STRAND ASSOCIATES®
Excellence in Engineering
Since 1946

Strand Associates, Inc.®
1170 South Houbolt Road
Joliet, IL 60431
(P) 815.744.4200
www.strand.com

November 17, 2022

Mr. Mark Siefert, Director of Public Works
City of Crest Hill
2090 Oakland Avenue
Crest Hill, IL 60403

Re: Alternative Water Source Distribution System Improvements
Project Plan

Dear Mr. Siefert:

Enclosed are three copies of the final Drinking Water Project Planning Submittal Checklist and associated project planning document regarding the water system improvements necessary for the acceptance of Lake Michigan water.

Please call 815-744-4200 with questions.

Sincerely,

STRAND ASSOCIATES, INC.®

Corrina M. Mauss

Enclosure: Report

Report for

City of Crest Hill, Illinois

Alternative Water Source Distribution System Improvements–Project Plan

Prepared by:

STRAND ASSOCIATES, INC.®
IDFPR No. 184-001273
1170 South Houbolt Road
Joliet, IL 60431
www.strand.com

November 2022

STRAND ASSOCIATES®
Excellence in Engineering
Since 1946

TABLE OF CONTENTS

Page No.
or Following

ALTERNATIVE WATER SOURCE DISTRIBUTION SYSTEM IMPROVEMENTS PROJECT PLAN

Water System Background..... 1
Project Purpose 3
Project Descriptions 4
Environmental Impacts..... 5
Engineer's Opinion of Probable Costs (OPC)..... 7
Financing Details 7
Project Sequencing..... 8
Local Newspapers 8
Project Scoring..... 8

TABLES

Table 1 Existing Water Distribution System Makeup 1
Table 2 Current Supply Capacity Summary..... 2
Table 3 Current Storage Capacity Summary..... 3
Table 4 Projected Water Demands 3

FIGURES

Figure 1 Existing Water System 1
Figure 2 Project Sequencing 9

APPENDICES

APPENDIX A–PROJECT MAPS
APPENDIX B–ENVIRONMENTAL CHECKLIST
APPENDIX C–ECOCAT
APPENDIX D–IDNR ECOCAT CONSULTATION TERMINATION LETTER
APPENDIX E–SHPO LETTER
APPENDIX F–SHPO SIGN-OFF
APPENDIX G–JOINT PERMIT APPLICATION
APPENDIX H–USACE AND IDNR CORRESPONDENCE (WATERS OF THE UNITED STATES)
APPENDIX I–TRIBAL CORRESPONDENCE
APPENDIX J–DETAILED OPINION OF CAPITAL COSTS
APPENDIX K–2022 RATE STUDY
APPENDIX L–2022 RATE ORDINANCE

The City of Crest Hill (City) is proceeding with plans to transfer to an alternative water supply and receive Lake Michigan water in 2030. This report develops a project plan for various water distribution system improvements within the City that are necessary to transfer to the treated Lake Michigan water supply. This report is intended to satisfy the requirements of the Illinois Environmental Protection Agency (IEPA), Public Water Supply Loan Program. The information contained in this report is in accordance with the IEPA Project Planning Submittal Checklist and the Illinois Administrative Code (IAC) 35, Sections 662.320 (e) and 662.330.

WATER SYSTEM BACKGROUND

The City is located in Will County, Illinois, approximately 38 miles southwest of the City of Chicago. According to the United States Census Bureau, the City's population was 20,550 in 2020 and 20,840 in 2010. The City currently serves approximately 21,169 people through 6,634 connections, including a connection with Stateville Correctional Center, which currently consists of approximately 2,856 inmates. These connections also include approximately 6,073 residential, 530 commercial, 24 institutional (such as schools and hospitals), and seven governmental customers.

The system includes two pressure zones, eight shallow wells, seven water treatment plants (WTP), four elevated storage tanks, and an emergency interconnect with the City of Joliet. Figure 1 shows the City's existing water system.

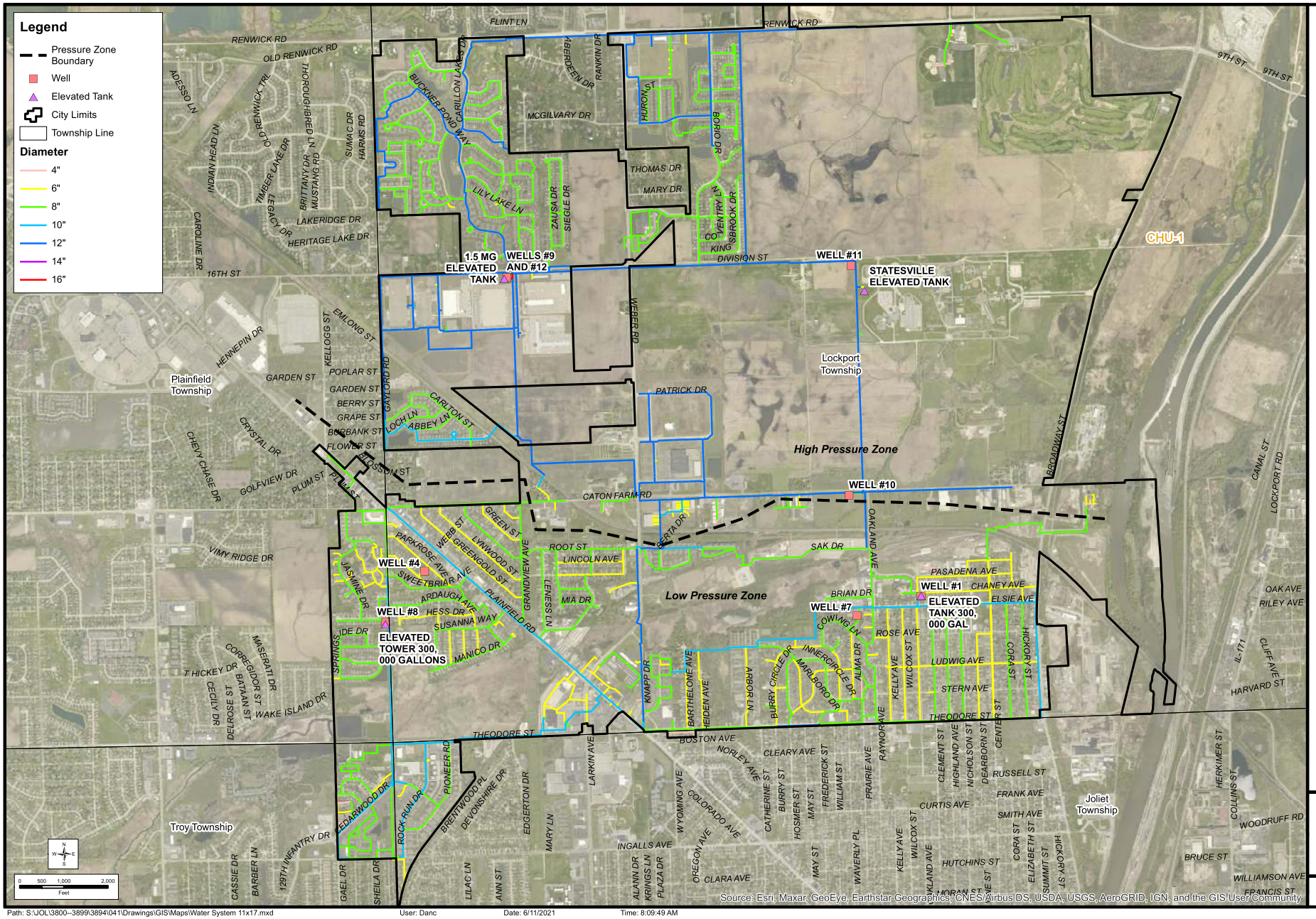
A. Distribution System

The water distribution system consists of approximately 84 miles of mostly ductile iron pipe ranging from 4 to 12 inches in diameter, which is further broken down in Table 1. The system contains two different zones, High and Low. These zones are connected via two interconnects. One interconnect is on a 12-inch water main on Weber Road, and the other is in an 8-inch water main on Caton Farm Road.

Diameter (in)	PVC (ft)	Ductile Iron (ft)	Undocumented* (ft)
4	-	3,192	284
6	25	83,648	11,356
8	1,563	232,775	-
10	-	48,736	-
12	4,907	96,072	-
14	-	40	-
16	-	259	-
Total (ft)	6,495	464,722	11,640
Total (miles)	1.23	88.02	2.20
Percent of Total	1.35	96.24%	2.41%

*Assumed to be ductile iron.
in=inch
ft=feet
PVC=polyvinyl chloride

Table 1 Existing Water Distribution System Makeup



EXISTING WATER SYSTEM

AWS DISTRIBUTION SYSTEM IMPROVEMENTS-PROJECT pLAN
CITY OF CREST HILL
WILL COUNTY, ILLINOIS

STRAND ASSOCIATES

FIGURE 1
3894.045

Path: S:\JOL\3800--3899\3894\041\Drawings\GIS\Maps\Water System 11x17.mxd User: Danc Date: 6/11/2021 Time: 8:09:49 AM

B. Water Supply

Throughout the City's distribution system, there are a total of eight shallow wells. The High Zone has three wells, while the Low Zone has four wells. The final well, Well No. 10, can serve both zones.

Table 2 shows summaries the capacities of each existing well. The Low Zone has a total well capacity of 1,650 gallons per minute (gpm), or 2.37 million gallons per day (MGD), and a firm capacity of 1,225 gpm, or 1.76 MGD. The High Zone has a total well capacity of 800 gpm, or 1.15 MGD, and a firm capacity of 525 gpm, or 0.76 MGD. The total well capacity for the combined system is 2,450 gpm, or 3.53 MGD, and the firm well capacity of the combined system is 2,025 gpm, or 2.92 MGD.

Well No.	Design Flow (gpm)
4	475
8	450
1	405
7	405
10	340
9[1]	280
12[1]	500
11	340
Total Capacity[2]	2,915
Firm Capacity[3]	2,695

[1]Wells operate asynchronously.
[2]Calculated without Well No. 9.
[3]Firm capacity is calculated with the largest producer, Well No. 12, out of service.

Table 2 Current Supply Capacity Summary

C. Treatment and Pumping Facilities

Most well houses within the City employ booster pumps. This is because the process of using an aeralater includes filtering the untreated water by gravity, therefore causing a break in pressure head. However, most booster pumps employ variable frequency drives to match well flow, so treatment and pumping capacity matches what is summarized previously in Table 2.

D. Storage Facilities

The City has four elevated storage tanks throughout the system. Both the Low and High Zone have two tanks. Table 3 summarizes the capacity of each tank.

Tower Number	Location	Zone	Capacity (MG)	Overflow Elevation AMSL (ft)
Tower 9	South of Division Street and Buckner Pond Way	High	1.50	800.3
Stateville	South of Division Street, West of Stateville	High	0.25	799.3
Tower 1	Oakland and Chaney Avenues	Low	0.30	753.3
Tower 8	Gaylord Road and Waterford Drive	Low	0.30	753.3
Total	**-**	**-**	**2.35**	**-**

MG=million gallons
AMSL=above means sea level

Table 3 Current Storage Capacity Summary

PROJECT PURPOSE

A. Population Projections and Water Demand

The City has estimated future demands using a population equivalent (PE) methodology, with growth at 289 PE per year to a projected maximum day demand of 4.18 MGD in 2050, as the data set most representative of the City's anticipated growth. These projected demands are summarized in Table 4.

Year	Projected Population[1]	Projected PEs	Projected Average Day Demand (MGD)	Projected Maximum Day Demand (MGD)	Projected Maximum:Average Ratio
2022[2]	18,596	21,129	1.93	2.83	1.46
2030	19,841	23,443	2.18	3.21	1.47
2050	25,109	29,230	2.81	4.18	1.49

[1]Population projections taken from Chicago Metropolitan Agency for Planning.
[2]Present-day population and demands are interpolated using historic 2020 and projected 2025 data.

Table 4 Projected Water Demands

As described previously in Table 2, current firm capacity is 2,695 gpm. It is typically good practice to run the wells at approximately 16 to 18 hours per day rather than 24 hours, in order to prevent overexertion and well failure. So, with the wells running at full capacity for 18 hours per day, firm capacity is approximately 2.91 MGD.

A firm well capacity of 2.91 MGD does not meet the 2030 or 2050 projected maximum day demands of 3.21 and 4.18 MGD, respectively.

B. Regulatory Compliance

Before 2030, in order to stay in compliance and properly meet projected demands, the City has decided to add one new shallow well that will pump approximately 400 gpm. This will raise firm capacity to approximately 3.21 MGD.

However, adding new wells, especially to the High Zone, has been difficult for the City. In order to avoid future compliance issues, the City has decided to join a regional water commission, the Grand Prairie Water Commission (GPWC), to supply its system with Lake Michigan water following 2030, because of the City's ongoing battles with polyfluoroalkyl substances, chlorides, and well siting in environmentally sensitive areas.

All proposed improvements to be constructed under this project plan will be designed in accordance with applicable laws and regulations. Additionally, the projects described in the following section are needed to meet the following Lake Michigan Allocation requirements:

1. Section 3730.307 of the IAC–"Permittees in Categories IA and IB shall limit non-revenue water so that it is less than 12% of net annual pumpage (system input volume) in Water Year 2015, decreasing to no more than 10% by Water Year 2019 and all years thereafter."

2. Chicago Department of Water Management Requirement–Storage capacity must be equal to two times the municipality's Illinois Department of Natural Resources (IDNR) allocation.

No requests for variance of exception to IAC Title 35 are anticipated at this time. There are no known current or impending violations for the City.

PROJECT DESCRIPTIONS

Water system improvements are needed in order to ensure water supply through 2030 and to transition to the Lake Michigan water source supplied by the GPWC in 2030 and beyond. IAC Title 35 and *Recommended Standards for Water Works* will be the basis for design. The proposed projects are as follows, and corresponding project maps can be found in Appendix A:

A. Projects that Increase Interim Supply through 2030

   a. Installing new 8-inch water main from the future Well No. 14 site behind Menards to the existing Well No. 10 WTP along Caton Farm Road.

   b. Retrofitting the existing Well No. 10 WTP (at Oakland Avenue and Caton Farm Road) to receive 400 gpm of untreated Well No. 14 water and to provide treatment to reduce iron levels.

B. Projects that Reduce Water Loss

   a. Replacing the aging 8-inch water main along Root Street and Sak Drive from Caton Farm Road to Oakland Avenue (9,825 feet) with a new to 12-inch water main.

   b. Lining the existing 10-inch water main along Broadway Street from Theodore Street to Chaney Avenue.

   c. Lining the existing 8-inch water main along Theodore Street from Broadway Street to United States Route 30 (Route 30).

d. Lining the existing 10-inch water main along Route 30 from Leness Lane to Theodore Street.

C. Projects that Increase Storage and Long-Term Supply Capacity

Constructing a new 3.5 MG standpipe and receiving and pump station adjacent to the existing Well No. 10 WTP.

ENVIRONMENTAL IMPACTS

Environmental impacts were assessed through compliance with the IEPA Loan Application and Environmental Checklist and Certification form (a copy of this checklist can be found in Appendix B). Consultation with the DNR, IDNR State Historic Preservation Office (SHPO), United States Army Corps of Engineers (USACE), and federally recognized interested Indian tribes was required for this project. The construction of the various projects will comply with all required environmental impact conditions and recommendations.

A. IDNR

The IDNR Ecological Compliance Assessment Tool (EcoCAT) was used to initiate communication with the IDNR regarding the various projects. Project information was entered through the IDNR Web site on August 1, 2022, and a printout of the assessment is provided in Appendix C.

The initial EcoCAT assessment determined that wetlands are located within 250 feet of the project location and that the following protected resources may be in the vicinity of the project location:

1. Lockport Prairie Illinois Natural Areas Inventory (INAI) Site
2. Lockport Prairie East INAI Site
3. Theodore Street Marsh INAI Site
4. Dellwood Park West Nature Preserve
5. Lockport Prairie Nature Preserve
6. Theodore Marsh Land and Water Reserve
7. Blackchin Shiner (*Notropis heterodon*)
8. Blanding's Turtle (*Emydoidea blandingii*)
9. Hine's Emerald Dragonfly (*Somatochlora hineana*)
10. Hine's Emerald Dragonfly (*Somatochlora hineana*)
11. Spotted Turtle (*Clemmys guttata*)

The IDNR provided a follow-up consultation on August 3, 2022, stating that adverse effects of the various projects are unlikely and that consultation under 17 IAC Parts 1075 and 1090 is terminated. A printout of this letter can be found in Appendix D.

B. IDNR SHPO

A letter, provided in Appendix E, was sent to the SHPO cultural resources protection reviewers on August 4, 2022, requesting Federal Section 106 sign-off. A sign-off letter was received by the SHPO on September 9, 2022. A printout of this response can be found in Appendix F.

C. USACE and IDNR

To receive sign-off on the IEPA Loan Application, the USACE and IDNR must evaluate projects with construction located within a river, stream, wetland, floodplain, floodway, waterway, or any body of water; or construction within 250 feet of a wetland. Using EcoCAT and the United States Fish and Wildlife's National Wetlands Inventory, the project was determined to be within 250 feet of a regulatory floodway. A Joint Permit Application (which can be found in Appendix G) was provided to the IDNR and USACE. Printouts of the correspondence between Strand Associates, Inc.® and these agencies can be found in Appendix H.

D. Tribal Consultations

Section 106 of the National Historic Preservation Act requires consultation with all federally recognized, interested native tribes if construction has potential to affect properties that have religious or cultural significance. In Will County, there exists ten federally recognized, interested tribes that are required to be contacted for comment. This includes:

1. Citizen Potawatomi Nation, Oklahoma
2. Forest County Potawatomi Community of Wisconsin
3. Hannahville Indian Community, Michigan
4. Kickapoo Tribe of Indians of the Kickapoo Reservation in Kansas
5. Kickapoo Tribe of Oklahoma
6. Little Traverse Bay Bands of Odawa Indians, Michigan
7. Menominee Indian Tribe of Wisconsin
8. Miami Tribe of Oklahoma
9. Peoria Tribe of Indians of Oklahoma
10. Prairie Band Potawatomi Nation

A letter discussing the project location and description was sent on August 18, 2022, to each tribe's tribal historic preservation officer or the next available contact on the Tribal Directory Assessment Tool. These letters can be found in Appendix I.

ENGINEER'S OPINION OF PROBABLE COSTS (OPC)

The total engineer's OPC for the various projects is $37,821,000 in 2022 dollars. A breakdown of the OPC is provided in the following, and a detailed breakdown by project can be found in Appendix J:

1.	Design Engineering (including planning and form preparation):	$2,564,100.00
2.	Construction Engineering (including Bidding):	$3,205,100.00
3.	Other Professional Services (legal and loan administration):	Not Applicable
4.	Construction:	$29,137,950.00
5.	Contingency (at 10 percent of Construction Costs):	$2,913,800
6.	Total Estimated Project Costs:	$37,821,000.00

FINANCING DETAILS

The total engineer's OPC for the various construction projects is approximately $37,821,000 in 2022 dollars. The debt service for a 20-year loan on this amount, at an anticipated interest rate of 1.24 percent per year, is approximately $2,147,686 annually. However, the City qualifies for a small community rate (75 percent of base rate) and a 30-year loan period because a population of less than 25,000 is served and the median household income (MHI) in the City is less than the statewide average. The debt service for a 30-year loan on this amount at an anticipated interest rate of 0.93 percent per year is approximately $1,451,010 annually. Currently, an average monthly residential bill of $30.52 from 5,882 residential customers as described in the existing User Charge and O, M, and R Certification Sheet found as page 4 of the Project Planning Submittal checklist will produce $2,154,200 of revenue per year. This revenue does not include apartment, commercial, sprinkler, or institutional income.

The *Water and Sewer Rate Study*, provided by Burns and McDonnell in February 2022, is included as Appendix K. This study included $14,218,700 for water main upgrades and water main lining, which the City would pay for without the use of an IEPA loan, through 2027. The study also accounted for an IEPA loan of $22,361,100 for additional storage, pumping station improvements, and local distribution and transmission main improvements in 2028. This loan was assumed to have a 30-year payback period, an annual interest rate of 2.5 percent, and a 1.0 percent issuance expense. Considering the City's status as a small community resulting in a reduced interest rate and extended loan period, they are prepared to move the loan projects up in the schedule.

The study in Appendix K proposed an 11 percent water rate increase through 2030, followed by a 6 percent annual water rate increase indefinitely to account for inflation. The City adopted this water rate increase in 2022, in accordance with the City ordinance (included in Appendix L), and no additional water rate adjustments beyond this are anticipated to be necessary for the projects laid out in this planning document.

PROJECT SEQUENCING

Bidding and the start of construction are contingent upon receipt of IEPA approval of this project plan, but no later than March 2023 for inclusion on IEPA's Intended Funding List for the fiscal year beginning July 1, 2023. Figure 2 shows a breakdown of the assumed project sequencing.

LOCAL NEWSPAPERS

A list of local newspapers for the IEPA review is shown in the following:

1. *Times Weekly Newspaper*, 254 East Class Street, Joliet, IL 60432
2. *Herald-News*, 2175 Oneida Street, Joliet, IL 60435
3. *Chicago Tribune Editorial Dept*, 58 North Chicago Street, Joliet, IL 60432

PROJECT SCORING

To facilitate Agency approval of this project planning document and placement on the Intended Funding List, draft scoring has been completed as follows (in accordance with IAC 365.345):

1. 0 points under subsection (e) Violations and Enforcement Compliance–Projects are not necessary for correcting a current violation of the Act or Board rules.
2. 0 points under subsection (f) Unsewered Communities and Consolidation–Projects are not providing wastewater collection or treatment services.
3. 0 points under subsection (g) Water Quality Improvement–Projects do not improve a named cause of impairment for a receiving water body.
4. 75 points under subsection (h) Protection of Assets–The projects that are considered asset protection and operation and maintenance projects (i.e., the water main replacement along Root Street and Sak Drive and all water main lining) are each designed to accommodate an average daily flow of less than 1 MG.
5. 20 points under subsection (i) Conservation and Green Infrastructure–The intent of the installation of a 3.5 MG standpipe is to provide the City with water in case of a service disruption.
6. 20 points under subsection (j) Readiness to Proceed–The City's goal is to receive a permit to construct the Well No. 14 untreated water main before the March 31, 2023, project planning approval deadline.
7. 30 points under subsection (k) Economic Factors–According to the most recent available United States Census data, MHI for the City is 85 percent of Illinois MHI.
8. 25 points under subsection (l) Population–The service population is between 10,000 and 34,999.

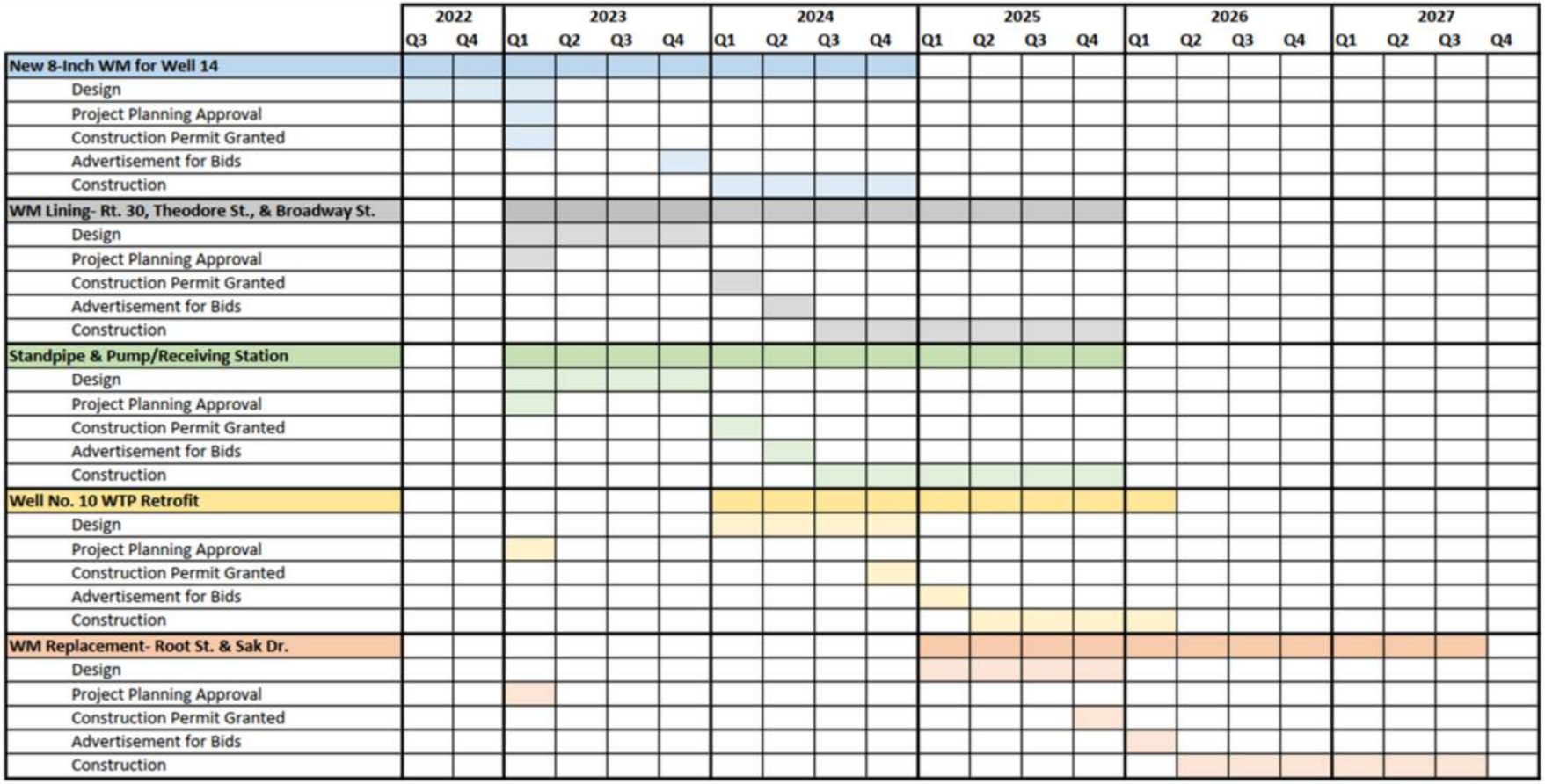
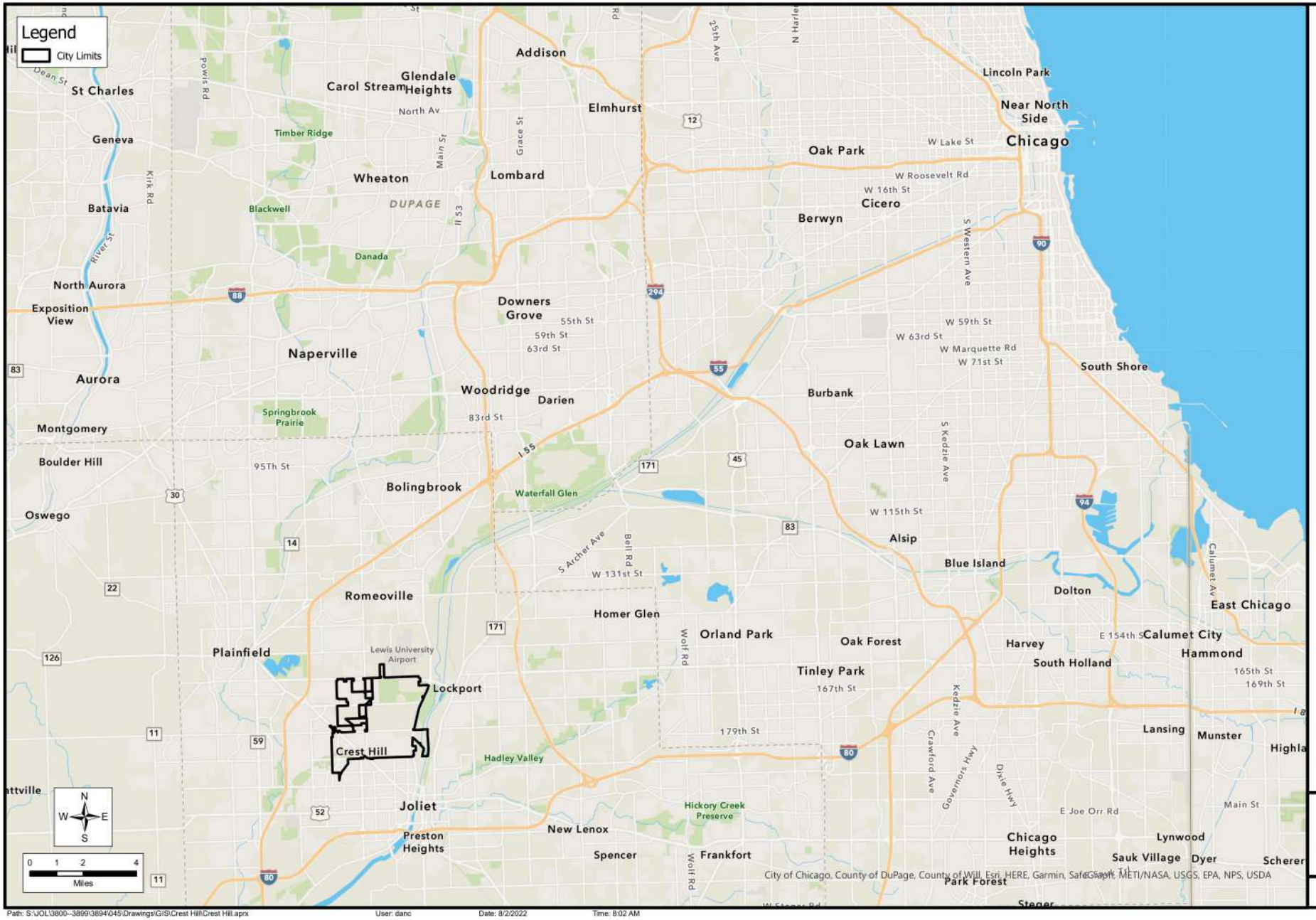


Figure 2 Project Sequencing

APPENDIX A
PROJECT MAPS



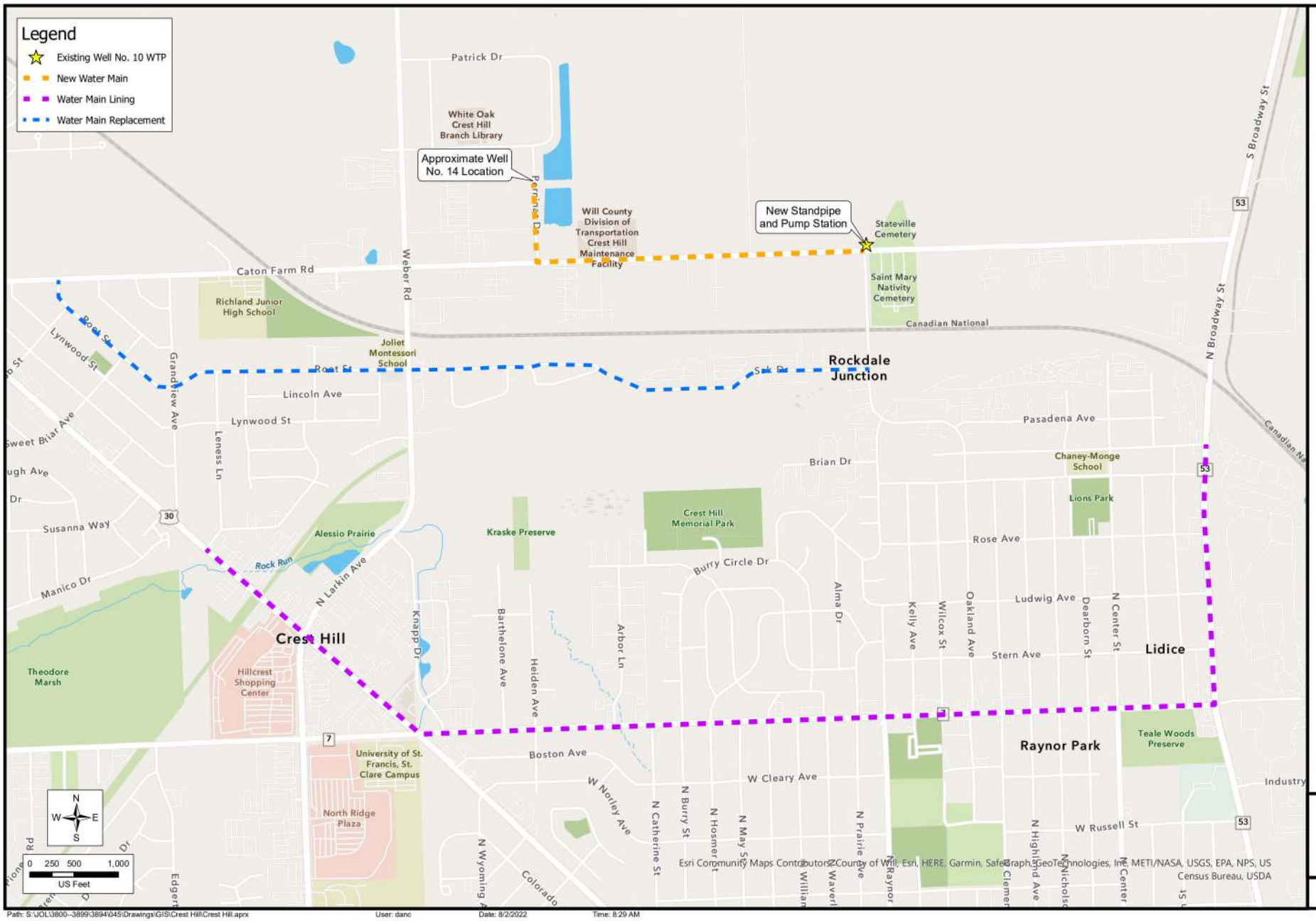
AREA MAP

IEPA PROJECT PLAN - AWS
CITY OF CREST HILL
WILL COUNTY, ILLINOIS

STRAND ASSOCIATES®

FIGURE 1
3894.045

Path: S:\JOL\3800--3899\3894\045\Drawings\GIS\Crest Hill\Crest Hill.aprx User: danc Date: 8/2/2022 Time: 8:02 AM



PROJECT MAP

IEPA PROJECT PLAN - AWS
CITY OF CREST HILL
WILL COUNTY, ILLINOIS

STRAND ASSOCIATES®

FIGURE 1
3894.045

Path: S:\JOL\3800--3899\3894\045\Drawings\GIS\Crest Hill\Crest Hill.aprx User: danc Date: 8/2/2022 Time: 8:29 AM

APPENDIX B
ENVIRONMENTAL CHECKLIST

IEPA Loan Applicant Environmental Checklist and Certification Form

Loan Applicant: City of Crest Hill L17#: IL1970250

This form must be signed by the loan applicant's Authorized Representative. All loan applicants must provide items 1 and 2 below. The information that must be provided for items 3-8 are specific to conditions of the project. See the attached instructions that explain the requirements and provide contact information. If you believe an item is not required for your project, enter N/A instead of the date of response and provide an explanation in the planning report. For checklist items marked as N/A, also indicate the page number of the planning report where the explanation is located.

Provide records of consultation with Illinois Department of Natural Resources (IDNR), State Historic Preservation Office (SHPO) for the National Historic Preservation Act, Section 106 sign-off.

1) Date of IDNR, SHPO response: September 9, 2022

Provide records of consultation with IDNR's Impact Assessment Section for evaluation pursuant to the Illinois Endangered Species Protection Act [520 ILCS 10/11], the Illinois Natural Areas Preservation Act [525 ILCS 30/17], Title 17 Illinois Administrative Code, Part 1075, and Interagency Wetlands Policy Act of 1989 (Illinois Administrative Code, Part 1090).

2) Date of EcoCAT printout: August 1, 2022

Date of IDNR follow-up letter (when protected resources are identified): August 3, 2022

For projects located within any wetland, river, stream, flood plain, floodway, waterway, any body of water, or construction located within 250 feet of a wetland; provide records of consultation from:

3) U.S. Army Corps of Engineers (USACE) **Date of USACE response:** September 2, 2022

For projects located within a flood plain or floodway, or along a jurisdictional river, lake, or stream without a mapped floodway or flood plain, provide records of consultation from:

4) IDNR Office of Water Resources (OWR) **Date of IDNR OWR response**: October 27, 2022

If the project involves conversion of prime agricultural land to other uses, provide records of consultation from:

5) Illinois Department of Agriculture (IDOA). **Date of IDOA response:** N/A

If the project includes 30% or more reserve capacity for future growth in the existing or proposed service areas, provide records of consultation from all applicable environmental regulatory entities listed on this form for the known growth/development areas associated with the identified secondary/indirect environmental impacts.

6) Secondary impacts list of applicable regulatory entities and date of their responses: N/A

If any project with secondary impacts is located in a county under the jurisdiction of a Designated Water Quality Management Agency (DWQMA), which are the Greater Egypt Regional Planning & Development Commission (GERPDC), the Southwestern Illinois Metropolitan and Regional Planning Commission (SIMAPC), and the Chicago Metropolitan Agency for Planning (CMAP), provide records of consultation from:

7) Date of DWQMA response: N/A

For certain projects, Section 106 of the National Historic Preservation Act of 1966 (NHPA) requires consultation with all interested, federally recognized Indian tribes. Consultation is required if construction has the potential to affect properties that have religious or cultural significance to Indian tribes previously residing in Illinois. Check all boxes below that apply to this project. If applicable, consultation is required with the Tribal Historic Preservation Office of each interested tribe. If a response is not received in 30 days, consider consultation closed.

☒ **Significant ground disturbance (digging)**
Examples: new sewers, utility lines (above and below ground), foundations, footings, grading, access roads. This does not include sewer lining; in-place sewer or water main replacements without an increase to the trench size; or re-building a lift station, well, or above-ground building without increasing the footprint.

☐ **New construction in undeveloped natural areas**
Examples: treatment plants, pipelines, or other new facilities in undeveloped natural areas such as forests, etc.

☒ **Visual changes and/or audible changes**
Examples: construction of a focal point that is out of character with the surrounding natural area, impairment of the view from an observation point in the natural landscape, impairment of the historic scenic qualities of an area, or an increase in noise levels above an acceptable standard in areas known and appreciated for their quietness.

☐ **Atmospheric changes**
Example: introduction of lights that create skyglow in an area with a dark night sky.

☐ **Work on a building with significant tribal association**
Examples: rehabilitation, demolition, or removal of a surviving ancient tribal structure(s), or a structure that is believed to be the location of a significant tribal event or that served as a tribal school or community hall.

☐ **Transfer, lease, or sale of a historic property of religious and cultural significance**
Examples: Involves properties that contain archaeological sites, burial grounds, sacred landscapes or features, ceremonial areas, or structures with significant tribal association.

☐ **None of the above apply – Tribal Consultation is Not Applicable**

8) Date Submitted to Interested Tribes 8/18/2022 **List tribes contacted below or attach a list. Indicate contact date and if a response was received. Copies of all responses must be submitted to IEPA.**

1. Citizen Potawatomi Nation, Oklahoma
2. Forest County Potawatomi Community of Wisconsin
3. Hannahville Indian Community, Michigan
4. Kickapoo Tribe of Indians of the Kickapoo Reservation in Kansas
5. Kickapoo Tribe of Oklahoma
6. Little Traverse Bay Bands of Odawa Indians, Michigan
7. Menominee Indian Tribe of Wisconsin
8. Miami Tribe of Oklahoma
9. Peoria Tribe of Indians of Oklahoma
10. Prairie Band Potawatomi Nation

No responses received by any listed tribes.

Certification: By signing this form, the Loan Applicant certifies that the applicable environmental evaluations were conducted for the proposed project locations, and if the review results for any of these environmental evaluations include recommendations, conditions, certifications, and/or permits, the Loan Applicant agrees to comply.

Signed: _____ Date: _____
Loan Applicant's Authorized Representative

IEPA Loan Applicant Environmental Checklist and Certification Form Instructions

To obtain Project Plan approval, a loan applicant must satisfy the IEPA that the project will comply with various State and Federal enactments for protection of historical/cultural resources, recreational areas, rivers, streams wetlands, any body of water, floodplains, river and stream banks, rare and endangered species, prime agricultural land, air and water quality and other sensitive environmental areas. These required evaluations are intended to ensure compliance with Section II, Environmental Authorities, of the USEPA Handbook for Cross-cutting Federal Authorities. Please note that in Illinois, the Wild and Scenic Rivers Act requirements only apply to a designated 17.1-mile part of the middle fork of the Vermilion River, which is located west of Danville, Illinois, in Vermilion County.

These requirements can be satisfied by providing the information noted on this checklist. This checklist itemizes the project conditions that determine which environmental evaluations are required. The loan applicant must ask the identified regulating entities to evaluate their proposed project and then provide records of consultation to the IEPA. Records of consultation consist of copies of the loan applicants request for consultation; all correspondence to document the evaluation of the project; and the final review results. If the final environmental review results include recommendations, conditions, certifications, or if permits are issued, copies must be provided as part of the records of consultation. The records of consultation for all necessary environmental evaluations must be provided to the IEPA before we can complete the project summary document (Categorical Exclusion or Preliminary Environmental Impacts Determination), which is necessary to comply with the public notification and project planning approval requirements. Depending on the site-specific project conditions, the required environmental evaluations can take two or more months to complete. If your project meets any listed conditions, it is suggested that you submit the project information to the regulating entity as soon as possible.

To determine whether evaluations by USACE (Item 3) and IDNR-OWR (Item 4) are required, loan applicants must provide the IEPA Loan Program a minimum of two maps that show the project location and the specified environmentally sensitive areas. One map must be an official floodway location map as described in Item 4 to determine whether IDNR-OWR evaluation must be conducted. One or more other maps that show wetlands, rivers, streams and any body of water as described in Item 3 must be provided to determine whether USACE evaluation must be conducted. If the project is in any one of the specified areas, the loan applicant must submit a joint application form to IDNR-OWR and/or USACE and provide records of consultation to IEPA. If the provided maps demonstrate that project is not located in the specified areas, further evaluation is not required for Items 3 and 4.

By signing the Environmental Checklist and Certification Form, the loan applicant is certifying that the correct environmental evaluations were done for all proposed project construction areas and that they will comply with all environmental requirements. **The checklist and certification form must be signed and dated by the loan applicant's Authorized Representative (not the consulting engineer) and submitted to IEPA.**

Some environmental evaluation results specify a time period that the consultation remains valid. The consultation may expire in two or three years or may be project specific. The environmental evaluations must be current and in effect when the IEPA approves the project planning. If an environmental consultation expires before IEPA loan project planning approval, the loan applicant must provide new updated records of consultation.

If you have any questions regarding this package, please contact the IEPA Infrastructure Financial Assistance Section (IFAS) in the Bureau of Water at 217/782-2027.

1) Historical/Cultural Resources - National Historic Preservation Act, Section 106

A sign-off from the Illinois Department of Natural Resources State Historic Preservation Office (SHPO) must be provided to IEPA. The request for evaluation must indicate that the project will be funded through the IEPA loan program and therefore will require a federal Section 106 Sign-off (this will also satisfy the State Agency Historic Preservation Protection Act of 1966). The sign-off may be unconditional, or it may be conditional upon the applicant agreeing to incorporate measures to protect or recover historic or archeological resources.

More information via the internet: https://www2.illinois.gov/dnrhistoric/Preserve/Pages/Resource-Protection.aspx

IL Historic Preservation Office phone number: (217) 782-4836

E-mail requests for SHPO review to: SHPO.Review@Illinois.gov .

2) Threatened & Endangered Species, Natural Areas, Wetlands - Illinois Endangered Species Protection Act, Illinois Natural Areas Preservation Act, Illinois Interagency Wetland Policy Act

All projects, except for equipment only purchases, must be evaluated by the Illinois Department of Natural Resources (IDNR) Impact Assessment Section (IAS) for potential adverse effects to protected natural resources pursuant to the Illinois Endangered Species Protection Act [520 ILCS 10/11], the Illinois Natural Areas Preservation Act [525 ILCS 30/17], Title 17 Illinois Administrative Code, Part 1075, and Interagency Wetlands Policy Act of 1989 (Illinois Administrative Code, Part 1090). Loan applicants should submit the project via IDNR's EcoCAT website at: https://dnr2.illinois.gov/EcoPublic/. Applicants must then provide copies of the following records of consultation to IEPA:

- An EcoCAT review report which states that consultation under Part 1075 is terminated and that the wetland review under Part 1090 is terminated. If protected resources are identified, also provide;
- A letter from IDNR terminating the Part 1075 consultation and the Part 1090 wetland review because adverse effects are unlikely, or
- A letter from IDNR detailing any recommendations or measures which must be taken to avoid, minimize or mitigate adverse effects. All recommendations or measures must be incorporated into the project bidding and construction contract specifications.

Loan applicants may contact IDNR, IAS in at: Illinois Department of Natural Resources
Office of Realty and Capital Planning, Impact Assessment Section
One Natural Resources Way
Springfield, Illinois 62702-1271
Phone: 217-785-5500
Email: DNR.Ecocat@Illinois.gov

Reminder: Fees are not applicable to consultations required by State or Federal Government projects. If this consultation is for an IEPA funded project, do not pay the fee.

3) U.S. Army Corps of Engineers (USACE) for construction located within a river, stream, wetland, flood plain, floodway, waterway, or any body of water; or construction within 250 feet of a wetland.

To demonstrate compliance, all applicants must provide a copy of an area topographic or satellite image map that shows the project location and at least one-quarter mile of surrounding area and identifies all the following areas: rivers, streams, wetlands, flood plains, floodways, waterways, or any body of water or that will verify these areas are not present. The origin of the map must be provided. It is acceptable to provide as many maps as necessary to show the listed environmentally sensitive areas. Please note that an official flood plain/floodway map must be provided separately for item 4 below. If the project is not located in the listed areas, Item 3 of the checklist can be marked N/A and further evaluation by USACE is not necessary.

For all projects located in any of these areas, the loan applicant must submit a Joint Application Form and supporting project information to USACE. If the review results obtained from the IDNR Eco-CAT, Part 1090 Wetland Protection Act evaluation identify wetlands within 250 feet of the project location, the loan applicant must submit the project to USACE for evaluation, regardless of whether the Eco-CAT review was terminated. If the project locations are in previously disturbed areas; or directional boring will be used, the USACE evaluation must still be conducted.

The Joint Application Form is available on the USACE website at this link: https://www.usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/Obtain-a-Permit/. Click on Applications and Application Information to see several options for District Specific Permit information. **Attachment A** to this guidance provides a map and addresses to help you determine the appropriate Army Corps of Engineers District Office for your project.

When USACE evaluation is required, the loan applicant must provide IEPA with a copy of the evaluation request and the review results that were obtained from USACE. Acceptable review results must be from the regulating entity and may consist of a letter or email stating that the project is not regulated, and/or a permit is not required. If the review results include recommendations, conditions, and/or permits, the loan applicant must provide IEPA with a copy of all correspondence. If recommendations, conditions and/or permits are issued, the applicant must comply. The conditions must be included within the bidding and construction contract documents before a loan is issued.

4) IDNR Office of Water Resources (OWR) for projects located within a flood plain or floodway, or along a jurisdictional river, lake, or stream without a mapped floodway or floodplain

IDNR/OWR has jurisdiction on any river, lake, or stream with a drainage area greater than one square mile in an urban area, or ten square miles in a rural area.

To demonstrate compliance, all applicants must provide a copy of an official floodways area map that shows the project location and at least one-quarter mile of surrounding area. Acceptable floodway location maps can be the Flood Insurance Rate Map for the project location's county or community, or from the Federal Emergency Management Agency (FEMA). The origin of the map must be provided. Some flood plain areas regulated by the IDNR-OWR have not been identified on flood insurance rate or FEMA mapping. If the project is located in an area that is not shown on an official flood insurance rate or FEMA map, the loan applicant must provide a topographic or satellite image map that documents the project is not in the flood plain of any river, lake, or stream with a drainage area greater than one square mile in an urban area or ten square miles in a rural area. A printout report from the U.S. Geological Survey (USGS) StreamStats website that shows the square miles of the drainage area (Parameter Code DRNAREA) can be used to document flood drainage areas in unmapped locations. The StreamStats website is at: https://water.usgs.gov/osw/streamstats/.

If the project is not located within a flood plain or floodway or jurisdictional area, Item 4 of the checklist form can be marked as N/A and further evaluation by IDNR-OWR is not necessary.

If the project is located within any area designated as a flood plain or floodway area, or along a jurisdictional river, lake or stream without a mapped floodway or floodplain, the loan applicant must submit a Joint Application Form and supporting project information to IDNR-OWR. If the project locations are in previously disturbed areas; or directional boring will be used, the IDNR-OWR evaluation must still be conducted. **The Joint Application Form** is available on IDNR's website:
https://www2.illinois.gov/dnr/WaterResources/Pages/PermitApplicationandInstructions.aspx

When IDNR OWR evaluation is required, the loan applicant must provide IEPA with a copy of the evaluation request and the review results that were obtained from IDNR OWR. Acceptable review results must be from the regulating entity and may consist of a letter or email stating that the project is not regulated, and/or a permit is not required. If the review results include recommendations, conditions, and/or permits, the loan applicant must provide IEPA with a copy of all correspondence and agree to comply. The conditions must be included within the bidding and construction contract documents before a loan is issued.

IDNR OWR contact information: https://www.dnr.illinois.gov/WaterResources/Pages/ResourceManagement.aspx

Projects in Cook, Lake, McHenry, DuPage, Kane and Will Counties	Illinois Department of Natural Resources – Office of Water Resources Division of Resource Management 2050 West Stearns Road Bartlett, Illinois 60103	phone: 847/608-3100
Projects in remainder of the State	Illinois Department of Natural Resources – Office of Water Resources Downstate Regulatory Programs Section One Natural Resources Way Springfield, Illinois 62702-1271	phone: 217/782-3863

---

5) Conversion of Prime Agricultural Land to Other Uses (Federal Farmland Preservation Policy Act)

If the project involves permanent conversion of prime agricultural land to other uses, a description and map of the area to be converted along with a discussion of the necessity of utilizing prime agricultural land for the project must be provided. A copy of the evaluation request and review results must be provided to IEPA. If prime agricultural land is being converted, comments should be obtained from the IL Department of Agriculture, Bureau of Land & Water Resources: https://www2.illinois.gov/sites/agr/Resources/LandWater/Documents/agsitereview.pdf

Or by writing: Illinois Department of Agriculture, Bureau of Land and Water Resources,
P.O. Box 19281, State Fairgrounds
Springfield, IL 62794-9281
Phone: (217) 785-4389

---

6) Secondary Environmental Impacts

Projects that include 30% or more reserve capacity for future growth in the existing or proposed service areas, must include a discussion of the potential secondary impacts of the proposed project(s) in the planning documents. The loan applicant must identify reasonably foreseeable secondary/indirect environmental impacts from the project that are likely to occur. Secondary/ indirect impacts can include changes in the rate, density, type of development or use of open space, floodplain, prime agricultural land, impacts to historical/cultural resources, endangered or threatened species, natural areas, wetlands, rivers and streams, floodways, waterways, or any body of water. Provide a map that shows all proposed growth/development areas. The impacts to sensitive ecosystems due to induced growth must be evaluated and appropriate measures for mitigation proposed if necessary.

Projects that have 30% or more reserve growth capacity and know the actual location of growth/development areas, must also submit these known growth/development areas for evaluation to the same regulating entities listed above that evaluate the identified project construction areas. For example: If a WWTP is being expanded to a capacity that

is 30% more than the existing capacity for reasons that includes serving a new 40-acre subdivision, the 40-acre property must be evaluated for environmental impacts using the same criteria listed in items 1-5 and 8 of this checklist. These secondary environmental impacts evaluations must be identified separately from the project's direct construction impacts. A copy of the evaluation requests and records of consultation must be provided to the IEPA. If recommendations, conditions and/or permits are issued, the loan applicant must agree to the conditions and to include them in the bidding and construction contract documents before a loan is issued.

---

7) Designated Water Quality Management Agency (DWQMA) Consultation/Sign-off

This evaluation is only applicable to projects that identify secondary impacts as noted in item 6 above and are in any of the counties covered by a Designated Water Quality Management Agency (DWQMA) that are identified in **Attachment B** and the contact information below. The DWQMA will determine whether the project is consistent with that Agency's goals, future growth service areas, and their Water Quality Management Plans. A copy of the evaluation requests and records of consultation must be provided to the IEPA. If recommendations and/or conditions are issued, the loan applicant must agree to the conditions and to include them in the bidding and construction contract documents before a loan is issued. See Item No. 6 for a list of secondary impacts. Contact information for DWQMAs is below.

Chicago Metropolitan Agency for Planning (CMAP)
233 South Wacker Drive
Suite 800
Chicago, Illinois 60606
(312) 454-0400
https://www.cmap.illinois.gov/

Counties: Cook, DuPage, Kane, Kendall, Lake, McHenry, Will

Greater Egypt Regional Planning & Development Commission
3000 West DeYoung St.
Suite 800B-3
Marion, Illinois 62959
(618) 997-9351
http://greateregypt.org/

Counties: Franklin, Jefferson, Jackson, Perry, Williamson

Southwestern Illinois Metropolitan and Regional Planning Commission
10025 Bunkum Road, #201
Fairview Heights, Illinois 62208
(618) 344-4250
https://simapc.org/

Counties: Bond, Clinton, Madison Monroe, Randolph, St. Clair, Washington

---

8) Tribal Consultations

Section 106 of the National Historic Preservation Act of 1966 (NHPA) states that when federal monies are involved, consultation with the Tribal Historic Preservation Office (THPO) of all federally recognized, interested tribes must occur. Interested tribes include those previously residing in Illinois. The purpose is to preserve and protect tribal heritage through consultations, investigations, and planning efforts, and to comply with cultural resource laws. The Section 106 review process requires initiation of consultation by notifying the appropriate tribes, after which time consulting tribes are allowed at least 30 days to provide comments.

The US Department of Housing & Urban Development's Office of Environment and Energy developed an application called the Tribal Directory Assessment Tool (TDAT) to help users identify tribes that may have an interest in a location down to the county level. The TDAT is accessible through the following link: (https://egis.hud.gov/TDAT/)

Consultation is required if construction has the potential to affect properties that have religious or cultural significance to Indian tribes previously residing in Illinois. The checklist on Page No. 2 of this document may be used to determine if tribal consultation is required. If consultant is required, loan applicants should access the TDAT website using the link above to retrieve contact information for interested tribes. Tribes should then be contacted and allowed at least 30 days for comment. When a Tribal Historic Preservation Officer (THPO) is listed as a tribal contact, consultations should be directed to this individual. If no THPO is listed, other tribal representatives listed on the TDAT website should be contacted. Contact may be by formal letter or e-mail when available. An example letter is below. The letter must be signed by the applicant's authorized representative. E-mails must be sent by the loan applicant.

A list of tribes contacted, contact date, and any comments received must be submitted to IEPA with the Environmental Checklist.

Tribal Consultation Letter Example

[Date]

[Name], [Title - Preferred THPO]
[Name of Tribe] -
[Address]

Re: Section 106 Review – [**Name of Loan Applicant]/[County**]

Dear **[Title] [Last Name]**,

The [**Name of Applicant**] has applied for funding from the Illinois Environmental Protection Agency (IEPA) for [**Project Purpose: i.e., Lead Service Line Replacement; Wastewater Treatment Plant Improvements**]. IEPA provides low interest loans through the State Revolving Fund (SRF), which receives annual federal capitalization funding from USEPA. Prior to receiving planning approval, IEPA requires review of all projects to assure compliance with federal cross-cutting authorities, including Section 106 of the National Historic Preservation Act (NHPA).

In cooperation with IEPA, our municipality will conduct a review of this proposed project's location to comply with Section 106 of the National Historic Preservation Act according to procedures outlined in 36 CFR Part 800. Due to tribal interests in [**County Name**] County, IL, we invite you to be a consulting party in this review to help identify properties in the project area that may have historical, religious, or cultural significance to your tribe. If such properties are identified and the project has the potential to impact historical or cultural resources, we request guidance regarding how to avoid, minimize, or mitigate any adverse effects.

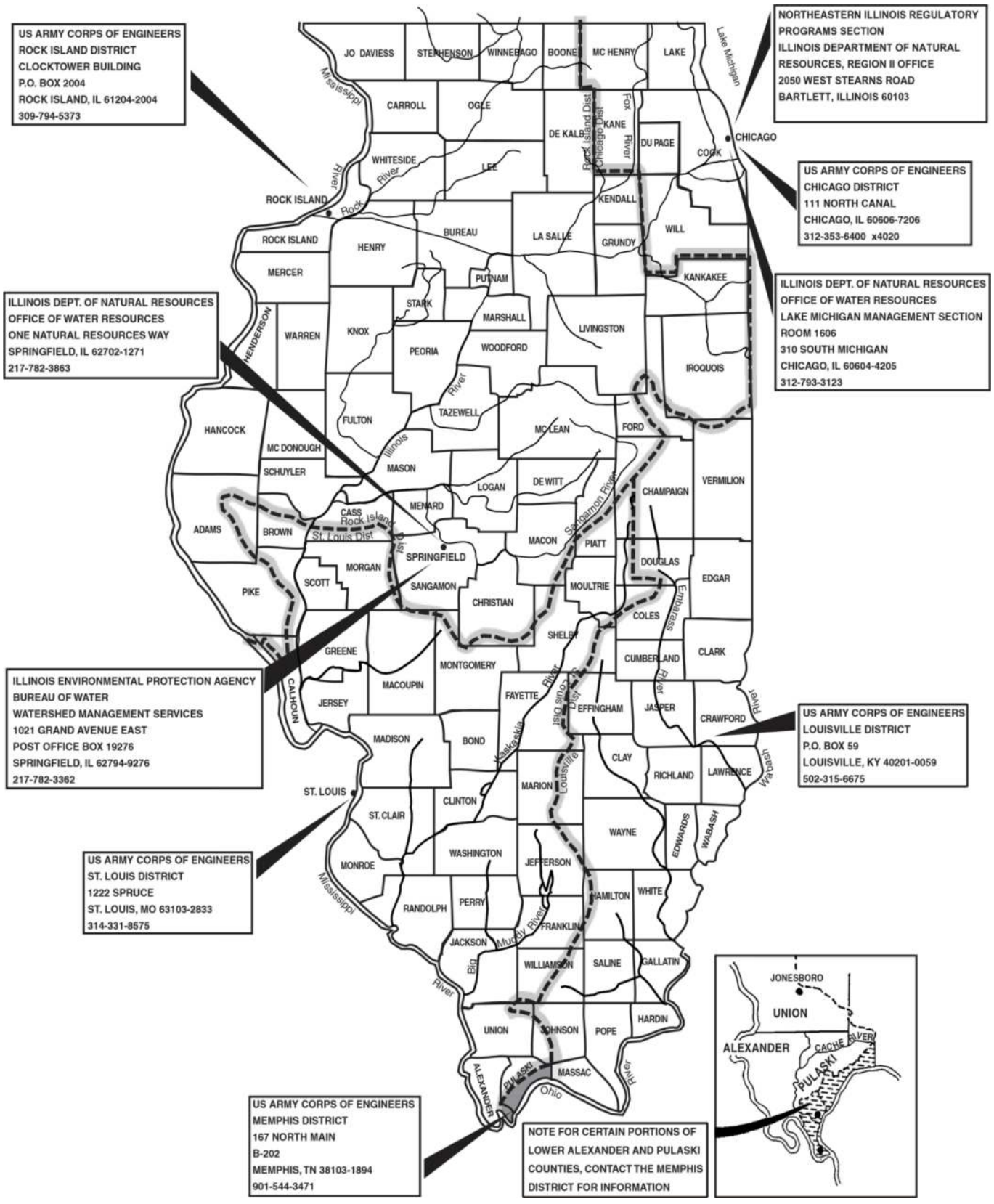
Information regarding the project is attached. If you would like to be a consulting party on this project, please respond to this letter within 30 days. Your response should include any concerns about the impact of this project. We value your opinion and if you have further questions regarding this project, please contact **[Name**] at [**e-Mail or Phone]**.

Sincerely,

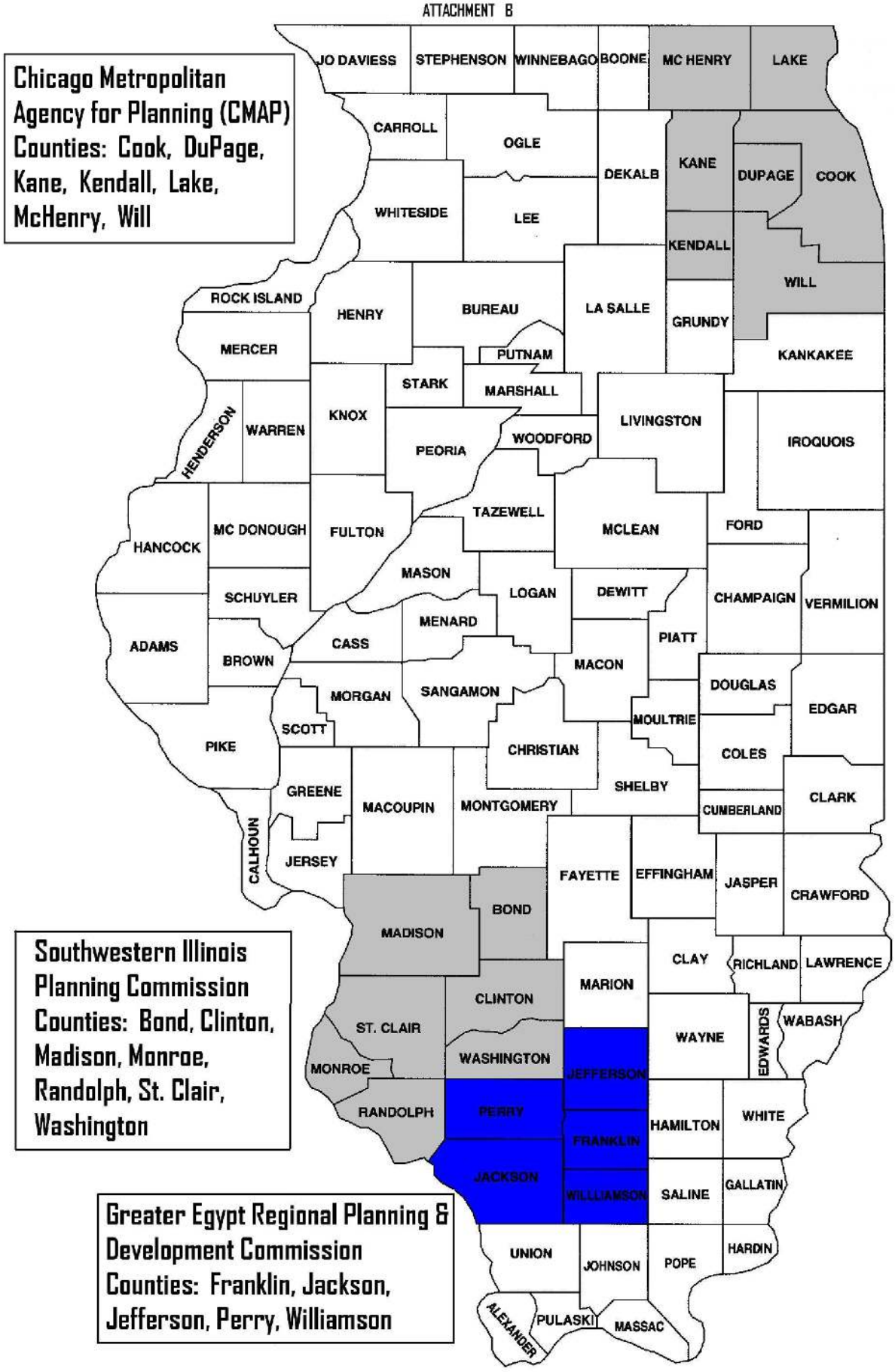
[Name]
[Title]
[Organization]

Attachment A

REGULATORY JURISDICTIONAL BOUNDARIES



ATTACHMENT B



APPENDIX C
ECOCAT

EcoCAT
Ecological Compliance Assessment Tool

Applicant:	Strand Associates Inc.	*IDNR Project Number:*	2301845
Contact:	Corrina Mauss	*Date:*	08/01/2022
Address:	1170 S Houbolt Road Joliet, IL 60431	*Alternate Number:*	3894.045

Project: AWS-Water System Distribution Improvements
Address: 41°33'59.2"N 88°06'14.2"W, Crest Hill

Description: Installation of new water main, retrofit of an existing water treatment plant, lining of various existing water main segments, and the installation of a 3.75 million gallon standpipe and associated pump station.

Natural Resource Review Results

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

The Illinois Natural Heritage Database shows the following protected resources may be in the vicinity of the project location:

Lockport Prairie INAI Site
Lockport Prairie East INAI Site
Theodore Street Marsh INAI Site
Dellwood Park West Nature Preserve
Lockport Prairie Nature Preserve
Theodore Marsh Land And Water Reserve
Blackchin Shiner *(Notropis heterodon)*
Blanding's Turtle *(Emydoidea blandingii)*
Hine's Emerald Dragonfly *(Somatochlora hineana)*
Hine's Emerald Dragonfly *(Somatochlora hineana)*
Spotted Turtle *(Clemmys guttata)*

Wetland Review (Part 1090)

The Illinois Wetlands Inventory shows wetlands within 250 feet of the project location.

An IDNR staff member will evaluate this information and contact you to request additional information or to terminate consultation if adverse effects are unlikely.

Location

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

County: Will

Township, Range, Section:
35N, 10E, 4
35N, 10E, 5
35N, 10E, 6
36N, 10E, 28
36N, 10E, 29
36N, 10E, 30

36N, 10E, 31
36N, 10E, 32
36N, 10E, 33

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

Government Jurisdiction
IL Environmental Protection Agency
Corrina Mauss
Strand Associates Inc.
1170 Houbolt Rd
Joliet, Illinois 60431

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.

Terms of Use

By using this website, you acknowledge that you have read and agree to these terms. These terms may be revised by IDNR as necessary. If you continue to use the EcoCAT application after we post changes to these terms, it will mean that you accept such changes. If at any time you do not accept the Terms of Use, you may not continue to use the website.

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.

2. Unauthorized attempts to upload, download, or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act.

3. IDNR reserves the right to enhance, modify, alter, or suspend the website at any time without notice, or to terminate or restrict access.

Security

EcoCAT operates on a state of Illinois computer system. We may use software to monitor traffic and to identify unauthorized attempts to upload, download, or change information, to cause harm or otherwise to damage this site. Unauthorized attempts to upload, download, or change information on this server is strictly prohibited by law.

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.

Privacy

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.

APPENDIX D
IDNR ECOCAT CONSULTATION TERMINATION LETTER

Illinois Department of
Natural Resources

One Natural Resources Way Springfield, Illinois 62702-1271
http://dnr.state.il.us

JB Pritzker, Governor
Colleen Callahan, Director

August 03, 2022

Corrina Mauss
Strand Associates Inc.
1170 S Houbolt Road
Joliet, IL 60431

RE: AWS-Water System Distribution Improvements
Project Number(s): 2301845 [3894.045]
County: Will

Dear Applicant:

This letter is in reference to the project you recently submitted for consultation. The natural resource review provided by EcoCAT identified protected resources that may be in the vicinity of the proposed action. The Department has evaluated this information and concluded that adverse effects are unlikely. Therefore, consultation under 17 Ill. Adm. Code Part 1075 and 1090 is terminated.

Consultation for Part 1075 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, or Natural Areas 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. Consultation for Part 1090 (Interagency Wetland Policy Act) is valid for three years.

The natural resource review reflects the information existing in the Illinois Natural Heritage Database and the Illinois Wetlands Inventory at the time of the project submittal, 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, you must comply with the applicable statutes and regulations. Also, note that termination does not imply IDNR's authorization or endorsement of the proposed action.

Please contact me if you have questions regarding this review.

Adam Rawe

Adam Rawe
Division of Ecosystems and Environment
217-785-5500

APPENDIX E
SHPO LETTER

STRAND ASSOCIATES®
Excellence in Engineering
Since 1946

Strand Associates, Inc.®
1170 South Houbolt Road
Joliet, IL 60431
(P) 815.744.4200
www.strand.com

August 4, 2022

Preservation Services Division
Illinois Historic Preservation Agency
One Old State Capitol Plaza
Springfield, IL 62701

Re: Alternative Water Source Distribution System Improvements
City of Crest Hill, Illinois (City)

To Whom it May Concern:

On behalf of the City, Strand Associates, Inc.® is providing this documentation for a State Historic Preservation Office Federal Section 106 sign-off for several water system distribution improvement projects consisting of the installation of new water main, retrofit of an existing water treatment plant (WTP), lining of various existing water main segments, and the installation of a 3.75 million gallon standpipe and associated pump station. A project location map, along with photographs of the only existing structure (the Well No. 10 WTP) in question, is enclosed.

Funding is being sought from the Illinois Environmental Protection Agency (IEPA) and the Public Water Supply Loan Program; therefore, the review should be done anticipating that IEPA loan funds will be used. The enclosed project location map shows the potential extent of the projects.

We hope the description provided and the exhibit enclosed meets with your approval. If you have any questions, please call 815-744-4200 or e-mail at corrina.mauss@strand.com

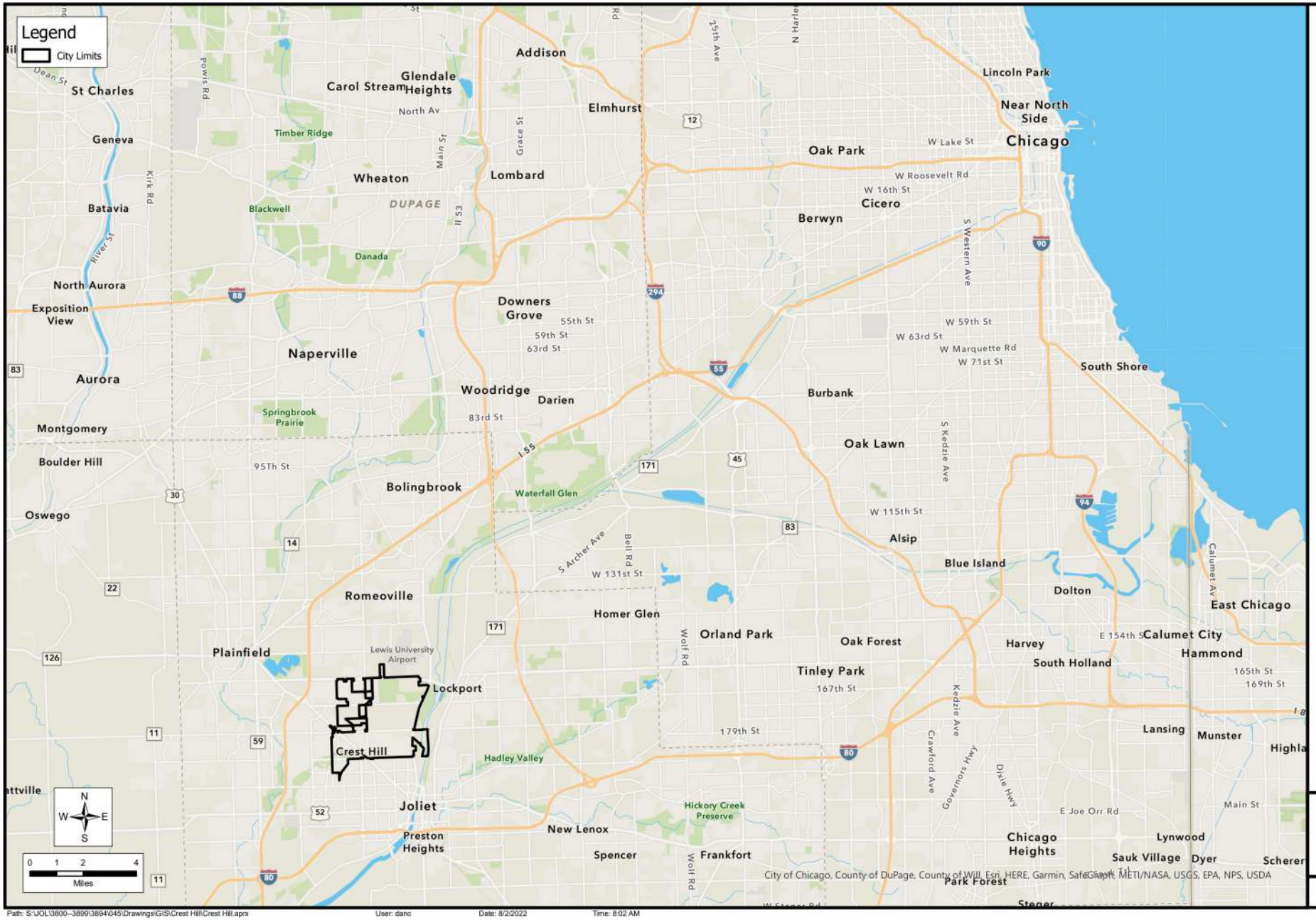
Sincerely,

STRAND ASSOCIATES, INC.®

Corrina M. Mauss

Enclosures

CMM:amm\S:\JOL\3800--3899\3894\045\Designs-Studies-Reports\Agency Permits and Approvals\SRF Project Plan\Environmental\SHPO\SHPO Letter.docx



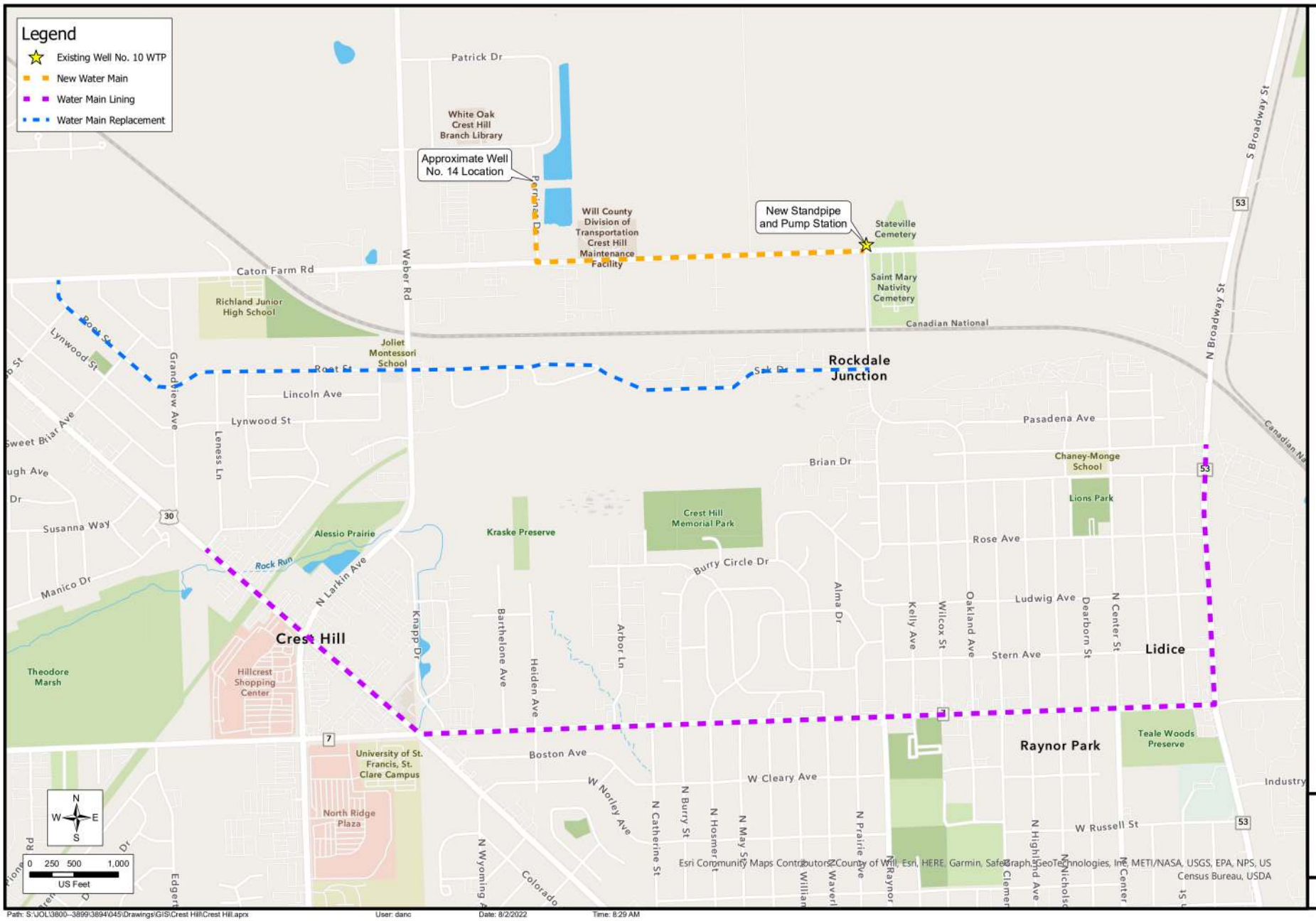
AREA MAP

IEPA PROJECT PLAN - AWS
CITY OF CREST HILL
WILL COUNTY, ILLINOIS

STRAND ASSOCIATES®

FIGURE 1
3894.045

Path: S:\JOL\3800--3899\3894\045\Drawings\GIS\Crest Hill\Crest Hill.aprx User: danc Date: 8/2/2022 Time: 8:02 AM



PROJECT MAP

IEPA PROJECT PLAN - AWS
CITY OF CREST HILL
WILL COUNTY, ILLINOIS

STRAND ASSOCIATES®

FIGURE 1
3894.045

Path: S:\JOL\3800--3899\3894\045\Drawings\GIS\Crest Hill\Crest Hill.aprx User: danc Date: 8/2/2022 Time: 8:29 AM


North Face of Well 10 WTP

North Face of Well 10 WTP

North Face of Well 10 WTP

East Face of Well 10 WTP

West Face of Well 10 WTP

West Face of Well 10 WTP

APPENDIX F
SHPO SIGN-OFF

ILLINOIS
DEPARTMENT OF NATURAL RESOURCES

Illinois Department of
Natural Resources

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

JB Pritzker, Governor
Colleen Callahan, Director

Will County
Crest Hill
Installation of New Water Main and 3.75 Million Gallon Standpipe and Pump Station, Retrofit of Water Treatment Plant, Lining of Water Main Segments
Water Treatment Plant and New Standpipe/Pump Station - North side of Caton Farm Road and Oakdale Ave., New Water Main - From the WTP Along Caton Farm Road to Well No. 14 Along Perinar Dr., Water Main Replacement - Sak Dr. from Oakland Ave. West to Root St. continuing across Grandview Ave. to Caton Farm Road, Water Main Lining - Broadway St. South to Theodore St. then West to U.S. 30 at Leness Ln.
Strand-3894.045
SHPO Log #017080422

September 9, 2022

Corrina Mauss
Strand Associates, Inc.
1170 South Houbolt Road
Joliet, IL 60431

Dear Ms. Mauss:

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 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 have any further questions, please contact Rita Baker, Cultural Resources Manager, at 217/785-4998 or at Rita.E.Baker@illinois.gov.

Sincerely,

Carey L. Mayer

Carey L. Mayer , AIA
Deputy State Historic Preservation Officer

APPENDIX G
JOINT PERMIT APPLICATION

STRAND ASSOCIATES®
Excellence in Engineering
Since 1946

Strand Associates, Inc.®
1170 South Houbolt Road
Joliet, IL 60431
(P) 815.744.4200
www.strand.com

August 26, 2022

Illinois Department of Natural Resources
Office of Water Resources
2050 West Stearns Road
Bartlett, IL 60103

Re: Alternative Water Source–Water System Distribution Improvements
City of Crest Hill, Illinois (City)

Dear Permit Reviewer:

On behalf of the City, Strand Associates, Inc.® (Strand) is seeking consultation from the Illinois Department of Natural Resources (IDNR) for the above-referenced project.

The purpose of this consultation is to fulfill the requirements of the Illinois Environmental Protection Agency's low interest loan Project Planning Document Environmental Checklist. No detailed design has been done on this project, as it is in the planning phase. This project is proposed to include the installation of new water main, retrofit of an existing water treatment plant, lining of various existing water main segments, and the installation of a 3.75-million-gallon standpipe and associated pump station.

While the Flood Insurance Rate Maps provided by the Federal Emergency Management Agency (FEMA) show regulatory floodways within the project boundaries, the proposed project is not likely to affect the floodways. As shown in the enclosed project map, Root Street and Sak Drive currently contain an 8- to 12-inch water main. The proposed project would replace the water main with one consistent 12-inch pipe. Additionally, the existing water main along Route 30 and Theodore Street is being lined in place, so there will be no disturbance of the surrounding floodplain or Rock Run stream.

Strand is providing the following as it relates to the above-mentioned project:

1. Proposed project map demonstrating project location (Exhibit A).

2. EcoCAT natural resource review results (Exhibit B).

3. Flood hazard maps given by the National Flood Insurance Program under FEMA (Exhibit C).

4. Joint Permit Application.

Additionally, if the IDNR finds the project sites to fall under its jurisdiction, the following are Strand's comments (in italics) addressing the requirements of Regional Permit No. 3 as they pertain to underground utilities.

a. The construction of the utility must not result in any increase in existing ground elevations.

This has been acknowledged by Strand.

b. The construction of the utility must not involve the placement of above ground structures in the floodway other than supporting towers for overhead utilities.

This has been acknowledged by Strand.

c. In the case of underground stream crossings, the top of the pipe or encasement must be buried a minimum of three (3) feet below the existing stream bed.

This has been acknowledged by Strand.

d. In the case of overhead utilities, supporting towers are not to be placed in the watercourse and shall be designed not to catch debris.

No overhead utilities are being constructed.

e. Disturbance of streamside vegetation shall be kept to a minimum during construction to prevent erosion and sedimentation. All disturbed floodway areas, including the stream banks, shall be restored to their original contours and seeded or otherwise stabilized upon completion of construction.

This has been acknowledged by Strand.

f. A utility crossing carrying material which may cause water pollution as defined by the Environmental Protection Act, 415 ILCS 5 (1996 State Bar Edition) shall be provided with shut-off valves on each side of the body of water to be crossed.

The utilities being constructed will only carry drinking water, which will not result in any water pollution if damaged.

g. If blasting is to be utilized in the construction of the crossing, the Permittee shall notify the Department of Natural Resources, Office of Resource Conservation at least (10) days prior to the blasting date to allow monitoring of any related fish kills.

No blasting will be used on this project.

This regional permit does not authorize utility crossings of the Kankakee River, Fox River, and the Fox Chain O* Lakes, Chicago River, South Branch Chicago River, South Fork of South Branch Chicago River, West Fork of South Branch Chicago River, Ogden Slip, Chicago Sanitary and Ship Canal, North Branch Chicago River from its mouth to its junction with the North Shore Channel, North Shore Channel, North Branch Canal, Des Plaines River from its mouth to Lockport Lock, Lake Calumet, Lake Calumet entrance channel, Calumet-Sag Channel, Calumet River, Grand Calumet, and the Little Calumet River from its mouth to its junction with the Calumet-Sag Channel.

This has been acknowledged by Strand.

Strand hopes this meets with your approval and you are able to provide your conditions of a construction permit through this area for Strand's use during actual design.

If you have any questions, please call 815-744-4200.

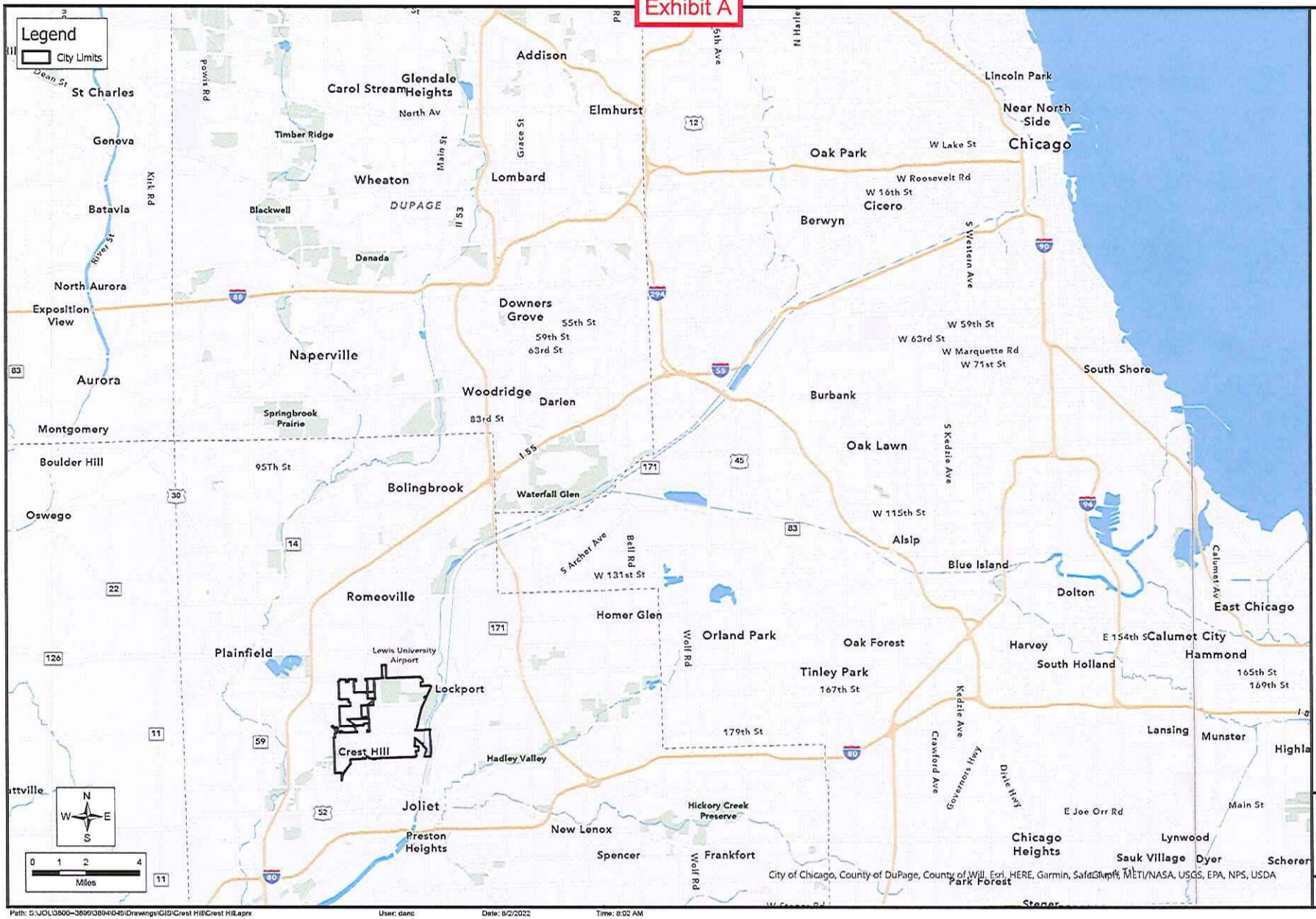
Sincerely,

STRAND ASSOCIATES, INC.®

Corrina M. Mauss

Enclosures

Exhibit A



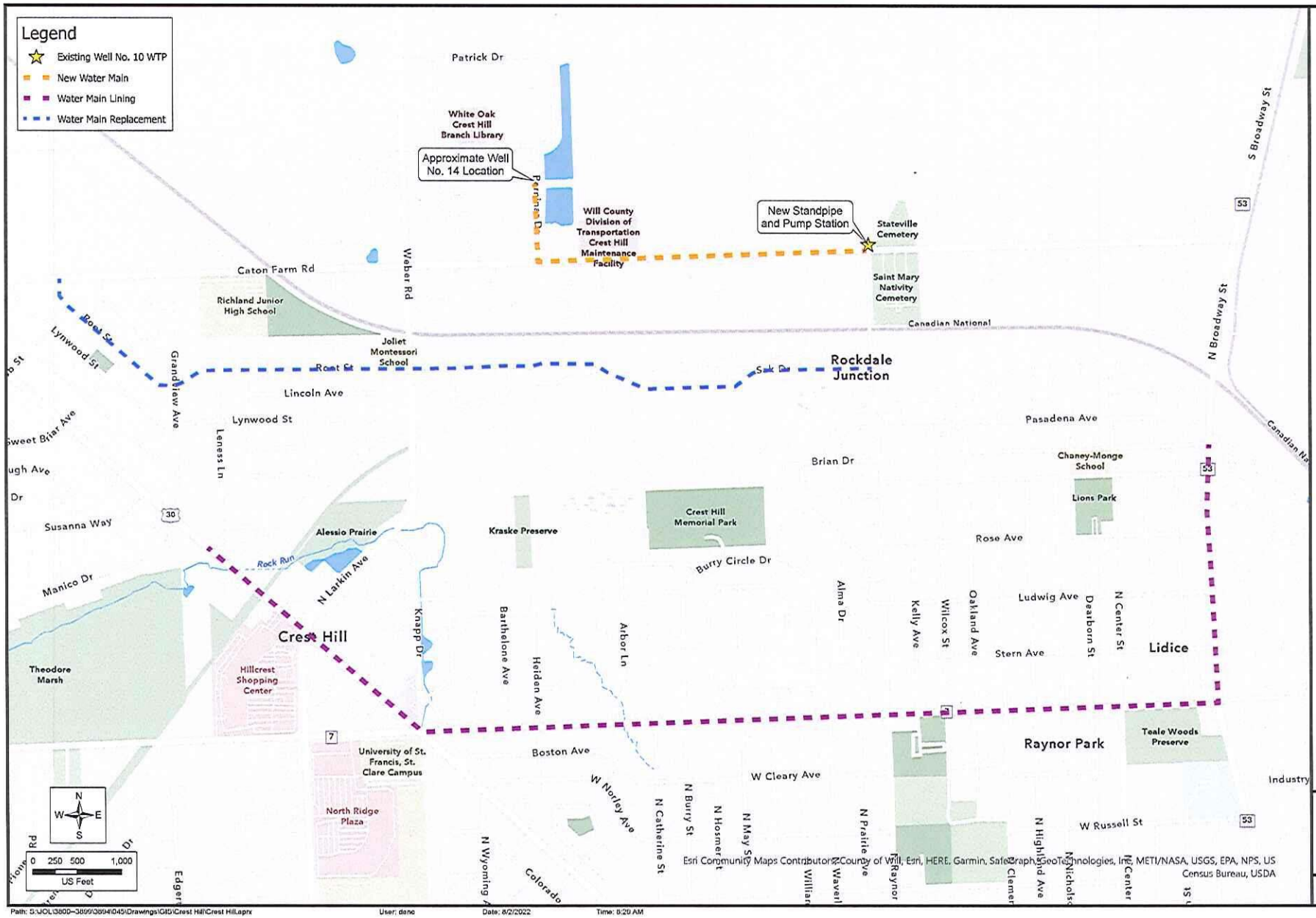
AREA MAP

IEPA PROJECT PLAN - AWS
CITY OF CREST HILL
WILL COUNTY, ILLINOIS

STRAND ASSOCIATES

FIGURE 1
3894.045

Path: S:\JOL\3800-3899\3894\045\Drawings\GIS\Crest Hill\Crest Hill.aprx User: danc Date: 8/2/2022 Time: 8:02 AM



PROJECT MAP

IEPA PROJECT PLAN - AWS
CITY OF CREST HILL
WILL COUNTY, ILLINOIS

STRAND ASSOCIATES®

FIGURE 1
3894.045

Path: S:\JOL\3800-3899\3894\045\Drawings\GIS\Crest Hill\Crest Hill.aprx User: dane Date: 8/2/2022 Time: 8:20 AM

Exhibit B

EcoCAT
Ecological Compliance Assessment Tool

ILLINOIS DEPARTMENT OF NATURAL RESOURCES

Applicant:	Strand Associates Inc.	*IDNR Project Number:*	2301845
Contact:	Corrina Mauss	*Date:*	08/01/2022
Address:	1170 S Houbolt Road Joliet, IL 60431	*Alternate Number:*	3894.045
Project:	AWS-Water System Distribution Improvements		
Address:	41°33'59.2"N 88°06'14.2"W, Crest Hill		

Description: Installation of new water main, retrofit of an existing water treatment plant, lining of various existing water main segments, and the installation of a 3.75 million gallon standpipe and associated pump station.

Natural Resource Review Results

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

The Illinois Natural Heritage Database shows the following protected resources may be in the vicinity of the project location:

Lockport Prairie INAI Site
Lockport Prairie East INAI Site
Theodore Street Marsh INAI Site
Dellwood Park West Nature Preserve
Lockport Prairie Nature Preserve
Theodore Marsh Land And Water Reserve
Blackchin Shiner *(Notropis heterodon)*
Blanding's Turtle *(Emydoidea blandingii)*
Hine's Emerald Dragonfly *(Somatochlora hineana)*
Hine's Emerald Dragonfly *(Somatochlora hineana)*
Spotted Turtle *(Clemmys guttata)*

Wetland Review (Part 1090)

The Illinois Wetlands Inventory shows wetlands within 250 feet of the project location.

An IDNR staff member will evaluate this information and contact you to request additional information or to terminate consultation if adverse effects are unlikely.

Location

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

County: Will

Township, Range, Section:
35N, 10E, 4
35N, 10E, 5
35N, 10E, 6
36N, 10E, 28
36N, 10E, 29
36N, 10E, 30

36N, 10E, 31
36N, 10E, 32
36N, 10E, 33

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

Government Jurisdiction
IL Environmental Protection Agency
Corrina Mauss
Strand Associates Inc.
1170 Houbolt Rd
Joliet, Illinois 60431

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.

Terms of Use

By using this website, you acknowledge that you have read and agree to these terms. These terms may be revised by IDNR as necessary. If you continue to use the EcoCAT application after we post changes to these terms, it will mean that you accept such changes. If at any time you do not accept the Terms of Use, you may not continue to use the website.

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.

2. Unauthorized attempts to upload, download, or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act.

3. IDNR reserves the right to enhance, modify, alter, or suspend the website at any time without notice, or to terminate or restrict access.

Security

EcoCAT operates on a state of Illinois computer system. We may use software to monitor traffic and to identify unauthorized attempts to upload, download, or change information, to cause harm or otherwise to damage this site. Unauthorized attempts to upload, download, or change information on this server is strictly prohibited by law.

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.

Privacy

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.

88°9'22.95"W 41°35'44.14"N

88°7'23.59"W 41°33'38.45"N

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) Zone A, V, A99
- With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee See Notes Zone X
- Area with Flood Risk due to Levee Zone D

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard Zone X
- Effective LOMRs
- Area of Undetermined Flood Hazard Zone D

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

For community and countywide map dates refer to the Flood Insurance Study Report for this jurisdiction.

SCALE

Map Projection:
GCS, Geodetic Reference System 1980
Vertical Datum: NAVD88
For information about the specific vertical datum for elevation features, datum conversions, or vertical monuments used to create this map, please see the Flood Insurance Study (FIS) Report for your community at https://msc.fema.gov

1 inch = 500 feet 1:6,000

0 250 500 1,000 1,500 2,000 Feet

N 0 50 100 200 300 400 Meters

FEMA
National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

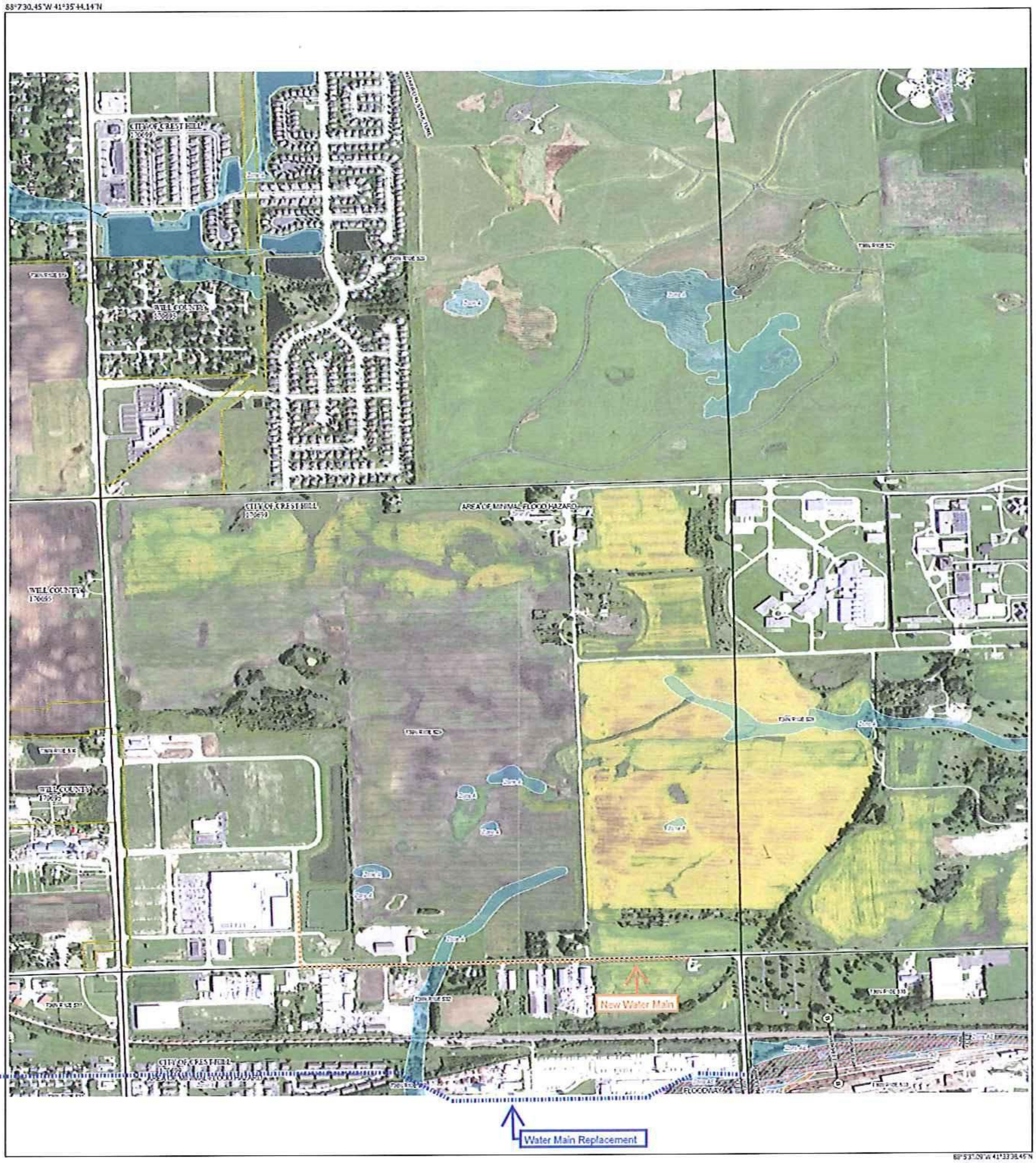
PANEL 134 OF 585

Panel Contains:

COMMUNITY	NUMBER	PANEL
CITY OF JOLIET	170702	0134
WILL COUNTY	170695	0134
CITY OF CREST HILL	170699	0134

MAP NUMBER
17197C0134G
EFFECTIVE DATE
February 15, 2019

88°7'30.45"W 41°35'44.14"N



88°5'37.09"W 41°33'38.45"N

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99 With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee See Notes Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS	NO SCREEN	Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES	20.2	Cross Sections with 1% Annual Chance
	17.5	Water Surface Elevation
		Coastal Transect
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at https://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates, refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Basemap information shown on this FIRM was provided in digital format by the United States Geological Survey (USGS). The basemap shown is the USGS National Map: Orthoimagery. Last refreshed October 2020.

This map was exported from FEMA's National Flood Hazard Layer (NFHL) on [illegible] and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time. For additional information, please see the Flood Hazard Mapping Updates Overview Fact Sheet at https://www.fema.gov/media-library/assets/documents/118418

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards. This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date.

SCALE

Map Projection:
GCS, Geodetic Reference System 1980
Vertical Datum: NAVD88
For information about the specific vertical datum for elevation features, datum conversions, or vertical monuments used to create this map, please see the Flood Insurance Study (FIS) Report for your community at https://msc.fema.gov

N

1 inch = 500 feet 1:6,000

0 250 500 1,000 1,500 2,000 Feet

0 50 100 200 300 400 Meters

FEMA

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

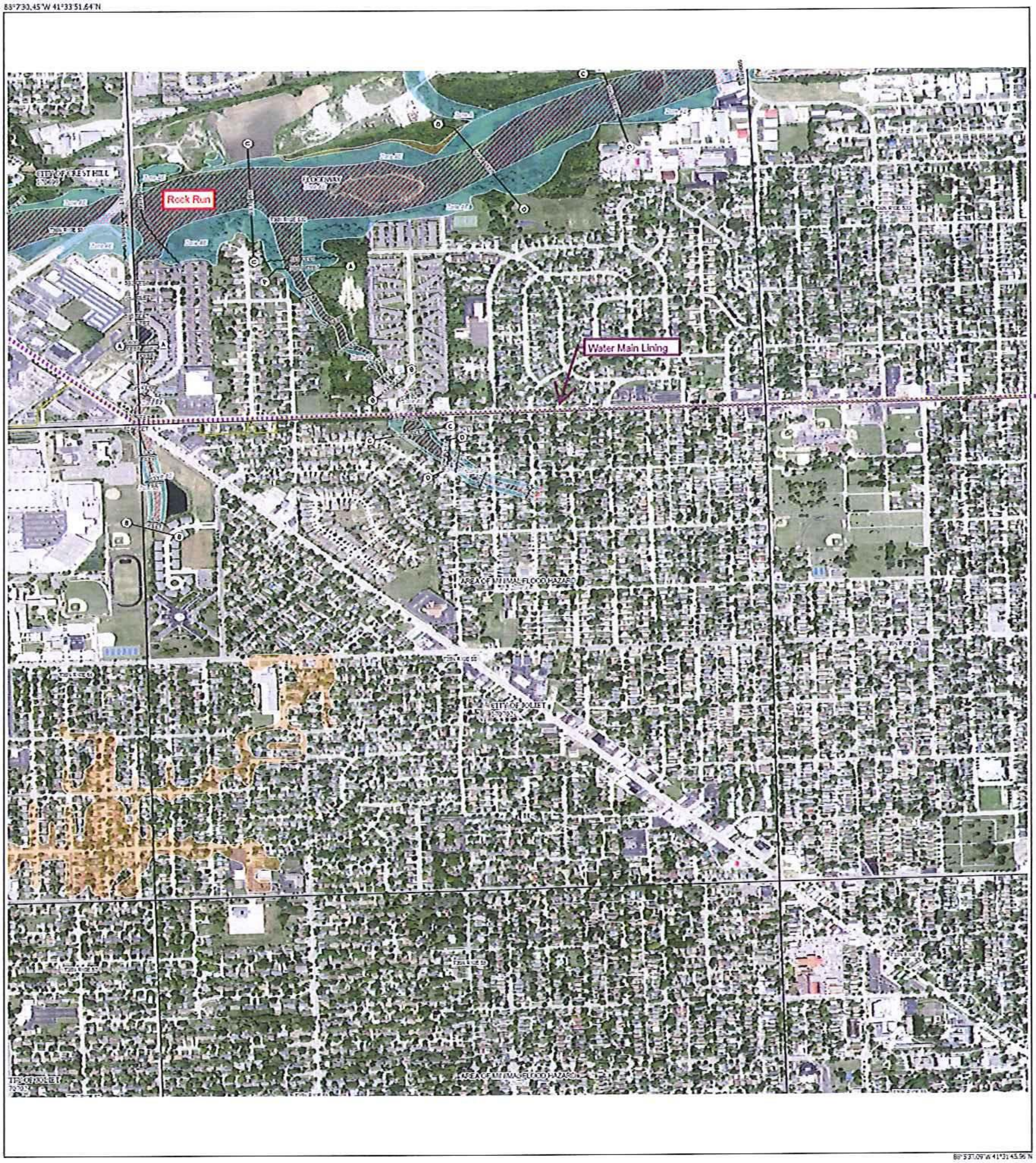
PANEL 153 OF 585

Panel Contains:

COMMUNITY	NUMBER	PANEL
CITY OF CREST HILL	170699	0153
WILL COUNTY	170695	0153

MAP NUMBER
17197C0153G
EFFECTIVE DATE
February 15, 2019

88°7'30.45"W 41°33'51.64"N



88°5'31.09"W 41°31'45.96"N

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) Zone A, V, A99 With BFE or Depth Zone AE, AO, AH, VE, AR Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X Future Conditions 1% Annual Chance Flood Hazard Zone X Area with Reduced Flood Risk due to Levee See Notes Zone X Area with Flood Risk due to Levee Zone D
OTHER AREAS	NO SCREEN Area of Minimal Flood Hazard Zone X Effective LOMRs Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer Levee, Dike, or Floodwall
OTHER FEATURES	20.2 Cross Sections with 1% Annual Chance 17.5 Water Surface Elevation Coastal Transect Coastal Transect Baseline Profile Baseline Hydrographic Feature Base Flood Elevation Line (BFE) Limit of Study Jurisdiction Boundary

NOTES TO USERS

[illegible]

SCALE

Map Projection:
GCS, Geodetic Reference System 1980
Vertical Datum: NAVD88
For information about the specific vertical datum for elevation features, datum conversions, or vertical monuments used to create this map, please see the Flood Insurance Study (FIS) Report for your community at https://msc.fema.gov

1 inch = 500 feet 1:6,000

0 250 500 1,000 1,500 2,000 Feet

N

0 50 100 200 300 400 Meters

FEMA

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

PANEL 161 OF 585

Panel Contains

COMMUNITY	NUMBER	PANEL
CITY OF CREST HILL	[illegible]	[illegible]
CITY OF JOLIET	[illegible]	[illegible]

MAP NUMBER
17197C0161G
EFFECTIVE DATE
February 15, 2019

JOINT APPLICATION FORM FOR ILLINOIS

ITEMS 1 AND 2 FOR AGENCY USE

1. Application Number	2. Date Received

3. and 4. (SEE SPECIAL INSTRUCTIONS) NAME, MAILING ADDRESS AND TELEPHONE NUMBERS

3a. Applicant's Name:	3b. Co-Applicant/Property Owner Name (if needed or if different from applicant):	4. Authorized Agent (an agent is not required):
Mark Siefert Company Name (if any) : City of Crest Hill Address: 2090 Oakland Ave Crest Hill, IL 60403 Email Address: MSiefert@cityofcresthill.com	Company Name (if any): Address: Email Address:	Corrina Mauss Company Name (if any): Strand Associates Address: 1170 S Houbolt Rd Joliet, IL 60431 Email Address: corrina.mauss@strand.com
Applicant's Phone Nos. w/area code Business: 815-723-8671 Residence: Cell: 815-954-5284 Fax:	Applicant's Phone Nos. w/area code Business: Residence: Cell: Fax:	Agent's Phone Nos. w/area code Business: 815-744-4200 Residence: Cell: Fax:

STATEMENT OF AUTHORIZATION

I hereby authorize, Corrina Mauss to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

Applicant's Signature — Date: 8-31-22

5. ADJOINING PROPERTY OWNERS (Upstream and Downstream of the water body and within Visual Reach of Project)

Name	Mailing Address	Phone No. w/area code
a. See Attached		
b.		
c.		
d.		

6. PROJECT TITLE:
Alternative Water Source–Water System Distribution Improvements

7. PROJECT LOCATION:
Various locations throughout City of Crest Hill; see Exhibit A (project map)

LATITUDE: 41.33075 °N LONGITUDE: 88.06457 °W	UTMs Northing: Easting:				
STREET, ROAD, OR OTHER DESCRIPTIVE LOCATION Caton Farm Rd from Perinar Dr to Oakland Ave, Root St and Sak Dr from Caton Farm Rd to Oakland Ave Route 30, Theodore St, and Broadway St from Leness Ln to Chaney Ave	LEGAL DESCRIPT	QUARTER	SECTION 32	TOWNSHIP NO. 36N	RANGE 10E
☒ IN OR ☐ NEAR CITY OF TOWN (check appropriate box) Municipality Name City of Crest Hill	WATERWAY Rock Run Stream Floodway Zones A and AE			RIVER MILE (if applicable)	
COUNTY Will	STATE IL	ZIP CODE 60403			

Revised 2010

☐ Corps of Engineers ☒ IL Dep't of Natural Resources ☐ IL Environmental Protection Agency ☐ Applicant's Copy

8. PROJECT DESCRIPTION (Include all features):

This project is proposed to include the installation of new water main, retrofit of an existing water treatment plant, lining of various existing water main segments, and the installation of a 3.75-million-gallon standpipe and associated pump station.

9. PURPOSE AND NEED OF PROJECT:

Water system improvements are needed in order to ensure water supply through 2030 and as a result of joining a regional water commission and receiving Lake Michigan water after 2030. The purpose of this consultation is to fulfill the requirements of the Illinois Environmental Protection Agency's low interest loan Project Planning Document Environmental Checklist.

COMPLETE THE FOLLOWING FOUR BLOCKS IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

10. REASON(S) FOR DISCHARGE:

N/A

11. TYPE(S) OF MATERIAL BEING DISCHARGED AND THE AMOUNT OF EACH TYPE IN CUBIC YARDS FOR WATERWAYS:

TYPE: N/A

AMOUNT IN CUBIC YARDS:

N/A

12. SURFACE AREA IN ACRES OF WETLANDS OR OTHER WATERS FILLED (See Instructions)

N/A

13. DESCRIPTION OF AVOIDANCE, MINIMIZATION AND COMPENSATION (See instructions)

N/A

14. Date activity is proposed to commence: Mid to Late 2023

Date activity is expected to be completed: Late 2024

15. Is any portion of the activity for which authorization is sought now complete? Yes [ ] No [X]

NOTE: If answer is "YES" give reasons in the Project Description and Remarks section. Indicate the existing work on drawings.

Month and Year the activity was completed

16. List all approvals or certification and denials received from other Federal, interstate, state, or local agencies for structures, construction, discharges or other activities described in this application.

Issuing Agency	Type of Approval	Identification No.	Date of Application	Date of Approval	Date of Denial

17. CONSENT TO ENTER PROPERTY LISTED IN PART 7 ABOVE IS HEREBY GRANTED. Yes [X] No [ ]

18. APPLICATION VERIFICATION (SEE SPECIAL INSTRUCTIONS)

Application is hereby made for the activities described herein. I certify that I am familiar with the information contained in the application, and that to the best of my knowledge and belief, such information is true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities.

Signature of Applicant or Authorized Agent	Date
[signature]	8-31-22

[ ] Corps of Engineers Revised 2010 [X] IL Dep't of Natural Resources [ ] IL Environmental Protection Agency [ ] Applicant's Copy

SEE INSTRUCTIONS FOR ADDRESS

LOCATION MAP

See Exhibit A

PLAN VIEW

N/A

FOR AGENCY USE ONLY

Revised 2010

☐ Corps of Engineers ☒ IL Dep't of Natural Resources ☐ IL Environmental Protection Agency ☐ Applicant's Copy

APPENDIX H
USACE AND IDNR CORRESPONDENCE (WATERS OF UNITED STATES)

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, CHICAGO DISTRICT
231 SOUTH LA SALLE STREET, SUITE 1500
CHICAGO IL 60604-1437

September 2, 2022

Regulatory Branch (LRC-2022-557)

SUBJECT: Crest Hill Distribution Improvements, Crest Hill, Will County, Illinois (Latitude 41.562545, Longitude -88.108975)

Mark Siefert
City of Crest Hill
2090 Oakland Avenue
Crest Hill, Illinois 60403

Dear Mr. Siefert:

We have received your consultation request letter from Strand Associates. The subject project has been assigned number LRC-2022-557. Please reference this number in all future correspondence concerning this project.

Upon a map review of your project zones, there could be at least eight possible "Waters of the US" within the proposed construction area. You may choose to have a wetland delineation completed for your project area, to help determine if these aquatic resources could be avoided during construction. Any disturbance or placement of fill material in jurisdictional wetlands or rivers may require a permit from this office under Section 404 of the Clean Water Act. If all rivers and wetlands can be avoided in project construction, and utility line crossings are directionally bored underneath aquatic resources, it is possible that no permit would be required from this office.

If impact to aquatic resources for your project are unavoidable, your project would likely qualify for Nationwide Permit 58 – Utility Line Activities for Water and Other Substances. Information about the Nationwide Permit Program is located on our website (https://www.lrc.usace.army.mil/Missions/Regulatory/Illinois/IL-Nationwide-Permits/). It is also your responsibility to obtain any required state, county, or local approvals for impacts to wetland areas not under the Department of the Army jurisdiction.

If you have any questions, please contact me by telephone at (312) 846-5541, or email at kimberly.j.kubiak@usace.army.mil.

Sincerely,

Kimberly J. Kubiak
Project Manager
Regulatory Branch

cc: Strand Associates (Corrina Mauss)

ILLINOIS DEPARTMENT OF NATURAL RESOURCES

Illinois Department of **Natural Resources**

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

JB Pritzker, Governor
Colleen Callahan, Director

Office of Water Resources • 2050 West Stearns Road • Bartlett, Illinois 60103

October 27, 2022

Subject: **Application No. N20220137**
Applicant: City of Crest Hill
Project: Water System Distribution Improvements
Watercourses: Rock Run North, St. Francis Academy Creek, St. Anne School Trib., and Railroad Creek
Community: City of Crest Hill

Mark Siefert
City of Crest Hill
2090 Oakland Avenue
Crest Hill, Illinois 60403

Dear Mr. Siefert:

This concerns your August 31, 2022, application for an Illinois Department of Natural Resources, Office of Water Resources (IDNR/OWR) permit for the above-referenced project. The application was submitted on your behalf by Corrina Mauss of Strand Associates, Inc. The project sites are located in the Southwest Quarter of Sections 29 and 31, Township 36 North, Range 10 East, and the Southwest Quarter of Section 32, Township 36 North, Range 10 East of the Third Principal Meridian in Will County.

We understand the subject project involves the construction a new water main and pump station, the replacement of an existing watermain and the lining to an existing watermain in the City of Crest Hill. Parts of the project are located in the "non-designated" floodway of Railroad Creek and located in the designated floodways of Rock Run North, St. Francis Academy Creek and St. Anne School Tributary. Upon review, we have determined the following:

1. The new pump station is located outside the floodway of Railroad Creek; therefore, it does not require and IDNR/OWR permit. This determination is based on the drawings entitled: **PROJECT MAP, FIGURE 1, 3894.045, UNDATED, ANNOTATED PANEL NUMBER 153 OF THE WILL COUNTY FIRM, ONE SHEET, UNDATED, BOTH RECEIVED AUGUST 29, 2022.**

2. The construction of a new water main and the replacement of an existing watermain do not require an IDNR/OWR permit because Railroad Creek has a drainage area of less than one square mile at the project sites.

3. The lining to an existing watermain located within the designated floodways of Rock Run North, St. Francis Academy Creek, and St. Anne School Tributary is consider maintenance and repair to an existing structure with a designated floodway. Please be advised that maintenance and repair work on existing structures in a designated floodway is exempt from needing a permit under 17 Illinois Administrative Code 3708; therefore, an IDNR/OWR permit is not required for the project.

These determinations do not exempt the project from meeting the requirements of any other local, state or federal agency, including the community's floodplain ordinance.

Information on our regulatory programs can be found on our web site. If you have any questions, please contact Kevin Hoobler of my staff at 847-608-3116.

Sincerely,

William T Boyd

William T. Boyd, P.E.
Chief, Northeastern Illinois Regulatory Programs Section

WB/KH:

cc: Corrina Mauss, Strand Associates, Inc.

APPENDIX I
TRIBAL CORRESPONDENCE

STRAND ASSOCIATES®
Excellence in Engineering
Since 1946

Strand Associates, Inc.®
1170 South Houbolt Road
Joliet, IL 60431
(P) 815.744.4200
www.strand.com

Tribal Consultation Letter

August 18, 2022

Mr. Ben Rhodd, THPO
Forest County Potawatomi Community of Wisconsin
P.O. Box 340
Crandon, WI 54520

Re: Section 106 Review
City of Crest Hill, Illinois (City) and Will County

Dear Mr. Rhodd:

On behalf of the City, Strand Associates, Inc.® (Strand) has applied for funding from the Illinois Environmental Protection Agency (IEPA) for several water system improvement projects throughout the City that are necessary for the City's switch to Lake Michigan water. IEPA provides low interest loans through the State Revolving Fund (SRF), which receives annual federal capitalization funding from the United States Environmental Protection Agency. Before receiving planning approval, IEPA requires review of all projects to assure compliance with federal cross-cutting authorities, including Section 106 of the National Historic Preservation Act (NHPA).

The proposed projects are as follows, and corresponding project maps are enclosed with this letter:

1. Projects that Increase Interim Supply

    a. An 8-inch water main from future Well No. 14 site behind Menards to the existing Well No. 10 water treatment plant (WTP) along Caton Farm Road.

    b. Retrofit of the existing Well No. 10 WTP to accept and treat 400 gallons per minute of raw Well No. 14 water for iron.

2. Projects that Reduce Water Loss

    a. Replacing the aging 8-inch water main along Root Street and Sak Drive from Caton Farm Road to Oakland Avenue (9,825 feet) with a new 12-inch water main. Lining the existing water main along Broadway Street from Theodore Street to Chaney Avenue.

    b. Lining the existing water main along Theodore Street from Broadway Street to Route 30.

    c. Lining the existing water main along Route 30 from Leness Lane to Theodore Street.

3. Projects that Increase Storage and Pumping Capacity

A 3.5-million-gallon standpipe and pump station at Oakland Avenue and Caton Farm Road.

In cooperation with IEPA, the City will conduct review of this proposed project's location to comply with Section 106 of the NHPA, according to procedures outlined in Title 36 of the Code of Federal Regulations, Part 800. Because of tribal interests in Will County, Illinois, Strand invites you to be a consulting party in this review to help identify properties in the project area that may have historical, religious, or cultural significance to your tribe. If such properties are identified and the project has the potential to impact historical or cultural resources, Strand requests guidance regarding how to avoid, minimize, or mitigate any adverse effects.

The project location maps are enclosed. If you would like to be a consulting party on this project, please respond to this letter within 30 days. Your response should include any concerns regarding the impact of this project. Strand values your opinion. If you have further questions regarding this project, please contact Corrina Mauss at 815-744-4200 or e-mail at corrina.mauss@strand.com.

Sincerely,

STRAND ASSOCIATES, INC.®

Corrina M. Mauss

CITY OF CREST HILL

Mark Siefert, Director of Public Works

Enclosures

STRAND ASSOCIATES®
Excellence in Engineering
Since 1946

Strand Associates, Inc.®
1170 South Houbolt Road
Joliet, IL 60431
(P) 815.744.4200
www.strand.com

Tribal Consultation Letter

August 18, 2022

Ms. Kelli Mosteller, THPO
Citizen Potawatomi Nation–Oklahoma
1601 South Gordon Cooper Drive
Shawnee, OK 74801

Re: Section 106 Review
City of Crest Hill, Illinois (City) and Will County

Dear Ms. Mosteller:

On behalf of the City, Strand Associates, Inc.® (Strand) has applied for funding from the Illinois Environmental Protection Agency (IEPA) for several water system improvement projects throughout the City that are necessary for the City's switch to Lake Michigan water. IEPA provides low interest loans through the State Revolving Fund (SRF), which receives annual federal capitalization funding from the United States Environmental Protection Agency. Before receiving planning approval, IEPA requires review of all projects to assure compliance with federal cross-cutting authorities, including Section 106 of the National Historic Preservation Act (NHPA).

The proposed projects are as follows, and corresponding project maps are enclosed with this letter:

1. Projects that Increase Interim Supply

    a. An 8-inch water main from future Well No. 14 site behind Menards to the existing Well No. 10 water treatment plant (WTP) along Caton Farm Road.

    b. Retrofit of the existing Well No. 10 WTP to accept and treat 400 gallons per minute of raw Well No. 14 water for iron.

2. Projects that Reduce Water Loss

    a. Replacing the aging 8-inch water main along Root Street and Sak Drive from Caton Farm Road to Oakland Avenue (9,825 feet) with a new 12-inch water main. Lining the existing water main along Broadway Street from Theodore Street to Chaney Avenue.

    b. Lining the existing water main along Theodore Street from Broadway Street to Route 30.

    c. Lining the existing water main along Route 30 from Leness Lane to Theodore Street.

3. Projects that Increase Storage and Pumping Capacity

A 3.5-million-gallon standpipe and pump station at Oakland Avenue and Caton Farm Road.

In cooperation with IEPA, the City will conduct review of this proposed project's location to comply with Section 106 of the NHPA, according to procedures outlined in Title 36 of the Code of Federal Regulations, Part 800. Because of tribal interests in Will County, Illinois, Strand invites you to be a consulting party in this review to help identify properties in the project area that may have historical, religious, or cultural significance to your tribe. If such properties are identified and the project has the potential to impact historical or cultural resources, Strand requests guidance regarding how to avoid, minimize, or mitigate any adverse effects.

The project location maps are enclosed. If you would like to be a consulting party on this project, please respond to this letter within 30 days. Your response should include any concerns regarding the impact of this project. Strand values your opinion. If you have further questions regarding this project, please contact Corrina Mauss at 815-744-4200 or e-mail at corrina.mauss@strand.com.

Sincerely,

STRAND ASSOCIATES, INC.®

Corrina M. Mauss

CITY OF CREST HILL

Mark Siefert, Director of Public Works

Enclosures

STRAND ASSOCIATES®
Excellence in Engineering
Since 1946

Strand Associates, Inc.®
1170 South Houbolt Road
Joliet, IL 60431
(P) 815.744.4200
www.strand.com

Tribal Consultation Letter

August 18, 2022

Mr. Kenneth Meshigaud, Chairperson
Hannahville Indian Community–Michigan
N14911 Hannahville B1 Road
Wilson, MI 49896

Re: Section 106 Review
City of Crest Hill, Illinois (City) and Will County

Dear Mr. Meshigaud:

On behalf of the City, Strand Associates, Inc.® (Strand) has applied for funding from the Illinois Environmental Protection Agency (IEPA) for several water system improvement projects throughout the City that are necessary for the City's switch to Lake Michigan water. IEPA provides low interest loans through the State Revolving Fund (SRF), which receives annual federal capitalization funding from the United States Environmental Protection Agency. Before receiving planning approval, IEPA requires review of all projects to assure compliance with federal cross-cutting authorities, including Section 106 of the National Historic Preservation Act (NHPA).

The proposed projects are as follows, and corresponding project maps are enclosed with this letter:

1. Projects that Increase Interim Supply

    a. An 8-inch water main from future Well No. 14 site behind Menards to the existing Well No. 10 water treatment plant (WTP) along Caton Farm Road.

    b. Retrofit of the existing Well No. 10 WTP to accept and treat 400 gallons per minute of raw Well No. 14 water for iron.

2. Projects that Reduce Water Loss

    a. Replacing the aging 8-inch water main along Root Street and Sak Drive from Caton Farm Road to Oakland Avenue (9,825 feet) with a new 12-inch water main. Lining the existing water main along Broadway Street from Theodore Street to Chaney Avenue.

    b. Lining the existing water main along Theodore Street from Broadway Street to Route 30.

    c. Lining the existing water main along Route 30 from Leness Lane to Theodore Street.

3. Projects that Increase Storage and Pumping Capacity

A 3.5-million-gallon standpipe and pump station at Oakland Avenue and Caton Farm Road.

In cooperation with IEPA, the City will conduct review of this proposed project's location to comply with Section 106 of the NHPA, according to procedures outlined in Title 36 of the Code of Federal Regulations, Part 800. Because of tribal interests in Will County, Illinois, Strand invites you to be a consulting party in this review to help identify properties in the project area that may have historical, religious, or cultural significance to your tribe. If such properties are identified and the project has the potential to impact historical or cultural resources, Strand requests guidance regarding how to avoid, minimize, or mitigate any adverse effects.

The project location maps are enclosed. If you would like to be a consulting party on this project, please respond to this letter within 30 days. Your response should include any concerns regarding the impact of this project. Strand values your opinion. If you have further questions regarding this project, please contact Corrina Mauss at 815-744-4200 or e-mail at corrina.mauss@strand.com.

Sincerely,

STRAND ASSOCIATES, INC.®

Corrina M. Mauss

CITY OF CREST HILL

Mark Siefert, Director of Public Works

Enclosures

STRAND ASSOCIATES®
Excellence in Engineering
Since 1946

Strand Associates, Inc.®
1170 South Houbolt Road
Joliet, IL 60431
(P) 815.744.4200
www.strand.com

Tribal Consultation Letter

August 18, 2022

Mr. Lester Randall, Chairperson
Kickapoo Tribe of Indians of the Kickapoo Reservation in Kansas
824 111th Drive
Horton, KS 66439

Re: Section 106 Review
City of Crest Hill, Illinois (City) and Will County

Dear Mr. Randall:

On behalf of the City, Strand Associates, Inc.® (Strand) has applied for funding from the Illinois Environmental Protection Agency (IEPA) for several water system improvement projects throughout the City that are necessary for the City's switch to Lake Michigan water. IEPA provides low interest loans through the State Revolving Fund (SRF), which receives annual federal capitalization funding from the United States Environmental Protection Agency. Before receiving planning approval, IEPA requires review of all projects to assure compliance with federal cross-cutting authorities, including Section 106 of the National Historic Preservation Act (NHPA).

The proposed projects are as follows, and corresponding project maps are enclosed with this letter:

1. Projects that Increase Interim Supply

    a. An 8-inch water main from future Well No. 14 site behind Menards to the existing Well No. 10 water treatment plant (WTP) along Caton Farm Road.

    b. Retrofit of the existing Well No. 10 WTP to accept and treat 400 gallons per minute of raw Well No. 14 water for iron.

2. Projects that Reduce Water Loss

    a. Replacing the aging 8-inch water main along Root Street and Sak Drive from Caton Farm Road to Oakland Avenue (9,825 feet) with a new 12-inch water main. Lining the existing water main along Broadway Street from Theodore Street to Chaney Avenue.

    b. Lining the existing water main along Theodore Street from Broadway Street to Route 30.

    c. Lining the existing water main along Route 30 from Leness Lane to Theodore Street.

3. Projects that Increase Storage and Pumping Capacity

A 3.5-million-gallon standpipe and pump station at Oakland Avenue and Caton Farm Road.

In cooperation with IEPA, the City will conduct review of this proposed project's location to comply with Section 106 of the NHPA, according to procedures outlined in Title 36 of the Code of Federal Regulations, Part 800. Because of tribal interests in Will County, Illinois, Strand invites you to be a consulting party in this review to help identify properties in the project area that may have historical, religious, or cultural significance to your tribe. If such properties are identified and the project has the potential to impact historical or cultural resources, Strand requests guidance regarding how to avoid, minimize, or mitigate any adverse effects.

The project location maps are enclosed. If you would like to be a consulting party on this project, please respond to this letter within 30 days. Your response should include any concerns regarding the impact of this project. Strand values your opinion. If you have further questions regarding this project, please contact Corrina Mauss at 815-744-4200 or e-mail at corrina.mauss@strand.com.

Sincerely,

STRAND ASSOCIATES, INC.®

Corrina M. Mauss

CITY OF CREST HILL

Mark Siefert, Director of Public Works

Enclosures

STRAND ASSOCIATES®
Excellence in Engineering
Since 1946

Strand Associates, Inc.®
1170 South Houbolt Road
Joliet, IL 60431
(P) 815.744.4200
www.strand.com

Tribal Consultation Letter

August 18, 2022

Mr. Darwin Kaskaske, Chairperson
Kickapoo Tribe of Indians of Oklahoma
P.O. Box 70
McLoud, OK 74851

Re: Section 106 Review
City of Crest Hill, Illinois (City) and Will County

Dear Mr. Kaskaske:

On behalf of the City, Strand Associates, Inc.® (Strand) has applied for funding from the Illinois Environmental Protection Agency (IEPA) for several water system improvement projects throughout the City that are necessary for the City's switch to Lake Michigan water. IEPA provides low interest loans through the State Revolving Fund (SRF), which receives annual federal capitalization funding from the United States Environmental Protection Agency. Before receiving planning approval, IEPA requires review of all projects to assure compliance with federal cross-cutting authorities, including Section 106 of the National Historic Preservation Act (NHPA).

The proposed projects are as follows, and corresponding project maps are enclosed with this letter:

1. Projects that Increase Interim Supply

    a. An 8-inch water main from future Well No. 14 site behind Menards to the existing Well No. 10 water treatment plant (WTP) along Caton Farm Road.

    b. Retrofit of the existing Well No. 10 WTP to accept and treat 400 gallons per minute of raw Well No. 14 water for iron.

2. Projects that Reduce Water Loss

    a. Replacing the aging 8-inch water main along Root Street and Sak Drive from Caton Farm Road to Oakland Avenue (9,825 feet) with a new 12-inch water main. Lining the existing water main along Broadway Street from Theodore Street to Chaney Avenue.

    b. Lining the existing water main along Theodore Street from Broadway Street to Route 30.

    c. Lining the existing water main along Route 30 from Leness Lane to Theodore Street.

3. Projects that Increase Storage and Pumping Capacity

A 3.5-million-gallon standpipe and pump station at Oakland Avenue and Caton Farm Road.

In cooperation with IEPA, the City will conduct review of this proposed project's location to comply with Section 106 of the NHPA, according to procedures outlined in Title 36 of the Code of Federal Regulations, Part 800. Because of tribal interests in Will County, Illinois, Strand invites you to be a consulting party in this review to help identify properties in the project area that may have historical, religious, or cultural significance to your tribe. If such properties are identified and the project has the potential to impact historical or cultural resources, Strand requests guidance regarding how to avoid, minimize, or mitigate any adverse effects.

The project location maps are enclosed. If you would like to be a consulting party on this project, please respond to this letter within 30 days. Your response should include any concerns regarding the impact of this project. Strand values your opinion. If you have further questions regarding this project, please contact Corrina Mauss at 815-744-4200 or e-mail at corrina.mauss@strand.com.

Sincerely,

STRAND ASSOCIATES, INC.®

Corrina M. Mauss

CITY OF CREST HILL

Mark Siefert, Director of Public Works

Enclosures

STRAND ASSOCIATES®
Excellence in Engineering
Since 1946

Strand Associates, Inc.®
1170 South Houbolt Road
Joliet, IL 60431
(P) 815.744.4200
www.strand.com

Tribal Consultation Letter

August 18, 2022

Ms. Melissa Wiatrolik, THPO
Little Traverse Bay Bands of Odawa Indians–Michigan
7500 Odawa Circle
Harbor Springs, MI 49740

Re: Section 106 Review
City of Crest Hill, Illinois (City) and Will County

Dear Ms. Wiatrolik:

On behalf of the City, Strand Associates, Inc.® (Strand) has applied for funding from the Illinois Environmental Protection Agency (IEPA) for several water system improvement projects throughout the City that are necessary for the City's switch to Lake Michigan water. IEPA provides low interest loans through the State Revolving Fund (SRF), which receives annual federal capitalization funding from the United States Environmental Protection Agency. Before receiving planning approval, IEPA requires review of all projects to assure compliance with federal cross-cutting authorities, including Section 106 of the National Historic Preservation Act (NHPA).

The proposed projects are as follows, and corresponding project maps are enclosed with this letter:

1. Projects that Increase Interim Supply

    a. An 8-inch water main from future Well No. 14 site behind Menards to the existing Well No. 10 water treatment plant (WTP) along Caton Farm Road.

    b. Retrofit of the existing Well No. 10 WTP to accept and treat 400 gallons per minute of raw Well No. 14 water for iron.

2. Projects that Reduce Water Loss

    a. Replacing the aging 8-inch water main along Root Street and Sak Drive from Caton Farm Road to Oakland Avenue (9,825 feet) with a new 12-inch water main. Lining the existing water main along Broadway Street from Theodore Street to Chaney Avenue.

    b. Lining the existing water main along Theodore Street from Broadway Street to Route 30.

    c. Lining the existing water main along Route 30 from Leness Lane to Theodore Street.

3. Projects that Increase Storage and Pumping Capacity

A 3.5-million-gallon standpipe and pump station at Oakland Avenue and Caton Farm Road.

In cooperation with IEPA, the City will conduct review of this proposed project's location to comply with Section 106 of the NHPA, according to procedures outlined in Title 36 of the Code of Federal Regulations, Part 800. Because of tribal interests in Will County, Illinois, Strand invites you to be a consulting party in this review to help identify properties in the project area that may have historical, religious, or cultural significance to your tribe. If such properties are identified and the project has the potential to impact historical or cultural resources, Strand requests guidance regarding how to avoid, minimize, or mitigate any adverse effects.

The project location maps are enclosed. If you would like to be a consulting party on this project, please respond to this letter within 30 days. Your response should include any concerns regarding the impact of this project. Strand values your opinion. If you have further questions regarding this project, please contact Corrina Mauss at 815-744-4200 or e-mail at corrina.mauss@strand.com.

Sincerely,

STRAND ASSOCIATES, INC.®

Corrina M. Mauss

CITY OF CREST HILL

Mark Siefert, Director of Public Works

Enclosures

STRAND ASSOCIATES®
Excellence in Engineering
Since 1946

Strand Associates, Inc.®
1170 South Houbolt Road
Joliet, IL 60431
(P) 815.744.4200
www.strand.com

Tribal Consultation Letter

August 18, 2022

Mr. David Grignon, THPO
Menominee Indian Tribe of Wisconsin
P.O. Box 910
Keshena, WI 54135-0910

Re: Section 106 Review
City of Crest Hill, Illinois (City) and Will County

Dear Mr. Grignon:

On behalf of the City, Strand Associates, Inc.® (Strand) has applied for funding from the Illinois Environmental Protection Agency (IEPA) for several water system improvement projects throughout the City that are necessary for the City's switch to Lake Michigan water. IEPA provides low interest loans through the State Revolving Fund (SRF), which receives annual federal capitalization funding from the United States Environmental Protection Agency. Before receiving planning approval, IEPA requires review of all projects to assure compliance with federal cross-cutting authorities, including Section 106 of the National Historic Preservation Act (NHPA).

The proposed projects are as follows, and corresponding project maps are enclosed with this letter:

1. Projects that Increase Interim Supply

    a. An 8-inch water main from future Well No. 14 site behind Menards to the existing Well No. 10 water treatment plant (WTP) along Caton Farm Road.

    b. Retrofit of the existing Well No. 10 WTP to accept and treat 400 gallons per minute of raw Well No. 14 water for iron.

2. Projects that Reduce Water Loss

    a. Replacing the aging 8-inch water main along Root Street and Sak Drive from Caton Farm Road to Oakland Avenue (9,825 feet) with a new 12-inch water main. Lining the existing water main along Broadway Street from Theodore Street to Chaney Avenue.

    b. Lining the existing water main along Theodore Street from Broadway Street to Route 30.

    c. Lining the existing water main along Route 30 from Leness Lane to Theodore Street.

3. Projects that Increase Storage and Pumping Capacity

A 3.5-million-gallon standpipe and pump station at Oakland Avenue and Caton Farm Road.

In cooperation with IEPA, the City will conduct review of this proposed project's location to comply with Section 106 of the NHPA, according to procedures outlined in Title 36 of the Code of Federal Regulations, Part 800. Because of tribal interests in Will County, Illinois, Strand invites you to be a consulting party in this review to help identify properties in the project area that may have historical, religious, or cultural significance to your tribe. If such properties are identified and the project has the potential to impact historical or cultural resources, Strand requests guidance regarding how to avoid, minimize, or mitigate any adverse effects.

The project location maps are enclosed. If you would like to be a consulting party on this project, please respond to this letter within 30 days. Your response should include any concerns regarding the impact of this project. Strand values your opinion. If you have further questions regarding this project, please contact Corrina Mauss at 815-744-4200 or e-mail at corrina.mauss@strand.com.

Sincerely,

STRAND ASSOCIATES, INC.®

Corrina M. Mauss

CITY OF CREST HILL

Mark Siefert, Director of Public Works

Enclosures

STRAND ASSOCIATES®
Excellence in Engineering
Since 1946

Strand Associates, Inc.®
1170 South Houbolt Road
Joliet, IL 60431
(P) 815.744.4200
www.strand.com

Tribal Consultation Letter

August 18, 2022

Ms. Diane Hunter, THPO
Miami Tribe of Oklahoma
P.O. Box 1326
Miami, OK 74355

Re: Section 106 Review
City of Crest Hill, Illinois (City) and Will County

Dear Ms. Hunter:

On behalf of the City, Strand Associates, Inc.® (Strand) has applied for funding from the Illinois Environmental Protection Agency (IEPA) for several water system improvement projects throughout the City that are necessary for the City's switch to Lake Michigan water. IEPA provides low interest loans through the State Revolving Fund (SRF), which receives annual federal capitalization funding from the United States Environmental Protection Agency. Before receiving planning approval, IEPA requires review of all projects to assure compliance with federal cross-cutting authorities, including Section 106 of the National Historic Preservation Act (NHPA).

The proposed projects are as follows, and corresponding project maps are enclosed with this letter:

1. Projects that Increase Interim Supply

    a. An 8-inch water main from future Well No. 14 site behind Menards to the existing Well No. 10 water treatment plant (WTP) along Caton Farm Road.

    b. Retrofit of the existing Well No. 10 WTP to accept and treat 400 gallons per minute of raw Well No. 14 water for iron.

2. Projects that Reduce Water Loss

    a. Replacing the aging 8-inch water main along Root Street and Sak Drive from Caton Farm Road to Oakland Avenue (9,825 feet) with a new 12-inch water main. Lining the existing water main along Broadway Street from Theodore Street to Chaney Avenue.

    b. Lining the existing water main along Theodore Street from Broadway Street to Route 30.

    c. Lining the existing water main along Route 30 from Leness Lane to Theodore Street.

3. Projects that Increase Storage and Pumping Capacity

A 3.5-million-gallon standpipe and pump station at Oakland Avenue and Caton Farm Road.

In cooperation with IEPA, the City will conduct review of this proposed project's location to comply with Section 106 of the NHPA, according to procedures outlined in Title 36 of the Code of Federal Regulations, Part 800. Because of tribal interests in Will County, Illinois, Strand invites you to be a consulting party in this review to help identify properties in the project area that may have historical, religious, or cultural significance to your tribe. If such properties are identified and the project has the potential to impact historical or cultural resources, Strand requests guidance regarding how to avoid, minimize, or mitigate any adverse effects.

The project location maps are enclosed. If you would like to be a consulting party on this project, please respond to this letter within 30 days. Your response should include any concerns regarding the impact of this project. Strand values your opinion. If you have further questions regarding this project, please contact Corrina Mauss at 815-744-4200 or e-mail at corrina.mauss@strand.com.

Sincerely,

STRAND ASSOCIATES, INC.®

Corrina M. Mauss

CITY OF CREST HILL

Mark Siefert, Director of Public Works

Enclosures

STRAND ASSOCIATES®
Excellence in Engineering
Since 1946

Strand Associates, Inc.®
1170 South Houbolt Road
Joliet, IL 60431
(P) 815.744.4200
www.strand.com

Tribal Consultation Letter

August 18, 2022

Mr. Craig Harper, Chief
Peoria Tribe of Indians of Oklahoma
P.O. Box 1527
Miami, OK 74355

Re: Section 106 Review
City of Crest Hill, Illinois (City) and Will County

Dear Mr. Harper:

On behalf of the City, Strand Associates, Inc.® (Strand) has applied for funding from the Illinois Environmental Protection Agency (IEPA) for several water system improvement projects throughout the City that are necessary for the City's switch to Lake Michigan water. IEPA provides low interest loans through the State Revolving Fund (SRF), which receives annual federal capitalization funding from the United States Environmental Protection Agency. Before receiving planning approval, IEPA requires review of all projects to assure compliance with federal cross-cutting authorities, including Section 106 of the National Historic Preservation Act (NHPA).

The proposed projects are as follows, and corresponding project maps are enclosed with this letter:

1. Projects that Increase Interim Supply

    a. An 8-inch water main from future Well No. 14 site behind Menards to the existing Well No. 10 water treatment plant (WTP) along Caton Farm Road.

    b. Retrofit of the existing Well No. 10 WTP to accept and treat 400 gallons per minute of raw Well No. 14 water for iron.

2. Projects that Reduce Water Loss

    a. Replacing the aging 8-inch water main along Root Street and Sak Drive from Caton Farm Road to Oakland Avenue (9,825 feet) with a new 12-inch water main. Lining the existing water main along Broadway Street from Theodore Street to Chaney Avenue.

    b. Lining the existing water main along Theodore Street from Broadway Street to Route 30.

    c. Lining the existing water main along Route 30 from Leness Lane to Theodore Street.

3. Projects that Increase Storage and Pumping Capacity

A 3.5-million-gallon standpipe and pump station at Oakland Avenue and Caton Farm Road.

In cooperation with IEPA, the City will conduct review of this proposed project's location to comply with Section 106 of the NHPA, according to procedures outlined in Title 36 of the Code of Federal Regulations, Part 800. Because of tribal interests in Will County, Illinois, Strand invites you to be a consulting party in this review to help identify properties in the project area that may have historical, religious, or cultural significance to your tribe. If such properties are identified and the project has the potential to impact historical or cultural resources, Strand requests guidance regarding how to avoid, minimize, or mitigate any adverse effects.

The project location maps are enclosed. If you would like to be a consulting party on this project, please respond to this letter within 30 days. Your response should include any concerns regarding the impact of this project. Strand values your opinion. If you have further questions regarding this project, please contact Corrina Mauss at 815-744-4200 or e-mail at corrina.mauss@strand.com.

Sincerely,

STRAND ASSOCIATES, INC.®

Corrina M. Mauss

CITY OF CREST HILL

Mark Siefert, Director of Public Works

Enclosures

STRAND ASSOCIATES®
Excellence in Engineering
Since 1946

Strand Associates, Inc.®
1170 South Houbolt Road
Joliet, IL 60431
(P) 815.744.4200
www.strand.com

Tribal Consultation Letter

August 18, 2022

Mr. Raphael Wahwassuck, THPO
Prairie Band Potawatomi Nation
16281 Q Road
Mayetta, KS 66509

Re: Section 106 Review
City of Crest Hill, Illinois (City) and Will County

Dear Mr. Wahwassuck:

On behalf of the City, Strand Associates, Inc.® (Strand) has applied for funding from the Illinois Environmental Protection Agency (IEPA) for several water system improvement projects throughout the City that are necessary for the City's switch to Lake Michigan water. IEPA provides low interest loans through the State Revolving Fund (SRF), which receives annual federal capitalization funding from the United States Environmental Protection Agency. Before receiving planning approval, IEPA requires review of all projects to assure compliance with federal cross-cutting authorities, including Section 106 of the National Historic Preservation Act (NHPA).

The proposed projects are as follows, and corresponding project maps are enclosed with this letter:

1. Projects that Increase Interim Supply

    a. An 8-inch water main from future Well No. 14 site behind Menards to the existing Well No. 10 water treatment plant (WTP) along Caton Farm Road.

    b. Retrofit of the existing Well No. 10 WTP to accept and treat 400 gallons per minute of raw Well No. 14 water for iron.

2. Projects that Reduce Water Loss

    a. Replacing the aging 8-inch water main along Root Street and Sak Drive from Caton Farm Road to Oakland Avenue (9,825 feet) with a new 12-inch water main. Lining the existing water main along Broadway Street from Theodore Street to Chaney Avenue.

    b. Lining the existing water main along Theodore Street from Broadway Street to Route 30.

    c. Lining the existing water main along Route 30 from Leness Lane to Theodore Street.

3. Projects that Increase Storage and Pumping Capacity

A 3.5-million-gallon standpipe and pump station at Oakland Avenue and Caton Farm Road.

In cooperation with IEPA, the City will conduct review of this proposed project's location to comply with Section 106 of the NHPA, according to procedures outlined in Title 36 of the Code of Federal Regulations, Part 800. Because of tribal interests in Will County, Illinois, Strand invites you to be a consulting party in this review to help identify properties in the project area that may have historical, religious, or cultural significance to your tribe. If such properties are identified and the project has the potential to impact historical or cultural resources, Strand requests guidance regarding how to avoid, minimize, or mitigate any adverse effects.

The project location maps are enclosed. If you would like to be a consulting party on this project, please respond to this letter within 30 days. Your response should include any concerns regarding the impact of this project. Strand values your opinion. If you have further questions regarding this project, please contact Corrina Mauss at 815-744-4200 or e-mail at corrina.mauss@strand.com.

Sincerely,

STRAND ASSOCIATES, INC.®

Corrina M. Mauss

CITY OF CREST HILL

Mark Siefert, Director of Public Works

Enclosures

APPENDIX J
DETAILED OPINION OF CAPITAL COSTS

Project	OPCC (2022 Dollars)
New 8-Inch WM for Well 14	
4,170 ft of 8-in Water Main @ $480 per LF	$1,834,800
Subtotal	$1,834,800
Contingency (10%)	$183,500
Design Engineering (8%)	$161,500
Construction Engineering (10%)	$201,800
New 8-Inch WM for Well 14 Total OPCC	***$2,381,600***
Well No. 10 WTP Retrofit	
Horizontal Pressure Filter	$807,500
Structural Modifications	$171,300
Electrical Upgrades	$328,800
H2S Chemical Feed and Chlorine System Additions	$105,000
Mechanical/Piping Reconfiguration	$151,300
Subtotal	$1,563,900
Contingency (10%)	$156,400
Design Engineering (8%)	$137,600
Construction Engineering (10%)	$172,000
Well No. 10 WTP Retrofit Total OPCC	***$2,029,900***
WM Replacement- Root St. & Sak Dr.	
10,525 ft of 12-in Water Main @ $513 per LF	$5,399,300
Subtotal	$5,399,300
Contingency (10%)	$539,900
Design Engineering (8%)	$475,100
Construction Engineering (10%)	$593,900
Root St. and Sak Dr. Water Main Upgrade Total OPCC	***$7,008,200***
WM Lining- Rt. 30, Theodore St., & Broadway St.	
6,125 ft of 8-in Water Main CIPP Lining @ $500 per LF	$3,062,500
9,450 ft of 10-in Water Main CIPP Lining @ $575 per LF	$5,433,750
Subtotal	$8,496,250
Contingency (10%)	$849,600
Design Engineering (8%)	$747,700
Construction Engineering (10%)	$934,600
WM Lining- Rt. 30, Theodore St., & Broadway St. Total OPCC	***$11,028,200***
Standpipe & Pump/Receiving Station	
Building with Electrical, Pumps, Piping and Valving	$3,137,500
Bathroom	$78,800
Chemical Feed Equipment	$100,300
Site Piping	$125,500
Sitework - Pavement	$28,800
Sitework - Fencing	$11,000
Sitework - Drainage, Seeding, and Erosion Control	$26,400
Electrical - Site Electrical and SCADA	$129,300
Electrical - Standby Generator	$143,600
Precast Concrete, Wire-Wound Standpipe	$7,875,000
Standpipe Site Prep and Foundation	$187,500
Subtotal	$11,843,700
Contingency (10%)	$1,184,400
Design Engineering (8%)	$1,042,200
Construction Engineering (10%)	$1,302,800
Standpipe & Pump/Receiving Station Total OPCC	***$15,373,100***
Total Capital Costs:	**$37,821,000**

APPENDIX K
2022 RATE STUDY

Water and Sewer Rate Study

City of Crest Hill, Illinois

Water and Sewer Rate Study
Project No. 135596

Final Report
2/7/2022

Water and Sewer Rate Study

prepared for

City of Crest Hill, Illinois
Water and Sewer Rate Study
Mount Prospect, Illinois

Project No. 135596

Final Report
2/7/2022

prepared by

Burns & McDonnell Engineering Company, Inc.

TABLE OF CONTENTS

Page No.

1.0 EXECUTIVE SUMMARY 1-1
1.1 Project Background 1-1
1.2 Industry Trends in Water and Sewer Rates 1-1
1.3 Project Approach 1-2
1.4 Financial Planning 1-3
1.5 Cost of Service 1-4
1.6 Proposed Rates 1-5

2.0 FINANCIAL PLANNING ANALYSIS 2-1
2.1 Introduction 2-1
2.2 Water and Sewer Utility Revenues under Existing Rates 2-1
2.2.1 Historical and Projected Customers and Volumes 2-1
2.2.2 Existing Water and Sewer Rates 2-2
2.2.3 User Revenues under Existing Rates 2-3
2.3 Water and Sewer Utility Expenditures 2-4
2.3.1 O&M Expenses 2-4
2.3.2 Projected Capital Improvement Expenditures 2-8
2.3.3 Existing and Proposed Debt Service Requirements 2-9
2.3.4 Water Utility Flow of Funds 2-10
2.3.5 Sewer Utility Flow of Funds 2-12
2.3.6 Consolidated Utility Flow of Funds 2-15

3.0 COST OF SERVICE ANALYSIS 3-1
3.1 Introduction 3-1
3.2 Water Cost of Service 3-1
3.2.1 Net Revenue Requirements 3-1
3.2.2 Cost of Service Methodology 3-2
3.2.3 Functional Cost Assignment 3-3
3.2.4 Units of Service 3-5
3.2.5 Unit Cost Development 3-6
3.2.6 Allocation of Costs to Customer Classes 3-7
3.3 Sewer Cost of Service 3-9
3.3.1 Net Revenue Requirements 3-9
3.3.2 Cost of Service Methodology 3-10
3.3.3 Functional Cost Assignment 3-10
3.3.4 Units of Service 3-14
3.3.5 Unit Cost Development 3-15
3.3.6 Allocation of Costs to Customer Classes 3-15

4.0 PROPOSED RATES 4-1
4.1 Introduction 4-1

4.2 Existing Water and Sewer Rates 4-1
4.3 Proposed Water and Sewer Rates 4-2
4.4 Regional Water and Sewer Typical Bills 4-3
4.5 Statement of Limitations 4-5

LIST OF TABLES

Page No.

Table 1-1: Proposed Systemwide Rate Increases 1-4
Table 1-1: Existing and Proposed Water and Sewer Rates 1-5
Table 1-2: Typical Water and Sewer Bills 1-6
Table 2-1: Historical and Projected Water Accounts and Volume 2-2
Table 2-2: Historical and Projected Sewer Accounts and Volume 2-2
Table 2-3: Existing Water and Sewer Rates 2-3
Table 2-4: Historical and Projected Water User Revenues 2-4
Table 2-5: Historical and Projected Sewer User Revenues 2-4
Table 2-6: Historical and Projected Water Operation and Maintenance Expenses 2-6
Table 2-7: Historical and Projected Sewer Operation and Maintenance Expenses 2-7
Table 2-8: Water Capital Improvement Program 2-8
Table 2-9: Sewer Capital Improvement Program 2-8
Table 2-10: Existing and Proposed Water Debt Service 2-9
Table 2-11: Existing and Proposed Sewer Debt Service 2-9
Table 2-12: Water Utility Financial Plan 2-11
Table 2-13: Sewer Utility Financial Plan 2-14
Table 2-14: Combined Water and Sewer Utility Financial Plan 2-16
Table 3-1: Test Year 2023 Water Net Revenue Requirements 3-2
Table 3-2: Allocation of Test Year 2021 Water Operation and Maintenance Expenses 3-4
Table 3-3: Allocation of Test Year 2023 Water Capital Costs 3-5
Table 3-4: Water Units of Service 3-6
Table 3-5: Water Unit Cost Development 3-6
Table 3-6: Water Cost Allocation to Customer Classes 3-8
Table 3-7: Comparison of Revenue Under Existing Rates to Allocated Cost of Service 3-9
Table 3-8: Test Year 2023 Sewer Net Revenue Requirements 3-10
Table 3-9: Allocation of Test Year 2023 Sewer Operation and Maintenance Expenses 3-12
Table 3-10: Allocation of Test Year 2023 Sewer Capital Costs 3-14
Table 3-11: Sewer Units of Service 3-15
Table 3-12: Sewer Unit Cost Development 3-15
Table 3-13: Sewer Cost Allocation to Customer Classes 3-16
Table 3-14: Comparison of Revenue Under Existing Rates to Allocated Cost of Service 3-17
Table 4-1: Existing Water and Sewer Rates 4-2
Table 4-2: Existing and Proposed Water and Sewer Rates 4-3
Table 4-3: Typical Water and Sewer Bills Under Existing and Proposed Rates 4-3

LIST OF FIGURES

Page No.

Figure 1-1: Changes in General Inflation and Water and Sewer Rates 1-1
Figure 1-2: Study Methodology 1-2
Figure 4-1: Residential Water and Sewer Bi-Monthly Bill Comparison at 5 CCF per Month 4-4

LIST OF ABBREVIATIONS

Abbreviation	Term/Phrase/Name
AWWA	American Water Works Association
BLS	Bureau of Labor Statistics
BOD	Biochemical Oxygen Demand
CCF	Hundred Cubic Feet
CIP	Capital Improvement Program
CITY	City of Crest Hill
CPI-U	Consumer Price Index for all Urban Consumers
DSC	Debt Service Coverage
FY	Fiscal Year
IEPA	Illinois Environmental Protection Agency
I/I	Infiltration/Inflow
Kgal	Thousand Gallons of Water
MHI	Median Household Income
NACWA	National Association of Clean Water Agencies
O&M	Operation & Maintenance Expense
SRF	State Revolving Fund
the Study	City of Crest Hill Water and Sewer Rate Study
SS	Suspended Solids
WEF	Water Environment Federation

1.0 EXECUTIVE SUMMARY

1.1 Project Background

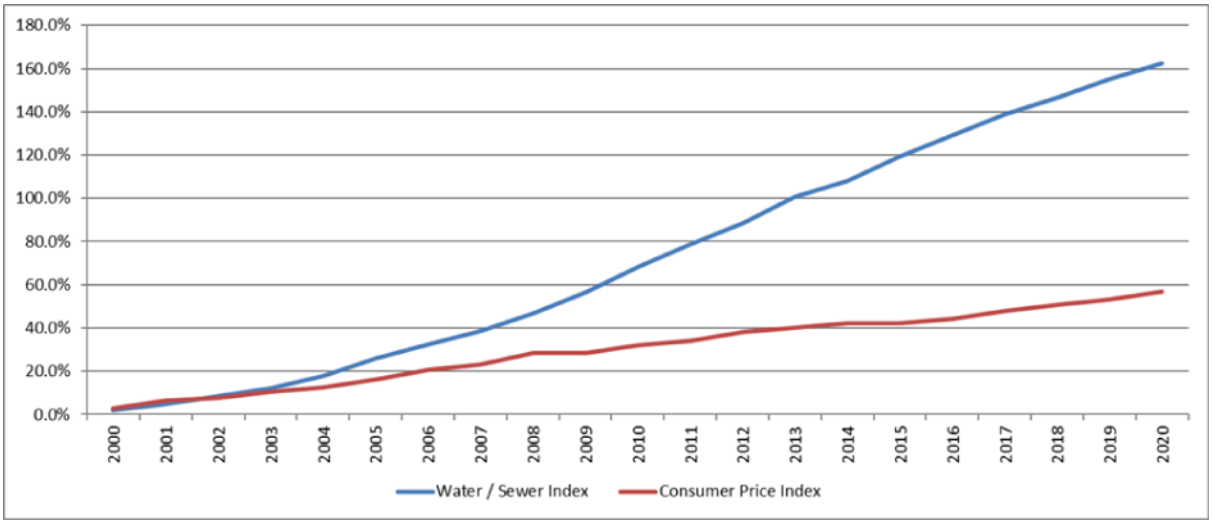
Burns & McDonnell was engaged by the City of Crest Hill (the City) to conduct a water and sewer rate study (the Study) that (i) evaluated the financial planning implications of joining the regional water commission with source of supply coming from Lake Michigan and funding other future capital improvements and operating expenses, and (ii) proposed rates to generate indicated revenues and recover costs for the water and sewer utilities. This Report summarizes the results of the Study.

1.2 Industry Trends in Water and Sewer Rates

Many factors impact the cost of providing municipal water and sewer service. One universal funding challenge for most municipal water and sewer utilities involves implementing and sustaining adequate renewal and replacement of aging infrastructure, particularly water and sewer mains. Other dynamics typically include compliance with regulatory requirements, inflation on operating and capital costs, and a general trend in declining consumption, which is often associated with more efficient fixtures and appliances and greater awareness of water conservation.

Each utility is different, and the relative importance of these dynamics will vary by utility. However, there is no doubt that water and sewer rate increases have substantially outpaced general inflation in the United States. The United States Bureau of Labor Statistics (BLS) tracks many facets of inflation, including the Consumer Price Index for all Urban Consumers (CPI-U) which measures inflation at the household level. The BLS also tracks an index for combined household water and sewer costs. Figure 1-1 compares changes in both of these BLS data series.

Figure 1-1: Changes in General Inflation and Water and Sewer Rates



Since 2000 the water and sewer index has increased nearly 5 percent per year, while CPI's annual rate of change is about 2 percent per year.

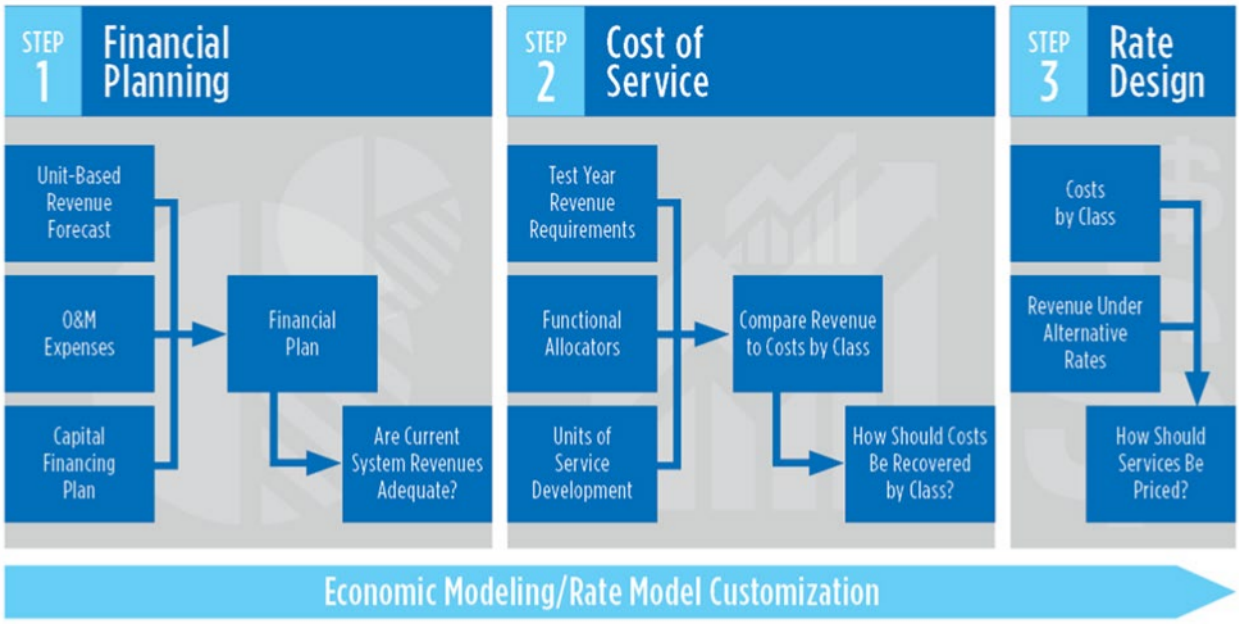
Other industry surveys reach similar conclusions regarding water and/or sewer rates. The National Association of Clean Water (NACWA) annually updates its *Cost of Clean Water Index*, which specifically surveys sewer utilities across the nation regarding the cost of residential sewer service. From 1985 through 2020, the annual increase according to this survey has been 4.8 percent per year. American Water Works Association (AWWA) also conducts a broad, biennial water and sewer rate survey with results indicating average annual rate increases of 5.1 percent per year for water and 5.6 percent per year for sewer from 1996 to 2018.

Every utility is unique, and the dynamics impacting rates can vary widely. However, knowing at the national level that water and sewer rates are increasing at 2 times CPI or more is important context when reviewing water and sewer utility financial plans.

1.3 Project Approach

To meet the project objectives, Burns & McDonnell conducted the rate study in a three-step approach. This approach, depicted in Figure 1-2, is grounded in the principles established by the American Water Works Association (AWWA) *M1 Rate Manual* and the Water Environment Federation (WEF) *Financing and Charges for Wastewater Systems*.

Figure 1-2: Study Methodology



Step 1: Financial Planning provides an indication of the adequacy of the revenue generated by current rates. The results of the financial forecast analysis answer the questions "Are the existing rates adequate?" and "If not, what level of overall revenue increase is needed?" The Financial Planning Analysis is presented section 2.0 of this report.

Step 2: Cost of Service focuses on assigning cost responsibility to customer classes. Each customer class is allocated a share of the overall system costs commensurate with the level of service provided. The net revenue requirements (costs to be recovered from rates) identified in Step 1 are allocated to customers in accordance with industry standards and principles and system specifics. The Cost of Service Analysis is detailed in Section 3.0 of this report.

Step 3: Rate Design provides for the required revenue recovery. Once the overall level of revenue required is identified and customer class responsibility for that level of revenue is determined, schedules of rates for each rate class are developed that will generate revenues accordingly. The Rate Design Analysis is detailed in Section 4.0 of this report.

1.4 Financial Planning

Comprehensive financial planning conducted for the water and sewer utility indicates that revenues under existing rates are not sufficient to meet the projected cash obligations of the utility over the ten-year study period. The need for revenue adjustments is influenced by the following factors:

- Changing sources of water supply which impacts both capital improvements and operating costs.
- Beyond the capital improvements associated with water supply, proposed capital plans for both the water and sewer utility also include improvements in underground infrastructure such as water and sewer mains.
- Inflationary impacts on operation and maintenance expenses and future capital improvements.
- Sustaining reasonable reserves and debt service coverage.

Financial planning assumptions are described in Section 2.0 of this report. The proposed financial plans presented in this report were evaluated based on the following guiding principles:

1. To the extent possible, minimize sudden and substantial revenue adjustments.
2. Maintain projected operating reserves each year in an amount equal to a minimum of 90 days of O&M.
3. Mitigate new debt issuance where possible.
4. Provide adequate funding for each utility's anticipated capital improvements.

City ordinances provide for an automatic annual rate adjustment of 5 percent to water and sewer rates. Financial planning described in Section 2.0 indicated a need for rate increases in some years that are above the automatic 5 percent level, as shown in Table 1-1 below. For the sewer utility, a 9 percent increase was recommended for 2023, 2024, and 2025, returning to the automatic 5 percent increases thereafter. For the water utility, 11 percent increases were recommended annually from 2023 through 2030. Increases of 6 percent were recommended in the last two years of the forecast period.

Table 1-1: Proposed Systemwide Rate Increases

	Sewer Revenue Percent Change				Water Revenue Percent Change		
	Existing Automatic Increase	Proposed Incremental Increase	Proposed Total Effective Increase		Existing Automatic Increase	Proposed Incremental Increase	Proposed Total Effective Increase
2023	5.0%	4.0%	9.0%	2023	5.0%	6.0%	11.0%
2024	5.0%	4.0%	9.0%	2024	5.0%	6.0%	11.0%
2025	5.0%	4.0%	9.0%	2025	5.0%	6.0%	11.0%
2026	5.0%	0.0%	5.0%	2026	5.0%	6.0%	11.0%
2027	5.0%	0.0%	5.0%	2027	5.0%	6.0%	11.0%
2028	5.0%	0.0%	5.0%	2028	5.0%	6.0%	11.0%
2029	5.0%	0.0%	5.0%	2029	5.0%	6.0%	11.0%
2030	5.0%	0.0%	5.0%	2030	5.0%	6.0%	11.0%
2031	5.0%	0.0%	5.0%	2031	5.0%	1.0%	6.0%
2032	5.0%	0.0%	5.0%	2032	5.0%	1.0%	6.0%

1.5 Cost of Service

The cost of service analysis is focused on determining revenue responsibility. Once the overall need for revenue increases is identified through financial planning, cost of service analysis helps answer the following question:

- "Which customer class or classes are responsible for the costs incurred to provide service?"

The cost of service analysis compares the revenues received from each customer class under the existing schedule of rates with the allocated cost responsibility for that class, which helps inform rate design.

The cost of service analysis was developed in the following steps:

1. Determine the net revenue requirements to be recovered from user charges.
2. Allocate test period operating and capital costs.
3. Estimate the system test period units of service.
4. Develop test period unit costs of service by class.
5. Assign the costs of service to customer classes.

To equitably develop rates, the utility customer classes are allocated their respective share of the total cost of service according to their use of the system. Costs are assigned through consideration of volume, peak water demand characteristics, sewer strength loadings, customer costs, and other relevant factors. Ultimately, proposed rates must be sufficient to meet the net revenue requirements forecasted for the utility.

1.6 Proposed Rates

The primary focus of Step 3, Rate Design is to develop proposed rates for each utility to progress toward the following goals:

- Generate adequate revenues to meet the projected operating and capital costs, while maintaining sound financial performance.
- Provide revenue stability.
- Provide cost recovery that is reasonably commensurate with the cost of providing service.

Table 1-1 shows the existing and proposed water and sewer rates.

Table 1-2: Existing and Proposed Water and Sewer Rates

Line No.	Rate Code	Description	Existing 2022	Proposed 2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
		Water Rates											
1		Proposed Annual Water Rate Increases		11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	6.00%	6.00%
	1001 & 1501	Residential & Sprinkler											
2		Base Charge (1st 400 cubic Ft.)	$ 22.97	$ 25.50	$ 28.30	$ 31.41	$ 34.87	$ 38.71	$ 42.96	$ 47.69	$ 52.94	$ 56.11	$ 59.48
3		Each Additional Hundred Cubic Ft.	$ 4.52	$ 5.02	$ 5.57	$ 6.18	$ 6.86	$ 7.62	$ 8.45	$ 9.38	$ 10.42	$ 11.04	$ 11.70
	1011	Stateville - Water											
4		Base Charge (1st 400 cubic Ft.)	$ 11.49	$ 12.75	$ 14.16	$ 15.71	$ 17.44	$ 19.36	$ 21.49	$ 23.86	$ 26.48	$ 28.07	$ 29.75
5		Each Additional Hundred Cubic Ft.	$ 4.52	$ 5.02	$ 5.57	$ 6.18	$ 6.86	$ 7.62	$ 8.45	$ 9.38	$ 10.42	$ 11.04	$ 11.70
		Sewer Rates											
6		Proposed Annual Sewer Rate Increases		9.00%	9.00%	9.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
	3001	Residential											
7		Base Charge (1st 400 cubic Ft.)	$ 22.97	$ 25.04	$ 27.29	$ 29.75	$ 31.23	$ 32.80	$ 34.44	$ 36.16	$ 37.97	$ 39.86	$ 41.86
8		Each Additional Hundred Cubic Ft.	$ 5.39	$ 5.88	$ 6.40	$ 6.98	$ 7.33	$ 7.70	$ 8.08	$ 8.48	$ 8.91	$ 9.35	$ 9.82
	3011	Stateville - Sewer											
9		Base Charge (1st 400 cubic Ft.)	$ 11.49	$ 12.52	$ 13.65	$ 14.88	$ 15.62	$ 16.41	$ 17.23	$ 18.09	$ 18.99	$ 19.94	$ 20.94
10		Each Additional Hundred Cubic Ft.	$ 8.07	$ 8.80	$ 9.59	$ 10.45	$ 10.97	$ 11.52	$ 12.10	$ 12.70	$ 13.34	$ 14.01	$ 14.71
	3501	Residential - Unmetered											
11		Base Charge	$ 66.07	$ 72.02	$ 78.50	$ 85.56	$ 89.84	$ 94.33	$ 99.05	$ 104.00	$ 109.20	$ 114.66	$ 120.40
	3502	Commercial - Unmetered											
12		Base Charge	$ 109.15	$ 118.97	$ 129.68	$ 141.35	$ 148.42	$ 155.84	$ 163.63	$ 171.81	$ 180.41	$ 189.43	$ 198.90

The impact of proposed water and sewer rates on residential customers across multiple usage levels has been calculated and is shown in Table 1-2.

Table 1-3: Typical Water and Sewer Bills

Line No.	Description	Rate Code	Billable Flow (Cubic Feet)	Bi-Monthly Bill Under Existing 2022 Rates $	Proposed 2023 Rates $	Proposed 2024 Rates $	Proposed 2025 Rates $	Proposed 2026 Rates $	Proposed 2027 Rates $	Proposed 2028 Rates $	Proposed 2029 Rates $	Proposed 2030 Rates $	Proposed 2031 Rates $	Proposed 2032 Rates $
	Water Bills													
1	Residential	1001	400	$ 22.97	$ 25.50	$ 28.30	$ 31.41	$ 34.87	$ 38.71	$ 42.96	$ 47.69	$ 52.94	$ 56.11	$ 59.48
2	Residential	1001	800	$ 41.05	$ 45.57	$ 50.58	$ 56.14	$ 62.32	$ 69.17	$ 76.78	$ 85.23	$ 94.60	$ 100.28	$ 106.29
3	Residential	1001	1,000	$ 50.09	$ 55.60	$ 61.72	$ 68.50	$ 76.04	$ 84.40	$ 93.69	$ 103.99	$ 115.43	$ 122.36	$ 129.70
4	Residential	1001	1,200	$ 59.13	$ 65.63	$ 72.85	$ 80.87	$ 89.76	$ 99.64	$ 110.60	$ 122.76	$ 136.27	$ 144.44	$ 153.11
5	Residential	1001	2,000	$ 95.29	$ 105.77	$ 117.41	$ 130.32	$ 144.66	$ 160.57	$ 178.23	$ 197.84	$ 219.60	$ 232.78	$ 246.74
6	Percentage Increase				11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	6.00%	6.00%
	$ Change In Bills													
7	Residential		400		$ 2.53	$ 2.80	$ 3.11	$ 3.46	$ 3.84	$ 4.26	$ 4.73	$ 5.25	$ 3.18	$ 3.37
8	Residential		800		$ 4.52	$ 5.01	$ 5.56	$ 6.18	$ 6.85	$ 7.61	$ 8.45	$ 9.37	$ 5.68	$ 6.02
9	Residential		1,000		$ 5.51	$ 6.12	$ 6.79	$ 7.54	$ 8.36	$ 9.28	$ 10.31	$ 11.44	$ 6.93	$ 7.34
10	Residential		1,200		$ 6.50	$ 7.22	$ 8.01	$ 8.90	$ 9.87	$ 10.96	$ 12.17	$ 13.50	$ 8.18	$ 8.67
11	Residential		2,000		$ 10.48	$ 11.63	$ 12.91	$ 14.34	$ 15.91	$ 17.66	$ 19.61	$ 21.76	$ 13.18	$ 13.97
	Sewer Bills													
12	Residential	3001	400	$ 22.97	$ 25.04	$ 27.29	$ 29.75	$ 31.23	$ 32.80	$ 34.44	$ 36.16	$ 37.97	$ 39.86	$ 41.86
13	Residential	3001	800	$ 44.53	$ 48.54	$ 52.91	$ 57.67	$ 60.55	$ 63.58	$ 66.76	$ 70.10	$ 73.60	$ 77.28	$ 81.14
14	Residential	3001	1,000	$ 55.31	$ 60.29	$ 65.71	$ 71.63	$ 75.21	$ 78.97	$ 82.92	$ 87.06	$ 91.42	$ 95.99	$ 100.79
15	Residential	3001	1,200	$ 66.09	$ 72.04	$ 78.52	$ 85.59	$ 89.87	$ 94.36	$ 99.08	$ 104.03	$ 109.23	$ 114.70	$ 120.43
16	Residential	3001	2,000	$ 109.21	$ 119.04	$ 129.75	$ 141.43	$ 148.50	$ 155.93	$ 163.72	$ 171.91	$ 180.50	$ 189.53	$ 199.01
17	Percentage Increase				9.00%	9.00%	9.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
	$ Change In Bills													
18	Residential		400		$ 2.07	$ 2.25	$ 2.46	$ 1.49	$ 1.56	$ 1.64	$ 1.72	$ 1.81	$ 1.90	$ 1.99
19	Residential		800		$ 4.01	$ 4.37	$ 4.76	$ 2.88	$ 3.03	$ 3.18	$ 3.34	$ 3.50	$ 3.68	$ 3.86
20	Residential		1,000		$ 4.98	$ 5.43	$ 5.91	$ 3.58	$ 3.76	$ 3.95	$ 4.15	$ 4.35	$ 4.57	$ 4.80
21	Residential		1,200		$ 5.95	$ 6.48	$ 7.07	$ 4.28	$ 4.49	$ 4.72	$ 4.95	$ 5.20	$ 5.46	$ 5.73
22	Residential		2,000		$ 9.83	$ 10.71	$ 11.68	$ 7.07	$ 7.43	$ 7.80	$ 8.19	$ 8.60	$ 9.03	$ 9.48

As a matter of practice, Burns & McDonnell encourages the City to evaluate the sufficiency of utility revenues and expenses annually as part of its budgeting process, with a comprehensive update to its financial plan every five years, or sooner if conditions change.

2.0 FINANCIAL PLANNING ANALYSIS

2.1 Introduction

The primary issue addressed in the Financial Planning Analysis is revenue sufficiency. The results of the Financial Planning Analysis answer the questions:

- Are automatic rate adjustments of 5 percent per year sufficient to fund anticipated operating and capital costs?
- If not, what level of overall revenue increase is needed?

City ordinances provide for an automatic annual rate adjustment of 5 percent to water and sewer rates. To determine if revenues under the automatic 5 percent annual rate adjustments are sufficient to meet the City's future operating and capital costs, Burns & McDonnell prepared a ten-year financial projection of revenues and expenditures for each utility. A comparison of projected revenues and expenditures provides insight into the sufficiency of overall revenue levels.

Our approach to Financial Planning involves the following basic steps:

1. Project revenues under existing rates.
2. Project water and sewer utility expenditures, including operating and capital costs.
3. Develop a ten-year financial plan, including the budget year and a nine-year forecast period.

The planning period includes the current fiscal year (FY) 2022 as a budget year and a nine-year forecast period, FY 2023 through FY 2032. The City's fiscal year ends on April 30, and the projected periods in the financial plan recognize the same fiscal year ending April 30.

2.2 Water and Sewer Utility Revenues under Existing Rates

The first step in the Financial Plan Analysis was to project revenues under the existing schedule of rates. To complete this step required an analysis of water and sewer customers, volumes, and revenues.

2.2.1 Historical and Projected Customers and Volumes

Table 2-1 presents the historical water customers and consumption by customer class served by the City in 2021 and the projection of customers and consumption by class for the 2022 to 2032 planning period. Due to a recent billing software upgrade, data from historic periods prior to 2021 was not available. Based on future demand forecasting done by Strand Associates, Inc., the City is anticipating roughly 1.5 percent average growth in demand over the forecast period.

Table 2-2 presents the historical sewer customers and consumption by class served by the City in 2021 and projection of customers and consumption by class for the 2022 to 2032 planning period. Access to historical data was limited to 2021 due to the same billing software upgrade impacting the water utility. Future demand follows the same growth projection of approximately 1.5 percent per year assumed for the water utility.

Table 2-1: Historical and Projected Water Accounts and Volume

Line		Historical	Projected										
No.		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	Accounts												
1	APARTMENT	163	165	167	169	171	173	175	177	179	181	183	185
2	COMMERCIAL - Sprinkler	6	6	6	6	6	6	6	6	6	6	6	6
3	COMMERCIAL	524	530	537	544	551	558	565	572	579	586	593	601
4	GOVERNMENT	7	7	7	7	7	7	7	7	7	7	7	7
5	GOVERNMENTWater - Stateville	1	1	1	1	1	1	1	1	1	1	1	1
6	INSTITUTIONAL - Sprinkler	3	3	3	3	3	3	3	3	3	3	3	3
7	INSTITUTIONAL	21	21	21	21	21	21	21	21	21	21	21	21
8	RESIDENTIAL - Sprinkler	48	49	50	51	52	53	54	55	56	57	58	59
9	RESIDENTIAL	5,827	5,900	5,974	6,049	6,125	6,204	6,284	6,365	6,447	6,530	6,613	6,697
10	SPIGOT	35	35	35	35	35	35	35	35	35	35	35	35
11	Total Accounts	6,634	6,717	6,801	6,886	6,972	7,061	7,151	7,242	7,334	7,427	7,520	7,615
	Billed Volume *(CCF)*												
12	APARTMENT	75,080	75,850	76,770	77,680	78,600	79,520	80,440	81,360	82,280	83,200	84,120	85,040
13	COMMERCIAL - Sprinkler	1,764	1,760	1,760	1,760	1,760	1,760	1,760	1,760	1,760	1,760	1,760	1,760
14	COMMERCIAL	83,283	84,290	85,400	86,520	87,630	88,740	89,860	90,970	92,080	93,200	94,310	95,580
15	GOVERNMENT	10,916	10,920	10,920	10,920	10,920	10,920	10,920	10,920	10,920	10,920	10,920	10,920
16	GOVERNMENTWater - Stateville	237,800	242,460	247,210	252,060	257,000	262,270	267,640	273,130	278,730	284,440	290,160	295,990
17	INSTITUTIONAL - Sprinkler	5,492	5,820	5,820	5,820	5,820	5,820	5,820	5,820	5,820	5,820	5,820	5,820
18	INSTITUTIONAL	4,005	4,040	4,040	4,040	4,040	4,040	4,040	4,040	4,040	4,040	4,040	4,040
19	RESIDENTIAL - Sprinkler	2,078	2,110	2,160	2,200	2,240	2,290	2,330	2,370	2,420	2,460	2,500	2,550
20	RESIDENTIAL	354,638	359,110	363,620	368,180	372,810	377,610	382,480	387,410	392,410	397,460	402,510	407,620
21	SPIGOT	32	30	30	30	30	30	30	30	30	30	30	30
22	Total Billed Volume	775,088	786,390	797,730	809,210	820,850	833,000	845,320	857,810	870,490	883,330	896,170	909,350

Table 2-2: Historical and Projected Sewer Accounts and Volume

Line		Historical	Projected										
No.		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	Accounts												
1	APARTMENT	160	162	164	166	168	170	172	174	176	178	180	182
2	COMMERCIAL	471	477	483	489	495	501	507	514	521	528	535	542
3	COMMERCIAL - UNMETERED	8	8	8	8	8	8	8	8	8	8	8	8
4	GOVERNMENT	5	5	5	5	5	5	5	5	5	5	5	5
5	GOVERNMENT - METERED	1	1	1	1	1	1	1	1	1	1	1	1
6	INSTITUTIONAL	18	18	18	18	18	18	18	18	18	18	18	18
7	RESIDENTIAL	5,809	5,882	5,956	6,031	6,107	6,186	6,266	6,347	6,429	6,512	6,595	6,679
8	RESIDENTIAL - UNMETERED	35	35	35	35	35	35	35	35	35	35	35	35
9	Total Accounts	6,507	6,588	6,670	6,753	6,837	6,924	7,012	7,102	7,193	7,285	7,377	7,470
	Billed Volume *(CCF)*												
10	APARTMENT	75,080	75,860	76,800	77,730	78,670	79,610	80,540	81,480	82,420	83,350	84,290	85,230
11	COMMERCIAL	81,565	82,630	83,670	84,710	85,750	86,790	87,830	89,040	90,260	91,470	92,680	93,890
12	COMMERCIAL - UNMETERED	-	-	-	-	-	-	-	-	-	-	-	-
13	GOVERNMENT	5,378	5,380	5,380	5,380	5,380	5,380	5,380	5,380	5,380	5,380	5,380	5,380
14	GOVERNMENT - METERED	295,929	301,730	307,640	313,670	319,820	326,380	333,070	339,900	346,860	353,970	361,090	368,350
15	INSTITUTIONAL	4,005	4,040	4,040	4,040	4,040	4,040	4,040	4,040	4,040	4,040	4,040	4,040
16	RESIDENTIAL	353,877	358,320	362,830	367,400	372,030	376,840	381,720	386,650	391,650	396,700	401,760	406,880
17	RESIDENTIAL - UNMETERED	-	-	-	-	-	-	-	-	-	-	-	-
18	Total Billed Volume	815,833	827,960	840,360	852,930	865,690	879,040	892,580	906,490	920,610	934,910	949,240	963,770

2.2.2 Existing Water and Sewer Rates

The water and sewer rate schedule is shown in Table 2-3. The water rate consists of a base charge per bi-monthly bill that includes the first 400 cubic feet of usage and a volumetric charge per hundred cubic feet (CCF) of usage above the first 400 cubic feet. The sewer rate also consists of a base charge per bi-

monthly bill that includes the first 400 cubic feet of usage and a volumetric charge per CCF of usage above the first 400 cubic feet.

Table 2-3: Existing Water and Sewer Rates

Line No.	Rate Code	Description	Existing 2022
		Water Rates	
	1001 & 1501	Residential & Sprinkler	
1		Base Charge (1st 400 cubic Ft.)	22.97
2		Each Additional Hundred Cubic Ft.	4.52
	1011	Stateville - Water	
3		Base Charge (1st 400 cubic Ft.)	11.49
4		Each Additional Hundred Cubic Ft.	4.52
		Sewer Rates	
	3001	Residential	
5		Base Charge (1st 400 cubic Ft.)	22.97
6		Each Additional Hundred Cubic Ft.	5.39
	3011	Stateville - Sewer	
7		Base Charge (1st 400 cubic Ft.)	11.49
8		Each Additional Hundred Cubic Ft.	8.07
	3501	Residential - Unmetered	
9		Base Charge	66.07
	3502	Commercial - Unmetered	
10		Base Charge	109.15

2.2.3 User Revenues under Existing Rates

Table 2-4 and Table 2-5 present water and sewer historical user charge revenues for 2021and a projection of user charge revenues under 2022 rates for the 2022 to 2032 planning period. The projection of user charge revenues was estimated based on the forecasted accounts and volumes factored by the schedule of 2022 water and sewer rates. City ordinances provide for an automatic annual rate adjustment of 5 percent to water and sewer rates. The sufficiency of the automatic 5 percent rate adjustments is evaluated later in this Section.

As shown in Table 2-4, water user charge revenues under existing rates are assumed to increase during the study period due to projected growth in demand. Similar growth assumptions are projected to impact the sewer utility as shown in Table 2-5.

Table 2-4: Historical and Projected Water User Revenues

Line No.		Historical 2021	Projected 2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	User Revenues under Existing Rates												
1	APARTMENT	$ 328,542	$ 348,500	$ 352,700	$ 356,900	$ 361,100	$ 365,400	$ 369,600	$ 373,800	$ 378,100	$ 382,300	$ 386,500	$ 390,700
2	COMMERCIAL - Sprinkler	$ 7,660	$ 8,000	$ 8,000	$ 8,000	$ 8,000	$ 8,000	$ 8,000	$ 8,000	$ 8,000	$ 8,000	$ 8,000	$ 8,000
3	COMMERCIAL	$ 394,572	$ 419,300	$ 424,800	$ 430,400	$ 435,900	$ 441,400	$ 447,000	$ 452,500	$ 458,100	$ 463,600	$ 469,200	$ 475,500
4	GOVERNMENT	$ 47,407	$ 49,800	$ 49,800	$ 49,800	$ 49,800	$ 49,800	$ 49,800	$ 49,800	$ 49,800	$ 49,800	$ 49,800	$ 49,800
5	GOVERNMENTWater - Stateville	$ 1,022,569	$ 1,094,700	$ 1,116,200	$ 1,138,100	$ 1,160,400	$ 1,184,200	$ 1,208,400	$ 1,233,200	$ 1,258,500	$ 1,284,300	$ 1,310,100	$ 1,336,400
6	INSTITUTIONAL - Sprinkler	$ 23,666	$ 26,400	$ 26,400	$ 26,400	$ 26,400	$ 26,400	$ 26,400	$ 26,400	$ 26,400	$ 26,400	$ 26,400	$ 26,400
7	INSTITUTIONAL	$ 18,799	$ 19,900	$ 19,900	$ 19,900	$ 19,900	$ 19,900	$ 19,900	$ 19,900	$ 19,900	$ 19,900	$ 19,900	$ 19,900
8	RESIDENTIAL - Sprinkler	$ 9,886	$ 10,500	$ 10,800	$ 11,000	$ 11,200	$ 11,400	$ 11,600	$ 11,800	$ 12,100	$ 12,300	$ 12,500	$ 12,700
9	RESIDENTIAL	$ 1,727,518	$ 1,836,800	$ 1,859,800	$ 1,883,200	$ 1,906,800	$ 1,931,400	$ 1,956,300	$ 1,981,500	$ 2,007,100	$ 2,032,900	$ 2,058,700	$ 2,084,900
10	SPIGOT	$ 4,595	$ 4,800	$ 4,800	$ 4,800	$ 4,800	$ 4,800	$ 4,800	$ 4,800	$ 4,800	$ 4,800	$ 4,800	$ 4,800
11	Total Revenue Under Existing Rates	$ 3,585,213	$ 3,818,700	$ 3,873,200	$ 3,928,500	$ 3,984,300	$ 4,042,700	$ 4,101,800	$ 4,161,700	$ 4,222,800	$ 4,284,300	$ 4,345,900	$ 4,409,100

Table 2-5: Historical and Projected Sewer User Revenues

Line No.		Historical 2021	Projected 2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	User Revenues under Existing Rates												
1	APARTMENT	$ 387,471	$ 411,100	$ 416,200	$ 421,200	$ 426,300	$ 431,400	$ 436,400	$ 441,500	$ 446,600	$ 451,700	$ 456,800	$ 461,900
2	COMMERCIAL	$ 442,939	$ 471,200	$ 477,100	$ 483,100	$ 489,000	$ 494,900	$ 500,900	$ 507,800	$ 514,700	$ 521,600	$ 528,500	$ 535,400
3	COMMERCIAL - UNMETERED	$ 4,990	$ 5,200	$ 5,200	$ 5,200	$ 5,200	$ 5,200	$ 5,200	$ 5,200	$ 5,200	$ 5,200	$ 5,200	$ 5,200
4	GOVERNMENT	$ 27,877	$ 29,300	$ 29,300	$ 29,300	$ 29,300	$ 29,300	$ 29,300	$ 29,300	$ 29,300	$ 29,300	$ 29,300	$ 29,300
5	GOVERNMENT - METERED	$ 2,275,639	$ 2,436,300	$ 2,484,000	$ 2,532,700	$ 2,582,300	$ 2,635,300	$ 2,689,300	$ 2,744,400	$ 2,800,600	$ 2,858,000	$ 2,915,500	$ 2,974,100
6	INSTITUTIONAL	$ 21,506	$ 22,800	$ 22,800	$ 22,800	$ 22,800	$ 22,800	$ 22,800	$ 22,800	$ 22,800	$ 22,800	$ 22,800	$ 22,800
7	RESIDENTIAL	$ 1,911,184	$ 2,034,300	$ 2,059,900	$ 2,085,800	$ 2,112,100	$ 2,139,400	$ 2,167,100	$ 2,195,100	$ 2,223,500	$ 2,252,200	$ 2,280,900	$ 2,309,900
8	RESIDENTIAL - UNMETERED	$ 12,814	$ 13,900	$ 13,900	$ 13,900	$ 13,900	$ 13,900	$ 13,900	$ 13,900	$ 13,900	$ 13,900	$ 13,900	$ 13,900
9	Total Revenue Under Existing Rates	$ 5,084,420	$ 5,424,100	$ 5,508,400	$ 5,594,000	$ 5,680,900	$ 5,772,200	$ 5,864,900	$ 5,960,000	$ 6,056,600	$ 6,154,700	$ 6,252,900	$ 6,352,500

2.3 Water and Sewer Utility Expenditures

Typically, a municipal water or sewer utility's primary cash expenditures include the following direct operating and capital costs:

- Operation and Maintenance (O&M) Expenses
- Capital Improvement Program Expenditures
- Debt Service Principal and Interest Payments

Each of these cash obligations is described further below.

2.3.1 O&M Expenses

Table 2-6 and Table 2-7 presents the recent water and sewer O&M expense history and the projection of water and sewer system O&M expenses through the 2032 planning period. Expenses summarized on Table 2-6 and Table 2-7 reflect operating costs only; costs related to capital projects are excluded from these tables and are addressed later in this report.

In general, projected O&M expenses are anticipated to increase from budgeted 2022 amounts based on inflation assumptions that vary depending on the expense type. Individual inflationary assumptions were developed by cost category in collaboration with Public Works staff and ranged from 0 percent to 4 percent depending on the cost item. Key inflation rate assumptions are as follows:

- Personnel – 4 percent annually from 2023-2026; 3 percent annually thereafter
- Technology – 1.5 percent annually
- Contractual – 1 percent annually
- Water commission reserve fee – 3.5 percent annually
- Water commission O&M – 2 percent annually

Shared administration operating costs were allocated 50 percent to water and 50 percent to sewer, with the exception of water meters which were assigned 100 percent to the water utility. Water meter costs are shown on Line 66 of Table 2-6. Forecasting for water meter costs reflects guidance from Public Works and assumes elevated expenditures through 2025, with declines in subsequent years as meter replacement activities subside.

Additionally, consideration was given to the variable costs associated with joining the regional water commission with source of supply coming from Lake Michigan. Lines 72 through 77 of Table 2-6 show the incremental operating costs associated with joining the commission.

Table 2-6: Historical and Projected Water Operation and Maintenance Expenses

Line No.		Historical			Budgeted	Budgeted	Projected									
		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	Water O&M (07-06)															
1	Salaries	237,202	235,041	236,526	267,265	289,789	301,400	313,500	326,000	339,000	349,200	359,700	370,500	381,600	393,000	404,800
2	Clerical Salaries	19,839	20,208	21,551	24,653	27,150	28,200	29,300	30,500	31,700	32,700	33,700	34,700	35,700	36,800	37,900
3	Mechanic Salaries	16,610	18,757	17,869	18,545	19,226	20,000	20,800	21,600	22,500	23,200	23,900	24,600	25,300	26,100	26,900
4	Seasonal Salaries	14,688	8,488	8,589	22,500	22,500	23,400	24,300	25,300	26,300	27,100	27,900	28,700	29,600	30,500	31,400
5	Overtime	14,248	11,075	7,640	18,463	20,002	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
6	Clerical Overtime	-	-	138	-	-	-	-	-	-	-	-	-	-	-	-
7	Mechanic Overtime	4,113	35	1,267	927	961	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
8	Utility Repair Overtime	13,748	25,689	15,963	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
9	Insurance Benefit	92,127	84,542	61,244	105,889	114,177	115,900	117,600	119,400	121,200	123,000	124,800	126,700	128,600	130,500	132,500
10	FICA	20,016	19,398	19,425	23,396	25,087	25,500	25,900	26,300	26,700	27,100	27,500	27,900	28,300	28,700	29,100
11	Medicare	4,692	4,536	4,554	5,472	5,867	6,000	6,100	6,200	6,300	6,400	6,500	6,600	6,700	6,800	6,900
12	Unemployment Benefit	1,634	930	753	850	871	900	900	900	900	900	900	900	900	900	900
13	IMRF Expense	6,209	32,101	22,936	32,570	35,656	35,700	35,700	35,700	35,700	35,700	35,700	35,700	35,700	35,700	35,700
14	STP OPEB Expense	2,931	4,654	-	-	-	-	-	-	-	-	-	-	-	-	-
15	Contractual Services	42,968	36,406	38,011	41,900	42,400	42,800	43,200	43,600	44,000	44,400	44,800	45,200	45,700	46,200	46,700
16	Technology	9,489	17,220	16,122	24,100	26,100	26,500	26,900	27,300	27,700	28,100	28,500	28,900	29,300	29,700	30,100
17	Legal Services	6,340	10,252	1,444	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
18	Contractual Lab	8,808	19,953	14,153	8,000	13,000	13,100	13,200	13,300	13,400	13,500	13,600	13,700	13,800	13,900	14,000
19	Temporary Help	-	6,589	-	-	-	-	-	-	-	-	-	-	-	-	-
20	Printing and Publications	3,244	877	26	4,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
21	Engineering	6,442	23,637	7,574	65,000	105,500	105,500	105,500	105,500	105,500	105,500	105,500	105,500	105,500	105,500	105,500
22	Training	6,210	3,758	3,328	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
23	Meal Expense	902	548	375	800	800	800	800	800	800	800	800	800	800	800	800
24	Clothing Allowance	2,910	3,450	3,997	3,800	3,800	3,800	3,800	3,800	3,800	3,800	3,800	3,800	3,800	3,800	3,800
25	Utilities	24,393	32,581	36,361	36,000	45,000	45,700	46,400	47,100	47,800	48,500	49,200	49,900	50,600	51,400	52,200
26	Power Purchase	175,191	137,839	133,348	125,000	125,000	126,900	128,800	130,700	132,700	134,700	136,700	138,800	140,900	143,000	145,100
27	Maint. & Repair	10,072	12,155	8,201	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000
28	Maintenance - Wells	55,844	37,192	38,062	50,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000
29	Water Storage - Tank	381,396	381,396	381,396	381,396	520,300	525,200	306,100	411,000	411,000	411,000	411,000	411,000	411,000	411,000	411,000
30	Equipment Rental	-	165	6,000	12,500	18,750	18,800	18,800	18,800	18,800	18,800	18,800	18,800	18,800	18,800	18,800
31	Materials & Supplies	14,124	1,905	1,420	-	-	-	-	-	-	-	-	-	-	-	-
32	Office Supplies	2,822	1,109	2,338	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
33	Safety Equipment	1,968	746	3,978	1,500	1,750	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800
34	Motor Fuel & Lubricants	14,373	13,206	11,260	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
35	Lab. Supplies & Equipment	5,684	4,626	2,959	5,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
36	Chemicals	84,054	84,385	85,393	90,000	76,000	76,800	77,600	78,400	79,200	80,000	80,800	81,600	82,400	83,200	84,000
37	Breaks-Materials & Repair	88,949	107,021	139,223	95,000	95,000	95,000	95,000	95,000	95,000	95,000	95,000	95,000	95,000	95,000	95,000
38	Valves and Hydrants	38,507	31,169	49,750	43,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
39	Office Equipment	162	-	179	-	-	-	-	-	-	-	-	-	-	-	-
40	Miscellaneous Expenses	3,040	2,321	1,198	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
41	Total Fund 07-06 Expense	1,435,948	1,435,963	1,404,553	1,588,026	1,816,186	1,842,200	1,644,500	1,771,500	1,794,300	1,813,700	1,833,400	1,853,600	1,874,300	1,895,600	1,917,400
	Administration O&M (07-09) [1]															
42	Salaries	46,900	49,700	50,100	76,700	86,800	90,300	93,900	97,600	101,500	104,600	107,700	111,000	114,300	117,800	121,300
43	Salaries Clerical	101,900	162,700	159,700	183,800	189,900	197,500	205,400	213,600	222,100	228,800	235,600	242,700	250,000	257,500	265,200
44	Overtime	500	600	900	3,300	3,900	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
45	Clerical Overtime	1,200	1,900	3,300	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800
46	Insurance Benefit	23,300	39,700	40,500	48,200	51,700	51,800	51,800	51,800	51,800	51,800	51,800	51,800	51,800	51,800	51,800
47	FICA	9,000	12,900	13,500	16,500	17,500	17,800	18,000	18,300	18,500	18,800	19,100	19,400	19,700	20,000	20,300
48	Medicare	2,100	3,100	3,200	3,900	4,100	4,200	4,200	4,300	4,300	4,400	4,400	4,500	4,500	4,600	4,600
49	Unemployment Benefit	600	500	300	600	600	600	600	600	600	600	600	600	600	600	600
50	IMRF Expense	2,700	21,100	15,700	23,200	25,100	25,500	25,900	26,300	26,700	27,100	27,500	27,900	28,300	28,700	29,100
51	STP OPEB Expense	1,300	3,100	-	-	-	-	-	-	-	-	-	-	-	-	-
52	Contractual Services	10,500	9,100	8,400	23,300	24,500	24,700	25,000	25,200	25,500	25,700	26,000	26,200	26,500	26,700	27,000
53	Technology	2,400	7,600	6,900	7,900	7,900	8,000	8,100	8,200	8,300	8,400	8,600	8,700	8,900	9,000	9,200
54	Legal Services	-	200	-	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
55	Consulting	18,300	20,900	27,600	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000
56	Temporary Help	22,400	4,100	-	-	-	-	-	-	-	-	-	-	-	-	-
57	Printing and Publications	8,300	5,800	6,300	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000
58	Postage	14,200	13,000	11,900	13,500	13,500	13,700	13,900	14,100	14,300	14,500	14,700	14,900	15,100	15,400	15,600
59	Insurance and Bonding	47,500	95,900	102,900	110,300	141,100	141,200	141,200	141,200	141,200	141,200	141,200	141,200	141,200	141,200	141,200
60	Engineering	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
61	Training	-	-	1,000	2,300	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
62	Utilities	1,900	2,100	4,700	4,300	4,300	4,300	4,400	4,400	4,500	4,500	4,600	4,600	4,700	4,700	4,800
63	Maintenance and Repair	400	600	100	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
64	Material & Supplies	600	-	-	-	-	-	-	-	-	-	-	-	-	-	-
65	Office Supplies	1,100	800	800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800
66	Meters	207,300	209,700	262,700	500,000	500,000	500,000	500,000	500,000	250,000	250,000	250,000	100,000	100,000	100,000	100,000
67	Office Equipment	400	-	-	-	-	-	-	-	-	-	-	-	-	-	-
68	Depreciation Expense	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
69	Miscellaneous Expense	1,300	1,200	3,100	11,100	11,100	11,100	11,100	11,100	11,100	11,100	11,100	11,100	11,100	11,100	11,100
70	Bank Fees	9,700	11,100	8,800	12,500	12,500	12,500	12,500	12,500	12,500	12,500	12,500	12,500	12,500	12,500	12,500
71	Total Fund 07-09 Water Expense	535,800	677,400	732,400	1,079,000	1,134,600	1,147,300	1,160,100	1,173,300	937,000	948,100	959,500	821,200	833,300	845,700	858,400
	Regional Water Commission Incremental O&M															
72	Production Cost Savings	-	-	-	-	-	-	-	-	-	-	-	-	(655,100)	(663,200)	(671,600)
73	Purchased Water Costs	-	-	-	-	-	-	-	-	-	-	-	-	2,180,200	2,237,900	2,297,100
74	Distribution Costs	-	-	-	-	-	-	-	-	-	-	-	-	310,300	320,600	331,200
75	Commission Reserve and Admin. Fees	-	-	-	-	-	-	-	207,600	214,900	222,400	230,200	238,200	191,000	194,900	198,900
76	Commission Debt Service	-	-	-	-	-	-	-	-	114,100	781,400	1,141,200	1,369,500	2,673,100	3,093,700	3,093,400
77	Total Water Commission Incremental O&M Expense	-	-	-	-	-	-	-	207,600	329,000	1,003,800	1,371,400	1,607,700	4,699,500	5,183,900	5,249,000
78	Grand Total Water O&M Expense	1,971,748	2,113,363	2,136,953	2,667,026	2,950,786	2,989,500	2,804,600	3,152,400	3,060,300	3,765,600	4,164,300	4,282,500	7,407,100	7,925,200	8,024,800

[1] Attributes 50% of total administrative 07-09 costs to the water utility with the exception that the water utility bears the full cost of Meters

Table 2-7: Historical and Projected Sewer Operation and Maintenance Expenses

Line No.		Historical			Budgeted	Budgeted	Projected									
		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	Sewer O&M (07-07)															
1	Salaries	262,829	244,473	260,486	297,993	320,644	333,500	346,800	360,700	375,100	386,400	398,000	409,900	422,200	434,900	447,900
2	Salaries Clerical	12,783	13,849	13,963	14,670	15,670	16,300	17,000	17,700	18,400	19,000	19,600	20,200	20,800	21,400	22,000
3	Salaries Mechanical	16,610	18,757	17,869	18,545	19,227	20,000	20,800	21,600	22,500	23,200	23,900	24,600	25,300	26,100	26,900
4	Seasonal	14,688	8,620	8,589	22,500	22,500	23,400	24,300	25,300	26,300	27,100	27,900	28,700	29,600	30,500	31,400
5	Overtime	2,017	1,100	5,474	19,707	21,164	21,200	21,200	21,200	21,200	21,200	21,200	21,200	21,200	21,200	21,200
6	Mechanic Overtime	-	-	1,267	927	961	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
7	Utility Repair Overtime	328	-	-	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
8	Insurance Benefit	90,646	71,986	74,357	102,522	107,803	109,400	111,000	112,700	114,400	116,100	117,800	119,600	121,400	123,200	125,000
9	FICA	19,348	17,459	19,803	23,829	25,430	25,800	26,200	26,600	27,000	27,400	27,800	28,200	28,600	29,000	29,400
10	Medicare	4,535	4,083	4,643	5,573	5,947	6,000	6,100	6,200	6,300	6,400	6,500	6,600	6,700	6,800	6,900
11	Unemployment Benefit	1,522	895	795	866	883	900	900	900	900	900	900	900	900	900	900
12	IMRF Expense	5,866	28,765	23,408	33,216	36,177	36,700	37,300	37,900	38,500	39,100	39,700	40,300	40,900	41,500	42,100
13	STP OPEB Expense	2,821	4,209	-	-	-	-	-	-	-	-	-	-	-	-	-
14	Contractual Services	9,749	33,667	23,509	31,500	32,000	32,300	32,600	32,900	33,200	33,500	33,800	34,100	34,400	34,700	35,000
15	Technology	3,434	15,311	14,323	21,000	21,000	21,300	21,600	21,900	22,200	22,500	22,800	23,100	23,400	23,800	24,200
16	Legal Services	5,035	272	309	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500
17	Temporary Help	-	6,589	-	-	-	-	-	-	-	-	-	-	-	-	-
18	Engineering	30,236	71,213	58,133	79,000	92,000	92,000	92,000	92,000	92,000	92,000	92,000	92,000	92,000	92,000	92,000
19	Training	3,022	1,567	2,257	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
20	Meal Expense	810	345	335	500	500	500	500	500	500	500	500	500	500	500	500
21	Clothing Allowance	2,946	3,059	3,665	3,800	3,800	3,800	3,800	3,800	3,800	3,800	3,800	3,800	3,800	3,800	3,800
22	Utilities	9,939	9,916	11,353	10,000	12,000	12,200	12,400	12,600	12,800	13,000	13,200	13,400	13,600	13,800	14,000
23	Power Purchase	3,048	3,149	3,184	3,200	3,200	3,200	3,200	3,200	3,200	3,200	3,200	3,200	3,200	3,200	3,200
24	Maintenance - Lift Station	2,612	-	-	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
25	Material & Supplies	1,912	-	35	-	-	-	-	-	-	-	-	-	-	-	-
26	Office Supplies	1,712	923	1,684	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
27	Safety Equipment	1,749	395	1,258	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
28	Motor Fuel & Lubricants	12,831	11,992	9,144	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
29	Lab. Supplies & Equipment	355	185	409	750	750	800	800	800	800	800	800	800	800	800	800
30	Chemicals	-	1,500	-	500	500	500	500	500	500	500	500	500	500	500	500
31	Breaks-Materils & Repair	1,933	5,310	-	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
32	Office Equipment	-	-	179	-	-	-	-	-	-	-	-	-	-	-	-
33	Miscellaneous Expenses	3,810	2,137	1,058	3,250	3,250	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300
34	Total Fund 07-07 Expense	529,125	581,728	561,488	737,048	788,606	807,300	826,500	846,500	867,100	884,100	901,400	919,100	937,300	956,100	975,200
	STP O&M (07-08)															
35	Salaries	234,976	213,819	246,188	288,135	295,703	307,500	319,800	332,600	345,900	356,300	367,000	378,000	389,300	401,000	413,000
36	Salaries Clerical	11,969	13,849	13,963	14,670	15,670	16,300	17,000	17,700	18,400	19,000	19,600	20,200	20,800	21,400	22,000
37	Salaries Mechanical	16,762	18,757	17,869	18,545	19,226	20,000	20,800	21,600	22,500	23,200	23,900	24,600	25,300	26,100	26,900
38	Seasonal Salaries	14,688	8,488	8,589	22,500	22,500	23,400	24,300	25,300	26,300	27,100	27,900	28,700	29,600	30,500	31,400
39	Overtime	24,164	25,428	8,310	31,860	32,779	32,800	32,800	32,800	32,800	32,800	32,800	32,800	32,800	32,800	32,800
40	Clerical Overtime	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	Mechanic Overtime	-	-	1,267	927	961	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
42	Insurance Benefit	80,407	60,377	67,431	97,009	102,385	103,900	105,500	107,100	108,700	110,300	112,000	113,700	115,400	117,100	118,900
43	FICA	19,065	17,052	18,945	23,351	23,984	24,300	24,700	25,100	25,500	25,900	26,300	26,700	27,100	27,500	27,900
44	Medicare	4,466	3,988	4,442	5,461	5,609	5,700	5,800	5,900	6,000	6,100	6,200	6,300	6,400	6,500	6,600
45	Unemployment Benefit	1,303	772	739	849	833	800	800	800	800	800	800	800	800	800	800
46	IMRF Expense	5,760	28,081	22,361	32,503	33,984	34,500	35,000	35,500	36,000	36,500	37,000	37,600	38,200	38,800	39,400
47	STP OPEB Expense	2,775	4,104	-	-	-	-	-	-	-	-	-	-	-	-	-
48	Contractual Services	11,612	15,348	16,943	12,000	14,000	14,100	14,200	14,300	14,400	14,500	14,600	14,700	14,800	14,900	15,000
49	Technology	22,043	41,327	54,637	47,700	47,700	48,400	49,100	49,800	50,500	51,300	52,100	52,900	53,700	54,500	55,300
50	Legal Services	5,035	10,348	6,408	1,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
51	Contractual Lab	34,475	21,340	27,341	27,500	27,500	27,800	28,100	28,400	28,700	29,000	29,300	29,600	29,900	30,200	30,500
52	Temporary Help	-	6,589	-	-	-	-	-	-	-	-	-	-	-	-	-
53	Annual NPDES Permit	32,500	33,500	33,500	33,500	33,500	33,500	33,500	33,500	33,500	33,500	33,500	33,500	33,500	33,500	33,500
54	Printing & Publications	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
55	Engineering	116,592	28,505	19,328	20,500	23,000	23,000	23,000	23,000	23,000	23,000	23,000	23,000	23,000	23,000	23,000
56	Training	6,666	3,644	2,819	4,200	4,200	4,200	4,200	4,200	4,200	4,200	4,200	4,200	4,200	4,200	4,200
57	Meal Expense	1,173	598	356	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
58	Clothing Allowance	2,838	3,000	3,727	3,800	3,800	3,800	3,800	3,800	3,800	3,800	3,800	3,800	3,800	3,800	3,800
59	Utilities	18,822	40,778	38,015	32,200	32,200	32,700	33,200	33,700	34,200	34,700	35,200	35,700	36,200	36,700	37,300
60	Power Purchase	161,047	176,872	186,290	180,000	180,000	182,700	185,400	188,200	191,000	193,900	196,800	199,800	202,800	205,800	208,900
61	Maint. & Repair	9,848	11,544	7,684	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000
62	Maint. & Repair West Plant	56,512	26,660	49,845	65,000	50,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
63	Maint. & Repair East Plant	76,812	54,539	48,888	60,000	55,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
64	Waste Removal	211,362	194,666	233,270	175,000	175,000	175,000	175,000	175,000	175,000	175,000	175,000	175,000	175,000	175,000	175,000
65	Intergovernmental Groups	20,587	15,004	20,156	20,000	18,000	18,200	18,400	18,600	18,800	19,000	19,200	19,400	19,600	19,800	20,000
66	Material & Supplies	-	-	35	-	-	-	-	-	-	-	-	-	-	-	-
67	Office Supplies	3,146	1,543	2,677	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
68	Safety Equipment	3,192	2,366	4,259	1,600	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
69	Motor Fuel & Lubricants	17,209	15,015	11,306	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
70	Lab. Supplies & Equipment	15,303	9,398	10,257	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000
71	Chemicals	46,665	30,729	12,750	30,000	25,000	25,300	25,600	25,900	26,200	26,500	26,800	27,100	27,400	27,700	28,000
72	Office Equipment	162	156	160	400	400	400	400	400	400	400	400	400	400	400	400
73	Miscellaneous Expenses	2,419	2,396	2,284	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800
74	Total Fund 07-08 Expense	1,292,354	1,140,578	1,203,039	1,304,010	1,303,734	1,360,100	1,382,200	1,405,000	1,428,400	1,448,600	1,469,200	1,490,300	1,511,800	1,533,800	1,556,400
	Administration O&M (07-09) [1]															
75	Salaries	46,900	49,700	50,100	76,700	86,800	90,300	93,900	97,600	101,500	104,600	107,700	111,000	114,300	117,800	121,300
76	Salaries Clerical	101,900	162,700	159,700	183,800	189,900	197,500	205,400	213,600	222,100	228,800	235,600	242,700	250,000	257,500	265,200
77	Overtime	500	600	900	3,300	3,900	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
78	Clerical Overtime	1,200	1,900	3,300	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800
79	Insurance Benefit	23,300	39,700	40,500	48,200	51,700	51,800	51,800	51,800	51,800	51,800	51,800	51,800	51,800	51,800	51,800
80	FICA	9,000	12,900	13,500	16,500	17,500	17,800	18,000	18,300	18,500	18,800	19,100	19,400	19,700	20,000	20,300
81	Medicare	2,100	3,100	3,200	3,900	4,100	4,200	4,200	4,300	4,300	4,400	4,400	4,500	4,500	4,600	4,600
82	Unemployment Benefit	600	500	300	600	600	600	600	600	600	600	600	600	600	600	600
83	IMRF Expense	2,700	21,100	15,700	23,200	25,100	25,500	25,900	26,300	26,700	27,100	27,500	27,900	28,300	28,700	29,100
84	STP OPEB Expense	1,300	3,100	-	-	-	-	-	-	-	-	-	-	-	-	-
85	Contractual Services	10,500	9,100	8,400	23,300	24,500	24,700	25,000	25,200	25,500	25,700	26,000	26,200	26,500	26,700	27,000
86	Technology	2,400	7,600	6,900	7,900	7,900	8,000	8,100	8,200	8,300	8,400	8,600	8,700	8,900	9,000	9,200
87	Legal Services	-	200	-	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
88	Consulting	18,300	20,900	27,600	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000
89	Temporary Help	22,400	4,100	-	-	-	-	-	-	-	-	-	-	-	-	-
90	Printing and Publications	8,300	5,800	6,300	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000
91	Postage	14,200	13,000	11,900	13,500	13,500	13,700	13,900	14,100	14,300	14,500	14,700	14,900	15,100	15,400	15,600
92	Insurance and Bonding	47,500	95,900	102,900	110,300	141,100	141,200	141,200	141,200	141,200	141,200	141,200	141,200	141,200	141,200	141,200
93	Engineering	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
94	Training	-	-	1,000	2,300	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
95	Utilities	1,900	2,100	4,700	4,300	4,300	4,300	4,400	4,400	4,500	4,500	4,600	4,600	4,700	4,700	4,800
96	Maintenance and Repair	400	600	100	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
97	Material & Supplies	600	-	-	-	-	-	-	-	-	-	-	-	-	-	-
98	Office Supplies	1,100	800	800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800
99	Meters	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100	Office Equipment	400	-	-	-	-	-	-	-	-	-	-	-	-	-	-
101	Depreciation Expense	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
102	Miscellaneous Expense	1,300	1,200	3,100	11,100	11,100	11,100	11,100	11,100	11,100	11,100	11,100	11,100	11,100	11,100	11,100
103	Bank Fees	9,700	11,100	8,800	12,500	12,500	12,500	12,500	12,500	12,500	12,500	12,500	12,500	12,500	12,500	12,500
104	Total Fund 07-09 Water Expense	328,500	467,700	469,700	579,000	634,600	647,300	660,100	673,300	687,000	698,100	709,500	721,200	733,300	745,700	758,400
105	Total Sewer O&M	2,149,979	2,190,006	2,234,227	2,620,058	2,726,940	2,814,700	2,868,800	2,924,800	2,982,500	3,030,800	3,080,100	3,130,600	3,182,400	3,235,600	3,290,000

[1] Attributes 50% of total administrative 07-09 costs to the sewer utility with the exception that the sewer ultity doesn't contribute to Meter expenses

2.3.2 Projected Capital Improvement Expenditures

Table 2-8 shows the projected water capital improvement expenditures (CIP) for the 2022 to 2032 planning period.

Water main renewal and replacement is shown on Lines 7 and 11 and represents the largest total capital expenditure over the study period. The storage/pump station and local main improvements shown on Lines 11 and 12 relate to capital projects to the City's system necessary to connect to the water commission.

The water utility total projected capital investment over the forecast period can be seen on Line 14 of Table 2-8.

Table 2-8: Water Capital Improvement Program

Line No.		Projected											
		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
	Projects												
1	Backhoe	-	-	36,700	-	-	-	-	-	-	-	-	36,700
2	Equipment Replacement	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	2,200,000
3	Iron Filters	-	-	100,000	-	100,000	-	100,000	-	-	-	-	300,000
4	Water System Purification	-	50,000	-	75,000	-	-	-	-	-	-	-	125,000
5	Operations	-	200,000	200,000	200,000	-	-	-	-	-	-	-	600,000
6	Water Main Upgrade	-	200,000	1,200,000	2,800,000	-	-	-	-	-	-	-	4,200,000
7	Water Main Lining	1,805,100	1,868,300	1,933,700	2,001,400	2,071,400	2,143,900	2,218,900	2,296,600	-	-	-	16,339,300
8	Hillcrest Center	-	-	-	-	2,500,000	-	-	-	-	-	-	2,500,000
9	Capital Purchases	40,000	-	-	-	-	-	-	-	-	-	-	40,000
10	Preliminary Engineering and Legal	803,400	-	-	-	-	-	-	-	-	-	-	803,400
11	Water Commission - Capital Replacement of Main	-	-	-	-	-	-	-	-	2,377,000	2,460,200	2,546,300	7,383,500
12	Additional Storage and Pumping Station Improvements	-	-	-	-	-	-	12,521,500	-	-	-	-	12,521,500
13	Local Distribution and Transmission Main Improvements	-	-	-	-	-	-	9,839,600	-	-	-	-	9,839,600
14	Total	2,848,500	2,518,300	3,670,400	5,276,400	4,871,400	2,343,900	24,880,000	2,496,600	2,577,000	2,660,200	2,746,300	56,889,000

Table 2-9 includes capital expenditures that require incremental funding over the study period. As such, the nearly $50 million in improvements at the City's East and West wastewater treatment plants that are already funded by IEPA loans are excluded. The most substantial capital expenditure for the sewer system is main lining, shown on line 9. The sewer utility total projected capital investment over the forecast period can be seen on Line 11 of Table 2-9.

Table 2-9: Sewer Capital Improvement Program

Line No.		Projected											
		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
	Budgeted Projects												
1	Portable Sewage Pumps	150,000	-	-	-	-	-	-	-	-	-	-	150,000
2	Backhoe	-	-	36,700	-	-	-	-	-	-	-	-	36,700
3	Plum Street Lift Station Rehab	-	70,000	-	-	-	-	-	-	-	-	-	70,000
4	Pump Capital Report	-	65,000	-	-	-	-	-	-	-	-	-	65,000
5	Plum Lift Station-Design	-	-	20,000	-	-	-	-	-	-	-	-	20,000
6	Plum Lift Station Construction	-	-	-	120,000	-	-	-	-	-	-	-	120,000
7	Buckner Lift Station-Design	-	-	-	35,000	-	-	-	-	-	-	-	35,000
8	Buckner Lift Station Construction	-	-	-	-	100,000	-	-	-	-	-	-	100,000
9	Sanitary System Maintenance	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	5,500,000
10	Capital Purchases - Sewer	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	825,000
11	Total	725,000	710,000	631,700	730,000	675,000	575,000	575,000	575,000	575,000	575,000	575,000	6,921,700

[1] CIP excludes East and West Treatment Plant projects that are in process and funded by IEPA loans

2.3.3 Existing and Proposed Debt Service Requirements

Table 2-10 and Table 2-11 show the existing and proposed debt service for the City water and sewer utilities.

Table 2-10: Existing and Proposed Water Debt Service

Line No.		Projected										
		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	Existing Debt Issues											
1	N/A	-	-	-	-	-	-	-	-	-	-	-
2	Total Existing Debt Service	-	-	-	-	-	-	-	-	-	-	-
	Proposed Debt											
3	2027 Bond [1]	-	-	-	-	-	-	-	1,070,200	1,070,200	1,070,200	1,070,200
	Total Proposed Debt	-	-	-	-	-	-	-	1,070,200	1,070,200	1,070,200	1,070,200
4	Total Gross Debt Service	-	-	-	-	-	-	-	1,070,200	1,070,200	1,070,200	1,070,200

[1] Assumed debt issuance with equal annual payments with Interest only in the first two years
Terms reflect 1% issuance expense, 30 year term and 2.50% interest

As shown on Table 2-10, the City has no outstanding debt for the water utility. The proposed financial plan includes one debt issue in 2028 to fund improvements on the water systems storage and pumping, and transmission main improvements associated with connection to the water commission. Proposed debt service payments are assumed to start in the year following debt issuance, based on an equal annual payment structure with a 30-year term, an annual interest rate of 2.5 percent with a 1.0 percent issuance expense.

Table 2-11: Existing and Proposed Sewer Debt Service

Line No.		Projected										
		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	Existing Debt Issues											
1	2019A	1,503,975	1,505,100	1,503,975	1,500,600	1,499,850	1,501,475	1,500,350	1,508,525	1,506,850	1,509,050	1,505,125
2	IEPA 2011	230,135	230,135	230,135	230,135	230,135	230,134	230,135	230,135	230,135	230,136	230,135
3	Net Debt Service	1,734,110	1,735,235	1,734,110	1,730,735	1,729,985	1,731,609	1,730,485	1,738,660	1,736,985	1,739,186	1,735,260
	Loans in Process											
4	East STP - IEPA Loan [1]	15,350	260,100	260,100	260,100	260,100	260,100	260,100	260,100	260,100	260,100	260,100
5	West STP - IEPA Loan [2]	-	112,500	225,000	2,493,700	2,493,700	2,493,700	2,493,700	2,493,700	2,493,700	2,493,700	2,493,700
6	Total Loans in Process	15,350	372,600	485,100	2,753,800	2,753,800	2,753,800	2,753,800	2,753,800	2,753,800	2,753,800	2,753,800
7	**Total Proposed Debt**	-	-	-	-	-	-	-	-	-	-	-
8	Total Debt Service	1,749,460	2,107,835	2,219,210	4,484,535	4,483,785	4,485,409	4,484,285	4,492,460	4,490,785	4,492,986	4,489,060

[1] Assumed 2021 IEPA loan with half principal and interest payment in the first year after issuance and full equal annual payments starting in 2023.
Term reflect 20 year term, 0.63% interest, and $795k principal foregiveness on a $5.67M loan
[2] Assumed 2023 IEPA loan with half principal and interest payment in the first year after issuance and full equal annual payments starting in 2024.
Term reflect 20 year term and 1.30% interest on a $45M loan

As shown on Table 2-11, the City has two outstanding debt series for the sewer utility. The proposed plan includes two State Revolving Fund (SRF) loans that are in process for the East and West sewer treatment plant projects. The terms for these SRF loans in process are detailed in the footnotes [1] and [2] of Table 2-11 above. No additional sewer debt issuance is proposed in the financial plan.

2.3.4 Water Utility Flow of Funds

Detailed cash flow tables were developed individually for the water and sewer utility, and then combined to show the consolidated utility cash flow under the proposed financial plan. Table 2-12 presents the water utility cash flow, Table 2-13 presents the sewer utility cash flow, and Table 2-14 shows the consolidated utility cash flow.

Beginning with the water utility, Line 1 of Table 2-12 shows user revenues under 2022 rates, identified previously in Table 2-4. Note the forecast of revenues on Line 1 reflects 2022 rates.

Lines 2 through 11 present the proposed revenue increases through 2032. The City has a policy of implementing 5 percent annual rate increases. For the water utility, all proposed increases exceed the automatic 5 percent adjustment included in the City's existing water rate ordinance. Proposed increases are 11 percent per year from 2023 through 2030, then falling to 6 percent in 2031 and 2032. These increases are sized to fund future operating and capital costs, sustain reasonable reserves, and provide adequate debt service coverage. All revenue increases are assumed to be effective May 1 of each year indicated. Total user revenues are summarized on Line 13.

All other water revenues are summarized on Line 14 and are estimated to remain at 2022 budgeted levels. Grand total water revenue is summarized on Line 15.

Total water O&M expenses are shown on Lines 16 through 18, shown previously in Table 2-6. The City's outstanding and proposed debt is shown on Lines 19 through 21 and are identified previously in Table 2-10.

Total revenue requirements are summarized on Line 22. This amount is deducted from Line 15, total revenue, to determine the annual operating balance. With the proposed revenue adjustments, the operating balance on Line 23 is positive throughout the forecast.

Lines 24 through 27 project future operating reserves for the water utility. At the beginning of 2022, the combined utility enterprise had approximately $13.6 million in available cash. In consultation with City staff, the water utility's portion of the beginning balance was estimated to be $11.8 million as shown on Line 24. The annual operating balance is added to this amount to reflect cash produced by ongoing operations of the water utility. The utility intends to maintain a minimum operating balance of 90 days (or about 25 percent) of the current fiscal year's budgeted O&M, shown as the target on Line 28. Any balances exceeding this minimum are considered available for use on capital projects and are transferred for that purpose on Line 26.

Table 2-12: Water Utility Financial Plan

Line No.				Projected 2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	Water Utility Operating Flow of Funds													
1	Revenue Under Existing Water Rates			3,818,800	3,873,300	3,928,500	3,984,400	4,042,800	4,101,900	4,161,900	4,222,700	4,284,300	4,345,900	4,409,200
	Proposed Revenue Adjustments													
	Year	Month	Increase											
2	2023	1	11.0%		426,100	432,100	438,300	444,700	451,200	457,800	464,500	471,300	478,000	485,000
3	2024	1	11.0%			479,700	486,500	493,600	500,800	508,200	515,600	523,100	530,600	538,400
4	2025	1	11.0%				540,000	547,900	555,900	564,100	572,300	580,700	589,000	597,600
5	2026	1	11.0%					608,200	617,100	626,100	635,300	644,500	653,800	663,300
6	2027	1	11.0%						685,000	695,000	705,100	715,400	725,700	736,300
7	2028	1	11.0%							771,400	782,700	794,100	805,500	817,300
8	2029	1	11.0%								868,800	881,500	894,100	907,200
9	2030	1	11.0%									978,400	992,500	1,007,000
10	2031	1	6.0%										600,900	609,700
11	2032	1	6.0%											646,300
12	Total Proposed Additional Revenue			-	426,100	911,800	1,464,800	2,094,400	2,810,000	3,622,600	4,544,300	5,589,000	6,270,100	7,008,100
13	Total Water User Charge Revenue			3,818,800	4,299,400	4,840,300	5,449,200	6,137,200	6,911,900	7,784,500	8,767,000	9,873,300	10,616,000	11,417,300
14	Other Water Fund Revenue			36,900	36,900	36,900	36,900	36,900	36,900	36,900	36,900	36,900	36,900	36,900
15	**Grand Total Water Revenue**			**3,855,700**	**4,336,300**	**4,877,200**	**5,486,100**	**6,174,100**	**6,948,800**	**7,821,400**	**8,803,900**	**9,910,200**	**10,652,900**	**11,454,200**
	Revenue Requirements													
16	Existing O&M Expense			2,950,800	2,989,500	2,804,600	2,944,800	2,731,300	2,761,800	2,792,900	2,674,800	2,707,600	2,741,300	2,775,800
17	Incremental O&M - Water Commission			-	-	-	207,600	329,000	1,003,800	1,371,400	1,607,700	4,699,500	5,183,900	5,249,000
18	Total O&M			2,950,800	2,989,500	2,804,600	3,152,400	3,060,300	3,765,600	4,164,300	4,282,500	7,407,100	7,925,200	8,024,800
	Debt Service													
19	Existing Debt			-	-	-	-	-	-	-	-	-	-	-
20	IEPA Proposed Debt			-	-	-	-	-	-	-	1,070,200	1,070,200	1,070,200	1,070,200
21	Total Debt Service			-	-	-	-	-	-	-	1,070,200	1,070,200	1,070,200	1,070,200
22	**Total Revenue Requirements**			**2,950,800**	**2,989,500**	**2,804,600**	**3,152,400**	**3,060,300**	**3,765,600**	**4,164,300**	**5,352,700**	**8,477,300**	**8,995,400**	**9,095,000**
23	**Annual Operating Balance**			**904,900**	**1,346,800**	**2,072,600**	**2,333,700**	**3,113,800**	**3,183,200**	**3,657,100**	**3,451,200**	**1,432,900**	**1,657,500**	**2,359,200**
24	Beginning Balance [1]			11,800,000	727,600	737,100	691,500	777,300	754,600	928,500	1,026,800	1,056,000	1,826,400	1,954,200
25	Annual Operating Balance			904,900	1,346,800	2,072,600	2,333,700	3,113,800	3,183,200	3,657,100	3,451,200	1,432,900	1,657,500	2,359,200
26	Transfers to Capital			(11,977,300)	(1,337,300)	(2,118,200)	(2,247,900)	(3,136,500)	(3,009,300)	(3,558,800)	(3,422,000)	(662,500)	(1,529,700)	(2,334,700)
27	Ending Balance			727,600	737,100	691,500	777,300	754,600	928,500	1,026,800	1,056,000	1,826,400	1,954,200	1,978,700
28	Op. Reserve Target [2]			727,600	737,100	691,500	777,300	754,600	928,500	1,026,800	1,056,000	1,826,400	1,954,200	1,978,700
	Water Utility Capital Flow of Funds													
	Sources													
29	Beginning Capital Balance [1]			-	9,128,800	7,947,800	6,395,600	3,367,100	1,632,200	2,297,600	3,152,400	4,077,800	2,163,300	1,032,800
30	Transfer from Operations			11,977,300	1,337,300	2,118,200	2,247,900	3,136,500	3,009,300	3,558,800	3,422,000	662,500	1,529,700	2,334,700
31	Anticipated Grants			-	-	-	-	-	-	-	-	-	-	-
32	Debt Issuance			-	-	-	-	-	-	22,400,000	-	-	-	-
33	**Total Capital Sources**			**11,977,300**	**10,466,100**	**10,066,000**	**8,643,500**	**6,503,600**	**4,641,500**	**28,256,400**	**6,574,400**	**4,740,300**	**3,693,000**	**3,367,500**
	Uses													
34	Inflated CIP			2,848,500	2,518,300	3,670,400	5,276,400	4,871,400	2,343,900	24,880,000	2,496,600	2,577,000	2,660,200	2,746,300
35	Debt Issuance Expense			-	-	-	-	-	-	224,000	-	-	-	-
36	**Total Capital Uses**			**2,848,500**	**2,518,300**	**3,670,400**	**5,276,400**	**4,871,400**	**2,343,900**	**25,104,000**	**2,496,600**	**2,577,000**	**2,660,200**	**2,746,300**
37	**Annual Capital Balance**			**9,128,800**	**7,947,800**	**6,395,600**	**3,367,100**	**1,632,200**	**2,297,600**	**3,152,400**	**4,077,800**	**2,163,300**	**1,032,800**	**621,200**
38	Total End of Year Cash			9,856,400	8,684,900	7,087,100	4,144,400	2,386,800	3,226,100	4,179,200	5,133,800	3,989,700	2,987,000	2,599,900
39	Debt Service Coverage [3]			-	-	-	-	-	-	-	4.22	2.34	2.55	3.20

[1] Available 2022 cash balances between water and sewer utilties developed in consultation with City staff.
[2] Based on 90 days operation and maintenance expense
[3] Minimum debt service coverage is 1.25: Targeting 1.50

The water capital flow of funds is shown in Table 2-12 on Lines 29 through 37. Sources of funds for the capital plan includes the transfer of available cash from operations and the issuance of debt. As noted previously, one debt issue is proposed for the water utility amounting to $22.4 million in proceeds in 2028. Capital uses of funds include capital expenditures and debt issuance expense.

Water capital improvement projects shown on Line 34 are consistent with those shown previously in Table 2-8.

Line 37 of Table 2-12 shows the annual capital balance. Total water utility cash available, including both the operating reserve and capital fund balances, is shown on Line 38.

Future water debt is assumed to be an Illinois Environmental Protection Agency (IEPA) SRF loan, and although an IEPA SRF loan will likely not include covenants regarding minimum debt service coverage (DSC), as a matter of prudent planning debt service coverage is evaluated and is shown on Line 39. DSC requirements are commonly associated with revenue bonds and generally require net revenues (defined as total utility revenue less O&M) to exceed annual debt service payments by a minimum factor that often ranges from 1.10x to 1.35x. This minimum DSC level provides assurances to bond holders that the utility has the financial wherewithal to meet its annual debt payment and is a measure of the relative health of a utility's cash flow. Municipal bond rating agencies evaluate many criteria regarding the creditworthiness of utility debt. Debt service coverage is one of the primary indicators that is examined, and rating agencies generally reserve their stronger ratings for debt service coverage ratios that exceed 1.5x to 2.0x. As shown on Line 35, the water utility is anticipated to have DSC exceeding 2.0x in each year of the forecast.

2.3.5 Sewer Utility Flow of Funds

Line 1 of Table 2-13 shows user revenues under 2022 rates, identified previously in Table 2-5. As with the water utility, the forecast of sewer revenues on Line 1 reflects 2022 rates.

Lines 2 through 11 present the proposed revenue increases through 2032. The City has a policy of implementing 5 percent annual rate increases. For the sewer utility, only proposed increases for 2023, 2024 and 2025 exceed the automatic 5 percent adjustment included in the City's existing sewer rate ordinance. Proposed increases are 9 percent per year from 2023 through 2025, and are subsequently anticipated to fall to the automatic 5 percent from 2026 through 2032. These increases are sized to fund future operating and capital costs, sustain reasonable reserves, and provide adequate debt service coverage. All revenue increases are assumed to be effective May 1 of each year indicated. Total user revenues are summarized on Line 13.

All other sewer revenues are summarized on Line 14 and are estimated to remain at 2022 budgeted levels. Grand total sewer revenue is summarized on Line 15.

Total sewer O&M expenses are shown on Lines 16, shown previously in Table 2-7. The City's outstanding and proposed debt is shown on Lines 17 through 20 and are identified previously in Table 2-11.

Total revenue requirements are summarized on Line 21. This amount is deducted from Line 15, total revenue, to determine the annual operating balance. With the proposed revenue adjustments, the annual operating balance on Line 22 is positive throughout the forecast.

Lines 23 through 26 project future operating reserves for the sewer utility. For 2022, a beginning balance of approximately $1.80 million was determined to be available for the sewer utility, as shown on Line 23. The annual operating balance is added to this amount to reflect cash produced by ongoing operations of the sewer utility. The utility intends to maintain a minimum operating balance of 90 days (or about 25 percent) of the current fiscal year's budgeted O&M, shown as the target on Line 27. Any balances exceeding this minimum are considered available for use on capital projects and are transferred for that purpose on Line 25.

The sewer capital flow of funds is shown in Table 2-13 on Lines 28 through 36. Sources of funds for the capital plan includes the transfer of available cash from operations and the issuance of debt. As noted previously, two debt issues are in process for the sewer utility related to the East and West treatment plant upgrades. Debt service associated with these issues is shown on Line 18, but the debt proceeds and costs are not included in the capital flow of funds, as the projects are already funded. All other capital improvements for the sewer utility are anticipated to be funded out of cash during the study period.

Line 36 of Table 2-12 shows the annual capital balance. Total water utility cash available, including both the operating reserve and capital fund balances, is shown on Line 37.

Table 2-13: Sewer Utility Financial Plan

Line No.				Projected 2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	Sewer Utility Operating Flow of Funds													
1	Revenue Under Existing Sewer Rates			5,424,000	5,508,300	5,593,900	5,680,900	5,772,200	5,864,900	5,960,000	6,056,600	6,154,700	6,252,900	6,352,500
	Proposed Revenue Adjustments													
	Year	Month	Increase											
2	2023	1	9.00%		495,700	503,500	511,300	519,500	527,800	536,400	545,100	553,900	562,800	571,700
3	2024	1	9.00%			548,800	557,300	566,300	575,300	584,700	594,200	603,800	613,400	623,200
4	2025	1	9.00%				607,500	617,200	627,100	637,300	647,600	658,100	668,600	679,300
5	2026	1	5.00%					373,800	379,800	385,900	392,200	398,500	404,900	411,300
6	2027	1	5.00%						398,700	405,200	411,800	418,500	425,100	431,900
7	2028	1	5.00%							425,500	432,400	439,400	446,400	453,500
8	2029	1	5.00%								454,000	461,300	468,700	476,200
9	2030	1	5.00%									484,400	492,100	500,000
10	2031	1	5.00%										516,700	525,000
11	2032	1	5.00%											551,200
12	Total Proposed Additional Revenue			-	495,700	1,052,300	1,676,100	2,076,800	2,508,700	2,975,000	3,477,300	4,017,900	4,598,700	5,223,300
13	Total Sewer User Charge Revenue			5,424,000	6,004,000	6,646,200	7,357,000	7,849,000	8,373,600	8,935,000	9,533,900	10,172,600	10,851,600	11,575,800
14	Other Sewer Fund Revenue			52,700	52,700	52,700	52,700	52,700	52,700	52,700	52,700	52,700	52,700	52,700
15	**Grand Total Sewer Revenue**			**5,476,700**	**6,056,700**	**6,698,900**	**7,409,700**	**7,901,700**	**8,426,300**	**8,987,700**	**9,586,600**	**10,225,300**	**10,904,300**	**11,628,500**
	Revenue Requirements													
16	Existing O&M Expense			2,726,900	2,814,700	2,868,800	2,924,800	2,982,500	3,030,800	3,080,100	3,130,600	3,182,400	3,235,600	3,290,000
	Debt Service													
17	Existing Debt			1,734,100	1,735,200	1,734,100	1,730,700	1,730,000	1,731,600	1,730,500	1,738,700	1,737,000	1,739,200	1,735,300
18	IEPA Loans In Process			15,400	372,600	485,100	2,753,800	2,753,800	2,753,800	2,753,800	2,753,800	2,753,800	2,753,800	2,753,800
19	Proposed Debt			-	-	-	-	-	-	-	-	-	-	-
20	Total Debt Service			1,749,500	2,107,800	2,219,200	4,484,500	4,483,800	4,485,400	4,484,300	4,492,500	4,490,800	4,493,000	4,489,100
21	**Total Revenue Requirements**			**4,476,400**	**4,922,500**	**5,088,000**	**7,409,300**	**7,466,300**	**7,516,200**	**7,564,400**	**7,623,100**	**7,673,200**	**7,728,600**	**7,779,100**
22	**Annual Operating Balance**			**1,000,300**	**1,134,200**	**1,610,900**	**400**	**435,400**	**910,100**	**1,423,300**	**1,963,500**	**2,552,100**	**3,175,700**	**3,849,400**
23	Beginning Balance [1]			1,800,000	672,400	694,000	721,800	721,200	735,400	747,300	759,500	771,900	784,700	797,800
24	Annual Operating Balance			1,000,300	1,134,200	1,610,900	400	435,400	910,100	1,423,300	1,963,500	2,552,100	3,175,700	3,849,400
25	Transfers to Capital			(2,127,900)	(1,112,600)	(1,583,100)	(1,000)	(421,200)	(898,200)	(1,411,100)	(1,951,100)	(2,539,300)	(3,162,600)	(3,836,000)
26	Ending Balance			672,400	694,000	721,800	721,200	735,400	747,300	759,500	771,900	784,700	797,800	811,200
27	Op. Reserve Target [2]			672,400	694,000	707,400	721,200	735,400	747,300	759,500	771,900	784,700	797,800	811,200
	Sewer Utility Capital Flow of Funds													
	Sources													
28	Beginning Capital Balance [1]			-	1,402,900	1,805,500	2,756,900	2,027,900	1,774,100	2,097,300	2,933,400	4,309,500	6,273,800	8,861,400
29	Transfer from Operations			2,127,900	1,112,600	1,583,100	1,000	421,200	898,200	1,411,100	1,951,100	2,539,300	3,162,600	3,836,000
30	Anticipated Grants			-	-	-	-	-	-	-	-	-	-	-
31	Debt Issuance			-	-	-	-	-	-	-	-	-	-	-
32	**Total Capital Sources**			**2,127,900**	**2,515,500**	**3,388,600**	**2,757,900**	**2,449,100**	**2,672,300**	**3,508,400**	**4,884,500**	**6,848,800**	**9,436,400**	**12,697,400**
	Uses													
33	Inflated CIP			725,000	710,000	631,700	730,000	675,000	575,000	575,000	575,000	575,000	575,000	575,000
34	Debt Issuance Expense			-	-	-	-	-	-	-	-	-	-	-
35	**Total Capital Uses**			**725,000**	**710,000**	**631,700**	**730,000**	**675,000**	**575,000**	**575,000**	**575,000**	**575,000**	**575,000**	**575,000**
36	**Annual Capital Balance**			**1,402,900**	**1,805,500**	**2,756,900**	**2,027,900**	**1,774,100**	**2,097,300**	**2,933,400**	**4,309,500**	**6,273,800**	**8,861,400**	**12,122,400**
37	Total End of Year Cash			2,075,300	2,499,500	3,478,700	2,749,100	2,509,500	2,844,600	3,692,900	5,081,400	7,058,500	9,659,200	12,933,600
38	Debt Service Coverage [3]			1.57	1.54	1.73	1.00	1.10	1.20	1.32	1.44	1.57	1.71	1.86

[1] Available 2022 cash balances between water and sewer utilties developed in consultation with City staff.
[2] Based on 90 days operation and maintenance expense
[3] Minimum debt service coverage is 1.25: Targeting 1.50

As with the water utility, debt service coverage is evaluated for the sewer utility. Anticipated DSC for the sewer utility is shown on Line 38. Sewer DSC slips as the full impact of IEPA treatment plant loan payments are absorbed in 2025 and 2026. However, significant improvement in sewer DSC is projected in the latter half of the study period, and on a consolidated basis DSC is above 1.5x, which is discussed in the next in the consolidated flow of funds.

2.3.6 Consolidated Utility Flow of Funds

A combined water and sewer utility cash flow is presented in Table 2-14. On a consolidated basis, proposed revenue adjustments range from 9.8 percent to 6.1 percent over the study period, as shown on Lines 4 through 13. Ending operating balances meet the 90-day operating reserve in each year. The CIP is fully funded by the available cash and proposed debt issuance.

The City reports the water and sewer utility as a combined enterprise and as such cash reserves and DSC should also be viewed on a combined basis. As shown on Line 41, DSC is projected to achieve 1.5x or greater in all years.

Table 2-14: Combined Water and Sewer Utility Financial Plan

Line No.				Projected									
				2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	Combined Utility Operating Flow of Funds													
1	Revenue Under Existing Water Rates			3,818,800	3,873,300	3,928,500	3,984,400	4,042,800	4,101,900	4,161,900	4,222,700	4,284,300	4,345,900	4,409,200
2	Revenue Under Existing Sewer Rates			5,424,000	5,508,300	5,593,900	5,680,900	5,772,200	5,864,900	5,960,000	6,056,600	6,154,700	6,252,900	6,352,500
3	Total User Charge Revenue			9,242,800	9,381,600	9,522,400	9,665,300	9,815,000	9,966,800	10,121,900	10,279,300	10,439,000	10,598,800	10,761,700
	Proposed Revenue Adjustments													
	Year	Month	Increase											
4	2023	1	9.80%		921,800	935,600	949,600	964,200	979,000	994,200	1,009,600	1,025,200	1,040,800	1,056,700
5	2024	1	9.80%			1,028,500	1,043,800	1,059,900	1,076,100	1,092,900	1,109,800	1,126,900	1,144,000	1,161,600
6	2025	1	9.80%				1,147,500	1,165,100	1,183,000	1,201,400	1,219,900	1,238,800	1,257,600	1,276,900
7	2026	1	7.60%					982,000	996,900	1,012,000	1,027,500	1,043,000	1,058,700	1,074,600
8	2027	1	7.60%						1,083,700	1,100,200	1,116,900	1,133,900	1,150,800	1,168,200
9	2028	1	7.70%							1,196,900	1,215,100	1,233,500	1,251,900	1,270,800
10	2029	1	7.80%								1,322,800	1,342,800	1,362,800	1,383,400
11	2030	1	8.00%									1,462,800	1,484,600	1,507,000
12	2031	1	6.10%										1,117,600	1,134,700
13	2032	1	6.50%											1,197,500
14	Total Proposed Additional Revenue			-	921,800	1,964,100	3,140,900	4,171,200	5,318,700	6,597,600	8,021,600	9,606,900	10,868,800	12,231,400
15	Total User Charge Revenue			9,242,800	10,303,400	11,486,500	12,806,200	13,986,200	15,285,500	16,719,500	18,300,900	20,045,900	21,467,600	22,993,100
16	Other Fund Revenue			89,600	89,600	89,600	89,600	89,600	89,600	89,600	89,600	89,600	89,600	89,600
17	**Grand Total Revenue**			**9,332,400**	**10,393,000**	**11,576,100**	**12,895,800**	**14,075,800**	**15,375,100**	**16,809,100**	**18,390,500**	**20,135,500**	**21,557,200**	**23,082,700**
	Revenue Requirements													
18	Water O&M			2,950,800	2,989,500	2,804,600	3,152,400	3,060,300	3,765,600	4,164,300	4,282,500	7,407,100	7,925,200	8,024,800
19	Sewer O&M			2,726,900	2,814,700	2,868,800	2,924,800	2,982,500	3,030,800	3,080,100	3,130,600	3,182,400	3,235,600	3,290,000
20	Total O&M Expense			5,677,700	5,804,200	5,673,400	6,077,200	6,042,800	6,796,400	7,244,400	7,413,100	10,589,500	11,160,800	11,314,800
	Debt Service													
21	Existing Debt			1,749,500	2,107,800	2,219,200	4,484,500	4,483,800	4,485,400	4,484,300	4,492,500	4,490,800	4,493,000	4,489,100
22	IEPA Proposed Debt			-	-	-	-	-	-	-	1,070,200	1,070,200	1,070,200	1,070,200
23	Total Debt Service			1,749,500	2,107,800	2,219,200	4,484,500	4,483,800	4,485,400	4,484,300	5,562,700	5,561,000	5,563,200	5,559,300
24	**Total Revenue Requirements**			**7,427,200**	**7,912,000**	**7,892,600**	**10,561,700**	**10,526,600**	**11,281,800**	**11,728,700**	**12,975,800**	**16,150,500**	**16,724,000**	**16,874,100**
25	**Annual Operating Balance**			**1,905,200**	**2,481,000**	**3,683,500**	**2,334,100**	**3,549,200**	**4,093,300**	**5,080,400**	**5,414,700**	**3,985,000**	**4,833,200**	**6,208,600**
26	Beginning Balance			13,600,000	1,400,000	1,431,100	1,413,300	1,498,500	1,490,000	1,675,800	1,786,300	1,827,900	2,611,100	2,752,000
27	Annual Operating Balance			1,905,200	2,481,000	3,683,500	2,334,100	3,549,200	4,093,300	5,080,400	5,414,700	3,985,000	4,833,200	6,208,600
28	Transfers to Capital			(14,105,200)	(2,449,900)	(3,701,300)	(2,248,900)	(3,557,700)	(3,907,500)	(4,969,900)	(5,373,100)	(3,201,800)	(4,692,300)	(6,170,700)
29	Ending Balance			1,400,000	1,431,100	1,413,300	1,498,500	1,490,000	1,675,800	1,786,300	1,827,900	2,611,100	2,752,000	2,789,900
30	Op. Reserve Target [1]			1,400,000	1,431,200	1,398,900	1,498,500	1,490,000	1,675,800	1,786,300	1,827,900	2,611,100	2,752,000	2,790,000
	Combined Utility Capital Flow of Funds													
	Sources													
31	Beginning Capital Balance			-	10,531,700	9,753,300	9,152,500	5,395,000	3,406,300	4,394,900	6,085,800	8,387,300	8,437,100	9,894,200
32	Transfer from Operations			14,105,200	2,449,900	3,701,300	2,248,900	3,557,700	3,907,500	4,969,900	5,373,100	3,201,800	4,692,300	6,170,700
33	Anticipated Grants			-	-	-	-	-	-	-	-	-	-	-
34	Debt Issuance			-	-	-	-	-	-	22,400,000	-	-	-	-
35	**Total Capital Sources**			**14,105,200**	**12,981,600**	**13,454,600**	**11,401,400**	**8,952,700**	**7,313,800**	**31,764,800**	**11,458,900**	**11,589,100**	**13,129,400**	**16,064,900**
	Uses													
36	Inflated CIP			3,573,500	3,228,300	4,302,100	6,006,400	5,546,400	2,918,900	25,455,000	3,071,600	3,152,000	3,235,200	3,321,300
37	Debt Issuance Expense			-	-	-	-	-	-	224,000	-	-	-	-
38	**Total Capital Uses**			**3,573,500**	**3,228,300**	**4,302,100**	**6,006,400**	**5,546,400**	**2,918,900**	**25,679,000**	**3,071,600**	**3,152,000**	**3,235,200**	**3,321,300**
39	**Annual Capital Balance**			**10,531,700**	**9,753,300**	**9,152,500**	**5,395,000**	**3,406,300**	**4,394,900**	**6,085,800**	**8,387,300**	**8,437,100**	**9,894,200**	**12,743,600**
40	Total End of Year Cash			11,931,700	11,184,400	10,565,800	6,893,500	4,896,300	6,070,700	7,872,100	10,215,200	11,048,200	12,646,200	15,533,500
41	Debt Service Coverage			2.09	2.18	2.66	1.52	1.79	1.91	2.13	1.97	1.72	1.87	2.12

[1] Based on 90 days operation and maintenance expense
[2] Minimum debt service coverage is 1.25: Targeting 1.50

3.0 COST OF SERVICE ANALYSIS

3.1 Introduction

The cost of service analysis is focused on determining revenue responsibility. Once the overall need for revenue increases is identified through financial planning, the results of the cost of service analysis help answer the following question:

- "Which customer class or classes are responsible for the costs incurred to provide service?"

The cost of service analysis compares the revenues received from each customer class under the existing schedule of rates with the allocated cost responsibility for that class.

The cost of service analysis was developed in the following steps:

1. Determine the net revenue requirements to be recovered from user charges.
2. Allocate test period operating and capital costs.
3. Estimate the system test period units of service.
4. Develop test period unit costs of service by class.
5. Assign the costs of service to customer classes.

To equitably develop rates for water and sewer service, the water and sewer utility's customer classes are allocated their respective share of the total cost of service according to their use of the system. Cost are assigned through consideration of volume, peak water demand characteristics, wastewater strength, customer costs, and other relevant factors. Ultimately, proposed rates must be sufficient to meet the net revenue requirements forecasted for the water and sewer utility.

3.2 Water Cost of Service

3.2.1 Net Revenue Requirements

As described in Section 2.0 of this report, the cash needs of the water utility were projected over a ten-year study period. The test period for the cost of service analysis is 2023, which corresponds to the first year in the study period in which revenue adjustments are proposed. For the water utility, the revenue adjustment amounts to a 11.0 percent increase.

Table 3-1 summarizes the development of the net revenue requirements to be recovered from water rates in the 2023 test year. The net revenue requirements represent the level of costs that must be recovered from water sales under the established water rate schedule and are equal to total operating and capital cost

expenditures less all sources of other revenue. As presented in Table 3-1, the net operating and capital costs can be seen on Line 8. This is 11.0 percent higher than revenues under existing water rates which is consistent with the 2023 revenue increase identified in the recommended water utility financial plan.

Table 3-1: Test Year 2023 Water Net Revenue Requirements

Line No.	Description	Operating Expense $	Capital Cost $	Total $
	Revenue Requirements			
1	Operating Expense	2,989,500	-	2,989,500
2	Debt Service	-	-	-
3	Revenue Capital Financing	-	1,337,300	1,337,300
4	Total	2,989,500	1,337,300	4,326,800
	Revenue Requirements Met from Other Sources			
5	Other Miscellaneous Revenue	36,900	-	36,900
6	Use of / (Deposit to) Reserves	(9,500)	-	(9,500)
7	Total	27,400	-	27,400
8	Cost of Service to be met by User Charges	2,962,100	1,337,300	4,299,400
9	Revenue under Existing Rates			3,873,300
10	Indicated System Revenue Adjustment			11.0%

3.2.2 Cost of Service Methodology

Two alternative water cost allocation methodologies are generally accepted by the American Water Works Association as described in AWWA *Manual M1, Principles of Water Rates, Fees, and Charges*: (1) the Base-Extra Capacity Method, and (2) the Commodity-Demand Method. Both methods are similar in that the average and peak water usage requirements by class are reflected in the allocation process. Although the allocation approach varies slightly in the assignment of costs, both approaches are centered on the recovery of costs related to both average and peak conditions.

For this Study, the Base-Extra Capacity method was followed. Under the Base-Extra Capacity method, costs are assigned to functional components including base, extra capacity, customer costs and fire protection. Base costs vary directly with the volume of water used and reflect the costs associated with serving customers under average load conditions. Base costs tend to include items such as power and chemicals costs.

Extra capacity costs reflect costs incurred to meet the peak demand at both a maximum day and a maximum hour. These costs include operating and capital costs necessary to provide additional capacity beyond average load conditions.

Customer costs are those that generally vary in accordance with the quantity of customers served. Such costs typically include meter reading, billing, customer care, and related support costs.

3.2.3 Functional Cost Assignment

The water utility system includes a variety of facilities that work in concert with one another to meet the average and peak demands of the system. Water systems are designed to meet anticipated peak coincidental demands of the whole system. For every volume-related element within the water system, an average demand is served and therefore a portion of such costs is attributable to the base cost component. Water system elements designed to primarily meet average day demand are assigned 100 percent to the base component. Extra capacity requirements exceeding the base are further distinguished between maximum day and maximum hour demands.

3.2.3.1 Operating Expenses

Operating expenses for the water system are budgeted and actual expenses are recorded to reflect costs associated with water treatment and distribution systems, and administrative costs. These costs were forecasted previously in Table 2-6 of this report. Test year 2023 operating costs are assigned to functional components in Table 3-2.

Water utility operating costs were allocated based on several considerations, including:

- Public works input regarding the functional purpose of certain costs.
- The design basis of the supply infrastructure, which is influenced primarily by average and maximum day service requirements.
- The design basis of the transmission and distribution system, which is influenced primarily by the maximum day and maximum hour service requirements.
- Directly assignable costs such as customer billing.

Table 3-2: Allocation of Test Year 2021 Water Operation and Maintenance Expenses

Line No.	Description	Test Year 2023 Total $	Base $	Maximum Day $	Maximum Hour $	Customer Meters $	Billing $	Public Fire Protection $	
	Water O&M								
1	Salaries	301,400	157,220	72,304	71,876	-	-	-	T&D
2	Clerical Salaries	28,200	14,710	6,765	6,725	-	-	-	T&D
3	Mechanic Salaries	20,000	10,433	4,798	4,769	-	-	-	T&D
4	Seasonal Salaries	23,400	12,206	5,614	5,580	-	-	-	T&D
5	Overtime	20,000	10,433	4,798	4,769	-	-	-	T&D
6	Clerical Overtime	-	-	-	-	-	-	-	T&D
7	Mechanic Overtime	1,000	522	240	238	-	-	-	T&D
8	Utility Repair Overtime	25,000	13,041	5,997	5,962	-	-	-	T&D
9	Insurance Benefit	115,900	60,457	27,804	27,639	-	-	-	T&D
10	FICA	25,500	13,302	6,117	6,081	-	-	-	T&D
11	Medicare	6,000	3,130	1,439	1,431	-	-	-	T&D
12	Unemployment Benefit	900	469	216	215	-	-	-	T&D
13	IMRF Expense	35,700	18,622	8,564	8,514	-	-	-	T&D
14	STP OPEB Expense	-	-	-	-	-	-	-	T&D
15	Contractual Services	42,800	22,326	10,267	10,207	-	-	-	T&D
16	Technology	26,500	13,823	6,357	6,320	-	-	-	T&D
17	Legal Services	10,000	5,216	2,399	2,385	-	-	-	T&D
18	Contractual Lab	13,100	6,833	3,143	3,124	-	-	-	T&D
19	Temporary Help	-	-	-	-	-	-	-	T&D
20	Printing and Publications	2,000	1,043	480	477	-	-	-	T&D
21	Engineering	105,500	55,032	25,309	25,159	-	-	-	T&D
22	Training	4,000	2,086	960	954	-	-	-	T&D
23	Meal Expense	800	417	192	191	-	-	-	T&D
24	Clothing Allowance	3,800	1,982	912	906	-	-	-	T&D
25	Utilities	45,700	45,700	-	-	-	-	-	Base
26	Power Purchase	126,900	12,690	-	114,210	-	-	-	Power
27	Maint. & Repair	22,000	11,476	5,278	5,246	-	-	-	T&D
28	Maintenance - Wells	55,000	24,775	11,394	18,831	-	-	-	Base MD MH
29	Water Storage - Tank	525,200	236,576	108,800	179,824	-	-	-	Base MD MH
30	Equipment Rental	18,800	9,807	4,510	4,483	-	-	-	T&D
31	Materials & Supplies	-	-	-	-	-	-	-	T&D
32	Office Supplies	2,000	1,043	480	477	-	-	-	T&D
33	Safety Equipment	1,800	939	432	429	-	-	-	T&D
34	Motor Fuel & Lubricants	15,000	7,825	3,598	3,577	-	-	-	T&D
35	Lab. Supplies & Equipment	4,000	2,086	960	954	-	-	-	T&D
36	Chemicals	76,800	76,800	-	-	-	-	-	Base
37	Breaks-Materials & Repair	95,000	49,555	22,790	22,655	-	-	-	T&D
38	Valves and Hydrants	40,000	-	-	-	-	-	40,000	Fire Protection
39	Office Equipment	-	-	-	-	-	-	-	T&D
40	Miscellaneous Expenses	2,500	1,304	600	596	-	-	-	T&D
41	Total Water O&M	1,842,200	903,879	353,517	544,804	-	-	40,000	
	Water Admin								
42	BAB Rebate Recievable	-	-	-	-	-	-	-	System General
43	Salaries	90,300	34,169	14,833	18,066	20,979	575	1,678	System General
44	Salaries Clerical	197,500	74,734	32,441	39,514	45,883	1,257	3,671	System General
45	Overtime	4,000	1,515	657	800	929	25	74	System General
46	Clerical Overtime	1,800	682	296	360	418	11	33	System General
47	Insurance Benefit	51,800	19,600	8,509	10,364	12,034	330	963	System General
48	FICA	17,800	6,736	2,924	3,561	4,135	113	331	System General
49	Medicare	4,200	1,589	690	840	976	27	78	System General
50	Unemployment Benefit	600	227	99	120	139	4	11	System General
51	IMRF Expense	25,500	9,649	4,189	5,102	5,924	162	474	System General
52	STP OPEB Expense	-	-	-	-	-	-	-	System General
53	Contractual Services	24,700	9,347	4,057	4,942	5,738	157	459	System General
54	Technology	8,000	3,026	1,314	1,601	1,859	51	149	System General
55	Legal Services	2,500	946	411	500	581	16	46	System General
56	Consulting	21,000	7,946	3,449	4,202	4,879	134	390	System General
57	Temporary Help	-	-	-	-	-	-	-	System General
58	Printing and Publications	9,000	3,406	1,478	1,801	2,091	57	167	System General
59	Postage	13,700	-	-	-	-	13,700	-	Customer
60	Insurance and Bonding	141,200	53,430	23,193	28,250	32,804	899	2,624	System General
61	Engineering	-	-	-	-	-	-	-	System General
62	Training	2,500	946	411	500	581	16	46	System General
63	Utilities	4,300	1,628	706	860	999	27	80	System General
64	Maintenance and Repair	1,500	568	246	300	348	10	28	System General
65	Material & Supplies	-	-	-	-	-	-	-	System General
66	Office Supplies	1,800	682	296	360	418	11	33	System General
67	Meters	500,000	-	-	-	500,000	-	-	Meters
68	Office Equipment	-	-	-	-	-	-	-	System General
69	Depreciation Expense	-	-	-	-	-	-	-	System General
70	Miscellaneous Expense	11,100	4,200	1,823	2,221	2,579	71	206	System General
71	Bank Fees	12,500	4,730	2,053	2,501	2,904	80	232	System General
72	Transfer Out	-	-	-	-	-	-	-	System General
73	Transfer Out - Debt	-	-	-	-	-	-	-	System General
74	Total	1,147,300	239,756	104,075	126,765	647,198	17,733	11,773	
75	Total Water O&M	2,989,500	1,143,635	457,592	671,569	647,198	17,733	51,773	
		100%	38%	15%	22%	22%	1%	2%	
	Less Other Operating Revenue								
76	Miscellaneous Revenue	36,900	14,116	5,648	8,289	7,988	219	639	
77	Use of / (Deposit to) Reserves	(9,500)	(3,634)	(1,454)	(2,134)	(2,057)	(56)	(165)	
78	Total	27,400	10,482	4,194	6,155	5,932	163	475	
79	Net Water O&M Expense	2,962,100	1,133,153	453,398	665,414	641,266	17,570	51,298	

3.2.3.2 Capital Costs

For Test Year 2023 the cash capital costs for the water utility are limited to pay-as-you-go (or revenue-financed) capital projects. Revenue financed capital is allocated on the basis of future (five-year) CIP, which is anticipated to be funded by available cash. Capital costs are allocated based on the type of project and its functional purpose, taking into consideration the cost-causative design associated with these projects.

Table 3-3: Allocation of Test Year 2023 Water Capital Costs

Line No.	Description	Five Year Total	Common to All Customers: Base	Maximum Day	Maximum Hour	Customer Meters	Billing	Public Fire Protection	Allocation Basis
		$	$	$	$	$	$	$	
	Future Plant								
1	Backhoe	36,667	25,067	11,600	-	-	-	-	Base MD
2	Equipment Replacement	1,000,000	685,000	315,000	-	-	-	-	Base MD
3	Iron Filters	200,000	137,000	63,000	-	-	-	-	Base MD
4	Water System Purification	125,000	85,600	39,400	-	-	-	-	Base MD
5	Operations	600,000	411,000	189,000	-	-	-	-	Base MD
6	Water Main Upgrade	4,200,000	2,190,800	1,007,600	1,001,600	-	-	-	T&D
7	Water Main Lining	9,679,900	5,049,300	2,322,200	2,308,400	-	-	-	T&D
8	Hillcrest Center	2,500,000	1,304,100	599,700	596,200	-	-	-	T&D
9	Capital Purchases	40,000	27,400	12,600	-	-	-	-	Base MD
10	Total	19,184,985	10,277,185	4,726,500	4,181,300	-	-	-	
11	Future Plant Allocation	100%	54%	25%	22%	0%	0%	0%	

		Test Year 2023	Common to All Customers: Base	Maximum Day	Maximum Hour	Customer Meters	Billing	Public Fire Protection	Allocation Basis
		$	$	$	$	$	$	$	
12	Revenue Financed Capital [1]	1,337,300	716,300	329,500	291,500	-	-	-	Future Plant
13	Net Water Capital Expense	1,337,300	716,300	329,500	291,500	-	-	-	

[1] Allocated on the basis of future plan on Row 11.

3.2.4 Units of Service

Functional costs responsibility of each customer class may be established based on the respective service requirements of each class. These service requirements are referred to as units of service and are summarized in Table 3-4.

Base cost responsibility is determined by the water volume used under average day conditions. Average day quantities reflect historical and forecasted demand. Extra capacity costs are assigned to classes based on the estimate of individual class peak demand characteristics and the relationship of these peaks to average use. The estimated capacity factors were developed based on an examination of peak to average demand available from the water utility's billing data, experience with the City's system, and judgment.

Table 3-4: Water Units of Service

Line No.	Description	Total Annual Usage CCF	Average Day CCF/ day	Maximum Day Capacity Factor %	Maximum Day Total Capacity CCF/ day	Maximum Day Extra Capacity (a) CCF/ day	Maximum Hour Capacity Factor %	Maximum Hour Total Capacity CCF/ day	Maximum Hour Extra Capacity (b) CCF/ day	Customers Equivalent Meters	Customers Billed Units
1	APARTMENT	76,770	210	225%	473	263	350%	736	526	272	1,002
2	COMMERCIAL - Sprinkler	1,760	5	250%	12	7	400%	19	14	9	6
3	COMMERCIAL	85,400	234	200%	468	234	325%	760	526	742	3,222
4	GOVERNMENT	10,920	30	200%	60	30	325%	97	67	21	42
5	GOVERNMENTWater - Stateville	247,210	677	225%	1,524	847	350%	2,371	1,693	21	12
6	INSTITUTIONAL - Sprinkler	5,820	16	250%	40	24	400%	64	48	15	3
7	INSTITUTIONAL	4,040	11	200%	22	11	325%	36	25	68	126
8	RESIDENTIAL - Sprinkler	2,160	6	250%	15	9	400%	24	18	51	50
9	RESIDENTIAL	363,620	996	225%	2,242	1,245	350%	3,487	2,491	6,033	35,844
10	SPIGOT	30	0	225%	0	0	350%	0	0	35	210
11	Public Fire Protection	-	-		630	630		5,040	4,410	-	-
12	Total	797,730	2,186		5,485	3,300		12,634	9,819	7,267	40,517

Projected customers for Test Year 2023 are the basis for the customer-related units of service. Equivalent meter ratios documented in the AWWA M1 manual reflect the relationship of the costs to install and maintain various sized meters to a standard 5/8-inch. These ratios are used to estimate 5/8-inch equivalents for each customer class. Billing costs are allocated to classes based on the projected number of billed units.

3.2.5 Unit Cost Development

Based on the functionalized operation and maintenance expenses and capital costs shown in Tables 3-2 and 3-3, respectively, and the units of service developed in Table 3-4, unit costs of service for each functional cost component may be determined. Table 3-5 shows the unit of measure and applicable unit cost for each functional component.

Table 3-5: Water Unit Cost Development

Line No.	Description	Test Year 2023 Total	Base CCF	Maximum Day CCF/day	Maximum Hour CCF/day	Customer Meters Equivalent Meters	Billing Bills	Fire Protection
1	Total Units of Service		797,730	3,300	9,819	7,267	40,517	1
2	Net Operating Expense - $	2,962,100	1,133,153	453,398	665,414	641,266	17,570	51,298
3	Unit Cost - $/Unit		1.4205	137.4001	67.7705	88.2472	0.4337	-
4	Net Capital Costs - $	1,337,300	716,300	329,500	291,500	-	-	-
5	Unit Cost - $/Unit		0.8979	99.8534	29.6884	-	-	-
6	Total Cost of Service	4,299,400	1,849,453	782,898	956,914	641,266	17,570	51,298
7	Unit Cost - $/Unit		2.3184	237.2534	97.4589	88.2472	0.4337	-

3.2.6 Allocation of Costs to Customer Classes

Applying the unit costs by function to units of service by class allows for the distribution of costs to customer classes, as shown in Table 3-6. Units of service for each class are as developed previously in Table 3-5. By applying the unit cost for each function against the level of service provided to each customer class, the total cost of service by customer class may be determined.

After Test Year 2023 costs are assigned to customer classes, they may be compared against revenue under existing rates. This comparison provides an indication of equity in the recovery of costs through revenues under existing 2022 rates. As shown in Table 3-7, the total system adjustment is indicated to be 11.0 percent, with impacts varying at the customer class level.

Table 3-6: Water Cost Allocation to Customer Classes

Line No.	Description	Test Year 2023 Total	Base	Maximum Day	Maximum Hour	Meters	Billing	Fire Protection
1	Unit Cost of Service - $/Unit		$ 2.318	$ 237.253	$ 97.459	$ 88.247	$ 0.434	$ 51,298.479
	APARTMENT							
2	Units of Service		76,770	263	526	272	1,002	-
3	Allocated Cost - $	316,100	178,000	62,400	51,300	24,000	400	-
	COMMERCIAL - Sprinkler							
4	Units of Service		1,760	7	14	9	6	-
5	Allocated Cost - $	8,000	4,100	1,700	1,400	800	-	-
	COMMERCIAL							
6	Units of Service		85,400	234	526	742	3,222	-
7	Allocated Cost - $	371,700	198,000	55,500	51,300	65,500	1,400	-
	GOVERNMENT							
8	Units of Service		10,920	30	67	21	42	-
9	Allocated Cost - $	40,800	25,300	7,100	6,600	1,800	-	-
	GOVERNMENTWater - Stateville							
10	Units of Service		247,210	847	1,693	21	12	-
11	Allocated Cost - $	940,900	573,100	200,900	165,000	1,900	-	-
	INSTITUTIONAL - Sprinkler							
12	Units of Service		5,820	24	48	15	3	-
13	Allocated Cost - $	25,300	13,500	5,700	4,700	1,400	-	-
	INSTITUTIONAL							
14	Units of Service		4,040	11	25	68	126	-
15	Allocated Cost - $	20,500	9,400	2,600	2,400	6,000	100	-
	RESIDENTIAL - Sprinkler							
16	Units of Service		2,160	9	18	51	50	-
17	Allocated Cost - $	13,300	5,000	2,100	1,700	4,500	-	-
	RESIDENTIAL							
18	Units of Service		363,620	1,245	2,491	6,033	35,844	-
19	Allocated Cost - $	1,929,000	843,000	295,400	242,700	532,400	15,500	-
	SPIGOT							
20	Units of Service		30	0	0	35	210	-
21	Allocated Cost - $	3,300	100	-	-	3,100	100	-
	Public Fire Protection							
22	Units of Service		-	630	4,410	-	-	1
23	Allocated Cost - $	630,600	-	149,500	429,800	-	-	51,300
24	Total Units of Service		797,730	3,300	9,819	7,267	40,517	1
25	Total Cost of Service	4,299,500	1,849,500	782,900	956,900	641,400	17,500	51,300

Table 3-7: Comparison of Revenue Under Existing Rates to Allocated Cost of Service

Line No.	Rate Class Code	Description	Revenue Under Existing Rates $	Total Allocated Cost of Service $	Indicated Increase / (Decrease) $	Indicated Increase / (Decrease) %
	Rate Code					
1	1001	Retail	2,711,922	3,106,900	394,978	14.6%
2	1011	Stateville	1,116,178	1,137,600	21,422	1.9%
3	1501	Sprinkler	45,215	54,900	9,685	21.4%
4		Total	3,873,315	4,299,400	426,085	11.0%

It is important to note that cost of service results are instructive but for many reasons should not be interpreted as prescriptive in the development of proposed rates. Section 4.0 will discuss proposed rates for the water utility.

3.3 Sewer Cost of Service

3.3.1 Net Revenue Requirements

As described in Section 2.0 of this report, the cash needs of the sewer utility were projected over a seven-year study period. The test period for the cost of service analysis is 2023, which corresponds to the first year for which revenue adjustments are proposed. For the sewer utility, the revenue adjustment amounts to a 9.0 percent increase.

Table 3-8 summarizes the development of the net revenue requirements to be recovered from sewer rates in the 2023 test year. The net revenue requirements represent the level of costs that must be recovered from sewer rates and are equal to total operating and capital cost expenditures less all sources of other revenue. The net operating and net capital costs are shown on Line 8 of Table 3-8. This is 9.0 percent higher than revenues under existing sewer rates, consistent with the 2023 revenue increase identified in the recommended sewer utility financial plan.

Table 3-8: Test Year 2023 Sewer Net Revenue Requirements

Line No.	Description	Operating Expense $	Capital Cost $	Total $
	Revenue Requirements			
1	Operating Expense	2,814,700	-	2,814,700
2	Debt Service	-	2,107,800	2,107,800
3	Revenue Capital Financing	-	1,112,600	1,112,600
4	Total	2,814,700	3,220,400	6,035,100
	Revenue Requirements Met from Other Sources			
5	Other Miscellaneous Revenue	52,700	-	52,700
6	Use of / (Deposit to) Reserves	(21,600)	-	(21,600)
7	Total	31,100	-	31,100
8	Cost of Service to be met by User Charges	2,783,600	3,220,400	6,004,000
9	Revenue under Existing Rates			5,508,300
10	Indicated System Revenue Adjustment			9.00%

.

3.3.2 Cost of Service Methodology

According to the WEF publication *Financing and Charges for Wastewater Systems*, three cost allocation methodologies are generally used in the identification and allocation of wastewater utility costs. They are:

- Design-Basis Cost Allocation Methodology, whereby costs are allocated to functions based on engineering design considerations that influence the size and purpose of facilities.
- Functional Cost Allocation Methodology, whereby costs are allocated to functions based on the operational purpose of facilities rather than engineering design.
- Hybrid Approach, where in general capital costs are allocated on the design basis while operating costs are allocated on the functional basis.

For this analysis, the functional cost allocation basis was followed, which aligns well with the current sewer cost structure and services related to its collection and treatment systems.

3.3.3 Functional Cost Assignment

The sewer utility system includes a variety of facilities that work in concert with one another to meet necessary service requirements. For the City, sewer system expenses include wastewater collection,

treatment, and and administrative costs which can be attributed on the functional cost recovery basis of volume, treatment plant, customer, and general system.

Volume costs are those which vary directly with the quantity of wastewater contributed. Treatment plant includes the strength of wastewater as measured in biochemical oxygen demand (BOD) and suspended solids (SS). Customer costs are those that generally vary in accordance with the quantity of customers served. Such costs may include a portion of billing, customer care, and related support costs. General system are all other costs incurred by the utility which are spread on the basis of all other direct costs.

3.3.3.1 Operating Expenses

Operating expenses for the sewer system were forecasted previously in Table 2-7 of this report. Test year 2023 operating costs are assigned to functional components in Table 3-9.

In general operation and maintenance costs were allocated based on several considerations, including:

- The cost causative or functional nature of the underlying expense.
- Directly assignable costs such as customer costs.
- Public works input regarding the functional purpose of certain costs.

Table 3-9: Allocation of Test Year 2023 Sewer Operation and Maintenance Expenses

Line No.	Description	Test Year 2023 Total	Volume	BOD	Suspended Solids	Customer	Allocation Basis
		$	$	$	$	$	
	Sewer O&M						
1	Salaries	333,500	333,500	-	-	-	Volume
2	Salaries Clerical	16,300	16,300	-	-	-	Volume
3	Salaries Mechanical	20,000	20,000	-	-	-	Volume
4	Seasonal	23,400	23,400	-	-	-	Volume
5	Overtime	21,200	21,200	-	-	-	Volume
6	Mechanic Overtime	1,000	1,000	-	-	-	Volume
7	Utility Repair Overtime	10,000	10,000	-	-	-	Volume
8	Insurance Benefit	109,400	109,400	-	-	-	Volume
9	FICA	25,800	25,800	-	-	-	Volume
10	Medicare	6,000	6,000	-	-	-	Volume
11	Unemployment Benefit	900	900	-	-	-	Volume
12	IMRF Expense	36,700	36,700	-	-	-	Volume
13	STP OPEB Expense	-	-	-	-	-	Volume
14	Contractual Services	32,300	32,300	-	-	-	Volume
15	Technology	21,300	21,300	-	-	-	Volume
16	Legal Services	7,500	7,500	-	-	-	Volume
17	Temporary Help	-	-	-	-	-	Volume
18	Engineering	92,000	92,000	-	-	-	Volume
19	Training	3,500	3,500	-	-	-	Volume
20	Meal Expense	500	500	-	-	-	Volume
21	Clothing Allowance	3,800	3,800	-	-	-	Volume
22	Utilities	12,200	12,200	-	-	-	Volume
23	Power Purchase	3,200	3,200	-	-	-	Volume
24	Maintenance - Lift Station	2,500	2,500	-	-	-	Volume
25	Material & Supplies	-	-	-	-	-	Volume
26	Office Supplies	1,200	1,200	-	-	-	Volume
27	Safety Equipment	1,500	1,500	-	-	-	Volume
28	Motor Fuel & Lubricants	15,000	15,000	-	-	-	Volume
29	Lab. Supplies & Equipment	800	800	-	-	-	Volume
30	Chemicals	500	500	-	-	-	Volume
31	Breaks-Materils & Repair	2,000	2,000	-	-	-	Volume
32	Office Equipment	-	-	-	-	-	Volume
33	Miscellaneous Expenses	3,300	3,300	-	-	-	Volume
34	Total Sewer O&M	807,300	807,300	-	-	-	
	STP O&M						
35	Salaries	307,500	153,700	76,900	76,900	-	WWTP
36	Salaries Clerical	16,300	8,100	4,100	4,100	-	WWTP
37	Salaries Mechanical	20,000	10,000	5,000	5,000	-	WWTP
38	Seasonal Salaries	23,400	11,600	5,900	5,900	-	WWTP
39	Overtime	32,800	16,400	8,200	8,200	-	WWTP
40	Clerical Overtime	-	-	-	-	-	WWTP
41	Mechanic Overtime	1,000	400	300	300	-	WWTP
42	Insurance Benefit	103,900	51,900	26,000	26,000	-	WWTP
43	FICA	24,300	12,100	6,100	6,100	-	WWTP
44	Medicare	5,700	2,900	1,400	1,400	-	WWTP
45	Unemployment Benefit	800	400	200	200	-	WWTP
46	IMRF Expense	34,500	17,300	8,600	8,600	-	WWTP
47	STP OPEB Expense	-	-	-	-	-	WWTP
48	Contractual Services	14,100	7,100	3,500	3,500	-	WWTP
49	Technology	48,400	24,200	12,100	12,100	-	WWTP
50	Legal Services	5,000	2,400	1,300	1,300	-	WWTP
51	Contractual Lab	27,800	13,800	7,000	7,000	-	WWTP
52	Temporary Help	-	-	-	-	-	WWTP
53	Annual NPDES Permit	33,500	16,700	8,400	8,400	-	WWTP
54	Printing & Publications	-	-	-	-	-	WWTP
55	Engineering	23,000	11,400	5,800	5,800	-	WWTP
56	Training	4,200	2,000	1,100	1,100	-	WWTP
57	Meal Expense	1,000	400	300	300	-	WWTP
58	Clothing Allowance	3,800	1,800	1,000	1,000	-	WWTP
59	Utilities	32,700	16,300	8,200	8,200	-	WWTP
60	Power Purchase	182,700	91,300	91,400	-	-	Power
61	Maint. & Repair	22,000	11,000	5,500	5,500	-	WWTP
62	Maint. & Repair West Plant	70,000	35,000	17,500	17,500	-	WWTP
63	Maint. & Repair East Plant	70,000	35,000	17,500	17,500	-	WWTP
64	Waste Removal	175,000	-	95,400	79,600	-	Strength
65	Intergovernmental Groups	18,200	9,000	4,600	4,600	-	WWTP
66	Material & Supplies	-	-	-	-	-	WWTP
67	Office Supplies	2,000	1,000	500	500	-	WWTP
68	Safety Equipment	2,000	1,000	500	500	-	WWTP
69	Motor Fuel & Lubricants	15,000	7,400	3,800	3,800	-	WWTP
70	Lab. Supplies & Equipment	11,000	5,400	2,800	2,800	-	WWTP
71	Chemicals	25,300	-	13,800	11,500	-	Strength
72	Office Equipment	400	200	100	100	-	WWTP
73	Miscellaneous Expenses	2,800	1,400	700	700	-	WWTP
74	Total STP O&M	1,360,100	578,600	445,500	336,000	-	

Line No.	Description	Test Year 2023 Total $	Volume $	BOD $	Suspended Solids $	Customer $	Allocation Basis
	Admin Sewer						
75	BAB Rebate Recievable	-	-	-	-	-	System General
76	Salaries	90,300	57,400	18,400	13,900	600	System General
77	Salaries Clerical	197,500	125,600	40,300	30,400	1,200	System General
78	Overtime	4,000	2,600	800	600	-	System General
79	Clerical Overtime	1,800	1,100	400	300	-	System General
80	Insurance Benefit	51,800	32,900	10,600	8,000	300	System General
81	FICA	17,800	11,400	3,600	2,700	100	System General
82	Medicare	4,200	2,700	900	600	-	System General
83	Unemployment Benefit	600	400	100	100	-	System General
84	IMRF Expense	25,500	16,200	5,200	3,900	200	System General
85	STP OPEB Expense	-	-	-	-	-	System General
86	Contractual Services	24,700	15,700	5,000	3,800	200	System General
87	Technology	8,000	5,100	1,600	1,200	100	System General
88	Legal Services	2,500	1,600	500	400	-	System General
89	Consulting	21,000	13,400	4,300	3,200	100	System General
90	Temporary Help	-	-	-	-	-	System General
91	Printing and Publications	9,000	5,700	1,800	1,400	100	System General
92	Postage	13,700	-	-	-	13,700	Customer
93	Insurance and Bonding	141,200	89,700	28,800	21,800	900	System General
94	Engineering	-	-	-	-	-	System General
95	Training	2,500	1,600	500	400	-	System General
96	Utilities	4,300	2,700	900	700	-	System General
97	Maintenance and Repair	1,500	1,000	300	200	-	System General
98	Material & Supplies	-	-	-	-	-	System General
99	Office Supplies	1,800	1,100	400	300	-	System General
100	Meters	-	-	-	-	-	System General
101	Office Equipment	-	-	-	-	-	System General
102	Depreciation Expense	-	-	-	-	-	System General
103	Miscellaneous Expense	11,100	7,000	2,300	1,700	100	System General
104	Bank Fees	12,500	7,900	2,600	1,900	100	System General
105	Transfer Out	-	-	-	-	-	System General
106	Transfer Out - Debt	-	-	-	-	-	System General
107	Total	647,300	402,800	129,300	97,500	17,700	
108	Total Wastewater O&M	2,814,700	1,788,700	574,800	433,500	17,700	
		100%	64%	20%	15%	1%	
109	Less Other Operating Revenue						
110	Miscellaneous Revenue	52,700	33,500	10,800	8,100	300	
111	Use of / (Deposit to) Reserves	(21,600)	(13,700)	(4,400)	(3,300)	(100)	
112	Total	31,100	19,800	6,400	4,800	200	
113	Net Wastewater O&M Expense	2,783,600	1,768,900	568,400	428,700	17,500	

3.3.3.2 Capital Costs

Cash capital costs for the sewer utility include pay-as-you-go (or revenue-financed) capital projects and payment on existing and proposed debt. As shown in Table 3-10, Test Year 2023 capital costs include both revenue-financed capital and a payment on existing and proposed debt. These costs are assigned to functional components in Table 3-10. The allocation of existing and proposed debt is based on the functional purpose of the projects funded by the debt. Revenue-financed capital costs are allocated based on the type of project and its functional purpose in the 5-year CIP, taking into consideration the cost-causative design associated with these projects.

Table 3-10: Allocation of Test Year 2023 Sewer Capital Costs

Line No.	Description	Five Year Total	Volume	BOD	Suspended Solids	Customer	Allocation Basis
		$	$	$	$	$	
	Future Plant						
1	Portable Sewage Pumps	150,000	150,000	-	-	-	Volume
2	Backhoe	36,667	36,667	-	-	-	System General
3	Plum Street Lift Station Rehab	70,000	70,000	-	-	-	Volume
4	Pump Capital Report	65,000	65,000	-	-	-	System General
5	Plum Lift Station-Design	20,000	20,000	-	-	-	Volume
6	Plum Lift Station Construction	120,000	120,000	-	-	-	Volume
7	Buckner Lift Station-Design	35,000	35,000	-	-	-	Volume
8	Buckner Lift Station Construction	100,000	100,000	-	-	-	Volume
9	Sanitary System Maintenance	2,500,000	2,500,000	-	-	-	System General
10	Capital Purchases - Sewer	375,000	375,000	-	-	-	System General
11	Total	3,471,667	3,471,667	-	-	-	
12	Future Plant Allocation		100%	0%	0%	0%	

		Test Year 2023 Total	Volume	BOD	Suspended Solids	Customer	Allocation Basis
		$	$	$	$	$	
	Existing Debt						
13	2019A [1]	1,505,100	752,500	376,300	376,300	-	WWTP
14	IEPA 2011 [2]	230,100	230,100	-	-	-	Volume
15	IEPA Loans In Process [1]	372,600	186,200	93,200	93,200	-	WWTP
16	Revenue Financed Capital [3]	1,112,600	1,112,600	-	-	-	Future Plant
17	Net Sewer Capital Expense	3,220,400	2,281,400	469,500	469,500	-	

[1] Debt supported treatment plant improvements
[2] Debt supported sewer line improvements
[3] Allocated using the "Future Plant" allocation determined by future CIP

3.3.4 Units of Service

Functional costs responsibility of each customer class may be established based on the respective service requirements of each class. These service requirements are referred to as units of service and are summarized in Table 3-11.

Billable flow or volume is that portion of each customer's annual water use discharged directly into the sewer system. Billable flow is based upon utility billing records. An additional consideration for system-wide treatment costs is Infiltration/ Inflow (I/I) which is the amount of flow treated at the plant beyond billable volume. This wastewater is related to wet weather events, where additional volume enters the system via leaks, cracks, direct downspout connections and other means, and is ultimately treated at the wastewater treatment plant. Billing costs are allocated to classes based on the projected number of billed units.

Table 3-11: Sewer Units of Service

Line No.	Description	Billable Flow	Infiltration/Inflow Volume	Infiltration/Inflow Customer	Treated Flow	Strength BOD	Strength SS	Meters	Billed Units
		CCF	75%	25%	CCF	lbs	lbs.		
1	APARTMENT	76,800	44,678	4,023	125,501	96,236	87,062	164	984
2	COMMERCIAL	83,670	48,675	11,848	144,193	192,138	149,379	483	2,898
3	COMMERCIAL - UNMETERED	1,386	806	196	2,388	3,182	2,474	8	48
4	GOVERNMENT	5,380	3,130	123	8,633	12,255	9,406	5	30
5	GOVERNMENT - METERED	307,640	178,970	49	486,659	699,673	535,665	1	12
6	INSTITUTIONAL	4,040	2,350	442	6,832	9,257	7,172	18	108
7	RESIDENTIAL	362,830	211,077	146,103	720,010	474,476	450,959	5,956	35,736
8	RESIDENTIAL - UNMETERED	2,132	1,240	859	4,231	2,788	2,650	35	210
9	Units of Service	843,878	490,926	163,643	1,498,447	1,490,006	1,244,767	6,670	40,026

3.3.5 Unit Cost Development

Based on the functionalized operation and maintenance expenses and capital costs shown in Tables 3-9 and 3-10, respectively, and the units of service developed in Table 3-11, unit costs of service for each functional cost component may be determined. Table 3-12 shows the unit of measure and applicable unit cost for each functional component.

Table 3-12: Sewer Unit Cost Development

Line No.	Description	Test Year 2023 Total	Volume	BOD	Suspended Solids	Customer
1	Total Units of Service		1,498,447	1,490,006	1,244,767	40,026
2	Unit of Measure		Treated CCF	Lbs	Lbs	Bills
3	Net Operating Expense - $	2,783,500	1,768,900	568,400	428,700	17,500
4	Unit Cost - $/Unit		1.1805	0.3815	0.3444	0.4372
5	Net Capital Costs - $	3,220,400	2,281,400	469,500	469,500	-
6	Unit Cost - $/Unit		1.5225	0.3151	0.3772	-
7	Total Cost of Service	6,003,900	4,050,300	1,037,900	898,200	17,500
8	Unit Cost - $/Unit		2.7030	0.6966	0.7216	0.4372

3.3.6 Allocation of Costs to Customer Classes

Applying the unit costs by function to units of service by class allows for the distribution of costs to customer classes, as shown in Table 3-13. Units of service for each class are as developed previously in Table 3-11. By applying the unit cost for each function against the level of service provided to each customer class, the total cost of service by customer class may be determined.

After Test Year 2023 costs are assigned to customer classes, they may be compared against revenue under existing rates. This comparison provides an indication of equity in the recovery of costs through revenues under existing 2022 rates. As shown in Table 3-14, the total system adjustment is indicated to be 9.0 percent overall, with impacts varying at the customer class level.

Table 3-13: Sewer Cost Allocation to Customer Classes

Line No.	Description	Test Year 2023 Total	Common to All Customers			
			Volume	BOD	Suspended Solids	Meter Reading
1	Unit Cost of Service - $/Unit		$ 2.703	$ 0.697	$ 0.722	$ 0.437
	APARTMENT					
2	Units of Service		125,501	96,236	87,062	984
3	Allocated Cost - $	469,520	339,230	67,040	62,820	430
	COMMERCIAL					
4	Units of Service		144,193	192,138	149,379	2,898
5	Allocated Cost - $	632,650	389,750	133,840	107,790	1,270
	COMMERCIAL - UNMETERED					
6	Units of Service		2,388	3,182	2,474	48
7	Allocated Cost - $	10,480	6,450	2,220	1,790	20
	GOVERNMENT					
8	Units of Service		8,633	12,255	9,406	30
9	Allocated Cost - $	38,670	23,330	8,540	6,790	10
	GOVERNMENT - METERED					
10	Units of Service		486,659	699,673	535,665	12
11	Allocated Cost - $	2,189,380	1,315,440	487,390	386,540	10
	INSTITUTIONAL					
12	Units of Service		6,832	9,257	7,172	108
13	Allocated Cost - $	30,150	18,470	6,450	5,180	50
	RESIDENTIAL					
14	Units of Service		720,010	474,476	450,959	35,736
15	Allocated Cost - $	2,617,740	1,946,190	330,520	325,410	15,620
	RESIDENTIAL - UNMETERED					
16	Units of Service		4,231	2,788	2,650	210
17	Allocated Cost - $	15,380	11,440	1,940	1,910	90
18	Total Units of Service		1,498,447	1,490,006	1,244,767	40,026
19	Total Cost of Service	6,003,970	4,050,300	1,037,940	898,230	17,500

Table 3-14: Comparison of Revenue Under Existing Rates to Allocated Cost of Service

Line No.	Rate Class Code	Description	Revenue Under Existing Rates $	Total Allocated Cost of Service $	Indicated Increase / (Decrease) $	Indicated Increase / (Decrease) %
	Rate Code					
1	3001	Retail	3,005,247	3,788,730	783,483	26.07%
2	3011	Stateville	2,483,975	2,189,380	(294,595)	-11.86%
3	3501	Residential - Unmetered	13,875	15,380	1,505	10.85%
4	3502	Commercial - Unmetered	5,239	10,480	5,241	100.03%
5		Total	5,508,336	6,003,970	495,634	9.00%

Similar to the water utility, it is important to note that cost of service results are instructive but for many reasons should not be interpreted as prescriptive in the development of proposed rates. Section 4.0 will discuss proposed rates for the sewer utility.

4.0 PROPOSED RATES

4.1 Introduction

The primary focus of Step 3, Rate Design, is the examination of revenue recovery. Generally speaking, the objective is to design rates for each utility to progress toward the following goals:

- Generate adequate revenues to meet the projected operating and capital costs, while maintaining sound financial performance.
- Provide revenue stability.

4.2 Existing Water and Sewer Rates

The existing 2022 water and sewer rate schedule is shown in Table 4-1. The water rate consists of a base charge per bi-monthly bill that includes the first 400 cubic feet of usage and a volumetric charge per CCF of usage above the first 400 cubic feet. Similarly, the sewer rate also consists of a base charge per bi-monthly bill that includes the first 400 cubic feet of usage and a volumetric charge per CCF of usage above the first 400 cubic feet.

Table 4-1: Existing Water and Sewer Rates

Line No.	Rate Code	Description	Existing 2022
		Water Rates	
	1001 & 1501	Residential & Sprinkler	
1		Base Charge (1st 400 cubic Ft.)	22.97
2		Each Additional Hundred Cubic Ft.	4.52
	1011	Stateville - Water	
3		Base Charge (1st 400 cubic Ft.)	11.49
4		Each Additional Hundred Cubic Ft.	4.52
		Sewer Rates	
	3001	Residential	
5		Base Charge (1st 400 cubic Ft.)	22.97
6		Each Additional Hundred Cubic Ft.	5.39
	3011	Stateville - Sewer	
7		Base Charge (1st 400 cubic Ft.)	11.49
8		Each Additional Hundred Cubic Ft.	8.07
	3501	Residential - Unmetered	
9		Base Charge	66.07
	3502	Commercial - Unmetered	
10		Base Charge	109.15

4.3 Proposed Water and Sewer Rates

Table 4-2 shows existing and proposed water and sewer rates. Water and sewer rates for 2023 through 2032 are anticipated to maintain the existing rate structure and increase in accordance with water and sewer rate increases shown previously in Table 2-12 and Table 2-13, respectively.

Table 4-2: Existing and Proposed Water and Sewer Rates

Line No.	Rate Code	Description	Existing 2022	Proposed 2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
		Water Rates											
1		Proposed Annual Water Rate Increases		11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	6.00%	6.00%
	1001 & 1501	Residential & Sprinkler											
2		Base Charge (1st 400 cubic Ft.)	$ 22.97	$ 25.50	$ 28.30	$ 31.41	$ 34.87	$ 38.71	$ 42.96	$ 47.69	$ 52.94	$ 56.11	$ 59.48
3		Each Additional Hundred Cubic Ft.	4.52	$ 5.02	$ 5.57	$ 6.18	$ 6.86	$ 7.62	$ 8.45	$ 9.38	$ 10.42	$ 11.04	$ 11.70
	1011	Stateville - Water											
4		Base Charge (1st 400 cubic Ft.)	$ 11.49	$ 12.75	$ 14.16	$ 15.71	$ 17.44	$ 19.36	$ 21.49	$ 23.86	$ 26.48	$ 28.07	$ 29.75
5		Each Additional Hundred Cubic Ft.	4.52	$ 5.02	$ 5.57	$ 6.18	$ 6.86	$ 7.62	$ 8.45	$ 9.38	$ 10.42	$ 11.04	$ 11.70
		Sewer Rates											
6		Proposed Annual Sewer Rate Increases		9.00%	9.00%	9.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
	3001	Residential											
7		Base Charge (1st 400 cubic Ft.)	$ 22.97	$ 25.04	$ 27.29	$ 29.75	$ 31.23	$ 32.80	$ 34.44	$ 36.16	$ 37.97	$ 39.86	$ 41.86
8		Each Additional Hundred Cubic Ft.	5.39	$ 5.88	$ 6.40	$ 6.98	$ 7.33	$ 7.70	$ 8.08	$ 8.48	$ 8.91	$ 9.35	$ 9.82
	3011	Stateville - Sewer											
9		Base Charge (1st 400 cubic Ft.)	$ 11.49	$ 12.52	$ 13.65	$ 14.88	$ 15.62	$ 16.41	$ 17.23	$ 18.09	$ 18.99	$ 19.94	$ 20.94
10		Each Additional Hundred Cubic Ft.	8.07	$ 8.80	$ 9.59	$ 10.45	$ 10.97	$ 11.52	$ 12.10	$ 12.70	$ 13.34	$ 14.01	$ 14.71
	3501	Residential - Unmetered											
11		Base Charge	$ 66.07	$ 72.02	$ 78.50	$ 85.56	$ 89.84	$ 94.33	$ 99.05	$ 104.00	$ 109.20	$ 114.66	$ 120.40
	3502	Commercial - Unmetered											
12		Base Charge	$ 109.15	$ 118.97	$ 129.68	$ 141.35	$ 148.42	$ 155.84	$ 163.63	$ 171.81	$ 180.41	$ 189.43	$ 198.90

Table 4-3 shows the changes in bi-monthly water and sewer bills over the study period, assuming all proposed rates are implemented through 2032.

Table 4-3: Typical Water and Sewer Bills Under Existing and Proposed Rates

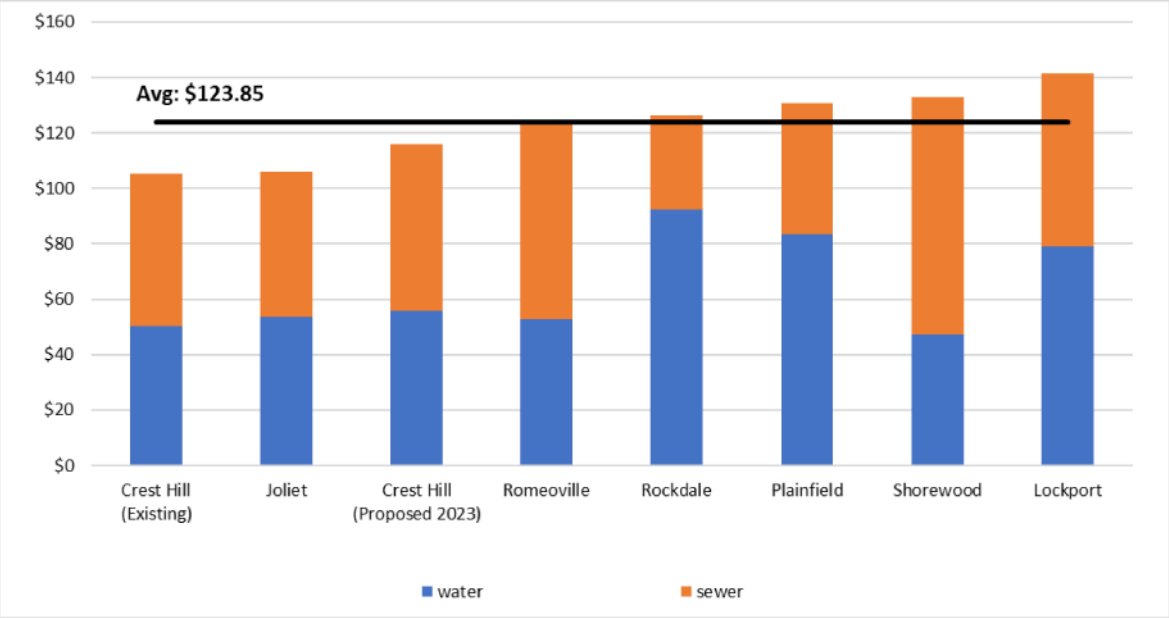
					Bi-Monthly Bill Under										
					Existing	Proposed	Proposed	Proposed	Proposed	Proposed	Proposed	Proposed	Proposed	Proposed	Proposed
Line No.	Description	Rate Code	Billable Flow (Cubic Feet)		2022 Rates $	2023 Rates $	2024 Rates $	2025 Rates $	2026 Rates $	2027 Rates $	2028 Rates $	2029 Rates $	2030 Rates $	2031 Rates $	2032 Rates $
	Water Bills														
1	Residential	1001	400	$	22.97	$ 25.50	$ 28.30	$ 31.41	$ 34.87	$ 38.71	$ 42.96	$ 47.69	$ 52.94	$ 56.11	$ 59.48
2	Residential	1001	800	$	41.05	$ 45.57	$ 50.58	$ 56.14	$ 62.32	$ 69.17	$ 76.78	$ 85.23	$ 94.60	$ 100.28	$ 106.29
3	Residential	1001	1,000	$	50.09	$ 55.60	$ 61.72	$ 68.50	$ 76.04	$ 84.40	$ 93.69	$ 103.99	$ 115.43	$ 122.36	$ 129.70
4	Residential	1001	1,200	$	59.13	$ 65.63	$ 72.85	$ 80.87	$ 89.76	$ 99.64	$ 110.60	$ 122.76	$ 136.27	$ 144.44	$ 153.11
5	Residential	1001	2,000	$	95.29	$ 105.77	$ 117.41	$ 130.32	$ 144.66	$ 160.57	$ 178.23	$ 197.84	$ 219.60	$ 232.78	$ 246.74
6	Percentage Increase					11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	6.00%	6.00%
	$ Change In Bills														
7	Residential		400			$ 2.53	$ 2.80	$ 3.11	$ 3.46	$ 3.84	$ 4.26	$ 4.73	$ 5.25	$ 3.18	$ 3.37
8	Residential		800			$ 4.52	$ 5.01	$ 5.56	$ 6.18	$ 6.85	$ 7.61	$ 8.45	$ 9.37	$ 5.68	$ 6.02
9	Residential		1,000			$ 5.51	$ 6.12	$ 6.79	$ 7.54	$ 8.36	$ 9.28	$ 10.31	$ 11.44	$ 6.93	$ 7.34
10	Residential		1,200			$ 6.50	$ 7.22	$ 8.01	$ 8.90	$ 9.87	$ 10.96	$ 12.17	$ 13.50	$ 8.18	$ 8.67
11	Residential		2,000			$ 10.48	$ 11.63	$ 12.91	$ 14.34	$ 15.91	$ 17.66	$ 19.61	$ 21.76	$ 13.18	$ 13.97
	Sewer Bills														
12	Residential	3001	400	$	22.97	$ 25.04	$ 27.29	$ 29.75	$ 31.23	$ 32.80	$ 34.44	$ 36.16	$ 37.97	$ 39.86	$ 41.86
13	Residential	3001	800	$	44.53	$ 48.54	$ 52.91	$ 57.67	$ 60.55	$ 63.58	$ 66.76	$ 70.10	$ 73.60	$ 77.28	$ 81.14
14	Residential	3001	1,000	$	55.31	$ 60.29	$ 65.71	$ 71.63	$ 75.21	$ 78.97	$ 82.92	$ 87.06	$ 91.42	$ 95.99	$ 100.79
15	Residential	3001	1,200	$	66.09	$ 72.04	$ 78.52	$ 85.59	$ 89.87	$ 94.36	$ 99.08	$ 104.03	$ 109.23	$ 114.70	$ 120.43
16	Residential	3001	2,000	$	109.21	$ 119.04	$ 129.75	$ 141.43	$ 148.50	$ 155.93	$ 163.72	$ 171.91	$ 180.50	$ 189.53	$ 199.01
17	Percentage Increase					9.00%	9.00%	9.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
	$ Change In Bills														
18	Residential		400			$ 2.07	$ 2.25	$ 2.46	$ 1.49	$ 1.56	$ 1.64	$ 1.72	$ 1.81	$ 1.90	$ 1.99
19	Residential		800			$ 4.01	$ 4.37	$ 4.76	$ 2.88	$ 3.03	$ 3.18	$ 3.34	$ 3.50	$ 3.68	$ 3.86
20	Residential		1,000			$ 4.98	$ 5.43	$ 5.91	$ 3.58	$ 3.76	$ 3.95	$ 4.15	$ 4.35	$ 4.57	$ 4.80
21	Residential		1,200			$ 5.95	$ 6.48	$ 7.07	$ 4.28	$ 4.49	$ 4.72	$ 4.95	$ 5.20	$ 5.46	$ 5.73
22	Residential		2,000			$ 9.83	$ 10.71	$ 11.68	$ 7.07	$ 7.43	$ 7.80	$ 8.19	$ 8.60	$ 9.03	$ 9.48

4.4 Regional Water and Sewer Typical Bills

A comparison of rates for six regional utilities was conducted based on rates in effect as of December 15, 2021. Figure 4-1 shows a combined water and sewer bi-monthly bill for a 5/8-inch meter using 5 CCF a

month for these regional providers. As shown in Figure 4-1, the regional typical bill ranges from about $105 per bi-month to about $141 per bi-month, with Crest Hill currently the lowest in this survey. The average across this survey is $123.85 per bi-month. Implementing proposed rates for 2023 does not significantly impact the competitive position of Crest Hill's rates. Note that most of the comparison communities are also likely participants in the regional water commission and are likely to experience rate increases to fund joining that initiative. As noted earlier, nationwide annual rate increases for water and sewer service amount to about 5 percent per year, suggesting rates for other communities will be increasing over time.

Figure 4-1: Residential Water and Sewer Bi-Monthly Bill Comparison at 5 CCF per Month



4.5 Statement of Limitations

In preparation of the City of Crest Hill Rate Study (Study), Burns & McDonnell relied upon information provided by the City and other parties. The information included various analyses, computer-generated information and reports, audited financial reports, and other financial and statistical information such as anticipated growth, as well as other documents such as operating budgets and current rate schedules. In addition, input to key assumptions regarding expected future levels of revenue, sales, and expenditures was provided by City staff to Burns & McDonnell. While Burns & McDonnell has no reason to believe that the information provided, and upon which Burns & McDonnell has relied, is inaccurate or incomplete in any material respect, Burns & McDonnell has not independently verified such information and cannot guarantee its accuracy or completeness.

Estimates and projections prepared by Burns & McDonnell relating to financial forecasting and costs are based on Burns & McDonnell's experience, qualifications, and judgment as a professional consultant. Since Burns & McDonnell has no control over weather, cost and availability of labor, material and equipment, labor productivity, contractors' procedures and methods, unavoidable delays, economic conditions, government regulations and laws (including interpretation thereof), competitive bidding, and market conditions or other factors affecting such estimates or projections, Burns & McDonnell does not guarantee the accuracy of its estimates or predictions.

BURNS McDONNELL

CREATE AMAZING.

Burns & McDonnell World Headquarters
9400 Ward Parkway
Kansas City, MO 64114
O 816-333-9400
F 816-333-3690
www.burnsmcd.com

APPENDIX L
2022 RATE ORDINANCE

ORDINANCE NO. 1897

AN ORDINANCE AMENDING PROVISIONS OF TITLE 13 (WATER AND SEWER), CHAPTER 24 (RATES AND CHARGES) OF THE CREST HILL CITY CODE REGARDING WATER AND SEWER RATES

WHEREAS, the City Council of the City of Crest Hill has the authority to adopt ordinances and to promulgate rules and regulations that pertain to its government and affairs and protect the public health, safety, and welfare of its citizens; and

WHEREAS, pursuant to Section 11-139-8 of the Illinois Municipal Code (65 ILCS 5/11-139-8), the City Council is authorized and directed to charge all users of the City's combined waterworks and sewerage system (the "System") a rate of compensation sufficient to pay the cost of operation and maintenance of the System, provide an adequate depreciation fund, and pay the principal of and interest upon all revenue bonds issued in connection with the System; and

WHEREAS, the City Council previously exercised the authority set forth above, generally enacting Title 13 (Water and Sewer), Chapter 24 (Rates and Charges) of the Crest Hill Code of Ordinances; and

WHEREAS, the City Council has determined that it is necessary, expedient, and in the best interests of the City and its citizens to amend various provisions of Title 13 (Water and Sewer), Chapter 24 (Rates and Charges) of the Crest Hill Code of Ordinances, as set forth in this Ordinance.

NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF CREST HILL, WILL COUNTY, ILLINOIS, PURSUANT TO ITS STATUTORY AUTHORITY, AS FOLLOWS:

SECTION 1: The City Council hereby finds that all of the recitals contained in the preamble to this Ordinance are true, correct, and complete and are hereby incorporated by reference hereto and made a part hereof.

SECTION 2: Title 13 (Water and Sewer), Chapter 24 (Rates and Charges), Section 13.24.010 (City Water Service Charges) is hereby amended to read as follows:

§13.24.010 CITY WATER SERVICE CHARGES.

There are hereby established the rates and charges for use of water provided by the City of Crest Hill through the city waterworks. These charges shall be separate and apart from (i) any wastewater service charges and (ii) from any debt service charges, as specified in §§13.24.011, 13.24.012, 13.24.013, 13.24.014, and 13.24.015 of this chapter.

(A) For use of water service as provided by the city the following rates and charges shall apply to all water connections (other than "bulk water connections," see subpart (B) of this Section, below):

(1) Base Water Charge: For the first four hundred cubic feet (400 $ft.^3$) used in a given billing cycle, the water user shall pay a flat fee of $25.50.

(2) Volumetric Water Charge: For every hundred cubic feet (100 ft^3), or part thereof, used in excess of four hundred cubic feet (400 $ft.^3$) of water in a given billing cycle, the water user shall pay an additional charge of $5.02.

(3) Every year on the first of May, both the base water charge and the volumetric water charge applicable to all water connections shall be immediately and automatically increased, without additional notice, as follows:

Implementation Date	5/1/2023	5/1/2024	5/1/2025	5/1/2026	5/1/2027	5/1/2028	5/1/2029	5/1/2030	5/1/2031
Base Water Charge	$ 28.30	$ 31.41	$ 34.87	$ 38.71	$ 42.96	$ 47.69	$ 52.94	$ 58.76	$ 62.28
Volumetric Water Charge	$ 5.57	$ 6.18	$ 6.86	$ 7.62	$ 8.45	$ 9.38	$ 10.42	$ 11.56	$ 12.26

Unless otherwise ordained by the City Council, the base water charge and volumetric water charge applicable to all water connections shall be immediately and automatically increased by six percent (6%) on each May first beginning on May 1, 2032.

(B) Any water user that consumes, on average, more than one hundred and fifty thousand cubic feet (150,000 $ft.^3$) of water per month is and shall be deemed a "bulk water user." Bulk water users shall pay the following rates in lieu of the amounts listed in subpart (A) of this Section, above:

(1) Monthly Billing Cycle: all bulk water users shall be billed on a monthly basis.

(2) Base Bulk-User Water Charge: For the first two hundred cubic feet (200 $ft.^3$) used in a given billing cycle, the bulk water user shall pay a flat fee of $12.75.

(3) Volumetric Bulk-User Water Charge: For every hundred cubic feet (100 ft^3), or part thereof, used in excess of two hundred cubic feet (200 $ft.^3$) of water in a given billing cycle, the bulk water user shall pay an additional charge of $5.02.

(4) Every year on the first of May, both the base bulk-user water charge and the volumetric bulk-user water charge applicable to all water connections shall be immediately and automatically increased, without additional notice, as follows:

Implementation Date	5/1/2023	5/1/2024	5/1/2025	5/1/2026	5/1/2027	5/1/2028	5/1/2029	5/1/2030	5/1/2031
Base Bulk User-Water Charge	$ 14.16	$ 15.71	$ 17.44	$ 19.36	$ 21.49	$ 23.86	$ 26.48	$ 29.39	$ 31.16
Volumetric Bulk-User Water Charge	$ 5.57	$ 6.18	$ 6.86	$ 7.62	$ 8.45	$ 9.38	$ 10.42	$ 11.56	$ 12.26

Unless otherwise ordained by the City Council, the base bulk-user water charge and volumetric bulk-user water charge applicable to all water connections shall be immediately and automatically increased by six percent (6%) on each May first beginning on May 1, 2032.

(C) Billing for water service shall be as specified in §13.24.050 of this chapter, and the procedure for handling delinquent bills shall be in accordance with §13.24.140 of this chapter. The procedure for establishing liens on behalf of the city for unpaid water bills shall be in accordance with §13.24.080 of this chapter

SECTION 3: Title 13 (Water and Sewer), Chapter 24 (Rates and Charges), Section 13.24.013 (Basic User Rate) is hereby amended to read as follows:

§13.24.013 MINIMUM CHARGE AND BASIC USER RATE FOR WASTEWATER SERVICE.

(A) Metered Connections: For use of wastewater service, as provided by the city, the following rates and charges shall apply to all metered wastewater connections (except with regards to "bulk wastewater users," as described in subpart (B) hereof):

(1) Minimum Wastewater Charge: For the first four hundred cubic feet (400 $ft.^3$) of wastewater discharged in a given billing cycle, all wastewater users shall be charged a flat fee of $25.04.

(2) Basic Wastewater User Rate: For every hundred cubic feet (100 ft^3), or part thereof, discharged in excess of four hundred cubic feet (400 $ft.^3$) of wastewater in a given billing cycle, every wastewater user shall be billed an additional charge of $5.88.

(3) Automatic Annual Rate Increase: Every year on the first of May, both the minimum wastewater charge and the basic wastewater user rate applicable to all metered wastewater connections shall be immediately and automatically increased, without additional notice, as follows:

Implementation Date	5/1/2023	5/1/2024	5/1/2025
Minimum Wastewater Charge	$ 27.29	$ 29.75	$ 31.23
Basic Wastewater User Rate	$ 6.40	$ 6.98	$ 7.33

Unless otherwise ordained by the City Council, the minimum wastewater charge and basic wastewater user rate applicable to all metered wastewater connections shall be immediately and automatically increased by five percent (5%) on each May first beginning on May 1, 2026.

(B) Bulk-Use Connections: Any metered wastewater user whose average discharge is in excess of one hundred and fifty thousand cubic feet (150,000 ft^3) per month is and shall be deemed a "bulk wastewater user." Bulk wastewater users shall pay the following rates in lieu of the amounts listed in subpart (A) of this Section, above:

(1) Monthly Billing Cycle: all bulk wastewater users shall be billed on a monthly basis.

(2) Minimum Wastewater Bulk-User Charge: For the first two hundred cubic feet (200 ft.^{3}) of wastewater discharged in a given billing cycle, all bulk wastewater users shall be charged a flat fee of $12.52.

(3) Basic Wastewater Bulk-User Rate: For every hundred cubic feet (100 ft^3), or part thereof, discharged in excess of two hundred cubic feet (200 ft.^{3}) of wastewater in a given billing cycle, every bulk wastewater user shall be billed an additional charge of $8.80.

(4) Automatic Annual Rate Increase: Every year on the first of May, both the minimum wastewater bulk-user charge and the basic wastewater bulk-user rate shall be immediately and automatically increased, without additional notice, as follows:

Implementation Date	5/1/2023	5/1/2024	5/1/2025
Bulk-User Minimum Charge	$ 13.65	$ 14.88	$ 15.62
Bulk-User	$ 9.59	$ 10.45	$ 10.97

Unless otherwise ordained by the City Council, the minimum wastewater bulk-user charge and the basic wastewater bulk-user rate shall be immediately and automatically increased by five percent (5%) on each May first beginning on May 1, 2026.

(C) Non-Metered Residential Connections:

(1) All non-metered residential wastewater users of the wastewater facilities shall pay a minimum flat-rate charge per billing cycle adequate to cover: (i) the applicable debt service charge, (ii) the minimum service charge applicable to metered connections, and (iii) a residential non-metered basic wastewater user rate of $72.02.

(2) No non-metered residential user may discharge more than 1,200 cubic feet of wastewater in any given billing cycle.

(3) Every year on the first of May, the residential non-metered basic wastewater user rate shall be immediately and automatically increased, without additional notice, as follows:

Implementation Date	5/1/2023	5/1/2024	5/1/2025
Basic User Rate (Non-Metered Residential)	$ 78.50	$ 85.56	$ 89.84

Unless otherwise ordained by the City Council, the residential non-metered basic wastewater user rate shall be immediately and automatically increased by five percent (5%) on each May first beginning on May 1, 2026.

(D) Non-Metered Commercial, Industrial, and Governmental Connections:

(1) All non-metered commercial, industrial, or governmental users of the wastewater facilities shall pay a minimum flat-rate charge per billing cycle adequate to cover (i) the applicable debt service charge, (ii) the minimum service charge applicable to metered connections, and (iii) a commercial non-metered basic wastewater user rate of $118.97.

(2) No non-metered commercial, industrial, or governmental user may discharge more than 2,000 cubic feet of wastewater in any given billing cycle.

(3) Every year on the first of May, the commercial non-metered basic wastewater user rate shall be immediately and automatically increased, without additional notice, as follows:

Implementation Date	5/1/2023	5/1/2024	5/1/2025
Basic User Rate (Non-Metered Commercial, Industrial, and Governmental)	$ 129.68	$ 141.35	$ 148.42

Unless otherwise ordained by the City Council, the commercial non-metered basic wastewater user rate shall be immediately and automatically increased by five percent (5%) on each May first beginning on May 1, 2026.

(E) Overuse by Non-Metered Connections: In the event that the City determines that a non-metered user connected to the wastewater facilities has discharged in excess of 1,200 cubic feet (if residential) or 2,000 cubic feet (if commercial, industrial, or governmental) in a given billing cycle, the City may require such non-metered user to install metering devices, acceptable to the City, on its the water supply and/or sewer main as necessary to measure the amount of service supplied. All costs associated with any such meter shall be paid by the non-metered user.

(F) Any non-metered user connected to the wastewater facilities may install metering devices, acceptable to the City, on its the water supply and/or sewer main as necessary to measure the amount of service supplied. All costs associated with any such meter shall be paid by the non-metered user.

SECTION 4: Title 13 (Water and Sewer), Chapter 24 (Rates and Charges), Section 13.24.017 (Sprinkler Water Service Charges) is hereby amended to read as follows:

§ 13.24.017 SPRINKLER WATER SERVICE CHARGES.

(A) There are hereby established the rates and charges for use of sprinkler water provided by the City of Crest Hill through the city waterworks. A sprinkler meter is defined as a second water meter provided by the city for outside use that will not utilize the city's wastewater facilities. Sprinkler meters shall be purchased exclusively from the city. It shall be the responsibility of the property owner to ensure proper installation of their sprinkler meter. A representative of the water department shall inspect all sprinkler meter installations. Sprinkler water service charges shall be separate and apart from any city water service charges, wastewater service charges, or from any

debt service charges as specified in §§13.24.010 through 13.24.015 of this chapter.

(B) For use of City water service for sprinkler purposes, the following rates and charges shall apply to all metered sprinkler connections:

a. Base Sprinkler Charge: For the first four hundred cubic feet (400 ft.^{3}) of water used in a given billing cycle, the user shall pay a flat fee of $25.50.

b. Volumetric Sprinkler Charge: For every 100 cubic feet (100 ft^3), or part thereof, used in excess of four hundred cubic feet (400 ft.^{3}) of water in a given billing cycle, the user shall pay an additional charge of $5.02.

(C) Every year on the first of May, both the base sprinkler charge and the volumetric sprinkler charge shall be immediately and automatically increased, without additional notice, as follows:

Implementation Date	5/1/2023	5/1/2024	5/1/2025	5/1/2026	5/1/2027	5/1/2028	5/1/2029	5/1/2030	5/1/2031
Base Sprinkler Charge	$ 28.30	$ 31.41	$ 34.87	$ 38.71	$ 42.96	$ 47.69	$ 52.94	$ 58.76	$ 62.28
Volumetric Sprinkler Charge	$ 5.57	$ 6.18	$ 6.86	$ 7.62	$ 8.45	$ 9.38	$ 10.42	$ 11.56	$ 12.26

Unless otherwise ordained by the City Council, the base sprinkler charge and volumetric sprinkler charge shall be immediately and automatically increased by six percent (6%) on each May first beginning on May 1, 2032.

(D) Billing for sprinkler service shall be as specified in §13.24.050 of this chapter, and the procedure for handling delinquent bills shall be in accordance with §13.24.140 of this chapter. The procedure for establishing liens on behalf of the city for unpaid water bills shall be in accordance with §13.24.080 of this chapter.

SECTION 5: Title 13 (Water and Sewer), Chapter 24, (Rates and Charges), Section 13.24.050 (Bills) is hereby amended, in part, to read as follows:

§ 13.24.050 BILLS.

(A) Except as otherwise required in this Chapter, the rates or charges for service shall be payable in bi-monthly billing cycles. The owner of the premises, the occupant thereof and the user(s) of the service shall be jointly and severally liable to pay for the service to such premises and the service provided by the city to the premises upon the aforestated condition. All bills and accounts for service shall be held only in the name of the title owner of record of the premises. All account holders, when necessary, will fully comply with the state statutes, then in effect, relating to notification of tenants of the water and sewer utility charges.

* * *

SECTION 6: In the event that any provision or provisions, portion or portions, or clause or

clauses of this Ordinance shall be declared to be invalid or unenforceable by a Court of competent jurisdiction, such adjudication shall in no way affect or impair the validity or enforceability of any of the remaining provisions, portions, or clauses of this Ordinance that may be given effect without such invalid or unenforceable provision or provisions, portion or portions, or clause or clauses.

SECTION 7: That all ordinances, resolutions, motions, or parts thereof, conflicting with any of the provisions of this Ordinance, are hereby repealed to the extent of the conflict.

SECTION 8: That the City Clerk is hereby directed to publish this Ordinance in pamphlet form.

SECTION 9: That this Ordinance, and the water and sewer rates imposed hereby, shall be in full force and effect on and after May 1, 2022.

[*Intentionally Blank*]

PASSED THIS 7 DAY OF MARCH, 2022.

	Aye	Nay	Absent	Abstain
Alderman John Vershay	✓			
Alderman Scott Dyke	✓			
Alderwoman Claudia Gazal	✓			
Alderman Darrell Jefferson	✓			
Alderperson Tina Oberlin	✓			
Alderman Mark Cipiti	✓			
Alderman Nate Albert	✓			
Alderman Joe Kubal	✓			
Mayor Raymond R. Soliman				

Christine Vershay-Hall, City Clerk

APPROVED THIS 7 DAY OF MARCH, 2022.

Raymond R. Soliman, Mayor

ATTEST:

Christine Vershay-Hall, City Clerk