AGREEMENT #22134 FOR PROFESSIONAL SERVICES
For LAKE COUNTY

This Agreement for Professional Services ("**Agreement**") is between the County of Lake ("**County**") and Burns & McDonnell Engineering Company, Inc. ("**Consultant**"), whose principal business address is 9400 Ward Parkway, Kansas City, MO 64114.

RECITALS

1. Lake County issued an RFP #22134 seeking Water, Sewer Rate and Connection Fee Study ("Services").
2. Consultant responded timely with a proposal dated September 15, 2022 ("Proposal").
3. Based on Consultant's Proposal, the County and Consultant have negotiated terms under which Consultant will perform the Services.
4. To memorialize the terms and conditions under which Consultant will perform the Services, the parties have drafted this Agreement.

In light of the foregoing, Lake County and Consultant agree as follows:

SECTION 1. AGREEMENT DOCUMENTS
The documents that encompass the parties' understanding are listed below and shall be considered in the following order of precedence, with the Consultant's proposal or the RFP supplying terms or specifications only where not superseded by the terms or specifications contained in this Agreement.

A. This Agreement and its Exhibit A – Evaluation of a Senior Discount
B. Consultant's proposal dated September 15, 2022.
C. The County's RFP (including any addenda to it).

SECTION 2. SCOPE OF WORK
The scope of work that Consultant agrees to perform is set forth in Request for Proposal #22134 – Scope of Work.

SECTION 3. EFFECTIVE DATE; TERM
This Agreement shall be effective from execution through completion of work, unless terminated under the provisions for doing so further below or the work set forth in this Agreement is completed before the end of the term. The work is complete upon a determination of completion by Lake County, as measured against any statements of work or other documents or contractual terms that the parties have memorialized. A determination of completion shall not constitute a waiver of any rights or claims that Lake County may have or thereafter acquire with respect to any provision of this Agreement. At the end of the Agreement term Lake County reserves the right to extend the Agreement for an additional period up to 60 days for the purpose of negotiating a new or extended agreement.

Effective Date. Unless a different effective date is provided above, this Agreement will become effective when all of the parties have signed it, and the date this Agreement is signed by the last party to sign it (as indicated by the date associated with that party's signature) will be deemed

the "Effective Date" of this Agreement. If a party signs but fails to date a signature, the date that the other party receives the signing party's signature will be deemed to be the date that the signing party signed this agreement, and the other party may inscribe that date as the date associated with the signing party's signature.

SECTION 4. AGREEMENT PRICE

The County will pay Consultant a fee of $86,644 for the water, sewer rate and connection study and $14,000 for the senior discount analysis and will invoice the County not more than once per month based upon the actual expense reimbursement, for a total project cost of $100,644.

SECTION 5. INVOICES & PAYMENT

A. At the start of this Agreement, the County will issue a purchase order for the work and Consultant shall submit invoices detailing the products and services provided and identify the purchase order number on all invoices.

B. Consultant shall maintain records showing the actual time its employees and agents devoted to the project, and the costs incurred. Consultant shall permit a representative from Lake County to inspect and audit all of Consultant's data and records for the work and services provided under this Agreement. Consultant shall make these records available at reasonable times during the Agreement period and for one year after the end of the Agreement.

C. All payments shall be made in accordance with the Illinois Local Government Prompt Payment Act, which generally requires approval of a vendor's bill within 30 days of receiving the invoice for the services contained in it, and payment within an additional 30 days (50 ILCS 505/1 *et seq.*).

D. Lake County's fiscal year ends on November 30. Invoices for services the Consultant has rendered up until November 30 of each year must be received by Lake County on or before January 15 of the subsequent calendar year.

   Other than the timeframe for payments related to the end of Lake County's fiscal year, as stated above, Lake County shall not be held financially liable for payment of any services rendered if the invoice for such services is not sent to the County within 90 days from the date the services were provided.

   If this Agreement is terminated prior to its expected expiration date, the Consultant must submit all invoices to Lake County no later than 30 days after the effective date of the termination.

   Payment for invoices received beyond the time periods in this subsection will be denied, absent an agreement to the contrary. Failure of the Consultant to invoice the County in the timeframes noted in this section shall constitute the Consultant's waiver of the Consultant's right to payment.

SECTION 6. CONTRACT MODIFICATIONS

In the event changes to the scope of the project or additional work become necessary or desired (a "Modification"), the parties shall follow the procedures set forth in this Section to memorialize the modification (a "Contract Modification"). A Contract Modification shall be effective only if documented in writing, dated and signed by both parties, and expressly referencing this Agreement. The Contract Modification shall set forth in detail: (i) the Modification requested, (ii) the reason for the proposed Modification; (iii) the cost of the Modification; and (iv) the Modification's impact on the time for completing the project.

In the event either party desires a Modification, the Project Manager for such party shall submit to the other party's Project Manager a proposed Contract Modification. If the receiving party does not accept the Contract Modification in writing within 10 business days, the receiving party shall be deemed to have rejected the Contract Modification. If the parties cannot reach agreement on a proposed Modification, Contractor shall nevertheless continue to render performance under this Agreement in accordance with its (unmodified) terms and conditions.

Modifications that involve or increase in the amounts payable by the County may require execution by the County Purchasing Agent. Some increases may also require approval by the County Board. In cases where the Purchasing Agent's signature is required, or where County Board approval is needed, the Contract Modification shall not be deemed rejected by County after 10 days if the County's Project Manager has indicated in writing within the 10-day period an intent to present the Contract Modification for appropriate signature or approval.

SECTION 7. INDEMNIFICATION

Consultant agrees to indemnify and defend Lake County (its employees, elected officials, executives, and agents) from all claims, actions, demands, judgments or liabilities, fines, penalties, and expenses, including without limitation reasonable legal fees and expert costs, arising out of this Agreement and arising from the Consultant's (its employees', executives', and agents') actions, whether negligent, reckless, or intentional. Lake County shall provide notice to Consultant promptly of any such claim, suit, or proceeding, and will assist Consultant, at Consultant's expense, in defending any such claim, suit, or proceeding.

SECTION 8. INSURANCE

The Consultant must obtain, for the Contract term and any extension of it, insurance issued by a company or companies qualified to do business in the State of Illinois with an A.M. Best Rating of at least A and provide the County with a Certificate of Insurance 15 days before the start of the project, and thereafter annually upon each renewal date for contracts/projects that will last more than one year. Insurance in the following types and amounts is necessary:

<u>Commercial General Liability Insurance</u>

In a broad form on an occurrence basis shall be maintained, to include, but not be limited to, coverage for property damage, bodily injury (including death), personal injury and advertising injury in the following coverage forms where exposure exists:

- Premises and Operations
- Independent Contractors
- Products/Completed Operations
- Liability assumed under an Insured Contract/ Contractual Liability

• Personal Injury and Advertising Injury

With limits of liability of:
$ 1,000,000 Each Occurrence
$ 1,000,000 Products-Completed Operations aggregate
$ 1,000,000 Personal and Advertising injury limit
$ 2,000,000 General aggregate; the CGL policy shall be endorsed to provide that the General Aggregate limit applies separately to each of the contractor's projects away from premises owned or rented to contractor.

Excess/ Umbrella Liability

The Contractor's Excess/ Umbrella liability insurance shall be written with the umbrella or excess follow form and outline the underlying coverage, limits of insurance will be based on size of project:
$ 2,000,000 per occurrence limit and in the aggregate.

Automobile Liability Insurance

Automobile liability insurance shall be maintained to respond to claims for damages because of bodily injury, death of a person, or property damage arising out of ownership, maintenance, or use of a motor vehicle. This policy shall be written to cover any auto whether owned, leased, hired, or borrowed.
The Contractor's auto liability insurance, as required above, shall be written with limits of insurance equal to the following:
$ 1,000,000 Combined single Limit (Each Accident)

Workers Compensation (Coverage A) and Employers Liability (Coverage B)

Workers Compensation Insurance covering all liability of the Contractor arising under the Worker's Compensation Act and Worker's Occupational Disease Act at limits in accordance with the laws of the State of Illinois. Employers' Liability Insurance shall be maintained to respond to claims for damages because of bodily injury, occupational sickness, or disease or death of the Contractor's employees, with limits listed below:
Employers Liability

a) Each Accident $1,000,000
b) Disease-Policy Limit $1,000,000
c) Disease-Each Employee $1,000,000

Such Insurance shall contain a waiver of subrogation in favor of Lake County.

Professional Liability – Errors and Omissions

The Engineers/Architects/Consultants for the plans of the project shall be written with limits of insurance equal to the following:
$ 1,000,000 per claim and in the aggregate per policy year
Coverage shall be provided for up to three (3) years after project completion.

County, acting at its sole option, may waive any of the foregoing insurance requirements upon a

request to do so, but no waiver shall be effective unless made in writing. Such waiver may include or be limited to a reduction in the amount of coverage required above. The extent of waiver shall be determined solely by County's risk manager taking into account the nature of the work and other factors relevant to County's exposure, if any, under this agreement.

Failure to Comply: In the event the Contractor fails to obtain or maintain any insurance coverage required under this agreement, Lake County may purchase such insurance coverage and charge the expense to the Contractor.

SECTION 9. INDEPENDENT CONTRACTOR; LICENSURE OR CERTIFICATIONS; KEY PERSONNEL

A. **Independent Contractor Status**. The parties intend that the Consultant will be an independent contractor.

B. **Licensure or Certifications**. If required by law, the Consultant must at all times be and remain licensed or certified as a qualified provider of the services provided in this Agreement. Consultant shall submit copies of the required licenses or certifications upon the County's request. Consultant shall promptly notify County in writing of any citation Consultant receives from any licensing or certification authority, including all responses and correction plans.

C. Where the parties have identified particular individuals as being critical to a project ("Key Employees"), then Consultant shall not replace Key Employees without the County's prior written consent, which shall not be unreasonably withheld. Should Key Employees be reassigned, become incapacitated, separate from the Consultant, or be otherwise unable to perform the functions assigned to them, Consultant shall (i) within 10 business days, temporarily replace the person with another properly qualified employee and (ii) within 30 calendar days, permanently replace the person.

   Lake County shall have the right to request that Consultant replace Key Employees from the project by setting forth in writing the grounds for the request. Consultant shall have a reasonable time period in which to address the grounds or make a substitution.

D. Consultant shall complete its obligations under this Agreement in a sound, economical and efficient manner and in accordance with this Agreement and all applicable laws. Consultant agrees to notify Lake County immediately whenever it is unable to comply with applicable State, Federal, or local laws, rules and regulations. Where non-compliance materially impairs the Consultant from performing the services under this Agreement, the County may terminate the Agreement for cause.

SECTION 10. DISPUTE RESOLUTION

All issues, claims, or disputes that the Consultant raises or makes related to this Agreement shall be resolved in accordance with the Contract Disputes provision of the Lake County Purchasing Ordinance, § 33.097.

SECTION 11. NO IMPLIED WAIVERS

Waivers of a term or condition of this Agreement shall be in writing, and that writing must describe the circumstances giving rise to the waiver. The parties intend that no waiver of any term or condition shall be deemed or construed as a waiver of any other term or condition of this Agreement, and waiver of any breach shall not be deemed to be a waiver of any subsequent breach, whether of the same or a different provision of this Agreement.

SECTION 12. SEVERABILITY

If any provision of this Agreement is unenforceable to any extent, the remainder of this Agreement (or application of that provision to any persons or circumstances other than those as to which it is held unenforceable) will not be affected by that unenforceability and will be enforceable to the fullest extent permitted by law.

SECTION 13. JURISDICTION, VENUE, CHOICE OF LAW AND PROFESSIONAL STANDARDS

This Agreement shall be governed by and construed according to the laws of the State of Illinois. Jurisdiction and venue shall be exclusively found in the 19th Judicial Circuit Court of Lake County, Illinois.

SECTION 14. NOTICES AND COMMUNICATIONS

All notices and communications which may be given by Lake County to Consultant relative to this Agreement shall be addressed to the Consultant at the address shown herein below:

Burns & McDonnell Engineering Company, Inc.
9400 Ward Parkway
Kansas City, MO 64114

Copies of any notices and communications which propose to modify or terminate this Agreement shall be provided to: Lake County Purchasing Division, 18 North County Street, Waukegan, Illinois 60085-4350; Attention: Purchasing Agent.

SECTION 15. ASSIGNMENT, ALTERATIONS AND MODIFICATIONS

This Agreement shall not be assigned, delegated, or modified without the express written consent of both parties. This Agreement supersedes all other agreements, oral or written, between the parties with respect to the subject matter of this Agreement.

If Lake County agrees that the Consultant may assign, delegate, or subcontract the work under this Agreement, Consultant shall remain contractually liable to Lake County unless otherwise agreed in writing.

SECTION 16. TERMINATION

Lake County reserves the right to terminate this Agreement as set forth below.

a. Termination for Convenience:
Lake County reserves the right to terminate this Agreement, or any part of this Agreement, with or without cause, upon 30 days' written notice. In case of such termination, Consultant shall be entitled to receive payment from Lake County for work completed to the date of termination in accordance with the terms and conditions of this Agreement.

b. Termination Due to Material Breach:
In the event that this Agreement is terminated due to the Consultant's material breach, Lake County shall be entitled to purchase substitute items or services elsewhere and charge Consultant with losses the County incurs, including attorney's fees and expenses, notwithstanding any damage limitations the parties may agree to elsewhere.

c. Termination Due to Lack of Appropriations:
If sufficient funds are not appropriated by the Lake County Board to continue the services under this Agreement, then Lake County may terminate this Agreement. Lake County agrees to give written notice of termination to Consultant at least 30 days prior to the end of the last fiscal year for which appropriations were made. Lake County shall remit payment for all work completed and approved or accepted by the County, to the date of termination. Termination under this subsection shall not entitle the Consultant to contractual damages of any kind.

d. Termination Due to Force Majeure Events:

(i) If a Force Majeure Event prevents a party from complying with any one or more obligations under this agreement, that inability to comply will not constitute breach if (1) that party uses reasonable efforts to perform those obligations, (2) that party's inability to perform those obligations is not due to its failure to (A) take reasonable measures to protect itself against events or circumstances of the same type as that Force Majeure Event or (B) develop and maintain a reasonable contingency plan to respond to events or circumstances of the same type as that Force Majeure Event, and (3) that party complies with its obligations under section 16(d)(iii), below.

(ii) For purposes of this agreement, "Force Majeure Event" means, with respect to a party, any event or circumstance, whether or not foreseeable, that was not caused by that party and any consequences of that event or circumstance.

(iii) If a Force Majeure Event occurs, the noncomplying party shall promptly notify the other party of occurrence of that Force Majeure Event and may terminate the Agreement based on it, with an obligation to pay only for services performed prior to the Force Majeure Event.

SECTION 17. CONFIDENTIALITY
Both parties acknowledge that Consultant's documents and dealings related to this Agreement are subject to the Illinois Open Meetings Act (5 ILCS 120/1 *et seq.*) and the Illinois Freedom of Information Act (5 ILCS 140/1 *et seq.*). Consultant agrees to comply with all pertinent federal and state statutes, rules and regulations and County ordinances related to confidentiality.

SECTION 18. WORK PRODUCT
All work product prepared by Consultant pursuant to this Agreement, including, but not limited to, policies, reports, analysis, plans, designs, calculations, work drawings, studies, photographs, models, and recommendations shall be the property of Lake County. Consultant shall deliver the work product to Lake County upon completion of Consultant's work, or termination of the

Agreement, whichever comes first. Consultant may retain copies of such work product for its records; however, Consultant may not use, print, share, disseminate, or publish any work product related to this Agreement without the consent of Lake County.

SECTION 19. PRESS/NEWS RELEASES

Consultant may not issue any press or news releases regarding this Agreement without prior approval from Lake County. Consultant shall provide notice to Lake County's Chief Communications Officer if contacted by the media regarding the services set forth in this Agreement.

SECTION 20. DEBARMENT AND SUSPENSION

The Lake County Purchasing Ordinance § 33.125 through 33.126 defines the County's Authority and Decision to Debar.

The Consultant certifies to the best of his or her knowledge and belief that the Consultant:

A. Is not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from covered transactions by any Federal department or agency.

B. Has not within a 3-year period preceding this contract been convicted of or had a civil judgment rendered against it for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain or performing a public (Federal, State, or local) transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statement, or receiving stolen property;

C. Is not presently indicted or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and

D. Has not, within a three-year period preceding this contract, had one or more public transactions (Federal, State, or local) terminated for cause or default.

Consultant agrees that, during the term of this Agreement, Consultant shall report to the County's contract administrator, within 10 days, any allegations to or findings by the National Labor Relations Board (NLRB) or Illinois Labor Relations Board (ILRB) that Consultant has violated a statute or regulation regarding labor standards or relations. If an investigation by the County results in a final determination that the matter adversely affects Consultant's responsibilities under this Agreement, then the County may terminate this contract.

SECTION 21. NON-DISCRIMINATION

During the term of this agreement, Consultant agrees to and shall comply with (1) the Equal Opportunity Employer provisions of Section 2000e of Chapter 21, Title 42 of the United States Code and Federal Executive Order Number 11246, as amended by Executive Order 11375, and (2) Chapter 33 of Title III of the Lake County Code of Ordinances (titled "Purchasing").

SECTION 22. OTHER CONSIDERATIONS

In no event shall Consultant or its subcontractors or subconsultants, of any tier, be liable in contract, tort, strict liability, warranty or otherwise, for any special, incidental, exemplary or consequential damages, such as, but not limited to, delay, disruption, loss of product, loss of anticipated profits or revenue, loss of use of the equipment or system, non-operation or increased expense of operation of other equipment or systems, cost of capital, or cost of purchase or replacement equipment, systems or power. In addition, to the fullest extent permissible by law, and notwithstanding any other provision of this Agreement or any work order, the total liability, in the aggregate, of Consultant, its officers, directors, shareholders, employees, agents, subcontractors and subconsultants, and any of them, to Lake County and anyone claiming by, through or under Lake County, for any and all claims, losses, liabilities, costs or damages whatsoever arising out of, resulting from or in any way related to the Work or this Agreement or any work order from any claim, including, but not limited to, tort claims, claims of negligence (of any degree), professional errors or omissions, breach of contract, breach of warranty, indemnity claims,and strict liability of Consultant, its officers, directors, shareholders, employees, agents, subcontractors and subconsultants, and any of them, shall not exceed $500,000.

Signed:

COUNTY OF LAKE	**BURNS & MCDONNELL ENGINEERING COMPANY, INC.**
By:_____	By: David A Warner
Its Purchasing Agent	Its Senior Project Manager
Date:_____	Date: 10/17/2022

Exhibit A

October 7, 2022

Yvette Albarran
Lake County - Purchasing Division
18 N. County Street – 9th Floor
Waukegan, IL 60085-4350

Re: RFP #22134 | Evaluation of a Senior Discount

Dear Ms. Albarran:

We are pleased to provide this letter in response to your email on September 29 regarding consulting services to evaluate and propose a senior discount to the direct retail customers for both water and sewer service.

Considerations when Implementing Rate-Funded Customer Assistance Programs

On the surface, the prospect of considering a customer assistance program such as a senior discount may sound straightforward. However it is an important change in the way Lake County recovers water and sewer costs and warrants diligence and strategic consideration.

We are aware of other communities in the Chicago metropolitan area that have senior discounts for water and sewer service. In 2017 a report was authored by the UNC Environmental Finance Center entitled *Navigating Legal Pathways to Rate-Funded Customer Assistance Programs*, which provides a state-by-state evaluation of legal capability to implement rate-funded customer assistance programs (CAPs). Its conclusions regarding Illinois for noncommission-regulated utilities included:

- "jurisdiction to set rates is broad but limited by the requirements that any rate structure used to implement a low-income CAP cannot result in rates that are excessive' or 'unreasonably discriminatory'," and,
- "limitations or enabling provisions in individual charters could affect an entity's ability to implement such programs and should be reviewed."

Overall, as a home rule state, this report viewed Illinois' applicable laws to be relatively permissive compared to other states regarding rate-funded CAPs. We assume Lake County either has or will have reviewed its legal authority to implement a senior discount for its retail water and sewer customers independently prior to implementation.

Because Lake County provides wholesale water and sewer service, it will be important to demonstrate that the cost of the discount is recovered by other retail customers and not by wholesale ratepayers. Because this program is a new consideration, Lake County does not currently have the ability to determine the accounts and revenues from customers that could potentially be eligible for a senior discount. As such, one of the challenges in this evaluation is determining the overall cost of the senior discount program. We'll collaborate with Lake County in determining how to estimate the potential cost of providing a discount, but there will be uncertainty in this process until the program is in place and actual participation rates are known.

9400 Ward Parkway
Kansas City, MO 64114

816-605-7800

1898andCo.com

Yvette Albarran
Lake County, Illinois
October 7, 2022

Lake County's existing rate structures are relatively complicated. Providing for a senior discount would further complicate these rates. The ability of the County's billing system to accommodate the discount will need to be considered. Additionally, how the discount will be administered should also be discussed, including who would be responsible for determining eligibility and processing the change to the rates for each account.

Finally, one of the challenges with customer assistance programs in general is the difficulty in perfectly meeting the goals and objectives for the program. For instance, if the primary goal for a senior discount reflects a desire to assist elderly customers on a fixed income, there will likely be customers eligible for a discount based on age that do not need customer assistance in paying their utility bill but will receive it anyway. This misalignment is sometimes referred to as leakage, simply because it is nearly impossible to perfectly align results of the assistance program with its strategic intent. Our approach includes a discussion with Lake County regarding the strategic intent of this program to help align the program design and consider alternate ways to meet the primary goals.

The remainder of this letter outlines the approach, and proposed level of effort and fee, to accomplish this task.

Task 1 | Evaluate a Senior Water & Sewer Discount

Task 1.1 Kick-off Meeting

A kick-off meeting for this task is proposed to discuss the following:

- Review of current Lake County customer assistance programs currently in effect for water and sewer bill assistance
- Goals for the senior discount
- Desired form of discount (i.e. development of specific rates or general percentage)
- Potential data sets and methods for quantifying customers that may receive the discount
- How the discount may be administered (general methods and procedures, billing system capability, etc)

Task 1.2 Analysis

A survey of regional utilities with a senior discounts in place will help provide Lake County with context regarding regional practices. If Lake County has access to the Water Utility Council, submitting a request to them may be the most cost effective and comprehensive method for gaining insight into regional practices. If this is not possible, we will conduct a survey of up to 30 regional utilities based on on-line rate ordinances. The determination of the list of those to survey will be reviewed with Lake County prior to proceeding.

The level of proposed discount will be largely driven by County program goals, but may also be influenced by the regional survey. The regional survey will provide information about the ways in which the discount is structured for other utilities. We will review and discuss the survey results to determine a proposed discount structure and level using Microsoft Teams.

Yvette Albarran
Lake County, Illinois
October 7, 2022

An estimate the potential cost of the senior discount (i.e. lost revenue and possible administrative costs) will be based on:

- Level and structure of proposed discount
- Estimates of eligibility and participation
- Preferred implementation timing
- County estimates of potential administrative costs

Task 1.3 Delivery of Results

We will summarize the approach and findings of the proposed senior discount in a technical memorandum for review and feedback. The memorandum will be finalized based on feedback received.

We recommend presenting the discount to the PWT as part of the rate study approach outlined in our initial proposal. Under this approach, we could be prepared to discuss senior discount regional practices and structures at the PWT discussion in Late January/Early February as part of the financial planning PWT meeting. Final recommendations including potential impact to bills would be made at the proposed April PWT meeting. For reference, our proposed rate study milestones are shown below.

Task	Anticipated Completion
Notice to proceed	November 14, 2022
Kickoff Meeting	Week of November 14
Data Received	Week of December 28
Preliminary Review of Utility Financial Plans & Connection Fees	Week of January 16, 2023
PWT Discussion – Financial Planning	Late January/Early February TBD
Preliminary Review of Cost of Service	Week of February 6
Preliminary Rate Design	Week of February 20
Draft Reports (Rates and Connection Fees)	By February 28
PWT Discussion – Proposed Rates	April 2023 TBD
Final Reports	May 2023 TBD

The advantage to this approach is that we can engage the PWT with little additional cost to the County. However, we also understand this may be a policy decision that needs to be presented at different times and are open to the County's perspective on when and how to engage decision makers.

Yvette Albarran
Lake County, Illinois
October 7, 2022

Proposed Level of Effort and Fee

Assuming the senior discount analysis is performed as part of the proposed rate study, 1898 & Co. proposes to complete the analysis described in this letter on a time and materials basis for a not-to-exceed fee of $14,000, including expenses and approximately 64 man-hours. This level of effort assumes we conduct the regional senior discount survey.

If the Water Utility Council is able to provide all necessary regional survey information, the not-to-exceed fee is estimated to be $11,000 including about 50 hours. Hourly rates will be based on the information submitted in our rate study proposal.

If presentations do not coincide with the proposed rate study presentations, we estimate additional costs per presentation of about $3,000 including labor and travel expenses above costs described above.

We are grateful for Lake County's consideration of us during this process and are happy to discuss any aspects of our original proposal and the proposed senior discount at your convenience. Please contact me at (816) 822-4207 / david.naumann@1898andco.com if I can assist in any way.

Sincerely,

David F. Naumann / Senior Project Manager

Water, Sewer Rate and Connection Fee Study

PROPOSAL

Submitted to Lake County, Illinois
RFP #22134
September 15, 2022

September 15, 2022

Yvette Albarran
Lake County - Purchasing Division
18 N. County Street – 9th Floor
Waukegan, IL 60085-4350

Re: Proposal for Water, Sewer Rate and Connection Fee Study | RFP #22134

Dear Ms. Albarran:

Lake County has requested professional services to provide a comprehensive Water and Sewer Rate Study and Connection Fee Study (Study). This important project requires an experienced rate consulting firm to support Lake County's financial planning and rate consulting needs. **1898 & Co.℠*, a division of Burns & McDonnell Engineering Company, Inc. is that firm.** 1898 & Co. specializes in providing comprehensive rate studies for water and sewer utilities and has been honored to provide these services to Lake County starting in 2018. Our reputation is based on our ability to provide an objective evaluation of each utility system we serve. In addition to our direct experience providing the requested services, we are supported by over 10,000 professionals specializing in the planning, design, and construction of utility and other infrastructure projects.

Seasoned Project Team with Experience Where it Matters Most. Our project team is led by Dave Naumann, who specializes in water and sewer utility financial and rate consulting. Dave was the project manager for the County's 2018 Rate and Connection Fee Study and has provided ongoing support to Lake County since then. He is supported by a team of experienced consultants that specialize in municipal ratemaking for water and sewer utilities. Our team brings both national and regional experience and has provided similar services to many Chicago-area water and sewer utilities including Rockford, DuPage County Water, Joliet, Mount Prospect, Winnetka, and others. All experience cited in our proposal is that of the team that will serve Lake County.

A Proven Approach. The proposed approach is consistent with services provided in the 2018 Study. Our methods for conducting utility rate and connection fee studies are well aligned with American Water Works Association and Water Environment Federation standards.

We Know Lake County and the Region. Lake County's water and sewer utility system, its financial data, and user rate structures are complex. We are very acquainted with these dynamics and are well positioned to provide the requested Study. Additionally, our directly applicable rate study experience in the Chicago metropolitan area provides valuable perspective on local rate making trends. Finally, through our local Chicago and Downers Grove offices, our firm has extensive first-hand knowledge, relationships, and data for similar communities that can be accessed as needed during the proposed Study.

Yvette Albarran
Lake County, Illinois
September 15, 2022

We appreciate the opportunity to continue serving Lake County through the proposed Study. If you have any questions, please contact Dave Naumann at (816) 822-4207 / david.naumann@1898andco.com.

Sincerely,

David F. Naumann / Senior Project Manager

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Appendices

Introduction Material and Executive Summary

Our Proposal

We are pleased to provide our proposal to perform a Water and Sewer Rate and Connection Fee Study, as described in Lake County's Request for Proposal (RFP) #22134.

The remainder of this proposal has been designed to address the needs outlined in Lake County's RFP. Key proposal sections are summarized below.

Company Background

This section describes Burns & McDonnell and its utility consulting group 1898 & Co., which is where our municipal finance and rates associates are staffed.

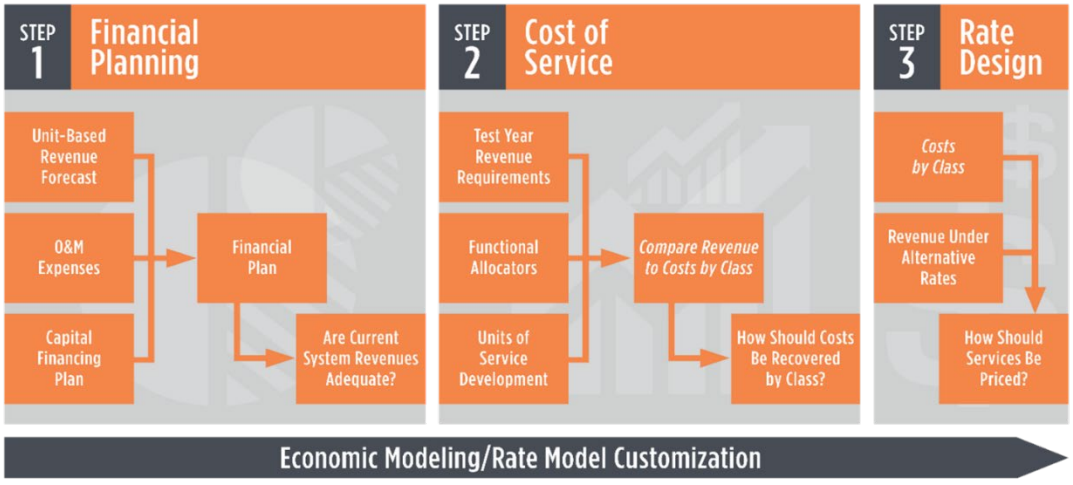
Relevant Experience

Our firm is a fully integrated engineering, architecture, construction, environmental and consulting firm with a multidisciplinary staff of more than 10,000 professionals worldwide. With annual revenues of $4.76 billion, we have large-firm resources but small-firm responsiveness. Because we are relationship-focused and dedicated to creating amazing success for our clients, we have a 90 percent repeat-business rate and client partnerships that span multiple decades. You'll also learn more about our specific experience conducting rate studies and details about projects that share many of the same goals as Lake County's proposed Study. We have a long history in performing municipal rate studies and have provided similar services to several water and/or sewer utilities in the Chicago metropolitan area, including Lake County.

Our team is backed by personnel from our downtown Chicago and Downers Grove offices. Our Chicago-based associates have completed over 5,000 projects for Illinois communities in the last 10 years. Nearly 485 of those projects were for water and wastewater clients, giving us first-hand knowledge, relationships, and data for similar communities.

Scope of Services

This section of our proposal includes a detailed, technical narrative of our understanding of Lake County's goals for this Study, and how we propose to perform the tasks needed to meet these goals. In broad terms, we will complete three primary steps in evaluating Lake County's water and sewer rates, depicted below.



- **Step 1: Financial Planning.** This step will determine if revenues under existing rates can be expected to provide enough funding to meet future operating and capital needs. If not, we will determine how much revenues should increase to meet these needs and achieve desired performance measures such as reserve levels and debt service coverage.
- **Step 2: Cost of Service Analysis.** This step will indicate how costs are related to the services provided by the water and sewer utilities by service area. Industry guidelines are used to assign cost to customer classes that each utility serves, providing insight into whether or not current utility rates are equitably priced.
- **Step 3: Rate Design.** This step will recommend rate changes and connection fees by service area to fairly recover costs and provide the funding for each utility identified in Step 1.

Our team will collaborate with Lake County to develop financial plans for each utility, supported by cost of service analysis and recommendations for rate design and connection fees. We will assist Lake County in developing strategies to successfully implement the proposed rate changes, including consideration of phased implementation to mitigate rate shock.

The rate study will be backed by reports and documentation explaining the key assumptions and findings. We are prepared to meet the needs outlined in the RFP and have the Draft Report delivered to Lake County in February 2023 and the Final Report delivered to Lake County in May 2023.

Implementation Plan

Based on our prior experience with Lake County and the desired scope of work associated with the proposed Study, we consider Lake County's desired timeline for key deliverables to be reasonable and achievable. Our implementation plan demonstrates the interim milestones to reach the indicated completion dates.

Project Management Team

Our project team is staffed by the same key individuals that have supported Lake County since 2018.

Client References

We encourage Lake County to contact our references. We are confident you will hear firsthand about our commitment to project success, timelines and budgets. We work with utilities large and small and have provided references that reflect this diversity.

Our Commitment

Our goal in every rate study is to be considered an extension of our client's team. Ultimately, we strive to become a trusted business adviser to our water and sewer clients. We promised Lake County we'd be a collaborative, engaging partner in our 2018 proposal and we hope our commitment in this regard has been demonstrated since then.

Our team possesses deep knowledge of the water and sewer utility industry and ratemaking practices in the local Chicago area as well as nationally. We are excited about the opportunity to continue our collaboration with Lake County through the proposed Study.

Company Background

Our Firm

Burns & McDonnell has been providing water and wastewater services to public sector and industrial clients since our founding in 1898. 1898 & Co. is headquartered in Kansas City, Missouri. With a local presence since 1994, we have two local offices in the Chicago metropolitan area, one in Downtown Chicago and another in Downers Grove. Combined, these two offices employ over 440 professionals. Our local office is supported by over 10,000 individuals located nation-wide. Burns & McDonnell offers a wide range of services to meet our clients' needs efficiently and effectively with expertise in our Chicago offices. These services are consistently provided with the standards of quality and commitment our firm prides itself in and include:

- Aviation & Federal
- Construction/Design-Build
- Energy
- Environmental Services
- Global Facilities
- Transmission & Distribution
- Transportation
- Water

100%

employee-owned

Backed by

10,000

professionals at Burns & McDonnell

55+

offices

Our more than 10,000 professionals around the world bring extensive experience in a wide range of scientific, architectural and engineering disciplines. We have people with the knowledge and background to complete virtually any project and address any challenges — whether known or unforeseen — in a timely, integrated and efficient manner. This translates to project consistency, lower costs and the ability to maintain your project schedule.

Our firm is employee-owned, meaning every employee is an owner from the mailroom to the board room. Employee ownership also means we all share in the firm's success and motivates us to achieve our vision of Making our Clients Successful. Because we are relationship-focused and dedicated to creating amazing success for our clients, we have a 90 percent repeat-business rate and client partnerships that span multiple decades.

Dedicated to Water

In the last 10 years, we have completed over 5,000 projects for Illinois communities. Nearly 485 of those projects were for water and wastewater clients. No other firm has the first-hand knowledge, relationships and data for similar communities, which will be a crucial part of this project. We also bring established connections with key stakeholders, Federal and State regulators and other decision-makers to facilitate planning efforts. The Village will benefit from having a partner that is committed to serving and understanding your needs through a holistic planning approach that will best serve your community.

About 1898 & Co.

1898 & Co. is the management consulting group within Burns & McDonnell, providing business, technology and security consulting across many industries, including municipal water and sewer utilities.

An Integral Part of Burns & McDonnell

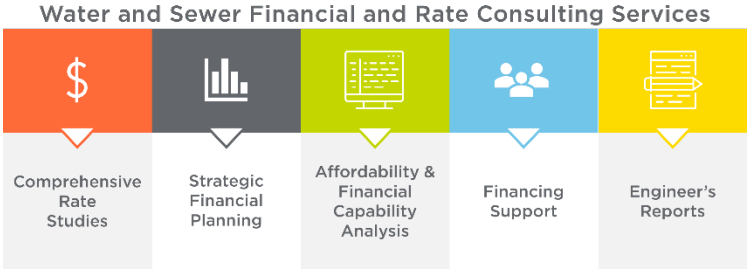
As part of Burns & McDonnell, our team is able to draw upon the vast experience created by the firm's 120+ years of architectural, engineering and construction history; after all, 1898 is the year Burns & McDonnell was founded. We not only effectively optimize and integrate business solutions, but also build the infrastructure you need to use them.

This background also gives us the unique ability to understand the entire life cycle of an asset - no matter the industry. In this way, we unlock the solutions that drive smarter business decisions, improving your organization and growing value.

Utility Financial & Rate Consulting Services

1898 & Co. has a team of consultants that can provide services to meet the financial and management challenges of our clients. This team of consultants consists of a multi-discipline group of engineers, economists, financial analysts, and other professionals with management expertise. Specific services tailored to municipal water and sewer utilities include:

Comprehensive Rate Studies



1898 & Co. provides comprehensive financial planning, cost of service and rate studies to municipal water and sewer utilities. These studies align with industry standards expressed in AWWA's *M1 Rate Manual* and WEF's *Financing and Charges for Wastewater Systems* and typically provide a five- to 10-year outlook. Priorities in rate studies can vary, and we customize our approach to address the specific needs of each community. We provide national and regional rate-making perspective, benchmarking, and a collaborative process.

Strategic Financial Planning

Our long-term financial forecasting is designed to evaluate the impact of 20-year+ capital improvement programs, whether they are identified as part of a recently completed master plan, or as a function of integrated planning evaluating the cost of regulatory compliance. These long-term plans provide strategic insight into ratepayer impacts resulting from program implementation and are complete with tabular results and graphics to illustrate impacts of different scenarios. Strategic financial planning can be conducted as part of a rate study

Affordability and Financial Capability Analysis

1898 & Co. provides program management support regarding compliance with the Clean Water Act in the form of affordability analysis and financial capability assessments (FCA). These tools examine the potential impact of compliance programs using the most recent guidelines published by the EPA. Affordability analyses and FCAs are often coupled with Strategic Financial Planning to demonstrate affordability implications from multiple perspectives.

Debt Issuance Support

1898 & Co. has served as consulting engineer for public utility financings totaling more than $18 billion. Through these financial transactions, we have worked with many investment banking firms and bond counsels. Typically, projections are made of the bond issuer's revenues, expenses, and other cash obligations to evaluate the ability of the enterprise to adequately repay the debt.

Additionally, existing bond covenants are examined to determine if the utility has appropriately met required debt service coverage or other measures of financial performance as a condition for issuing additional debt. Our firm also routinely provides representative system inspections and condition assessments to provide potential bondholders perspective on the overall condition of the utility system.

Engineer's Reports

Debt covenants may require a periodic review of a water or sewer utility, which may include a description of organizational structure, representative condition assessments, financial forecasting, and opinions regarding debt covenant compliance. If required, engineers reports may be developed annually, every three years, or every five years, depending on covenants. Specific requirements will be set forth in authorizing ordinances and summarized in official statements. 1898 & Co. has access to in-house resources that bring perspective on financial forecasting, infrastructure condition, operating insight, and capital needs to meet the specific requirements of the debt covenants.

Board of Directors

- Raymond J. Kowalik, Chairman, 9400 Ward Parkway, Kansas City, Missouri 64114
- Paul D. Fischer, Director, 9400 Ward Parkway, Kansas City, Missouri 64114
- Steven E. Gross, Director, 170 S. Independence Mall W, Unit 709, Philadelphia, PA 19106
- Renita M. Mollman, Director, 9400 Ward Parkway, Kansas City, Missouri 64114
- John E. Olander, Director, 9400 Ward Parkway, Kansas City, Missouri 64114
- Robert L. Reymond, Director, 9400 Ward Parkway, Kansas City, Missouri 64114
- Alissa D. Schuessler, Director, 9400 Ward Parkway, Kansas City, Missouri 64114

Similar work

Please see the Relevant Experience section of our proposal.

Organizational Chart

Please see the Project Management Team section of our proposal.

Detailed Resumes

Please see the Project Management Team section of our proposal.

Relevant Experience

Similar Project Experience

Our team is experienced in providing professional water and sewer rate study services. Below are descriptions of several relevant projects, including contributing team members.

Each project 1898 & Co. completes is unique in that it addresses specific issues for individual clients. In this sense, the scope of work developed for each client is a custom-tailored assignment; however, utility rate studies frequently contain universal elements that are common across projects 1898 & Co. has completed on previous engagements.

Lake County, Illinois | Water and Sewer Financial Planning & Rate Study; Connection Fees; Additional Support Services

In 2019 Burns & McDonnell completed a comprehensive financial plan and rate design study for Lake County's water and sewer utilities. The study included revenue increase and rate recommendations for a 10-year planning horizon.

Lake County's service area is diverse and complex. Lake County provides retail water service utilizing water supply from either Lake County groundwater wells and treatment infrastructure or from water provided by Central Lake County Joint Action Water Agency (CLCJAWA). Other water facilities involved in the delivery of water service include storage tanks, pump stations, and transmission and distribution mains. Lake County provides both retail and wholesale sewer service involving an array of infrastructure such as local collector mains, interceptors, force mains, pump stations and treatment plants. As with water service, depending on location some sewer customers receive sewer service solely through reliance on Lake County infrastructure, while others receive sewer service by relying on a combination of infrastructure owned by Lake County and other regional providers.

A detailed financial plan was developed for each utility to forecast future operating and capital costs applicable to each service and service area. Our team worked with Lake County to develop the financial principles by which revenue sufficiency would be evaluated, including the goal of cash-funding all recurring capital needs. Many financial planning scenarios were crafted and reviewed with the team. A phased approach was selected, and rate design was performed using the existing rate structure.

Connection fees were also evaluated during the study, examining how the value of assets in service enable growth in the water and sewer systems in accordance with the level of service provided.

We have recently provided additional support services, including a review of an alternative water rate structure, and cash flow analysis taking into consideration potential stimulus monies that would be used to fund capital improvements.

Key Project Staff: Dave Naumann, Sara Stafford

Joliet, Illinois | Water and Sewer Financial Planning & Rate Study; Cash Flow Modeling for the Alternative Water Supply Project

We were engaged by the City of Joliet (the City) to perform a comprehensive water and wastewater rate study (Study) that evaluated the financial impact of the substantial funding requirements associated with regulatory mandates, capacity to serve growth, long term control plan to address combined sewer overflows, and rehabilitation and repair of aging infrastructure, both in treatment plants and underground facilities. Upon completion of the financial planning efforts, proposed rates were developed to adequately recover the capital and operating costs for the water and wastewater utilities. Proposed rates were presented to City Council in 2015 for consideration and approval. City Council determined the need to conduct an efficiency study of the water and sewer utilities prior to adoption of proposed rate increases. The Study report documented the findings of financial planning and rates as of December 2015.

In 2016, following the completion of the efficiency study, our team performed an update of the financial planning and rate analysis. Following a presentation to the City Council, proposed rates were approved in the fall of 2016.

We were engaged in a refresh of this study in 2019 to determine a rate path for the next five years. Most recently, our firm has provided the City's Alternative Water Supply Project Team with cash flow planning to understand the long-term impact to revenues associated with different water supply solutions involving capital plans ranging from $500 million to over $1 billion.

A new rate study has been initiated in 2022 to provide a long-term rate forecast reflecting updated design costs for the alternative water supply. Additional scope items include a review of miscellaneous fees and connection fees.

Key project staff: Dave Naumann, Sara Stafford

DuPage County, Illinois | Water Rate Study

Our team is nearing completion on a water rate study for DuPage County in 2022. The study included development of a five-year financial plan, cost of service and rate design. Different rate increase and rate design scenarios were crafted to provide alternate proposals for equitable cost recovery. Recommendations have been presented to DuPage County's finance committee and a report is in development.

Key project staff: Dave Naumann, Alex Craven

Mount Prospect, Illinois | Water and Sewer System Renewal and Replacement Plan and Rate Study

The Village of Mount Prospect engaged our firm to recommend a renewal and replacement plan for underground infrastructure and to develop a financial plan and rate design to provide the necessary funding. A 10-year planning period was used, and a capital plan was developed valued at more than $58 million. At the end of 10 years, renewal and replacement was designed to be sufficient to meet an approximate 100-year cycle for mains.

The financial plan examined alternatives to fund the capital and operating needs through the 10-year period. Multiple scenarios were developed to identify the preferred plan. Alternatives included varying the amount of debt, adjusting the timing and level of recommended revenue increases, modifying the operation and maintenance forecast, and accelerating or decelerating the achievement of the 100-year replacement cycle. Multiple presentations were made to the Village's Finance Commission to review these alternatives and achieve their unanimous support.

Proposed rates were developed, including the implementation of a fixed fee for the water system that varied by meter size. Existing water rates were entirely volumetric. The fixed fee was phased in to mitigate the impact on small users. Sewer rates maintained the existing rate structure, but an outside village multiplier was recommended. As a follow-up service, we provided a calculator to assist the Village in evaluating the financial impact of system expansion.

An updated forecast was provided in 2021 to refresh the plan to include updated revenues, costs and available balances.

Key project staff: Dave Naumann, Alex Craven

Winnetka, Illinois | Water Renewal and Replacement Plan and Water Rate Study

Our firm completed a Renewal and Replacement Plan and Rate Study (Study) for the Village of Winnetka's water utility. The purpose of the Renewal and Replacement Plan was to develop a programmatic, prioritized project plan for replacing the system's water mains. The plan included recommendations for main replacement taking into consideration risk, break history, pipe material, location, and other parameters, including coordination with the Village's street maintenance schedule. A 10-year financial plan was developed, evaluating multiple scenarios using debt and cash to achieve the ability to reach a funding level for renewal and replacement equivalent to a 100-year cycle by 2025. Cost of service and rate development included the creation of a fixed service charge to improve revenue stability and rate equity. The study included extensive research into regional renewal and replacement practices and water rate design trends and levels. Three two-hour workshops were held with the Village Board to present and discuss findings associated with the renewal and replacement plan, financial planning, and rate recommendations.

Key project staff: Dave Naumann

Fort Smith, Arkansas | Water & Sewer Financial Planning, System Cost of Service and Rate Design Studies

We have been honored to serve the City of Fort Smith for several decades with both financial/rate consulting services and engineering services. Since 2011, our proposed project team has performed multiple rate-related projects in collaboration with the City of Fort Smith for its water and sewer utilities. Representative rate-related engagements include the following:

- Water and sewer financial planning, cost of service and rate studies
- Financial and rate-related support regarding the reopening of the City's sewer system
- Consent Decree, including affordability analysis and strategic financial planning services
- Utility financial policy development
- Annual water rate true-up services according to one of the City's wholesale agreements
- Bond feasibility studies supporting the issuance of $165M in revenue bonds since 2011

Our team has provided a wide array of rate-related services for both the water and sewer utilities. We are currently engaged to perform a water rate study that evaluates a transition from the current cash-basis cost recovery approach to a utility basis, including a rate of return for wholesale customers. We also perform the City's annual water rate true-up for its largest wholesale water customer. Our project team assumed responsibility for the true-up in 2012 and assisted the City through a transparent negotiation process with the wholesale customer to resume true-ups after a nearly six-year dispute. Other services have included bond feasibility studies supporting the issuance of utility revenue bonds and a study to develop and document financial policies and practices for the utility department.

Key project staff: Dave Naumann, Sara Stafford, Alex Craven

Kansas City, Missouri | Water and Sewer Bond Feasibility Studies

We have assisted the City with a dozen studies enabling in the issuance of approximately $1 billion in water and wastewater revenue bonds and state revolving loans since 2012. Services included representative system inspections and strategic condition assessments, and a financial analysis projecting cash flows and revenue bond debt service coverage over a 10-year time horizon. As a condition of the City's existing revenue bond covenant, an additional bonds test was also performed. Each of these feasibility assessments required about 2 months to complete and provided bond buyers an independent evaluation that the City had the financial capability to repay its debt. Note the financial planning conducted to assess feasibility is identical to the financial planning included in comprehensive rate studies performed by our team.

Key project staff: Dave Naumann, Sara Stafford

Crest Hill, Illinois | Water & Sewer Financial Planning and Rate Study; Ongoing Additional Support

In 2021 Burns & McDonnell assisted Crest Hill with long-term financial planning and rate development that evaluated the impact to ratepayers of joining the Grand Prairie Water Commission. The impacts associated with required capital improvements and changes in operation and maintenance costs were estimated through collaboration with other consulting engineers engaged by Crest Hill and Joliet. Multiple scenarios were evaluated over a 20-year forecast period, and rates were designed for the next 10 years. Results were presented to City Council for review and approval.

Planning models were subsequently updated as assumptions and data evolved in 2022, including sensitivities regarding a substantial wastewater treatment plant rehabilitation that was bid in 2022.

Key project staff: Dave Naumann, Alex Craven

Representative Water Clients

On the following page, you will find a representative client listing that documents similar, recent studies. We are happy to provide additional project descriptions and references as needed.

All of these projects have been executed following a proven, repeatable methodology based on industry practice and were led by our proposed project manager for Lake County's proposed Study.

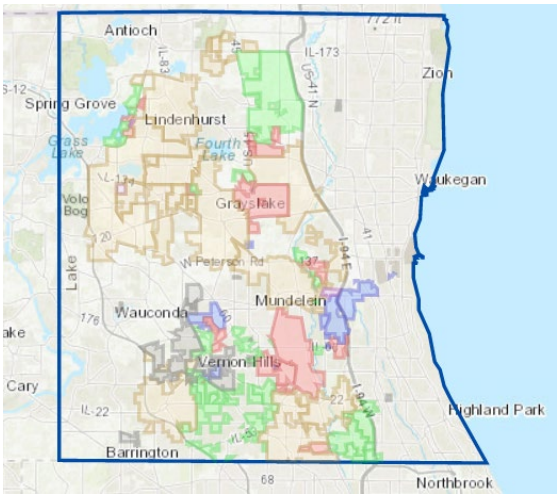
Water and Wastewater Experience

Client	City	State	Type	Rate Studies					Other Financial Studies		
			Water, Wastewater, Stormwater	Revenue Requirements	Cost of Service	Rate Design	Wholesale / Contract Rates	Rate Model	Benchmarking	Bond Feasibility Analysis	Other Assessment
Fort Smith	Fort Smith	AR	W, WW	●	●	●	●	●		●	●
Siloam Springs	Siloam Springs	AR	W, WW	●	●	●					
Lookout Mountain Water District	Evergreen	CO	W	●		●					●
Telluride	Telluride	CO	W, WW	●	●	●					
Harrington	Harrington	DE	WW	●	●	●	●				
Gainesville Regional Utilities	Gainesville	FL	W, WW								●
Fulton County	Atlanta	GA	W, WW	●		●					●
East Point	East Point	GA	W, WW	●	●	●					
DeKalb	DeKalb	IL	W	●	●	●					
Crest Hill	Crest Hill	IL	W, WW	●	●	●					●
DuPage County Public Works	Dupage County	IL	W, WW	●	●	●		●			
Evanston	Evanston	IL	W				●				●
Freeburg	Freeburg	IL	WW	●		●					
Homewood	Homewood	IL	W	●			●				
Joliet	Joliet	IL	W, WW	●	●	●		●			●
Lake County	Libertyville	IL	W, WW	●	●	●	●				●
Lake Forest	Lake Forest	IL	W, WW	●	●	●		●			
Mount Prospect	Mount Prospect	IL	W, WW	●	●	●					
Rockford	Rockford	IL	W	●	●	●					
St Charles	St Charles	IL	W, WW	●	●	●					
Winnetka	Winnetka	IL	W	●	●	●					
Newport Chemical Depot Reuse Authority	Newport	IN	W,WW	●		●					●
Arkansas City	Arkansas City	KS	WW	●							
Hutchinson	Hutchinson	KS	W	●	●	●					●
Johnson County Wastewater	Olathe	KS	WW	●	●	●	●	●	●		
Kansas City	Kansas City	KS	WW, SW	●					●		●
McPherson	McPherson	KS	W	●	●	●	●				●
Olathe	Olathe	KS	W, WW								●
Osage City	Osage City	KS	WW	●		●					
Wichita	Wichita	KS	W, WW	●						●	●
Owensboro	Owensboro	KY	W	●	●	●	●	●	●	●	
Bossier City	Bossier City	LA	W, WW	●		●	●				
Lafayette Utilities System	Lafayette	LA	W, WW	●	●	●				●	●
Monroe	Monroe	LA	W, WW	●		●					
Shreveport	Shreveport	LA	W, WW	●	●	●					●
Belton	Belton	MO	W		●	●	●				
Harrisonville	Harrissonville	MO	W, WW	●	●	●					
Joplin	Joplin	MO	WW	●	●	●		●			
Kansas City	Kansas City	MO	W, WW	●						●	●
Peculiar	Peculiar	MO	W	●		●					●
Republic	Republic	MO	W, WW	●		●					
Saint Charles	Saint Charles	MO	W, WW	●		●			●		
Saint Joseph	Saint Joseph	MO	WW	●	●	●				●	●
Sedalia	Sedalia	MO	W, WW	●	●	●					
Trenton	Trenton	MO	W, WW	●	●	●		●			
Jackson	Jackson	MS	W, WW	●							●
Greenville	Greenville	MS	W, WW	●							●
La Vista	La Vista	NE	WW	●	●	●		●			
MidAmerica Industrial Park	Pryor Creek	OK	W, WW	●		●	●				●

Scope of Services

Project Understanding

Lake County serves approximately 27,000 retail water and sewer customers and 150,000 wholesale sewer customers. This service is provided by a complex array of facilities including 12 water systems, five regional sanitary sewer systems, five water reclamation facilities and 75 sewer lift stations. Service is delivered through 300 miles of water main and 350 miles of sanitary sewer main located over multiple and diverse service areas.



Lake County regularly examines the sufficiency and equity of its rates, with the most recent analysis completed in 2019. One of the key objectives of the current Study is to develop a financial roadmap that appropriately funds the operating and capital needs of the water and sewer utilities. This roadmap will indicate the sufficiency of revenues under existing rates to meet future revenue requirements. To the extent revenue adjustments are needed, a plan will be crafted to implement necessary revenue increases through a collaborative process between Lake County and our project team.

Another key objective is to develop proposed rates and fees that reflect the cost of providing service and will generate the funding as identified in each utility's financial plan. Lake County's diversity of systems and customers is reflected in the variety of existing user charges and connection fees. We will combine our local ratemaking experience with our national perspective to provide Lake County equitable and implementable rate adjustments.

Our firm's water and sewer rate specialists regularly provide municipal rate studies to clients in the Chicago metropolitan area and across the country and are prepared to provide Lake County's requested services. The remainder of this section of our proposal highlights our approach to addressing Lake County's needs.

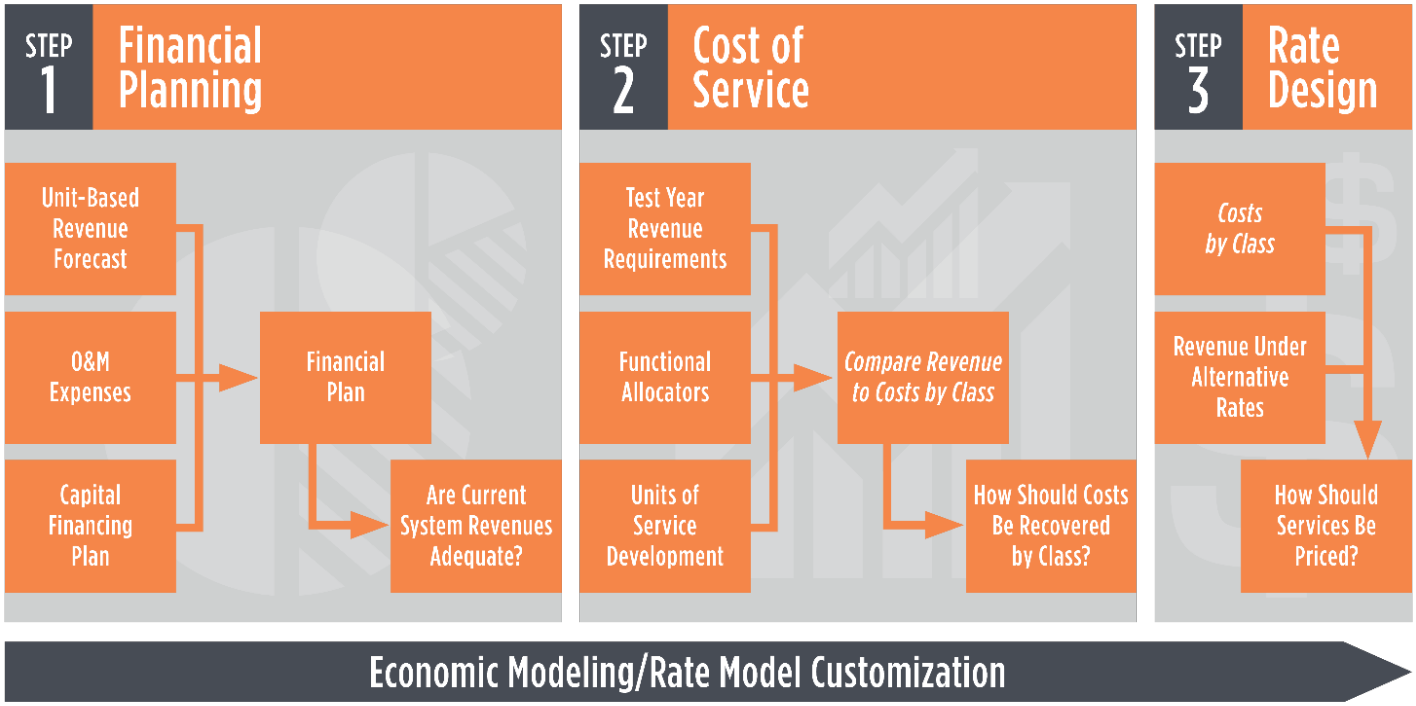
The proposed Study will follow the same process and protocol as our prior rate study services provided to Lake County and will update all key assumptions to acknowledge current conditions and data sets. Key objectives of the proposed study include the following.

- Provide a 10-year financial plan, taking into consideration current billing determinants, budgets, inflation/cost escalators, external funding provided through anticipated federal and state stimulus programs, and capital improvement needs
- Perform cost of service analysis leveraging Lake County cost accounting data
- Develop a five-year rate design using the existing water and sewer rate structures
- Provide a connection fee study to update connection fees by service and service area

Our Approach to Municipal Water and Sewer Rate Studies

For comprehensive water and sewer rate studies, we follow a three-step approach depicted in the following diagram. This approach has been utilized by our proposed project team and consistently applied in essentially all comprehensive financial planning, cost of service and rate studies we conduct.

Our approach 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.*



Proposed Work Plan

We have organized the Proposed Work Plan below to address the specific scope of services requested in Lake County's RFP, including connection fees. All requested scope components are included herein and are sequenced in a way we believe will enable project completion efficiently and effectively. We are prepared to adjust our approach to meet Lake County's needs as may be desired.

The studies for each utility are very similar in content and philosophy but there are subtle differences based on nuances for each. The following specific tasks are proposed to be undertaken to complete the proposed Study.

Task 1 | Initiate Project

Task 1.1 Initiate Project

The objective of Task 1 is to initiate the Study, collecting pertinent data and collaborating with Lake County to confirm consensus understanding of issues, milestones, communication strategies and other matters.

Task 1.2 Request for Information
Within five working days following receipt of the Notice to Proceed, we will provide Lake County with a preliminary data request to complete the study. The data request will itemize information needed for understanding the financial and operating characteristics and cost drivers of the utilities and within each of the service areas. Such information is anticipated to include items such as:

- Budgets;
- Audited financial statements;
- Budget versus actual revenues and expenses for the current fiscal year;
- Anticipated federal or state external stimulus funding;
- Bond covenants, intergovernmental agreements and other contractual requirements, as applicable;
- Historical customer data (e.g. number of active accounts by meter size and by customer class, usage for water and sewer by class, revenues by class)
- Projected capital expenditures;
- Fund balances;
- Existing debt and loan payment schedules;
- Reserve policies;
- Other appropriate information as deemed necessary

We have a substantial amount of existing data from prior work with Lake County. The data request will be tailored to reflect only incremental data needs required to perform the Study, which we anticipate being relatively minor.

Task 1.3 Kick-off Meeting & Project Management
We will conduct a project kick-off meeting virtually using Microsoft Teams. This meeting will provide the opportunity for our team and Lake County to discuss the project approach, schedule, deliverables, various issues to be addressed, and the initial data and information requested. Burns & McDonnell will provide an agenda in advance of the meeting.

Task 1 Deliverables
- Preliminary data request
- Electronic copies of the kick-off meeting agenda
- Microsoft Teams kick-off meeting

Task 2 | Financial Plan Development

The objective of Task 2 is to develop a 10-year financial plan for each utility system that adequately funds the operating and capital requirements, complies with financial management policies and bond covenants, and provides a defensible and implementable plan for the utilities to move forward. Within Task 2 we will also take an initial look at connection fees to the potential order of magnitude change in this important funding source.

We will develop the financial forecasts specifically for the water and sewer utilities consistent with the approach used in the 2018/2019 study. This will determine whether each utility's revenues under current rates can be expected to provide adequate funding for future utility operating and capital costs.

Task 2.1 Evaluate Current Usage Levels and Prepare Revenue Forecast
Projected annual utility service revenues under existing rates will be developed. Our team will review historical growth in the number of customers by class and by service area, and then forecast the annual number of customers for each utility rate class for each year of the forecast period.

We will assess trends in usage for water and sewer billable flow by class over a three-year period. Based on the trend analysis and other available information, our team will estimate the future usage per customer for each rate class for each utility.

This information will be used in the forecast of revenues under existing rates, including the rate increase planned for implementation at the beginning of Fiscal Year (FY) 2023. We will also develop projections of revenues from other existing sources, which may include interest income and other miscellaneous income sources.

Task 2.2 Project Capital Flow of Funds
We will review the capital improvement plan (CIP) provided by Lake County and develop a capital planning flow of funds. This plan will acknowledge anticipated sources and uses of capital funds to implement the CIP. Funding sources may include issuance of proposed bonds, loans, growth-related fees, existing balances, potential ARPA funding, and other sources as applicable. Uses of funds will include the CIP, cost of debt issuance, and other costs as identified through consultation with Lake County.

Task 2.3 – Project Operating Revenue Requirements
Projections of annual system operation and maintenance expenses will be developed based on variables that may include projected water and sewer usage, historical expense levels, existing budgets, inflation estimates and the input of Lake County staff regarding any planned changes to the operation and maintenance of the utility systems.

Annual debt service requirements on any outstanding debt will be included in the operating forecast. To the extent additional financing of expected capital improvements is indicated to be required, estimates of new debt service requirements will also be incorporated in the forecast. In addition, the impacts of any financial performance requirements or targets, i.e. debt service coverage requirement, reserve levels, target operating ratio, etc., whether imposed internally or externally, will be considered.

Projections of any other system cash expenditures not included in any of the above categories will also be captured in the financial forecast. Such expenditures often include transfers or routine capital expenditures not otherwise included in a capital improvement plan.

Task 2.4 – Initial Evaluation of Connection Fees
The equity of the current connection fees will be examined for adequacy in recovering growth-related costs from new connections. The initial review of connection fees at this stage of the project is to ascertain the overall level of change that may be warranted in adjusting future connection fees, to understand the impact such changes could have on the overall financial plans. Final determination of connection fees is anticipated to be completed in Task 4 Rate Design.

Our team will review the fee to confirm a rational nexus exists between the fee and the level of service provided within each service area. Replacement cost estimates of key backbone infrastructure will be estimated in collaboration with Lake County personnel. If current replacement cost data is unavailable, costs may be estimated based on values used in the 2019 study plus allowances for inflation reflecting inflationary indices such as Handy-Whitman or the Engineering News Record Construction Cost Index. Simultaneously, the overall equivalent residential units that are served in each service area under the existing system will be determined using Lake County engineering estimates of residential equivalents. Asset value for each service area will then be divided by equivalent units to calculate the recommended charge. In Task 2, this process will provide an indication of the adequacy of existing connection fees, and the overall degree of change in future connection fees that can be used in the development of financial plans.

Task 2.5 – Review and Finalize Operating Cash Flows

We will summarize the annual forecasts of each utility's revenues and operating requirements in the form of pro-forma cash flow analyses. These analyses will identify the annual operating surplus or deficit anticipated during the study period. The sufficiency of existing rates to meet future revenue requirements will be evaluated based the ability to meet certain financial performance measures, including the anticipated annual surplus or deficit, debt service coverage levels, reserve balance goals, and other policies or measures developed in conjunction with Lake County. If revenues under existing rates are not sufficient to meet future revenue requirements, adjustments will be proposed.

Our team will review the preliminary forecast results with Lake County during a review meeting. During this meeting, we will review assumptions and results for each component of the cash flow forecast. During the meeting adjustments may be made "real time" to optimize the financial plans and meet Lake County's needs.

Task 2 Deliverables

- Evaluation of billing determinants and trends
- Preliminary review of connection fees
- Projected cash flow by utility
- Scenario analysis
- Microsoft Teams Meeting to review and finalize cash flows

Task 3 | Cost of Service Analysis

A cost of service analysis focuses on assigning cost responsibility for each utility system to the various service areas served by Lake County. The 2018/2019 study developed operating cost by service area for each utility based on Lake County's historical cost accounting to the different classifications of customers. Capital costs were allocated to service areas on the basis of asset values. Combined, the operating and capital costs for each utility and service area were compared to current revenues by service area to inform rate making. A similar approach is anticipated for the proposed Study.

We will review preliminary cost of service analysis with Lake County staff. Any revisions to the assumptions used in the cost of service analysis will be agreed upon for purposes of finalizing the analysis. The final cost allocations will be fair and equitable to the service areas and will align Lake County goals and objectives.

Task 3 Deliverables

- Cost of service allocations to service areas
- Microsoft Teams meeting to discuss cost of service results

Task 4 | Proposed Water Rate Development

The objective of Task 4 is to develop proposed rates that meet the needs and objectives of each utility system and service area. Lake County has indicated the desire to maintain the current rate structure, and to adjust rates within that structure to meet indicated system revenue increases as identified in Task 2. Cost of service will also provide context for potential rate adjustments by service area as identified in Task 3.

Task 4.1 – Design Proposed User Charge Rates

Based on the forecasted revenue requirements and cost of service analysis, proposed water and sewer user charges will be developed by service area for a 5-year projection period. Changes in rates may be phased-in over a multi-year period if needed to assist in implementation and mitigate adverse impacts to customer classes.

Task 4.2 – Finalize Connection Fees
Based on preliminary analysis conducted regarding connection fees in Task 2, proposed connection fees by service area will be finalized for both utilities.

Task 4.3 – Rate and Fee Comparisons
Our team will residential typical bill calculations for each utility and retail service area under a variety of usage levels. Typical monthly bill calculations will demonstrate the impact the proposed rates may have on monthly residential bills. We will provide rate comparisons for average residential water and sewer customers of existing and proposed rates to the rates of up to fifteen neighboring water and sewer utilities in the region. Additionally, our team will prepare a comparison of connection fees for water and sewer service for up to 15 water and sewer utilities. The list of utilities for which these comparisons will be developed will be agreed upon prior to the initiation of Task 4.

Task 4.4 – Review Proposed Rates and Fees
We will review and discuss the proposed rates and fees, and the forecast of revenues at proposed rates. Any revisions to the proposed rates used in the analysis will be agreed upon for purposes of finalizing the proposed rate development.

Task 4 Deliverables and Meetings

- Proposed rates and connection fees
- Typical bill computation
- Regional comparison of proposed rates and fees
- Microsoft Teams meeting to review draft and final proposed rates and fees

Task 5 | Reports and Presentations

Upon completion of the utility rate development, our team will summarize the Study results in a draft report for review by the County. The report will include an executive summary describing the study process, and key findings and recommendations regarding rate design and proposed fees. Subsequent sections of the report will describe the analysis in more tactical detail and will identify the results of each task of the Study.

Based on completion of prior project tasks, the report will document the following key deliverables:

- A summary of current and proposed rates for established service areas
- Document the analysis performed to support proposed rates and connection fees
- Document significant policies and assumptions utilized in the rate study
- Compare Lake County's existing and proposed rates and connection fees with those used by regional peers

We will discuss the results of Study and review the draft reports in a Microsoft Teams meeting with Lake County staff. Based upon comments and input from Lake County, our team will complete a final revision to the reports and will provide a digital copy in PDF format to Lake County.

The RFP indicates one on-site presentation of results to Lake County's Public Works and Transportation Committee (PWPT) with potential for a follow-up presentation to the Finance & Administrative Committee (F&A). Based on the 2019 study we suggest two PWT meetings – one at the conclusion of Task 3 to review systemwide funding needs and recommendations, and one at the end of Task 4 to review proposed rates and regional bill comparisons. However, we are open to alternate approaches to committee presentations based on Lake County preferences. For the purposes of estimating level of effort and fee, we have assumed two presentations to committees during the delivery of results.

Task 5 Deliverables and Meetings

- Draft & final reports
- Adobe PDF of final reports
- Microsoft Teams meeting to review and finalize reports
- Tow committee presentations (PWPT and/or F&A, under any combination)

Implementation Plan

Once the project is initiated and data is received, it is anticipated it will take about three to four months to complete the development of financial plans, evaluation of cost of service, rate design and draft reports. We understand Lake County would like to have the study completed by May 2023 and propose the following major milestones to meet this schedule.

Task	Anticipated Completion
Notice to proceed	November 14, 2022
Kickoff Meeting	Week of November 14
Data Received	Week of December 28
Preliminary Review of Utility Financial Plans & Connection Fees	Week of January 16, 2023
PWT Discussion – Financial Planning	Late January/Early February TBD
Preliminary Review of Cost of Service	Week of February 6
Preliminary Rate Design	Week of February 20
Draft Reports (Rates and Connection Fees)	By February 28
PWT Discussion – Proposed Rates	April 2023 TBD
Final Reports	May 2023 TBD

As indicated earlier, we are open to different approaches regarding committee presentations.

During the project, we propose monthly recurring meetings with Lake County staff to discuss the project status, review deliverables, and discuss pertinent issues impacting project development and delivery. Because the project will be progressing during the holiday season, we recommend recurring meetings be established at project kickoff.

Lake County's engagement is particularly critical in the following areas.

- Timely delivery of initial data and assistance addressing initial questions
- Review of deliverables including preliminary cash flows, preliminary rate and fee design, and draft reports
- Scheduling assistance and attendance of recurring monthly meetings

Please see the Project Management Team section for resumes and relevant experience of each key team member.

Project Management Team

Key Team Members

1898 & Co. has assembled an experienced project team to execute the proposed Study for Lake County, led by the same project manager and senior analyst that has completed prior rate-related services to Lake County.

Dave Naumann, MBA / Project Manager

Dave is a senior project manager specializing in financial and operational management consulting for water, wastewater and storm water systems and leads our municipal water and sewer finance and rates practice. Representative engagements during Dave's 31 years of service have included financial planning, cost of service and rate design; affordability analysis; system development charges; utility valuation; depreciation analysis; economic modeling; feasibility of plant expansion; feasibility of organizational or governance change and related transition planning; and process improvement. His experience, understanding of business operations and financial modeling skills provide a strong basis to help clients make sound decisions.

Dave has facilitated large and small workshops and presented study results to a variety of decision makers and stakeholders.

Dave holds a BSBA in Finance Economics and an MBA with an emphasis in Finance. He has been with 1898 & Co. the last 11 years.

Representative Projects

- Lake County, IL – Water and Sewer Rate Study and Connection Fees (2018); Rate Structure Change Evaluation (2021); Financial Planning Refresh (2022)
- Joliet, IL- Water and Sewer Rate Studies (2015, 2019, 2022 ongoing); Long-term financial planning for alternative water supply (2018-current); Connection fees (ongoing)
- Crest Hill, IL - Water and Sewer Utility Financial Planning and Rate Study (2021); Financial Planning Updates (2022)
- DuPage County, IL - Water Rate Study (2022)
- Evanston, IL - Annual Water Plant Valuation (each year since 2011)
- Rockford, IL- Water Rate Study (2022 ongoing)
- St Charles, IL - Connection Fee Update (2022 ongoing)
- Mount Prospect, IL – Water and Sewer Rate Studies (2017); Financial Plan Refresh (2021)
- Winnetka, IL – Water Rate Study (2017)
- City of Fort Smith, AR - Comprehensive water and wastewater financial planning, cost of service and rate design (2011, 2014/2015, 2019, 2021-2022); Financial policy assessment (2014), Wholesale contract settlement issues (2011-2022); Wastewater Affordability Assessment (2018-2022)
- Johnson County Wastewater, KS – Annual comprehensive wastewater financial planning, cost of service and rate design (2005-2011, 2014 -2022)
- City of Joplin, MO – Comprehensive wastewater financial planning, cost of service and rate design (2014, 2019)
- City of Kansas City, MO – Water and wastewater bond feasibility analysis; Wastewater Affordability Assessment (2012-2021)
- Bossier City, LA – Comprehensive wastewater financial planning, cost of service and rate design with annual updates (2014-2019)
- Town of Telluride, CO - Comprehensive water and wastewater financial planning, cost of service and rate design (2013, 2017, 2019, 2022 ongoing)
- City of Trenton, MO – Comprehensive water, wastewater and electric financial planning, cost of service and rate design (2014, 2018 update); Wastewater Affordability Assessment (2017-2019); Financial Planning Scenarios (2018-2019)
- City of Wichita, KS – Water and wastewater bond feasibility analysis (2012 - 2022)

Paul St. Aubyn, PE / Client Liaison

Paul is a civil and environmental engineer and project manager with 15 years of experience. His areas of expertise include potable water system design and planning, including water distribution system modeling, master plans and studies, process and facility design, water main design and condition assessments. He also has experience designing and planning storm and sanitary sewer collection systems, performing sewer design, sanitary sewer system studies, flooding evaluations, as well as experience with USEPA Consent Orders. He is proficient in numerous computer applications (InfoWater, Bentley WaterGEMS, ArcGIS, AutoCAD Civil 3D, and Microstation).

Paul holds a BS in Civil and Environmental Engineering and **is located in our Chicago Downers Grove office.**

Sara Stafford / Senior Consultant

With over 20 years of experience, Sara's area of expertise is in financial analysis, with a focus on market assessments and pro forma presentations. As a senior consultant specializing in water and sewer rate consulting, she is skilled in financial modeling, financial analyses and risk analyses. Sara has been actively involved in several water costs of service analyses and rate studies for various utilities. She has been responsible for analyzing required capital expenditures, evaluating revenue and debt financing, and allocating costs to various customer classes. Sara has also served as a project analyst on several consulting engineer's reports for water and wastewater utility revenue bond issues. She has been responsible for performing financial cash flow analyses including reviews of debt service coverage levels.

Sara holds a BS in Business Administration and has spent her entire career at 1898 & Co. specializing in water and sewer utility financial consulting.

Representative Projects

- Lake County, IL – Water and Sewer Rate Study and Connection Fees (2018); Rate Structure Change Evaluation (2021); Financial Planning Refresh (2022)
- Joliet, IL- Water and Sewer Rate Studies (2015, 2019, 2022 ongoing); Long-term financial planning for alternative water supply (2018-current); Connection fees (ongoing)
- Evanston, IL - Annual Water Plant Valuation (each year since 2011)
- Rockford, IL- Water Rate Study (2022 ongoing)
- City of Fort Smith, AR - Comprehensive water and wastewater financial planning, cost of service and rate design (2011, 2014/2015, 2019, 2021-2022); Financial policy assessment (2014), Wholesale contract settlement issues (2011-2022); Wastewater Affordability Assessment (2018-2022)
- Johnson County Wastewater, KS – Annual comprehensive wastewater financial planning, cost of service and rate design (2005-2011, 2014 -2022)
- City of Kansas City, MO – Water and wastewater bond feasibility analysis; Wastewater Affordability Assessment (2012-2021)
- Bossier City, LA – Comprehensive wastewater financial planning, cost of service and rate design with annual updates (2014-2019)
- City of Trenton, MO – Comprehensive water, wastewater and electric financial planning, cost of service and rate design (2014, 2018 update); Wastewater Affordability Assessment (2017-2019); Financial Planning Scenarios (2018-2019)
- City of Wichita, KS – Water and wastewater bond feasibility analysis (2012 - 2022)

Alex Craven, MBA / Consultant

Alex specializes in financial data review and analysis; financial modeling; cash flow forecasting; cost of service analysis; and rate development for water and wastewater utilities. Alex is proficient in the Microsoft suite of products, with advanced skills in the use of Excel.

Alex holds a BA in Economics and Business Administration, and an MBA. He has been with 1898 & Co nearly five years.

Representative Projects

- Crest Hill, IL - Water and Sewer Utility Financial Planning and Rate Study (2021); Financial Planning Updates (2022)
- Republic, MO – Water and Sewer Utility Financial Planning and Rate Study (2020 with updates in 2021 and 2022)
- St. Joseph, MO – Sewer Rate Study (2020-2022)
- Rochester Public Utilities, MN – Water Rate Study (ongoing)
- DuPage County, IL - Water Rate Study (2022)
- Mount Prospect, IL –Financial Plan Refresh (2021)
- St Charles, IL - Connection Fee Update (2022 ongoing)
- Town of Telluride, CO - Comprehensive water and wastewater financial planning, cost of service and rate design (2013, 2017, 2019, 2022 ongoing)

Evaristo Casimiro / Financial Analyst

Evaristo is experienced in executing a variety of studies, to bring together the technical and economic knowledge needed to develop strategic roadmaps for the utility industry including electric, water, and wastewater. He specializes in Financial Modeling, Valuation & Appraisals, and Depreciation studies.

Evaristo holds a BS in Business Administration and Economics, and an MBA. He has been with 1898 & Co for one year.

Representative Projects

- Crest Hill, IL - Water and Sewer Utility Financial Planning and Rate Study Updates (2022)
- Rochester Public Utilities, MN – Water Rate Study (ongoing)
- Emporia, KS – Water and Sewer Comprehensive Rate Studies (ongoing)
- Republic, MO – Water and Sewer Utility Financial Planning and Rate Study updates in 2021 and 2022

Project Management Approach

As a matter of general practice we strive to assign basic data aggregation and analysis to junior members of our team, with senior members being responsible for quality review of that analysis and performance of more complex aspects of the study such as financial planning strategy and cost of service analysis. Our project manager will be responsible for overall project management and project delivery, including presentations and reports.

The level of effort we have estimated for this project reflects contributions from all levels of our project team. The table below shows the distribution of labor hours by task. For instance 37 percent of our labor hours are associated with Financial Plan Development in Task 2. The table also shows with each task how labor hours are distributed by employee. For instance, 12 percent of labor hours associated with Task 2 Financial Plan Development relate to our project manager Dave Naumann.

	Task 1 - Initiate Project	Task 2 - Financial Plan Development	Task 3 - Cost of Service Analysis	Task 4 - Proposed Rate Development	Task 5 - Reports and Presentations	Total
Total Labor by Task	1%	37%	34%	13%	15%	100%
Labor Distribution with Task by Employee						
Dave Naumann	33%	12%	24%	17%	53%	23%
Paul St. Aubyn	33%	1%	0%	0%	2%	1%
Sara Stafford	33%	46%	60%	33%	8%	43%
Alex Craven	0%	27%	13%	17%	38%	22%
Evaristo Casimiro	0%	15%	3%	33%	0%	11%
Total	100%	100%	100%	100%	100%	100%

We follow a quality control program that provides peer reviews of our work products to confirm our deliverables are consistently adhering to our quality standards.

Client References

We encourage Lake County to contact our references for their perspective on our team's ability to execute the proposed project on time and within budget. Many of our clients engage us for study updates and we strive to be considered extended members of their team. We recognize that becoming a trusted advisor is an honor earned and not granted; performing studies on time and on budget is a key requirement in earning client trust.

"The Presentation from Burns & McDonnell was as comprehensive, well-thought out, and well-reasoned as any I have been involved in...I have not seen the level of thought, care and understanding of the issues as they were presented...it was a pleasure to listen to and I was glad to be involved."

- Charles L. Zitnik, D.A. Davidson & Co.
Regarding Trenton, Missouri Water, Sewer & Electric Rate Studies

We have worked with Lake County since 2018 on rate study endeavors. In supplying references for this RFP, we have chosen four other communities that can speak to our rate study expertise and project delivery with the assumption that Lake County is familiar with our performance. However, if perspective regarding our Lake County performance is helpful in the selection process, Austin McFarlane, Joel Sensenig, or Julie Gray are most familiar with our work.

Please see the Reference sheet in Appendix C for additional reference details.

- **Allison Swisher** / Director of Public Utilities / 815-724-4222 / aswisher@jolietcity.org
- **Sean Dorsey** / Public Works Director / 847-870-5640 / sdordsey@mountprospect.org
- **Lance McAvoy** / Utilities Director / 479-784-2401 / lmcavoy@fortsmithar.gov
- **Stan Spera** / Financial Administrator / 630-985-3553 / Stanley.spera@dupageco.org

Sample Deliverables

Included in Appendix A are sample reports. Two are reports from the 2018/2019 Lake County rate study and connection fee study, which we felt may be helpful and convenient for reference. We are also including a report for Lafayette Utilities System, which was a comprehensive study including their water, sewer, and electric utilities. Dave Naumann led the water and sewer utility portions of that rate study.

Exceptions to the RFP

We have been honored to serve Lake County with water and sewer rate and connection fee services since 2018.

While we believe the terms and conditions included in RFP #22134, with minor modification, can serve as the basis for a mutually agreeable contract based on our experience with Lake County, we propose using our existing agreement with Lake County. The terms and conditions from that agreement originated in 2018 based on Lake County's agreement with mutually agreeable minor adjustments, and have been the basis for the rate consulting services since. Our most recent agreement with Lake County #22074 is enclosed in Appendix B for reference.

Price Proposal

1898 & Co. proposes to complete the water, sewer rate and connection vee study described in this proposal on a time and materials basis for a not-to-exceed fee of $86,644, including expenses, using the hourly billing rates included with this proposal on Lake County's requested forms.

Appendix A

Sample Deliverables

Water and Sewer Rate Study

Lake County, Illinois

Water and Sewer Rate Study
Project No. 109356

Final Report
10/20/2019

Water and Sewer Rate Study

prepared for

Lake County, Illinois
Water and Sewer Rate Study
Lake County, Illinois

Project No. 109356

Final Report
10/20/2019

prepared by

Burns & McDonnell Engineering Company, Inc.

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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
CLCJAWA	Central Lake County Joint Action Water Agency
CPI-U	Consumer Price Index for all Urban Consumers
FY	Fiscal year
IEPA	Illinois Environmental Protection Agency
Kgal	Thousand gallons of water
Mgd	Million gallons per day
NSWRD	North Shore Water Reclamation District
O&M	Operation & Maintenance Expense
SS	Suspended solids
RCE	Residential customer equivalent
WEF	Water Environment Federation

1.0 EXECUTIVE SUMMARY

1.1 Project Background

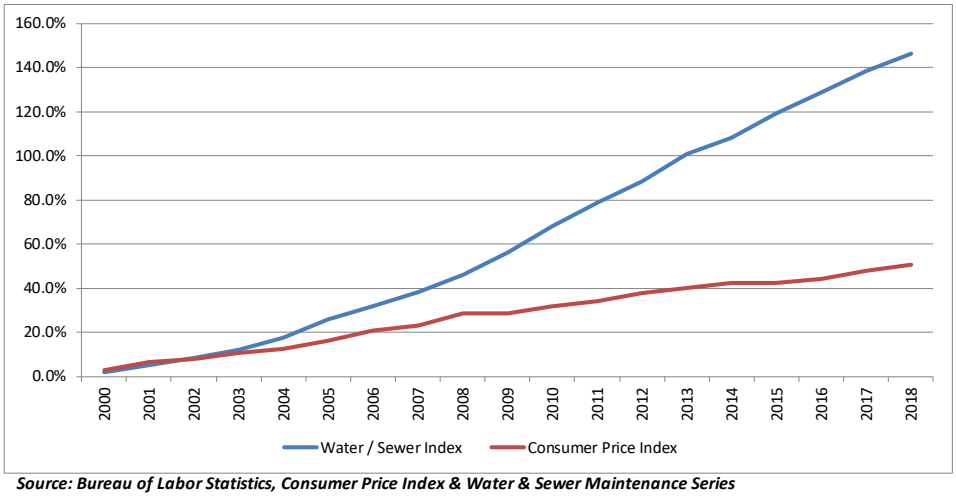
Burns & McDonnell was engaged by Lake County, Illinois (Lake County) to perform a water and sewer rate study (Study) that (i) evaluates the financial planning implications of the funding requirements for the utilities, and (ii) proposes rates to adequately recover these costs for the water and sewer utilities. This Report presents the major findings of the Study.

1.2 Industry Trends in Water and Sewer Rates

Nationally, water and sewer rates have been on a steady rise for decades. Replacement of aging infrastructure is one of several dynamics impacting water and sewer utility rates. Other dynamics may include regulatory requirements, inflation on operating and capital costs, and a general trend in declining consumption most 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. The most commonly referenced measure is the Consumer Price Index for all Urban Consumers (CPI-U) which measures inflation at the consumer level. The BLS also tracks a combined inflation index for consumer water and sewer costs. Figure 1-1 compares changes in the consumer price index to changes in the water and sewer cost index.

Figure 1-1: Trends in National Water and Sewer Rates Compared to Inflation



Source: Bureau of Labor Statistics, Consumer Price Index & Water & Sewer Maintenance Series

Annually, the trend shown in Figure 1-1 represents an approximate increase of 5 percent per year for the water and sewer index, while CPI's annual rate of change is about 2 percent per year. Other industry surveys such as the American Water Works Association's Rate Survey and the National Association of Clean Water Association's Cost of Clean Water index also indicate 5 percent to 6 percent per year for utility rate increases.

Each utility may be influenced by specific circumstances that can lead to increases that are higher or lower than these industry trends. However, costs associated with renewal and replacement of existing infrastructure and the increasing cost of regulatory compliance are two of the primary dynamics contributing toward the increases in water and sewer rates. Understanding the reality of increasing costs within the water and sewer industry provides helpful context in evaluating proposed financial plans.

1.3 Financial Planning

As discussed in Section 2 of this report, revenues under existing rates are not sufficient to meet the projected cash obligations of the utilities over the ten-year study period. The need for revenue adjustments is influenced by the following factors:

- Inflationary impacts on operation and maintenance expenses and future capital improvements.
- Implementation of the proposed capital plans, including pay-as-you-go funding for capital improvements.

Financial planning assumptions are described in Section 2 of this report. The financial plans detailed in this report propose the following revenue increases to be effective December 1 of each fiscal year indicated.

Table 1-1: Proposed Water and Sewer Revenue Increases

	Water			Sewer		
	System Increase	CPI	Total Adjustment	System Increase	CPI	Total Adjustment
2020	9.5%	2.1%	11.6%	2.0%	2.1%	4.1%
2021	9.5%	2.1%	11.6%	2.0%	2.1%	4.1%
2022	9.5%	2.1%	11.6%	1.0%	2.1%	3.1%
2023	9.5%	2.1%	11.6%	0.0%	2.1%	2.1%
2024	9.5%	2.1%	11.6%	0.0%	2.1%	2.1%
2025	9.5%	2.1%	11.6%	0.0%	2.1%	2.1%
2026	9.5%	2.1%	11.6%	0.0%	2.1%	2.1%
2027	0.0%	2.1%	2.1%	0.0%	2.1%	2.1%
2028	0.0%	2.1%	2.1%	0.0%	2.1%	2.1%
2029	0.0%	2.1%	2.1%	0.0%	2.1%	2.1%

Table 1-1 shows increases for both the core system as well as assumed general inflation. CPI is estimated to be 2.1 percent and is subject to change from year to year. The increases proposed in Table 1-1 are designed to enable the water utility to reach its cash-funded capital improvement program funding in seven years, while the sewer utility is projected to reach its cash-funded capital improvement program funding in three years. Note that once these funding thresholds are reached, the system increase falls to 0.0 percent in Table 1-1, with only CPI-based adjustments through the end of the study period.

It is important to recognize among the assumptions used to develop the financial plans herein, no extensive capital improvements are included beyond the capital investment targets established by Lake County staff. In the event that an unforeseen, material capital improvement is required, it may prompt revisions to the planning shown in this report.

1.4 Cost of Service Analysis

Using Lake County's historical cost accounting information, costs were distributed to the water and sewer utilities and then to service areas for each utility. Results of the cost of service analysis are discussed in Section 3 of this report.

1.5 Proposed Rates

Development of proposed rates is discussed in Section 4 of this report. Existing and proposed water rates are shown in Table 1-2. Proposed rates include the development of a monthly, fixed service charge and the elimination of the minimum bill associated with water use.

Existing and proposed sewer rates are shown in Table 1-3. No changes to the sewer rate structure are proposed at this time.

The impact of proposed water and sewer rates on typical residential customers has been calculated and is shown in Tables 1-4 and 1-5. A regional comparison of water and sewer bills has also been prepared. As shown in Figure 1, for a residential customer using 5,000 gallons under selected existing Lake County water and sewer rates, the impact of proposed FY 2020 changes to water and sewer rates does not have a material impact on Lake County's position in the regional survey.

Table 1-2: Existing and Proposed Water Rates

	Existing	Proposed, Fiscal Year				
	FY 2019	2020	2021	2022	2023	2024
Monthly Service Charge						
Meter Size						
Up to 1"	$ -	$ 7.28	$ 8.13	$ 9.07	$ 10.13	$ 11.30
1.5"	$ -	$ 8.20	$ 9.10	$ 10.20	$ 11.40	$ 12.70
2"	$ -	$ 10.60	$ 11.80	$ 13.20	$ 14.80	$ 16.50
3"	$ -	$ 28.70	$ 32.00	$ 35.80	$ 39.90	$ 44.60
4"	$ -	$ 35.40	$ 39.50	$ 44.10	$ 49.20	$ 54.90
6"	$ -	$ 51.00	$ 56.90	$ 63.50	$ 70.90	$ 79.10
8"	$ -	$ 68.80	$ 76.80	$ 85.70	$ 95.70	$ 106.80
12"	$ -	$ 115.60	$ 129.00	$ 144.00	$ 160.80	$ 179.50
Volumetric Rates						
Metered Well Water						
(A) General Service Areas						
(1) Block 1 (0-2,000 gallons per month)	$ 4.16	$ 1.00	$ 1.12	$ 1.25	$ 1.40	$ 1.56
(2) Block 2 (3,000-6,000 gallons per month)	$ 4.39	$ 4.80	$ 5.36	$ 5.98	$ 6.68	$ 7.46
(3) Block 3 (7,000 gallons or greater per month)	$ 4.60	$ 5.28	$ 5.90	$ 6.58	$ 7.35	$ 8.21
(4) Non-Residential: Residential with multiple dwelling units per meter and irrigation meters	$ 4.39	$ 4.80	$ 5.36	$ 5.98	$ 6.68	$ 7.46
(B) CLCJAWA Service Areas						
(1) Block 1 (0-2,000 gallons per month)	$ 5.72	$ 3.08	$ 3.09	$ 3.10	$ 3.11	$ 3.12
(2) Block 2 (3,000-6,000 gallons per month)	$ 6.03	$ 6.28	$ 6.66	$ 7.08	$ 7.55	$ 8.08
(3) Block 3 (7,000 gallons or greater per month)	$ 6.33	$ 6.91	$ 7.33	$ 7.79	$ 8.31	$ 8.89
(4) Non-Residential: Residential with multiple dwelling units per meter and irrigation meters	$ 6.03	$ 6.28	$ 6.66	$ 7.08	$ 7.55	$ 8.08
(C) Hawthorn Woods - Glennshire/Forest Lake						
(1) Block 1 (0-2,000 gallons per month)	$ 8.03	$ 5.56	$ 5.57	$ 5.58	$ 5.59	$ 5.60
(2) Block 2 (3,000-6,000 gallons per month)	$ 8.45	$ 8.81	$ 9.19	$ 9.62	$ 10.10	$ 10.63
(3) Block 3 (7,000 gallons or greater per month)	$ 8.88	$ 9.69	$ 10.11	$ 10.58	$ 11.11	$ 11.69
(4) Non-Residential: Residential with multiple dwelling units per meter and irrigation meters	$ 8.45	$ 8.81	$ 9.19	$ 9.62	$ 10.10	$ 10.63
Unmetered Water						
(1) Arden Shores	$ 55.10	$ 62.03	$ 63.11	$ 64.32	$ 65.67	$ 67.18
(2) Countryside Lake	$ 43.86	$ 48.00	$ 53.60	$ 59.80	$ 66.80	$ 74.60
(3) Forest Lake	$ 43.51	$ 52.86	$ 55.14	$ 57.72	$ 60.60	$ 63.78
(4) Oak Terrace	$ 33.42	$ 36.00	$ 40.20	$ 44.85	$ 50.10	$ 55.95

Table 1-3: Existing and Proposed Sewer Rates

	Existing	Proposed, Fiscal Year				
	FY 2019	2020	2021	2022	2023	2024
Volumetric Rates						
Metered Sewer						
(1) General Service Areas	$ 5.57	$ 5.80	$ 6.04	$ 6.23	$ 6.36	$ 6.50
(2) Southeast Central - Libertyville, Countryside Manor, North Libertyville Estates, Terre Faire	$ 6.56	$ 6.83	$ 7.11	$ 7.33	$ 7.49	$ 7.65
(3) Northeast Central - NSWRD Wildwood	$ 8.08	$ 8.29	$ 8.51	$ 8.69	$ 8.81	$ 8.94
(4) Northeast Central - NSWRD Arbor Vista	$ 10.20	$ 10.40	$ 10.61	$ 10.78	$ 10.90	$ 11.02

Wholesale Sewer	$/1000 gal	$/RCE/Month	$/1000 gal	$/RCE/Month	$/1000 gal	$/RCE/Month	$/1000 gal	$/RCE/Month	$/1000 gal	$/RCE/Month	$/1000 gal	$/RCE/Month
(1) Antioch	$ 4.94	$ 39.52	$ 5.14	$ 41.12	$ 5.35	$ 42.80	$ 5.52	$ 44.16	$ 5.64	$ 45.12	$ 5.76	$ 46.08
(2) Buffalo Grove	$ 4.08	$ 30.60	$ 4.25	$ 31.88	$ 4.43	$ 33.23	$ 4.57	$ 34.28	$ 4.67	$ 35.03	$ 4.77	$ 35.78
(3) Grayslake	$ 3.44	$ 25.80	$ 3.58	$ 26.85	$ 3.73	$ 27.98	$ 3.85	$ 28.88	$ 3.93	$ 29.48	$ 4.01	$ 30.08
(4) Green Oaks	$ 1.10	$ 8.80	$ 1.15	$ 9.20	$ 1.20	$ 9.60	$ 1.24	$ 9.92	$ 1.27	$ 10.16	$ 1.30	$ 10.40
(5) Gurnee	$ 3.44	$ 25.80	$ 3.58	$ 26.85	$ 3.73	$ 27.98	$ 3.85	$ 28.88	$ 3.93	$ 29.48	$ 4.01	$ 30.08
(6) Hainesville (Northwest)	$ 3.70	$ 27.75	$ 3.76	$ 28.20	$ 3.82	$ 28.65	$ 3.87	$ 29.03	$ 3.90	$ 29.25	$ 3.94	$ 29.55
(7) Hainesville (Northeast Central)	$ 3.44	$ 25.80	$ 3.58	$ 26.85	$ 3.73	$ 27.98	$ 3.85	$ 28.88	$ 3.93	$ 29.48	$ 4.01	$ 30.08
(8) Harbor Ridge	$ 5.57	$ 41.78	$ 5.71	$ 42.83	$ 5.85	$ 43.88	$ 5.96	$ 44.70	$ 6.04	$ 45.30	$ 6.12	$ 45.90
(9) Lakes Region Sanitary District	$ 3.70	$ 27.75	$ 3.76	$ 28.20	$ 3.82	$ 28.65	$ 3.87	$ 29.03	$ 3.90	$ 29.25	$ 3.94	$ 29.55
(10) Lake Villa	$ 3.70	$ 27.75	$ 3.76	$ 28.20	$ 3.82	$ 28.65	$ 3.87	$ 29.03	$ 3.90	$ 29.25	$ 3.94	$ 29.55
(11) Lake Zurich	$ 4.08	$ 30.60	$ 4.25	$ 31.88	$ 4.43	$ 33.23	$ 4.57	$ 34.28	$ 4.67	$ 35.03	$ 4.77	$ 35.78
(12) Libertyville	$ 1.10	$ 8.80	$ 1.15	$ 9.20	$ 1.20	$ 9.60	$ 1.24	$ 9.92	$ 1.27	$ 10.16	$ 1.30	$ 10.40
(13) Lincolnshire	$ 4.08	$ 30.60	$ 4.25	$ 31.88	$ 4.43	$ 33.23	$ 4.57	$ 34.28	$ 4.67	$ 35.03	$ 4.77	$ 35.78
(14) Riverwoods	$ 5.57	$ 44.56	$ 5.80	$ 46.40	$ 6.04	$ 48.32	$ 6.23	$ 49.84	$ 6.36	$ 50.88	$ 6.50	$ 52.00
(15) Round Lake	$ 3.70	$ 27.75	$ 3.76	$ 28.20	$ 3.82	$ 28.65	$ 3.87	$ 29.03	$ 3.90	$ 29.25	$ 3.94	$ 29.55
(16) Round Lake Beach	$ 3.70	$ 27.75	$ 3.76	$ 28.20	$ 3.82	$ 28.65	$ 3.87	$ 29.03	$ 3.90	$ 29.25	$ 3.94	$ 29.55
(17) Round Lake Park	$ 3.70	$ 27.75	$ 3.76	$ 28.20	$ 3.82	$ 28.65	$ 3.87	$ 29.03	$ 3.90	$ 29.25	$ 3.94	$ 29.55
(18) Round Lake Heights	$ 3.70	$ 27.75	$ 3.76	$ 28.20	$ 3.82	$ 28.65	$ 3.87	$ 29.03	$ 3.90	$ 29.25	$ 3.94	$ 29.55
(19) Waukegan	$ 3.44	$ 25.80	$ 3.58	$ 26.85	$ 3.73	$ 27.98	$ 3.85	$ 28.88	$ 3.93	$ 29.48	$ 4.01	$ 30.08
Unmetered Sewer												
(A) General Service Area	$ 44.55		$ 46.40		$ 48.32		$ 49.84		$ 50.88		$ 52.00	
(B) Southeast Central - Libertyville	$ 48.39		$ 54.64		$ 56.88		$ 58.64		$ 59.92		$ 61.20	
(C) Northwest	$ 41.77		$ 43.50		$ 45.30		$ 46.73		$ 47.70		$ 48.75	
(D) Northeast Central	$ 53.70		$ 62.18		$ 63.83		$ 65.18		$ 66.08		$ 67.05	
(E) Ravenna, Royal Melbourne, Kildeer North Kildeer Central, Kildeer South	$ 55.73		$ 58.00		$ 60.40		$ 62.30		$ 63.60		$ 65.00	
(F) Riverside Preserve	$ 70.73		$ 73.65		$ 76.69		$ 79.09		$ 80.77		$ 82.49	

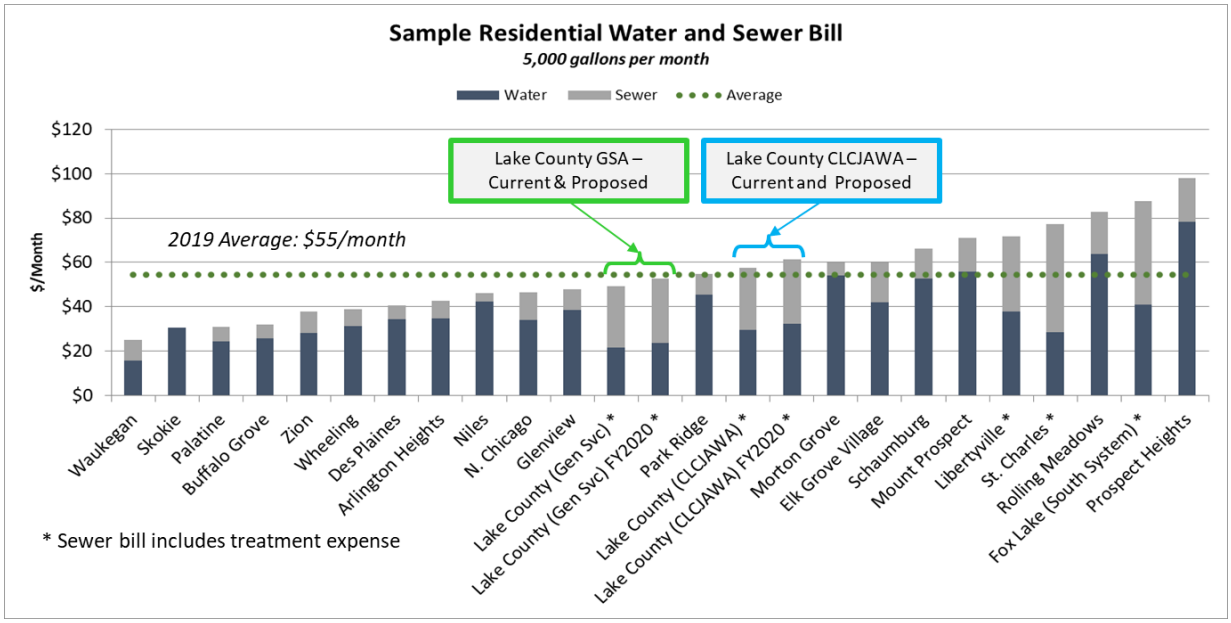
Table 1-4: Typical Residential Water Bills Under Existing and Proposed Rates

Meter Size	Monthly Water Use	Current Rates	Proposed Rates					Difference				
			2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
inches	kgal	$/mo	$/mo	$/mo	$/mo	$/mo	$/mo	$	$	$	$	$
General Service Areas												
1"	0	$ 8.32	$ 7.28	$ 8.13	$ 9.07	$ 10.13	$ 11.30	$ (1.04)	$ 0.85	$ 0.95	$ 1.06	$ 1.18
1"	1	$ 8.32	$ 8.28	$ 9.25	$ 10.32	$ 11.53	$ 12.86	$ (0.04)	$ 0.97	$ 1.08	$ 1.21	$ 1.34
1"	2	$ 8.32	$ 9.28	$ 10.37	$ 11.57	$ 12.93	$ 14.42	$ 0.96	$ 1.09	$ 1.21	$ 1.36	$ 1.50
1"	3	$ 12.71	$ 14.08	$ 15.73	$ 17.55	$ 19.61	$ 21.88	$ 1.37	$ 1.65	$ 1.83	$ 2.06	$ 2.28
1"	4	$ 17.10	$ 18.88	$ 21.09	$ 23.53	$ 26.29	$ 29.34	$ 1.78	$ 2.21	$ 2.45	$ 2.76	$ 3.06
1"	5	$ 21.49	$ 23.68	$ 26.45	$ 29.51	$ 32.97	$ 36.80	$ 2.19	$ 2.77	$ 3.07	$ 3.46	$ 3.84
1"	6	$ 25.88	$ 28.48	$ 31.81	$ 35.49	$ 39.65	$ 44.26	$ 2.60	$ 3.33	$ 3.69	$ 4.16	$ 4.62
1"	8	$ 35.08	$ 39.04	$ 43.61	$ 48.65	$ 54.35	$ 60.68	$ 3.96	$ 4.57	$ 5.05	$ 5.70	$ 6.34
1"	10	$ 44.28	$ 49.60	$ 55.41	$ 61.81	$ 69.05	$ 77.10	$ 5.32	$ 5.81	$ 6.41	$ 7.24	$ 8.06
1"	12	$ 53.48	$ 60.16	$ 67.21	$ 74.97	$ 83.75	$ 93.52	$ 6.68	$ 7.05	$ 7.77	$ 8.78	$ 9.78
1"	15	$ 67.28	$ 76.00	$ 84.91	$ 94.71	$ 105.80	$ 118.15	$ 8.72	$ 8.91	$ 9.81	$ 11.09	$ 12.36
1"	20	$ 90.28	$ 102.40	$ 114.41	$ 127.61	$ 142.55	$ 159.20	$ 12.12	$ 12.01	$ 13.21	$ 14.94	$ 16.66
CLCJAWA Service Areas												
1"	0	$ 11.44	$ 7.28	$ 8.13	$ 9.07	$ 10.13	$ 11.30	$ (4.16)	$ 0.85	$ 0.95	$ 1.06	$ 1.18
1"	1	$ 11.44	$ 10.36	$ 11.22	$ 12.17	$ 13.24	$ 14.42	$ (1.08)	$ 0.86	$ 0.96	$ 1.07	$ 1.19
1"	2	$ 11.44	$ 13.44	$ 14.31	$ 15.27	$ 16.35	$ 17.54	$ 2.00	$ 0.87	$ 0.97	$ 1.08	$ 1.20
1"	3	$ 17.47	$ 19.72	$ 20.97	$ 22.35	$ 23.90	$ 25.62	$ 2.25	$ 1.25	$ 1.39	$ 1.55	$ 1.73
1"	4	$ 23.50	$ 26.00	$ 27.63	$ 29.43	$ 31.45	$ 33.70	$ 2.50	$ 1.63	$ 1.81	$ 2.02	$ 2.26
1"	5	$ 29.53	$ 32.28	$ 34.29	$ 36.51	$ 39.00	$ 41.78	$ 2.75	$ 2.01	$ 2.23	$ 2.49	$ 2.79
1"	6	$ 35.56	$ 38.56	$ 40.95	$ 43.59	$ 46.55	$ 49.86	$ 3.00	$ 2.39	$ 2.65	$ 2.96	$ 3.32
1"	8	$ 48.22	$ 52.38	$ 55.61	$ 59.17	$ 63.17	$ 67.64	$ 4.16	$ 3.23	$ 3.57	$ 4.00	$ 4.48
1"	10	$ 60.88	$ 66.20	$ 70.27	$ 74.75	$ 79.79	$ 85.42	$ 5.32	$ 4.07	$ 4.49	$ 5.04	$ 5.64
1"	12	$ 73.54	$ 80.02	$ 84.93	$ 90.33	$ 96.41	$ 103.20	$ 6.48	$ 4.91	$ 5.41	$ 6.08	$ 6.80
1"	15	$ 92.53	$ 100.75	$ 106.92	$ 113.70	$ 121.34	$ 129.87	$ 8.22	$ 6.17	$ 6.79	$ 7.64	$ 8.54
1"	20	$ 124.18	$ 135.30	$ 143.57	$ 152.65	$ 162.89	$ 174.32	$ 11.12	$ 8.27	$ 9.09	$ 10.24	$ 11.44
Hawthorn Woods Service Areas												
1"	0	$ 16.06	$ 7.28	$ 8.13	$ 9.07	$ 10.13	$ 11.30	$ (8.78)	$ 0.85	$ 0.95	$ 1.06	$ 1.18
1"	1	$ 16.06	$ 12.84	$ 13.70	$ 14.65	$ 15.72	$ 16.90	$ (3.22)	$ 0.86	$ 0.96	$ 1.07	$ 1.19
1"	2	$ 16.06	$ 18.40	$ 19.27	$ 20.23	$ 21.31	$ 22.50	$ 2.34	$ 0.87	$ 0.97	$ 1.08	$ 1.20
1"	3	$ 24.51	$ 27.21	$ 28.46	$ 29.85	$ 31.41	$ 33.13	$ 2.70	$ 1.25	$ 1.40	$ 1.56	$ 1.73
1"	4	$ 32.96	$ 36.02	$ 37.65	$ 39.47	$ 41.51	$ 43.76	$ 3.06	$ 1.63	$ 1.83	$ 2.04	$ 2.26
1"	5	$ 41.41	$ 44.83	$ 46.84	$ 49.09	$ 51.61	$ 54.39	$ 3.42	$ 2.01	$ 2.26	$ 2.52	$ 2.79
1"	6	$ 49.86	$ 53.64	$ 56.03	$ 58.71	$ 61.71	$ 65.02	$ 3.78	$ 2.39	$ 2.69	$ 3.00	$ 3.32
1"	8	$ 67.62	$ 73.02	$ 76.25	$ 79.87	$ 83.93	$ 88.40	$ 5.40	$ 3.23	$ 3.63	$ 4.06	$ 4.48
1"	10	$ 85.38	$ 92.40	$ 96.47	$ 101.03	$ 106.15	$ 111.78	$ 7.02	$ 4.07	$ 4.57	$ 5.12	$ 5.64
1"	12	$ 103.14	$ 111.78	$ 116.69	$ 122.19	$ 128.37	$ 135.16	$ 8.64	$ 4.91	$ 5.51	$ 6.18	$ 6.80
1"	15	$ 129.78	$ 140.85	$ 147.02	$ 153.93	$ 161.70	$ 170.23	$ 11.07	$ 6.17	$ 6.92	$ 7.77	$ 8.54
1"	20	$ 174.18	$ 189.30	$ 197.57	$ 206.83	$ 217.25	$ 228.68	$ 15.12	$ 8.27	$ 9.27	$ 10.42	$ 11.44

Table 1-5: Typical Residential Sewer Bills Under Existing and Proposed Rates

Meter Size	Monthly Water Use	Current Rates	Proposed Rates					Difference				
			2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
inches	kgal	$/mo	$/mo	$/mo	$/mo	$/mo	$/mo	$	$	$	$	$
(1) General Service Areas												
1"	0	$ 11.14	$ 11.60	$ 12.08	$ 12.46	$ 12.72	$ 13.00	$ 0.46	$ 0.48	$ 0.38	$ 0.26	$ 0.28
1"	1	$ 11.14	$ 11.60	$ 12.08	$ 12.46	$ 12.72	$ 13.00	$ 0.46	$ 0.48	$ 0.38	$ 0.26	$ 0.28
1"	2	$ 11.14	$ 11.60	$ 12.08	$ 12.46	$ 12.72	$ 13.00	$ 0.46	$ 0.48	$ 0.38	$ 0.26	$ 0.28
1"	3	$ 16.71	$ 17.40	$ 18.12	$ 18.69	$ 19.08	$ 19.50	$ 0.69	$ 0.72	$ 0.57	$ 0.39	$ 0.42
1"	4	$ 22.28	$ 23.20	$ 24.16	$ 24.92	$ 25.44	$ 26.00	$ 0.92	$ 0.96	$ 0.76	$ 0.52	$ 0.56
1"	5	$ 27.85	$ 29.00	$ 30.20	$ 31.15	$ 31.80	$ 32.50	$ 1.15	$ 1.20	$ 0.95	$ 0.65	$ 0.70
1"	6	$ 33.42	$ 34.80	$ 36.24	$ 37.38	$ 38.16	$ 39.00	$ 1.38	$ 1.44	$ 1.14	$ 0.78	$ 0.84
1"	8	$ 44.56	$ 46.40	$ 48.32	$ 49.84	$ 50.88	$ 52.00	$ 1.84	$ 1.92	$ 1.52	$ 1.04	$ 1.12
1"	10	$ 55.70	$ 58.00	$ 60.40	$ 62.30	$ 63.60	$ 65.00	$ 2.30	$ 2.40	$ 1.90	$ 1.30	$ 1.40
1"	12	$ 66.84	$ 69.60	$ 72.48	$ 74.76	$ 76.32	$ 78.00	$ 2.76	$ 2.88	$ 2.28	$ 1.56	$ 1.68
1"	15	$ 83.55	$ 87.00	$ 90.60	$ 93.45	$ 95.40	$ 97.50	$ 3.45	$ 3.60	$ 2.85	$ 1.95	$ 2.10
1"	20	$ 111.40	$ 116.00	$ 120.80	$ 124.60	$ 127.20	$ 130.00	$ 4.60	$ 4.80	$ 3.80	$ 2.60	$ 2.80
(2) Southeast Central - Libertyville, Countryside Manor, North Libertyville Estates, Terre Faire												
1"	0	$ 13.12	$ 13.66	$ 14.22	$ 14.66	$ 14.98	$ 15.30	$ 0.54	$ 0.56	$ 0.44	$ 0.32	$ 0.32
1"	1	$ 13.12	$ 13.66	$ 14.22	$ 14.66	$ 14.98	$ 15.30	$ 0.54	$ 0.56	$ 0.44	$ 0.32	$ 0.32
1"	2	$ 13.12	$ 13.66	$ 14.22	$ 14.66	$ 14.98	$ 15.30	$ 0.54	$ 0.56	$ 0.44	$ 0.32	$ 0.32
1"	3	$ 19.68	$ 20.49	$ 21.33	$ 21.99	$ 22.47	$ 22.95	$ 0.81	$ 0.84	$ 0.66	$ 0.48	$ 0.48
1"	4	$ 26.24	$ 27.32	$ 28.44	$ 29.32	$ 29.96	$ 30.60	$ 1.08	$ 1.12	$ 0.88	$ 0.64	$ 0.64
1"	5	$ 32.80	$ 34.15	$ 35.55	$ 36.65	$ 37.45	$ 38.25	$ 1.35	$ 1.40	$ 1.10	$ 0.80	$ 0.80
1"	6	$ 39.36	$ 40.98	$ 42.66	$ 43.98	$ 44.94	$ 45.90	$ 1.62	$ 1.68	$ 1.32	$ 0.96	$ 0.96
1"	8	$ 52.48	$ 54.64	$ 56.88	$ 58.64	$ 59.92	$ 61.20	$ 2.16	$ 2.24	$ 1.76	$ 1.28	$ 1.28
1"	10	$ 65.60	$ 68.30	$ 71.10	$ 73.30	$ 74.90	$ 76.50	$ 2.70	$ 2.80	$ 2.20	$ 1.60	$ 1.60
1"	12	$ 78.72	$ 81.96	$ 85.32	$ 87.96	$ 89.88	$ 91.80	$ 3.24	$ 3.36	$ 2.64	$ 1.92	$ 1.92
1"	15	$ 98.40	$ 102.45	$ 106.65	$ 109.95	$ 112.35	$ 114.75	$ 4.05	$ 4.20	$ 3.30	$ 2.40	$ 2.40
1"	20	$ 131.20	$ 136.60	$ 142.20	$ 146.60	$ 149.80	$ 153.00	$ 5.40	$ 5.60	$ 4.40	$ 3.20	$ 3.20
(3) Northeast Central - NSWRD Wildwood												
1"	0	$ 16.16	$ 16.58	$ 17.02	$ 17.38	$ 17.62	$ 17.88	$ 0.42	$ 0.44	$ 0.36	$ 0.24	$ 0.26
1"	1	$ 16.16	$ 16.58	$ 17.02	$ 17.38	$ 17.62	$ 17.88	$ 0.42	$ 0.44	$ 0.36	$ 0.24	$ 0.26
1"	2	$ 16.16	$ 16.58	$ 17.02	$ 17.38	$ 17.62	$ 17.88	$ 0.42	$ 0.44	$ 0.36	$ 0.24	$ 0.26
1"	3	$ 24.24	$ 24.87	$ 25.53	$ 26.07	$ 26.43	$ 26.82	$ 0.63	$ 0.66	$ 0.54	$ 0.36	$ 0.39
1"	4	$ 32.32	$ 33.16	$ 34.04	$ 34.76	$ 35.24	$ 35.76	$ 0.84	$ 0.88	$ 0.72	$ 0.48	$ 0.52
1"	5	$ 40.40	$ 41.45	$ 42.55	$ 43.45	$ 44.05	$ 44.70	$ 1.05	$ 1.10	$ 0.90	$ 0.60	$ 0.65
1"	6	$ 48.48	$ 49.74	$ 51.06	$ 52.14	$ 52.86	$ 53.64	$ 1.26	$ 1.32	$ 1.08	$ 0.72	$ 0.78
1"	8	$ 64.64	$ 66.32	$ 68.08	$ 69.52	$ 70.48	$ 71.52	$ 1.68	$ 1.76	$ 1.44	$ 0.96	$ 1.04
1"	10	$ 80.80	$ 82.90	$ 85.10	$ 86.90	$ 88.10	$ 89.40	$ 2.10	$ 2.20	$ 1.80	$ 1.20	$ 1.30
1"	12	$ 96.96	$ 99.48	$ 102.12	$ 104.28	$ 105.72	$ 107.28	$ 2.52	$ 2.64	$ 2.16	$ 1.44	$ 1.56
1"	15	$ 121.20	$ 124.35	$ 127.65	$ 130.35	$ 132.15	$ 134.10	$ 3.15	$ 3.30	$ 2.70	$ 1.80	$ 1.95
1"	20	$ 161.60	$ 165.80	$ 170.20	$ 173.80	$ 176.20	$ 178.80	$ 4.20	$ 4.40	$ 3.60	$ 2.40	$ 2.60
(4) Northeast Central - NSWRD Arbor Vista												
1"	0	$ 20.40	$ 20.80	$ 21.22	$ 21.56	$ 21.80	$ 22.04	$ 0.40	$ 0.42	$ 0.34	$ 0.24	$ 0.24
1"	1	$ 20.40	$ 20.80	$ 21.22	$ 21.56	$ 21.80	$ 22.04	$ 0.40	$ 0.42	$ 0.34	$ 0.24	$ 0.24
1"	2	$ 20.40	$ 20.80	$ 21.22	$ 21.56	$ 21.80	$ 22.04	$ 0.40	$ 0.42	$ 0.34	$ 0.24	$ 0.24
1"	3	$ 30.60	$ 31.20	$ 31.83	$ 32.34	$ 32.70	$ 33.06	$ 0.60	$ 0.63	$ 0.51	$ 0.36	$ 0.36
1"	4	$ 40.80	$ 41.60	$ 42.44	$ 43.12	$ 43.60	$ 44.08	$ 0.80	$ 0.84	$ 0.68	$ 0.48	$ 0.48
1"	5	$ 51.00	$ 52.00	$ 53.05	$ 53.90	$ 54.50	$ 55.10	$ 1.00	$ 1.05	$ 0.85	$ 0.60	$ 0.60
1"	6	$ 61.20	$ 62.40	$ 63.66	$ 64.68	$ 65.40	$ 66.12	$ 1.20	$ 1.26	$ 1.02	$ 0.72	$ 0.72
1"	8	$ 81.60	$ 83.20	$ 84.88	$ 86.24	$ 87.20	$ 88.16	$ 1.60	$ 1.68	$ 1.36	$ 0.96	$ 0.96
1"	10	$ 102.00	$ 104.00	$ 106.10	$ 107.80	$ 109.00	$ 110.20	$ 2.00	$ 2.10	$ 1.70	$ 1.20	$ 1.20
1"	12	$ 122.40	$ 124.80	$ 127.32	$ 129.36	$ 130.80	$ 132.24	$ 2.40	$ 2.52	$ 2.04	$ 1.44	$ 1.44
1"	15	$ 153.00	$ 156.00	$ 159.15	$ 161.70	$ 163.50	$ 165.30	$ 3.00	$ 3.15	$ 2.55	$ 1.80	$ 1.80
1"	20	$ 204.00	$ 208.00	$ 212.20	$ 215.60	$ 218.00	$ 220.40	$ 4.00	$ 4.20	$ 3.40	$ 2.40	$ 2.40

Figure 1-2: Regional Comparison of Combined Water and Sewer Bills

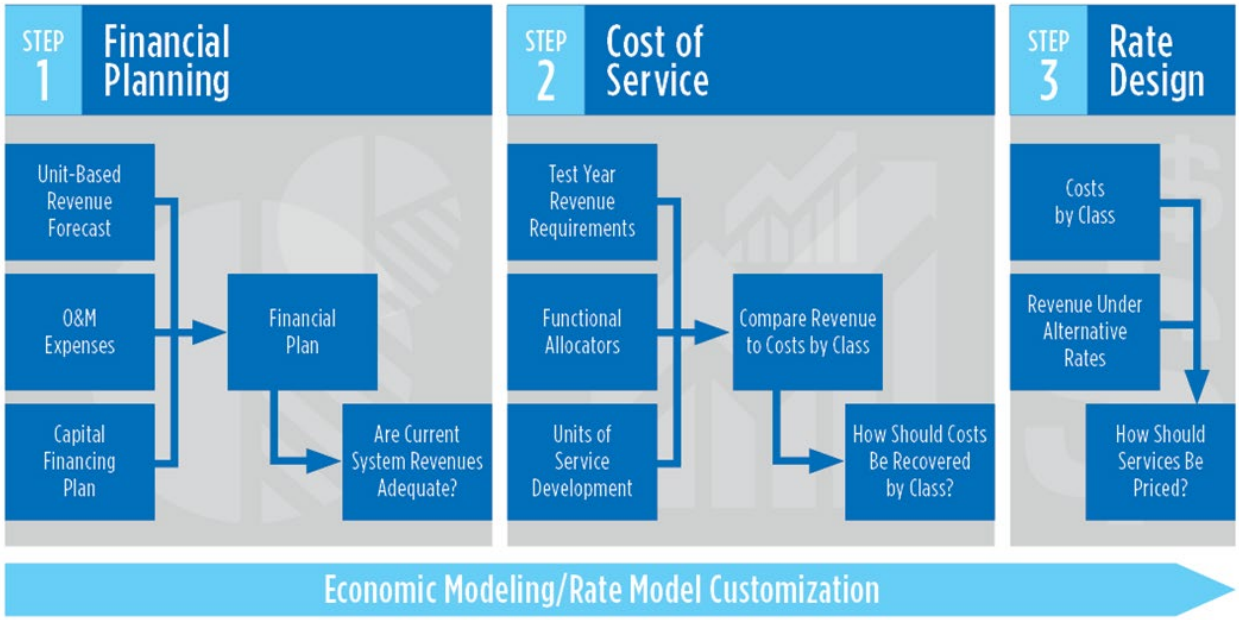


2.0 FINANCIAL PLANNING ANALYSIS

2.1 Project Approach

Burns & McDonnell conducted the water and sewer rate study in a three-step approach. Our general approach to water and sewer rate studies, depicted in Figure 2-1, 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 2-1: General 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 in this section of our report.

Step 2: Cost of Service focuses on assigning cost responsibility to customer classes. Each customer class is allocated an appropriate share of the overall system costs based on the level of service provided. The net revenue requirements (costs to be recovered from rates) identified in Step 1 are allocated to customers based on Lake County's historical cost accounting system and service characteristics. The Cost of Service Analysis is detailed in Section 3 of this report.

Step 3: Rate Design provides for the required revenue recovery. Once the overall level of revenue required is identified and allocated cost has been evaluated, schedules of rates for each rate class are

developed that will generate revenues accordingly. The Rate Design Analysis is detailed in Section 4 of this report.

2.2 Introduction to Financial Planning

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

- "Are the existing rates sufficient to fund anticipated operating and capital costs?"
- "If not, what level of overall revenue increase is needed?"

To determine if the existing schedule of rates can be expected to generate revenues sufficient to meet Lake County's operating and capital costs, Burns & McDonnell prepared a ten-year financial projection of revenues and expenditures for the water and sewer utilities. A comparison of projected revenues and expenditures provides insight into the adequacy 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. Evaluate the sufficiency of revenues under existing rates to fund future costs and meet financial performance targets.

The planning period includes the current fiscal year (FY) 2019 as a budget year and a ten-year forecast period, FY 2020 through FY 2029. Lake County's fiscal year ends on November 30, and the projected periods in the financial plan recognize the same fiscal year ending November 30.

2.3 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 effort required an analysis of water and sewer customers, volumes, and revenues.

2.3.1 Historical and Projected Customers and Volumes

Table 2-1 presents Lake County's a summary of historical retail water and sewer customers and total volumes from 2015 to 2017, estimated customers and volume for 2018 and 2019, and projected customers and volume for the 2020 to 2029 planning period. In recent years, both water and sewer accounts as well as water and sewer volumes have remained relatively stable. For planning purposes, overall levels of accounts and volume are projected to remain consistent with 2018 levels.

Table 2-1: Summary of Historical and Projected Customer Accounts and Volumes

Line No.		Historical			Budgeted		Projected									
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
	Retail Customer Accounts															
1	Water	20,426	21,047	20,636	20,636	20,636	20,636	20,636	20,636	20,636	20,636	20,636	20,636	20,636	20,636	20,636
2	Sewer	23,915	24,461	24,106	24,106	24,106	24,106	24,106	24,106	24,106	24,106	24,106	24,106	24,106	24,106	24,106
	Total Billed Volume															
3	Water	1,709,105	1,699,460	1,631,663	1,644,300	1,644,300	1,644,300	1,644,300	1,644,300	1,644,300	1,644,300	1,644,300	1,644,300	1,644,300	1,644,300	1,644,300
4	Sewer	2,341,618	2,107,370	2,208,665	2,208,600	2,208,600	2,208,600	2,208,600	2,208,600	2,208,600	2,208,600	2,208,600	2,208,600	2,208,600	2,208,600	2,208,600
5	Sewer - Wholesale	4,702,740	4,820,098	4,814,495	4,814,495	4,814,495	4,814,495	4,814,495	4,814,495	4,814,495	4,814,495	4,814,495	4,814,495	4,814,495	4,814,495	4,814,495
6	Total	8,753,463	8,626,928	8,654,823	8,667,395	8,667,395	8,667,395	8,667,395	8,667,395	8,667,395	8,667,395	8,667,395	8,667,395	8,667,395	8,667,395	8,667,395

2.3.2 Existing Water and Sewer Rates

Existing water and sewer rate schedules are shown in Tables 2-2 and 2-3. Existing metered water rates, shown in Table 2-2, include an inclining block rate structure with a minimum bill for residential service. Non-residential water rates are billed based on a uniform volumetric rate. Lake County's water rates vary based on the water supply source and include the following areas.

- General Service Areas
- Central Lake County Joint Action Water Agency (CLCJAWA) Service Areas
- Hawthorne Woods – Glenshire/Forest Lake

Unmetered water rates consist of a monthly charge by service area based on residential equivalents and include Arden Shores, Countryside Lake, Forest Lake and Oak Terrace.

Existing metered sewer rates, shown in Table 2-3, include a uniform volumetric charge per thousand gallons with a minimum bill. Metered sewer service areas include the following:

- General Service Areas
- Southeast Central
- Northeast Central – North Shore Water Reclamation District (NSWRD) Wildwood
- Northeast Central – NSWRD Arbor Vista

Unmetered sewer rates consist of a monthly charge differentiated by service area. Unmetered sewer service areas include the General Service area; Southeast Central – Libertyville; Northwest; Northeast Central; Ravenna, Royal Melbourne, Kildeer North, Kildeer Central, Kildeer South; and Riverside Preserve.

Lake County provides wholesale sewer service to multiple areas. Service levels vary to include conveyance, or treatment, or both. The existing wholesale sewer rate structure includes either a uniform rate per 1,000 gallons or an equivalent rate per residential customer equivalent (RCE). The RCE is based on an equivalency multiplier that varies from 7.5 to 8.0 by area.

Table 2-2: Existing Water Rates

Volumetric Rates

	Existing FY 2019
General Service Areas	($/1000 gal)
Block 1 (0-2,000 gallons per month)	$4.16
Block 2 (3,000-6,000 gallons per month)	$4.39
Block 3 (7,000 gallons or greater per month)	$4.60
Non-Residential	$4.39
CLCJAWA Service Areas	
Block 1 (0-2,000 gallons per month)	$5.72
Block 2 (3,000-6,000 gallons per month)	$6.03
Block 3 (7,000 gallons or greater per month)	$6.33
Non-Residential	$6.03
Hawthorn Woods - Glennshire/Forest Lake	
Block 1 (0-2,000 gallons per month)	$8.03
Block 2 (3,000-6,000 gallons per month)	$8.45
Block 3 (7,000 gallons or greater per month)	$8.88
Non-Residential	$8.45

Unmetered Water

	Existing FY 2019
	($/mo)
Arden Shores	$55.11
Countryside Lake	$43.86
Forest Lake	$43.51
Oak Terrace	$33.42

Table 2-3: Existing Sewer Rates

Metered Sewer Volumetric Rates

	Existing FY 2019 ($/1000 gal)
General Service Areas	$5.57
Southeast Central - Libertyville, Countryside Manor, North Libertyville Estates, Terre Faire	$6.56
Northeast Central - NSWRD Wildwood	$8.08
Northeast Central - NSWRD Arbor Vista	$10.20

Unmetered Sewer

	Existing FY 2019 ($/mo)
General Service Area	$44.55
Southeast Central - Libertyville	$48.39
Northwest	$41.77
Northeast Central	$53.70
Ravenna, Royal Melbourne, Kildeer North Kildeer Central, Kildeer South	$55.73
Riverside Preserve	$70.73

Wholesale Sewer

	Existing FY 2019	
	($/1000 gal)	($/RCE/Month)
Antioch	$4.94	$39.49
Buffalo Grove	$4.08	$30.60
Grayslake	$3.44	$25.78
Green Oaks	$1.10	$8.80
Gurnee	$3.44	$25.78
Hainesville (Northwest)	$3.70	$27.75
Hainesville (Northeast Central)	$3.44	$25.78
Harbor Ridge	$5.57	$41.78
Lakes Region Sanitary District	$3.70	$27.75
Lake Villa	$3.70	$27.75
Lake Zurich	$4.08	$30.60
Libertyville	$1.10	$8.80
Lincolnshire	$4.08	$30.60
Riverwoods	$5.57	$44.56
Round Lake	$3.70	$27.75
Round Lake Beach	$3.70	$27.75
Round Lake Park	$3.70	$27.75
Round Lake Heights	$3.70	$27.75
Waukegan	$3.44	$25.78

2.3.3 User Revenues under Existing Rates

Table 2-4 presents historical user charge revenues for 2015 to 2017, budgeted revenue for 2018 and 2019, and a projection of user charge revenues under current rates for the 2020 to 2029 planning period.

The water and sewer systems owned and operated by Lake County represent a complex array of facilities. In some instances, Lake County provides full service, considered for the water utility to be water treatment, transmission and distribution. Full sewer utility service generally includes collection and

treatment. In some areas of Lake County, the County only provides a portion of the water or sewer service received by the end customer. Partial water service may include transmission and/or distribution only; partial sewer service may be collection only. In such instances, the remaining service (primarily treatment) is provided by other service providers in the region.

Lake County differentiates its collected revenues between revenues for services Lake County provides and revenues collected for the payment of services provided by others. Table 2-4 shows the revenue detailed by utility between Lake County revenues and those revenues collected and passed on to other regional utilities that provide a portion of service in Lake County.

As can be seen on Line 1 of Table 2-4, Lake County's portion of historical and budgeted water user charge revenues have ranged from $4.3 million to $5.1 million per year. As shown on Line 2, retail sewer service revenues have ranged from $10.1 million to $11.8 million per year, while wholesale sewer revenues have ranged from $8.9 million to $11.6 million per year. Overall, user charge revenues under existing rates are projected to remain consistent with the 2019 budget through 2029.

For the purpose of this analysis, the pass-through portion of Lake County's projected revenues are forecasted to remain consistent with budgeted 2019 levels. Should regional service providers increase rates over the forecast period, it is anticipated associated revenue increases would be passed through to applicable Lake County customers when such rates are implemented.

Table 2-4: Historical and Projected Water and Sewer User Revenues

Line		Historical			Budgeted		Projected									
No.		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
	Lake County User Charge Revenue															
1	Water	5,051,198	4,657,213	4,804,917	$4,305,800	$4,777,500	$4,777,500	$4,777,500	$4,777,500	$4,777,500	$4,777,500	$4,777,500	$4,777,500	$4,777,500	$4,777,500	$4,777,500
2	Sewer	$10,108,354	$11,413,174	$11,823,255	$11,200,600	$10,718,200	$10,718,200	$10,718,200	$10,718,200	$10,718,200	$10,718,200	$10,718,200	$10,718,200	$10,718,200	$10,718,200	$10,718,200
3	Sewer - Wholesale	8,923,080	9,859,912	9,228,476	$8,771,500	$11,556,700	$11,556,700	$11,556,700	$11,556,700	$11,556,700	$11,556,700	$11,556,700	$11,556,700	$11,556,700	$11,556,700	$11,556,700
4	Total	$24,082,631	$25,930,299	$25,856,649	$24,277,900	$27,052,400	$27,052,400	$27,052,400	$27,052,400	$27,052,400	$27,052,400	$27,052,400	$27,052,400	$27,052,400	$27,052,400	$27,052,400
	Pass Through User Charge Revenue															
5	Water	$4,130,500	$4,574,000	$4,269,400	$4,780,300	$4,692,000	$4,692,000	$4,692,000	$4,692,000	$4,692,000	$4,692,000	$4,692,000	$4,692,000	$4,692,000	$4,692,000	$4,692,000
6	Sewer	1,251,600	1,181,500	1,290,600	$1,453,700	$1,534,500	$1,534,500	$1,534,500	$1,534,500	$1,534,500	$1,534,500	$1,534,500	$1,534,500	$1,534,500	$1,534,500	$1,534,500
7	Sewer - Wholesale	$7,088,300	$6,691,400	$7,309,400	$8,233,100	$8,690,800	$8,690,800	$8,690,800	$8,690,800	$8,690,800	$8,690,800	$8,690,800	$8,690,800	$8,690,800	$8,690,800	$8,690,800
8	Total	12,470,400	12,446,900	12,869,400	14,467,100	14,917,300	14,917,300	14,917,300	14,917,300	14,917,300	14,917,300	14,917,300	14,917,300	14,917,300	14,917,300	14,917,300
	Total User Charge Revenue															
9	Water	9,181,698	9,231,213	9,074,317	9,086,100	9,469,500	9,469,500	9,469,500	9,469,500	9,469,500	9,469,500	9,469,500	9,469,500	9,469,500	9,469,500	9,469,500
10	Sewer	11,359,954	12,594,674	13,113,855	12,654,300	12,252,700	12,252,700	12,252,700	12,252,700	12,252,700	12,252,700	12,252,700	12,252,700	12,252,700	12,252,700	12,252,700
11	Sewer - Wholesale	16,011,380	16,551,312	16,537,876	17,004,600	20,247,500	20,247,500	20,247,500	20,247,500	20,247,500	20,247,500	20,247,500	20,247,500	20,247,500	20,247,500	20,247,500
12	Total	36,553,031	38,377,199	38,726,049	38,745,000	41,969,700	41,969,700	41,969,700	41,969,700	41,969,700	41,969,700	41,969,700	41,969,700	41,969,700	41,969,700	41,969,700

2.4 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
- Revenue-Financed Capital Improvement Program Expenditures

- Debt Service Principal and Interest Payments

2.4.1 O&M Expenses

Table 2-5 summarizes recent water and sewer O&M expense history and the projection of water and sewer system O&M expenses through the 2029 planning period. Expenses summarized on Table 2-5 reflect operating costs only; costs related to capital projects are excluded from Table 2-5 and are addressed in Section 2.4.2 of this report.

In recent history, combined water and sewer O&M expenses ranged from $30.0 million in 2015 to a budget of $34.6 million in 2018. Anticipated 2019 O&M costs are based on Lake County's approved budget. In general, projected O&M expenses are anticipated to increase from budgeted 2019 amounts by about 2.1 percent, consistent with recent trends in the consumer price index. Consistent with the forecasting of pass-through revenues, water purchase and sewerage treatment expenses in this analysis are forecasted to remain at the 2019 budget levels. Should regional service providers increase rates over the forecast period, it is anticipated associated revenue increases would be passed through to applicable Lake County customers so that pass-through revenues and expenses are consistent.

Overall, O&M expenses are projected to increase from $38.3 million in 2019 to $43.8 million in 2029.

Table 2-5: Historical and Projected Operation and Maintenance Expenses

Line No.		Historical			Budgeted		Projected									
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
1	Personal Services	9,091,541	9,151,002	9,606,565	9,373,600	9,503,800	9,706,200	9,913,000	10,124,100	10,339,800	10,560,000	10,785,000	11,014,700	11,249,300	11,489,000	11,733,700
2	Commodities	1,563,931	2,188,136	1,928,351	1,984,900	2,187,600	2,234,200	2,281,700	2,330,300	2,380,000	2,430,700	2,482,500	2,535,300	2,589,300	2,644,500	2,700,800
	Contractuals															
3	Electricity	1,715,452	1,775,995	1,536,830	1,867,900	1,995,600	2,038,100	2,081,500	2,125,900	2,171,100	2,217,400	2,264,600	2,312,900	2,362,100	2,412,400	2,463,800
4	Wholesale Water Purchase	4,130,454	4,573,982	4,269,440	4,780,300	4,692,000	4,692,000	4,692,000	4,692,000	4,692,000	4,692,000	4,692,000	4,692,000	4,692,000	4,692,000	4,692,000
5	Wholesale Sewerage Treatment	8,339,893	7,872,933	8,600,000	9,686,700	10,225,200	10,225,200	10,225,200	10,225,200	10,225,200	10,225,200	10,225,200	10,225,200	10,225,200	10,225,200	10,225,200
6	Indirect Cost Allocations	1,176,246	1,153,714	1,392,567	1,562,100	1,630,700	1,665,400	1,700,900	1,737,100	1,774,100	1,811,900	1,850,500	1,889,900	1,930,200	1,971,300	2,013,300
7	All other Contractual Expenses	4,017,446	5,101,622	6,855,078	5,384,100	8,062,000	8,233,800	8,409,200	8,588,300	8,771,300	8,958,100	9,148,900	9,343,700	9,542,800	9,746,100	9,953,700
8	Total Utility Expenses	30,034,963	31,817,384	34,188,831	34,639,600	38,296,900	38,794,900	39,303,500	39,822,900	40,353,500	40,895,300	41,448,700	42,013,700	42,590,900	43,180,500	43,782,500
9	*Total Inflation*		*5.9%*	*7.5%*	*1.3%*	*10.6%*	*1.3%*	*1.3%*	*1.3%*	*1.3%*	*1.3%*	*1.4%*	*1.4%*	*1.4%*	*1.4%*	*1.4%*
10	*Inflation Excluding Wholesale Costs*		*10.3%*	*10.1%*	*-5.4%*	*15.9%*	*2.1%*	*2.1%*	*2.1%*	*2.1%*	*2.1%*	*2.1%*	*2.1%*	*2.1%*	*2.1%*	*2.1%*
11	Total Water O&M				9,613,100	10,293,200	10,412,500	10,534,300	10,658,800	10,785,900	10,915,700	11,048,300	11,183,700	11,321,900	11,463,200	11,607,400
12	Total Sewer O&M				25,026,500	28,003,700	28,382,400	28,769,200	29,164,200	29,567,600	29,979,600	30,400,400	30,830,100	31,269,100	31,717,300	32,175,100

[1] O&M projected to increase by 2.13 percent, annual CPI increase from 2016 to 2017.
[2] O&M excluding Wholesale Water Purchases and Sewerage Treatment is distributed between between utilities based on Lake County 2017 trial balances.

2.4.2 Projected Capital Improvement Expenditures

Table 2-6 shows the projected capital improvement plan (CIP) for the 2019 to 2029 planning period. Lake County anticipates total capital investment needs for water and sewer projects to be $9.2 million per year in 2018 dollars. This targeted investment in utility infrastructure is inflated over the forecast period at 2.1 percent annually and is summarized on Lines 1 through 3 of Table 2-6. Lake County plans to cash finance these projects. As such, the spending targets have been phased-in to align with funding anticipated to be available from future operations and rate increases. As can be seen on Lines 4 through 7 of Table 2-6, the

water utility is expected to reach 100 percent funding of the CIP target in 2026 and the sewer utility is expected to reach 100 percent of the CIP target in 2023.

Table 2-6: Capital Improvement Program

Line No.		Projected										
		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
1	Total Inflated Water Utility CIP	3,758,400	3,838,400	3,920,200	4,003,700	4,089,000	4,176,100	4,265,100	4,355,900	4,448,700	4,543,500	4,640,200
2	Total Inflated Sewer Utility CIP	5,637,600	5,757,700	5,880,300	6,005,600	6,133,500	6,264,100	6,397,600	6,533,900	6,673,000	6,815,200	6,960,300
3	Total Inflated Combined Utility CIP	9,396,000	9,596,100	9,800,500	10,009,300	10,222,500	10,440,200	10,662,700	10,889,800	11,121,700	11,358,700	11,600,500
4	Annual Percentage of Water CIP	0.0%	0.0%	5.0%	30.0%	45.0%	60.0%	80.0%	100.0%	100.0%	100.0%	100.0%
5	**Projected Annual Water CIP**	-	-	**196,000**	**1,201,100**	**1,840,100**	**2,505,700**	**3,412,100**	**4,355,900**	**4,448,700**	**4,543,500**	**4,640,200**
6	Annual Percentage of Sewer CIP	35.0%	60.0%	60.0%	95.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
7	**Projected Annual Sewer CIP**	**1,973,200**	**3,454,600**	**3,528,200**	**5,705,300**	**6,133,500**	**6,264,100**	**6,397,600**	**6,533,900**	**6,673,000**	**6,815,200**	**6,960,300**
8	**Projected Annual Combined CIP**	**1,973,200**	**3,454,600**	**3,724,200**	**6,906,400**	**7,973,600**	**8,769,800**	**9,809,700**	**10,889,800**	**11,121,700**	**11,358,700**	**11,600,500**

2.4.3 Existing Debt Service Requirements

Table 2-7 summarizes the existing debt service requirements for the water and sewer utilities. As shown on Table 2-7, the water utility annual debt service payments decrease from $168,600 in 2019 to $85,400 in 2029. The sewer utility annual debt service payments decrease from $6.1 million in 2019 to $3.9 million in 2029. The reductions are expected because the 2005S-1 and the 2016 series debt issues are fully amortized during the forecast period. No new debt is anticipated in the financial planning performed for this study.

Table 2-7: Existing Debt Service

Line No.		Projected										
		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
	Existing Debt Issues											
	Water Utility Debt											
1	2005S-1	76,900	74,400	76,900	74,100	76,300	73,200	-	-	-	-	-
2	2009S-1	91,700	95,100	93,300	91,400	89,500	92,500	90,200	87,900	85,500	88,100	85,400
3	Total Water Utility Debt	168,600	169,500	170,200	165,500	165,800	165,700	90,200	87,900	85,500	88,100	85,400
	Sewer Utility Debt											
4	2010A	1,260,400	1,299,600	1,336,300	2,000,300	1,874,400	1,830,400	1,784,900	1,737,900	1,689,400	1,639,400	1,837,900
5	2016 (Refunded 2006B)	2,364,300	2,367,000	2,299,500	-	-	-	-	-	-	-	-
6	IEPA L17	1,910,100	1,910,100	1,910,100	1,910,100	1,910,100	1,910,100	1,910,100	1,910,100	1,910,100	1,910,100	1,910,100
7	IEPA L14964	578,900	578,900	578,900	578,900	578,900	578,900	578,900	578,900	578,900	578,900	178,800
8	Total Sewer Utility Debt	6,113,700	6,155,600	6,124,800	4,489,300	4,363,400	4,319,400	4,273,900	4,226,900	4,178,400	4,128,400	3,926,800
9	Total Existing Debt	6,282,300	6,325,100	6,295,000	4,654,800	4,529,200	4,485,100	4,364,100	4,314,800	4,263,900	4,216,500	4,012,200

2.5 Water and Sewer Utility Financial Plans

Based on the preceding information, financial plans for the water and sewer utilities have been assembled. The financial plans aggregate the revenues and expenses forecasted and discussed in preceding sections of this report to assess the adequacy of revenues to meet future operating and capital requirements. The cash flow analyses identify the overall increase in water and sewer revenues needed to meet Lake County's financial objectives.

2.5.1 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 plan. Table 2-8 presents the water utility cash flow, Table 2-9 presents the sewer utility cash flow, and Table 2-10 shows the consolidated utility cash flow.

Beginning with the water utility, Line 1 of Table 2-8 shows Lake County's portion of user revenues under current rates, identified previously in Table 2-4. Lines 2 through 11 present the revenue increases which have been sized to reflect an underlying water system increase of 9.5 percent per year plus an allowance for inflation, estimated to be 2.13 percent annually. The total increase of 11.63 percent continues through FY 2026, at which point the inflated CIP spending target for the water utility is fully funded. Subsequent rate increases are proposed to reflect inflation only starting in FY 2027. Each increase is assumed to be effective December 1 of the fiscal year indicated. Total Lake County user revenues are summarized on Line 13.

Line 14 shows the wholesale water purchase passthrough revenue and Line 15 shows other revenues, forecast to remain at 2019 budget amounts. Line 16 shows the total operating revenue forecasted over the study period. Including the proposed revenue adjustments and CPI, total revenue is projected to increase from $10.2 million in 2019 to $16.4 million in 2029.

Water O&M expenses are shown on Lines 17 and 18 of Table 2-8, shown previously in Table 2-5. Existing debt service amounts on Line 19 reflect debt service payments identified previously in Table 2-7. Lake County is not forecasting the issuance of additional utility debt in this plan, as can be seen on Line 20.

Total revenue requirements are summarized on Line 22. This amount is deducted from Line 16, total revenue, to determine the annual operating surplus or deficit. With the proposed revenue adjustments, the operating balance on Line 23 is positive in all years of the forecast beginning in FY 2020, and increasing to provide the funding needed for a pay-as-you-go strategy for capital improvements.

Lines 24 through 28 show the flow of funds to finance the CIP for the water utility. For 2019, a beginning balance of approximately $2.4 million was available, as shown on Line 24. The annual operating balance is added to this amount to reflect the cash surplus or deficit expected each year from ongoing operations of the water utility assuming all rate increases shown in Table 2-8 are implemented. The utility intends to maintain a minimum operating and capital balance of 25 percent of O&M, shown as the target on Line 29. Water capital improvement projects and the percentage of the total CIP shown on Lines 26 and 27 are

consistent with that shown previously in Table 2-6. Over time, the reserve target is achieved, and CIP funding is gradually increased, such that 100 percent of the CIP spending target is funded in FY 2026.

Line 30 shows the debt service coverage of the existing debt. As noted on the table, the minimum coverage is 1.5. Debt service coverage levels are intended to provide assurances to bond holders that the utility has the financial wherewithal to meet its annual debt payment. Municipal bond rating agencies evaluate many criteria regarding the credit worthiness 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 1.50x to 2.00x. Due to the very low amount of existing debt, and no issuance of additional debt, the debt service coverage as shown on Line 30 is projected to be strong for the water utility.

Table 2-8: Water Utility Financial Plan

Line No.				Projected									
				2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
	Water Utility Flow of Funds													
1	Revenue Under Existing Rates			4,777,500	4,777,500	4,777,500	4,777,500	4,777,500	4,777,500	4,777,500	4,777,500	4,777,500	4,777,500	4,777,500
	Proposed Revenue Adjustments													
	Year	Month	Increase											
2	2020	2	11.63%		509,300	555,600	555,600	555,600	555,600	555,600	555,600	555,600	555,600	555,600
3	2021	2	11.63%			568,600	620,200	620,200	620,200	620,200	620,200	620,200	620,200	620,200
4	2022	2	11.63%				634,700	692,400	692,400	692,400	692,400	692,400	692,400	692,400
5	2023	2	11.63%					708,500	772,900	772,900	772,900	772,900	772,900	772,900
6	2024	2	11.63%						790,900	862,800	862,800	862,800	862,800	862,800
7	2025	2	11.63%							882,900	963,100	963,100	963,100	963,100
8	2026	2	11.63%								985,500	1,075,100	1,075,100	1,075,100
9	2027	2	2.13%									201,500	201,500	201,500
10	2028	2	2.13%										205,400	205,400
11	2029	2	2.13%											209,400
12	Total Proposed Additional Revenue			-	509,300	1,124,200	1,810,500	2,576,700	3,432,000	4,386,800	5,452,500	5,743,600	5,949,000	6,158,400
13	Total User Charge Revenue			4,777,500	5,286,800	5,901,700	6,588,000	7,354,200	8,209,500	9,164,300	10,230,000	10,521,100	10,726,500	10,935,900
14	Wholesale Water Purchase Passthrough			4,692,000	4,692,000	4,692,000	4,692,000	4,692,000	4,692,000	4,692,000	4,692,000	4,692,000	4,692,000	4,692,000
15	Other Revenue			724,300	724,300	724,300	724,300	724,300	724,300	724,300	724,300	724,300	724,300	724,300
16	**Grand Total Revenue**			**10,193,800**	**10,703,100**	**11,318,000**	**12,004,300**	**12,770,500**	**13,625,800**	**14,580,600**	**15,646,300**	**15,937,400**	**16,142,800**	**16,352,200**
	Revenue Requirements													
17	Wholesale Water Purchase Passthrough			4,692,000	4,692,000	4,692,000	4,692,000	4,692,000	4,692,000	4,692,000	4,692,000	4,692,000	4,692,000	4,692,000
18	Operation and Maintenance Expense			5,601,200	5,720,500	5,842,300	5,966,800	6,093,900	6,223,700	6,356,300	6,491,700	6,629,900	6,771,200	6,915,400
	Debt Service													
19	Existing Debt			147,000	148,500	149,700	145,800	146,700	147,200	72,600	71,100	69,600	73,000	71,300
20	Proposed Debt			-	-	-	-	-	-	-	-	-	-	-
21	Total Debt Service			147,000	148,500	149,700	145,800	146,700	147,200	72,600	71,100	69,600	73,000	71,300
22	**Total Revenue Requirements**			**10,440,200**	**10,561,000**	**10,684,000**	**10,804,600**	**10,932,600**	**11,062,900**	**11,120,900**	**11,254,800**	**11,391,500**	**11,536,200**	**11,678,700**
23	**Annual Operating Balance**			(246,400)	142,100	634,000	1,199,700	1,837,900	2,562,900	3,459,700	4,391,500	4,545,900	4,606,600	4,673,500
24	Beginning Balance Op and Cap Funds [1]			2,403,300	2,156,900	2,299,000	2,737,000	2,735,600	2,733,400	2,790,600	2,838,200	2,873,800	2,971,000	3,034,100
25	Funds from Operations			(246,400)	142,100	634,000	1,199,700	1,837,900	2,562,900	3,459,700	4,391,500	4,545,900	4,606,600	4,673,500
26	Percentage of CIP			0.0%	0.0%	5.0%	30.0%	45.0%	60.0%	80.0%	100.0%	100.0%	100.0%	100.0%
27	Use of Funds - CIP			-	-	196,000	1,201,100	1,840,100	2,505,700	3,412,100	4,355,900	4,448,700	4,543,500	4,640,200
28	Ending Op and Cap Balance			2,156,900	2,299,000	2,737,000	2,735,600	2,733,400	2,790,600	2,838,200	2,873,800	2,971,000	3,034,100	3,067,400
29	Target Annual Ending Balance [2]			2,573,300	2,603,100	2,633,600	2,664,700	2,696,500	2,728,900	2,762,100	2,795,900	2,830,500	2,865,800	2,901,900
30	**Debt Service Coverage [3]**			**31.24**	**33.55**	**36.58**	**41.41**	**45.51**	**50.29**	**113.28**	**128.76**	**133.73**	**128.38**	**132.35**

[1] 2019 Beginning Balance Operating and Capital Funds equal to prior year Target Annual Ending Balance - 25% of O&M.
[2] Target Annual Ending Balance taken from '2017 Lake County PW final FS' pg 26; Operation Account - 25% of O&M.
[3] Minimum Debt Service Coverage of 1.5x required by Bond ordinance.

2.5.2 Sewer Utility Flow of Funds

Table 2-9 presents the sewer utility cash flow. Lines 1 and 2 of Table 2-9 show the Lake County portion of retail and wholesale user revenues under current rates, identified previously in Table 2-4. Lines 3 through 12 present the revenue increases which have been sized to reflect an underlying sewer system increase of 2.0 percent per year plus an allowance for inflation, estimated to be 2.13 percent annually. The total increase of 4.13 percent is anticipated for FY 2020 and 2021. In FY 2022, the total increase is 3.13 percent. Starting in FY 2023, the sewer CIP is expected to be fully funded, and future increases reflect inflation only. Each increase is assumed to be effective December 1 of the fiscal year indicated. Total Lake County user revenues are summarized on Line 14.

Lines 15 and 16 show the wholesale water purchase pass-through revenue for retail and wholesale sewer treatment and Line 17 shows other revenues, forecast to remain at 2019 budget amounts. Line 18 shows the total operating revenue forecasted over the study period. Including the proposed revenue adjustments and CPI, total revenue is projected to increase from $36.7 million in 2019 to $43.2 million in 2029.

Sewer O&M expenses are shown on Lines 19 and 20 of Table 2-9, shown previously in Table 2-5. Existing debt service amounts on Line 21 reflect debt service payments identified previously in Table 2-7. Lake County is not forecasting the issuance of additional utility debt in this plan, as can be seen on Line 22.

Total revenue requirements are summarized on Line 24. This amount is deducted from Line 18, total revenue, to determine the annual operating surplus or deficit. With the proposed revenue adjustments, the operating balance on Line 25 is positive in all years of the forecast and increasing to provide the funding needed for a pay-as-you-go strategy for capital improvements.

Lines 26 through 30 show the flow of funds to finance the CIP for the sewer utility. For 2019, a beginning balance of approximately $6.3 million was available, as shown on Line 26. The annual operating balance is added to this amount to reflect the cash surplus expected each year from ongoing operations of the sewer utility assuming all rate increases shown in Table 2-9 are implemented. Comparable to the water utility, the sewer utility targets a minimum operating and capital balance of 25 percent of O&M, shown as the target on Line 31. Sewer capital improvement projects and the percentage of the total CIP shown on Lines 28 and 29 are consistent with that shown previously in Table 2-6. Compared to the water utility, the sewer utility reaches its CIP funding target more quickly, such that 100 percent of the CIP spending target is funded in FY 2023.

Line 32 shows the debt service coverage of the existing debt. As previously noted, the minimum debt service coverage level is 1.5. As can be seen on Table 2-9, the debt service coverage level improves during the forecast period, increasing from 1.50 in 2019 to 2.96 in 2029. This improvement reflects the impact of proposed rate increases, the reduction in existing sewer debt service payments beginning in FY 2022, and no planned issuance of additional debt.

Table 2-9: Sewer Utility Financial Plan

Line No.				Projected 2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
	Sewer Utility Flow of Funds													
	Revenue Under Existing Rates													
1	Retail Sewer Revenue			10,718,200	10,718,200	10,718,200	10,718,200	10,718,200	10,718,200	10,718,200	10,718,200	10,718,200	10,718,200	10,718,200
2	Wholesale Sewer Revenue			11,556,700	11,556,700	11,556,700	11,556,700	11,556,700	11,556,700	11,556,700	11,556,700	11,556,700	11,556,700	11,556,700
	Proposed Revenue Adjustments													
	Year	Month	Increase											
3	2020	2	4.13%		843,300	920,000	920,000	920,000	920,000	920,000	920,000	920,000	920,000	920,000
4	2021	2	4.13%			878,100	957,900	957,900	957,900	957,900	957,900	957,900	957,900	957,900
5	2022	2	3.13%				693,000	756,000	756,000	756,000	756,000	756,000	756,000	756,000
6	2023	2	2.13%					486,300	530,600	530,600	530,600	530,600	530,600	530,600
7	2024	2	2.13%						496,700	541,900	541,900	541,900	541,900	541,900
8	2025	2	2.13%							507,300	553,400	553,400	553,400	553,400
9	2026	2	2.13%								518,100	565,200	565,200	565,200
10	2027	2	2.13%									529,200	577,300	577,300
11	2028	2	2.13%										540,400	589,600
12	2029	2	2.13%											551,900
13	Total Proposed Additional Revenue			-	843,300	1,798,100	2,570,900	3,120,200	3,661,200	4,213,700	4,777,900	5,354,200	5,942,700	6,543,800
14	Total User Charge Revenue			22,274,900	23,118,200	24,073,000	24,845,800	25,395,100	25,936,100	26,488,600	27,052,800	27,629,100	28,217,600	28,818,700
15	Wholesale Sewer Treatment - Retail			1,534,500	1,534,500	1,534,500	1,534,500	1,534,500	1,534,500	1,534,500	1,534,500	1,534,500	1,534,500	1,534,500
16	Wholesale Sewer Treatment - Wholesale			8,690,800	8,690,800	8,690,800	8,690,800	8,690,800	8,690,800	8,690,800	8,690,800	8,690,800	8,690,800	8,690,800
17	Other Revenue			4,158,700	4,158,700	4,158,700	4,158,700	4,158,700	4,158,700	4,158,700	4,158,700	4,158,700	4,158,700	4,158,700
18	**Grand Total Revenue**			**36,658,900**	**37,502,200**	**38,457,000**	**39,229,800**	**39,779,100**	**40,320,100**	**40,872,600**	**41,436,800**	**42,013,100**	**42,601,600**	**43,202,700**
	Revenue Requirements													
19	Wholesale Sewerage Treatment			10,225,300	10,225,300	10,225,300	10,225,300	10,225,300	10,225,300	10,225,300	10,225,300	10,225,300	10,225,300	10,225,300
20	All Other Operation and Maint Expense			17,778,400	18,157,100	18,543,900	18,938,900	19,342,300	19,754,300	20,175,100	20,604,800	21,043,800	21,492,000	21,949,800
	Debt Service													
21	Existing Debt			5,777,500	5,823,200	5,797,100	4,167,200	4,057,400	4,028,800	3,999,200	3,968,600	3,937,100	3,904,600	3,721,000
22	Proposed Debt			-	-	-	-	-	-	-	-	-	-	-
23	Total Debt Service			5,777,500	5,823,200	5,797,100	4,167,200	4,057,400	4,028,800	3,999,200	3,968,600	3,937,100	3,904,600	3,721,000
24	**Total Revenue Requirements**			**33,781,200**	**34,205,600**	**34,566,300**	**33,331,400**	**33,625,000**	**34,008,400**	**34,399,600**	**34,798,700**	**35,206,200**	**35,621,900**	**35,896,100**
25	**Annual Operating Balance**			2,877,700	3,296,600	3,890,700	5,898,400	6,154,100	6,311,700	6,473,000	6,638,100	6,806,900	6,979,700	7,306,600
26	Beginning Balance Op and Cap Funds			6,256,600	7,161,100	7,003,100	7,365,600	7,558,700	7,579,300	7,626,900	7,702,300	7,806,500	7,940,400	8,104,900
27	Funds from Operations			2,877,700	3,296,600	3,890,700	5,898,400	6,154,100	6,311,700	6,473,000	6,638,100	6,806,900	6,979,700	7,306,600
28	Percentage of CIP			35.0%	60.0%	60.0%	95.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
29	Use of Funds - CIP			1,973,200	3,454,600	3,528,200	5,705,300	6,133,500	6,264,100	6,397,600	6,533,900	6,673,000	6,815,200	6,960,300
30	Ending Op and Cap Balance			7,161,100	7,003,100	7,365,600	7,558,700	7,579,300	7,626,900	7,702,300	7,806,500	7,940,400	8,104,900	8,451,200
31	Target Annual Ending Balance [1]			7,000,900	7,095,600	7,192,300	7,291,100	7,391,900	7,494,900	7,600,100	7,707,500	7,817,300	7,929,300	8,043,800
32	**Debt Service Coverage [2]**			**1.50**	**1.57**	**1.67**	**2.42**	**2.52**	**2.57**	**2.62**	**2.67**	**2.73**	**2.79**	**2.96**

[1] 2019 Beginning Balance Operating and Capital Funds equal to prior year Target Annual Ending Balance - 25% of O&M.
[2] Target Annual Ending Balance taken from '2017 Lake County PW final FS' pg 26; Operation Account - 25% of O&M.
[3] Minimum Debt Service Coverage of 1.5x required by Bond ordinance.

2.5.3 Consolidated Utility Flow of Funds

A combined water and sewer utility detailed cash flow table is presented in Table 2-10. On a consolidated basis, proposed revenue adjustments range between 4.1 percent and 5.5 percent while funding for capital spending targets is phased in. Consolidated utility increases by year are shown on Lines 2 through 11. At the consolidated level, beginning in FY 2027 revenue increases reflect CPI only. Ending operating balances are projected to meet the 25 percent operating reserve in each year. Assuming all proposed increases are implemented, the CIP is fully funded by cash under a pay-as-you-go strategy, and debt

service coverage improves throughout the forecast period. These important milestones are projected to be accomplished while keeping consolidated rate increases within national industry average increases of 5 to 6 percent per year.

Table 2-10: Combined Water and Sewer Utility Financial Plan

Line No.				Projected 2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
	Combined Utility Flow of Funds													
1	Revenue Under Existing Rates			27,052,400	27,052,400	27,052,400	27,052,400	27,052,400	27,052,400	27,052,400	27,052,400	27,052,400	27,052,400	27,052,400
	Proposed Revenue Adjustments													
	Year	Month	Increase											
2	2020	2	5.45%		1,352,600	1,475,600	1,475,600	1,475,600	1,475,600	1,475,600	1,475,600	1,475,600	1,475,600	1,475,600
3	2021	2	5.53%			1,446,700	1,578,100	1,578,100	1,578,100	1,578,100	1,578,100	1,578,100	1,578,100	1,578,100
4	2022	2	4.81%				1,327,700	1,448,400	1,448,400	1,448,400	1,448,400	1,448,400	1,448,400	1,448,400
5	2023	2	4.13%					1,194,800	1,303,500	1,303,500	1,303,500	1,303,500	1,303,500	1,303,500
6	2024	2	4.28%						1,287,600	1,404,700	1,404,700	1,404,700	1,404,700	1,404,700
7	2025	2	4.43%							1,390,200	1,516,500	1,516,500	1,516,500	1,516,500
8	2026	2	4.58%								1,503,600	1,640,300	1,640,300	1,640,300
9	2027	2	2.13%									730,700	778,800	778,800
10	2028	2	2.13%										745,800	795,000
11	2029	2	2.13%											761,300
12	Total Proposed Additional Revenue			-	1,352,600	2,922,300	4,381,400	5,696,900	7,093,200	8,600,500	10,230,400	11,097,800	11,891,700	12,702,200
13	Total User Charge Revenue			27,052,400	28,405,000	29,974,700	31,433,800	32,749,300	34,145,600	35,652,900	37,282,800	38,150,200	38,944,100	39,754,600
14	Pass Through Revenue			14,917,300	14,917,300	14,917,300	14,917,300	14,917,300	14,917,300	14,917,300	14,917,300	14,917,300	14,917,300	14,917,300
15	Other Revenue			4,883,000	4,883,000	4,883,000	4,883,000	4,883,000	4,883,000	4,883,000	4,883,000	4,883,000	4,883,000	4,883,000
16	**Grand Total Revenue**			**46,852,700**	**48,205,300**	**49,775,000**	**51,234,100**	**52,549,600**	**53,945,900**	**55,453,200**	**57,083,100**	**57,950,500**	**58,744,400**	**59,554,900**
	Revenue Requirements													
17	Operation and Maintenance Expense			38,296,900	38,794,900	39,303,500	39,823,000	40,353,500	40,895,300	41,448,700	42,013,800	42,591,000	43,180,500	43,782,500
	Debt Service													
18	Existing Debt			5,924,500	5,971,700	5,946,800	4,313,000	4,204,100	4,176,000	4,071,800	4,039,700	4,006,700	3,977,600	3,792,300
19	Proposed Debt			-	-	-	-	-	-	-	-	-	-	-
20	Total Debt Service			5,924,500	5,971,700	5,946,800	4,313,000	4,204,100	4,176,000	4,071,800	4,039,700	4,006,700	3,977,600	3,792,300
21	**Total Revenue Requirements**			**44,221,400**	**44,766,600**	**45,250,300**	**44,136,000**	**44,557,600**	**45,071,300**	**45,520,500**	**46,053,500**	**46,597,700**	**47,158,100**	**47,574,800**
22	**Annual Operating Balance**			2,631,300	3,438,700	4,524,700	7,098,100	7,992,000	8,874,600	9,932,700	11,029,600	11,352,800	11,586,300	11,980,100
23	Beginning Balance Op and Cap Funds [1]			8,659,900	9,318,000	9,302,100	10,102,600	10,294,300	10,312,700	10,417,500	10,540,500	10,680,300	10,911,400	11,139,000
24	Funds from Operations			2,631,300	3,438,700	4,524,700	7,098,100	7,992,000	8,874,600	9,932,700	11,029,600	11,352,800	11,586,300	11,980,100
25	Percentage of CIP			21.0%	36.0%	38.0%	69.0%	78.0%	84.0%	92.0%	100.0%	100.0%	100.0%	100.0%
26	Use of Funds - CIP			1,973,200	3,454,600	3,724,200	6,906,400	7,973,600	8,769,800	9,809,700	10,889,800	11,121,700	11,358,700	11,600,500
27	Ending Op and Cap Balance			9,318,000	9,302,100	10,102,600	10,294,300	10,312,700	10,417,500	10,540,500	10,680,300	10,911,400	11,139,000	11,518,600
28	Target Annual Ending Balance [2]			5,844,900	5,969,400	6,096,600	6,226,400	6,359,100	6,494,500	6,632,900	6,774,100	6,918,400	7,065,800	7,216,300
29	**Debt Service Coverage [3]**			**3.96**	**4.07**	**4.27**	**6.10**	**6.45**	**6.70**	**7.10**	**7.42**	**7.56**	**7.66**	**8.09**

[1] 2019 Beginning Balance Operating and Capital Funds equal to prior year Target Annual Ending Balance - 25% of O&M.
[2] Target Annual Ending Balance taken from '2017 Lake County PW final FS' pg 26; Operation Account - 25% of O&M.
[3] Minimum Debt Service Coverage of 1.5x required by Bond ordinance.

2.6 Alternate Financial Plans

During the study, several scenarios were evaluated that considered different timing in the speed with which capital spending targets were achieved. Through consultation with Lake County public works staff, and the Public Works, Planning and Transportation Committee, the scenario presented in this report was ultimately selected.

Sections 3 and 4 of this report discuss the cost of service analysis and the proposed rate design for each utility.

3.0 COST OF SERVICE ANALYSIS

3.1 Introduction

The cost of service analysis evaluates revenue responsibility. Once the overall need for revenue increases is identified through financial planning, the results of the cost of service analysis provides perspective on costs incurred to provide service to classes or segments of customers.

To determine each customer class' share of the cost of providing utility 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 water and sewer systems owned and operated by Lake County are a complex array of facilities. Water and sewer customers are aggregated by service area (Central, Northeast Central, South Central, Northeast, Southeast, and Northwest) and by type of service (Retail Water, Retail Sewer, and Sewer Wholesale). 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. Assign the costs of service to customer classes by service area.
4. Compare costs to revenues under existing rates.

For this study, cost allocations rely on historical cost accounting to distribute O&M costs between utilities and among service areas; Lake County staff guidance on the purpose of existing debt issuance; replacement cost asset valuations by service area; and, historical billed volumes to distribute costs within areas where needed. In this manner, the water and sewer utility's customer classes are allocated a reasonable share of the total cost of service according to their use of the system.

3.2 Water Cost of Service

3.2.1 Net Revenue Requirements

As described in Section 2 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 2020, which corresponds to the first year for which revenue adjustments are proposed. For the water utility, the revenue adjustment amounts to a 11.63 percent total increase.

Table 3-1 summarizes the development of the net revenue requirements to be recovered from water rates in the 2020 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 cash operating and capital cost expenditures less all sources of other revenue. As presented in Table 3-1, the net operating costs are equal to $5,040,300 and the net capital costs are equal to $292,800 for a total net revenue requirement of $5,333,100. It is important to note these costs exclude purchased water supply; rates associated with the pass-through cost of purchased water supply are assumed to be adjusted by Lake County as increases are encountered. As shown in Table 3-1, Lake County's water system revenue requirement is 11.63 percent higher than Lake County water revenues under existing rates. The increase shown in Table 3-1 is consistent with the 2020 revenue increase identified in the recommended water utility financial plan discussed in Section 2 of this report.

Table 3-1: Test Year 2020 Water Net Revenue Requirements

	Operating Expense $	Capital Cost $	Total $
Revenue Requirements			
Operating Expense	5,720,500		5,720,500
Debt Service		148,500	148,500
Revenue Capital Financing		142,100	142,100
Total	5,720,500	290,600	6,011,100
Revenue Requirements Met from Other Sources			
Other Operating Revenue	724,300		724,300
Annualized Increase	(44,100)	(2,200)	(46,300)
Use of / (Deposit to) Reserves			-
Total	680,200	(2,200)	678,000
Cost of Service to be met by User Charges	5,040,300	292,800	5,333,100
Revenue under Existing Rates			4,777,500
System Revenue Adjustment			11.63%

3.2.2 Water Cost of Service Methodology

Two water cost allocation methodologies are generally promulgated 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 each customer class' average water usage requirements and peak demand water usage requirements 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.

Lake County's cost accounting system tracks certain operating and maintenance costs by service and service area, assigning costs directly where applicable and allocating costs primarily on the basis of volume. Administrative, engineering, lab and other shared services not assigned to service areas by Lake County's cost accounting system are distributed to service areas on the basis of volume. In coordination with Lake County staff, debt service costs have been assigned between water and sewer by debt issue, and then assigned to service areas based on the purpose of the bonds. Consistent with prior Lake County cost allocation practice, Lake County's cost accounting system and billed volume serve as the primary basis for assigning water revenue requirements.

3.2.2.1 Operating Expenses

Operating expenses for the water system were forecasted previously in Table 2-5 of this report. Test year 2020 operating costs are assigned to functional areas in Table 3-2. Cost allocations are based on 2017 actuals and billed volumes.

Table 3-2: Allocation of Test Year 2020 Water Operation and Maintenance Expenses

	2017 Water Allocated Costs		Allocation Factors		Test Year O&M Costs		
	Wholesale Purchases	All Other O&M	Wholesale Purchases	All Other O&M	Wholesale Purchases	All Other O&M	Annualized Increase
	$	$	%	%	$	$	$
CLCJAWA	4,210,599	2,746,835	97.4%	74.0%	4,571,257	4,230,388	32,613
General Service	18,519	875,567	0.4%	23.6%	20,105	1,348,457	10,395
Hawthorn Woods	92,697	91,978	2.1%	2.5%	100,637	141,655	1,092
Total Water System	**4,321,815**	**3,714,381**	100.0%	100.0%	**4,692,000**	**5,720,500**	**44,100**

3.2.2.2 Capital Costs

Cash capital costs for the water utility include pay-as-you-go (or revenue-financed) capital projects and payments on existing debt. Capital costs are assigned to functional components in Table 3-3. Capital costs are allocated on the replacement cost-based investment in Lake County's water utility assets.

Table 3-3: Allocation of Test Year 2020 Water Capital Costs

	Replacement Cost Value of Water Assets						Allocation Factors		Allocated Test Year Costs		
Region	Well Supply	WTP	Storage	Water Main	Pump Station	Total	Capital Allocation Factors	Direct Debt Allocation Factors	Revenue Financed Capital	Debt Service	Annualized Increase
	$	$	$	$	$	$	%	%	$	$	$
CLCJAWA	-	-	17,000,000	246,211,500	12,000,000	275,211,500	76.3%	100.0%	108,426	130,901	1,679
General Service	5,700,000	500,000	6,950,000	61,669,800	6,250,000	81,069,800	22.5%		31,939	16,650	494
Hawthorn Woods	-	-	-	4,401,900	-	4,401,900	1.2%		1,734	904	27
Total Water System	**5,700,000**	**500,000**	**23,950,000**	**312,283,200**	**18,250,000**	**360,683,200**	100.0%	100.0%	**142,100**	**148,456**	**2,200**

3.2.3 Summary of Revenues and Allocated Revenue Requirements

Table 3-4 summarizes the revenue and allocated revenue requirements by service area. As shown in Table 3-4, the overall revenue increase is identified as 11.6 percent.

Table 3-4: Comparison of Revenue Under Existing Rates to Allocated Cost of Service

Revenues	CLCJAWA	General Service	Hawthorn Woods	Total
User Charges	3,968,398	780,435	28,668	4,777,500
Other Revenues	705,499	17,126	1,675	724,300
Total Revenue	**4,673,897**	**797,561**	**30,342**	**5,501,800**
Revenues Requirements				
O&M (less pass through)	4,230,388	1,348,457	141,655	5,720,500
Debt Service	130,901	16,650	904	148,456
Revenue Financed Capital	108,426	31,939	1,734	142,100
Annualized Increase	34,291	10,890	1,119	46,300
Total Revenue Requirements	**4,504,006**	**1,407,937**	**145,412**	**6,057,356**
Excess/(Deficient) Revenues	**169,890**	**(610,376)**	**(115,070)**	**(555,556)**
Percent Change Needed	-4.3%	78.2%	401.4%	11.6%

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 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 of this report, the cash needs of the sewer utility were projected over a ten-year study period. The test period for the cost of service analysis is 2020, which corresponds to the first year for which revenue adjustments are proposed. For the sewer utility, the revenue adjustment amounts to a 4.13 percent increase.

Table 3-5 summarizes the development of the net revenue requirements to be recovered from sewer rates in the 2020 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. As presented in Table 3-5, the net operating costs are equal to $14,049,500 and the net capital costs are equal to $9,145,400 for a total net revenue requirement of $23,194,900. It is important to note these costs exclude wholesale sewer treatment expenses; rates associated with the pass-through cost of wholesale sewer treatment expense are assumed to be adjusted by Lake County as increases are encountered. As shown in Table 3-5, Lake County's sewer system revenue requirement is 4.13 percent higher than revenues under existing sewer rates, consistent with the 2020 revenue increase identified in the recommended sewer utility financial plan discussed in Section 2 of this report.

Table 3-5: Test Year 2020 Sewer Net Revenue Requirements

	Operating Expense $	Capital Cost $	Total $
Revenue Requirements			
Operating Expense	18,157,100		18,157,100
Debt Service		5,823,200	5,823,200
Revenue Capital Financing		3,296,600	3,296,600
Total	18,157,100	9,119,800	27,276,900
Revenue Requirements Met from Other Sources			
Other Operating Revenue	4,158,700		4,158,700
Annualized Increase	(51,100)	(25,600)	(76,700)
Use of / (Deposit to) Reserves			-
Total	4,107,600	(25,600)	4,082,000
Cost of Service to be met by User Charges	14,049,500	9,145,400	23,194,900
Revenue under Existing Rates			22,274,900
System Revenue Adjustment			4.13%

3.3.2 Sewer Cost of Service Methodology

According to the Water Environment Federation's *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.

Lake County's cost accounting system tracks operating and maintenance cost by service and service area, assigning costs directly where applicable and allocating costs primarily on the basis of volume. Administrative, engineering, lab and other shared services not assigned to service areas by Lake County's cost accounting system are distributed to service areas on the basis of volume. In coordination with Lake County staff, debt service costs have been assigned between water and sewer by debt issue, and then assigned to service areas based on the purpose of the bonds. Consistent with Lake County cost allocation practice, Lake County's cost accounting system and billed volume serve as the primary basis for assigning sewer revenue requirements.

3.3.2.1 Operating Expenses

Operating expenses for the sewer system were forecasted previously in Table 2-5 of this report. Test year 2020 operating costs are assigned to functional areas in Table 3-6. Billing determinants and allocated cost are based on 2017 actuals and are the basis for the allocation factors for test year allocations.

Table 3-6: Allocation of Test Year 2020 Sewer Operation and Maintenance Expenses

	Billing Determinants					2017 Sewer Allocated Costs		Allocation Factors		Test Year O&M Costs		
	2017 Volume	Treatment	Dist/Coll	Transportation	Total	Treatment	All Other O&M	Treatment	All Other O&M	Treatment	All Other O&M	Annualized Increase
	kgal	kgal	kgal	kgal	kgal	$	$	%	%	$	$	$
481: Central												
Retail Water	208,355		208,355		208,355							
Retail Sewer	179,713	141,693	179,713	38,020	217,734	304,111	484,742	3.5%	2.9%	352,975	530,639	1,493
Wholesale Sewer	643,116	-	-	643,116	643,116	325,131	697,256	3.7%	4.2%	377,372	763,275	2,148
Total 481	1,031,184	141,693	388,068	681,136	1,069,204	629,242	1,181,998			730,347	1,293,915	3,641
482: NE Central												
Retail Water	319,645	-	319,645		319,645							
Retail Sewer	335,910	-	335,910	335,910	671,820	1,017,962	543,260	11.6%	3.3%	1,181,527	594,698	1,674
Wholesale Sewer	879,542	-	-	879,542	879,542	3,186,487	695,152	36.2%	4.2%	3,698,486	760,971	2,142
Total 482	1,535,097	-	655,555	1,215,452	1,871,007	4,204,449	1,238,412			4,880,013	1,355,669	3,815
483: South Central												
Retail Water	837,575	-	837,575	-	837,575							
Retail Sewer	766,485	766,485	766,485	-	766,485		3,203,617		19.3%		3,506,948	9,870
Wholesale Sewer	-	-	-	-	-		3,203,617				3,506,948	9,870
Total 483	1,604,060	766,485	1,604,060	-	1,604,060							
484: Northeast												
Retail Water	111,019	-	111,019	-	111,019							
Retail Sewer	105,436	105,436	105,436	105,436	210,872		928,906		5.6%		1,016,859	2,862
Wholesale Sewer	54,421	54,421	-	54,421	54,421		429,032		2.6%		469,654	1,322
Total 484	270,876	159,857	216,455	159,857	376,312		1,357,938				1,486,513	4,184
485: Southeast												
Retail Water	81,713	-	81,713	-	81,713							
Retail Sewer	680,777	680,777	680,777	680,777	1,361,554		2,981,511		18.0%		3,263,812	9,185
Wholesale Sewer	1,624,914	1,624,914	-	1,624,914	1,624,914		4,695,535		28.3%		5,140,127	14,466
Total 485	2,387,404	2,305,691	762,490	2,305,691	3,068,181		7,677,046				8,403,939	23,651
486: Northwest												
Retail Water	73,357	-	73,357	-	73,357							
Retail Sewer	140,343	-	140,343	140,343	280,686		295,560		1.8%		323,545	911
Wholesale Sewer	1,612,503	-	-	1,612,503	1,612,503	3,976,071	1,632,042	45.1%	9.8%	4,614,939	1,786,571	5,028
Total 486	1,826,202	-	213,700	1,752,846	1,966,546	3,976,071	1,927,602			4,614,939	2,110,115	5,939
Total Retail Water	1,631,663	-	1,631,663	-	1,631,663							
Total Retail Sewer	2,208,665	1,694,391	2,208,665	1,300,487	3,509,152	1,322,074	8,437,597	15.0%	50.9%	1,534,502	9,236,502	25,995
Total Wholesale Sewer	4,814,495	1,679,335	-	4,814,495	4,814,495	7,487,689	8,149,017	85.0%	49.1%	8,690,798	8,920,598	25,105
Total System	**8,654,823**	**3,373,727**	**3,840,328**	**6,114,982**	**9,955,310**	**8,809,762**	**16,586,613**	100.0%	100.0%	**10,225,300**	**18,157,100**	**51,100**

3.3.2.2 Capital Costs

Cash capital costs for the sewer utility include pay-as-you-go (or revenue-financed) capital projects and payments on existing debt. Capital costs are assigned to functional areas in Table 3-7. Capital costs are allocated on the replacement cost-based investment in Lake County's sewer utility assets.

Allocations shown on Table 3-7 are based on either the replacement cost of the system less local collector sewers or the replacement cost of the collector sewers with few exceptions. Two debt issues are directly assigned to functional areas based on the purpose of the bonds – IEPA Loan 17 which is associated with the Northwest area and IEPA Loan 14964 which is associated with the Southeast area. All other sewer debt is distributed on the basis of the replacement cost less collector sewers.

Cash-funded capital improvements are allocated 75 percent on the basis of replacement cost less collector sewers and 25 percent on the basis of collector sewers. Costs allocated on the basis of collector sewers are allocated within retail service only and not shared with wholesale service customers.

Within each area, volume is used to distribute costs between retail and wholesale.

Table 3-7: Allocation of Test Year 2020 Sewer Capital Costs

		Replacement Cost Value of Sewer Assets							Allocation Factors		Allocated Test Year Costs		
Region	Sewer Usage	Interceptor	Collector	Force Main	WWTP	Pump Station	Total	Total Less Collectors	Capital Allocation Factors	Collector Allocation Factors	Debt Service	Revenue Financed Capital	Annualized Increase
	kgal	$	$	$	$	$	$	$	%	%	$	$	$
481: Central													
Retail	179,713	2,127,600	56,992,800	2,024,400	42,405,200	1,791,400	105,341,400	48,348,600	9.8%	9.1%	326,513	316,821	2,507
Wholesale	643,116	8,626,200	-	1,543,900	-	1,658,600	11,828,700	11,828,700	2.4%		79,883	59,236	613
Total 481		10,753,800	56,992,800	3,568,300	42,405,200	3,450,000	117,170,100	60,177,300			406,396	376,057	3,120
482: NE Central													
Retail	335,910	5,665,500	114,880,800	554,000	-	1,589,100	122,689,400	7,808,600	1.6%	18.3%	52,734	189,604	405
Wholesale	879,542	14,834,400	-	1,450,600	-	4,160,900	20,445,900	20,445,900	4.1%		138,077	102,389	1,060
Total 482		20,499,900	114,880,800	2,004,600	-	5,750,000	143,135,300	28,254,500			190,811	291,994	1,465
483: South Central													
Retail	766,485	5,508,000	213,290,000	8,058,900	49,594,800	5,750,000	282,201,700	68,911,700	14.0%	33.9%	465,382	624,498	3,573
Total 483		5,508,000	213,290,000	8,058,900	49,594,800	5,750,000	282,201,700	68,911,700			465,382	624,498	3,573
484: Northeast													
Retail	105,436	15,476,100	43,121,200	23,500	23,892,700	379,200	82,892,700	39,771,500	8.1%	6.9%	268,589	255,669	2,062
Wholesale	54,421	7,988,000	-	12,200	12,332,300	195,800	20,528,300	20,528,300	4.2%		138,634	102,802	1,064
Total 484		23,464,100	43,121,200	35,700	36,225,000	575,000	103,421,000	60,299,800			407,223	358,471	3,127
485: Southeast													
Retail	680,777	12,960,500	155,582,800	11,037,400	54,327,700	4,234,200	238,142,600	82,559,800	16.7%	24.7%	752,373	617,245	4,281
Wholesale	1,624,914	15,200,200	-	12,944,700	129,672,300	4,965,800	162,783,000	162,783,000	33.0%		1,483,452	815,189	8,441
Total 485		28,160,700	155,582,800	23,982,100	184,000,000	9,200,000	400,925,600	245,342,800			2,235,824	1,432,434	12,721
486: Northwest													
Retail	140,343	1,523,300	45,277,200	476,800	-	460,400	47,737,700	2,460,500	0.5%	7.2%	169,546	71,622	128
Wholesale	1,612,503	17,502,300	-	5,478,900	-	5,289,600	28,270,800	28,270,800	5.7%		1,948,065	141,575	1,466
Total 486		19,025,600	45,277,200	5,955,700	-	5,750,000	76,008,500	30,731,300			2,117,611	213,197	1,593
Total Retail	2,208,665	43,261,000	629,144,800	22,175,000	170,220,400	14,204,300	879,005,500	249,860,700	50.6%		2,035,136	2,075,458	12,956
Total Wholesale	4,814,495	64,151,100	-	21,430,300	142,004,600	16,270,700	243,856,700	243,856,700	49.4%		4,253,492	1,845,689	16,218
Total Sewer System	**7,023,160**	**107,412,100**	**629,144,800**	**43,605,300**	**312,225,000**	**30,475,000**	**1,122,862,200**	**493,717,400**	100.0%	100.0%	**5,823,247**	**3,296,650**	**25,600**

3.3.3 Summary of Revenues and Allocated Revenue Requirements

Table 3-8 summarizes the revenue and allocated revenue requirements by service and by area. As shown in Table 3-8, the overall revenue increase is identified as 4.1 percent, with retail indicated to increase 5.2 percent and wholesale increasing 3.2 percent.

Table 3-8: Summary of Revenues and Allocated Revenue Requirement by Area

Revenues	Sewer Retail Total	Northwest	Northeast	Northeast Central	Southeast Central	Southeast	Sewer Wholesale Total	Sewer System Total
User Charges	10,718,198	1,700,897	251,929	755,660	758,100	8,090,116	11,556,702	22,274,900
Other Revenues	2,115,407	485,090	161,774	189,081	95,966	1,111,382	2,043,293	4,158,700
Total Revenue	**12,833,605**	**2,185,987**	**413,703**	**944,741**	**854,065**	**9,201,499**	**13,599,995**	**26,433,600**
Revenues Requirements								
O&M (less pass through)	9,236,502	1,786,571	469,654	760,971	763,275	5,140,127	8,920,598	18,157,100
Debt Service	2,035,136	1,948,065	138,634	138,077	79,883	1,483,452	3,788,111	5,823,247
Revenue Financed Capital	2,075,458	141,575	102,802	102,389	59,236	815,189	1,221,192	3,296,650
Annualized Increase	38,816	6,521	2,393	3,213	2,773	22,984	37,884	76,700
Total Revenue Requirements	**13,385,913**	**3,882,731**	**713,483**	**1,004,651**	**905,167**	**7,461,750**	**13,967,784**	**27,353,697**
Excess/(Deficient) Revenues	**(552,308)**	**(1,696,744)**	**(299,780)**	**(59,910)**	**(51,102)**	**1,739,748**	**(367,789)**	**(920,097)**
Percent Change Needed	5.2%	99.8%	119.0%	7.9%	6.7%	-21.5%	3.2%	4.1%

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 will discuss proposed rates for the sewer utility.

4.0 PROPOSED RATE DESIGN

4.1 Introduction

Step 3 Rate Design develops proposed rates to provide revenues commensurate with funding requirements as identified in Section 2 of this report. 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.
- Provide cost recovery that is reasonably commensurate with the cost of providing service.

4.2 Existing Water Rates

The current water rate schedule is shown in Table 4-1. Existing metered water rates include an inclining block rate structure with a minimum bill for residential service.

Table 4-1: Existing Water Rates

Volumetric Rates	
	Existing FY 2019
General Service Areas	($/1000 gal)
Block 1 (0-2,000 gallons per month)	$4.16
Block 2 (3,000-6,000 gallons per month)	$4.39
Block 3 (7,000 gallons or greater per month)	$4.60
Non-Residential	$4.39
CLCJAWA Service Areas	
Block 1 (0-2,000 gallons per month)	$5.72
Block 2 (3,000-6,000 gallons per month)	$6.03
Block 3 (7,000 gallons or greater per month)	$6.33
Non-Residential	$6.03
Hawthorn Woods - Glennshire/Forest Lake	
Block 1 (0-2,000 gallons per month)	$8.03
Block 2 (3,000-6,000 gallons per month)	$8.45
Block 3 (7,000 gallons or greater per month)	$8.88
Non-Residential	$8.45

Unmetered Water	
	Existing FY 2019
	($/mo)
Arden Shores	$55.11
Countryside Lake	$43.86
Forest Lake	$43.51
Oak Terrace	$33.42

The current water rate structure includes a minimum bill for residential accounts but lacks a fixed component for larger, non-residential accounts. Fixed service charges over time will help provide revenue stability as weather or other events may impact water consumption.

4.3 Proposed Water Rates

Water rate structures frequently feature a fixed service charge and a volumetric fee. Service charges are often designed to recover costs associated with meter reading, meter cost recovery, billing and customer service, all functions that are not generally related to the amount of water consumed in a given month. Such fees may be uniform, meaning the same fixed fee applies to all types of users or sizes of meter. Alternately, the base fee can be designed to increase in accordance with meter size, recognizing the higher cost of larger meters.

A fixed monthly service charge has been developed for Lake County. The service charge increases by meter size and is designed to be the same across all three service areas. Volumetric rates are proposed to maintain the current 3-block structure, however the minimum use requirement of 2 kgal per month should be eliminated. Volume rates were developed to work in collaboration with fixed fees to provide necessary revenues and support the conservation-oriented inclining block rate structure previously used by Lake County.

Rates have been designed over a 5-year period and are shown in Table 4-2. Rates include the pass-through water supply cost associated with serving the CLCJAWA and Hawthorn Woods service areas. To the extent these water suppliers increase the cost of purchased water, it is anticipated Lake County would adjust the rates shown in Table 4-2 to recover the incremental increase. As presented in Table 4-2, no increase is assumed for CLCJAWA or Aqua purchased water costs.

Unmetered water rates shown in Table 4-2 reflect residential customer equivalent multipliers of 10.0 for Countryside Lake and 7.5 for Oak Terrace, applied against the GSA Block 2 Rate, consistent with rate setting precedent. The multiplier for Forest Lake is 6.0 applied against the Hawthorn Woods Block 2 Rate, also consistent with prior precedent.

A bill comparison has been prepared for both residential and commercial accounts reflecting the impact of rates proposed in Table 4-2 across a variety of customer profiles. Table 4-3 shows the residential bill impact, while Table 4-4 shows the commercial bill impact.

Table 4-2: Existing and Proposed Water Rates

	Existing	Proposed, Fiscal Year				
	FY 2019	2020	2021	2022	2023	2024
Monthly Service Charge						
Meter Size						
Up to 1"	$ -	$ 7.28	$ 8.13	$ 9.07	$ 10.13	$ 11.30
1.5"	$ -	$ 8.20	$ 9.10	$ 10.20	$ 11.40	$ 12.70
2"	$ -	$ 10.60	$ 11.80	$ 13.20	$ 14.80	$ 16.50
3"	$ -	$ 28.70	$ 32.00	$ 35.80	$ 39.90	$ 44.60
4"	$ -	$ 35.40	$ 39.50	$ 44.10	$ 49.20	$ 54.90
6"	$ -	$ 51.00	$ 56.90	$ 63.50	$ 70.90	$ 79.10
8"	$ -	$ 68.80	$ 76.80	$ 85.70	$ 95.70	$ 106.80
12"	$ -	$ 115.60	$ 129.00	$ 144.00	$ 160.80	$ 179.50
Volumetric Rates						
Metered Well Water						
(A) General Service Areas						
(1) Block 1 (0-2,000 gallons per month)	$ 4.16	$ 1.00	$ 1.12	$ 1.25	$ 1.40	$ 1.56
(2) Block 2 (3,000-6,000 gallons per month)	$ 4.39	$ 4.80	$ 5.36	$ 5.98	$ 6.68	$ 7.46
(3) Block 3 (7,000 gallons or greater per month)	$ 4.60	$ 5.28	$ 5.90	$ 6.58	$ 7.35	$ 8.21
(4) Non-Residential: Residential with multiple dwelling units per meter and irrigation meters	$ 4.39	$ 4.80	$ 5.36	$ 5.98	$ 6.68	$ 7.46
(B) CLCJAWA Service Areas						
(1) Block 1 (0-2,000 gallons per month)	$ 5.72	$ 3.08	$ 3.09	$ 3.10	$ 3.11	$ 3.12
(2) Block 2 (3,000-6,000 gallons per month)	$ 6.03	$ 6.28	$ 6.66	$ 7.08	$ 7.55	$ 8.08
(3) Block 3 (7,000 gallons or greater per month)	$ 6.33	$ 6.91	$ 7.33	$ 7.79	$ 8.31	$ 8.89
(4) Non-Residential: Residential with multiple dwelling units per meter and irrigation meters	$ 6.03	$ 6.28	$ 6.66	$ 7.08	$ 7.55	$ 8.08
(C) Hawthorn Woods - Glennshire/Forest Lake						
(1) Block 1 (0-2,000 gallons per month)	$ 8.03	$ 5.56	$ 5.57	$ 5.58	$ 5.59	$ 5.60
(2) Block 2 (3,000-6,000 gallons per month)	$ 8.45	$ 8.81	$ 9.19	$ 9.62	$ 10.10	$ 10.63
(3) Block 3 (7,000 gallons or greater per month)	$ 8.88	$ 9.69	$ 10.11	$ 10.58	$ 11.11	$ 11.69
(4) Non-Residential: Residential with multiple dwelling units per meter and irrigation meters	$ 8.45	$ 8.81	$ 9.19	$ 9.62	$ 10.10	$ 10.63
Unmetered Water						
(1) Arden Shores	$ 55.10	$ 62.03	$ 63.11	$ 64.32	$ 65.67	$ 67.18
(2) Countryside Lake	$ 43.86	$ 48.00	$ 53.60	$ 59.80	$ 66.80	$ 74.60
(3) Forest Lake	$ 43.51	$ 52.86	$ 55.14	$ 57.72	$ 60.60	$ 63.78
(4) Oak Terrace	$ 33.42	$ 36.00	$ 40.20	$ 44.85	$ 50.10	$ 55.95

Table 4-3: Residential Typical Bill Impacts

Meter Size	Monthly Water Use	Current Rates	Proposed Rates					Difference					Difference				
			2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
inches	kgal	$/mo	$/mo	$/mo	$/mo	$/mo	$/mo	$	$	$	$	$	%	%	%	%	%
General Service Areas																	
1"	0	$ 8.32	$ 7.28	$ 8.13	$ 9.07	$ 10.13	$ 11.30	$ (1.04)	$ 0.85	$ 0.95	$ 1.06	$ 1.18	-13%	12%	12%	12%	12%
1"	1	$ 8.32	$ 8.28	$ 9.25	$ 10.32	$ 11.53	$ 12.86	$ (0.04)	$ 0.97	$ 1.08	$ 1.21	$ 1.34	0%	12%	12%	12%	12%
1"	2	$ 8.32	$ 9.28	$ 10.37	$ 11.57	$ 12.93	$ 14.42	$ 0.96	$ 1.09	$ 1.21	$ 1.36	$ 1.50	12%	12%	12%	12%	12%
1"	3	$ 12.71	$ 14.08	$ 15.73	$ 17.55	$ 19.61	$ 21.88	$ 1.37	$ 1.65	$ 1.83	$ 2.06	$ 2.28	11%	12%	12%	12%	12%
1"	4	$ 17.10	$ 18.88	$ 21.09	$ 23.53	$ 26.29	$ 29.34	$ 1.78	$ 2.21	$ 2.45	$ 2.76	$ 3.06	10%	12%	12%	12%	12%
1"	5	$ 21.49	$ 23.68	$ 26.45	$ 29.51	$ 32.97	$ 36.80	$ 2.19	$ 2.77	$ 3.07	$ 3.46	$ 3.84	10%	12%	12%	12%	12%
1"	6	$ 25.88	$ 28.48	$ 31.81	$ 35.49	$ 39.65	$ 44.26	$ 2.60	$ 3.33	$ 3.69	$ 4.16	$ 4.62	10%	12%	12%	12%	12%
1"	8	$ 35.08	$ 39.04	$ 43.61	$ 48.65	$ 54.35	$ 60.68	$ 3.96	$ 4.57	$ 5.05	$ 5.70	$ 6.34	11%	12%	12%	12%	12%
1"	10	$ 44.28	$ 49.60	$ 55.41	$ 61.81	$ 69.05	$ 77.10	$ 5.32	$ 5.81	$ 6.41	$ 7.24	$ 8.06	12%	12%	12%	12%	12%
1"	12	$ 53.48	$ 60.16	$ 67.21	$ 74.97	$ 83.75	$ 93.52	$ 6.68	$ 7.05	$ 7.77	$ 8.78	$ 9.78	12%	12%	12%	12%	12%
1"	15	$ 67.28	$ 76.00	$ 84.91	$ 94.71	$ 105.80	$ 118.15	$ 8.72	$ 8.91	$ 9.81	$ 11.09	$ 12.36	13%	12%	12%	12%	12%
1"	20	$ 90.28	$ 102.40	$ 114.41	$ 127.61	$ 142.55	$ 159.20	$ 12.12	$ 12.01	$ 13.21	$ 14.94	$ 16.66	13%	12%	12%	12%	12%
CLCJAWA Service Areas																	
1"	0	$ 11.44	$ 7.28	$ 8.13	$ 9.07	$ 10.13	$ 11.30	$ (4.16)	$ 0.85	$ 0.95	$ 1.06	$ 1.18	-36%	12%	12%	12%	12%
1"	1	$ 11.44	$ 10.36	$ 11.22	$ 12.17	$ 13.24	$ 14.42	$ (1.08)	$ 0.86	$ 0.96	$ 1.07	$ 1.19	-9%	8%	9%	9%	9%
1"	2	$ 11.44	$ 13.44	$ 14.31	$ 15.27	$ 16.35	$ 17.54	$ 2.00	$ 0.87	$ 0.97	$ 1.08	$ 1.20	17%	6%	7%	7%	7%
1"	3	$ 17.47	$ 19.72	$ 20.97	$ 22.35	$ 23.90	$ 25.62	$ 2.25	$ 1.25	$ 1.39	$ 1.55	$ 1.73	13%	6%	7%	7%	7%
1"	4	$ 23.50	$ 26.00	$ 27.63	$ 29.43	$ 31.45	$ 33.70	$ 2.50	$ 1.63	$ 1.81	$ 2.02	$ 2.26	11%	6%	7%	7%	7%
1"	5	$ 29.53	$ 32.28	$ 34.29	$ 36.51	$ 39.00	$ 41.78	$ 2.75	$ 2.01	$ 2.23	$ 2.49	$ 2.79	9%	6%	6%	7%	7%
1"	6	$ 35.56	$ 38.56	$ 40.95	$ 43.59	$ 46.55	$ 49.86	$ 3.00	$ 2.39	$ 2.65	$ 2.96	$ 3.32	8%	6%	6%	7%	7%
1"	8	$ 48.22	$ 52.38	$ 55.61	$ 59.17	$ 63.17	$ 67.64	$ 4.16	$ 3.23	$ 3.57	$ 4.00	$ 4.48	9%	6%	6%	7%	7%
1"	10	$ 60.88	$ 66.20	$ 70.27	$ 74.75	$ 79.79	$ 85.42	$ 5.32	$ 4.07	$ 4.49	$ 5.04	$ 5.64	9%	6%	6%	7%	7%
1"	12	$ 73.54	$ 80.02	$ 84.93	$ 90.33	$ 96.41	$ 103.20	$ 6.48	$ 4.91	$ 5.41	$ 6.08	$ 6.80	9%	6%	6%	7%	7%
1"	15	$ 92.53	$ 100.75	$ 106.92	$ 113.70	$ 121.34	$ 129.87	$ 8.22	$ 6.17	$ 6.79	$ 7.64	$ 8.54	9%	6%	6%	7%	7%
1"	20	$ 124.18	$ 135.30	$ 143.57	$ 152.65	$ 162.89	$ 174.32	$ 11.12	$ 8.27	$ 9.09	$ 10.24	$ 11.44	9%	6%	6%	7%	7%
Hawthorn Woods Service Areas																	
1"	0	$ 16.06	$ 7.28	$ 8.13	$ 9.07	$ 10.13	$ 11.30	$ (8.78)	$ 0.85	$ 0.95	$ 1.06	$ 1.18	-55%	12%	12%	12%	12%
1"	1	$ 16.06	$ 12.84	$ 13.70	$ 14.65	$ 15.72	$ 16.90	$ (3.22)	$ 0.86	$ 0.96	$ 1.07	$ 1.19	-20%	7%	7%	7%	8%
1"	2	$ 16.06	$ 18.40	$ 19.27	$ 20.23	$ 21.31	$ 22.50	$ 2.34	$ 0.87	$ 0.97	$ 1.08	$ 1.20	15%	5%	5%	5%	6%
1"	3	$ 24.51	$ 27.21	$ 28.46	$ 29.85	$ 31.41	$ 33.13	$ 2.70	$ 1.25	$ 1.40	$ 1.56	$ 1.73	11%	5%	5%	5%	6%
1"	4	$ 32.96	$ 36.02	$ 37.65	$ 39.47	$ 41.51	$ 43.76	$ 3.06	$ 1.63	$ 1.83	$ 2.04	$ 2.26	9%	5%	5%	5%	5%
1"	5	$ 41.41	$ 44.83	$ 46.84	$ 49.09	$ 51.61	$ 54.39	$ 3.42	$ 2.01	$ 2.26	$ 2.52	$ 2.79	8%	4%	5%	5%	5%
1"	6	$ 49.86	$ 53.64	$ 56.03	$ 58.71	$ 61.71	$ 65.02	$ 3.78	$ 2.39	$ 2.69	$ 3.00	$ 3.32	8%	4%	5%	5%	5%
1"	8	$ 67.62	$ 73.02	$ 76.25	$ 79.87	$ 83.93	$ 88.40	$ 5.40	$ 3.23	$ 3.63	$ 4.06	$ 4.48	8%	4%	5%	5%	5%
1"	10	$ 85.38	$ 92.40	$ 96.47	$ 101.03	$ 106.15	$ 111.78	$ 7.02	$ 4.07	$ 4.57	$ 5.12	$ 5.64	8%	4%	5%	5%	5%
1"	12	$ 103.14	$ 111.78	$ 116.69	$ 122.19	$ 128.37	$ 135.16	$ 8.64	$ 4.91	$ 5.51	$ 6.18	$ 6.80	8%	4%	5%	5%	5%
1"	15	$ 129.78	$ 140.85	$ 147.02	$ 153.93	$ 161.70	$ 170.23	$ 11.07	$ 6.17	$ 6.92	$ 7.77	$ 8.54	9%	4%	5%	5%	5%
1"	20	$ 174.18	$ 189.30	$ 197.57	$ 206.83	$ 217.25	$ 228.68	$ 15.12	$ 8.27	$ 9.27	$ 10.42	$ 11.44	9%	4%	5%	5%	5%

Table 4-4: Commercial Typical Bill Impacts

Meter Size	Monthly Water Use	Current Rates	Proposed Rates					Difference					Difference				
			2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
inches	kgal	$/mo	$/mo	$/mo	$/mo	$/mo	$/mo	$	$	$	$	$	%	%	%	%	%
General Service Areas																	
1.5"	30	$ 132	$ 152	$ 170	$ 190	$ 212	$ 237	$ 21	$ 18	$ 20	$ 22	$ 25	16%	12%	12%	12%	12%
2"	60	$ 263	$ 299	$ 333	$ 372	$ 416	$ 464	$ 35	$ 35	$ 39	$ 44	$ 49	13%	12%	12%	12%	12%
3"	110	$ 483	$ 557	$ 622	$ 694	$ 775	$ 865	$ 74	$ 65	$ 72	$ 81	$ 91	15%	12%	12%	12%	12%
4"	180	$ 790	$ 899	$ 1,004	$ 1,121	$ 1,252	$ 1,398	$ 109	$ 105	$ 116	$ 131	$ 146	14%	12%	12%	12%	12%
6"	500	$ 2,195	$ 2,451	$ 2,737	$ 3,054	$ 3,411	$ 3,809	$ 256	$ 286	$ 317	$ 357	$ 398	12%	12%	12%	12%	12%
8"	500	$ 2,195	$ 2,469	$ 2,757	$ 3,076	$ 3,436	$ 3,837	$ 274	$ 288	$ 319	$ 360	$ 401	12%	12%	12%	12%	12%
12"	1100	$ 4,829	$ 5,396	$ 6,025	$ 6,722	$ 7,509	$ 8,386	$ 567	$ 629	$ 697	$ 787	$ 877	12%	12%	12%	12%	12%
CLCJAWA Service Areas																	
1.5"	30	$ 181	$ 197	$ 209	$ 223	$ 238	$ 255	$ 16	$ 12	$ 14	$ 15	$ 17	9%	6%	7%	7%	7%
2"	60	$ 362	$ 387	$ 411	$ 438	$ 468	$ 501	$ 26	$ 24	$ 27	$ 30	$ 34	7%	6%	6%	7%	7%
3"	110	$ 663	$ 720	$ 765	$ 815	$ 870	$ 933	$ 56	$ 45	$ 50	$ 56	$ 63	8%	6%	7%	7%	7%
4"	180	$ 1,085	$ 1,166	$ 1,238	$ 1,319	$ 1,408	$ 1,509	$ 80	$ 73	$ 80	$ 90	$ 101	7%	6%	6%	7%	7%
6"	500	$ 3,015	$ 3,191	$ 3,387	$ 3,604	$ 3,846	$ 4,119	$ 176	$ 196	$ 217	$ 242	$ 273	6%	6%	6%	7%	7%
8"	500	$ 3,015	$ 3,209	$ 3,407	$ 3,626	$ 3,871	$ 4,147	$ 194	$ 198	$ 219	$ 245	$ 276	6%	6%	6%	7%	7%
12"	1100	$ 6,633	$ 7,024	$ 7,455	$ 7,932	$ 8,466	$ 9,068	$ 391	$ 431	$ 477	$ 534	$ 602	6%	6%	6%	7%	7%
Hawthorn Woods Service Areas																	
1.5"	30	$ 254	$ 273	$ 285	$ 299	$ 314	$ 332	$ 19	$ 12	$ 14	$ 16	$ 17	7%	5%	5%	5%	5%
2"	60	$ 507	$ 539	$ 563	$ 590	$ 621	$ 654	$ 32	$ 24	$ 27	$ 30	$ 34	6%	4%	5%	5%	5%
3"	110	$ 930	$ 998	$ 1,043	$ 1,094	$ 1,151	$ 1,214	$ 68	$ 45	$ 51	$ 57	$ 63	7%	5%	5%	5%	5%
4"	180	$ 1,521	$ 1,621	$ 1,694	$ 1,776	$ 1,867	$ 1,968	$ 100	$ 73	$ 82	$ 92	$ 101	7%	4%	5%	5%	5%
6"	500	$ 4,225	$ 4,456	$ 4,652	$ 4,874	$ 5,121	$ 5,394	$ 231	$ 196	$ 222	$ 247	$ 273	5%	4%	5%	5%	5%
8"	500	$ 4,225	$ 4,474	$ 4,672	$ 4,896	$ 5,146	$ 5,422	$ 249	$ 198	$ 224	$ 250	$ 276	6%	4%	5%	5%	5%
12"	1100	$ 9,295	$ 9,807	$ 10,238	$ 10,726	$ 11,271	$ 11,873	$ 512	$ 431	$ 488	$ 545	$ 602	6%	4%	5%	5%	5%

4.4 Existing Sewer Rates

The current sewer rate schedule is shown in Table 4-5. Existing metered rates include a volumetric charge with a minimum billed usage level of 2 kgal per month. Unmetered sewer rates consist of a monthly charge differentiated by service area. Unmetered sewer service areas include the General Service area; Southeast Central – Libertyville; Northwest; Northeast Central; Ravenna, Royal Melbourne, Kildeer North, Kildeer Central, Kildeer South; and Riverside Preserve.

Lake County provides wholesale sewer service to multiple areas. Service levels vary to include conveyance, or treatment, or both. The existing wholesale sewer rate structure includes either a uniform rate per 1,000 gallons or an equivalent rate per residential customer equivalent. The RCE is based on an equivalency multiplier that varies from 7.5 to 8.0 by area.

4.5 Proposed Sewer Rates

Proposed rates have been designed in accordance with the existing rate structure to produce revenues indicated as necessary to fund future operating and capital requirements as detailed in Section 2 of this report. The existing rate structure is proposed to be maintained to mitigate the amount of change impacting customer bills.

Sewer rates have been developed for a 5-year period and are shown in Table 4-6. Rates include the pass-through wastewater treatment expense where applicable. To the extent these wastewater treatment providers increase the cost of treated flow, it is anticipated Lake County would adjust the rates shown in Table 4-6 to recover the incremental increase. As presented in Table 4-6, no increase in the pass-through wastewater treatment expense is assumed over the forecast period.

Unmetered sewer rates shown in Table 4-6 reflect residential customer equivalent multipliers of 8.0 for the General Service Area and the Southeast Central – Libertyville area; 7.5 for the Northwest and Northeast Central areas, and 10.0 for Ravenna, Royal Melbourne, Kildeer North, Kildeer Central and Kildeer South. These multipliers are applied to the GSA metered volume rate for the GSA, Northwest, and Ravenna, Royal Melbourne, Kildeer North, Kildeer Central and Kildeer South. The Southeast Central multiplier is applied against the Southeast Central metered volume rate, while the Northeast Central multiplier is applied against the Northeast Central – NSWRD Wildwood rate.

A bill comparison has been prepared for residential accounts reflecting the impact of rates proposed in Table 4-5 across a variety of residential customer profiles. Because sewer rates were generally increased uniformly in accordance with the revenue increases proposed in Section 2 and the rate structure is unchanged, no comparisons were prepared for commercial accounts.

Table 4-5: Existing Sewer Rates

Metered Sewer Volumetric Rates

	Existing FY 2019 ($/1000 gal)
General Service Areas	$5.57
Southeast Central - Libertyville, Countryside Manor, North Libertyville Estates, Terre Faire	$6.56
Northeast Central - NSWRD Wildwood	$8.08
Northeast Central - NSWRD Arbor Vista	$10.20

Unmetered Sewer

	Existing FY 2019 ($/mo)
General Service Area	$44.55
Southeast Central - Libertyville	$48.39
Northwest	$41.77
Northeast Central	$53.70
Ravenna, Royal Melbourne, Kildeer North Kildeer Central, Kildeer South	$55.73
Riverside Preserve	$70.73

Wholesale Sewer

	Existing FY 2019	
	($/1000 gal)	($/RCE/Month)
Antioch	$4.94	$39.49
Buffalo Grove	$4.08	$30.60
Grayslake	$3.44	$25.78
Green Oaks	$1.10	$8.80
Gurnee	$3.44	$25.78
Hainesville (Northwest)	$3.70	$27.75
Hainesville (Northeast Central)	$3.44	$25.78
Harbor Ridge	$5.57	$41.78
Lakes Region Sanitary District	$3.70	$27.75
Lake Villa	$3.70	$27.75
Lake Zurich	$4.08	$30.60
Libertyville	$1.10	$8.80
Lincolnshire	$4.08	$30.60
Riverwoods	$5.57	$44.56
Round Lake	$3.70	$27.75
Round Lake Beach	$3.70	$27.75
Round Lake Park	$3.70	$27.75
Round Lake Heights	$3.70	$27.75
Waukegan	$3.44	$25.78

Table 4-6: Existing and Proposed Sewer Rates

	Existing	Proposed, Fiscal Year				
	FY 2019	2020	2021	2022	2023	2024
Volumetric Rates						
Metered Sewer						
(1) General Service Areas	$ 5.57	$ 5.80	$ 6.04	$ 6.23	$ 6.36	$ 6.50
(2) Southeast Central - Libertyville, Countryside Manor, North Libertyville Estates, Terre Faire	$ 6.56	$ 6.83	$ 7.11	$ 7.33	$ 7.49	$ 7.65
(3) Northeast Central - NSWRD Wildwood	$ 8.08	$ 8.29	$ 8.51	$ 8.69	$ 8.81	$ 8.94
(4) Northeast Central - NSWRD Arbor Vista	$ 10.20	$ 10.40	$ 10.61	$ 10.78	$ 10.90	$ 11.02

Wholesale Sewer	$/1000 gal	$/RCE/Month	$/1000 gal	$/RCE/Month	$/1000 gal	$/RCE/Month	$/1000 gal	$/RCE/Month	$/1000 gal	$/RCE/Month	$/1000 gal	$/RCE/Month
(1) Antioch	$ 4.94	$ 39.52	$ 5.14	$ 41.12	$ 5.35	$ 42.80	$ 5.52	$ 44.16	$ 5.64	$ 45.12	$ 5.76	$ 46.08
(2) Buffalo Grove	$ 4.08	$ 30.60	$ 4.25	$ 31.88	$ 4.43	$ 33.23	$ 4.57	$ 34.28	$ 4.67	$ 35.03	$ 4.77	$ 35.78
(3) Grayslake	$ 3.44	$ 25.80	$ 3.58	$ 26.85	$ 3.73	$ 27.98	$ 3.85	$ 28.88	$ 3.93	$ 29.48	$ 4.01	$ 30.08
(4) Green Oaks	$ 1.10	$ 8.80	$ 1.15	$ 9.20	$ 1.20	$ 9.60	$ 1.24	$ 9.92	$ 1.27	$ 10.16	$ 1.30	$ 10.40
(5) Gurnee	$ 3.44	$ 25.80	$ 3.58	$ 26.85	$ 3.73	$ 27.98	$ 3.85	$ 28.88	$ 3.93	$ 29.48	$ 4.01	$ 30.08
(6) Hainesville (Northwest)	$ 3.70	$ 27.75	$ 3.76	$ 28.20	$ 3.82	$ 28.65	$ 3.87	$ 29.03	$ 3.90	$ 29.25	$ 3.94	$ 29.55
(7) Hainesville (Northeast Central)	$ 3.44	$ 25.80	$ 3.58	$ 26.85	$ 3.73	$ 27.98	$ 3.85	$ 28.88	$ 3.93	$ 29.48	$ 4.01	$ 30.08
(8) Harbor Ridge	$ 5.57	$ 41.78	$ 5.71	$ 42.83	$ 5.85	$ 43.88	$ 5.96	$ 44.70	$ 6.04	$ 45.30	$ 6.12	$ 45.90
(9) Lakes Region Sanitary District	$ 3.70	$ 27.75	$ 3.76	$ 28.20	$ 3.82	$ 28.65	$ 3.87	$ 29.03	$ 3.90	$ 29.25	$ 3.94	$ 29.55
(10) Lake Villa	$ 3.70	$ 27.75	$ 3.76	$ 28.20	$ 3.82	$ 28.65	$ 3.87	$ 29.03	$ 3.90	$ 29.25	$ 3.94	$ 29.55
(11) Lake Zurich	$ 4.08	$ 30.60	$ 4.25	$ 31.88	$ 4.43	$ 33.23	$ 4.57	$ 34.28	$ 4.67	$ 35.03	$ 4.77	$ 35.78
(12) Libertyville	$ 1.10	$ 8.80	$ 1.15	$ 9.20	$ 1.20	$ 9.60	$ 1.24	$ 9.92	$ 1.27	$ 10.16	$ 1.30	$ 10.40
(13) Lincolnshire	$ 4.08	$ 30.60	$ 4.25	$ 31.88	$ 4.43	$ 33.23	$ 4.57	$ 34.28	$ 4.67	$ 35.03	$ 4.77	$ 35.78
(14) Riverwoods	$ 5.57	$ 44.56	$ 5.80	$ 46.40	$ 6.04	$ 48.32	$ 6.23	$ 49.84	$ 6.36	$ 50.88	$ 6.50	$ 52.00
(15) Round Lake	$ 3.70	$ 27.75	$ 3.76	$ 28.20	$ 3.82	$ 28.65	$ 3.87	$ 29.03	$ 3.90	$ 29.25	$ 3.94	$ 29.55
(16) Round Lake Beach	$ 3.70	$ 27.75	$ 3.76	$ 28.20	$ 3.82	$ 28.65	$ 3.87	$ 29.03	$ 3.90	$ 29.25	$ 3.94	$ 29.55
(17) Round Lake Park	$ 3.70	$ 27.75	$ 3.76	$ 28.20	$ 3.82	$ 28.65	$ 3.87	$ 29.03	$ 3.90	$ 29.25	$ 3.94	$ 29.55
(18) Round Lake Heights	$ 3.70	$ 27.75	$ 3.76	$ 28.20	$ 3.82	$ 28.65	$ 3.87	$ 29.03	$ 3.90	$ 29.25	$ 3.94	$ 29.55
(19) Waukegan	$ 3.44	$ 25.80	$ 3.58	$ 26.85	$ 3.73	$ 27.98	$ 3.85	$ 28.88	$ 3.93	$ 29.48	$ 4.01	$ 30.08

Unmetered Sewer						
(A) General Service Area	$ 44.55	$ 46.40	$ 48.32	$ 49.84	$ 50.88	$ 52.00
(B) Southeast Central - Libertyville	$ 48.39	$ 54.64	$ 56.88	$ 58.64	$ 59.92	$ 61.20
(C) Northwest	$ 41.77	$ 43.50	$ 45.30	$ 46.73	$ 47.70	$ 48.75
(D) Northeast Central	$ 53.70	$ 62.18	$ 63.83	$ 65.18	$ 66.08	$ 67.05
(E) Ravenna, Royal Melbourne, Kildeer North Kildeer Central, Kildeer South	$ 55.73	$ 58.00	$ 60.40	$ 62.30	$ 63.60	$ 65.00
(F) Riverside Preserve	$ 70.73	$ 73.65	$ 76.69	$ 79.09	$ 80.77	$ 82.49

Table 4-7: Residential Typical Bill Impacts

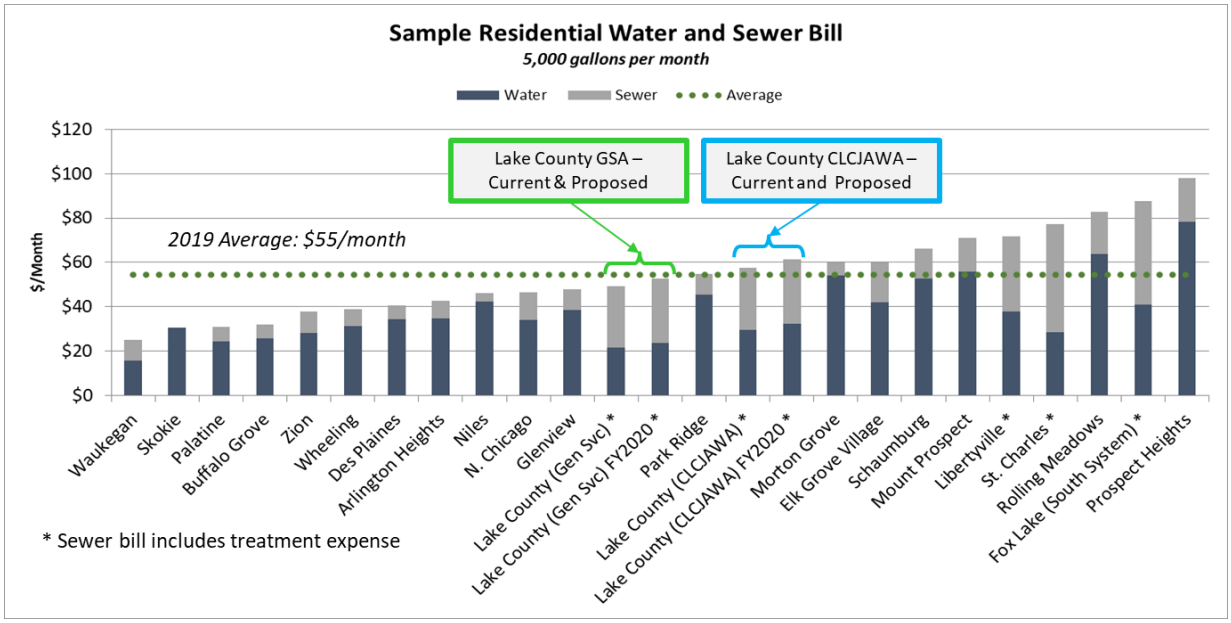
Meter Size	Monthly Water Use	Current Rates	Proposed Rates					Difference				
			2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
inches	kgal	$/mo	$/mo	$/mo	$/mo	$/mo	$/mo	$	$	$	$	$
(1) General Service Areas												
1"	0	$ 11.14	$ 11.60	$ 12.08	$ 12.46	$ 12.72	$ 13.00	$ 0.46	$ 0.48	$ 0.38	$ 0.26	$ 0.28
1"	1	$ 11.14	$ 11.60	$ 12.08	$ 12.46	$ 12.72	$ 13.00	$ 0.46	$ 0.48	$ 0.38	$ 0.26	$ 0.28
1"	2	$ 11.14	$ 11.60	$ 12.08	$ 12.46	$ 12.72	$ 13.00	$ 0.46	$ 0.48	$ 0.38	$ 0.26	$ 0.28
1"	3	$ 16.71	$ 17.40	$ 18.12	$ 18.69	$ 19.08	$ 19.50	$ 0.69	$ 0.72	$ 0.57	$ 0.39	$ 0.42
1"	4	$ 22.28	$ 23.20	$ 24.16	$ 24.92	$ 25.44	$ 26.00	$ 0.92	$ 0.96	$ 0.76	$ 0.52	$ 0.56
1"	5	$ 27.85	$ 29.00	$ 30.20	$ 31.15	$ 31.80	$ 32.50	$ 1.15	$ 1.20	$ 0.95	$ 0.65	$ 0.70
1"	6	$ 33.42	$ 34.80	$ 36.24	$ 37.38	$ 38.16	$ 39.00	$ 1.38	$ 1.44	$ 1.14	$ 0.78	$ 0.84
1"	8	$ 44.56	$ 46.40	$ 48.32	$ 49.84	$ 50.88	$ 52.00	$ 1.84	$ 1.92	$ 1.52	$ 1.04	$ 1.12
1"	10	$ 55.70	$ 58.00	$ 60.40	$ 62.30	$ 63.60	$ 65.00	$ 2.30	$ 2.40	$ 1.90	$ 1.30	$ 1.40
1"	12	$ 66.84	$ 69.60	$ 72.48	$ 74.76	$ 76.32	$ 78.00	$ 2.76	$ 2.88	$ 2.28	$ 1.56	$ 1.68
1"	15	$ 83.55	$ 87.00	$ 90.60	$ 93.45	$ 95.40	$ 97.50	$ 3.45	$ 3.60	$ 2.85	$ 1.95	$ 2.10
1"	20	$ 111.40	$ 116.00	$ 120.80	$ 124.60	$ 127.20	$ 130.00	$ 4.60	$ 4.80	$ 3.80	$ 2.60	$ 2.80
(2) Southeast Central - Libertyville, Countryside Manor, North Libertyville Estates, Terre Faire												
1"	0	$ 13.12	$ 13.66	$ 14.22	$ 14.66	$ 14.98	$ 15.30	$ 0.54	$ 0.56	$ 0.44	$ 0.32	$ 0.32
1"	1	$ 13.12	$ 13.66	$ 14.22	$ 14.66	$ 14.98	$ 15.30	$ 0.54	$ 0.56	$ 0.44	$ 0.32	$ 0.32
1"	2	$ 13.12	$ 13.66	$ 14.22	$ 14.66	$ 14.98	$ 15.30	$ 0.54	$ 0.56	$ 0.44	$ 0.32	$ 0.32
1"	3	$ 19.68	$ 20.49	$ 21.33	$ 21.99	$ 22.47	$ 22.95	$ 0.81	$ 0.84	$ 0.66	$ 0.48	$ 0.48
1"	4	$ 26.24	$ 27.32	$ 28.44	$ 29.32	$ 29.96	$ 30.60	$ 1.08	$ 1.12	$ 0.88	$ 0.64	$ 0.64
1"	5	$ 32.80	$ 34.15	$ 35.55	$ 36.65	$ 37.45	$ 38.25	$ 1.35	$ 1.40	$ 1.10	$ 0.80	$ 0.80
1"	6	$ 39.36	$ 40.98	$ 42.66	$ 43.98	$ 44.94	$ 45.90	$ 1.62	$ 1.68	$ 1.32	$ 0.96	$ 0.96
1"	8	$ 52.48	$ 54.64	$ 56.88	$ 58.64	$ 59.92	$ 61.20	$ 2.16	$ 2.24	$ 1.76	$ 1.28	$ 1.28
1"	10	$ 65.60	$ 68.30	$ 71.10	$ 73.30	$ 74.90	$ 76.50	$ 2.70	$ 2.80	$ 2.20	$ 1.60	$ 1.60
1"	12	$ 78.72	$ 81.96	$ 85.32	$ 87.96	$ 89.88	$ 91.80	$ 3.24	$ 3.36	$ 2.64	$ 1.92	$ 1.92
1"	15	$ 98.40	$ 102.45	$ 106.65	$ 109.95	$ 112.35	$ 114.75	$ 4.05	$ 4.20	$ 3.30	$ 2.40	$ 2.40
1"	20	$ 131.20	$ 136.60	$ 142.20	$ 146.60	$ 149.80	$ 153.00	$ 5.40	$ 5.60	$ 4.40	$ 3.20	$ 3.20
(3) Northeast Central - NSWRD Wildwood												
1"	0	$ 16.16	$ 16.58	$ 17.02	$ 17.38	$ 17.62	$ 17.88	$ 0.42	$ 0.44	$ 0.36	$ 0.24	$ 0.26
1"	1	$ 16.16	$ 16.58	$ 17.02	$ 17.38	$ 17.62	$ 17.88	$ 0.42	$ 0.44	$ 0.36	$ 0.24	$ 0.26
1"	2	$ 16.16	$ 16.58	$ 17.02	$ 17.38	$ 17.62	$ 17.88	$ 0.42	$ 0.44	$ 0.36	$ 0.24	$ 0.26
1"	3	$ 24.24	$ 24.87	$ 25.53	$ 26.07	$ 26.43	$ 26.82	$ 0.63	$ 0.66	$ 0.54	$ 0.36	$ 0.39
1"	4	$ 32.32	$ 33.16	$ 34.04	$ 34.76	$ 35.24	$ 35.76	$ 0.84	$ 0.88	$ 0.72	$ 0.48	$ 0.52
1"	5	$ 40.40	$ 41.45	$ 42.55	$ 43.45	$ 44.05	$ 44.70	$ 1.05	$ 1.10	$ 0.90	$ 0.60	$ 0.65
1"	6	$ 48.48	$ 49.74	$ 51.06	$ 52.14	$ 52.86	$ 53.64	$ 1.26	$ 1.32	$ 1.08	$ 0.72	$ 0.78
1"	8	$ 64.64	$ 66.32	$ 68.08	$ 69.52	$ 70.48	$ 71.52	$ 1.68	$ 1.76	$ 1.44	$ 0.96	$ 1.04
1"	10	$ 80.80	$ 82.90	$ 85.10	$ 86.90	$ 88.10	$ 89.40	$ 2.10	$ 2.20	$ 1.80	$ 1.20	$ 1.30
1"	12	$ 96.96	$ 99.48	$ 102.12	$ 104.28	$ 105.72	$ 107.28	$ 2.52	$ 2.64	$ 2.16	$ 1.44	$ 1.56
1"	15	$ 121.20	$ 124.35	$ 127.65	$ 130.35	$ 132.15	$ 134.10	$ 3.15	$ 3.30	$ 2.70	$ 1.80	$ 1.95
1"	20	$ 161.60	$ 165.80	$ 170.20	$ 173.80	$ 176.20	$ 178.80	$ 4.20	$ 4.40	$ 3.60	$ 2.40	$ 2.60
(4) Northeast Central - NSWRD Arbor Vista												
1"	0	$ 20.40	$ 20.80	$ 21.22	$ 21.56	$ 21.80	$ 22.04	$ 0.40	$ 0.42	$ 0.34	$ 0.24	$ 0.24
1"	1	$ 20.40	$ 20.80	$ 21.22	$ 21.56	$ 21.80	$ 22.04	$ 0.40	$ 0.42	$ 0.34	$ 0.24	$ 0.24
1"	2	$ 20.40	$ 20.80	$ 21.22	$ 21.56	$ 21.80	$ 22.04	$ 0.40	$ 0.42	$ 0.34	$ 0.24	$ 0.24
1"	3	$ 30.60	$ 31.20	$ 31.83	$ 32.34	$ 32.70	$ 33.06	$ 0.60	$ 0.63	$ 0.51	$ 0.36	$ 0.36
1"	4	$ 40.80	$ 41.60	$ 42.44	$ 43.12	$ 43.60	$ 44.08	$ 0.80	$ 0.84	$ 0.68	$ 0.48	$ 0.48
1"	5	$ 51.00	$ 52.00	$ 53.05	$ 53.90	$ 54.50	$ 55.10	$ 1.00	$ 1.05	$ 0.85	$ 0.60	$ 0.60
1"	6	$ 61.20	$ 62.40	$ 63.66	$ 64.68	$ 65.40	$ 66.12	$ 1.20	$ 1.26	$ 1.02	$ 0.72	$ 0.72
1"	8	$ 81.60	$ 83.20	$ 84.88	$ 86.24	$ 87.20	$ 88.16	$ 1.60	$ 1.68	$ 1.36	$ 0.96	$ 0.96
1"	10	$ 102.00	$ 104.00	$ 106.10	$ 107.80	$ 109.00	$ 110.20	$ 2.00	$ 2.10	$ 1.70	$ 1.20	$ 1.20
1"	12	$ 122.40	$ 124.80	$ 127.32	$ 129.36	$ 130.80	$ 132.24	$ 2.40	$ 2.52	$ 2.04	$ 1.44	$ 1.44
1"	15	$ 153.00	$ 156.00	$ 159.15	$ 161.70	$ 163.50	$ 165.30	$ 3.00	$ 3.15	$ 2.55	$ 1.80	$ 1.80
1"	20	$ 204.00	$ 208.00	$ 212.20	$ 215.60	$ 218.00	$ 220.40	$ 4.00	$ 4.20	$ 3.40	$ 2.40	$ 2.40

4.6 Regional Comparison of Combined Water and Sewer Bills

Figure 4-1, shows a regional comparison of combined water and sewer bills, demonstrating the impact of proposed 2020 rates on a GSA water and sewer customer and a CLCJAWA water and GSA sewer customer using 5,000 gallons a month. Lake County's bills shown in Figure 4-1 are in the middle of the surveyed communities and are fairly close to the regional average of $55 per month. It is important to note that some communities fund a portion of their utility bills through taxes or pay other providers for certain aspects of service such as sewage treatment.

Proposed 2020 rates are not anticipated to materially impact Lake County's position and for a 5,000 gallon per month customer will increase Lake County water and sewer bills about $3 to $4 a month in the GSA and CLCJAWA service areas. It is important to note that rates for other communities will likely be increasing in the future.

Figure 4-1: Regional Comparison of Combined Water and Sewer Bills



4.7 Summary

The financial and rate plans described in this report represent a roadmap the utilities may follow to fund future operating and capital costs. As with any financial plan, conditions and events may change in the future. Lake County has a robust budgeting and planning process, as time passes, we recommend plans and rates presented herein be adjusted to reflect the most recent information available. Such information may include revised capital plans, updated wholesale water purchase or sewerage treatment costs, changes account growth or billed volume, or other key assumptions.

4.8 Statement of Limitations

In preparation of the Lake County Water and Sewer Rate Study (Study), Burns & McDonnell relied upon information provided by Lake County. The information included various analyses, computer-generated information and reports, audited financial reports, and other financial and statistical information, as well as other documents such as operating budgets, billing data and current rate schedules. In addition, input to key assumptions regarding expected future levels of revenue, sales, and expenditures was provided by Lake County 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.

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Water and Sewer Connection Fee Study

Lake County, Illinois

Water and Sewer Connection Fees
Project No. 109356

Final Report
10/28/2019

Water and Sewer Connection Fee Study

prepared for

Lake County, Illinois
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prepared by

Burns & McDonnell Engineering Company, Inc.

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LIST OF ABBREVIATIONS

Abbreviation	Term/Phrase/Name
AWWA	American Water Works Association
CIP	Capital Improvement Program
CLCJAWA	Central Lake County Joint Action Water Agency
FY	Fiscal year
gpd	Gallons per day
Kgal	Thousand gallons of water
Mgd	Million gallons per day
NSWRD	North Shore Water Reclamation District
NWRWRF	Northwest Regional Water Reclamation Facility
RE	Residential equivalent
WEF	Water Environment Federation

1.0 EXECUTIVE SUMMARY

1.1 Project Background

Burns & McDonnell was engaged by Lake County, Illinois (Lake County) to perform an evaluation of water and sewer connection fees (Study). The goal of this effort was to determine the degree to which current connection fees reasonably recover the cost associated with growth, and where appropriate, make recommendations for future water and sewer connection fees. This Connection Fee Report summarizes the major findings of the Study.

1.2 Methodology

Connection fees are one-time fees intended to recover capital costs associated with utility system infrastructure used to provision service to new customers. Different approaches may be used in the determination of connection fees. For this Study, the Buy-In Method was selected for use in the update of Lake County's connection fees based on the following rationale.

- The Buy-In Method has been used previously by Lake County in the development of its connection fees.
- Generally, the utility systems owned and operated by Lake County are considered to have adequate capacity to accommodate growth.
- The Buy-In Method is commonly accepted and relatively easy to explain.
- Because the approach uses the current cost of existing capacity, it is not dependent on future capital project spending to establish the level of fee.

The basic calculation used to develop connection fees is generally consistent across methodologies and is illustrated below in Figure 1-1.

Figure 1-1: Summary of Connection Fee Calculation

The project approach used in the evaluation of Lake County's connection fees is discussed further in Section 2.0 of this report.

1.3 Existing and Proposed Water Connection Fees

Lake County provides retail water service utilizing water supply from either Lake County groundwater wells and treatment infrastructure or from water supply provided by Central Lake County Joint Action Water Agency (CLCJAWA). Other water facilities involved in the delivery of water service include storage tanks, pump stations, and transmission and distribution mains.

Existing and proposed water connection fees are shown in Table 1-1. Because of the difference in water supply, Lake County's current water connection fees are differentiated by water source. The fees shown in Table 1-1 reflect costs for Lake County facilities only and exclude CLCJAWA connection fees.

The analysis described in this report serves as the basis for recommended adjustments to water connection fees. A common principle applied to utility rate and fee implementation is to mitigate where possible the impact of sudden changes in fees. Following this principle, the proposed water connection fees have been phased-in to reach the recommended connection fee level over three years.

Table 1-1: Existing and Proposed Water Connection Fees

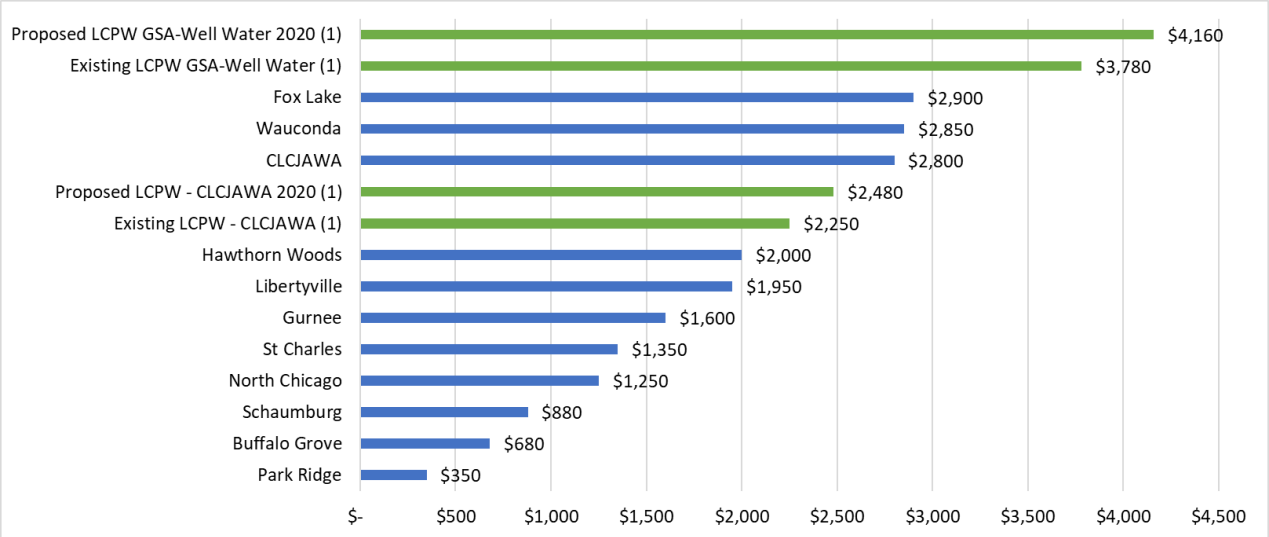
	Existing	Proposed		
	2019	2020	2021	2022
Water Connection Fees				
General Service Areas (CLCJAWA) [1]	$ 2,250	$ 2,480	$ 3,350	$ 4,510
General Service Areas (Well Water)	$ 3,780	$ 4,160	$ 4,770	$ 5,470

[1] LCPW portion only. Excludes CLCJAWA connection fee.

Figure 1-2 compares Lake County's existing 2019 and proposed 2020 water connection fees to other regional water utilities. It is important to recognize differences in connection fees can be attributed to several factors, including:

- Fees developed to reflect only a portion of service provided (i.e. supply/treatment only, or transmission/distribution only)
- Variations in fee development methodology
- Policies regarding the recovery of the cost of growth
- Age of and available capacity in applicable infrastructure
- Other factors

Figure 1-2: Regional Comparison of Water Connection Fees



(1) Reflects Lake County Public Works facility costs only, excludes CLCJAWA costs.

Section 3.0 of this report details recommendations regarding Lake County's water connection fees.

1.4 Existing and Proposed Sewer Connection Fees

Lake County provides both retail and wholesale sewer service involving an array of infrastructure such as local collector mains, interceptors, force mains, pump stations and treatment plants. As with water service, depending on location some sewer customers receive sewer service solely through reliance on Lake County infrastructure, while others receive sewer service by relying on a combination of infrastructure owned by Lake County and other regional providers. In this report sewer connection fees have been developed for Lake County recognizing the infrastructure applicable to specific service areas, and only recovers the cost of infrastructure owned and operated by Lake County.

Existing and proposed sewer connection fees are shown in Table 1-2. Fees are differentiated based on the facilities used by each region. The fees shown in Table 1-1 reflect costs for Lake County facilities only and exclude connection fees for treatment service provided by Fox Lake, Libertyville and the North Shore Water Reclamation District.

The analysis described in this report serves as the basis for recommended adjustments to sewer connection fees. A common principle applied to sewer rate and fee design is to mitigate where possible the impact of sudden changes in fees. Following this principle, the proposed sewer connection fees have been phased-in to reach the recommended connection fee level over three years, with relatively few exceptions as outlined further in Section 2.5 and subsequent sections of this report.

Table 1-2: Existing and Proposed Sewer Connection Fees

	Existing	Proposed		
	2019	2020	2021	2022
Wastewater Connection Fees				
Diamond-Sylvan Lake	$ 9,110	$ 8,760	$ 8,760	$ 8,760
Northeast	$ 7,240	$ 7,730	$ 7,730	$ 7,730
Northeast Central				
Highland Lake, Avon & Warren Townships, Village of Third Lake	$ 2,700	$ 2,970	$ 3,260	$ 3,580
Grayslake, Gurnee, Hainesville and Waukegan	$ 1,300	$ 1,430	$ 1,710	$ 2,040
Northwest				
Fox Lake Hills, Petite Lake and Stanton Bay [1]	$ 2,590	$ 2,850	$ 2,960	$ 3,080
Wholesale [1]	$ 1,190	$ 1,310	$ 1,420	$ 1,540
South Central	$ 5,540	$ 6,090	$ 6,300	$ 6,500
Southeast				
Portwine	$ 7,580	$ 8,220	$ 8,220	$ 8,220
Buffalo Grove, Riverwoods	$ 5,150	$ 5,670	$ 5,810	$ 5,950
Kildeer	$ 6,550	$ 7,210	$ 7,350	$ 7,490
Ela	$ 9,020	$ 9,920	$ 10,070	$ 10,210
Lake Zurich, Lincolnshire	$ 3,780	$ 4,030	$ 4,030	$ 4,030
Southeast Central				
Countryside Manor, Terre Faire, North Libertyville Estates [1]	$ 2,680	$ 2,950	$ 3,040	$ 3,120
Green Oaks [1]	$ 1,280	$ 1,410	$ 1,490	$ 1,580
Libertyville [1]	$ 1,280	$ 1,410	$ 1,490	$ 1,580

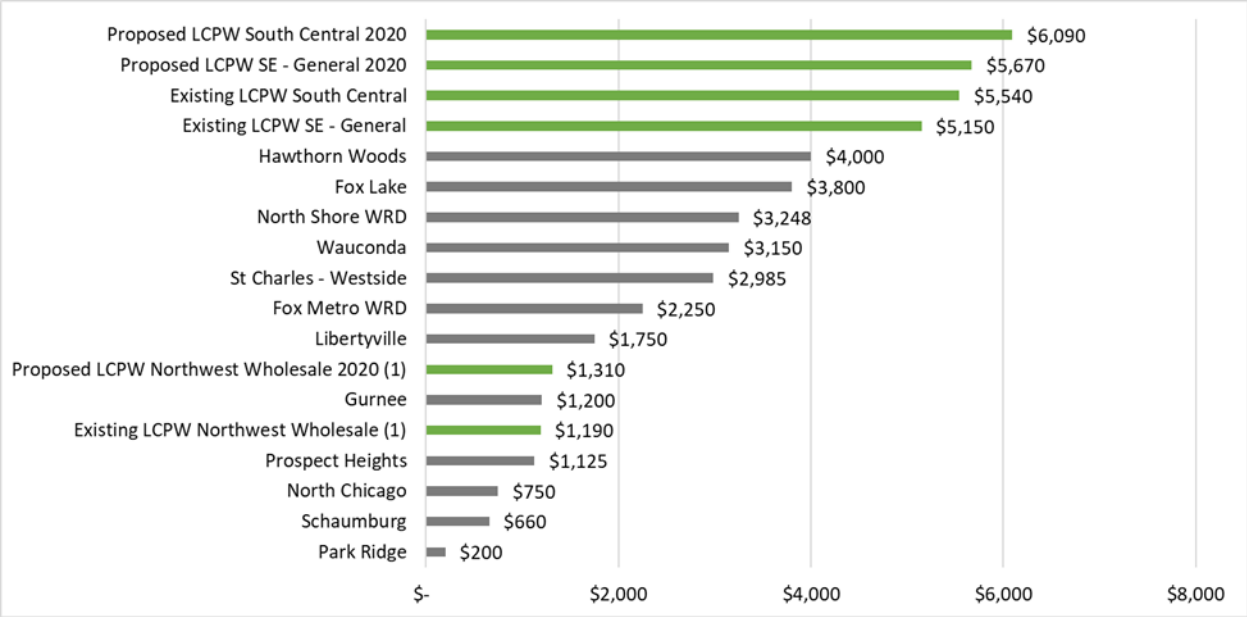
[1] LCPW portion only. Excludes Fox Lake in Northwest Area and Libertyville in the Southeast Central Area.

Figure 1-3 compares Lake County's existing 2019 and proposed 2020 sewer connection fees to other regional water utilities. Because of the number of specific regional sewer connection fees applied by Lake County, Figure 1-3 has been limited to include Lake County's more commonly applied connection fees in recent years.

As with the comparison of water connection fees, it is important to recognize differences in connection fees can be attributed to several factors, including:

- Fees developed to reflect only a portion of service provided (i.e. treatment, or conveyance only)
- Variations in fee development methodology
- Policies regarding the recovery of the cost of growth
- Age of and available capacity in applicable infrastructure
- Other factors

Figure 1-3: Regional Comparison of Sewer Connection Fees



(1) Reflects Lake County Public Works facility costs only, excludes Fox Lake treatment costs.

Section 4.0 of this report details recommendations regarding Lake County's sewer connection fees.

2.0 CONNECTION FEE METHODOLOGY

2.1 Introduction

The evaluation of connection fees has been performed concurrently with Lake County's Water and Sewer Rate Study, also completed by Burns & McDonnell in 2019. Collectively, the user charges developed in the Rate Study and the Connection Fees described in this report provide necessary funding for Lake County's water and sewer utility enterprise.

Connection fees are one-time fees intended to recover capital costs associated with utility system infrastructure used to provision service to new customers. Within the water and sewer utility industry, connection fees are also sometimes referred to as system development charges, tap fees, or impact fees. Connection fees are designed such that new connections pay their proportionate share of system development costs, thereby lowering the burden of development costs that existing ratepayers would otherwise fund through user charges. By utilizing connection fees, new customers will contribute toward historical investment in facilities made by existing customers. Ultimately, the use of connection fees enables new customers who directly benefit from the service to pay for the service, rather than receive a subsidy from all other customers through user charges.

Connection fees should be implemented with appropriate consideration of legal authority and statutory requirements, which vary by state. Some important elements in the development of connection fees are summarized or referenced in this report. However, this report should not be considered legal advice pertaining to the implementation or use of connection fees.

Generally speaking, a reasonable relationship must exist between the fees charged and the cost of providing capacity to the customer. This relationship is typically referred to as a rational nexus, which is a foundational concept in the development of connection fees. Having a rational nexus means that the connection fee has a reasonable relationship to the benefits received, and that new customers pay their proportionate share of the cost of capacity.

The remainder of this section of the report describes the analysis used to assign new customers their proportionate share of system capacity costs. As such, Lake County is establishing a rational nexus between capacity provided in the system, the proportionate share to be recovered from new customers, and the proposed connection fees.

2.2 Approach

Different approaches may be used in the determination of connection fees. The American Water Works Association (AWWA) M1 Manual of Practice *Principles of Water Rates, Fees, and Charges* indicates the three most common methods for determining connection fees are:

- **Buy-In Method**, which is based on the value of the existing capacity. This method is typically used when the utility has adequate capacity to meet current and anticipated growth requirements.
- **Incremental Cost Method**, which is based on the value or cost to expand the system's capacity. This method is typically used when the existing system has limited or no capacity to accommodate growth and new investment will be needed to serve additional customers.
- **Combined Approach**, which is based on the blended value of the existing and expanded system's capacity. This approach is typically used when capacity to accommodate growth exists in some parts of the service (such as transmission) but additional capacity is required to accommodate growth in other aspects of the service (such as treatment plant.)

The Buy-In Method was selected for use in the update of Lake County's connection fees. Under the Buy-In Method, connection fees for new customers reflect the current value of providing capacity to serve additional users. Under this method, the new customer is effectively on par with the value of capacity contributed by existing customers and proportionately shares in the responsibility for system capacity. The Buy-In Method was selected for this analysis based on the following rationale.

- The Buy-In Method has been used previously by Lake County in the development of its connection fees
- Generally, the utility systems owned and operated by Lake County are considered to have adequate capacity to accommodate growth.
- The Buy-In Method is commonly accepted and relatively easy to explain.
- Because the approach uses the current cost of existing capacity, it is not dependent future capital projects spending to establish the level of fee. In other words, the resulting fee is not reliant on the addition of future capacity in its justification.

The underlying calculation used to develop connection fees is generally consistent across methodologies and is illustrated below in Figure 2-1.

Figure 2-1: Summary of Connection Fee Calculation

Lake County provides water and sewer service through a complex array of facilities owned and operated by the County. For some of Lake County's customers, a portion of the service is provided by other utility entities. Lake County's connection fees discussed in this report are designed to recover the cost of facilities owned and operated by Lake County, and do not include costs associated with any portion of service provided by others. Most frequently, this service is related to water supply or wastewater treatment, and will be noted where applicable as connection fees are detailed later in this report.

2.3 System Valuation

The first step in the Buy-In Method is valuing the system infrastructure, which represents the numerator in the connection fee calculation process illustrated in Figure 2-1. For this study, the Replacement Cost Method was used to identify the value of existing infrastructure in today's dollars. For the water utility, assets valued generally include groundwells, storage, treatment facilities, pump stations, transmission mains (10-inch to 20-inch) and distribution mains (unknown to 8-inch) where applicable. Main-related valuations were developed by Burns & McDonnell reflecting current price per foot estimates and Lake County's inventory of feet of pipe by region. Wells, storage, treatment facilities and pump station valuations were estimated by Burns & McDonnell based on the replacement cost of similar facilities.

For the sewer system, assets valued generally include interceptor mains, force mains, pump stations, local collector mains, and treatment facilities where applicable. Main-related valuations were considered by Burns & McDonnell reflecting current price per foot estimates and Lake County's inventory of feet of pipe by region. Pump stations and treatment facility valuations were estimated by Burns & McDonnell based on the replacement cost of similar facilities.

2.4 System Capacity

As illustrated in Figure 2-1, estimates of system capacity provide the denominator in the connection fee calculation process. For this study, capacity estimates have been developed on the basis of either design capacities for certain facilities or estimates of future demand over a 20-year planning horizon. Lake County generally utilizes a Residential Equivalent (RE) for planning purposes, representing the water

demand or wastewater flow associated with a single-family residence. Use of a RE assists Lake County in estimating the equivalent demand for non-residential accounts such as commercial or industrial facilities based on equivalent flow rates. For each facility or group of facilities valued in this report, an estimate of capacity and a conversion of that capacity to RE's has been prepared. In doing so, a unit cost of capacity is developed that may be applied to a new connection's RE to determine a proportionate connection fee.

2.5 Development of Proposed Fees

In general, where adjustments to existing connection fees have been recommended, proposed fees have been designed to phase-in changes over a three-year period. In consultation with Lake County, the following approach has been taken in the development of the three-year connection fee phasing plan.

- The change in the first year (2020) has been limited to 10 percent of the existing fee.
- The change in years 2 and 3 (2021 and 2022) is calibrated to bring the proposed fee into full implementation by year 3 in equally proportioned changes.
- In some cases, the total indicated change is less than 10 percent. In such instances, the recommendation is to implement the full change in 2020, and then hold the fee constant in 2021 and 2022.

2.6 Statement of Limitations

In preparation of the Lake County Water and Sewer Connection Fee Study (Study), Burns & McDonnell relied upon information provided by Lake County. The information included various analyses, computer-generated information and reports, audited financial reports, and other financial and statistical information, as well as other documents such as operating statistics, billing data and system geographic information. 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.

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3.0 WATER CONNECTION FEES

3.1 Introduction

Lake County provides retail water service utilizing water supply from either Lake County groundwater wells and treatment infrastructure or from water supply provided by Central Lake County Joint Action Water Agency (CLCJAWA). Other water facilities involved in the delivery of water service include storage tanks, pump stations, and transmission and distribution mains.

Because of the difference in water supply, Lake County's current water connection fees are differentiated by water source, with connection fees applicable to General Service Areas served with Lake County well water and General Service Areas with CLCJAWA supply.

Table 3-1 summarizes the valuation, RE, and cost per RE for the water system components. The cost of distribution mains was not included as these smaller local mains are typically contributed by developers.

Table 3-1: Water System Component Values

	Transmission Main		Storage	Well Water Supply
	Feet of Transmission Main 10" to 20"	Replacement Cost Value $	Replacement Cost Value $	Replacement Cost Value $
Sub System				
Arden Shores	-	$ -	$ -	$ -
Brooks Farm	2,995	$ 898,500	$ 1,000,000	$ 1,000,000
Countryside Lake	13,368	$ 4,010,400	$ 750,000	$ 1,200,000
Forest Lake	-	$ -	$ -	$ -
Fox Lake Hills	4,195	$ 1,258,500	$ 500,000	$ 500,000
Grandwood Park	26,924	$ 8,077,200	$ 3,000,000	$ 1,000,000
Hawthorn Woods	-	$ -	$ -	$ -
Highland Lake	-	$ -	$ 200,000	$ 500,000
Knollwood/Rondout	77,218	$ 23,165,400	$ 3,000,000	$ -
Oak Terrace	-	$ -	$ -	$ -
Pekara	7,301	$ 2,190,300	$ 1,500,000	$ 2,000,000
Vernon Hills	274,494	$ 82,348,200	$ 10,000,000	$ -
Wildwood	67,305	$ 20,191,500	$ 4,000,000	$ -
Subtotal	473,800	$ 142,140,000	$ 23,950,000	$ 6,200,000
Engineering & Administrative		$ 21,321,000	$ 3,592,500	$ 930,000
Total Value		$ 163,461,000	$ 27,542,500	$ 7,130,000
Estimated Residential Equivalents		42,343	42,343	7,465
Cost per RE (rounded)		$ 3,860	$ 650	$ 960

3.2 General Service Areas (Well Water)

The existing and proposed water connection fees includes the cost for water supply, transmission, and storage facilities. Cost of local distribution mains are not included in this evaluation as those mains were contributed by developers. The current fee is $3,780 per RE, while the recommended fee is $5,470 per RE. Table 3-2 shows the existing and proposed connection fees for this area, reflecting a three-year phase-in of the proposed connection fee.

Table 3-2: General Service Area Connection Fee with Well Water Supply ($/RE)

	Existing	Proposed		
Water Connection Fee	2019	2020	2021	2022
General Service Areas (Well Water)	$ 3,780	$ 4,160	$ 4,770	$ 5,470

Figure 3-1 illustrates the primary components of the General Service Area (Well Water) connection fee that are included in the proposed fee. The values in Figure 3-1 reflect the cost per RE for each applicable system component established previously in Table 3-1. The total recommended fee of $5,470 per RE is phased-in over a three-year period beginning in 2020.

Figure 3-1: Proposed 2022 Connection Fee per RE – General Service Area (Well Water)

3.3 General Service Areas (CLCJAWA)

For water transmission and storage costs, the connection fee for General Service Areas receiving water supplied by CLCJAWA is consistent with the approach for customers served by Lake County Well Water. However, in General Service Areas with CLCJAWA water supply, no cost of water supply has been included in the development of the proposed Lake County connection fee. New connections in these areas remit connection fees for CLCJAWA water supply directly to CLCJAWA. Costs included in this analysis only recover cost associated with Lake County infrastructure.

Table 3-3 shows the existing and proposed connection fees for this area, reflecting a three-year phase-in of the proposed connection fee.

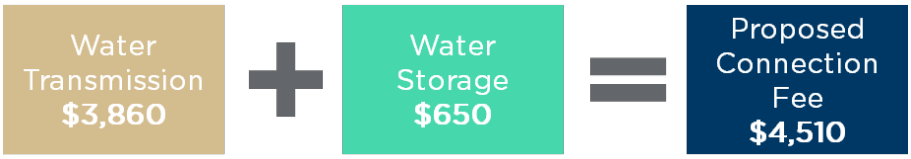
Table 3-3: General Service Area Connection Fee with CLCJAWA Water Supply ($/RE)

	Existing	Proposed		
Water Connection Fee	2019	2020	2021	2022
General Service Areas (CLCJAWA) [1]	$ 2,250	$ 2,480	$ 3,350	$ 4,510

[1] LCPW portion only. Excludes CLCJAWA connection fee.

Figure 3-2 illustrates the primary components of the General Service Area (CLCJAWA) connection fee that are included in the proposed fee. The values in Figure 3-2 reflect the cost per RE for each applicable system component established previously in Table 3-1. The total recommended fee of $4,510 per RE is phased-in over a three-year period beginning in 2020.

Figure 3-2: Proposed 2022 Connection Fee per RE – General Service Area (CLCJAWA)



3.4 Summary of Existing and Proposed Water Connection Fees

Table 3-4 summarizes the existing and proposed water connection fees for Lake County. Note that in General Service Areas with CLCJAWA water supply, no cost of water supply has been included in the development of the proposed Lake County connection fee.

Table 3-4: Existing and Proposed Water Connection Fees

	Existing	Proposed		
	2019	2020	2021	2022
Water Connection Fees				
General Service Areas (CLCJAWA) [1]	$ 2,250	$ 2,480	$ 3,350	$ 4,510
General Service Areas (Well Water)	$ 3,780	$ 4,160	$ 4,770	$ 5,470

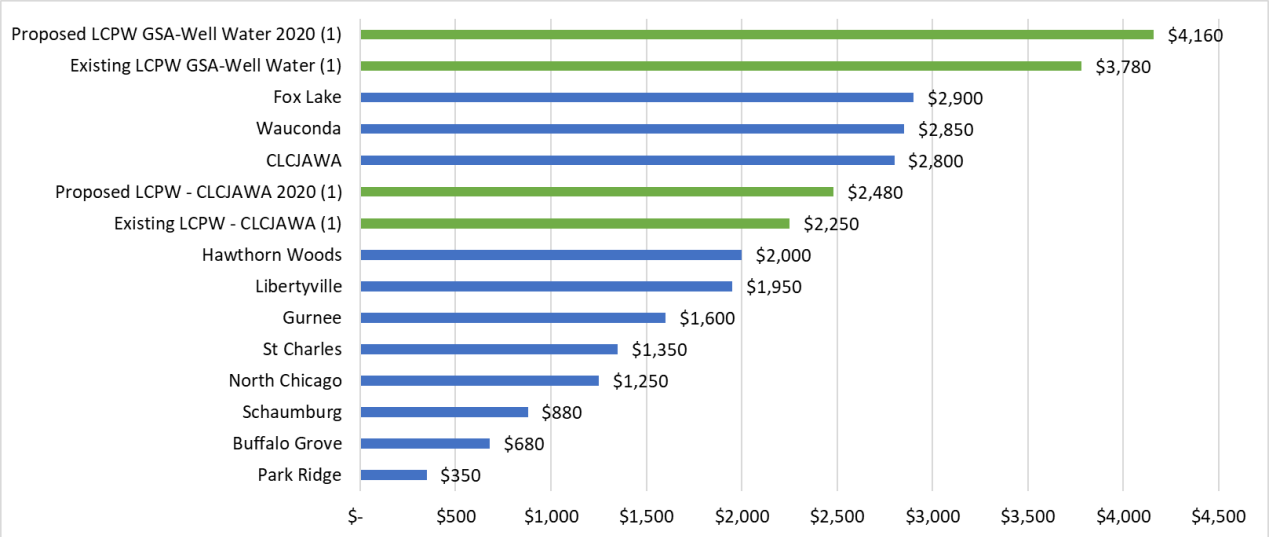
[1] LCPW portion only. Excludes CLCJAWA connection fee.

3.5 Regional Water Connection Fee Comparison

Figure 3-3 compares Lake County's existing 2019 and proposed 2020 water connection fees to other regional water utilities. It is important to recognize differences in connection fees can be attributed to several factors, including:

- Fees developed to reflect only a portion of service provided (i.e. supply/treatment only, or transmission/distribution only)
- Variations in fee development methodology
- Policies regarding the recovery of the cost of growth
- Age of and available capacity in applicable infrastructure
- Other factors

Figure 3-3: Regional Comparison of Water Connection Fees



(2) Reflects Lake County Public Works facility costs only, excludes CLCJAWA costs.

4.0 SEWER CONNECTION FEES

4.1 Introduction

Lake County provides both retail and wholesale sewer service involving an array of infrastructure such as local collector mains, interceptors, force mains, pump stations and treatment plants. As with water service, depending on location some sewer customers receive sewer service solely through reliance on Lake County infrastructure, while others receive sewer service by relying on a combination of infrastructure owned by Lake County and other regional providers. In this report sewer connection fees have been developed for Lake County recognizing the infrastructure applicable to specific service areas, and only recovers the cost of infrastructure owned and operated by Lake County.

Existing sewer connection fees are differentiated based on the facilities used by each region. The fees shown in Table 1-1 reflect costs for Lake County facilities only and exclude connection fees for treatment service provided by Fox Lake, Libertyville, and the North Shore Water Reclamation District.

Table 4-1 summarizes the valuation, RE, and cost per RE for the sewer transmission system components. Table 4-2 summarizes similar information for Lake County's sewer treatment facilities. As noted in this section, where applicable the cost of local collector mains is included in some areas if Lake County was responsible for their original construction.

Table 4-1: Sewer System Transmission Values

	Interceptor		Force Main		Pump station	Subtotal	Engineering & Administration	Total	Residential Equivalents	Cost per RE	Rounded Cost per RE
Sub System	Feet	$	Feet	$	$	$	$	$		$	$
Diamond-Sylvan Lake	3,874	$ 1,549,600	11,377	$ 1,706,550	$ 1,500,000	$ 4,756,150	$ 713,400	$ 5,469,550	1,616	$ 3,385	$ 3,390
Northeast	51,009	$ 20,403,600	207	$ 31,050	$ 500,000	$ 20,934,650	$ 3,140,200	$ 24,074,850	14,286	$ 1,685	$ 1,690
Northeast Central	44,565	$ 17,826,000	11,621	$ 1,743,150	$ 5,000,000	$ 24,569,150	$ 3,685,400	$ 28,254,550	13,861	$ 2,038	$ 2,040
Northwest	41,360	$ 16,544,000	34,526	$ 5,178,900	$ 5,000,000	$ 26,722,900	$ 4,008,400	$ 30,731,300	19,989	$ 1,537	$ 1,540
South Central	11,974	$ 4,789,600	46,718	$ 7,007,700	$ 5,000,000	$ 16,797,300	$ 2,519,600	$ 19,316,900	17,143	$ 1,127	$ 1,130
Southeast Central	19,504	$ 7,801,600	9,309	$ 1,396,350	$ 1,500,000	$ 10,697,950	$ 1,604,700	$ 12,302,650	7,767	$ 1,584	$ 1,580
Southeast											
Portwine Sector		$ -	10,000	$ 3,174,700	$ 727,500	$ 3,902,200	$ 585,300	$ 4,487,500	1,071	$ 4,190	$ 4,190
Ela Sector		$ -	15,023	$ 2,253,500	$ 727,500	$ 2,981,000	$ 447,200	$ 3,428,200	1,259	$ 2,723	$ 2,720
All Other Southeast	61,219	$ 24,487,600	102,839	$ 15,425,800	$ 6,545,000	$ 46,458,400	$ 6,968,800	$ 53,427,200	27,835	$ 1,919	$ 1,920
TOTAL	233,505	$ 93,402,000	241,620	$ 37,917,700	$ 26,500,000	$ 157,819,700	$ 23,673,000	$ 181,492,700			

Table 4-2: Sewer System Treatment Values

	WRF	Engineering & Administration	Total	Residential Equivalents	Cost per RE	Rounded Cost per RE
	$	$	$		$	$
Mill Creek	$ 31,500,000	$ 4,725,000	$ 36,225,000	6,000	$ 6,038	$ 6,040
Vernon Hills	$ 80,000,000	$ 12,000,000	$ 92,000,000	17,143	$ 5,367	$ 5,370
Des Plaines	$ 160,000,000	$ 24,000,000	$ 184,000,000	45,714	$ 4,025	$ 4,030
TOTAL	$ 271,500,000	$ 40,725,000	$ 312,225,000			

4.2 Service Areas

Lake County's sewer system is distinguished by seven service areas as noted below.

- Diamond/Sylvan Lake
- Northeast
- Northeast Central
- Northwest
- South Central
- Southeast
- Southeast Central

Sewer service connection fees have been developed following the same methodology applied to the water connection fees. Fees are distinguished by service area to reflect the unique combination of Lake County assets required to provide sewer service to that area, whether that service is on a retail or wholesale basis. As noted previously, connection fees associated with infrastructure owned by other service providers that assists in the providing a portion of sewer service to these areas are not included in this assessment.

4.3 Diamond/Sylvan Lake

Located in Lake County's Central Region, the Diamond/Sylvan Lake Service Area receives retail sewer service from Lake County. The Diamond/Sylvan Lake Service Area includes parts of unincorporated Fremont and Ela Townships, including the unincorporated areas of Countryside Lake, Diamond Lake, and Sylvan Lake. Lake County's infrastructure required for this service includes local collector mains, transmission system assets, and sewage treatment through the Vernon Hills Wastewater Reclamation Facility (WRF). Because local collectors were contributed by developers, costs associated with the local collector assets are not included in this assessment.

Table 4-3 shows the existing and proposed connection fee for this area. Analysis indicates the connection fee for this service area should be lowered, which is proposed to take effect in its entirety in 2020.

Table 4-3: Diamond/Sylvan Lake Connection Fee ($/RE)

	Existing	Proposed		
Wastewater Connection Fees	2019	2020	2021	2022
Diamond-Sylvan Lake	$ 9,110	$ 8,760	$ 8,760	$ 8,760

Figure 4-1 illustrates the primary components of the Diamond/Sylvan Lake connection fee that are included in the proposed fee. The values in Figure 4-1 reflect the cost per RE for each applicable system component established previously in Table 4-1 and Table 4-2. Because the change is less than 10 percent, the total recommended fee of $8,760 per RE is proposed to be implemented in 2020 and remain at that level through 2022.

Figure 4-1: Proposed 2022 Connection Fee per RE – Diamond-Sylvan Lake

4.4 Northeast Service Area

The Northeast Service Area receives both retail and wholesale sewer service from Lake County. Retail service is provided to portions of unincorporated Antioch, Newport and Warrant Townships, as well as portions of the Village of Old Mill Creek. Wholesale service is provided to the Village of Antioch. Lake County's sewer system infrastructure in the Northeast Service Area includes local collector mains, transmission system assets, and sewage treatment through the Mill Creek WRF. Because local collectors were contributed by developers, costs associated with the local collector assets are not included in this assessment.

Table 4-4 shows the existing and proposed connection fee for this area.

Table 4-4: Northeast Service Area Connection Fee ($/RE)

	Existing	Proposed		
Wastewater Connection Fees	2019	2020	2021	2022
Northeast	$ 7,240	$ 7,730	$ 7,730	$ 7,730

Figure 4-2 illustrates the primary components of the Northeast connection fee that are included in the proposed fee. The values in Figure 4-2 reflect the cost per RE for each applicable system component established previously in Table 4-1 and Table 4-2. The total recommended fee of $7,730 per RE is proposed to be implemented in 2020 and remain at that level through 2022.

Figure 4-2: Proposed 2022 Connection Fee per RE – Northeast

4.5 Northeast Central Service Area

The Northeast Central Service Area receives both retail and wholesale sewer service from Lake County. Communities served include portions of unincorporated Avon, Fremont, Libertyville and Warren Townships, as well as portions of the Villages of Grayslake, Gurnee, Hainesville and Third Lake, and portions of the City of Waukegan. Lake County's sewer system infrastructure in the Northeast Central Service Area includes local collector mains and transmission system assets, which conveys sewer flow to the North Shore Water Reclamation District's (NSWRD) WRF. Lake County built local collector sewers in certain parts of the Northeast Central Service Area, including Highland Lake, Avon & Warren Townships, and the Village of Third Lake. As such a cost for local collector sewers has been included in the applicable areas. In remaining portions of the Northeast Central Service Area, local collectors were contributed by developers, so costs associated with the local collector assets are not included in those areas.

Sewer connection fees differ within the Northeast Central Service Area based on differences in service and are described in the following subsections.

4.5.1 Highland Lake, Avon & Warren Townships, Village of Third Lake

Highland Lake is located within Avon Township and receives retail sewer service. Retail service is also provided to unincorporated areas within Avon and Warren Townships, the Village of Third Lake and Gurnee. Table 4-5 shows the existing and proposed connection fee for this area, reflecting a three-year phase-in of the proposed connection fee.

Table 4-5: Northeast Central Service Area – Highland Lake, Avon & Warren Townships, Village of Third Lake, Gurnee retail Connection Fees ($/RE)

	Existing	Proposed		
Wastewater Connection Fees	2019	2020	2021	2022
Northeast Central				
Highland Lake, Avon & Warren Townships, Village of Third Lake	$ 2,700	$ 2,970	$ 3,260	$ 3,580

Figure 4-3 illustrates the primary components of this area's connection fee that are included in the proposed fee. The values in Figure 4-3 reflect the cost per RE for each applicable system component established previously in Table 4-1 and an allowance for local collectors of $1,540 per RE. The total recommended fee of $3,580 per RE is phased-in over a three-year period beginning in 2020. This connection fee excludes the connection fee related to treatment service provided by NSWRD.

Figure 4-3: Proposed 2022 Connection Fee per RE – Northeast Central Service Area – Highland Lake, Avon & Warren Townships, Village of Third Lake

4.5.2 Grayslake, Gurnee wholesale, Hainesville and Waukegan

Lake County provides wholesale sewer service to the Village of Grayslake and portions of the Villages of Gurnee and Hainesville and the City of Waukegan. Lake County's infrastructure in this service is limited to transmission (conveyance) only. Table 4-6 shows the existing and proposed connection fee for this area, reflecting a three-year phase-in of the proposed connection fee.

Table 4-6: Northeast Central Service Area – Grayslake, Gurnee wholesale, Hainesville, Waukegan Connection Fees ($/RE)

	Existing	Proposed		
Wastewater Connection Fees	2019	2020	2021	2022
Northeast Central				
Grayslake, Gurnee, Hainesville and Waukegan	$ 1,300	$ 1,430	$ 1,710	$ 2,040

Figure 4-4 illustrates the primary components of this area's connection fee that are included in the proposed fee. The values in Figure 4-4 reflect the cost per RE for transmission established previously in Table 4-1. The total recommended fee of $2,040 per RE is phased-in over a three-year period beginning in 2020. This connection fee excludes the connection fee related to treatment service provided by NSWRD.

Figure 4-4: Proposed 2022 Connection Fee per RE – Grayslake, Gurnee wholesale, Hainesville and Waukegan

4.6 Northwest Central Service Area

The Northwest Central Service Area receives both retail and wholesale sewer service from Lake County. The service area designated as Northwest I includes Fox Lake Hills, Petite Lake, Stanton Bay, and the former Northwest Lakes Region Sanitary District. The Northwest II service area includes portions of Hainesville, Lake Villa, Round Lake, Round Lake Beach, and Round Lake Heights. Retail service is enabled by Lake County infrastructure including local sewer collectors and transmission facilities. Wholesale service relies upon Lake County's transmission facilities only. Both retail and wholesale treatment service is provided by the Village of Fox Lake's Northwest Regional Water Reclamation Facility (NWRWRF). Connection fees associated with the NWRWRF are not included in Lake County's fees discussed herein.

Sewer connection fees differ within the Northwest Service Area based on differences in service and are described in the following subsections.

4.6.1 Northwest I

Retail service is provided to Fox Lake Hills, Petite Lake, Stanton Bay, and the former Northwest Lakes Region Sanitary District utilizing Lake County's local sewer collectors and transmission assets. Table 4-7 shows the existing and proposed connection fee for this area, reflecting a three-year phase-in of the proposed connection fee.

Table 4-7: Northwest I – Connection Fees ($/RE)

	Existing	Proposed		
Wastewater Connection Fees	2019	2020	2021	2022
Northwest				
Fox Lake Hills, Petite Lake and Stanton Bay [1]	$ 2,590	$ 2,850	$ 2,960	$ 3,080

[1] LCPW portion only. Excludes Fox Lake in Northwest Area and Libertyville in the Southeast Central Area.

Figure 4-5 illustrates the primary components of this area's connection fee that are included in the proposed fee. The values in Figure 4-5 reflect the cost per RE for each applicable system component established previously in Table 4-1 and an allowance for the local collectors of $1,540 per RE. The total recommended fee of $3,080 per RE is phased-in over a three-year period beginning in 2020. This connection fee excludes fees related to treatment service provided by NWRWRF.

Figure 4-5: Proposed 2022 Connection Fee per RE – Northwest I

4.6.2 Northwest II

Lake County provides wholesale service to the Northwest II service area, which includes portions of Hainesville, Lake Villa, Round Lake, Round Lake Beach, and Round Lake Heights. Service is enabled by Lake County's transmission assets. Treatment service is provided by the NWRWRF; connection fees associated with the NWRWRF are not included in Lake County's fees discussed herein. Table 4-8 shows the existing and proposed connection fee for this area, reflecting a three-year phase-in of the proposed connection fee.

Table 4-8: Northwest II – Connection Fees ($/RE)

	Existing	Proposed		
Wastewater Connection Fees	2019	2020	2021	2022
Northwest Wholesale [1]	$ 1,190	$ 1,310	$ 1,420	$ 1,540

[1] LCPW portion only. Excludes Fox Lake in Northwest Area and Libertyville in the Southeast Central Area.

Figure 4-6 illustrates the primary components of this area's connection fee that are included in the proposed fee. The values in Figure 4-6 reflect the cost per RE for transmission established previously in Table 4-1. The total recommended fee of $1,540 per RE is phased-in over a three-year period beginning in 2020. This connection fee excludes fees related to treatment service provided by NWRWRF.

Figure 4-6: Proposed 2022 Connection Fee per RE – Northwest II

4.7 Southeast Service Area

Lake County provides retail and wholesale sewer service to the Southeast Service Area. Due to differences in the services provided by Lake County, this area has five sub-areas noted as follows:

- Portwine Sector: Bannockburn, Deerfield, Lincolshire, Riverwoods
- Ela Sector: Hawthorn Woods, long Grove, Forest Lake, Kildeer
- General: Buffalo Grove, Riverwoods
- Kildeer, Long Grove, Pekara, Horatio Gardens
- Lincolnshire, Lake Zurich

Lake County's infrastructure in this area includes local collector mains, transmission system assets, and sewage treatment through the Des Plaines River WRF. In some but not all parts of the Southeast Service Area, Lake County built local collector mains. The cost for local collector mains is included in the proposed connection fee where appropriate.

4.7.1 Portwine Sector

Located on the east side of the Southeast Service Area, Lake County provides retail service to portions of the Village of Bannockburn and wholesale service to portions of the Villages of Deerfield, Lincolnshire, and Riverwoods. Retail service utilizes Lake County's local sewer collectors, transmission and treatment assets, but transmission assets in the Portwine Sector rely on the Portwine Road lift station and force main which discharge directly into the Des Plaines River WRF. Therefore, the Portwine Sector does not share in the transmission costs generally associated with the Southeast Service Area. Additionally, the local collector infrastructure was contributed by developers and is not included in this assessment. Wholesale service utilizes Lake County's transmission and treatment assets.

Table 4-9 shows the existing and proposed connection fee for this area.

Table 4-9: Portwine Sector – Connection Fees ($/RE)

	Existing	Proposed		
Wastewater Connection Fees	2019	2020	2021	2022
Southeast Portwine	$ 7,580	$ 8,220	$ 8,220	$ 8,220

Figure 4-7 illustrates the primary components of this area's connection fee that are included in the proposed fee. The values in Figure 4-7 reflect the cost per RE for each applicable system component established previously in Table 4-1 and Table 4-2. Because the change is less than 10 percent, the total recommended fee of $8,220 per RE is proposed to be implemented in 2020 and remain at that level through 2022.

Figure 4-7: Proposed 2022 Connection Fee per RE – Portwine

4.7.2 General Sector

Lake County provides retail service to portions of Long Grove and unincorporated Pekara, and wholesale service to portions of the Villages of Buffalo Grove, Kildeer, Lincolshire, and Riverwoods. Retail service utilizes Lake County's local sewer collectors, transmission and treatment assets, but the local collector infrastructure was contributed by developers and is not included in this assessment. Wholesale service utilizes Lake County's transmission and treatment assets.

Table 4-10 shows the existing and proposed connection fee for this area, reflecting a three-year phase-in of the proposed connection fee.

Table 4-10: General Sector – Connection Fees ($/RE)

	Existing	Proposed		
Wastewater Connection Fees	2019	2020	2021	2022
Southeast General Sector	$ 5,150	$ 5,670	$ 5,810	$ 5,950

Figure 4-8 illustrates the primary components of this area's connection fee that are included in the proposed fee. The values in Figure 4-8 reflect the cost per RE for each applicable system component established previously in Table 4-1 and Table 4-2. The total recommended fee of $5,950 per RE is phased-in over a three-year period beginning in 2020.

Figure 4-8: Proposed 2022 Connection Fee per RE – General

4.7.3 Village of Kildeer

Lake County provides retail service to a portion of the Village of Kildeer, involving Lake County's local sewer collectors, transmission and treatment assets. In this area, Lake County built the local collector system.

Table 4-11 shows the existing and proposed connection fee for this area, reflecting a three-year phase-in of the proposed connection fee.

Table 4-11: Village of Kildeer – Connection Fees ($/RE)

	Existing	Proposed		
Wastewater Connection Fees	2019	2020	2021	2022
Southeast Kildeer	$ 6,550	$ 7,210	$ 7,350	$ 7,490

Figure 4-9 illustrates the primary components of this area's connection fee that are included in the proposed fee. The values in Figure 4-9 reflect the cost per RE for each applicable system component established previously in Table 4-1 and Table 4-2 and include local collector costs. The total recommended fee of $7,490 per RE is phased-in over a three-year period beginning in 2020.

Figure 4-9: Proposed 2022 Connection Fee per RE – Kildeer

4.7.4 Ela Sector

Lake County provides retail service to a portion of the Villages of Hawthorn Woods, Long Grove, Forest Lake and Kildeer. Lake County infrastructure includes sewer collectors, transmission and treatment assets. In addition to sharing in the general transmission costs associated with the Southeast Service Area, the Ela Sector also includes the Ela Lift Station and related force main. In this area, Lake County built the local collector system.

Table 4-12 shows the existing and proposed connection fee for this area, reflecting a three-year phase-in of the proposed connection fee.

Table 4-12: Ela Sector – Connection Fees ($/RE)

	Existing	Proposed		
Wastewater Connection Fees	2019	2020	2021	2022
Southeast Ela	$ 9,020	$ 9,920	$ 10,070	$ 10,210

Figure 4-10 illustrates the primary components of this area's connection fee that are included in the proposed fee. The values in Figure 4-10 reflect the cost per RE for each applicable system component established previously in Table 4-1 and Table 4-2 and include local collector costs. The total recommended fee of $10,210 per RE is phased-in over a three-year period beginning in 2020.

Figure 4-10: Proposed 2022 Connection Fee per RE – Ela Sector

4.7.5 Villages of Lake Zurich and Lincolnshire

Lake County provides wholesale service to the Villages of Lake Zurich and Lincolnshire. Lake County infrastructure required to serve these Villages only includes the Des Plaines River WRF, as both communities discharge directly to the WRF.

Table 4-13 shows the existing and proposed connection fee for this area.

Table 4-13: Lake Zurich and Lincolnshire – Connection Fees ($/RE)

	Existing	Proposed		
Wastewater Connection Fees	2019	2020	2021	2022
Southeast				
Lake Zurich, Lincolnshire	$ 3,780	$ 4,030	$ 4,030	$ 4,030

Figure 4-11 illustrates the primary components of this area's connection fee that are included in the proposed fee. The values in Figure 4-11 reflect the cost per RE for treatment at the Des Plaines River WRF, established previously in Table 4-2. Because the change is less than 10 percent, the total recommended fee of $4,030 per RE is proposed to be implemented in 2020 and remain at that level through 2022.

Figure 4-11: Proposed 2022 Connection Fee per RE – Lake Zurich and Lincolnshire

4.8 Southeast Central Service Area

Lake County provides retail and wholesale sewer service to the Southeast Central Service Area. Due to differences in the services provided by Lake County, this area has two sub-areas noted as follows:

- Unincorporated Libertyville Township: Countryside Manor, Terre Faire, North Libertyville Estates
- Green Oaks and Libertyville

Lake County's infrastructure in this area includes local collector mains, transmission system assets. Treatment service is provided by the Village of Libertyville's WRF. Use of local collector mains, which were built by Lake County, is limited to the retail service area.

4.8.1 Unincorporated Libertyville Township

Lake County provides retail service in this area utilizing its local sewer collectors and transmission assets. The local collector infrastructure was built by Lake County and is included in this assessment.

Table 4-14 shows the existing and proposed connection fee for this area, reflecting a three-year phase-in of the proposed connection fee. Connection fees do not include the cost associated with the Libertyville WRF.

Table 4-14: Unincorporated Libertyville Township – Connection Fees ($/RE)

	Existing	Proposed		
Wastewater Connection Fees	2019	2020	2021	2022
Southeast Central				
Countryside Manor, Terre Faire, North Libertyville Estates [1]	$ 2,680	$ 2,950	$ 3,040	$ 3,120

[1] LCPW portion only. Excludes Fox Lake in Northwest Area and Libertyville in the Southeast Central Area.

Figure 4-12 illustrates the primary components of this area's connection fee that are included in the proposed fee. The values in Figure 4-12 reflect the cost per RE for applicable transmission cost established previously in Table 4-1. The total recommended fee of $3,120 per RE is proposed to be implemented in 2020 and is phased-in over a three-year period beginning in 2020. Connection fees do not include the cost associated with the Libertyville WRF.

Figure 4-12: Proposed 2022 Connection Fee per RE – Unincorporated Libertyville Township

4.8.2 Villages of Green Oaks and Libertyville

Lake County provides wholesale service to the Village of Green Oaks and portions of the Village of Libertyville utilizing its transmission assets only. Treatment service is provided by the Village of Libertyville's WRF.

Table 4-15 shows the existing and proposed connection fee for this area, reflecting a three-year phase-in of the proposed connection fee. Connection fees do not include the cost associated with the Libertyville WRF.

Table 4-15: Green Oaks and Libertyville– Connection Fees ($/RE)

	Existing	Proposed		
Wastewater Connection Fees	2019	2020	2021	2022
Southeast Central				
Green Oaks and Libertyville [1]	$ 1,280	$ 1,410	$ 1,490	$ 1,580

[1] LCPW portion only. Excludes Fox Lake in Northwest Area and Libertyville in the Southeast Central Area.

Figure 4-13 illustrates the primary components of this area's connection fee that are included in the proposed fee. The values in Figure 4-13 reflect the cost per RE for applicable transmission cost established previously in Table 4-1. The total recommended fee of $1,580 per RE is proposed to be implemented in 2020 and is phased-in over a three-year period beginning in 2020. Connection fees do not include the cost associated with the Libertyville WRF.

Figure 4-13: Proposed 2022 Connection Fee per RE – Green Oaks and Libertyville

4.9 Summary of Existing and Proposed Sewer Connection Fees

Table 4-16 summarizes the existing and proposed sewer connection fees for Lake County. Note that connection fees associated with treatment provided by third parties are not included in the Northeast Central, Northwest, and Southeast Central areas where applicable.

Table 4-16: Existing and Proposed Sewer Connection Fees

	Existing	Proposed		
	2019	2020	2021	2022
Wastewater Connection Fees				
Diamond-Sylvan Lake	$ 9,110	$ 8,760	$ 8,760	$ 8,760
Northeast	$ 7,240	$ 7,730	$ 7,730	$ 7,730
Northeast Central				
Highland Lake, Avon & Warren Townships, Village of Third Lake	$ 2,700	$ 2,970	$ 3,260	$ 3,580
Grayslake, Gurnee, Hainesville and Waukegan	$ 1,300	$ 1,430	$ 1,710	$ 2,040
Northwest				
Fox Lake Hills, Petite Lake and Stanton Bay [1]	$ 2,590	$ 2,850	$ 2,960	$ 3,080
Wholesale [1]	$ 1,190	$ 1,310	$ 1,420	$ 1,540
South Central	$ 5,540	$ 6,090	$ 6,300	$ 6,500
Southeast				
Portwine	$ 7,580	$ 8,220	$ 8,220	$ 8,220
Buffalo Grove, Riverwoods	$ 5,150	$ 5,670	$ 5,810	$ 5,950
Kildeer	$ 6,550	$ 7,210	$ 7,350	$ 7,490
Ela	$ 9,020	$ 9,920	$ 10,070	$ 10,210
Lake Zurich, Lincolnshire	$ 3,780	$ 4,030	$ 4,030	$ 4,030
Southeast Central				
Countryside Manor, Terre Faire, North Libertyville Estates [1]	$ 2,680	$ 2,950	$ 3,040	$ 3,120
Green Oaks [1]	$ 1,280	$ 1,410	$ 1,490	$ 1,580
Libertyville [1]	$ 1,280	$ 1,410	$ 1,490	$ 1,580

[1] LCPW portion only. Excludes Fox Lake in Northwest Area and Libertyville in the Southeast Central Area.

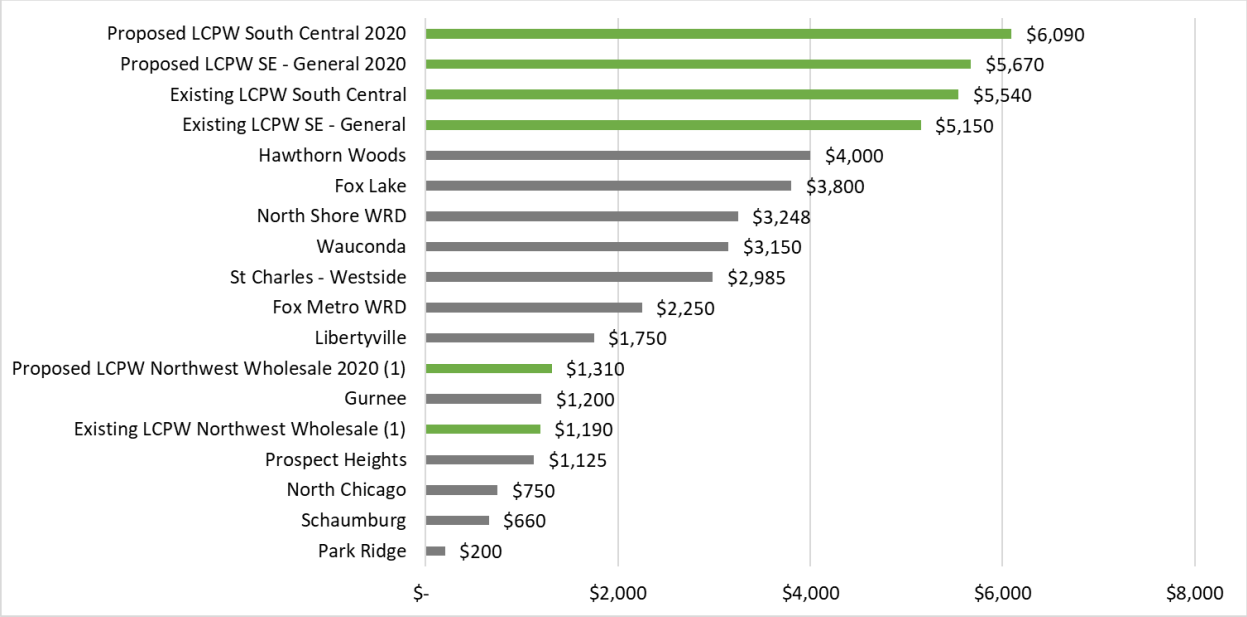
4.10 Regional Sewer Connection Fee Comparison

Figure 4-14 compares Lake County's existing 2019 and proposed 2020 sewer connection fees to other regional sewer utilities. Because of the number of specific regional sewer connection fees applied by Lake County, Figure 4-14 has been limited to include Lake County's more commonly applied connection fees in recent years.

It is important to recognize differences in connection fees can be attributed to several factors, including:

- Fees developed to reflect only a portion of service provided (i.e. supply/treatment only, or transmission/distribution only)
- Variations in fee development methodology
- Policies regarding the recovery of the cost of growth
- Age of and available capacity in applicable infrastructure
- Other factors

Figure 4-14: Regional Comparison of Sewer Connection Fees



(1) Reflects Lake County Public Works facility costs only, excludes Fox Lake treatment costs.

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Electric, Water, and Wastewater Cost of Service and Rate Study

Lafayette Utilities System

Cost of Service and Rate Study
Project No. 131021

7/25/2022

Electric, Water, and Wastewater Cost of Service and Rate Study

prepared for

Lafayette Utilities System
Cost of Service and Rate Study
Lafayette, Louisiana
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Burns & McDonnell Engineering Company, Inc.
Kansas City, Missouri

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LIST OF ABBREVIATIONS

Abbreviation	Term/Phrase/Name
4CP	4 coincident peak
A&G	Administrative and General
AMI	Advanced Metering Infrastructure
AWWA	American Water Works Association
Burns & McDonnell	Burns & McDonnell Engineering Company, Inc.
CER	Consulting Engineers Report
CIP	Capital Improvement Program
CIS	Customer information system
CP	Coincident-peak
DG	Distributed Generation
DSC	Debt service coverage
DSCR	Debt service coverage ratio
EV	Electric Vehicle
FC	Fuel Charge
FY	Fiscal year
ILOT	In lieu of tax
IRP	Integrated resource plan
kV	Kilovolts
KWH	Kilowatt Hour
LCG	Lafayette City-Parish Consolidated Government
LCG	Lafayette Consolidated Government
LGS	Large General Service
LPPA	Lafayette Public Power Authority
LUS	Lafayette Utilities System
LUS Fiber	Communications System
MDM	Meter data management system
MISO	Midcontinent Independent System Operator, Inc.
NCP	Non-coincident peak
O&M	Operations and Maintenance Expense
REC	Renewable Energy Credit
Report	Cost of Service and Rate Study Report
TOU	Time of Use
Utilities System	Lafayette Utilities Systems Electric, Water, and Wastewater Systems
WEF	Water Environment Federation

EXECUTIVE SUMMARY

Introduction

Lafayette Utilities System ("LUS") retained Burns & McDonnell to perform a combined electric, water, and wastewater Cost of Service and Rate Study (Study) including financial planning, cost of service, and rate analysis for the utility systems. The Study provides a five-year financial plan that evaluates the sufficiency of revenues under existing rates to meet future operating and capital costs of the utility. If revenues are insufficient to meet funding requirements, recommendations are made to increase rates sufficiently to meet the utility's revenue requirements. Proposed rates are designed to provide revenues in accordance with the projected financial plans and annual revenue requirement.

Financial Planning and Base Rate Revenue Increase

LUS reviews its retail utility rates and associated level of revenue generation periodically to determine if adjustments to rates should be made. The electric utility increases its variable fuel cost rate rider on a routine basis based on market and fuel pricing while the base electric rates, water rates, and wastewater rates are adjusted in formal rate studies. One of the key objectives for financial planning was to determine the sufficiency of these base rate increases to adequately fund LUS's future revenue requirement.

Several financial planning scenarios were evaluated to fund future operating and capital needs for each utility. Financial planning scenarios were evaluated based on the following guiding principles, which were developed in collaboration with LUS staff at the beginning of the Study:

1. Each utility should work towards standing on its own financially by the end of the projection period.
2. Implement rate increases over a three-year period to minimize sudden impacts to customers.
3. Maintain projected operating cash reserves in accordance with target requirements.
4. Maintain current debt service coverage levels for LUS in total.
5. Maintain positive net cash flows for LUS in total.
6. Provide funding for $20 million in capital spending per year over the 5-year forecast period.

Based on the ability to meet the guiding principles, the recommended financial plans detailed in this report propose revenue increases shown in Table ES-1, to be effective November 1 of each year indicated. The financial projections for each utility and for all of LUS are presented within Section 2 of this report.

Table ES-1: Proposed Base Rate Revenue Increases by Utility

	2022	2023	2024	2025	2026
Electric Rate Increase Level	0.0%	3.0%	3.0%	0.0%	0.0%
Water Rate Increase Level	0.0%	8.0%	8.0%	8.0%	0.0%
Wastewater Rate Increase Level	0.0%	9.5%	9.5%	9.5%	0.0%

[1] All years are presented are fiscal year beginning November 1st.

[2] Rate increase levels presented are base rate revenue percentage increase amounts excluding fuel cost rate revenues.

[3] Rate increases would be implemented at the beginning of each fiscal year on November 1st.

Proposed Retail Rates

A detailed cost of service analysis was performed for each utility. The cost of service in conjunction with the base rate revenue increases shown in Table ES-1, provided context for the development of proposed retail rates. Additionally, utility rate levels were compared to regional communities. Regional rate and average bill comparisons are provided by utility in their respective sections within this report.

For each of the utilities, the rates reflect the existing retail rate structure with minor adjustments to the proportions recovered from fixed and variable charges.

The existing and proposed electric rates for the electric system are presented in Table ES-2. The proposed changes would be implemented in FY 2023 and FY 2024. The rates proposed for the electric utility also included several new rate proposals including optional time of use (TOU) rates, optional green energy rates, and a new transmission rate class for larger customers that are connected directly to the LUS transmission system.

The existing and proposed water rates for the water system are presented in Table ES-3. The proposed rate changes would be implemented over a three-year period between FY 2023 and FY 2025.

The existing and proposed wastewater rates for the wastewater system are presented in Table ES-4. The proposed rate changes would be implemented over a three-year period between FY 2023 and FY 2025.

Table ES-2: Electric Utility Existing and Proposed Rates

Rate Class Description	Charge	Existing Rates 2022	Proposed Rates 2023	Proposed Rates 2024
		$	$	$
Residential Service R1	All kWh per kWh	0.04764	0.04921	0.05093
	Customer Charge	8.00	10.00	12.00
	Fuel Rate per kWh	0.04300	0.04300	0.04300
Residential Net Metering R1NM	All kWh per kWh	0.04764	0.04921	0.05093
	Customer Charge	8.00	10.00	12.00
	Fuel Rate per kWh	0.04300	0.04300	0.04300
Residential Time of Use Rate Pilot (New)	Customer Charge	8.00	10.00	12.00
	Summer Off-peak	0.02040	0.02107	0.02181
	Summer On-peak	0.04080	0.04215	0.04362
	Summer Super-peak	0.12240	0.12644	0.13086
	Winter Off-peak	0.02040	0.02107	0.02181
	Winter On-peak	0.04080	0.04215	0.04362
	Winter Super-peak	N/A	N/A	N/A
	Fuel Rate per kWh	0.04300	0.04300	0.04300
Small General Service C1	All kWh per kWh	0.06176	0.06157	0.06157
	Demand Chg (per kW)	-	-	-
	Customer Charge	10.00	12.00	14.00
	Fuel Rate per kWh	0.04300	0.04300	0.04300
Schools & Churches SC1	All kWh per kWh	0.05222	0.05483	0.05757
	Demand Chg (per kW)	-	-	-
	Customer Charge	10.00	12.00	14.00
	Fuel Rate per kWh	0.04300	0.04300	0.04300
Large General Service C2	All kWh per kWh	0.02098	0.02119	0.02140
	Demand Chg (per kW)	8.50	8.60	8.70
	Customer Charge	50.00	50.00	50.00
	Fuel Rate per kWh	0.04300	0.04300	0.04300
Large General Service Primary C2P	All kWh per kWh	0.02098	0.02087	0.02108
	Demand Chg (per kW)	8.00	7.60	7.70
	Customer Charge	50.00	50.00	50.00
	Fuel Rate per kWh	0.04300	0.04236	0.04236
University of Louisiana U1 (Secondary)	All kWh per kWh	0.02112	0.02119	0.02140
	Demand Chg (per kW)	4.28	6.88	6.96
	Customer Charge	50.00	50.00	50.00
	Fuel Rate per kWh	0.04300	0.04300	0.04300
University of Louisiana U1 (Primary)	All kWh per kWh	0.02112	0.02087	0.02108
	Demand Chg (per kW)	4.28	5.88	5.96
	Customer Charge	50.00	50.00	50.00
	Fuel Rate per kWh	0.04300	0.04236	0.04236
Transmission Service (New)	All kWh per kWh	N/A	0.02055	0.02076
	Demand Chg (per kW)	N/A	2.00	2.02
	Customer Charge	N/A	50.00	50.00
	Fuel Rate per kWh	N/A	0.04171	0.04171

[1] All years are presented are fiscal year beginning November 1st.
[2] Non-city customers' existing and proposed rates have a 10 percent adder to base rates. The 10 percent adder does not apply to the fuel rate for non-city customers.

Table ES-3: Water Utility Existing and Proposed Rates

Rate Code	Class Description	Existing 2022 $	Proposed 2023 $	2024 $	2025 $	2026 $	2027 $
W-1	Residential - Inside						
	Meter Charge by Meter Size						
	0.75"	5.55	5.99	6.47	6.99	6.99	6.99
	1"	9.25	9.99	10.79	11.65	11.65	11.65
	1.5"	18.50	19.98	21.58	23.31	23.31	23.31
	2"	29.60	31.97	34.53	37.29	37.29	37.29
	3"	55.50	59.94	64.74	69.92	69.92	69.92
	4"	92.50	99.90	107.89	116.52	116.52	116.52
	6"	185.00	199.80	215.78	233.04	233.04	233.04
	8"	296.00	319.68	345.25	372.87	372.87	372.87
	Commodity Charge						
	Winter	1.70	1.82	1.95	2.09	2.09	2.09
	Summer (Tier 1)	1.70	1.82	1.95	2.09	2.09	2.09
	Summer (Tier 2)	2.70	2.89	3.09	3.31	3.31	3.31
W-1-O	Residential - Outside						
	Meter Charge by Meter Size						
	0.75"	11.10	11.98	12.94	13.98	13.98	13.98
	1"	18.50	19.98	21.58	23.30	23.30	23.30
	1.5"	37.00	39.96	43.16	46.62	46.62	46.62
	2"	59.20	63.94	69.06	74.58	74.58	74.58
	Commodity Charge						
	Winter	3.40	3.64	3.90	4.18	4.18	4.18
	Summer (Tier 1)	3.40	3.64	3.90	4.18	4.18	4.18
	Summer (Tier 2)	5.40	5.78	6.18	6.62	6.62	6.62
W-2	Commercial - Inside						
	Meter Charge by Meter Size						
	0.75"	5.55	5.99	6.47	6.99	6.99	6.99
	1"	9.25	9.99	10.79	11.65	11.65	11.65
	1.5"	18.50	19.98	21.58	23.31	23.31	23.31
	2"	29.60	31.97	34.53	37.29	37.29	37.29
	3"	55.50	59.94	64.74	69.92	69.92	69.92
	4"	92.50	99.90	107.89	116.52	116.52	116.52
	6"	185.00	199.80	215.78	233.04	233.04	233.04
	8"	296.00	319.68	345.25	372.87	372.87	372.87
	Commodity Charge	1.95	2.13	2.32	2.53	2.53	2.53
W-2-O	Commercial - Outside						
	Meter Charge by Meter Size						
	0.75"	11.10	11.98	12.94	13.98	13.98	13.98
	1"	18.50	19.98	21.58	23.30	23.30	23.30
	1.5"	37.00	39.96	43.16	46.62	46.62	46.62
	2"	59.20	63.94	69.06	74.58	74.58	74.58
	4"	185.00	199.80	215.78	233.04	233.04	233.04
	Commodity Charge	3.90	4.26	4.64	5.06	5.06	5.06
W-3	Bulk Sales at Plants						
	Customer Charge	10.00	10.80	11.66	12.59	12.59	12.59
	Commodity Charge	1.95	2.13	2.32	2.53	2.53	2.53
W-4	Bulk Sales from Hydrants						
	Customer Charge	51.50	55.62	60.07	64.88	64.88	64.88
	Commodity Charge	1.95	2.13	2.32	2.53	2.53	2.53
W-5	Bulk Water						
	Customer Charge	51.50	55.62	60.07	64.88	64.88	64.88
	Commodity Charge	1.95	2.13	2.32	2.53	2.53	2.53
W-6	Sprinkler						
	Meter Charge by Meter Size						
	0.75"	5.55	5.99	6.47	6.99	6.99	6.99
	1"	9.25	9.99	10.79	11.65	11.65	11.65
	1.5"	18.50	19.98	21.58	23.31	23.31	23.31
	2"	29.60	31.97	34.53	37.29	37.29	37.29
	3"	55.50	59.94	64.74	69.92	69.92	69.92
	4"	92.50	99.90	107.89	116.52	116.52	116.52
	6"	185.00	199.80	215.78	233.04	233.04	233.04
	8"	296.00	319.68	345.25	372.87	372.87	372.87
	Commodity Charge	2.54	2.74	2.96	3.20	3.20	3.20

[1] All years presented are fiscal year beginning November 1st.

Table ES-4: Wastewater Utility Existing and Proposed Rates

Rate Code	Class Description	Existing 2022 $	Proposed 2023 $	2024 $	2025 $	2026 $
S-1	Residential - Inside					
	Volume Charge (Kgal)	5.90	6.38	6.90	7.47	7.47
	Customer Charge	8.60	9.42	10.31	11.29	11.29
S-1-O	Residential - Outside					
	Volume Charge (Kgal)	7.10	7.68	8.30	8.99	8.99
	Customer Charge	10.30	11.28	12.35	13.52	13.52
S-2	Commercial - Inside					
	Volume Charge (Kgal)	6.15	6.83	7.58	8.41	8.41
	Customer Charge	16.15	17.68	19.36	21.20	21.20
	BOD	7.23	7.92	8.67	9.49	9.49
	or					
	COD	3.61	3.95	4.33	4.74	4.74
	plus					
	TSS	7.23	7.92	8.67	9.49	9.49
S-2-O	Commercial - Outside					
	Volume Charge (Kgal)	7.40	8.22	9.12	10.12	10.12
	Customer Charge	24.20	26.49	29.01	31.77	31.77
	BOD	8.68	9.51	10.41	11.39	11.39
	or					
	COD	4.34	4.75	5.21	5.70	5.70
	plus					
	TSS	8.68	9.51	10.41	11.39	11.39
	Flat Rate Customers					
	Flat Rate - Commercial	64.42	71.29	78.85	87.21	87.21
	Flat Rate -Residential (Apartment)	30.83	33.46	36.31	39.44	39.44
	Flat Rate -Residential	47.33	51.30	55.60	60.33	60.33
	Flat Rate - Commercial Outside	101.84	112.72	124.70	137.94	137.94
	Flat Rate -Residential Outside	61.11	66.23	71.77	77.85	77.85

[1] All years presented are fiscal year beginning November 1st.

Typical Bill Impacts

Table ES-5 present the changes in typical LUS Residential bills over the next five years at common usage amounts, assuming all proposed rates are implemented through FY 2025. The typical bills presented assume that LUS's fuel remains flat for illustrative purposes however it is subject to change based on LUS's cost of fuel and energy. The combined cumulative bill impact of the proposed rates to the average LUS Residential customer over the 5-year period is 12.9 percent or an average increase of approximately 2.5 percent per year.

Table ES-5: Residential Utility Bills Under Existing and Proposed Rates

		Existing	Proposed			
		2022	2023	2024	2025	2026
Electric						
Annual Bill	$/year	$ 1,405	$ 1,452	$ 1,501	$ 1,501	$ 1,501
Monthly Bill	$/month	$ 117	$ 121.0	$ 125	$ 125	$ 125
Water						
Annual Bill	$/year	$ 169	$ 181	$ 195	$ 209	$ 209
Monthly Bill	$/month	$ 14	$ 15	$ 16	$ 17	$ 17
Wastewater						
Annual Bill	$/year	$ 457	$ 496	$ 538	$ 584	$ 584
Monthly Bill	$/month	$ 38	$ 41	$ 45	$ 49	$ 49
Total Bill	$/year	$ 2,031	$ 2,129	$ 2,233	$ 2,294	$ 2,294
Total Bill	$/month	$ 169	$ 177	$ 186	$ 191	$ 191
Total Increase	$/year		$ 98	$ 104	$ 61	$ -
Total Increase	$/month		$ 8	$ 9	$ 5	$ -
Cummulative Increase	$/year		$ 98	$ 202	$ 263	$ 263
Cummulative Increase	$/month		$ 8	$ 17	$ 22	$ 22
Cummulative Increase	%/year		4.8%	9.9%	12.9%	12.9%
Cummulative Increase	%/month		4.8%	9.9%	12.9%	12.9%

Prioritized Recommendations

This Study includes several recommendations regarding financial plans, proposed revenue adjustments, and structures of future rates. However, not all recommendations must be implemented immediately. The recommendations, in order of importance, are presented below.

1. To meet future funding needs, implement proposed electric, water, and wastewater rates under existing structures for all three utilities as proposed in this report.
2. Implement the proposed optional electric rates once LUS systems, websites, and staff are prepared to

offer, support, and bill the new optional electric rates.

3. Develop promotional and information materials for customers with electric vehicles and distributed generation.
4. Work with the University and other potential new large customers to finalize an agreeable rate structure that is based on the service level characteristics provided.

Finally, the City monitors the financial position of each utility and in total as a part of its annual budget process and through the preparation of the Annual Consulting Engineers Report (CER). This approach should be continued, with particular emphasis on the impact of recent changes in inflation and future capital needs, as both may fluctuate over time and may require recalibration of financial plans. A comprehensive rate financial plan, cost of service and rate study are recommended at five-year intervals, or more frequently if substantial changes in capital improvement spending or operating expense levels are identified.

1.0 INTRODUCTION

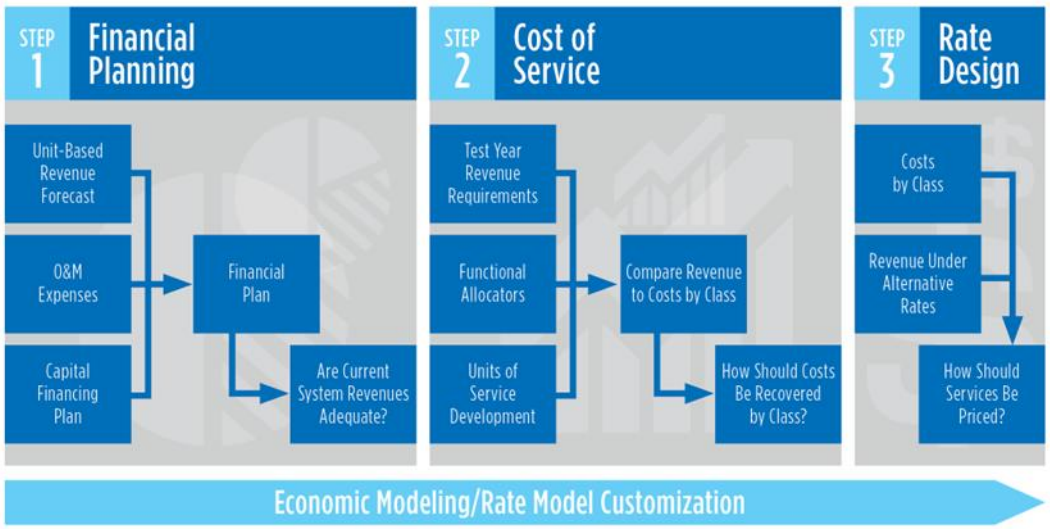
1.1 Introduction

Lafayette Utilities System ("LUS") retained Burns & McDonnell to perform a combined electric, water, and wastewater Cost of Service and Rate Study (Study) including financial planning, cost of service, and rate analysis for the utility systems. The Study provides a five-year financial plan that evaluates the sufficiency of revenues under existing rates to meet future operating and capital costs of the utility. If revenues are insufficient to meet funding requirements, recommendations are made to increase rates sufficiently to meet the utility's revenue requirements. Proposed rates are designed to provide revenues in accordance with the projected financial plans and annual revenue requirement.

1.2 Study Approach

To meet the Study objectives, Burns & McDonnell conducted the analysis in a three-step approach. This approach is depicted in Figure ES-1.

Figure ES-1: Study Approach



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?".

To determine if the existing schedule of rates can be expected to generate enough revenue to meet the City's operating and capital costs, Burns & McDonnell prepared a five-year financial projection of revenues and expenditures for each utility system. A comparison of projected revenues and expenditures provides insight into the adequacy of overall revenue levels.

Our approach to Financial Planning involves the following basic steps:

1. Project revenues under existing rates.
2. Project utility expenditures.
3. Develop a multi-year financial plan.
4. Evaluate financial sufficiency based on key performance indicators such as reserve balances, debt service coverage, and cash flow.

The planning period includes the 2022 budget year and a five-year forecast period, 2023 – 2027. The financial projections of each utility were evaluated individually and collectively and are presented in Section 2 of the report.

Step 2: Cost of Service focuses on assigning cost responsibility to customer classes. Each customer class is allocated an appropriate share of the overall system costs based on 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.

To determine each customer class' equitable share of the cost of providing utility 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 with :

1. Determine the net revenue requirements to be recovered from user charges.
2. Allocate test period operating and capital costs as applicable to the utility.
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.

The utility’s customer classes are allocated their respective share of the total cost of service according to their use of the system and provides context for the development of proposed rates. Costs are assigned through consideration of customer costs, and other relevant factors that vary by utility. Ultimately, proposed rates must be sufficient to meet the net revenue requirements forecasted for the utility.

Step 3: Rate Design provides for the required revenue recovery. Once the overall level of revenue required is identified, and cost of service analysis is completed, schedules of rates for each rate class are

developed that will generate future revenues indicated in the financial plan. Generally, the objective is to design rates for each utility to progress toward the following goals:

1. Rates should provide revenue stability for the utility.
2. Rates should be simple and understandable.
3. Rates should provide for a reasonable relationship to the cost of providing service.

Each individual utility as presented in this report has its own cost of service and rate design that are shown in their respective chapters.

1.3 Statement of Limitations

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The information, analysis, and opinions contained in this material are based on publicly available sources, secondary market research, and financial or operational information, or otherwise information provided by or through Burns & McDonnell clients whom have represented to Burns & McDonnell they have received appropriate permissions to provide to Burns & McDonnell, and as directed by such clients, that Burns & McDonnell is to rely on such client provided information as current, accurate, and complete. Burns & McDonnell has not conducted complete or exhaustive research, or independently verified any such information utilized herein and makes no representation or warranty, express or implied, that such information is current, accurate or complete. Projected data and conclusions contained herein are based (unless sourced otherwise) on the information described above and are the opinions of Burns & McDonnell which should not be construed as definitive forecasts and are not guaranteed.

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2.0 REVENUE REQUIREMENT ANALYSIS

2.1 Utilities System Projections

This section includes forward-looking financial statements based on Burns & McDonnell and LUS's current expectations and projections about future events and financial trends regarding the Utilities System. Projections as contained herein reflect estimates of what might occur in the future based on the information available as of the date of this Report. Burns & McDonnell prepared a 5-year projection of financial and operating data for each of the Electric, Water, and Wastewater Systems. Projections are based on Lafayette Consolidate Government (LCG) 2022 - 2026 Budgets for LUS and other assumptions and considerations as listed in the Report. The projections prepared are for the Projected Period of November 1, 2021 through October 31, 2026.

2.1.1 Electric System Revenue and Expense Projections

Burns & McDonnell completed a long-term system load forecast in 2020. The long-term load forecast forms the basis for long term projections of customer growth and energy sales and was used in the 2020 LUS Integrated Resource Plan (IRP) prepared by Burns & McDonnell. Electric System retail revenue projections are based on the load forecast, base rates projected, and fuel rates projected. The existing electric rates allow LUS to pass the direct (Midcontinent Independent System Operator (MISO) power cost, fuel cost, certain Lafayette Public Power Authority (LPPA) costs, environmental costs, purchased power costs, and other eligible cost directly to consumers in the form of a fuel charge that is adjusted regularly. This mechanism greatly reduces risk to LUS. LUS's largest expense is associated with the cost to purchase and generate power for the electric utility system. The projected purchased power cost is based on the 2020 IRP projections prepared by Burns & McDonnell. Fixed expense projections associated with operating the generating units are based on historical average levels with an allowance for escalation. Variations in variable purchased power costs are directly covered by the fuel charges billed to customers. Other electric utility fixed costs such as transmission, distribution, customer costs, A&G expenses, and debt service are recovered through LUS's base electric rates.

2.1.2 Water Revenue and Expense System Projections

The long-term forecast assumes that the number of customers in the water utility will grow at approximately 0.4 percent per year over the next 10 years. Retail water rate revenues are forecasted based on the expected system growth and projected utility rates. Wholesale water sales are projected to continue to grow over the forecast period based on projections provided and reviewed by LUS along with 8% wholesale rate increases every other year. Water operating expenses include production, distribution, customer, and A&G expense with water production being the largest. These expense projections are

generally based historical average levels with escalation. Some variable production expenses are escalated based on volumes and changes to electric rates. The water system recovers increases in expenses through rate increases that are approved in rate studies.

2.1.3 Wastewater System Revenue and Expense Projections

The long-term forecast assumes that the number of customers in the wastewater utility will grow at approximately 0.4 percent per year over the next 10 years. Retail wastewater rate revenues are forecasted based on the expected system growth and projected utility rates. Wastewater operating expenses include treatment, collection, customer, and A&G expense with treatment being the largest. These expense projections are generally based on average historical levels with escalation. Some variable production expenses are escalated based on volumes and changes to electric rates. The wastewater system recovers increases in expenses through periodic rate increases that are approved in rate studies.

2.1.4 Debt Service Projections

The Study projections included LUS debt service for the Series 2010 Bonds, Series 2017 Bonds, Series 2019 Bonds, and Series 2021 Bonds. No other new debt issues are included in the 5-year projections. The projected debt service coverage ratio exceeds the minimum requirement of 1.0.

2.1.5 Other Expense Projections

Other expenses include ILOT, normal capital and special equipment, and other miscellaneous expenses. Normal capital and special equipment are projected based on the 2021 budget plus an allowance for inflation.

2.1.6 In Lieu of Tax

The ILOT calculation provides for an ILOT payment equal to 12 percent of the Receipts Fund deposits. To be eligible to make the ILOT payment, LUS must first pass an ILOT Test. The ILOT test ensures that the Utilities System retains sufficient cash to meet capital obligations. If cash available after payment of operating expenses and debt service, less 7.5 percent of the Non-fuel Revenues, is greater than 12 percent of the Receipts Fund, LUS passes the test and makes the ILOT payment to the City. If LUS fails the ILOT test, LUS pays the cash available after debt service less 7.5 percent of the Non-fuel Revenues.

2.1.7 Capital Improvement Programs

The projections include the LUS Capital Improvement Plan (CIP) which reflects capital projects designed to upgrade, renew, and expand the system to meet customer growth requirements and provide a high level

of service. The Study used the 5-year CIP approved in FY 2021 totaling approximately $100 million from 2021 to 2025 or approximately $20 million per year.

2.1.8 Bond Reserve Fund and Cash Available

Cash available reflects remaining funds available to LUS once all other credit obligations of LUS are satisfied. LCG has a financial objective that requires a minimum cash balance of $8,000,000 to be held in an Operation and Maintenance Fund. The Operation and Maintenance Fund resides in the Operating Fund providing a cash reserve to meet system O&M expense requirements. Once O&M expense and debt service obligations are met by LUS, accumulated cash balances are held in a Capital Additions Fund and are applicable to capital projects or other lawful uses. The Projected Period assumes that capital for LUS will be paid with a combination of cash balances available in the Capital Additions Fund and new debt.

2.1.9 Other Revenues and Expenses

LUS incurs other miscellaneous non-operating revenues and expenses. Other revenues and income include items such as connection fees, interest incomes, late payment penalties, and other minor sources of income. Other expenses and income deductions are also incurred by the utility and are incorporated into the forecast projections.

2.1.10 Financial Projections and Rate Increase Requirements

This section presents financial projections and the annual net cash flows for the electric, water, and wastewater utility systems. The projections were reviewed with LUS and LCG staff to determine the overall level of rate revenue increases required for each utility to fund operating expenses, fund capital expenditures, fund debt service, and maintain minimum levels of cash and debt service coverage.

Electric base rate revenue increases of 3.0% per year are proposed for the electric utility over the next 2 years beginning in FY 2023. Fuel rate revenues will continue to recover fuel and purchased power related expenses as stipulated in the LUS rate schedule and will fluctuate based on market costs.

Water rate revenue increases of 8.0% per year are proposed for the water utility over the next 3 years beginning in FY 2023. Wholesale water sales are projected to continue to grow over the forecast period with 8% rate increases assumed for every other year of the forecast. The increases planned for the water utility are set to allow LUS to better recover its full cost of service and be self-sustaining.

Wastewater rate revenue increases of 9.5% per year are proposed for the wastewater utility over the next 3 years beginning in FY 2023. The increases planned for the wastewater utility are set to allow LUS to better recover its full cost of service and work towards being self-sustaining.

The proposed retail rate revenue increase levels will allow the combined LUS utility to meet its financial targets over the 5-year study period based on the assumptions used in this Study.

Table 2-1: Electric Utility Cash Flow Projections

	Year 0 FY 2021	Year 1 FY 2022	Year 2 FY 2023	Year 3 FY 2024	Year 4 FY 2025	Year 5 FY 2026
Retail Rate Increase	**0.0%**	**0.0%**	**3.0%**	**3.0%**	**0.0%**	**0.0%**
Total Operating Revenue	180,501,912	179,807,499	186,361,158	192,775,453	197,889,419	198,950,660
Total Operating Expenses	129,912,480	124,996,544	128,299,113	143,092,502	142,508,980	142,920,091
Balance Available for Debt Service	50,589,433	54,810,954	58,062,045	49,682,951	55,380,439	56,030,569
Total Debt Service: Cash Basis	17,101,771	15,950,735	15,869,653	15,855,461	15,845,899	15,836,647
Debt Service Coverage Ratio (before ILOT)	2.96	3.44	3.66	3.13	3.49	3.54
Total Other Income (Expenditures)	(23,294,399)	(23,109,064)	(23,578,798)	(24,274,241)	(24,992,184)	(25,336,618)
Balance Available for Retained Earnings & Capital	10,193,262	15,751,155	18,613,595	9,553,248	14,542,357	14,857,304
Capital Expenditures	11,830,000	7,509,350	3,887,609	3,549,027	3,708,733	11,829,343
Change in Cash	(1,636,738)	8,241,805	14,725,986	6,004,222	10,833,624	3,027,960

Table 2-2: Water Utility Cash Flow Projections

	Year 0 FY 2021	Year 1 FY 2022	Year 2 FY 2023	Year 3 FY 2024	Year 4 FY 2025	Year 5 FY 2026
Retail Rate Increase	**0.0%**	**0.0%**	**8.0%**	**8.0%**	**8.0%**	**0.0%**
Total Operating Revenue	22,389,282	22,857,337	24,565,525	26,644,038	28,423,496	29,261,741
Total Operating Expenses	15,265,482	15,632,498	16,216,714	16,822,302	17,445,218	18,077,469
Balance Available for Debt Service	7,123,800	7,224,838	8,348,811	9,821,735	10,978,278	11,184,272
Total Debt Service: Cash Basis	2,207,678	2,182,638	2,182,457	2,181,469	2,182,530	2,181,851
Debt Service Coverage Ratio (before ILOT)	3.23	3.31	3.83	4.50	5.03	5.13
Total Other Income (Expenditures)	(4,572,839)	(4,629,070)	(4,854,858)	(5,154,122)	(5,494,677)	(5,814,920)
Balance Available for Retained Earnings & Capital	343,284	413,131	1,311,496	2,486,145	3,301,071	3,187,500
Capital Expenditures	4,590,000	2,514,900	2,746,443	5,209,423	3,565,631	4,797,695
Change in Cash	(4,246,716)	(2,101,769)	(1,434,947)	(2,723,279)	(264,560)	(1,610,195)

Table 2-3: Wastewater Utility Cash Flow Projections

	Year 0 FY 2021	Year 1 FY 2022	Year 2 FY 2023	Year 3 FY 2024	Year 4 FY 2025	Year 5 FY 2026
Retail Rate Increase	**0.0%**	**0.0%**	**9.5%**	**9.5%**	**9.5%**	**0.0%**
Total Operating Revenue	31,774,071	31,859,301	34,986,403	38,441,256	42,227,507	42,428,228
Total Operating Expenses	21,197,957	21,309,021	22,054,141	22,825,295	23,606,175	24,375,815
Balance Available for Debt Service	10,576,114	10,550,280	12,932,262	15,615,961	18,621,331	18,052,413
Total Debt Service: Cash Basis	5,786,152	5,607,718	5,597,990	5,595,620	5,595,872	5,595,752
Debt Service Coverage Ratio (before ILOT)	1.83	1.88	2.31	2.79	3.33	3.23
Total Other Income (Expenditures)	(6,013,524)	(5,922,093)	(6,109,381)	(6,587,427)	(7,109,392)	(7,675,826)
Balance Available for Retained Earnings & Capital	(1,223,561)	(979,531)	1,224,891	3,432,914	5,916,068	4,780,834
Capital Expenditures	22,925,000	4,105,650	17,368,658	3,828,612	10,857,882	7,816,246
Change in Cash	(24,148,561)	(5,085,181)	(16,143,767)	(395,698)	(4,941,814)	(3,035,412)

Table 2-4: Combined Utility Cash Flow Projections

	Year 0 FY 2021	Year 1 FY 2022	Year 2 FY 2023	Year 3 FY 2024	Year 4 FY 2025	Year 5 FY 2026
Total Operating Revenue	234,665,265	234,524,137	245,913,086	257,860,746	268,540,421	270,640,629
Total Operating Expenses	166,375,918	161,938,064	166,569,968	182,740,099	183,560,373	185,373,376
Balance Available for Debt Service	68,289,347	72,586,073	79,343,119	75,120,647	84,980,048	85,267,253
Total Debt Service: Cash Basis	25,095,600	23,741,091	23,650,100	23,632,550	23,624,300	23,614,250
Debt Service Coverage Ratio (before ILOT)	2.72	3.06	3.35	3.18	3.60	3.61
Total Other Income (Expenditures)	(33,880,762)	(33,660,226)	(34,543,037)	(36,015,790)	(37,596,253)	(38,827,365)
Balance Available for Retained Earnings & Capital	9,312,985	15,184,755	21,149,982	15,472,307	23,759,495	22,825,638
Capital Expenditures	39,345,000	14,129,900	24,002,710	12,587,062	18,132,245	24,443,285
Change in Cash	(30,032,015)	1,054,855	(2,852,728)	2,885,245	5,627,250	(1,617,646)

2.2 Revenue Requirements

The annual revenue requirement for each utility system was developed based on the LUS budget projections for the next five years. The annual revenue requirement for each utility is used as the basis for the class cost of service by utility. The annual revenue requirement for each utility over the next 5 years is presented below and is subsequently used in the cost of service and rate design analysis in later sections of this report. The annual revenue requirement includes all O&M expenses, ILOT, debt service, capital projects, income deductions, less other income, less revenues, less deposits from other funds, and changes in operating reserves.

Table 2-5: Electric Utility Revenue Requirement Forecast

Electric Utility	Year 0 FY 2021	Year 1 FY 2022	Year 2 FY 2023	Year 3 FY 2024	Year 4 FY 2025	Year 5 FY 2026
Production	$ 91,085,008	$ 91,303,324	$ 93,283,590	$ 106,776,527	$ 104,842,246	$ 103,866,600
Transmission	$ 8,782,149	$ 3,455,307	$ 3,671,387	$ 3,821,421	$ 3,977,903	$ 4,141,117
Distribution	$ 13,252,573	$ 13,366,977	$ 13,923,186	$ 14,503,519	$ 15,109,042	$ 15,740,871
Customer Service & Sales	$ 3,041,013	$ 3,065,152	$ 3,202,580	$ 3,345,688	$ 3,492,507	$ 3,626,741
Administrative & General	$ 13,751,737	$ 13,805,784	$ 14,218,369	$ 14,645,347	$ 15,087,282	$ 15,544,761
In Lieu of Tax Payment	$ 18,169,203	$ 17,970,676	$ 17,996,750	$ 18,441,002	$ 18,896,449	$ 18,966,575
Debt Service	$ 17,101,771	$ 15,950,735	$ 15,869,653	$ 15,855,461	$ 15,845,899	$ 15,836,647
Normal Capital & Special Equipment	$ 5,547,880	$ 5,866,183	$ 6,342,592	$ 6,628,009	$ 6,926,269	$ 7,237,952
5 Year Capital Improvement Plan	$ 11,830,000	$ 7,509,350	$ 3,887,609	$ 3,549,027	$ 3,708,733	$ 11,829,343
Income Deductions	$ 1,896,435	$ 1,614,515	$ 1,687,168	$ 1,763,091	$ 1,842,430	$ 1,925,339
Less Other Income	$ (2,319,118)	$ (2,342,310)	$ (2,447,714)	$ (2,557,861)	$ (2,672,964)	$ (2,793,248)
Less Other Revenues	$ (5,258,737)	$ (5,306,124)	$ (5,588,278)	$ (5,866,924)	$ (6,134,137)	$ (6,394,868)
Less Deposits from Other Funds	$ (2,291,067)	$ (2,512,307)	$ (2,573,616)	$ (1,662,328)	$ (1,765,106)	$ (1,886,146)
Changes in Operating Reserves	$ 654,329	$ 10,754,112	$ 17,299,602	$ 7,666,550	$ 12,598,729	$ 4,914,106
Total Revenue Requirement	$ 175,243,175	$ 174,501,374	$ 180,772,880	$ 186,908,529	$ 191,755,281	$ 192,555,792
Total Revenues (Base + Fuel)	$ 175,243,175	$ 174,501,374	$ 180,772,880	$ 186,908,529	$ 191,755,281	$ 192,555,792

Table 2-6: Water Utility Revenue Requirement Forecast

Water Utility	Year 0 FY 2021	Year 1 FY 2022	Year 2 FY 2023	Year 3 FY 2024	Year 4 FY 2025	Year 5 FY 2026
Production Related	$ 6,068,285	$ 6,182,862	$ 6,375,339	$ 6,572,432	$ 6,769,916	$ 6,963,274
Distribution	$ 2,610,595	$ 2,811,711	$ 2,937,181	$ 3,068,203	$ 3,205,039	$ 3,347,974
Customer Related	$ 1,458,908	$ 1,471,696	$ 1,537,334	$ 1,605,787	$ 1,676,607	$ 1,745,651
Administrative & General	$ 5,127,694	$ 5,166,230	$ 5,366,859	$ 5,575,880	$ 5,793,657	$ 6,020,571
In Lieu of Tax Payment	$ 2,546,946	$ 2,585,057	$ 2,632,287	$ 2,831,535	$ 3,067,573	$ 3,278,597
Debt Service	$ 2,207,678	$ 2,182,638	$ 2,182,457	$ 2,181,469	$ 2,182,530	$ 2,181,851
Normal Capital & Special Equipment	$ 2,261,100	$ 2,390,827	$ 2,584,993	$ 2,701,318	$ 2,822,877	$ 2,949,907
5 Year Capital Improvement Plan	$ 4,590,000	$ 2,514,900	$ 2,746,443	$ 5,209,423	$ 3,565,631	$ 4,797,695
Income Deductions & WC Reserve	$ 602,793	$ 499,565	$ 522,045	$ 545,537	$ 570,086	$ 595,740
Less Other Income	$ (838,000)	$ (846,380)	$ (884,467)	$ (924,268)	$ (965,860)	$ (1,009,324)
Less Other Revenues	$ (592,266)	$ (561,056)	$ (556,697)	$ (549,846)	$ (549,490)	$ (555,373)
Less Deposits from Other Funds	$ (135,617)	$ (94,616)	$ (97,958)	$ (94,852)	$ (88,695)	$ (78,366)
Changes in Operating Reserves	$ (4,111,099)	$ (2,007,154)	$ (1,336,988)	$ (2,628,427)	$ (175,865)	$ (1,531,829)
Total Revenue Requirement	$ 21,797,016	$ 22,296,281	$ 24,008,828	$ 26,094,192	$ 27,874,006	$ 28,706,368
Total Revenues (Retail + Wholesale)	$ 21,797,016	$ 22,296,281	$ 24,008,828	$ 26,094,192	$ 27,874,006	$ 28,706,368

Table 2-7: Wastewater Utility Revenue Requirement Forecast

Wastewater Utility	Year 0 FY 2021	Year 1 FY 2022	Year 2 FY 2023	Year 3 FY 2024	Year 4 FY 2025	Year 5 FY 2026
Treatment	$ 7,284,659	$ 7,312,841	$ 7,539,870	$ 7,773,091	$ 8,004,489	$ 8,226,501
Collection	$ 5,964,593	$ 6,015,570	$ 6,288,106	$ 6,571,881	$ 6,859,049	$ 7,141,728
Customer Related	$ 1,472,021	$ 1,484,412	$ 1,550,772	$ 1,619,934	$ 1,691,234	$ 1,758,927
Administrative & General	$ 6,476,684	$ 6,496,198	$ 6,675,393	$ 6,860,390	$ 7,051,403	$ 7,248,658
In Lieu of Tax Payment	$ 3,963,562	$ 3,889,444	$ 3,900,235	$ 4,278,870	$ 4,696,949	$ 5,154,824
Debt Service	$ 5,786,152	$ 5,607,718	$ 5,597,990	$ 5,595,620	$ 5,595,872	$ 5,595,752
Normal Capital & Special Equipment	$ 2,220,586	$ 2,347,990	$ 2,538,677	$ 2,652,917	$ 2,772,298	$ 2,897,052
5 Year Capital Improvement Plan	$ 22,925,000	$ 4,105,650	$ 17,368,658	$ 3,828,612	$ 10,857,882	$ 7,816,246
Income Deductions & WC Reserve	$ 797,155	$ 662,116	$ 691,912	$ 723,048	$ 755,585	$ 789,586
Less Other Income	$ (967,779)	$ (977,457)	$ (1,021,443)	$ (1,067,407)	$ (1,115,441)	$ (1,165,636)
Less Other Revenues	$ (983,130)	$ (905,040)	$ (933,935)	$ (964,250)	$ (996,180)	$ (1,029,885)
Less Deposits from Other Funds	$ (180,930)	$ (64,996)	$ (67,221)	$ (51,167)	$ (26,881)	$ 8,604
Changes in Operating Reserves	$ (23,967,631)	$ (5,020,184)	$ (16,076,546)	$ (344,531)	$ (4,914,933)	$ (3,044,015)
Total Revenue Requirement	$ 30,790,941	$ 30,954,261	$ 34,052,468	$ 37,477,006	$ 41,231,327	$ 41,398,342
Total Revenues (Retail + Wholesale)	$ 30,790,941	$ 30,954,261	$ 34,052,468	$ 37,477,006	$ 41,231,327	$ 41,398,342

2.3 Principal Considerations and Assumptions

The projected operating results for the Utilities System, also referred to as LUS, rely upon information gathered and assumptions made during Burns & McDonnell's review. Key assumptions which were relied upon are summarized below.

1. LUS is assumed to operate and maintain the Utilities System following prudent utility practices. Prudent utility practices mean practices, methods, and acts that would be expected to accomplish the desired results in a workmanlike manner.
2. LUS is assumed to continue to hire and maintain competent personnel in amounts necessary to sustain service. If needed, LUS will provide training to personnel to ensure the safety of personnel and reliability of the utilities.
3. LUS is assumed to continue to maintain and renew any required permits or approvals related to the utilities including electric, water, and wastewater treatment plants and sites.
4. There will not be further regulation of LUS facilities that require major capital expenditures for LUS to comply beyond those assumed in the CIP 5-year projections.
5. It is assumed that the Rodemacher Unit 2, Hargis-Hébert Plant, T. J. Labbé Plant and the future combustion turbine plants will be maintained and operated in good condition throughout the Projected Period.
6. It is assumed that the transmission and distribution systems will be maintained and operated in good condition throughout the Projected Period.
7. It is assumed that the water treatment plants, ground water wells, and distribution system will be maintained and operated in good condition throughout the Projected Period.
8. It is assumed that the wastewater treatment plants and collection system will be maintained and

operated in good condition throughout the Projected Period.

9. It is assumed that all existing contracts will be honored and that the Utilities System would extend or replace any expired contracts as needed.
10. It is assumed that standard operating procedure for LUS will continue and will not include the effects of any event outside of LUS's control including events traditionally considered force majeure.
11. LUS is assumed to continue to have adequate coal, natural gas, and water supply for operation of the power plants.
12. LUS is assumed to continue to have adequate water supply from the Chicot aquifer to meet the customers' needs.
13. LUS is assumed to continue to be a market participant in MISO including providing capacity and meeting all other operational and financial requirements.
14. LUS is assumed to continue to have adequate transmission access in MISO to buy and sell power as needed.
15. Utilities System financial and operating data and budgetary projections were provided by LUS and LCG.
16. LPPA financial and operating data was provided by LUS, LPPA and Cleco staff. Data provided includes historical financial and operating data for 2015 through 2020, the 2021 Budget, and the LPPA Operating and Capital Budget.
17. Burns & McDonnell completed a long-term system load forecast in 2020. The long-term load forecast forms the basis for long term projections of customer growth and energy sales and was used in the 2020 LUS IRP prepared by Burns & McDonnell which was used for the projections in this Study.
18. Burns & McDonnell prepared an IRP for the electric system in 2020. The IRP contained projections of forecasted fuel usage and cost, MISO wholesale market revenues, MISO wholesale market costs, and power purchase agreement costs for both LUS and LPPA power plants. The IRP assumes Rodemacher Unit 2 is retired in 2027 and is replaced with a simple cycle gas turbine plant of similar capacity. Additional solar capacity and energy is assumed to be added between 2021 and 2029.
19. The existing electric rates allow LUS to pass the direct MISO power cost, fuel cost, certain LPPA costs, environmental costs, purchased power costs, and other eligible cost directly to consumers in the form of a fuel charge that is adjusted regularly. This mechanism reduces risk to LUS. This rate mechanism is assumed to be used throughout the study forecast period.
20. Future costs associated with emissions or potential environmental compliance have not been included within the projected operating results. Rodemacher Unit 2 is planned to be retired in 2027 which is beyond the Study forecast period. All operating expenses associated with environmental compliance are included in the fuel charge and passed through to customers in the retail electric rates.

21. O&M projections prepared for the Study were based on LUS and LCG budget projections provided in FY 2021. Historical O&M levels were inflated to match LUS and LCG budget projections provided.
22. LUS plans to issue new bonds in FY 2023 due to recent increases in capital improvement plan costs. The bonds will fund various electric, water, and wastewater projects. This new bond issue and recent increases in capital improvement plan spending levels were not included in the Study projections.
23. The new bond funding anticipated for FY 2023 is reasonable and appropriate to fund the proposed projects and the forecasted revenues represented in the most recent annual consulting engineer of record report continuing disclosure financial projections and this Study's financial projections are expected to be able to fund the new debt service associated with the bonds.
24. The ILOT calculation provides for an ILOT payment equal to 12 percent of the Receipts Fund deposits. To be eligible to make the ILOT payment, LUS must first pass an ILOT Test. The ILOT test ensures that the Utilities System retains sufficient cash to meet capital obligations. If cash available after payment of operating expenses and debt service, less 7.5 percent of the Non-fuel Revenues, is greater than 12 percent of the Receipts Fund, LUS passes the test and makes the ILOT payment to the City. If LUS fails the ILOT test, LUS pays the cash available after debt service less 7.5 percent of the Non-fuel Revenues.
25. The projections include the LUS CIP which reflects capital projects designed to upgrade, renew, and expand the system to meet customer growth requirements. The capital plan for years 2021 through 2025 was based on the 2021 Budget and 2026 was based on historical levels for this Study forecast period.
26. Cash available reflects remaining funds available to LUS once all other credit obligations of LUS are satisfied. LCG has a financial objective that requires a minimum cash balance of $8,000,000 to be held in an Operation and Maintenance Fund. The Operation and Maintenance Fund resides in the Operating Fund providing a cash reserve to meet system O&M expense requirements. Once O&M expense and debt service obligations are met by LUS, accumulated cash balances are held in a Capital Additions Fund and are applicable to capital projects or other lawful uses. The Projected Period assumes that capital additions for LUS will be paid with a combination of cash balances available in the Capital Additions Fund and new debt.
27. All 2021 refunding bonds for LUS, LPPA, and LUS Fiber and their associated debt service schedules are included in the forecast projections.

3.0 ELECTRIC UTILITY SYSTEM

3.1 Cost of Service Development

The test year revenue requirement developed from the financial forecast was used as the basis for the cost of service analysis. This section of the report summarizes the basis of the functionalization, classification, and allocation of costs to customer classes. Tables showing the assignment of the test year revenue requirement among functional services, as well as the development of allocation factors and the allocation of the test year revenue requirement to the electric utility's rate classifications, are presented in the following subsections.

3.1.1 Net Revenue Requirements

A summary of the test year rate revenue requirement is presented in Table 3-1. The annual cost of service consists of O&M expenses, transfers to the City, debt service, capital spending, other revenues and income, other income deductions, deposits from other funds, and changes in operating reserves. FY 2022 was used as a test year for the electric utility cost of service analysis and is representative of a normal year from a cost structure perspective. As described previously in this report, the Study proposes 3 percent rate increases in FY 2023 and FY 2024.

Table 3-1: Electric Utility Test Year Revenue Requirement

	Year 1 FY 2022
Production	$ 91,303,324
Transmission	$ 3,455,307
Distribution	$ 13,366,977
Customer Service & Sales	$ 3,065,152
Administrative & General	$ 13,805,784
In Lieu of Tax Payment	$ 17,970,676
Debt Service	$ 15,950,735
Normal Capital & Special Equipment	$ 5,866,183
5 Year Capital Improvement Plan	$ 7,509,350
Income Deductions	$ 1,614,515
Less Other Income	$ (2,342,310)
Less Other Revenues	$ (5,306,124)
Less Deposits from Other Funds	$ (2,512,307)
Changes in Operating Reserves	$ 10,754,112
Total Revenue Requirement	$ 174,501,374
Total Revenues (Base + Fuel)	$ 174,501,374

3.1.2 Revenue Requirement Functionalization and Classification

The first step in the development of the cost of service analysis was the unbundling of the various components of the test year revenue requirement by functional utility service. To a certain degree, the electric service that the City provides its customers is sold as a bundled product. However, this bundled product involves the provision of multiple functional services. Utilities have a need to unbundle the costs of providing the component services making up this bundled product. The electric utility benefits from this separation of costs and providing its services at a functional level. The unbundling of the electric utility's costs also allows for separate pricing of individual services to be done more easily.

3.1.3 Functionalization

Multiple functional services were identified while analyzing LUS's cost categories. Each cost category and its subordinate functional services are summarized below.

- Power Supply
  - Purchased Power and Generation Capacity
  - Purchased Power Energy
- Transmission Delivery
  - Transmission Service
- Distribution Substation
  - Substation Service
- Distribution Delivery
  - Distribution Backbone Demand (Primary)
  - Distribution Backbone Customer (Primary)
  - Distribution Demand (Secondary)
  - Distribution Customer (Secondary)
- Customer Services
  - Distribution Metering
  - Meter Reading
  - Records & Billing
  - Customer Services
- Lighting
  - Street and Private Area Lighting
- Revenue
  - Payment In Lieu of Taxes (ILOT)

3.1.4 Revenue Requirement Classification

The test year cost for each component of the revenue requirement was assigned to one or more of the unbundled services. The unbundled assignment of each amount was based on the utilization of specific data to estimate the portions of each item attributable to the various functional services. The amount for each item was assigned using one of the following approaches:

- **Direct Assignment** – to one or more specific functional services due to the nature of the account/element. For example, energy purchases were assigned to the KWH function service based on the projected cost of purchased energy in the test period.

- **Percentage Utilization** – based on the estimated level of activities within the account/element, costs were assigned to multiple functional service categories. For example, overhead and underground line expenses are allocated based on the ratio of primary and secondary overhead and underground line miles that comprise LUS's service territory.

- **Composite Ratio Assignment** – involves the assignment of costs based on the ratio of costs by functional service, whose percentage allocations have already been established, to the associated functional services for the test year. For example, interest income was assigned to functional services based on the percentage distribution of all other system costs.

- **Plant In Service Ratio** – LUS's plant in service was developed and allocated to each of the functional categories. For example, plant in service ratios were used to allocate O&M costs between distribution primary and secondary categories. In addition, plant in service ratios were used to allocate debt service, net cash flow, and annual capital expenditures for the test year.

The way each component was assigned to the functional services varied based on the nature of the item. Burns & McDonnell developed the proposed unbundling of the components of the FY 2022 revenue requirement based on its understanding of the types of associated costs. A summary of the assignment of each component of the test year revenue requirement is presented in Table 3-2. The assignment of the components of the test year revenue requirement for FY 2022 shows that $71.6 million, or approximately 41 percent, of LUS's test year net revenue requirement was related to purchased power energy.

Table 3-2: Electric Utility Revenue Requirement Unbundled Assignment Summary

Description	Test Year	UNBUNDLED COSTS													
	2022	Purchased Power and Generation Capacity	Purchased Power Energy	Transmission Delivery	Distribution Substation	Distribution Backbone Demand (Primary)	Distribution Backbone Customer (Primary)	Distribution Demand	Distribution Customer	Distribution Metering	Meter Reading	Records & Billing	Customer Services	Lighting	Revenue
OPERATING EXPENSES															
Total Power Production and Supply	$ 91,303,324	$ 25,021,457	$ 66,281,867	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Transmission Operations	$ 3,405,162	$ -	$ 1,368,590	$ 2,036,572	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Transmission Maintenance	$ 50,145	$ -	$ -	$ 50,145	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Distribution Operations	$ 6,727,484	$ -	$ -	$ -	$ 1,501,829	$ 1,512,245	$ 488,410	$ 1,149,705	$ 772,305	$ 770,072	$ -	$ -	$ -	$ 532,919	$ -
Total Distribution Maintenance	$ 6,639,493	$ -	$ -	$ -	$ 6,171	$ 2,590,552	$ 1,110,232	$ 1,456,015	$ 621,569	$ 616,708	$ -	$ -	$ -	$ 238,246	$ -
Total Customer Accounts Operations Expenses	$ 3,031,482	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 416,331	$ 2,615,151	$ -	$ -	$ -
Total Customer Service and Informational Expenses	$ 20,562	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 20,562	$ -	$ -
Total Sales Expense	$ 13,108	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 13,108	$ -	$ -
Total Administrative & General	$ 13,805,784	$ 3,210,634	$ -	$ 1,805,240	$ 879,980	$ 2,523,104	$ 932,183	$ 1,542,166	$ 1,008,362	$ 948,065	$ 297,847	$ 583,179	$ 49	$ 74,976	$ -
Total Other Expenses	$ 17,970,676	$ -	$ 4,000,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 13,970,676
Total Operating Expenses	$ 142,967,220	$ 28,232,091	$ 71,650,457	$ 3,891,957	$ 2,387,980	$ 6,625,901	$ 2,530,825	$ 4,147,885	$ 2,402,237	$ 2,334,844	$ 714,178	$ 3,198,330	$ 33,719	$ 846,141	$ 13,970,676
OTHER REVENUE REQUIREMENTS															
Required Change in Operating Reserves	$ 10,754,112	$ 3,409,293	$ -	$ 1,736,361	$ 693,301	$ 1,478,673	$ 582,466	$ 1,327,572	$ 801,838	$ 537,267	$ 20,224	$ 39,599	$ 3	$ 127,514	$ -
Annual Debt Service	$ 15,950,735	$ 5,056,738	$ -	$ 2,575,408	$ 1,028,319	$ 2,193,200	$ 863,927	$ 1,969,084	$ 1,189,304	$ 796,887	$ 29,997	$ 58,734	$ 5	$ 189,132	$ -
Normal Capital & Special Equipment	$ 5,866,183	$ 1,859,711	$ -	$ 947,155	$ 378,184	$ 806,590	$ 317,725	$ 724,168	$ 437,389	$ 293,070	$ 11,032	$ 21,601	$ 2	$ 69,557	$ -
5 Year Capital Improvement Plan	$ 7,509,350	$ 2,380,631	$ -	$ 1,212,461	$ 484,116	$ 1,032,523	$ 406,723	$ 927,013	$ 559,905	$ 375,161	$ 14,122	$ 27,651	$ 2	$ 89,040	$ -
Income Deductions	$ 1,614,515	$ 511,837	$ -	$ 260,680	$ 104,085	$ 221,993	$ 87,446	$ 199,308	$ 120,380	$ 80,660	$ 3,036	$ 5,945	$ 0	$ 19,144	$ -
Total Other Revenue Requirements	$ 41,694,895	$ 13,218,211	$ -	$ 6,732,064	$ 2,688,005	$ 5,732,979	$ 2,258,287	$ 5,147,145	$ 3,108,815	$ 2,083,046	$ 78,413	$ 153,531	$ 13	$ 494,387	$ -
Cost of Service	$ 184,662,115	$ 41,450,302	$ 71,650,457	$ 10,624,021	$ 5,075,985	$ 12,358,880	$ 4,789,112	$ 9,295,030	$ 5,511,052	$ 4,417,889	$ 792,590	$ 3,351,861	$ 33,732	$ 1,340,527	$ 13,970,676
OTHER REVENUES															
Less Other Income	$ (2,342,310)	$ (232,649)	$ -	$ (282,019)	$ (173,038)	$ (480,127)	$ (183,389)	$ (300,564)	$ (174,071)	$ (169,188)	$ (51,751)	$ (231,758)	$ (2,443)	$ (61,313)	$ -
Less Other Revenues	$ (5,306,124)	$ (527,029)	$ -	$ (638,869)	$ (391,990)	$ (1,087,649)	$ (415,438)	$ (680,880)	$ (394,330)	$ (383,267)	$ (117,233)	$ (525,010)	$ (5,535)	$ (138,895)	$ -
Less Deposits from Other Funds	$ (2,512,307)	$ (249,534)	$ -	$ (302,487)	$ (185,596)	$ (514,972)	$ (196,699)	$ (322,378)	$ (186,705)	$ (181,467)	$ (55,507)	$ (248,578)	$ (2,621)	$ (65,763)	$ -
Total Other Revenues	$ (10,160,741)	$ (1,009,212)	$ -	$ (1,223,376)	$ (750,624)	$ (2,082,748)	$ (795,525)	$ (1,303,823)	$ (755,105)	$ (733,922)	$ (224,491)	$ (1,005,345)	$ (10,599)	$ (265,971)	$ -
Rate Revenue Requirements	$ 174,501,374	$ 40,441,090	$ 71,650,457	$ 9,400,646	$ 4,325,361	$ 10,276,132	$ 3,993,587	$ 7,991,208	$ 4,755,947	$ 3,683,968	$ 568,100	$ 2,346,516	$ 23,133	$ 1,074,556	$ 13,970,676

3.1.5 Revenue Requirement Allocation

Following the unbundling of the various components of the test year revenue requirement to the functional utility services, the unbundled test year revenue requirement was allocated to the electric utility's retail rate classifications. These allocations were developed to reflect the relative impact each rate class will have on the level of each component of the test year revenue requirement. The test year revenue requirement was allocated to the Residential, Residential Non-City, Residential Net Metering, Small General Service, Schools and Churches, Large General Service Secondary, Large General Service Primary, University Primary Service, University Secondary Service, Street Lighting, and Private Area Lighting classes.

3.1.6 Allocation Factors

Burns & McDonnell utilized billing history data and projections of future sales and loads to develop a series of allocation factors. The allocation factors were developed based on billing determinants, estimates of the contributions of each rate classification to LUS's total annual system energy requirements, average monthly coincident system peak demand, and average monthly non-coincident system peak demand. In addition, the total number of customers in each rate category were determined. Ratios were calculated of each class's contribution for each statistic to the corresponding total. These ratios were used as cost allocation factors to allocate each unbundled component of the test year revenue requirement to the rate classes. These allocation factors are presented in Table 3-3 and the basis for their development are provided in the following sections.

Table 3-3: Electric Utility Allocation Factors

	Total System	Residential Service R1	Residential Non-City Service R1O	Residential Net Metering R1NM	Small General Service C1	Schools & Churches SC1	Large General Service C2	Large General Service Primary C2P	University of Louisiana U1 (Secondary)	University of Louisiana U1 (Primary)	Street Lighting L2	Private Security Lighting L3	Allocation Code
Energy Factors													
Total Energy Sales	2,010,412,000	796,117,854	15,720,588	3,788,442	241,670,221	56,669,547	731,482,709	84,287,579	19,937,181	47,544,000	9,355,715	3,838,165	
Total Energy Sales Factor	1.000	0.396	0.008	0.002	0.120	0.028	0.364	0.042	0.010	0.024	0.005	0.002	A.
Total Energy Requirement	2,092,000,000	829,202,427	16,373,894	3,945,880	251,713,402	59,024,585	761,881,214	86,537,555	20,765,718	48,813,142	9,744,514	3,997,669	
Total Energy Requirement Factor	1.000	0.396	0.008	0.002	0.120	0.028	0.364	0.041	0.010	0.023	0.005	0.002	B.
Demand Factors													
1-CP	371,376	166,045	3,279	626	35,913	13,210	127,885	14,528	3,486	6,405	-	-	
1-CP Factor	1.000	0.447	0.009	0.002	0.097	0.036	0.344	0.039	0.009	0.017	0.000	0.000	C.
1-NCP	483,562	189,285	3,738	1,217	57,459	56,141	142,555	16,195	3,885	9,950	2,224	913	
1-NCP Factor	1.000	0.391	0.008	0.003	0.119	0.116	0.295	0.033	0.008	0.021	0.005	0.002	D.
Primary NCP	470,990	184,363	3,641	1,186	55,966	54,681	138,849	15,774	3,784	9,692	2,167	889	
Primary NCP Factor	1.000	0.391	0.008	0.003	0.119	0.116	0.295	0.033	0.008	0.021	0.005	0.002	E.
Secondary NCP	439,238	181,762	3,589	1,169	55,176	53,909	136,889	N/A	3,731	N/A	2,136	876	
Secondary NCP Factor	1.000	0.414	0.008	0.003	0.126	0.123	0.312	0.000	0.008	0.000	0.005	0.002	F.
Customer and Other Factors													
Number of Customers	94,349	56,811	982	240	8,498	448	1,260	8	50	1	21,200	4,850	
Customer Factor	1.000	0.602	0.010	0.003	0.090	0.005	0.013	0.000	0.001	0.000	0.225	0.051	G.
Meter Reading - Relative Weight	0.0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	
Meter Reading - Weighted No. of Customers	68,299	56,811	982	240	8,498	448	1,260	8	50	1	-	-	
Meter Reading - Weighted Customer Factor	1.000	0.832	0.014	0.004	0.124	0.007	0.018	0.000	0.001	0.000	0.000	0.000	H.
Records & Billing - Relative Weight	0.0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.10	0.10	
Records & Billing - Weighted No. of Customers	70,904	56,811	982	240	8,498	448	1,260	8	50	1	2,120	485	
Records & Billing - Weighted Customer Factor	1.000	0.801	0.014	0.003	0.120	0.006	0.018	0.000	0.001	0.000	0.030	0.007	I.
Customer Services - Relative Weight	0.0	1.00	1.00	1.00	1.00	3.00	3.00	3.00	3.00	3.00	0.10	0.10	
Customer Services - Weighted No. of Customers	74,438	56,811	982	240	8,498	1,344	3,781	23	150	3	2,120	485	
Customer Services - Weighted Customer Factor	1.000	0.763	0.013	0.003	0.114	0.018	0.051	0.000	0.002	0.000	0.028	0.007	J.
Distribution Services - Relative Weight	0.0	1.00	1.00	0.00	1.80	1.80	3.40	0.00	3.40	0.00	0.00	0.00	
Distribution Services - Weighted No. of Customers	78,352	56,811	982	-	15,297	807	4,285	-	170	-	-	-	
Distribution Services - Weighted Customer Factor	1.000	0.725	0.013	0.000	0.195	0.010	0.055	0.000	0.002	0.000	0.000	0.000	K.
Lighting	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	
Lighting Factor	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	L.
Purchased Power - Capacity (Avg & 4CP)	275,603	114,938	2,270	534	31,072	6,842	99,235	11,272	2,705	5,952	556	228	
PP - Capacity Factor	1.000	0.417	0.008	0.002	0.113	0.025	0.360	0.041	0.010	0.022	0.002	0.001	M.
Lighting 2	1	-	-	-	-	-	-	-	-	-	1	0	
Lighting 2 Factor	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.800	0.200	N.
Rate Revenue	$ 174,501,374	$ 71,769,882	$ 1,487,740	$ 323,210	$ 24,558,479	$ 5,032,764	$ 58,824,356	$ 5,957,496	$ 1,522,818	$ 3,031,877	$ 1,323,744	$ 669,008	
Rate Revenue Factor	1.000	0.411	0.009	0.002	0.141	0.029	0.337	0.034	0.009	0.017	0.008	0.004	P.
Distribution Metering - Relative Weight	0.0	1.00	1.00	1.00	1.00	1.00	4.00	4.00	4.00	4.00	0.00	0.00	
Distribution Metering - Weighted No. of Customers	72,256	56,811	982	240	8,498	448	5,041	31	200	4	-	-	
Distribution Metering - Weighted Customer Factor	1.000	0.786	0.014	0.003	0.118	0.006	0.070	0.000	0.003	0.000	0.000	0.000	Q.
1PH/3PH Allocation Factors													
Single phase customers	100%	86%	2%	0%	7%	0%	0%	0%	0%	0%	3%	1%	R.
Three phase customers	100%	13%	0%	0%	62%	4%	20%	0%	1%	0%	0%	0%	S.
1PH/3PH Demand Secondary Demand Allocation													
Single Phase Secondary NCP	100%	72.45%	1.44%	0.47%	12.47%	10.66%	0.89%	0.00%	0.39%	0.00%	0.86%	0.35%	T.
Three Phase Secondary NCP	100%	1.32%	0.01%	0.00%	12.68%	14.36%	70.20%	0.00%	1.44%	0.00%	0.00%	0.00%	U.
Total Secondary NCP	100%	41.38%	0.82%	0.27%	12.56%	12.27%	31.17%	0.00%	0.85%	0.00%	0.49%	0.20%	
Transformer Costs													
Customer Cost ($)	$14,963,328	$11,443,856	$308,622	$75,427	$1,875,684	$163,294	$1,075,108	$0	$21,338	$0	$0	$0	
Customer Cost Weighting	1.000	0.765	0.021	0.005	0.125	0.011	0.072	0.000	0.001	0.000	0.000	0.000	W.
Demand Cost ($)	$30,668,300	$11,443,856	$308,622	$75,427	$7,502,736	$1,469,645	$9,675,976	$0	$192,039	$0	$0	$0	
Demand Cost Weighting	1.000	0.373	0.010	0.002	0.245	0.048	0.316	0.000	0.006	0.000	0.000	0.000	X.

3.1.6.1 Energy Allocation

An energy allocation factor was developed for use in the apportionment of all energy-related expenses. Based on the billing data provided, energy sales to each of LUS's rate classes were determined. The energy sales for each class were factored up to the system level. System losses were assumed to occur between three voltage levels, from power supply to transmission, from transmission voltage to primary distribution voltage, and from primary distribution voltage to secondary distribution voltage. For example, Residential customers incur losses across all three levels while Primary service customers only incurs losses across transmission and primary levels. The ratios of the resulting estimated contributions of each class to the total system energy requirements represented the energy allocation factor.

3.1.6.2 Demand Allocation

The determination of system demand contributions for each rate class was more complex than the development of the energy allocation factors. Burns & McDonnell compiled LUS customer class load data from LUS's meter data management system to develop composite load shapes for each customer class. Coincident peak demand, 4 coincident peak (4CP), average demand, and non-coincident peak (NCP) demand estimates for each of LUS's customer classes were calculated based on the load research data provided. Since the system peak occurs in the afternoon hours of the summer season, it was assumed that the Street Lighting and Private Security Lighting classes would have no load on the system at that time and therefore would not contribute to the system coincident peak.

For each class, maximum demands were calculated based on the load research factors. The load factors were applied to the corresponding test year energy sales for each class to determine the peak demands for each rate class. Ratios of each class's demand to the total for all classes were calculated. These ratios represented the factors to be used in allocating the system demand costs amongst the various classes.

Fixed generation capacity costs were allocated to the classes using an average and 4CP allocation factor since roughly 50 percent of LUS's generation fixed costs are base load resources while the remaining 50 percent is used to meet the summer peak demand. Backbone power delivery demand costs including local transmission, substations, and primary distribution demand were allocated using a coincident peak (CP) demand allocation factor. Secondary distribution demand costs were allocated using an NCP demand allocation factor.

3.1.6.3 Customer Allocation

Customer allocation factors were developed to allocate the costs of metering, records and billing, customer services, and distribution customer costs to the various rate classifications. Customer allocation

factors were based on relative weighting of the number of customers included in each rate class served by LUS. Relative weights were estimated to reflect differences in the effort required and the cost incurred to provide customer services to customers in the different rate classes.

Primary and secondary distribution customer costs were allocated based on the number of customers served at primary and secondary voltages. Services, O&M and plant costs were weighted on a per customer basis with larger customers receiving a higher weighting. In Addition, Metering costs were weighted on a per customer basis with larger customers receiving a higher weighting than Residential customers. Billing and Accounting customer allocation factors were weighted similar to the metering allocation factors such that larger customers like Large General Service were weighted heavier than the Residential class.

3.1.7 Cost of Service Summary

Each component item of the FY 2022 test year revenue requirement, which was classified and assigned to the various functional utility services, was allocated to the appropriate customer rate classifications using the corresponding allocation factors described previously. The allocated amounts were summarized for each rate class. The total amounts for each unbundled service within each component of the test year revenue requirement were carried forward from Table 3-2.

The results of the cost of service analysis and the allocation of the test year revenue requirement to the electric utility's rate classes are presented in Table 3-4. The results are broken out into energy-related costs, expressed in dollars per kWh; peak demand-related costs, expressed in both dollars per kW of system power supply billing demand per month; distribution-related costs, expressed in both dollars per kW of system power supply billing demand per month; and customer-related costs, expressed in dollars per customer per month. The total cost of service is expressed dollars per kWh.

Table 3-4 includes a revenue comparison that compares the net revenue requirement to the projected revenue that would be generated by current rates. This analysis indicates the extent to which the test year revenues generated from existing rates for each class would either exceed or fall short of the corresponding revenue requirement. The results show the current conditions of how revenues are generated in comparison to how costs are incurred among classes. For example, the Residential class is receiving a subsidy under current rates. Conversely, the Small General Service class is recovering more cost than it has been allocated, therefore, subsidizing the cost of some other classes.

Table 3-4: Electric Utility Cost of Service Summary

	Total System	Residential Service R1	Residential Non-City Service R1O	Residential Net Metering R1NM	Small General Service C1	Schools & Churches SC1	Large General Service C2	Large General Service Primary C2P	University of Louisiana U1 (Secondary)	University of Louisiana U1 (Primary)	Street Lighting L2	Private Security Lighting L3	Cost Category
Cost-of-Service Summary													
Average Consumers	94,349	56,811	982	240	8,498	448	1,260	8	50	1	21,200	4,850	
Energy Sales (kWh)	2,010,412,000	796,117,854	15,720,588	3,788,442	241,670,221	56,669,547	731,482,709	84,287,579	19,937,181	47,544,000	9,355,715	3,838,165	
Purchased Power and Generation Capacity	$40,441,090	$16,865,582	$333,037	$78,317	$4,559,432	$1,003,962	$14,561,381	$1,653,997	$396,883	$873,407	$81,611	$33,481	Power Supply Capacity Costs
Average Cost per kWh	$0.0201	$0.0212	$0.0212	$0.0207	$0.0189	$0.0177	$0.0199	$0.0196	$0.0199	$0.0184	$0.0087	$0.0087	
Purchased Power Energy	$71,650,457	$28,399,968	$560,802	$135,145	$8,621,119	$2,021,577	$26,094,234	$2,963,889	$711,220	$1,671,837	$333,747	$136,919	Power Supply Energy Costs
Average Cost per kWh	$0.0356	$0.0357	$0.0357	$0.0357	$0.0357	$0.0357	$0.0357	$0.0352	$0.0357	$0.0352	$0.0357	$0.0357	
Transmission Delivery	$9,400,646	$4,203,106	$82,997	$15,834	$909,078	$334,385	$3,237,151	$367,736	$88,231	$162,128	$0	$0	Distribution Costs
Average Cost per kWh	$0.0047	$0.0053	$0.0053	$0.0042	$0.0038	$0.0059	$0.0044	$0.0044	$0.0044	$0.0034	$0.0000	$0.0000	
Distribution Substation	$4,325,361	$1,933,904	$38,188	$7,286	$418,279	$153,855	$1,489,456	$169,200	$40,596	$74,597	$0	$0	Distribution Costs
Average Cost per kWh	$0.0022	$0.0024	$0.0024	$0.0019	$0.0017	$0.0027	$0.0020	$0.0020	$0.0020	$0.0016	$0.0000	$0.0000	
Distribution Backbone Demand (Primary)	$10,276,132	$4,594,543	$90,726	$17,309	$993,740	$365,527	$3,538,628	$401,983	$96,448	$177,227	$0	$0	Distribution Costs
Average Cost per kWh	$0.0051	$0.0058	$0.0058	$0.0046	$0.0041	$0.0065	$0.0048	$0.0048	$0.0048	$0.0037	$0.0000	$0.0000	
Distribution Backbone Customer (Primary)	$3,993,587	$3,047,896	$52,684	$12,876	$455,933	$72,129	$202,855	$1,247	$8,047	$161	$113,737	$26,020	Customer Costs
Average Cost per kWh	$0.0020	$0.0038	$0.0034	$0.0034	$0.0019	$0.0013	$0.0003	$0.0000	$0.0004	$0.0000	$0.0122	$0.0068	
Distribution Demand	$7,991,208	$4,255,846	$94,630	$27,826	$1,448,385	$641,981	$1,431,412	$0	$43,263	$0	$33,941	$13,924	Distribution Costs
Average Cost per kWh	$0.0040	$0.0053	$0.0060	$0.0073	$0.0060	$0.0113	$0.0020	$0.0000	$0.0022	$0.0000	$0.0036	$0.0036	
Distribution Customer	$4,755,947	$3,679,281	$77,466	$15,599	$647,818	$42,042	$220,250	$167	$6,137	$21	$54,660	$12,505	Customer Costs
Average Cost per kWh	$0.0024	$0.0046	$0.0049	$0.0041	$0.0027	$0.0007	$0.0003	$0.0000	$0.0003	$0.0000	$0.0058	$0.0033	
Distribution Metering	$3,683,968	$2,896,508	$50,067	$12,236	$433,287	$22,849	$257,040	$1,581	$10,197	$204	$0	$0	Customer Costs
Average Cost per kWh	$0.0018	$0.0036	$0.0032	$0.0032	$0.0018	$0.0004	$0.0004	$0.0000	$0.0005	$0.0000	$0.0000	$0.0000	
Meter Reading	$568,100	$472,547	$8,168	$1,996	$70,688	$3,728	$10,484	$64	$416	$8	$0	$0	Customer Costs
Average Cost per kWh	$0.0003	$0.0006	$0.0005	$0.0005	$0.0003	$0.0001	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	
Records & Billing	$2,346,516	$1,880,129	$32,499	$7,943	$281,248	$14,831	$41,711	$256	$1,655	$33	$70,160	$16,051	Customer Costs
Average Cost per kWh	$0.0012	$0.0024	$0.0021	$0.0021	$0.0012	$0.0003	$0.0001	$0.0000	$0.0001	$0.0000	$0.0075	$0.0042	
Customer Services	$23,133	$17,655	$305	$75	$2,641	$418	$1,175	$7	$47	$1	$659	$151	Customer Costs
Average Cost per kWh	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0001	$0.0000	
Lighting	$1,074,556	$0	$0	$0	$0	$0	$0	$0	$0	$0	$960,684	$113,873	Customer Costs
Average Cost per kWh	$0.0005	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.1027	$0.0297	
Revenue	$13,970,676	$5,537,533	$109,347	$26,351	$1,680,978	$394,175	$5,087,952	$577,910	$138,676	$325,981	$65,075	$26,697	Power Supply Energy Costs
Average Cost per kWh	$0.0069	$0.0070	$0.0070	$0.0070	$0.0070	$0.0070	$0.0070	$0.0069	$0.0070	$0.0069	$0.0070	$0.0070	
Total	$174,501,374	$77,784,498	$1,530,917	$358,793	$20,522,624	$5,071,458	$56,173,728	$6,138,038	$1,541,817	$3,285,606	$1,714,275	$379,620	
Monthly Cost Per Consumer	$154.13	$114.10	$129.91	$124.58	$201.24	$943.04	$3,714.11	$66,000.41	$2,569.70	$273,800.46	$6.74	$6.52	
Average Cost per kWh	$0.0868	$0.0977	$0.0974	$0.0947	$0.0849	$0.0895	$0.0768	$0.0728	$0.0773	$0.0691	$0.1832	$0.0989	
Power Supply Capacity Costs	$40,441,090	$16,865,582	$333,037	$78,317	$4,559,432	$1,003,962	$14,561,381	$1,653,997	$396,883	$873,407	$81,611	$33,481	
Monthly Cost Per Consumer	$35.72	$24.74	$28.26	$27.19	$44.71	$186.69	$962.77	$17,784.91	$661.47	$72,783.91	$0.32	$0.58	
Average Cost per kWh	$0.0201	$0.0212	$0.0212	$0.0207	$0.0189	$0.0177	$0.0199	$0.0196	$0.0199	$0.0184	$0.0087	$0.0087	
Power Supply Energy Costs	$71,650,457	$28,399,968	$560,802	$135,145	$8,621,119	$2,021,577	$26,094,234	$2,963,889	$711,220	$1,671,837	$333,747	$136,919	
Monthly Cost Per Consumer	$63.29	$41.66	$47.59	$46.93	$84.54	$375.91	$1,725.30	$31,869.77	$1,185.37	$139,319.79	$1.31	$2.35	
Average Cost per kWh	$0.0356	$0.0357	$0.0357	$0.0357	$0.0357	$0.0357	$0.0357	$0.0352	$0.0357	$0.0352	$0.0357	$0.0357	
Distribution Costs	$31,993,346	$14,987,399	$306,542	$68,254	$3,769,481	$1,495,748	$9,696,647	$938,919	$268,539	$413,952	$33,941	$13,924	
Monthly Cost Per Consumer	$28.26	$21.98	$26.01	$23.70	$36.96	$278.14	$641.12	$10,095.90	$447.56	$34,495.99	$0.13	$0.24	
Average Cost per kWh	$0.0159	$0.0188	$0.0195	$0.0180	$0.0156	$0.0264	$0.0133	$0.0111	$0.0135	$0.0087	$0.0036	$0.0036	
Customer Costs	$16,445,806	$11,994,016	$221,189	$50,725	$1,891,615	$155,996	$733,515	$3,324	$26,499	$428	$1,199,901	$168,599	
Monthly Cost Per Consumer	$14.53	$17.59	$18.77	$17.61	$18.55	$29.01	$48.50	$35.74	$44.17	$35.68	$4.72	$2.90	
Average Cost per kWh	$0.0082	$0.0151	$0.0141	$0.0134	$0.0078	$0.0028	$0.0010	$0.0000	$0.0013	$0.0000	$0.1283	$0.0439	
Revenue Comparison													
Revenue Requirement	$174,501,374	$77,784,498	$1,530,917	$358,793	$20,522,624	$5,071,458	$56,173,728	$6,138,038	$1,541,817	$3,285,606	$1,714,275	$379,620	
Revenue from Current Rates	$174,501,374	$71,769,882	$1,487,740	$323,210	$24,558,479	$5,032,764	$58,824,356	$5,957,496	$1,522,818	$3,031,877	$1,323,744	$669,008	
Difference	$0	$6,014,615	$43,177	$35,583	-$4,035,854	$38,694	-$2,650,628	$180,543	$18,999	$253,728	$390,531	-$289,387	
Required Adjustment	0.0%	8.4%	2.9%	11.0%	-16.4%	0.8%	-4.5%	3.0%	1.2%	8.4%	29.5%	-43.3%	
Rev. Requirement - $/kWh	$0.0868	$0.0977	$0.0974	$0.0947	$0.0849	$0.0895	$0.0768	$0.0728	$0.0773	$0.0691	$0.1832	$0.0989	
Rev. from Current Rates	$0.0868	$0.0901	$0.0946	$0.0853	$0.1016	$0.0888	$0.0804	$0.0707	$0.0764	$0.0638	$0.1415	$0.1743	
Difference	$0.0000	$0.0076	$0.0027	$0.0094	($0.0167)	$0.0007	($0.0036)	$0.0021	$0.0010	$0.0053	$0.0417	($0.0754)	
Required Adjustment	0.0%	8.4%	2.9%	11.0%	-16.4%	0.8%	-4.5%	3.0%	1.2%	8.4%	29.5%	-43.3%	
Revenue Comparison (Excluding Fuel)													
Revenue Requirement Exluding Fuel	$102,850,917	$49,384,530	$970,115	$223,648	$11,901,506	$3,049,881	$30,079,495	$3,174,150	$830,597	$1,613,768	$1,380,528	$242,701	
Revenue from Current Rates Excluding Fuel	$102,850,917	$43,369,914	$926,938	$188,065	$15,937,360	$3,011,187	$32,730,122	$2,993,607	$811,598	$1,360,040	$989,997	$532,089	
Difference	$0	$6,014,615	$43,177	$35,583	-$4,035,854	$38,694	-$2,650,628	$180,543	$18,999	$253,728	$390,531	-$289,387	
Required Adjustment	0.0%	13.9%	4.7%	18.9%	-25.3%	1.3%	-8.1%	6.0%	2.3%	18.7%	39.4%	-54.4%	
Rev. Requirement - $/kWh	$0.0512	$0.0620	$0.0617	$0.0590	$0.0492	$0.0538	$0.0411	$0.0377	$0.0417	$0.0339	$0.1476	$0.0632	
Rev. from Current Rates	$0.0512	$0.0545	$0.0590	$0.0496	$0.0659	$0.0531	$0.0447	$0.0355	$0.0407	$0.0286	$0.1058	$0.1386	
Difference	$0.0000	$0.0076	$0.0027	$0.0094	($0.0167)	$0.0007	($0.0036)	$0.0021	$0.0010	$0.0053	$0.0417	($0.0754)	
Required Adjustment	0.0%	13.9%	4.7%	18.9%	-25.3%	1.3%	-8.1%	6.0%	2.3%	18.7%	39.4%	-54.4%	

3.2 Retail Rate Design

The third and final phase of the Study completed for the electric utility was the rate analysis. The cost of service analysis described in this report served as one input into the rate analysis and rate recommendations. Input from LUS was also taken into consideration in the development of the recommendations. As presented earlier in this report, the rates proposed in this Study are developed to provide increased base rate revenues of 3.0 percent in FY 2023 and 3.0 percent in FY 2024. The rate recommendations submitted to LUS for consideration and adoption were developed to continue to meet the following electric utility rate criteria for service provided by municipally owned utilities:

- Rates should provide revenue stability for the utility.
- Rates should be simple and understandable.
- Rates should provide for a reasonable relationship to the cost of providing service.
- Rates should be designed to encourage the efficient use of power.

3.2.1 Existing Rates

Customers are charged based on their service application, overall monthly kWh energy consumption, and/or kW demand characteristics. Residential, Small General Service, and Schools and Churches classes are billed a monthly customer charge on a dollar per month basis for electric service and on a dollar per kWh rate for energy usage. Non-city customers base rates are 10.0 percent higher than inside City rates. Net Metering customers are charged the same as other customers. Large General Service (LGS) Primary and Secondary classes are billed a monthly demand charge on a dollar per kW basis and on a dollar per kWh rate for energy usage. They are also billed a monthly customer charge on a dollar per month basis. LGS primary customers receive a $0.50 per kW discount. The University is billed a discounted monthly demand charge on a dollar per kW basis and on a dollar per kWh rate for energy usage. The University is also billed a monthly customer charge on a dollar per month basis for each meter. All customer classes are billed a monthly fuel rate which is based on LUS's actual fuel cost and is adjusted on a routine basis as fuel and purchased power cost fluctuate.

3.2.2 Proposed Rates

The proposed changes to the existing rate classes use the same structure as the existing rates but aims to recover more revenue through the residential customer class as per the cost of service results. The proposed rates were adjusted to also generate more fixed charge revenues which was also in line with the cost of service study results. The proposed rates are presented in Table 3-5. The key rate design issues pertinent to each rate class are summarized in the following subsections.

Table 3-5: Electric Utility Existing and Proposed Rates

Rate Class Description	Charge	Existing Rates 2022	Proposed Rates 2023	Proposed Rates 2024
		$	$	$
Residential Service R1	All kWh per kWh	0.04764	0.04921	0.05093
	Customer Charge	8.00	10.00	12.00
	Fuel Rate per kWh	0.04300	0.04300	0.04300
Residential Net Metering R1NM	All kWh per kWh	0.04764	0.04921	0.05093
	Customer Charge	8.00	10.00	12.00
	Fuel Rate per kWh	0.04300	0.04300	0.04300
Residential Time of Use Rate Pilot (New)	Customer Charge	8.00	10.00	12.00
	Summer Off-peak	0.02040	0.02107	0.02181
	Summer On-peak	0.04080	0.04215	0.04362
	Summer Super-peak	0.12240	0.12644	0.13086
	Winter Off-peak	0.02040	0.02107	0.02181
	Winter On-peak	0.04080	0.04215	0.04362
	Winter Super-peak	N/A	N/A	N/A
	Fuel Rate per kWh	0.04300	0.04300	0.04300
Small General Service C1	All kWh per kWh	0.06176	0.06157	0.06157
	Demand Chg (per kW)	-	-	-
	Customer Charge	10.00	12.00	14.00
	Fuel Rate per kWh	0.04300	0.04300	0.04300
Schools & Churches SC1	All kWh per kWh	0.05222	0.05483	0.05757
	Demand Chg (per kW)	-	-	-
	Customer Charge	10.00	12.00	14.00
	Fuel Rate per kWh	0.04300	0.04300	0.04300
Large General Service C2	All kWh per kWh	0.02098	0.02119	0.02140
	Demand Chg (per kW)	8.50	8.60	8.70
	Customer Charge	50.00	50.00	50.00
	Fuel Rate per kWh	0.04300	0.04300	0.04300
Large General Service Primary C2P	All kWh per kWh	0.02098	0.02087	0.02108
	Demand Chg (per kW)	8.00	7.60	7.70
	Customer Charge	50.00	50.00	50.00
	Fuel Rate per kWh	0.04300	0.04236	0.04236
University of Louisiana U1 (Secondary)	All kWh per kWh	0.02112	0.02119	0.02140
	Demand Chg (per kW)	4.28	6.88	6.96
	Customer Charge	50.00	50.00	50.00
	Fuel Rate per kWh	0.04300	0.04300	0.04300
University of Louisiana U1 (Primary)	All kWh per kWh	0.02112	0.02087	0.02108
	Demand Chg (per kW)	4.28	5.88	5.96
	Customer Charge	50.00	50.00	50.00
	Fuel Rate per kWh	0.04300	0.04236	0.04236
Transmission Service (New)	All kWh per kWh	N/A	0.02055	0.02076
	Demand Chg (per kW)	N/A	2.00	2.02
	Customer Charge	N/A	50.00	50.00
	Fuel Rate per kWh	N/A	0.04171	0.04171

[1] Non-city customers' existing and proposed rates have a 10 percent adder to base rates. The 10 percent adder does not apply to the fuel rate for non-city customers.

3.2.2.1 Residential

The cost-of-service indicated that the Residential class has been subsidized by the other classes by nearly 14.0 percent. The existing 14.0 percent under recovery combined with 3.0 percent base rate increases in FY 2023 and FY 2024 results in an overall under recovery of nearly 20.0 percent. To work towards cost of service gradually, the Residential base rate charges (non-fuel) are proposed to increase by only 6.0 percent in FY 2023 and 6.0 percent in FY 2024. When combined with the fuel charges, the overall average bill increase would be 3.4 percent in FY 2023 and 3.4 percent in FY 2024. This increase would be achieved by gradually increasing the customer charge and energy rate.

3.2.2.2 Residential Net Metering

Like the Residential class, the Residential Net Metering class is under recovering its costs. The proposed rate changes to the Residential class are proposed to the existing Residential Net Metering customers as well, resulting in similar levels of bill changes on a percentage basis. Additionally, the existing Residential Net Metering rate would be limited to only the existing 240 customers beginning November 1, 2022. All future solar customers are proposed to be placed on to a TOU rate described in this report.

3.2.2.3 Residential Time of Use Pilot

LUS is planning to deploy TOU rates under a pilot program. The TOU rates are designed to be revenue neutral to the existing rates and would be increased similarly to the default Residential rates. The new rates would be available in FY 2023 and customers would be required to remain on those rates for 12 months. Additional details regarding the design of the TOU rates are provided later in this report.

3.2.2.4 Small General Service

The cost of service indicated that the Small General Service class is over recovering. To work towards cost of service gradually, the Small General Service base rate charges (non-fuel) are proposed to increase by only 1.0 percent in FY 2023 and 1.0 percent in FY 2024. When combined with the fuel charges, the overall bill increase would be 0.6 percent in FY 2023 and 0.8 percent in FY 2024. This increase would be achieved by increasing the customer charge.

3.2.2.5 Small General Service Net Metering

The existing Small General Service Net Metering rate structure would be the same rates proposed for the Small General service class.

3.2.2.6 Schools and Churches

LUS desires to gradually remove end use rates from its existing tariff like most electric utilities in the United States. The base rates proposed will gradually increase to move the existing customers towards the Small General Service class rates over the next three years. Beginning in FY 2025 the existing Schools

and Churches customers would be placed in the Small General Service rate class. The average total bill will increase by approximately 3.3 percent per year assuming the fuel rate and charges remains constant.

3.2.2.7 Large General Service

The cost of service indicated that the Large General Service class is over recovering. To work towards cost of service gradually, the Large General Service base rate charges (non-fuel) are proposed to increase by only 1.0 percent in FY 2023 and 1.0 percent in FY 2024. When combined with the fuel charges, the overall bill increase would be 0.5 percent in FY 2023 and 0.5 percent in FY 2024. This increase would be achieved by increasing the demand and energy charges while holding the customer charge fixed. The same rates proposed for this class would apply to existing and future customers with solar.

3.2.2.8 Large General Service Primary

The Large General Service Primary rates are based on the Large General Service Secondary rates and are proposed to have similar levels of increases to the demand charge and energy charge. However, the cost-of-service analysis indicated that the demand discount provided to the primary customers should change from $0.50/kW per month to $1.00/kW per month. Additionally, the primary customers should also receive a 1.5 percent discount on both base rate energy charges since they are metered on the high side of the transformer they own and therefore do not incur those losses like secondary customers. The adjustment to the demand charge and energy charge discounts are proposed for FY 2023.

3.2.2.9 University of Louisiana

The University of Louisiana is under a long-term agreement with LUS that is set to expire within the next year. The Study proposes that the University's future rates move closer to those proposed for the LGS Secondary and LGS Primary classes and that the same primary discounts for demand and energy be applied to University load at a minimum. The Study assumed that LUS would offer the University LGS Secondary and Primary demand rates resulting in a total cost increase to the University of approximately 7 percent. The final proposed rate will be agreed upon between LUS, the City, and the University.

3.2.3 Typical Bills

The following tables present the changes in electric bills over the next three years for the customer classes at common usage amounts, assuming all proposed rates are implemented through 2024. The typical bills presented assume that LUS's fuel remains flat at $0.0430 for illustrative purposes however it is subject to change based on LUS's cost of fuel and energy. Typical University Bills are not included to maintain customer billing data confidentiality.

Table 3-6: Electric Utility Typical Residential Bills Under Existing and Proposed Rates

Typical Residential Service R1

Usage	2022 Existing Rates	2023 Proposed Rates	2023 Dollar Change	2023 Percent Change	2024 Proposed Rates	2024 Dollar Change	2024 Percent Change
kWh	($)	($)	($)	(%)	($)	($)	(%)
600	$ 62.38	$ 65.33	$ 2.94	4.7%	$ 68.36	$ 3.03	4.6%
900	$ 89.58	$ 92.99	$ 3.41	3.8%	$ 96.54	$ 3.55	3.8%
1,168	**$ 113.85**	**$ 117.68**	**$ 3.84**	**3.4%**	**$ 121.70**	**$ 4.01**	**3.4%**
1,500	$ 143.96	$ 148.32	$ 4.36	3.0%	$ 152.90	$ 4.58	3.1%
1,800	$ 171.15	$ 175.98	$ 4.83	2.8%	$ 181.08	$ 5.10	2.9%

Typical Residential Non-City Service R1O

Usage	2022 Existing Rates	2023 Proposed Rates	2023 Dollar Change	2023 Percent Change	2024 Proposed Rates	2024 Dollar Change	2024 Percent Change
kWh	($)	($)	($)	(%)	($)	($)	(%)
700	$ 75.58	$ 78.99	$ 3.41	4.5%	$ 82.52	$ 3.53	4.5%
1,000	$ 104.20	$ 108.13	$ 3.93	3.8%	$ 112.23	$ 4.09	3.8%
1,334	**$ 136.07**	**$ 140.58**	**$ 4.51**	**3.3%**	**$ 145.31**	**$ 4.73**	**3.4%**
1,700	$ 170.98	$ 176.13	$ 5.15	3.0%	$ 181.55	$ 5.42	3.1%
2,000	$ 199.60	$ 205.27	$ 5.67	2.8%	$ 211.26	$ 5.99	2.9%

Typical Residential Net Metering R1NM

Usage	2022 Existing Rates	2023 Proposed Rates	2023 Dollar Change	2023 Percent Change	2024 Proposed Rates	2024 Dollar Change	2024 Percent Change
kWh	($)	($)	($)	(%)	($)	($)	(%)
700	$ 71.45	$ 74.55	$ 3.10	4.3%	$ 77.75	$ 3.21	4.3%
1,000	$ 98.64	$ 102.21	$ 3.57	3.6%	$ 105.93	$ 3.72	3.6%
1,315	**$ 127.23**	**$ 131.30**	**$ 4.07**	**3.2%**	**$ 135.56**	**$ 4.27**	**3.2%**
1,600	$ 153.02	$ 157.54	$ 4.52	3.0%	$ 162.30	$ 4.76	3.0%
2,000	$ 189.28	$ 194.42	$ 5.14	2.7%	$ 199.87	$ 5.44	2.8%

Table 3-7: Electric Utility Typical Commercial Bills Under Existing and Proposed Rates

Typical Small General Service C1

Usage	2022 Existing Rates	2023 Proposed Rates	2023 Dollar Change	2023 Percent Change	2024 Proposed Rates	2024 Dollar Change	2024 Percent Change
kWh	($)	($)	($)	(%)	($)	($)	(%)
1,800	$ 198.57	$ 200.23	$ 1.67	0.8%	$ 202.23	$ 2.00	1.0%
2,370	**$ 258.26**	**$ 259.82**	**$ 1.56**	**0.6%**	**$ 261.82**	**$ 2.00**	**0.8%**
3,000	$ 324.28	$ 325.72	$ 1.44	0.4%	$ 327.72	$ 2.00	0.6%

Typical Schools & Churches SC1

Usage	2022 Existing Rates	2023 Proposed Rates	2023 Dollar Change	2023 Percent Change	2024 Proposed Rates	2024 Dollar Change	2024 Percent Change
kWh	($)	($)	($)	(%)	($)	($)	(%)
7,900	$ 762.24	$ 784.86	$ 22.63	3.0%	$ 808.52	$ 23.66	3.0%
10,537	**$ 1,013.36**	**$ 1,042.87**	**$ 29.51**	**2.9%**	**$ 1,073.76**	**$ 30.89**	**3.0%**
13,200	$ 1,266.90	$ 1,303.37	$ 36.47	2.9%	$ 1,341.56	$ 38.19	2.9%

Typical Large General Service C2

Usage	Demand	kW Load Factor	2022 Existing Rates	2023 Proposed Rates	2023 Dollar Change	2023 Percent Change	2024 Proposed Rates	2024 Dollar Change	2024 Percent Change
kWh	kW	(%)	($)	($)	($)	(%)	($)	($)	(%)
48,366	**161**	**41%**	**$ 4,513**	**$ 4,539**	**$ 26**	**0.6%**	**$ 4,566**	**$ 26**	**0.6%**
48,366	**130**	**51%**	**$ 4,245**	**$ 4,269**	**$ 23**	**0.5%**	**$ 4,292**	**$ 23**	**0.5%**
48,366	**108**	**61%**	**$ 4,065**	**$ 4,086**	**$ 21**	**0.5%**	**$ 4,107**	**$ 21**	**0.5%**

Typical Large General Service Primary C2P

Usage	Demand	kW Load Factor	2022 Existing Rates	2023 Proposed Rates	2023 Dollar Change	2023 Percent Change	2024 Proposed Rates	2024 Dollar Change	2024 Percent Change
kWh	kW	(%)	($)	($)	($)	(%)	($)	($)	(%)
906,318	**1,819**	**68%**	**$ 72,589**	**$ 71,179**	**$ (1,410)**	**-1.9%**	**$ 71,550**	**$ 371**	**0.5%**
906,318	**1,587**	**78%**	**$ 70,730**	**$ 69,412**	**$ (1,317)**	**-1.9%**	**$ 69,760**	**$ 348**	**0.5%**
906,318	**1,407**	**88%**	**$ 69,291**	**$ 68,046**	**$ (1,245)**	**-1.8%**	**$ 68,376**	**$ 330**	**0.5%**

3.2.4 Alternative Retail Rate Design Issues

Within this rate study, Burns & McDonnell developed alternative retail rate designs for LUS to address new customer types and new rate offerings.

3.2.5 Time of Use Rates

LUS has recently installed and deployed a new advanced metering infrastructure (AMI) system, meter data management (MDM) system, and advanced customer information system (CIS). These systems enable LUS to collect hourly energy use for every customer and bill those customers using TOU rates. All LUS customers can observe their hourly energy usage and can make informed decision on their behavior and energy use. LUS desires to implement new TOU rates for its customers on a limited basis within a pilot program before offering it to all customers. The TOU rate pilot program would be offered on an opt-in basis and initially be limited to the first 500 customers that sign up. By implementing TOU rates customers will be able to save money by making changes to their usage behavior.

Within this rate design analysis, Burns & McDonnell considered various TOU rate design structures that reflected good rate making design principals. LUS also desired to consider and address other important issues including supporting cost-effective space heating and other non-summer use, cost effective electric vehicle (EV) charging, equitable cost recovery from distributed generation and other low use customers, and its new metering and billing. Table 3-8 represents the qualitative assessment of various rate design principals and issues that led to the recommendation of implementing a new TOU energy rate for LUS. Based on the assessment, LUS and Burn & McDonnell recommend implementing a simple seasonal TOU energy rate for its pilot TOU program and consider including a demand rate in the future.

Table 3-8: Time of Use Rate Design Qualitative Analysis

Bonbright Rate Design Principals	Flat Energy Charge	Declining Block Rate	Inclining Block Rate	Demand Rate	Seasonal TOU Energy Rate	Seasonal TOU Energy + Demand Rate	Dynamic Rates (VPP / CPP/ PTR)	Real Time Pricing Rate
Promote Equitable Rate Recovery	NEGATIVE	NEGATIVE	NEGATIVE	POSITIVE	POSITIVE	POSITIVE	NEUTRAL	NEUTRAL
Provide Revenue Stability and Sufficiency	NEUTRAL	NEUTRAL	NEGATIVE	POSITIVE	NEUTRAL	POSITIVE	NEUTRAL	NEUTRAL
Promote Economic Efficiency in Rate Design	NEGATIVE	NEGATIVE	NEGATIVE	POSITIVE	POSITIVE	POSITIVE	POSITIVE	POSITIVE
Promote Peak Load Reduction and Load Shifting	NEGATIVE	NEGATIVE	NEGATIVE	POSITIVE	POSITIVE	POSITIVE	POSITIVE	POSITIVE
Support Efficient Use of Energy	NEUTRAL	NEUTRAL	NEUTRAL	POSITIVE	NEUTRAL	POSITIVE	NEUTRAL	NEUTRAL
Provide Customer Value & Satisfaction	NEGATIVE	NEGATIVE	POSITIVE	POSITIVE	POSITIVE	POSITIVE	POSITIVE	POSITIVE
Provide Rate & Bill Simplicity	POSITIVE	POSITIVE	POSITIVE	POSITIVE	POSITIVE	POSITIVE	NEGATIVE	NEGATIVE

Other Utility Rate Design Goals	Flat Energy Charge	Declining Block Rate	Inclining Block Rate	Demand Rate	TOU Energy Rate	TOU Energy + Demand Rate	Dynamic Rates (VPP / CPP/ PTR)	Real Time Pricing Rate
Support Cost Effective Electric Space Heating (SH) and Other Non-Summer Use	NEGATIVE	POSITIVE	NEUTRAL	POSITIVE	NEUTRAL	POSITIVE	NEUTRAL	NEUTRAL
Support Cost Effective Electric Vehicle (EV) Charging and Other Off-Peak Use	NEGATIVE	NEGATIVE	NEGATIVE	POSITIVE	POSITIVE	POSITIVE	NEUTRAL	NEUTRAL
Support Equitable Cost Recovery From Distributed Generation (DG) and Other Low Use	NEGATIVE	NEGATIVE	NEGATIVE	POSITIVE	POSITIVE	POSITIVE	NEUTRAL	NEUTRAL
Metering and Billing Capability	POSITIVE	POSITIVE	POSITIVE	POSITIVE	POSITIVE	NEUTRAL	NEGATIVE	NEGATIVE

Burns & McDonnell evaluated LUS's existing system loads and underlying cost structure to develop a seasonal 3-part TOU energy rate option. LUS's system and Residential customers peak between 2 pm and 7 pm in the summer which is defined as May 1st through October 31st in this Study. These late summer afternoon peaks are what the system generation and transmission infrastructure are built to support. The system load during the late-night hours in both the summer and winter reduces significantly and can drop down to nearly 33 percent of the system peak. The base load infrastructure supports this load and is inexpensive for LUS to serve. The system load shape and typical residential load shapes by season are presented in Figure 3-1 and Figure 3-2.

Figure 3-1: LUS System Annual Hourly Load Shape 2019

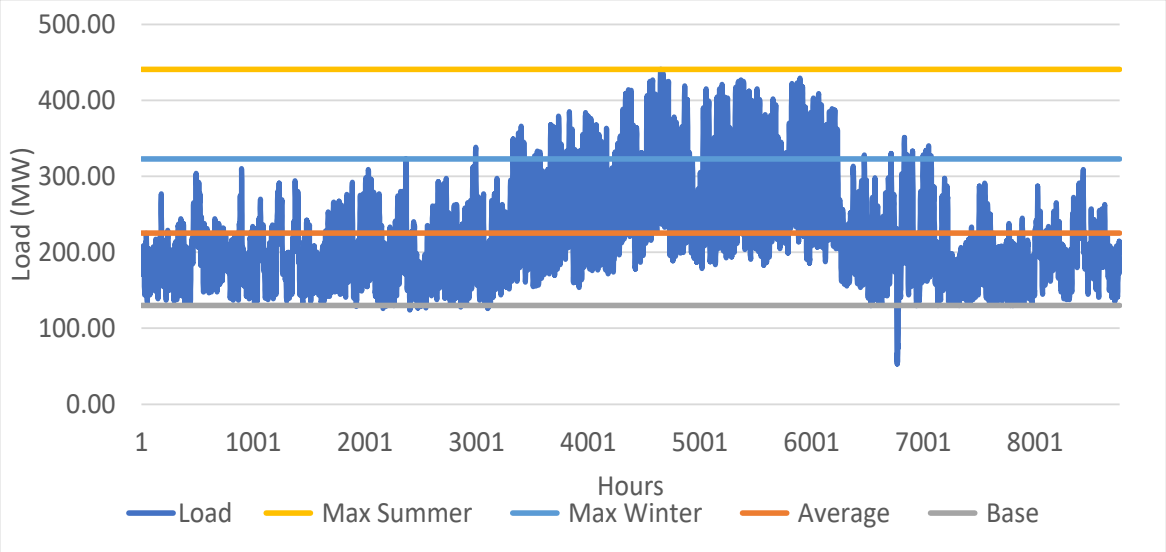
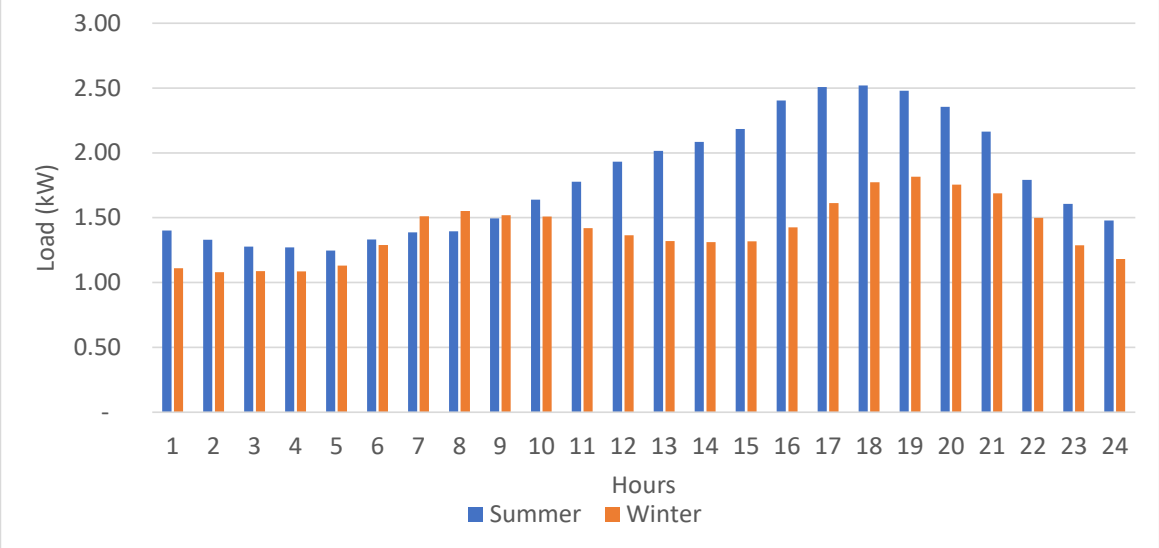
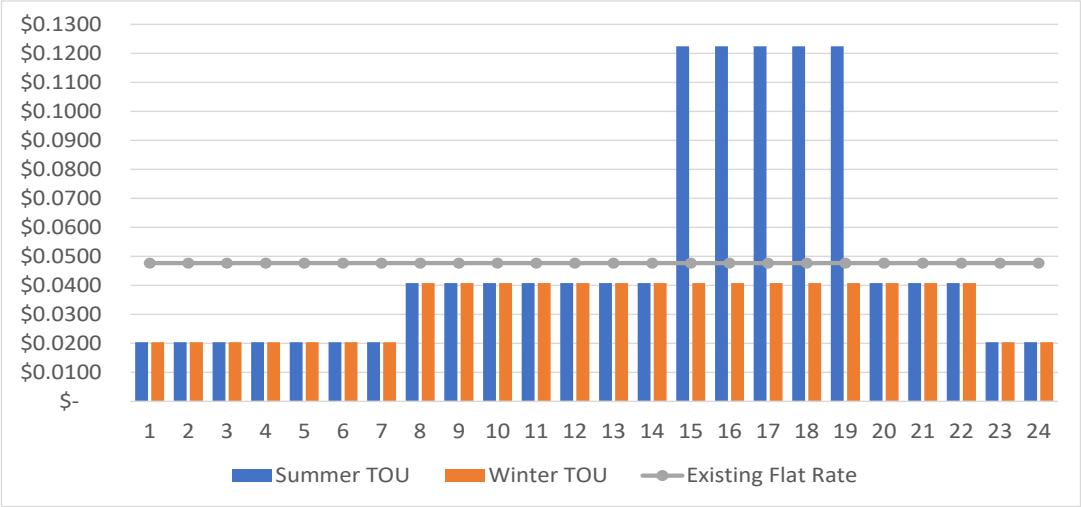


Figure 3-2: LUS Residential Typical Daily Load Shape by Season 2019



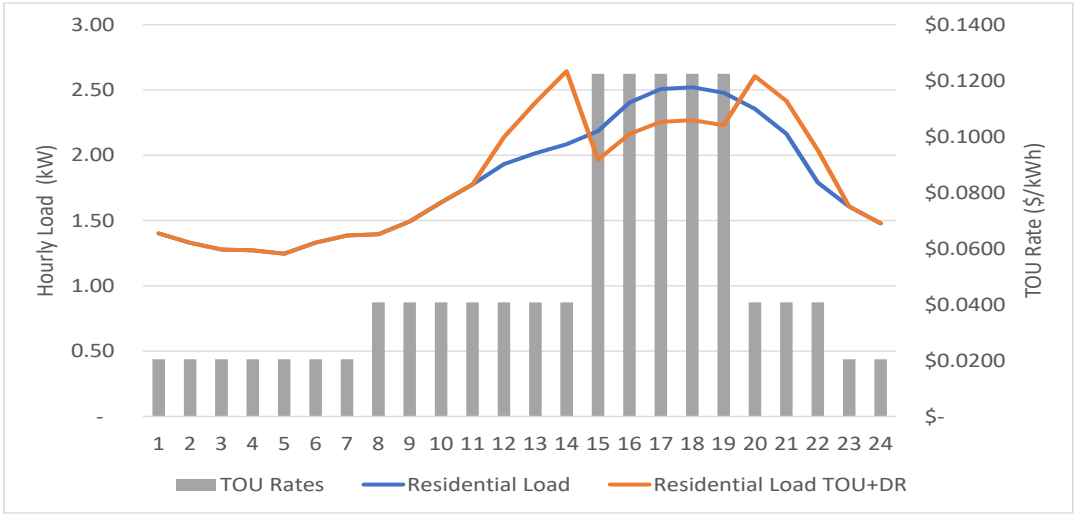
Burns & McDonnell developed an optional 3-part TOU energy rate that is revenue and bill neutral to the existing flat base rates for the average LUS Residential load shape. Since LUS is a summer peaking utility and builds its peaking generation to serve the peak load during the summer afternoon hours, a super peak rate (2-7 pm) was set to recover the peak generation, average generation, and distribution costs. The on-peak rate (8 am - 2 pm and 7 pm – 10 pm) was set to recover, average generation and distribution costs, and is nearly the same as the non-TOU energy rate. The off-peak rate (10 pm – 8 am) is set to recover distribution costs only. A similar approach was used for the non-summer months, but a super-peak rate was not used. The proposed TOU rates are compared to the existing base rate in Figure 3-3. Customers with a 3:1 super peak to on peak ratio are estimated to shift and save as presented in Figure 3-4.

Figure 3-3: TOU Electric Rates and Existing Flat Rates



[1] Summer is defined as May 1st through October 31st. All other months are non-summer or winter.

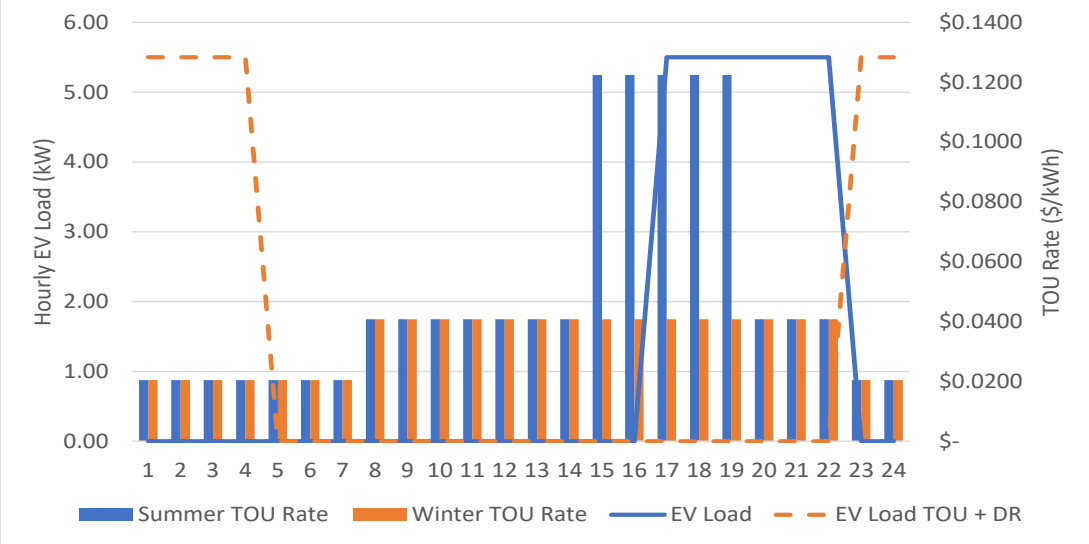
Figure 3-4: TOU Electric Rates and Estimated Summer Demand Response



3.2.6 Electric Vehicle Rates

LUS is interested in offering electric rates that can be used by its Residential customers for low-cost off-peak EV charging. Most utilities across the United States are developing TOU rates or EV TOU rates that can be used by customers who own EVs. TOU rates can provide customers a cost-effective solution for off-peak charging and reflect the utility's hourly cost of service. TOU rates encourage EV charging that occurs off-peak which can also help the utility avoid system upgrades due to customers charging when they return home in the late afternoon during the on-peak hours. LUS customers who own EVs and now have access to usage data through their utility portal are expected to adopt TOU rates so long as LUS markets these rates as beneficial to EV owners. Those EV owners using TOU rates are expected to shift between 80 and 100 percent of their EV charging from the super peak time period to off peak by delaying the charging of their EVs with onboard timers. This study recommends that the pilot TOU rate be offered and marketed to EV drivers and that a specific EV TOU rate not be promoted at this time. Based on the TOU rates developed and proposed in this Study, EV owners driving 15,000 miles per year would save nearly $120 per year by switching to the proposed TOU rates and charging between 10 pm and 8 am. A graphical representation of the TOU rates and estimated EV demand response is presented in Figure 3-5.

Figure 3-5: TOU Rates and EV Demand Response



3.2.7 Distributed Generation Rates

LUS is interested in adopting a reasonable approach for recovering costs from customers that own solar and energy storage. Many states with high penetrations of solar have deployed TOU electric rates to more fairly value the solar energy generated. In the State of Louisiana, there is regulatory precedence for charging and crediting customers with distributed generation systems like solar and energy storage at

different rates for future customers. The existing 240 customers who have solar must be grandfathered on the legacy Residential net metering rate structure. This Study developed TOU rates that can potentially reward customers with distributed generation (DG) depending on when the solar energy is used to offset future customers' use. Burns & McDonnell compiled load profiles and modeled south facing rooftop solar to build a representative solar customer. The average LUS customer deploying solar would see a bill reduction of approximately 6.0 percent by switching from the flat rate to the TOU rate. The summer TOU rate design includes an on-peak (8 am to 2 pm) rate that is slightly lower than the flat rate while the super peak rate (2 pm – 7 pm) is roughly 3 times the price as the flat rate. This rate structure will provide equitable benefits to customers that help LUS generate solar energy during the peak afternoon hours and reduce LUS's system peak. The proposed TOU rates and typical Residential solar net load shapes are presented in the following figures.

Figure 3-6: Summer TOU Rates and Residential Solar Net Load

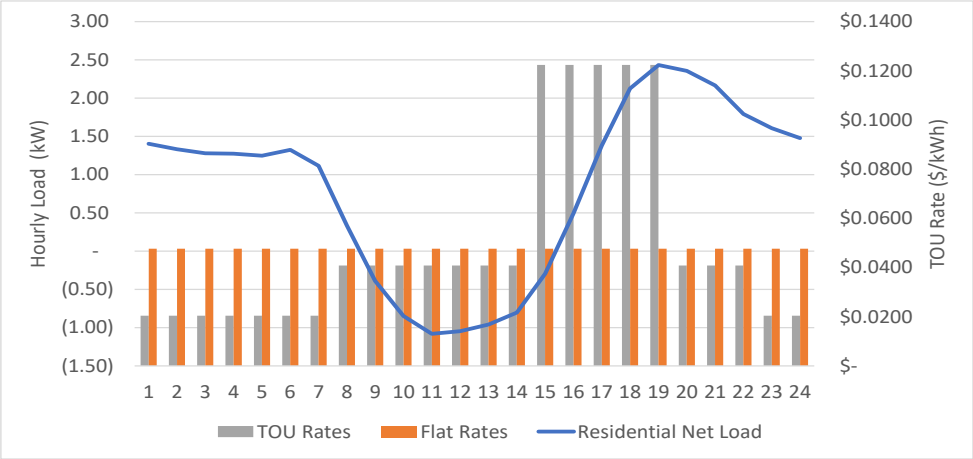
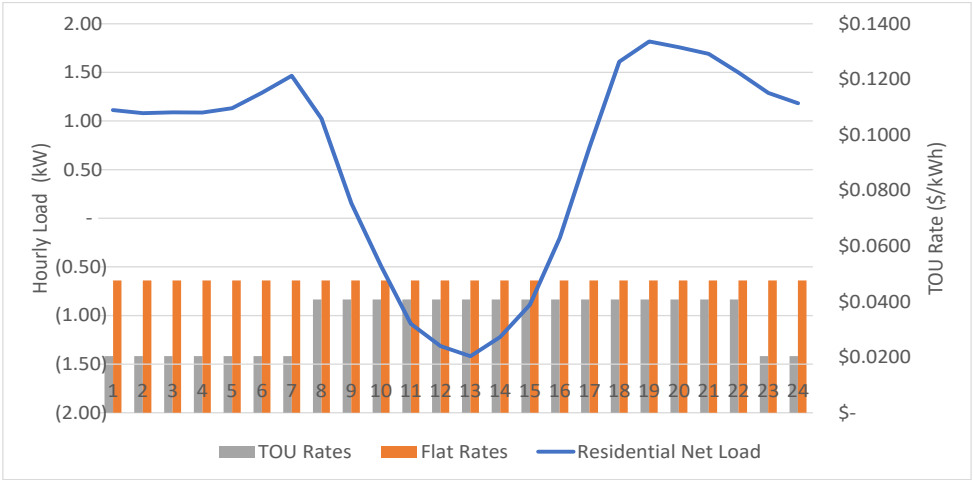


Figure 3-7: Winter TOU Rates and Residential Solar Net Load



3.2.8 Renewable Energy Rate

LUS desires to offer a renewable energy rate for those customers who desire to have 100 percent of their energy supplied by renewable energy. The two primary methods used by utilities to provide renewable energy to customers are a contract for differences rate agreement and a green energy rate rider.

The contract for differences rate agreement is more complex in nature and is often used as a means for a customer to secure renewable energy from a specific resource while the customer takes on the energy market risk of that resource. If a large commercial or industrial customer desires to have energy secured directly from a specific resource, the utility will prepare an agreement and the large customer will agree to take the risk of the potential loss or gain from that resource over a specified period. If LUS has a customer that desires to secure renewable power from a specific resource, LUS should consider setting up an individual agreement with that customer. Burns & McDonnell does not currently recommend setting up a standard contract for differences tariff currently.

The green energy rate is commonly used by utilities to offer customers access to the renewable energy attribute associated with renewable energy already being purchased by the electric utility. LUS is currently planning to purchase renewable energy from future solar energy resources and will take title to the Renewable Energy Credits (REC) associated with those resources. Since LUS is not obligated to meet a renewable energy portfolio standard, LUS can either retire those RECs, sell those RECs on the market, or provide them to customers for a price equal to their market value which fluctuates monthly. Burns & McDonnell recommends that LUS include a green energy rate rider in its tariff for those Residential, Commercial, and Institutional customers desiring renewable energy. Based on recent market pricing data the cost of REC's in Louisiana is between $0.001 per kWh and $0.002 per kWh. A customer selecting this green energy rate rider would pay approximately 1.0 to 2.0 percent more for 100.0 percent renewable energy supply and could opt in or opt out at any time.

3.2.9 Transmission Service Rates

LUS does not currently have any customers served directly off the LUS 69 kV transmission system. Burns & McDonnell developed a new transmission service rate that can be offered to customers that build their own substations and connect to LUS's transmission system. The proposed rate is designed based on the cost of service and does not include costs associated with primary or secondary network distribution system assets. LUS should consider including this new rate in its tariffs so new large commercial and industrial customers considering development in Lafayette can use it in their site selection analysis. LUS may also consider reserving the option to also develop special contract transmission rates for large transmission service customers who may have unique circumstances.

3.3 Regional Rate Comparison

LUS's residential and commercial electric rates have consistently been among the lowest in the region and continued to follow that trend into FY 2022. The following tables compare the average residential and commercial electric rates in the region as of October 31, 2021. Table 3-9 presents LUS and its regional peers' average electric rate based on a usage of 1,000 kWh per month. Table 3-10 presents the LUS commercial rate benchmark based on S&P Global data through 2020. While the fuel portion of the rate changes on a monthly basis based on LUS's cost of fuel and purchased power, the non-fuel rates have not been adjusted since FY 2018. The regional comparison shown in these tables reflects a historical snap shot, but it is expected that the regional communities shown will be subjected to similar market and industry conditions and are also expected to increase rates over the next 5 years.

Table 3-9: Electric System Residential Rate Comparison

Utility	Average Rate ($/kWh)
New Orleans – Cleco	$0.12187
New Orleans - Entergy	$0.12187
Shreveport – SWEPCO	$0.09950
New Iberia - Cleco	$0.11492
Alexandria	$0.10790
Baton Rouge – Entergy	$0.10955
Lake Charles – Entergy	$0.10955
LUS (Existing)	$0.09668

Source: LUS

Table 3-10: Electric System Commercial Rate Comparison

Utility	Average Rate ($/kWh)
New Iberia – Cleco	$0.1033
Alexandria	$0.0904
Shreveport – SWEPCO	$0.09440
New Orleans – Entergy New Orleans	$0.08490
Baton Rouge – Entergy Louisiana	$0.08430
Lake Charles – Entergy Louisiana	$0.08430
LUS (Existing)	$0.0806

Source: S&P Global Retail Average Retail Rate Summary for Louisiana

4.0 WATER UTILITY SYSTEM

4.1 Cost of Service Development

The test year revenue requirement developed from the financial forecast was used as the basis for the cost of service analysis. This section of the report summarizes the basis of the functionalization, classification, and allocation of costs to customer classes. Tables showing the assignment of the test year revenue requirement among functional services, as well as the development of allocation factors and the allocation of the test year revenue requirement to the water utility's rate classifications, are presented in the following subsections.

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 each customer class' average water usage requirements and peak demand water usage requirements 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.

4.1.1 Net Revenue Requirement

Based on analysis completed, the cash needs of the water utility were projected through 2026. The test period for the water cost of service analysis is FY 2023, which corresponds to the first year for which revenue adjustments are proposed. For the water utility, the revenue adjustment in test year 2023 is an 8.0 percent increase.

Table 4-1 summarizes the development of the net revenue requirements to be recovered from water rates in the FY 2023 test year. The net revenue requirements represent the level of costs that must be recovered from water rates and are equal to total operating and capital cost expenditures less all sources of other revenue. As shown in Table 4-1, the net operating costs amount to $13.0 million and the net capital costs amount to $3.5 million for a total net revenue requirement of $16.5 million. This is 8.0 percent higher than revenues under existing water rates, consistent with the FY 2023 revenue increase identified in the proposed water utility financial plan.

Table 4-1: Water Utility Test Year Revenue Requirement

Line No.	Description	Operating Expense	Capital Cost	Total
		$	$	$
	Revenue Requirements			
1	Operating Expense	19,365,725	-	19,365,725
2	Debt Service	-	2,182,457	2,182,457
3	Normal Capital & Special Equipmen	-	2,584,993	2,584,993
4	Revenue Financed Capital	-	2,746,443	2,746,443
5	Total	19,365,725	7,513,893	26,879,618
	Revenue Requirements Met from Other Sources			
6	Miscellaneous Revenue	(1,440,570)	-	(1,440,570)
7	Wholesale Revenue Requirement	(4,766,902)	(2,645,706)	(7,412,607)
8	Deposits from Other Funds	(97,958)	-	(97,958)
9	Use of / (Deposit to) Reserves	-	1,386,141	1,386,141
10	Total	(6,305,430)	(4,031,847)	(10,337,277)
11	Cost of Service to be met by Retail User Charges	13,060,295	3,482,046	16,542,341
12	Retail Revenue under Existing Rates			15,316,983
13	Indicated Retail System Revenue Adjustment			8.0%

4.1.2 Unit Cost Development (Cost by Function)

Based on the functionalized operation and maintenance expenses and capital costs and the developed units of service, unit costs of service for each functional cost component may be determined. Table 4-2 indicates, for each functional component, the unit of measure and applicable unit cost.

Table 4-2: Water Utility Unit Costs

Line No.	Description	Test Year 2023 Total	Common to All				Common to Retail
			Base	Max Day	Max Hour	Customer	
			Kgal	Kgal/day	Kgal/day	Bills	Kgal
1	Total Retail Units of Service		5,381,650	9,559	24,303	584,831	5,381,650
2	Net Retail Operating Expense -	13,060,220	6,729,712	1,963,789	575,586	2,813,985	977,148
3	Unit Cost - $/Unit		1.2505	205.4441	23.6838	4.8116	0.1816
4	Net Retail Capital Costs - $	3,482,046	1,759,846	805,600	456,100	460,500	-
5	Unit Cost - $/Unit		0.3270	84.2788	18.7673	0.7874	-
6	Total Retail Cost of Service	16,542,266	8,489,558	2,769,389	1,031,686	3,274,485	977,148
7	Unit Cost - $/Unit		1.5775	289.7228	42.4511	5.5990	0.1816

4.1.3 Allocation of Costs to Customer Classes

Applying the unit costs by function to each customer class' units of service allows for the distribution of costs to customer classes, as shown in Table 4-3. Units of service for each class are as developed previously in Table 4-2. 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.

Table 4-3: Water Utility Test Year Revenue Requirement Allocation

Line No.	Description	Test Year 2023 Total	Common to All				Common to Retail
			Base	Max Day	Max Hour	Customer	
1	Retail Unit Cost of Service - $/Unit		$ 1.5775	$ 289.7228	$ 42.4511	$ 5.5990	$ 0.1816
	Residential						
2	Units of Service		2,516,637	3,447	10,342	472,180	2,516,637
3	Allocated Cost - $	8,508,500	3,970,000	998,800	439,000	2,643,800	456,900
	Residential - Outside						
4	Units of Service		113,139	155	465	18,193	113,139
5	Allocated Cost - $	365,500	178,500	44,900	19,700	101,900	20,500
	Residential - Sprinkler						
6	Units of Service		216,638	594	1,187	18,472	216,638
7	Allocated Cost - $	706,800	341,700	172,000	50,400	103,400	39,300
	Commercial						
8	Units of Service		2,057,934	4,229	9,867	63,891	2,057,934
9	Allocated Cost - $	5,621,800	3,246,400	1,225,100	418,900	357,700	373,700
	Commercial - Outside						
10	Units of Service		53,005	109	254	2,249	53,005
11	Allocated Cost - $	148,100	83,600	31,500	10,800	12,600	9,600
	Interdepartmental						
12	Units of Service		30,921	85	169	442	30,921
13	Allocated Cost - $	88,600	48,800	24,500	7,200	2,500	5,600
	Municipal-General Fund						
14	Units of Service		37,065	102	203	1,238	37,065
15	Allocated Cost - $	110,100	58,500	29,400	8,600	6,900	6,700
	Commercial - Sprinkler						
16	Units of Service		156,039	427	855	4,758	156,039
17	Allocated Cost - $	461,300	246,200	123,900	36,300	26,600	28,300
	Schools & Chruches						
18	Units of Service		74,934	154	359	2,581	74,934
19	Allocated Cost - $	206,100	118,200	44,600	15,300	14,400	13,600
	Schools & Chruches - Outside						
20	Units of Service		5,891	12	28	79	5,891
21	Allocated Cost - $	15,500	9,300	3,500	1,200	400	1,100
	University (UL)						
22	Units of Service		119,448	245	573	748	119,448
23	Allocated Cost - $	309,700	188,400	71,100	24,300	4,200	21,700
24	Total Units of Service		5,381,650	9,559	24,303	584,831	5,381,650
25	Total Cost of Service	16,542,000	8,489,600	2,769,300	1,031,700	3,274,400	977,000

4.1.4 Cost of Service Comparison

After Test Year 2023 costs are assigned to customer classes, they are 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 4-4, the total system adjustment is 8.0 percent.

Table 4-4: Water Utility Test Year Cost of Service Summary

Line No.	Description	Revenue Under Existing Rates	Total Allocated Cost of Service	Indicated Increase / (Decrease)	Indicated Increase / (Decrease)
		$	$	$	%
	Class				
1	Residential	8,207,000	8,874,000	667,000	8.1%
2	Commercial	5,213,600	5,769,900	556,300	10.7%
3	Municipal-General Fun	103,200	110,100	6,900	6.7%
4	Schools & Churches	226,500	221,600	(4,900)	-2.2%
5	University (UL)	275,500	309,700	34,200	12.4%
6	Interdepartmental	80,600	88,600	8,000	9.9%
7	Sprinkler	1,210,800	1,168,100	(42,700)	-3.5%
8	Total	15,317,200	16,542,000	1,224,800	8.0%
	Rate Code				
9	Residential	8,207,000	8,874,000	667,000	8.1%
10	Commercial	5,899,400	6,499,900	600,500	10.2%
11	Sprinkler	1,210,800	1,168,100	(42,700)	-3.5%
12	Total	15,317,200	16,542,000	1,224,800	8.0%

4.2 Retail Rate Design

The third and final phase of the Study completed for the water utility was the rate analysis. The cost of service analysis described previously served as one input into the rate analysis and rate recommendations. Input from LUS was also taken into consideration in the development of the recommendations. As discussed previously, effective increases of 8.0 percent per year are proposed for the water utility over the next 3 years. The objective of this portion of the Study is to design rates for each utility rate class to progress toward the following goals:

- Rates should provide revenue stability for the utility.
- Rates should be simple and understandable.
- Rates should provide for a reasonable relationship to the cost of providing service.
- Rates should be designed to encourage the efficient use of the commodity

4.2.1 Existing Retail Rates

The current water rate consists of a meter charge that increases by meter size and a volumetric charge per 1,000 gallons of usage for both Inside and Outside City customers. Outside city rates are based on a 2.0 times multiple of inside city rates.

4.2.2 Proposed Retail Rates

The proposed rates use the same structure as the existing rates but aims to recover more revenue through the commercial customer class as per the cost of service results. The proposed rates increase the residential and commercial service charge at 8 percent, which is the system revenue increase. The volumetric rate for commercial is proposed to raise slightly more than 8 percent while the volumetric rate for residential is proposed to raise slightly less than 8 percent. Overall, the system wide increase of 8.0 percent is achieved through the proposed rates.

Outside City rates are currently based on a multiplier of Inside City rates which is a common method of administering utility rates for non-owner users of water systems. This approach has been continued in the development of proposed retail water rates. Proposed rates are presented in Table 4-5 and Table 4-6.

Table 4-5: Water Utility Existing and Proposed Residential Rates

Rate Code	Class Description	Existing 2022 $	Proposed 2023 $	2024 $	2025 $	2026 $
W-1	Residential - Inside					
	Meter Charge by Meter Size					
	0.75"	5.55	5.99	6.47	6.99	6.99
	1"	9.25	9.99	10.79	11.65	11.65
	1.5"	18.50	19.98	21.58	23.31	23.31
	2"	29.60	31.97	34.53	37.29	37.29
	3"	55.50	59.94	64.74	69.92	69.92
	4"	92.50	99.90	107.89	116.52	116.52
	6"	185.00	199.80	215.78	233.04	233.04
	8"	296.00	319.68	345.25	372.87	372.87
	Commodity Charge					
	Winter	1.70	1.82	1.95	2.09	2.09
	Summer (Tier 1)	1.70	1.82	1.95	2.09	2.09
	Summer (Tier 2)	2.70	2.89	3.09	3.31	3.31
W-1-O	Residential - Outside					
	Meter Charge by Meter Size					
	0.75"	11.10	11.98	12.94	13.98	13.98
	1"	18.50	19.98	21.58	23.30	23.30
	1.5"	37.00	39.96	43.16	46.62	46.62
	2"	59.20	63.94	69.06	74.58	74.58
	Commodity Charge					
	Winter	3.40	3.64	3.90	4.18	4.18
	Summer (Tier 1)	3.40	3.64	3.90	4.18	4.18
	Summer (Tier 2)	5.40	5.78	6.18	6.62	6.62

Table 4-6: Water Utility Existing and Proposed Commercial Rates

Rate Code	Class Description	Existing 2022 $	Proposed 2023 $	2024 $	2025 $	2026 $	2027 $
W-2	Commercial - Inside						
	Meter Charge by Meter Size						
	0.75"	5.55	5.99	6.47	6.99	6.99	6.99
	1"	9.25	9.99	10.79	11.65	11.65	11.65
	1.5"	18.50	19.98	21.58	23.31	23.31	23.31
	2"	29.60	31.97	34.53	37.29	37.29	37.29
	3"	55.50	59.94	64.74	69.92	69.92	69.92
	4"	92.50	99.90	107.89	116.52	116.52	116.52
	6"	185.00	199.80	215.78	233.04	233.04	233.04
	8"	296.00	319.68	345.25	372.87	372.87	372.87
	Commodity Charge	1.95	2.13	2.32	2.53	2.53	2.53
W-2-O	Commercial - Outside						
	Meter Charge by Meter Size						
	0.75"	11.10	11.98	12.94	13.98	13.98	13.98
	1"	18.50	19.98	21.58	23.30	23.30	23.30
	1.5"	37.00	39.96	43.16	46.62	46.62	46.62
	2"	59.20	63.94	69.06	74.58	74.58	74.58
	4"	185.00	199.80	215.78	233.04	233.04	233.04
	Commodity Charge	3.90	4.26	4.64	5.06	5.06	5.06
W-3	Bulk Sales at Plants						
	Customer Charge	10.00	10.80	11.66	12.59	12.59	12.59
	Commodity Charge	1.95	2.13	2.32	2.53	2.53	2.53
W-4	Bulk Sales from Hydrants						
	Customer Charge	51.50	55.62	60.07	64.88	64.88	64.88
	Commodity Charge	1.95	2.13	2.32	2.53	2.53	2.53
W-5	Bulk Water						
	Customer Charge	51.50	55.62	60.07	64.88	64.88	64.88
	Commodity Charge	1.95	2.13	2.32	2.53	2.53	2.53
W-6	Sprinkler						
	Meter Charge by Meter Size						
	0.75"	5.55	5.99	6.47	6.99	6.99	6.99
	1"	9.25	9.99	10.79	11.65	11.65	11.65
	1.5"	18.50	19.98	21.58	23.31	23.31	23.31
	2"	29.60	31.97	34.53	37.29	37.29	37.29
	3"	55.50	59.94	64.74	69.92	69.92	69.92
	4"	92.50	99.90	107.89	116.52	116.52	116.52
	6"	185.00	199.80	215.78	233.04	233.04	233.04
	8"	296.00	319.68	345.25	372.87	372.87	372.87
	Commodity Charge	2.54	2.74	2.96	3.20	3.20	3.20

4.2.3 Typical Bills

Table 4-7 and Table 4-8 present the changes in water bills over the study period for residential and commercial customers at common usage amounts, assuming all proposed rates are implemented through 2025. For a typical residential customer using 5,000 gallons per month, water bills are anticipated to increase $1.04 per bill in 2023 over 2022.

Table 4-7: Water Utility Typical Residential Bills Under Existing and Proposed Rates

				Monthly Bill Under				
				Existing	Proposed	Proposed	Proposed	Proposed
Rate		Meter	Billable	2022	2023	2024	2025	2026
Code	Description	Size	Flow (1,000 Gal.)	Rates $	Rates $	Rates $	Rates $	Rates $
	Customer Class							
W-1	Residential - Inside	0.75"	2.0	$ 8.95	$ 9.63	$ 10.37	$ 11.17	$ 11.17
W-1	Residential - Inside	0.75"	5.0	$ 14.05	$ 15.09	$ 16.22	$ 17.44	$ 17.44
W-1	Residential - Inside	0.75"	8.0	$ 19.15	$ 20.55	$ 22.07	$ 23.71	$ 23.71
	Change in $ over prior year							
W-1	Residential - Inside	0.75"	2.0		$ 0.68	$ 0.74	$ 0.80	$ -
W-1	Residential - Inside	0.75"	5.0		$ 1.04	$ 1.13	$ 1.22	$ -
W-1	Residential - Inside	0.75"	8.0		$ 1.40	$ 1.52	$ 1.64	$ -
	Change in % over prior year							
W-1	Residential - Inside	0.75"	2.0		8%	8%	8%	0%
W-1	Residential - Inside	0.75"	5.0		7%	7%	8%	0%
W-1	Residential - Inside	0.75"	8.0		7%	7%	7%	0%

Table 4-8: Water Utility Typical Commercial Bills Under Existing and Proposed Rates

				Monthly Bill Under				
				Existing	Proposed	Proposed	Proposed	Proposed
Rate		Meter	Billable	2022	2023	2024	2025	2026
Code	Description	Size	Flow (1,000 Gal.)	Rates $	Rates $	Rates $	Rates $	Rates $
	Customer Class							
W-2	Commercial - Inside	0.75"	30.0	$ 64.05	$ 69.89	$ 76.07	$ 82.89	$ 82.89
W-2	Commercial - Inside	1.5"	30.0	$ 77.00	$ 83.88	$ 91.18	$ 99.21	$ 99.21
W-2	Commercial - Inside	2"	60.0	$ 146.60	$ 159.77	$ 173.73	$ 189.09	$ 189.09
W-2	Commercial - Inside	2"	150.0	$ 322.10	$ 351.47	$ 382.53	$ 416.79	$ 416.79
	Change in $ over prior year							
W-2	Commercial - Inside	0.75"	30.0		$ 5.84	$ 6.18	$ 6.82	$ -
W-2	Commercial - Inside	1.5"	30.0		$ 6.88	$ 7.30	$ 8.03	$ -
W-2	Commercial - Inside	2"	60.0		$ 13.17	$ 13.96	$ 15.36	$ -
W-2	Commercial - Inside	2"	150.0		$ 29.37	$ 31.06	$ 34.26	$ -
	Change in % over prior year							
W-2	Commercial - Inside	0.75"	30.0		9%	9%	9%	0%
W-2	Commercial - Inside	1.5"	30.0		9%	9%	9%	0%
W-2	Commercial - Inside	2"	60.0		9%	9%	9%	0%
W-2	Commercial - Inside	2"	150.0		9%	9%	9%	0%

4.3 Regional Rate Comparison

This section presents the regional bill comparison on an average dollar cost per thousand gallons basis. Compared to the regional peers shown below LUS ranks the lowest in cost. The proposed water rates will increase the average rate on a dollars per thousand gallons basis however other regional water utilities are expected to increase rates over the next 5 years as well. On a national average, water utility rates have historically increased 5 percent per year or 28 percent cumulatively over a 5-year period. The LUS proposed rate increases will generate a 26 percent cumulative increase over the next 5-years which compares well to the national average.

Table 4-9: Water Utility Residential Rate Comparison

Utility	Average ($/1,000 gallons) (1)	
LUS	$	2.64
Alexandria	$	3.19
Lake Charles	$	3.55
Shreveport	$	3.72
Baton Rouge	$	4.37
New Iberia	$	5.39
New Orleans	$	9.79

(1) Assumes monthly water consumption of 7,000 gallons.

Table 4-10: Water Utility Commercial Rate Comparison

Utility	Average ($/1,000 gallons) (1)	
LUS	$	2.97
Alexandria	$	3.27
Shreveport	$	4.28
Lake Charles	$	4.55
Baton Rouge	$	4.66
New Iberia	$	5.39
New Orleans	$	9.77

Source: LUS. Rates as of March 2022.
Assumes monthly water consumption of 30,000 gallons

5.0 WASTEWATER UTILITY SYSTEM

5.1 Cost of Service Development

The second phase of this Study was the development of the cost of service analysis. The test year revenue requirement developed from the financial forecast, was used as the basis for the cost of service analysis. This section of the report summarizes the basis of the functionalization, classification and allocation of costs to customer classes. Tables showing the assignment of the test year revenue requirement among functional services, as well as the development of allocation factors and the allocation of the test year revenue requirement to the Wastewater utility's rate classifications, are presented in the following subsections

According to the Water Environment Federation (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 wastewater cost structure and services related to its collection and treatment system.

5.1.1 Net Revenue Requirement

Based on analysis completed, the cash needs of the wastewater utility were projected through 2026. The test period for the wastewater cost of service analysis is FY 2023, which corresponds to the first year for which revenue adjustments are proposed. For the wastewater utility, the revenue adjustment in test year 2023 is a 9.5 percent increase.

Table 4-1 summarizes the development of the net revenue requirements to be recovered from wastewater rates in the FY 2023 test year. The net revenue requirements represent the level of costs that must be recovered from wastewater rates and are equal to total operating and capital cost expenditures less all sources of other revenue. As shown in Table 4-1, the net operating costs amount to $24.6 million and the net capital costs amount to $9.3 million for a total net revenue requirement of $33.9 million. This is 9.5

percent higher than revenues under existing wastewater rates, consistent with the FY 2023 revenue increase identified in the proposed wastewater utility financial plan.

Table 5-1: Wastewater Utility Test Year Revenue Requirement

Line No.	Description	Operating Expense $	Capital Cost $	Total $
	Revenue Requirements			
1	Operating Expense	26,646,288	-	26,646,288
2	Debt Service	-	5,597,990	5,597,990
3	Normal Capital & Special Equipmer	-	2,538,677	2,538,677
4	Revenue Financed Capital	-	17,368,658	17,368,658
5	Total	26,646,288	25,505,325	52,151,612
	Revenue Requirements Met from Other Sources			
6	Miscellaneous Revenue	(1,955,378)	-	(1,955,378)
7	Deposits from Other Funds	(67,221)	-	(67,221)
8	Use of / (Deposit to) Reserves	-	16,241,714	16,241,714
9	Total	(2,022,598)	(16,241,714)	(18,264,312)
10	Cost of Service to be met by User Charges	24,623,689	9,263,611	33,887,300
11	Revenue under Existing Rates			30,947,300
12	Indicated System Revenue Adjustment			9.5%

5.1.2 Unit Cost Development (Cost by Function)

Based on the functionalized operation and maintenance expenses and capital costs and the developed units of service, unit costs of service for each functional cost component may be determined. Table 4-2 indicates, for each functional component, the unit of measure and applicable unit cost.

Table 5-2: Wastewater Utility Unit Costs

Line No.	Description	Test Year 2023 Total	Volume	BOD	Suspended Solids	Customer
1	Total Units of Service		5,577,834	4,847,313	9,273,448	496,082
2	Unit of Measure		Treated Kgal	Lbs	Lbs	Bills
3	Net Operating Expense -	24,623,600	16,242,000	2,268,200	3,540,200	2,573,200
4	Unit Cost - $/Unit		2.912	0.468	0.382	5.187
5	Net Capital Costs - $	9,263,628	6,757,728	855,300	1,650,600	-
6	Unit Cost - $/Unit		1.212	0.176	0.178	-
7	Total Cost of Service	33,887,228	22,999,728	3,123,500	5,190,800	2,573,200
8	Unit Cost - $/Unit		4.123	0.644	0.560	5.187

5.1.3 Allocation of Costs to Customer Classes

Applying the unit costs by function to each customer class' units of service allows for the distribution of costs to customer classes, as shown in Table 4-3. Units of service for each class are as developed previously in Table 4-2. 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.

Table 5-3: Wastewater Utility Test Year Revenue Requirement Allocation

Line No.	Description	Test Year 2023 Total	Common to All Customers			
			Volume	BOD	Suspended Solids	Meter Reading
1	Unit Cost of Service - $/Unit		$ 4.123	$ 0.644	$ 0.560	$ 5.187
	Residential					
2	Units of Service		3,044,024	2,415,898	4,731,483	412,505
3	Allocated Cost - $	18,896,700	12,551,700	1,556,600	2,648,700	2,139,700
	Residential - Outside City					
4	Units of Service		157,999	128,429	252,561	18,326
5	Allocated Cost - $	970,700	651,500	82,700	141,400	95,100
	Commercial					
6	Units of Service		2,090,537	1,878,176	3,753,165	60,561
7	Allocated Cost - $	12,245,300	8,620,100	1,210,100	2,101,000	314,100
	Commercial - Outside City					
8	Units of Service		50,766	46,010	92,063	1,063
9	Allocated Cost - $	295,900	209,300	29,600	51,500	5,500
	Municipal-General Fund					
10	Units of Service		21,348	19,620	39,339	170
11	Allocated Cost - $	123,500	88,000	12,600	22,000	900
	Schools & Churches					
12	Units of Service		78,226	70,070	139,957	2,480
13	Allocated Cost - $	458,900	322,600	45,100	78,300	12,900
	Schools & Churches/Outside					
14	Units of Service		5,657	5,208	10,444	37
15	Allocated Cost - $	32,700	23,300	3,400	5,800	200
	University (UL)					
16	Units of Service		124,647	114,827	230,316	721
17	Allocated Cost - $	720,600	514,000	74,000	128,900	3,700
	Interdepartmental					
18	Units of Service		4,630	4,076	8,119	220
19	Allocated Cost - $	27,300	19,100	2,600	4,500	1,100
	Surcharge Strength					
20	Units of Service		-	165,000	16,000	-
21	Allocated Cost - $	115,300	-	106,300	9,000	-
22	Total Units of Service		5,577,834	4,847,313	9,273,448	496,082
23	Total Cost of Service	33,886,900	22,999,600	3,123,000	5,191,100	2,573,200

5.1.4 Cost of Service Comparison

After Test Year 2023 costs are assigned to customer classes, they are 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 4-4, the total system adjustment is 9.5 percent.

Table 5-4: Wastewater Utility Test Year Cost of Service Summary

Line No.	Description	Revenue Under Existing Rates $	Total Allocated Cost of Service $	Indicated Increase / (Decrease) $	Indicated Increase / (Decrease) %
1	Residential	17,664,848	19,867,400	2,202,552	12.5%
2	Commercial	11,995,077	12,656,500	661,423	5.5%
3	Schools & Churches	467,959	491,600	23,641	5.1%
4	University	668,041	720,600	52,559	7.9%
5	Municipal-General Fund	123,382	123,500	118	0.1%
6	Interdepartmental	27,992	27,300	(692)	-2.5%
7	Total	30,947,300	33,886,900	2,939,600	9.5%
8	Residential	17,664,848	19,867,400	2,202,552	12.5%
9	Commercial	13,282,452	14,019,500	737,048	5.5%
10	Total	30,947,300	33,886,900	2,939,600	9.5%

5.2 Retail Rate Design

The third and final phase of the Study completed for the wastewater utility was the rate analysis. The cost of service analysis described previously served as one input into the rate analysis and rate recommendations. Input from LUS was also taken into consideration in the development of the recommendations. As discussed previously, effective increases of 9.5 percent per year are proposed for the wastewater utility over the next 3 years. The objective of this portion of the Study is to design rates for each utility rate class to progress toward the following goals:

- Rates should provide revenue stability for the utility.
- Rates should be simple and understandable.
- Rates should provide for a reasonable relationship to the cost of providing service.
- Rates should be designed to encourage the efficient use of the commodity

5.2.1 Existing Retail Rates

The current wastewater rate consists of a fixed customer charge per month and a volumetric charge per 1,000 gallons of usage for both Inside and Outside City customers. Outside city rates are based on a multiple ranging from 1.2 to 1.5 times inside city rates.

5.2.2 Proposed Retail Rates

The proposed rates use the same structure as the existing rates but aims to recover more revenue through the commercial customer class as per the cost of service results. The proposed rates increase the residential and commercial customer charge at 9.5 percent, which is the system wide revenue increase. The commercial volume rate is proposed to increase more than the system wide increase of 9.5 percent and the residential volume rate is proposed to increase less. Overall, the system wide increase of 9.5 percent is achieved through the proposed rates.

Outside City rates are currently based on a multiplier of Inside City rates which is a common method of administering utility rates for non-owner users of wastewater systems. This approach has been continued in the development of proposed retail wastewater rates. Proposed rates are presented in Table 4-5.

Table 5-5: Wastewater Utility Existing and Proposed Rates

Rate Code	Class Description	Existing 2022 $	Proposed 2023 $	2024 $	2025 $	2026 $
S-1	Residential - Inside					
	Volume Charge (Kgal)	5.90	6.38	6.90	7.47	7.47
	Customer Charge	8.60	9.42	10.31	11.29	11.29
S-1-O	Residential - Outside					
	Volume Charge (Kgal)	7.10	7.68	8.30	8.99	8.99
	Customer Charge	10.30	11.28	12.35	13.52	13.52
S-2	Commercial - Inside					
	Volume Charge (Kgal)	6.15	6.83	7.58	8.41	8.41
	Customer Charge	16.15	17.68	19.36	21.20	21.20
	BOD	7.23	7.92	8.67	9.49	9.49
	or					
	COD	3.61	3.95	4.33	4.74	4.74
	plus					
	TSS	7.23	7.92	8.67	9.49	9.49
S-2-O	Commercial - Outside					
	Volume Charge (Kgal)	7.40	8.22	9.12	10.12	10.12
	Customer Charge	24.20	26.49	29.01	31.77	31.77
	BOD	8.68	9.51	10.41	11.39	11.39
	or					
	COD	4.34	4.75	5.21	5.70	5.70
	plus					
	TSS	8.68	9.51	10.41	11.39	11.39
	Flat Rate Customers					
	Flat Rate - Commercial	64.42	71.29	78.85	87.21	87.21
	Flat Rate -Residential (Apartment)	30.83	33.46	36.31	39.44	39.44
	Flat Rate -Residential	47.33	51.30	55.60	60.33	60.33
	Flat Rate - Commercial Outside	101.84	112.72	124.70	137.94	137.94
	Flat Rate -Residential Outside	61.11	66.23	71.77	77.85	77.85

5.2.3 Typical Bills

Table 4-7 presents the changes in wastewater bills over the study period for customers at common usage amounts, assuming all proposed rates are implemented through 2025. For a typical residential customer using 5,000 gallons per month, wastewater bills are anticipated to increase by $3.22 per bill in 2023 over 2022.

Table 5-6: Wastewater Utility Typical Bills Under Existing and Proposed Rates

Line No.	Description	Billable Flow (1,000 Gal.)	Monthly Bill Under Existing 2022 Rates $	Proposed 2023 Rates $	Proposed 2024 Rates $	Proposed 2025 Rates $	Proposed 2026 Rates $
	Customer Class						
1	Residential - Inside	2.0	$ 20.40	$ 22.18	$ 24.11	$ 26.23	$ 26.23
2	Residential - Inside	5.0	$ 38.10	$ 41.32	$ 44.81	$ 48.64	$ 48.64
3	Residential - Inside	8.0	$ 55.80	$ 60.46	$ 65.51	$ 71.05	$ 71.05
4	Commercial - Inside	30.0	$ 200.65	$ 222.58	$ 246.76	$ 273.50	$ 273.50
5	Commercial - Inside	60.0	$ 385.15	$ 427.48	$ 474.16	$ 525.80	$ 525.80
6	Commercial - Inside	150.0	$ 938.65	$ 1,042.18	$ 1,156.36	$ 1,282.70	$ 1,282.70
	Change in $ over prior year						
7	Residential - Inside			$ 1.78	$ 1.93	$ 2.12	$ -
8	Residential - Inside			$ 3.22	$ 3.49	$ 3.83	$ -
9	Residential - Inside			$ 4.66	$ 5.05	$ 5.54	$ -
10	Commercial - Inside			$ 21.93	$ 24.18	$ 26.74	$ -
11	Commercial - Inside			$ 42.33	$ 46.68	$ 51.64	$ -
12	Commercial - Inside			$ 103.53	$ 114.18	$ 126.34	$ -
	Change in % over prior year						
13	Residential			8.7%	8.7%	8.8%	0.0%
14	Residential			8.5%	8.4%	8.5%	0.0%
15	Residential			8.4%	8.4%	8.5%	0.0%
16	Commercial - Inside			10.9%	10.9%	10.8%	0.0%
17	Commercial - Inside			11.0%	10.9%	10.9%	0.0%
18	Commercial - Inside			11.0%	11.0%	10.9%	0.0%

5.3 Regional Rate Comparison

This section presents the regional bill comparison on an average dollar cost per thousand gallons basis. Compared to the regional peers shown below LUS is comparable to others. The proposed wastewater rates will increase the average rate on a dollars per thousand gallons basis however other regional water utilities are also expected to increase rates over the next 5 years as well. On a national average, wastewater utility rates have historically increased 5 percent per year or 28 percent cumulatively over a 5-year period. The LUS proposed rate increases will generate a 31 percent cumulative increase over the next 5-years which compares well to the national average.

Table 5-7: Wastewater Utility Existing and Proposed Rates

Utility	Average ($/1,000 gallons) [1]
Alexandria	$ 3.86
Lake Charles	$ 4.50
New Iberia	$ 5.21
Baton Rouge	$ 6.87
LUS	$ 7.13
Shreveport	$ 11.10
New Orleans	$ 12.42

(1) Assumes monthly water consumption of 7,000 gallons.

BURNS McDONNELL

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Appendix B

Agreement

AGREEMENT #22074 FOR PROFESSIONAL SERVICES for LAKE COUNTY

This Agreement for Professional Services ("**Agreement**") is between the County of Lake ("**County**") and Burns & McDonnell Engineering Company, Inc. ("**Consultant**"), whose principal business address is 9400 Ward Parkway, Kansas City, MO 64114.

RECITALS

1. Lake County is seeking the development of water rates for two new service areas Pekara and Highland Lake and Evaluate the Impact of ARPA Funding on Water and Sewer Financial Plans and Rates ("Services").
2. Consultant responded timely with a proposal dated April 15, 2022 ("Proposal").
3. Based on Consultant's Proposal, the County and Consultant have negotiated terms under which Consultant will perform the Services.
4. To memorialize the terms and conditions under which Consultant will perform the Services, the parties have drafted this Agreement.

In light of the foregoing, Lake County and Consultant agree as follows:

SECTION 1. AGREEMENT DOCUMENTS
The documents that encompass the parties' understanding are listed below.

This Agreement, including its:
Exhibit A: Letter Proposal
Exhibit B: Data Request

SECTION 2. SCOPE OF WORK
The Consultant shall furnish all services as required to evaluate water rates for two new areas of service, Pekara and Highland Lake and evaluate the impact of American Rescue Plan Act (ARPA) or grant funding on water and sewer financial plans and rates. The Consultant shall designate and assign a project manager who will act as the primary contact and will be responsible for the Consultant's work (including sub-consultant work if applicable). To ensure the project remains on schedule, the following project management activities will be expected:

The process of developing rates and conducting further analysis of the impacts of grant funding will necessitate several steps, which will include analysis and consideration of the following information provided by Lake County Public Works:

1. Year-to-date and audited financial statements for the last 3 years
2. Detailed operation and maintenance expenses for the last 3 years
3. A summary of historical revenues for the last 3 years, including user charges, property taxes, interest income, miscellaneous fees, and other revenues
4. Existing debt and loan payment schedules by debt issuance by utility
5. The 5-year year capital improvement plan as approved
6. Beginning operating and capital fund balances at the start of the most recent fiscal year for each utility
7. A summary of customer accounts, billed water volumes and sewer usage, and revenues by class for the last three years
8. Current schedule of rates

The scope of work that Consultant agrees to perform is set forth in Exhibit A to this Agreement. Consultant will summarize initial findings in tables and memorandums for review by LCPW. A final report will be delivered to when the feedback is address and approved. If the County desires, the Consultant will present findings and recommendations associated with the financial plan and rate update at a stakeholder meeting on County premises as an additional service.

SECTION 3. EFFECTIVE DATE; TERM

Term: This Agreement shall be effective upon execution and shall be in effect for a six-month period with the option to renew for an additional six-month period. At the end of any contract term, Lake County reserves the right to extend this contract for a period of 60-days for the purpose of negotiating a new or extended agreement. In the event Lake County exercises its right to institute the 60-day extension, prorated rebate calculations shall be applied. For any year beyond the initial contract term, this contract is contingent upon the appropriation of sufficient funds.

Effective Date. Unless a different effective date is provided above, this Agreement will become effective when all of the parties have signed it, and the date this Agreement is signed by the last party to sign it (as indicated by the date associated with that party's signature) will be deemed the "Effective Date" of this Agreement. If a party signs but fails to date a signature, the date that the other party receives the signing party's signature will be deemed to be the date that the signing party signed this agreement, and the other party may inscribe that date as the date associated with the signing party's signature.

SECTION 4. AGREEMENT PRICE

The County will pay Consultant a fee of $32,604 for deliverables identified in Section 2 of Consultant's proposal dated April 15, 2022. Lake County shall make periodic payments to the Consultant based upon actual progress and Consultant's invoice. Payments shall not exceed the

amounts shown in the Estimated Level of Effort and Fee portion of the Consultant's proposal, and full payments for each task shall not be made until the task is completed and accepted by Lake County. Any on-site presentation by the Consultant will cost approximately $4,000, which includes labor to prepare and present, as well as travel expenses which will be passed through at cost.

SECTION 5. INVOICES & PAYMENT

A. At the start of this Agreement, the County will issue a purchase order for the work and Consultant shall submit invoices detailing the products and services provided and identify the purchase order number on all invoices.

B. Consultant shall maintain records showing the actual time its employees and agents devoted to the project, and the costs incurred. Consultant shall permit a representative from Lake County to inspect and audit all of Consultant's data and records for the work and services provided under this Agreement. Consultant shall make these records available at reasonable times during the Agreement period and for one year after the end of the Agreement.

C. All payments shall be made in accordance with the Illinois Local Government Prompt Payment Act, which generally requires approval of a vendor's bill within 30 days of receiving the invoice for the services contained in it, and payment within an additional 30 days (50 ILCS 505/1 *et seq.*).

D. Lake County's fiscal year ends on November 30. Invoices for services the Consultant has rendered up until November 30 of each year must be received by Lake County on or before January 15 of the subsequent calendar year.

Other than the timeframe for payments related to the end of Lake County's fiscal year, as stated above, Lake County shall not be held financially liable for payment of any services rendered if the invoice for such services is not sent to the County within 90 days from the date the services were provided.

If this Agreement is terminated prior to its expected expiration date, the Consultant must submit all invoices to Lake County no later than 30 days after the effective date of the termination.

Payment for invoices received beyond the time periods in this subsection will be denied, absent an agreement to the contrary. Failure of the Consultant to invoice the County in the timeframes noted in this section shall constitute the Consultant's waiver of the Consultant's right to payment.

SECTION 6. CHANGE ORDERS

In the event changes to the scope of the project or additional work become necessary or desired (a "Change"), the parties shall follow the procedures set forth in this Section to memorialize the change (a "Change Order"). A Change Order shall be effective only if documented in writing, dated and signed by both parties, and expressly referencing this Agreement. The Change Order shall set forth in detail: (i) the Change requested, (ii) the reason for the proposed Change; (iii) the cost of the Change; and (iv) the Change's impact on the time for completing the project.

In the event either party desires a Change, the Project Manager for such party shall submit to the other party's Project Manager a proposed Change Order. If the receiving party does not accept the Change Order in writing within 10 business days, the receiving party shall be deemed to have rejected the Change Order. If the parties cannot reach agreement on a proposed Change, Contractor shall nevertheless continue to render performance under this Agreement in accordance with its (unchanged) terms and conditions.

Changes that involve or increase in the amounts payable by the County may require execution by the County Purchasing Agent. Some increases may also require approval by the County Board. In cases where the Purchasing Agent's signature is required, or where County Board approval is needed, the Change Order shall not be deemed rejected by County after 10 days if the County's Project Manager has indicated in writing within the 10-day period an intent to present the Change Order for appropriate signature or approval.

SECTION 7. INDEMNIFICATION

Consultant agrees to indemnify and defend Lake County (its employees, elected officials, executives, and agents) from all claims, actions, demands, judgments or liabilities, fines, penalties, and expenses, including without limitation reasonable legal fees and expert costs, arising out of this Agreement and arising from the Consultant's (its employees', executives', and agents') actions, whether negligent, reckless, or intentional. Lake County shall provide notice to Consultant promptly of any such claim, suit, or proceeding, and will assist Consultant, at Consultant's expense, in defending any such claim, suit, or proceeding.

SECTION 8. INSURANCE

The Consultant must obtain, for the Contract term and any extension of it, insurance issued by a company or companies qualified to do business in the State of Illinois with an A.M. Best Rating of at least A- and provide the County with a Certificate of Insurance 15 days before the start of the project, and thereafter annually upon each renewal date for contracts/projects that will last more than one year. Insurance in the following types and amounts is necessary:

Commercial General Liability Insurance

In a broad form on an occurrence basis shall be maintained, to include, but not be limited to, coverage for property damage, bodily injury (including death), personal injury

and advertising injury in the following coverage forms where exposure exists:
- Premises and Operations
- Independent Contractors
- Products/Completed Operations
- Liability assumed under an Insured Contract/ Contractual Liability
- Personal Injury and Advertising Injury

With limits of liability not less than:
$ 1,000,000 Each Occurrence
$ 1,000,000 Products-Completed Operations
$ 1,000,000 Personal and Advertising injury limit
$ 2,000,000 General aggregate; the CGL policy shall be endorsed to provide that the General Aggregate limit applies separately to each of the contractor's projects away from premises owned or rented to contractor.

Excess/ Umbrella Liability

The Contractor's Excess/ Umbrella liability insurance shall be written with the umbrella follow form and outline the underlying coverage, limits of insurance will be based on size of project:
$ 2,000,000 per occurrence limit and in the aggregate

Automobile Liability Insurance

Automobile liability insurance shall be maintained to respond to claims for damages because of bodily injury, death of a person, or property damage arising out of ownership, maintenance, or use of a motor vehicle. This policy shall be written to cover any auto whether owned, leased, hired, or borrowed.
The Contractor's auto liability insurance, as required above, shall be written with limits of insurance not less than the following:
$ 1,000,000 Combined single Limit (Each Accident)

Workers Compensation (Coverage A) and Employers Liability (Coverage B)

Workers Compensation Insurance covering all liability of the Contractor arising under the Worker's Compensation Act and Worker's Occupational Disease Act at limits in accordance with the laws of the State of Illinois. Employers' Liability Insurance shall be maintained to respond to claims for damages because of bodily injury, occupational sickness, or disease or death of the Contractor's employees, with limits listed below:
Employers Liability

1. Each Accident $1,000,000
2. Disease-Policy Limit $1,000,000
3. Disease-Each Employee $1,000,000

Such Insurance shall contain a waiver of subrogation in favor of Lake County.

County, acting at its sole option, may waive any of the foregoing insurance requirements upon a request to do so, but no waiver shall be effective unless made in writing. Such waiver may include or be limited to a reduction in the amount of coverage required above. The extent of waiver shall be determined solely by County's risk manager taking into account the nature of the work and other factors relevant to County's exposure, if any, under this agreement.

Failure to Comply: In the event the Contractor fails to obtain or maintain any insurance coverage required under this agreement, Lake County may purchase such insurance coverage and charge the expense to the Contractor.

SECTION 9. INDEPENDENT CONTRACTOR; LICENSURE OR CERTIFICATIONS; KEY PERSONNEL

A. **Independent Contractor Status**. The parties intend that the Consultant will be an independent contractor.

B. **Licensure or Certifications**. If required by law, the Consultant must at all times be and remain licensed or certified as a qualified provider of the services provided in this Agreement. Consultant shall submit copies of the required licenses or certifications upon the County's request. Consultant shall promptly notify County in writing of any citation Consultant receives from any licensing or certification authority, including all responses and correction plans.

C. Where the parties have identified particular individuals as being critical to a project ("Key Employees"), then Consultant shall not replace Key Employees without the County's prior written consent, which shall not be unreasonably withheld. Should Key Employees be reassigned, become incapacitated, separate from the Consultant, or be otherwise unable to perform the functions assigned to them, Consultant shall (i) within 10 business days, temporarily replace the person with another properly qualified employee and (ii) within 30 calendar days, permanently replace the person.

   Lake County shall have the right to request that Consultant replace Key Employees from the project by setting forth in writing the grounds for the request. Consultant shall have a reasonable time period in which to address the grounds or make a substitution.

D. Consultant shall complete its obligations under this Agreement in a sound, economical and efficient manner and in accordance with this Agreement and all applicable laws. Consultant agrees to notify Lake County immediately whenever it is unable to comply with applicable State, Federal, or local laws, rules and regulations. Where non-compliance materially impairs the Consultant from performing the services under this Agreement, the County may terminate the Agreement for cause.

SECTION 10. DISPUTE RESOLUTION

All issues, claims, or disputes that the Consultant raises or makes related to this Agreement shall be resolved in accordance with the Contract Disputes provision of the Lake County Purchasing Ordinance, § 33.097.

SECTION 11. NO IMPLIED WAIVERS

Waivers of a term or condition of this Agreement shall be in writing, and that writing must describe the circumstances giving rise to the waiver. The parties intend that no waiver of any term or condition shall be deemed or construed as a waiver of any other term or condition of this Agreement, and waiver of any breach shall not be deemed to be a waiver of any subsequent breach, whether of the same or a different provision of this Agreement.

SECTION 12. SEVERABILITY

If any provision of this Agreement is unenforceable to any extent, the remainder of this Agreement (or application of that provision to any persons or circumstances other than those as to which it is held unenforceable) will not be affected by that unenforceability and will be enforceable to the fullest extent permitted by law.

SECTION 13. JURISDICTION, VENUE, CHOICE OF LAW AND PROFESSIONAL STANDARDS

This Agreement shall be governed by and construed according to the laws of the State of Illinois. Jurisdiction and venue shall be exclusively found in the 19th Judicial Circuit Court of Lake County, Illinois.

SECTION 14. NOTICES AND COMMUNICATIONS

All notices and communications which may be given by Lake County to Consultant relative to this Agreement shall be addressed to the Consultant at the address shown herein below:

Burns & McDonnell
9400 Ward Parkway
Kansas City, MO 64114

Copies of any notices and communications which propose to modify or terminate this Agreement shall be provided to: Lake County Purchasing Division, 18 North County Street, Waukegan, Illinois 60085-4350; Attention: Purchasing Agent.

SECTION 15. ASSIGNMENT, ALTERATIONS AND MODIFICATIONS

This Agreement shall not be assigned, delegated, or modified without the express written consent of both parties. This Agreement supersedes all other agreements, oral or written, between the parties with respect to the subject matter of this Agreement.

If Lake County agrees that the Consultant may assign, delegate, or subcontract the work under this Agreement, Consultant shall remain contractually liable to Lake County unless otherwise agreed in writing.

SECTION 16. TERMINATION

Lake County reserves the right to terminate this Agreement as set forth below.

a. Termination for Convenience:
Lake County reserves the right to terminate this Agreement, or any part of this Agreement, with or without cause, upon 30 days' written notice. In case of such termination, Consultant shall be entitled to receive payment from Lake County for work completed to the date of termination in accordance with the terms and conditions of this Agreement.

b. Termination Due to Material Breach:
In the event that this Agreement is terminated due to the Consultant's material breach, Lake County shall be entitled to purchase substitute items or services elsewhere and charge Consultant with losses the County incurs, including attorney's fees and expenses, notwithstanding any damage limitations the parties may agree to elsewhere.

c. Termination Due to Lack of Appropriations:
If sufficient funds are not appropriated by the Lake County Board to continue the services under this Agreement, then Lake County may terminate this Agreement. Lake County agrees to give written notice of termination to Consultant at least 30 days prior to the end of the last fiscal year for which appropriations were made. Lake County shall remit payment for all work completed and approved or accepted by the County, to the date of termination. Termination under this subsection shall not entitle the Consultant to contractual damages of any kind.

Termination Due to Force Majeure Events:

(i) If a Force Majeure Event prevents a party from complying with any one or more obligations under this agreement, that inability to comply will not constitute breach if (1) that party uses reasonable efforts to perform those obligations, (2) that party's inability to perform those obligations is not due to its failure to (A) take reasonable measures to protect itself against events or circumstances of the same type as that Force Majeure Event or (B) develop and maintain a reasonable contingency plan to respond to events or circumstances of the same type as that Force Majeure Event, and (3) that party complies with its obligations under section 16(d)(iii), below.

(ii) For purposes of this agreement, "Force Majeure Event" means, with respect to a party, any event or circumstance, whether or not foreseeable, that was not caused by that party and any consequences of that event or circumstance.

(iii) If a Force Majeure Event occurs, the noncomplying party shall promptly notify the other party of occurrence of that Force Majeure Event and may terminate the Agreement based on it, with an obligation to pay only for services performed prior to the Force Majeure Event.

SECTION 17. CONFIDENTIALITY

Both parties acknowledge that Consultant's documents and dealings related to this Agreement are subject to the Illinois Open Meetings Act (5 ILCS 120/1 *et seq.*) and the Illinois Freedom of Information Act (5 ILCS 140/1 *et seq.*). Consultant agrees to comply with all pertinent federal and state statutes, rules and regulations and County ordinances related to confidentiality.

SECTION 18. WORK PRODUCT

All work product prepared by Consultant pursuant to this Agreement, including, but not limited to, policies, reports, analysis, plans, designs, calculations, work drawings, studies, photographs, models, and recommendations shall be the property of Lake County. Consultant shall deliver the work product to Lake County upon completion of Consultant's work, or termination of the Agreement, whichever comes first. Consultant may retain copies of such work product for its records; however, Consultant may not use, print, share, disseminate, or publish any work product related to this Agreement without the consent of Lake County.

SECTION 19. PRESS/NEWS RELEASES

Consultant may not issue any press or news releases regarding this Agreement without prior approval from Lake County. Consultant shall provide notice to Lake County's Chief Communications Officer if contacted by the media regarding the services set forth in this Agreement.

SECTION 20. DEBARMENT AND SUSPENSION

The Lake County Purchasing Ordinance § 33.125 through 33.126 defines the County's Authority and Decision to Debar.

The Consultant certifies to the best of his or her knowledge and belief that the Consultant:

A. Is not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from covered transactions by any Federal department or agency.

B. Has not within a 3-year period preceding this contract been convicted of or had a civil judgment rendered against it for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain or performing a public (Federal, State, or local) transaction; violation of Federal or State antitrust statutes or commission of

embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statement, or receiving stolen property;

C. Is not presently indicted or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and

D. Has not, within a three-year period preceding this contract, had one or more public transactions (Federal, State, or local) terminated for cause or default.

Consultant agrees that, during the term of this Agreement, Consultant shall report to the County's contract administrator, within 10 days, any allegations to or findings by the National Labor Relations Board (NLRB) or Illinois Labor Relations Board (ILRB) that Consultant has violated a statute or regulation regarding labor standards or relations. If an investigation by the County results in a final determination that the matter adversely affects Consultant's responsibilities under this Agreement, then the County may terminate this contract.

SECTION 21. NON-DISCRIMINATION

During the term of this agreement, Consultant agrees to and shall comply with (1) the Equal Opportunity Employer provisions of Section 2000e of Chapter 21, Title 42 of the United States Code and Federal Executive Order Number 11246, as amended by Executive Order 11375, and (2) Chapter 33 of Title III of the Lake County Code of Ordinances (titled "Purchasing").

SECTION 22. OTHER CONSIDERATIONS

In no event shall Consultant or its subcontractors or subconsultants, of any tier, be liable in contract, tort, strict liability, warranty or otherwise, for any special, incidental, exemplary or consequential damages, such as, but not limited to, delay, disruption, loss of product, loss of anticipated profits or revenue, loss of use of the equipment or system, non-operation or increased expense of operation of other equipment or systems, cost of capital, or cost of purchase or replacement equipment, systems or power. In addition, to the fullest extent permissible by law, and notwithstanding any other provision of this Agreement or any work order, the total liability, in the aggregate, of Consultant, its officers, directors, shareholders, employees, agents, subcontractors and subconsultants, and any of them, to Lake County and anyone claiming by, through or under Lake County, for any and all claims, losses, liabilities, costs or damages whatsoever arising out of, resulting from or in any way related to the Work or this Agreement or any work order from any claim, including, but not limited to, tort claims, claims of negligence (of any degree), professional errors or omissions, breach of contract, breach of warranty, indemnity claims and strict liability of Consultant, its officers, directors, shareholders, employees, agents, subcontractors and subconsultants, and any of them, shall not exceed $500,000.

Signed:

COUNTY OF LAKE

By: Austin McFarlane
Its Interim-Director

Date: 5/12/2022

Burns & McDonnell

By: David McKernan
Its Senior Project Manager

Date: May 11, 2022

EXHIBIT A

BURNS McDONNELL

April 15, 2022

Julie Gray
Contract Manager
Lake County Public Works
650 W Winchester Road
Libertyville, IL 60048

Re: Water Service Rate Development

Dear Julie:

This letter proposal follows our recent email exchanges and Teams meeting about the potential for Burns & McDonnell to assist Lake County Public Works (LCPW) in the following areas:

- Developing water rates for two new areas of service, Pekara and Highland Lake
- Evaluating the impact federal stimulus funding will have on LCPW's financial plan which was finalized

The rest of this letter will summarize our understanding of the issues and our proposed approach to address them.

Pekara

Currently, water is supplied by LCPW wells and is conveyed to customers using LCPW transmission, storage and distribution lines. Water supply is planned to shift from LCPW well water to Lake Michigan water via Buffalo Grove. Pekara customers will continue to rely on the same LCPW transmission, storage and distribution facilities. The capital cost associated with enabling the change in water supply will be funded entirely from American Rescue Plan Act (ARPA) funding. The rate issue at hand is how to price water service for Pekara reflecting the new water supply.

LCPW currently has three metered water rate structures that vary based on the water supply source. Well water is covered under the GSA rate structure. Other areas of Lake County that receive water supply either from Central Lake County Joint Action Water Agency (CLCJAWA) or from Aqua Illinois (i.e. Hawthorn Woods) also have their own LCPW water rate structures. In those cases, the cost of water supply from CLCJAWA and Hawthorn Woods is passed through the LCPW rates to the customer.

We propose the following approach:

1. For Pekara rates, use the LCPW rates excluding pass throughs for either CLCJAWA or Hawthorn Woods as a starting point, acknowledging

   a. LCPW water rates in those areas, after removing the pass through for water supply, reflect the cost of transmission and distribution (T&D) of water service
   b. CLCJAWA has a slightly lower LCPW T&D rate compared to Hawthorn Woods, which would provide some benefit to impacted customers
   c. Hawthorn Woods is closer in proximity to Pekara and may be a better representation of local LCPW T&D cost
2. Treat Buffalo Grove supply cost per thousand gallons as a pass through, consistent with CLCJAWA and Hawthorn Woods. If it's possible in the future that other LCPW areas currently on well water could ultimately use Buffalo Grove supply, treating these supply costs as a pass through will make the rate setting approach consistent.
3. Compute the impact to residential and commercial bills across several usage levels.
4. If the bill impact causes concern, phase the change in rates over a 2- or 3- year period to mitigate the most sudden impact. If this is desired Burns & McDonnell will assist in the development of a phased rate implementation.
5. Summarize findings in a memorandum.

Highland Lake

LCPW currently provides water service through its GSA rate to a portion of the Highland Lake area. LCPW anticipates extending water service into an area currently served by the Highland Lake Water Company (HLWC) to approximately 16-18 connections. Doing so would address current water service deficiencies in the HLWC service area. The capital cost associated with enabling the change in water supply will be funded entirely from ARPA funds, although it is unclear if the cost of meters to be installed at the HLWC connections is also externally funded. The rate issue in this instance is the development of a new water rate for the extended service area.

We propose the following approach:

1. Consistent with other Highland Lake area service, use LCPW's GSA rate for the HLWC connections.
2. Compute the impact to residential bills across several usage levels. Because these HLWC connections are currently unmetered, representative usage levels to be used in the bill impact assessment will have to be estimated.
3. If the bill impact causes concern, phase the change in rates over a 2- or 3- year period to mitigate the most sudden impact. If this is desired Burns & McDonnell will assist in the development of a phased rate implementation.

4. If the cost of meters represents incremental funding, propose alternate cost recovery mechanisms for LCPW's consideration.
5. Summarize findings in a memorandum.

Evaluate the Impact of ARPA Funding on Water and Sewer Financial Plans and Rates

In the LCPW rate study completed in 2019, a ten-year rate plan was proposed. For the water utility, an increase of 9.5% per year above the consumer price index (CPI) was proposed for 2020 through 2026, with CPI-based adjustments thereafter through 2029. For the sewer utility, the 2020 and 2021 sewer rate increase was proposed to be 2% over CPI, while 2022 was proposed to be 1% over CPI. All following years 2023 through 2029 were assumed to be CPI-based.

These increases were sized to meet future revenue requirements, including increased cash funded capital spending for each utility. The rate increases returned to CPI-based levels in each plan around the time each utility was projected to be capable of fully funding the capital improvements with annual cash generated by rates.

Much has changed since late 2019, and current conditions are for a variety of reasons different. Key changes include the following:

- In response to the impact of the COVID-19 pandemic, the US federal government provided extensive stimulus funding, including funding provided by ARPA. Lake County has been approved to receive approximately $18.7 million in federal funding for 7 different capital projects impacting both the water and sewer utility. External grant funding was not anticipated when the rate study was finalized in 2019.
- When the rate study was finalized, the inflationary environment was relatively stable. As of March 2022, the annualized increase in CPI is about 8.5%, compared with a CPI estimate in the rate study of 2.1%.
- Capital inflation rates are also elevated. As of February 2022, the Engineering New Record Construction Cost Index was increasing at an annual rate of 8.4%. Capital inflation assumed in the rate study was projected to be 2.1%.

LCPW is being asked about the impact external ARPA funding is expected to have on projected water and sewer utility rates. Burns & McDonnell proposes updating the financial plan and forecasted rates to reflect current conditions, including ARPA funding, inflation, capital spending targets and other variables that may have changed since the rate study was completed.

We propose the following approach:

1) Update the LCPW water and sewer cash flows to reflect current conditions, including:
   a) User charge revenues under existing rates
   b) Beginning balances
   c) External funding to be awarded to LCPW, including ARPA
   d) O&M expenses, including FY2022 budget and allowances for future inflation
   e) Capital expenses, including FY2022 budget, renewal and replacement targets, and allowances for inflation
   f) Current pass-through components of existing rate structure
2) Evaluate the sufficiency of revenues under existing rates, including estimates the CPI-based component of Lake County's existing rate ordinance
3) In the event CPI-based ordinances are not sufficient to adequately meet future funding needs and comply with desired financial policies (such as reserve balances), provide recommendations for rate increases beyond estimated CPI.
4) Review with Lake County and refine based on feedback received.
5) Update proposed rate schedules to reflect revised cash flows and anticipated rate increases
6) Evaluate the impact to typical bills in the same depth and format used in the rate study
7) Summarize findings in a letter report.

Timeline

Once initiated, it is anticipated it will take about 3 weeks to draft initial tables, review with Lake County, draft a technical memorandum, and finalize based on feedback from Lake County.

Evaluating the impact of ARPA funding on financial plans and rates will take about 8 weeks to complete. A review of preliminary tables should occur after about 4 weeks. Following an initial review with Lake County, we will be able to evaluate scenarios to test alternate assumptions and rate increases. After Lake County determines a preferred scenario, rates will be designed assuming across the board increases are applied to the 2022 rates. A draft letter report will be provided for Lake County's review, which will be finalized based on feedback received.

Estimated Level of Effort and Fee

Based on the scope described in this letter, the table below summarizes the level of effort and fee associated with the 3 major elements of the study. The not-to-exceed fee for all 3 tasks is proposed to be $32,604.

If the County desires, we would be happy to present findings and recommendations associated with the financial plan and rate update at a stakeholder meeting on County premises as an additional service. We estimate an on-site presentation to be cost approximately $4,000, which includes labor to prepare and present, as well as travel expenses which will be passed through at cost.

Lake County, Illinois
20 22 Pekara, Highland Lake, & Financial Planning/ Rates Update

Consultant	Task 1 - Pekara	Task 2 - Highland Park	Task 3 - Fin Plan / Rate Update	Estimated Total Hours	Total Labor & Expense	Hourly Rate
Dave Naumann	1	1	16	18	$ 4,644	$ 258
Sara Stafford	6	6	60	72	$ 17,712	$ 246
Alex Craven	4	4	48	56	$ 10,248	$ 183
Total Labor	11	11	124	146	$ 32,60 4	
Expenses $ (1)					$ -	
Total Project Fees	$ 2,4 66	$ 2,4 66	$ 27,672		**$ 32,6 0 4**	

(1) Cost for travel and on-site meetings, to be billed at cost.

We are honored to continue to be of service to Lake County. Should you have any questions, regarding this proposal, please contact me at 816-914-5868.

Sincerely,

David F. Naumann
Senior Project Manager

EXHIBIT B

BURNS McDONNELL

DATA REQUEST

Following is a list of the information Burns & McDonnell will need to complete the scope of services. While this list is intended to be comprehensive, during the conduct of the study, it is possible that additional data may be requested. Information available in electronic format is preferred over hard copy. If information is obtainable from the County's website, a link directing the project team to that data is acceptable.

1. Audited financial statements for the last 3 years
2. Year-to-date financial statements as may be available
3. Detailed operation and maintenance expenses for the last 3 years
4. A summary of historical revenues for the last 3 years, including user charges, property taxes, interest income, miscellaneous fees, and other revenues
5. Most recent annual budget
6. Existing debt and loan payment schedules by debt issuance by utility
7. The most recent multi-year capital improvement plan
8. Beginning operating and capital fund balances at the start of the most recent fiscal year for each utility
9. A summary of customer accounts, billed water volumes and sewer usage, and revenues by class for the last three years
10. Current schedule of rates

Appendix C

Required Forms

Lake County, Illinois
Request for Proposals # 22134
Water, Sewer Rate and Connection Fee Study

Request for Proposal (RFP) is for the purpose of establishing a contract with a qualified firm to perform a Water, Sewer Rate and Connection Fee Study, as described herein.

GENERAL REQUIREMENTS: Proposers are to submit electronic proposals, to be opened and evaluated in private. Submit one (1) complete electronic unprotected copy via the Lake County Purchasing Portal and one (1) redacted copy that can be used to comply with the Illinois Freedom of Information Act (FOIA). Please refer to the FOIA statute, 5 ILCS 140/1 et seq., and specifically Section 7 therein, for an explanation of the information that may be redacted.

SUBMISSION DATE & TIME: **September 15, 2022, by no later than 11:00 a.m. local time**. Proposals received after the time specified will not be opened.

CONTACT / QUESTIONS: **All contact and questions regarding the Request for Proposal shall be with the Purchasing Division.** Should the proposer require additional information about this RFP, please submit questions on our website at http://lakecountypurchasingportal.com by selecting the RFP number and addendum link. Questions may also be submitted via email to purchasing@lakecountyil.gov. All questions shall be submitted no less than seven (7) days prior to the RFP opening date.

CONTENTS: The following sections, including this cover sheet, shall be considered integral of this solicitation:

*General Terms and Conditions
*Insurance and Bonding Requirements
*Special Terms and Conditions
*General Information
*Scope of Work
*Submittal Requirements
*Evaluation Criteria
*Proposal Price Sheet
*Addendum Acknowledgement
*General Information Sheet
*References
*Sustainability Statement
*Vendor Disclosure Statement
*Vendor Certification

If your RFP includes any exceptions, proposers must insert an "X" in the following box indicating a submission with exceptions and provide separately a submission with noted exceptions. ☐

NOTE TO PROPOSERS.: Any and all exceptions to these specifications MUST be clearly and completely indicated in the Proposer's response to the RFP. Failure to do so may lead the County to declare any such term non-negotiable. Proposer's desire to take exception to a non-negotiable term will not disqualify it from consideration for award

Contractor agrees that with respect to the above required insurance:

a) The CGL policy shall be endorsed for the general aggregate to apply on a "per Project" basis;
b) The Contractor's insurance shall be primary & non-contributory over Lake County's insurance in the event of a claim.
c) Contractor agrees that with respect to the above required insurance, Lake County shall be named as additional insured, including its agents, officers, and employees and volunteers and be provided with thirty (30) days' notice, in writing by endorsement, of cancellation or material change. A blanket additional insured ISO endorsement is preferred for Contractors who have multiple projects with the County.
d) Lake County shall be provided with Certificates of Insurance and should include the appropriate corresponding ISO form endorsements evidencing the above required insurance, prior to commencement of this Contract and thereafter with certificates evidencing renewals or replacements of said policies of insurance at least thirty (30) days prior to the expiration of cancellation of any such policies. No manuscript endorsements will be accepted. Any hard copies of said Notices and Certificates of Insurance and Endorsements shall be provided to:

Lake County
Purchasing Division
18 N. County 9th Floor
Waukegan, Illinois 60085
Attn: RuthAnne Hall, Lake County Purchasing Agent

e) **Electronic copies of Notices, Certificates of Insurance and Endorsements can be emailed to** Purchasing@lakecountyil.gov **in place of hard copies.**

Failure to Comply: In the event the Contractor fails to obtain or maintain any insurance coverage required under this agreement, Lake County may purchase such insurance coverage and charge the expense to the Contractor.

Water, Sewer Rate and Connection Fee Study

PROPOSAL PRICE SHEET **August 2022**

THE PRICE PROPOSAL SHALL INCLUDE A TOTAL PRICE AS A FIXED FEE FOR ALL SERVICES DELINEATED IN THIS RFP. THE PROPOSER WILL CONSIDER ALL COSTS (LABOR, OVERHEAD, ADMINISTRATION, PROFIT, TRAVEL, ETC.) ASSOCIATED WITH PROVIDING THE SERVICES LISTED IN THIS RFP. ANY HOURLY RATES FOR SERVICES THAT MAY NOT BE INCLUDED SHALL BE PROVIDED WITH THE CORRESPONDING SERVICE AND RATE.

All additional services beyond the initial scope of the project, identified by the Proposer as beneficial to the County, shall be delineated separately for the County to consider.

The quote will consider all costs (labor, material, overhead, administration, profit, travel, etc.) associated with providing the services listed in this RFP. (Please attach additional sheets if necessary)

Action Item	Proposed Price	Number of Hours
Task 1 – Initiate Project	$776	3
Task 2 - Financial Plan Development	$31,389	135
Task 3 - Cost of Service Analysis	$30,524	124
Task 4 - Proposed Rate Development	$10,376	48
Task 5 - Reports and Presentations	$13,529	53
TOTAL:	$86,594	363

Please indicate any hourly rates for services that may not be included in the original scope of the RFP. (Please indicate below the positions and hourly rates.)

Position	Rate for Service
Dave Naumann (Level 16)	$268
Paul St. Aubyn & Sara Stafford (Level 13)	$254
Alex Craven (Level 10)	$189
Evaristo Casimiro (Level 9)	$166

Please delineate any services out of scope for the ONE-STOP OPERATOR that may not be included in the original scope of the RFP.

Service	Proposed Price
N/A	N/A

LakeCounty

Addendum Acknowledgement RFP #22134

The undersigned acknowledges receipt of the following addendum(s):

ADDENDUM #	SIGNATURE

I have examined and carefully prepared the submittal documentation in detail before submitting my response to Lake County.

Submittal Number: #22134

Company Name: 1898 & Co.

Authorized Representative: David F Naumann

Signature

Authorized Representative: David F. Naumann

Print

Date: September 15, 2022

It is the vendor's responsibility to check for addendums, posted on the website at http://lakecountypurchasingportal.com prior to the submittal due date. No notification will be sent when addendums are posted unless there is an addendum posted within three business days of the submittal due date.

If the submittal has already been received by Lake County, vendors are required to acknowledge receipt of addendum via email to purchasing@lakecountyil.gov prior to the due date.

Submittals that do not acknowledge addendums may be rejected.

All responses are to be submitted in a sealed envelope. Envelopes are to be clearly marked with required submittal information.

Water, Sewer Rate and Connection Fee Study
GENERAL INFORMATION SHEET **August 2022**

AUTHORIZED NEGOTIATORS:

Name: Chris Underwood Phone # (816) 822-4313 Email Address: chris.underwood@1898andco.com

Name:_____ Phone #_____ Email Address: _____

BUSINESS ORGANIZATION: (check one only)

____ Sole Proprietor: An individual whose signature is affixed to this proposal.

____ Partnership: State full names, titles, and addresses of all responsible principals and/or partners on attached sheet.

_X_ Corporation: State of incorporation: Missouri

____ Non-profit Corporation

____ 501c3-- U.S. Internal Revenue Code

By signing this proposal document, the proposer hereby certifies that it is not barred from responding on this contract as a result of a violation of either Section 33E-3 or 33E-4 of the Illinois Criminal Code of 1961, as amended.

1898 & Co.
Business Name

Signature

Chris Underwood
Print or Type Name

General Manager
Title

September 15, 2022
Date

Water, Sewer Rate and Connection Fee Study

REFERENCES **August 2022**

List below other similar size clients for whom you have provided similar services. Please include the email address for each reference.

Agency Name:	Joliet, Illinois
Address	140 W. Jefferson Street
City, State, Zip Code	Joliet, IL 60432
Telephone Number	815-724-4222
E-Mail	aswisher@jolietcity.org
Contact Person	Allison Swisher, Director of Public Works
Dates of Service	Rate Studies: 2016, 2019, 2022
# of Employees	

Agency Name:	Mount Prospect, Illinois
Address	1700 West Central Road
City, State, Zip Code	Mount Prospect, IL 6056
Telephone Number	847-870-5640
E-Mail	Sdorsey@mountprospect.org
Contact Person	Sean Dorsey, Public Works Director
Dates of Service	2017
# of Employees	

Agency Name:	Fort Smith, Arkansas
Address	801 Carnall Ave, Suite 500
City, State, Zip Code	Fort Smith, AR 72901
Telephone Number	479-784-2401
E-Mail	LanceM@FortSmithAR.gov
Contact Person	Lance McAvoy, Utilities Director
Dates of Service	2011-2022
# of Employees	

Agency Name:	DuPage County
Address	421 N. County Farm Road
City, State, Zip Code	Wheaton, IL 60187
Telephone Number	630-985-3553
E-Mail	Stanley.spera@dupageco.org
Contact Person	Stan Spera, Financial Administrator
Dates of Service	2022
# of Employees	

If perspective regarding our Lake County performance is helpful in the selection process, Austin McFarlane, Joel Sensenig, or Julie Gray are most familiar with our work.

Sustainability Statement

Waste Minimization

We perform periodic audits of our waste streams. Results show improvement in our recycling rates. We handle paper, cardboard, plastic and metal – all of which support LEED recertification of our 9300/9400 Ward Parkway offices. Lamp lighting elements, print cartridges, and electronics are diverted from landfill and managed by appropriately-authorized recycling partners. Food and landscape wastes are composted. Instead of paper-based corporate communications, messages are displayed on strategically- positioned digital screens. In place of disposable plates, cups and utensils – cafeteria operations offer reusable and washable dishware. Corporate purchasing policies for printing paper and cleaning products include terms for responsible sourcing, no/low toxicity and higher recycled-content percentages.

Energy Efficiency

We continue to improve the Energy Star score for our 9300/9400 Ward Parkway offices. Currently, we rank in the 96th percentile, near the top among peer facilities. We have improved our lighting power density. We lower our HVAC set points in winter and raise them in summer. We have a solar photovoltaic array and six charging stations for electric vehicles.

Water Efficiency

Since our initial LEED certification several years ago, we have continued to demonstrate water- conservation practices. We have low-flow fixtures in our restrooms and on-site fitness center locker rooms. Our landscape irrigation system has been upgraded and calibrated to be more water efficient.

Staff

We have more than 280 employee-owners credentialed by the Institute for Sustainable Infrastructure as Envision Sustainability Professionals, and 250 by the U.S. Green Building Council as LEED Accredited Professionals. Our Vice President of Environmental Services is the executive sponsor of our sustainability team. The team has representatives from diverse practices across several of our office locations. We encourage web-based conferencing to reduce the carbon footprint from airline and car travel. Similarly, we support programs for public transit, car-pooling and bicycling to work. We offer on-site fitness centers that include showers for bicycle commuters.

Education

We support the active participation of our employee-owners in various organizations and their sustainability-related committees (e.g., American Society of Civil Engineers, American Public Works Association, American Water Works Association, National Association of Environmental Professionals, Institute for Sustainable Infrastructure and U.S. Green Building Council). We encourage and fully reimburse investment in continuing education to promote innovation, leadership and renewal of sustainability credentials. We also present at national conferences, such as Greenbuild and Growing Sustainable Communities.

A copy of our Corporate Sustainability report is located on the following pages.

BURNS McDONNELL

WHAT WE DO MATTERS

2020 Corporate Sustainability Report

Burns & McDonnell is a family of companies bringing together an unmatched team of 7,600 engineers, construction professionals, architects, planners, technologists and scientists to design and build our critical infrastructure. With an integrated construction and design mindset, we offer full-service capabilities.

The firm was founded in 1898 by Clinton S. Burns and Robert E. McDonnell.

SUSTAINABILITY AMID A PANDEMIC

The coronavirus pandemic sent ripple effects across all segments of society and the economy. From the beginning, Burns & McDonnell embraced creative approaches to deliver important critical infrastructure without interruption.

The challenges 2020 presented and shed important light on — a pandemic, racial injustice and social unrest — demanded the best of us all. Our employee-owners responded with resiliency, working together (often virtually) to make our clients successful. Across industries, we pivoted aggressively to move infrastructure forward, consistently seeking opportunities to apply sustainable concepts to our work.

Powered by our collective responsibility to make the world a better place, we are committed to protecting our natural resources and improving the quality of life in the communities we serve. With every project we plan, design, build and manage, we embrace chances to address the world's biggest challenges with innovative and sustainable solutions.

This report includes environmental, social and economic issues that are material to Burns & McDonnell employee-owners, clients and stakeholders. It encompasses our offices worldwide and is informed by the Global Reporting Initiative (GRI) Standards for sustainability reporting.

REIMAGINING RESILIENCY

As we reflect on 2020, it's important to recognize the challenges individuals, businesses and communities faced — and are still facing — during these unprecedented times. While phrases like social distancing and flattening the curve became an everyday part of our lexicon, our response to multiple crises called on us to be nimble and innovative in the sustainable ways we handled our clients' work.

At Burns & McDonnell, sustainability is more than just a feel-good moral choice. Practiced thoughtfully, it can be a good business decision that generates better processes, improved productivity and innovative results.

While the coronavirus pandemic drastically impacted the way we live and work, there will always be a need to maintain the critical infrastructure that keeps the world moving and connected. From manufacturing, healthcare and transportation to power, communications and government work, our firm's employee-owners provided uninterrupted service on nearly 13,000 projects, touching 16 critical infrastructure categories in the U.S. and abroad. We were on-site through it all, with employee-owners in the field making positive things happen.

Looking forward, it's an exciting time to focus on sustainability and resiliency, guiding clients through an energy transition and helping them leverage renewable energy sources like solar, wind and biofuels to achieve sustainability goals.

We evaluate our own corporate sustainability performance annually as a reminder to keep improving, and we had much to be proud of in 2020, including:

- Celebrating the opening of the final building on our world headquarters campus. Crews worked more than 134,000 hours without any safety incidents. The project generated work for more than 50 companies, including 30 businesses owned by women and minorities.
- Helping a growing number of clients replace or supplement traditional energy sources with renewables to offset carbon footprints.
- Continuing to advance our internal competitive innovation incubator, IGNITE, to create new technologically driven services and products that address industry changes on the horizon.
- Using virtual technologies and adaptive strategies to connect and problem-solve. By integrating innovative tech into our services, we're helping clients use digital twins and augmented reality for training, testing and on-site visits — keeping projects moving, on time and on budget.
- Supporting employee-owners by offering COVID-19 testing and easy access to vaccinations. We also encourage the use of virtual health options that allow employee-owners to focus on their well-being.

- Offering critical resources and services to those who needed it most. The Burns & McDonnell Foundation donated $1.5 million to the United Way's nationwide COVID-19 Community Response and Recovery Fund. We also had our most successful United Way corporate campaign to date, donating $4 million to help those in our communities.
- Demonstrating our consistent focus on our most valuable asset — our employee-owners. We were named once again to the *Fortune* list of 100 Best Companies to Work For and selected as one of 50 Companies That Care by *People* magazine.
- Developing Burns & Mac On Call, an online complimentary consultation service that quickly and efficiently connects our industry leaders with people seeking solutions to infrastructure challenges.
- Expanding our regional and international offices; capitalizing on direct-owned resources; translating our design-build experience for new industries and markets; and continuing to grow 1898 & Co., our future-focused consulting and technology company.

In tough times, we came together in a big way to collaborate, build and connect as one Burns & McDonnell. For more than 120 years, we've proudly worked alongside our clients to grow local economies and provide the infrastructure needed for the communities they serve. We're proud of the work we've done in recent years and look forward to the work ahead.

Ray Kowalik
Chairman and CEO

COMPANY

For more than 120 years, the Burns & McDonnell mission has been inspired by a call to make the world a better place. We continue to solve global issues with strategic perspective and excellent execution, a tradition established by our visionary founders who built the company to enable our nation's growth and prosperity through infrastructure.

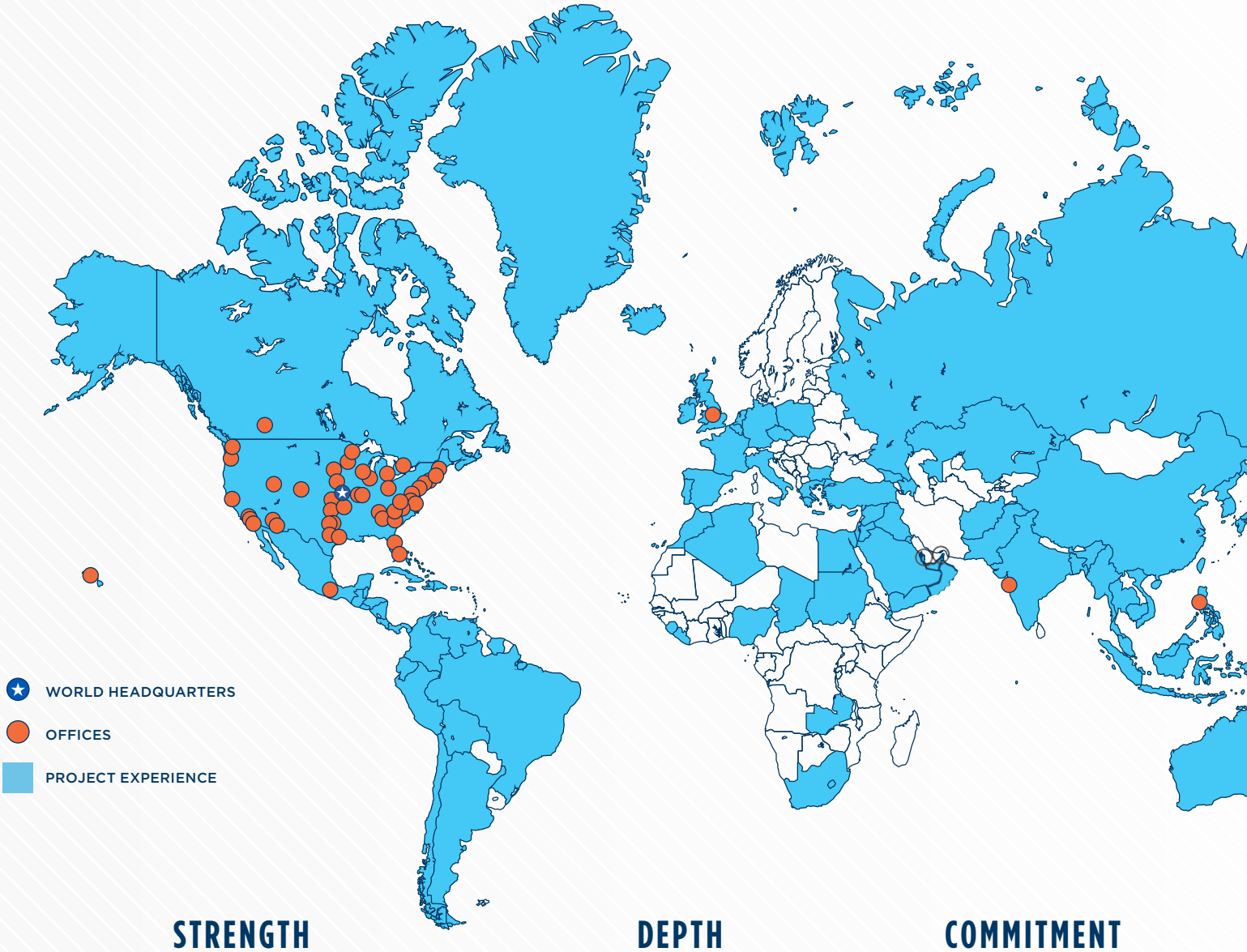
Sustainability touches every facet of our business and makes us a better company. With an eye toward sustainable solutions, our agility, creativity and ceaseless commitment helps us deliver client results that often exceed expectations.

During the pandemic, our focus on sustainability propelled our resolve in meeting client needs and increased our business resiliency and range. This section provides information about our services, markets, diversity, financial strength, growth and business ethics, and outlines our essential commitment to safety and quality no matter what challenges we face.

PROFILE

LOCATIONS

From our headquarters is in Kansas City, Missouri — where we began in 1898 — our reach continues to expand. Our more than 60 offices dot the map across the globe, rising out of our philosophy of serving our clients where they operate.



STRENGTH

7,600

ENGINEERS, ARCHITECTS, CONSTRUCTION PROFESSIONALS, SCIENTISTS, CONSULTANTS AND ENTREPRENEURS

DEPTH

60+

OFFICES WORLDWIDE

COMMITMENT

100%

EMPLOYEE-OWNED

See more at
burnsmcd.com/locations

TOP RANKINGS

ENGINEERING NEWS-RECORD

TOP **10%** IN TOP U.S.-BASED CONSTRUCTION FIRMS

#6 TOP 100 DESIGN-BUILD FIRMS

#9 TOP 500 DESIGN FIRMS

#17 TOP 100 GREEN BUILDINGS DESIGN FIRMS

#21 TOP 50 DESIGNERS IN INTERNATIONAL MARKETS

#1 IN POWER

#1 IN TRANSMISSION AND DISTRIBUTION

#1 DESIGN FIRM IN TEXAS AND LOUISIANA

#2 IN FOOD AND BEVERAGE

#2 IN WIND POWER

#3 IN FOSSIL FUEL

#3 IN GOVERNMENT OFFICES

#4 IN AEROSPACE

#4 IN COGENERATION

#5 IN CHEMICAL PLANTS

#5 IN TELECOMMUNICATIONS

#6 IN REFINERIES AND PETROCHEMICAL PLANTS

#7 IN DATA CENTERS

#7 IN PIPELINES

#8 IN CLEAN AIR COMPLIANCE

#9 IN WATER TREATMENT

#11 IN CHEMICAL AND SOIL REMEDIATION

#11 IN SANITARY AND STORM SEWERS

#11 IN SITE ASSESSMENT AND COMPLIANCE

#12 IN WASTEWATER TREATMENT

BUILDING DESIGN + CONSTRUCTION

#2 IN RECONSTRUCTION SECTOR ENGINEERING

#3 IN OFFICE ENGINEERING

#3 IN GOVERNMENT SECTOR ENGINEERING

#4 IN ENGINEERING ARCHITECTURE FIRMS

#4 IN INDUSTRIAL SECTOR ENGINEERING

#6 IN DATA CENTER ENGINEERING

#13 IN UNIVERSITY ENGINEERING

#15 IN RETAIL ENGINEERING

#15 IN RECONSTRUCTION CONTRACTORS AND CM FIRMS

#23 IN HEALTHCARE ENGINEERING

#32 IN CONSTRUCTION/PROJECT MANAGEMENT FIRMS

#38 IN RETAIL CONTRACTORS AND CM FIRMS

#45 IN LABORATORY FACILITIES ENGINEERING

#50 IN OFFICE CONTRACTORS AND CM FIRMS

#1

IN ELECTRICAL DESIGN

ELECTRICAL CONSTRUCTION AND MAINTENANCE'S TOP 40 ELECTRICAL DESIGN FIRMS

#4

MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION (MEP) DESIGN

CONSULTING-SPECIFYING ENGINEER'S MEP DESIGN GIANTS 100 REPORT

35

LOCAL PUBLICATIONS THAT NAME US A BEST PLACE TO WORK YEAR AFTER YEAR

NAMED ONE OF *PEOPLE* MAGAZINE'S

50

COMPANIES THAT CARE

#65

FORTUNE MAGAZINE'S 2020 LIST OF 100 BEST COMPANIES TO WORK FOR NATIONWIDE

OWNERSHIP AND GOVERNANCE

The transition to employee ownership in 1986 launched Burns & McDonnell into a period of revitalization, expansion and cultural growth that continues today. As owners, we share a stake in our company and receive comprehensive information about strategic, financial and operational performance. We are transparent and regularly share financial information among employee-owners. Employee-owners participate in a spring shareholders meeting and a fall financial update.

We are governed by a board of directors, which is chaired by our CEO, and a leadership team including officers and principals. Supporting these groups are appointed employee-owner representatives, who participate in quarterly meetings and serve as a conduit for ideas and information. Meeting minutes are accessible on our intranet, available to all employee-owners.

Board of Directors:

- Ray Kowalik, chairman and CEO
- Paul Fischer, president, Regional Office Group
- Randy Griffin, president, Construction/Design-Build Group
- John Olander, chief operating officer and president, Transmission & Distribution Group
- Bob Reymond, president, Oil, Gas & Chemical Group
- Denny Scott, chief financial officer
- David Yeamans, president, Aviation & Federal Group

7 BOARD MEMBERS

73 OFFICERS

138 PRINCIPALS

FINANCIAL STRENGTH

Our historical growth and stability is reflected in our strong financial performance. Annual revenue in 2020 was $3.9 billion and has remained consistently above $3 billion for the past several years. Annual revenues for 2019 and 2018 were $3.8 billion and $3.2 billion, respectively.

Burns & McDonnell maintains cash and investment balances of nine figures and has no current or long-term bank borrowings. The company maintains positive net income and current backlog levels in excess of $4 billion, and an aggregate bonding program of $1 billion, with a current available capacity of $750 million.

Through the Employee Stock Ownership Plan (ESOP), employee-owners — who are enrolled automatically — participate directly in the company's profitability. At year-end, our company makes a cash contribution to the ESOP, which is allocated to eligible employee-owners. An independent valuation consultant reviews our financial performance to determine our ESOP stock price each year.

GROWTH

COVID-19 changed the landscape for the global labor force. In a year when many companies struggled or closed, we continued to successfully execute and serve our clients despite an interrupted supply chain and major projects being put on hold. With agile teams and resources, we quickly adapted to changing market conditions. Our lasting commitment to diversification in service offerings also helped us pivot efficiently during such a turbulent time. Areas of growth we've experienced include:

Shift to Renewables

The focus on renewables continues in parallel with decarbonization efforts. Many clients are diversifying assets to include renewables and first-of-a-kind carbon reduction technologies to reduce greenhouse gas emissions. While for decades we've partnered with clients to improve efficiency in their water and energy consumption — and meet EPA standards — now, more than ever, the focus is on delivering solutions to reduce carbon emissions throughout asset portfolios. Growth in solar, storage, hydrogen, carbon capture, advanced nuclear, hydroelectric and renewable fuels is where the future is headed, and we are here to support clients on these and other projects that help them reduce their carbon emissions.

Offshore Wind

The offshore wind industry has the potential to create thousands of high-paying jobs, support a growing economy and help create efficient, sustainable energy for years to come. While the offshore wind market is in the early stages in North America, the industry is going strong abroad in markets like the United Kingdom. In the U.S., we're involved in 60% of announced offshore wind projects, including services for new and updated onshore substations, overhead/underground transmission lines, interconnection stations and more.

Mission Critical

Critical infrastructure has been a primary focus since our inception. More recently, the development of technology services has been an area of explosive growth. We're working with companies in tech to develop data centers globally, expanding our data center design, engineering and construction teams significantly to meet these needs. This growth also impacts businesses that provide power, water, environmental and other needs to these mission-critical facilities.

Pandemic-Era Consulting

The pandemic has prompted businesses to adjust how they operate. Large, high-traffic facilities like airports and sports venues are reimagining their spaces to provide safer, better-quality experiences. As society faces a constantly evolving future, clients are looking for pandemic-centric guidance. They're calling on us for help navigate their way through the pandemic, whether it's for consulting about business aircraft fleets and enhanced safety features for mechanical, electrical, plumbing (MEP) and other systems to safely operating on construction sites, managing supply chain disruptions and developing water/wastewater coronavirus monitoring solutions.

Business Technology and Cybersecurity Consulting

When we see a need, we work tirelessly to meet it. That extends to developing technology tools to address specific industry challenges:

- AssetLens — from 1898 & Co., our business, technology and cybersecurity consulting arm — provides a more efficient and data-driven process for capital planning. It assesses the condition and criticality of an organization's critical assets, collecting and cleansing data, applying proprietary algorithms, and automating an investment plan with business justification. This allows companies to make proactive, data-driven decisions that provide the most value to their customers.
- Also designed by 1898 & Co., the Aircraft Characteristics App is a primarily mobile application available to download in the iOS, Android and Windows operating systems that offers easy-to-

access statistics and specifications for aircraft of numerous makes and models. Data for commercial, military and general aviation aircraft is sorted by manufacturer and labeled with a group number for quick identification. Users can find fast facts like ramp weight, wingspan, tail height, passenger capacity and more at the touch of a button without paging through a textbook-size publication. For our aviation clients, it offers game-changing gains in efficiency and convenience.

CHALLENGES

We see new challenges in nearly every market we serve and view these challenges as opportunities to help make our clients and the communities they serve more resilient. Many of these challenges have been years in the making and were accelerated by the pandemic:

- The pandemic created ongoing challenges in the availability, delivery, cost and shipping of commodities and equipment. For example, critical components for solar equipment, including steel, aluminum and semiconductor chips, have become increasingly supply-constrained.
- Labor shortages are significantly impacting projects in every industry and market.
- Consumer demands are changing rapidly, pushing a need for new work processes and technologies. In the aviation industry, for example, airlines and owner operators are rethinking operations and seeking upgraded tech to stay competitive.
- Extreme weather is increasingly affecting vital infrastructure. Urgent needs for repairs to electricity and water infrastructure, airports, highways and bridges are driving investment and a demand for quick delivery.
- Preparing the grid for the coming energy transition to support the rise of transportation electrification is a major priority for the power industry, which is also coping with distributed generation and huge shifts in a generation mix toward renewables, battery storage and flexible, fast-start units.
- As the U.S. becomes a net exporter of petroleum and related hydrocarbons, oil and gas networks must expand infrastructure to meet demand.
- Increased threat of cybersecurity events requires integrated cybersecurity and physical security plans. Organizations are seeking how best to assess, select and deploy these solutions across their businesses.

GROWTH IN 2020*

310,883
SQUARE FEET OF ADDED SPACE

37
NEW OR EXPANDED OFFICES

**Includes headquarters, regional and branch facilities.*

GLOBAL PRACTICES

Our diverse business portfolio allows us to nimbly respond to market changes without compromising our mission of making our clients successful.

While our global practices each have a defined focus, all are united through constant collaboration to achieve our clients' overall goals. This structure provides employee-owners the opportunity to positively impact projects that span multiple industries.

BUSINESS ETHICS

As detailed in our comprehensive Business Conduct Guide, we are committed to conducting business lawfully and ethically. All new hires are required to complete business ethics training within three months of their start date — and all employee-owners are required to complete a refresher course every two years. Every employee-owner is required, upon risk of penalty, including possible termination of employment, to adhere to our high standards of personal and professional integrity.

SAFETY

At Burns & McDonnell, the safety of our employee-owners, subcontractors and related personnel is of the utmost importance. Safety is a core value of our culture, and we are dedicated to protecting the safety of all individuals associated with our company.

A safe work environment impacts every measure of a firm's success, from quality of work life to productivity and profitability — our clients' and our own. With many of our employee-owners working full time on client sites, our safety leadership affects the safety and health of not only our employee-owners but also that of many others influenced by their activities.

Our Corporate Safety & Health Program is integrated into our project process as a critical element. Through training, management, behavior modification and recognition, we aim to achieve the goal of zero recordable incidents. We understand that each of us plays a vital role in the completion of work in a safe manner. Employee recommendations to improve safety and health conditions are encouraged and given thorough consideration by our management team.

Our current safety record puts us in the top 5% of all contractors nationwide. We do not rest upon past successes, but use those successes as a foundation for continued improvement. In addition to physical safety, our team of certified and trained cybersecurity professionals addresses the ever-changing threats to our people, offices and data through awareness, monitoring and implementation of the latest security technologies.

Tools we utilize to promote safety include:

- 40-hour HAZWOPER training
- First-aid and CPR training
- Hazard-specific training
- Onboarding
- OSHA 30-hour construction/general industry safety training
- Pre-task analyses on-site
- Safety toolbox talks
- Site and workplace signage
- Site safety orientation
- Task safety observation

SAFETY IN A PANDEMIC

COVID-19 presents a unique safety challenge, one we're addressing by staying on top of rapid changes to identify developing risks. We view this new threat from the same perspective as almost any other hazard on a project site. We work to understand the risk, and then we put control measures in place to control the threat.

As essential workers, many of our field operations staff were separated from their loved ones for extended periods due to travel restrictions. While on-site, we establish and follow various social distancing procedures, like breaking crews into smaller groups to monitor worker health more closely, staggering meeting and break times, and enhancing sanitation methods. Where travel restrictions limit site access, we rely on augmented and virtual reality technology to conduct testing, site walk-throughs and other mission-critical functions.

We continue to leverage tech like Worldcue — a risk management platform that evaluates traveling workers' health, safety and security threats — to help keep employee-owners safe, as well as Triax contact tracing technology.

A work-from-home mandate was put in place for those whose jobs could be performed from home. For those who needed to work in the office, we took special precautions to make the premises as safe as possible.

Despite new challenges, employee-owners and contingent workers received safety training year-round, completing more than 32,000 training hours in 2020. A tremendous amount of this training was done virtually, including the introduction of a new Safe Driver training program.

"2020 demonstrated the need to emphasize holistic safety. It's important to keep our employee-owners physically and mentally healthy, and that starts before setting foot into an office or on a job site. Whether it's providing additional training for these unprecedented times or fostering an environment where we can discuss topics like mental health openly, we're emerging from this period with a renewed vision of how we can best meet our safety needs."

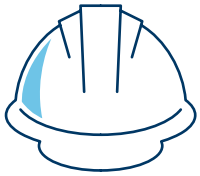
Jamie Butler
Vice President, Safety & Health

OUR SAFETY RECORD

Our recordable incident rate, as defined by the Occupational Safety & Health Administration (OSHA), compares favorably with the Bureau of Labor Statistics and the Construction Industry Institute contractor average. We rank in the top 5% of U.S. contractors in Days Away Restricted or Transferred (DART), Total Recordable Incident Rate (TRIR) and Experience Modification Rate (EMR). We experienced zero fines, OSHA citations or work-related fatalities in 2020.

SAFETY

IS OUR TOP PRIORITY



OUR TOTAL RECORDABLE INCIDENT RATE IS

93% LOWER

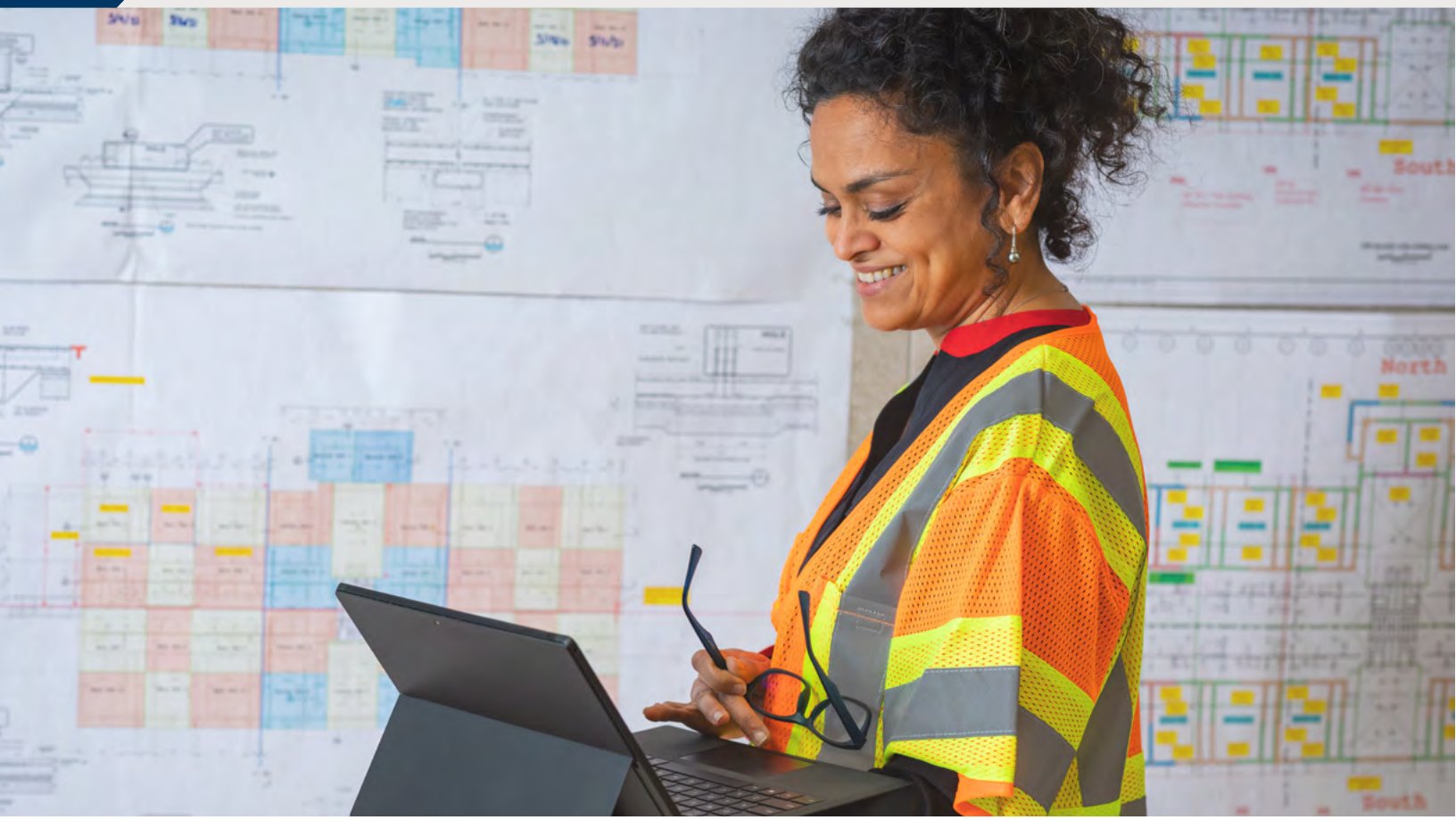
THAN THE INDUSTRY AVERAGE

WE RANK IN THE

TOP 5%

OF AEC FIRMS FOR SAFETY

	2018	2019	2020
Total Recordable Incident Rate	0.13	0.17	0.15
Days Away Restrictions/Transfers Rate	0.06	0.05	0.03
Fatalities	0	0	0
Hours Worked	19,543,704	22,913,829	21,807,604



QUALITY

We achieve operational sustainability through the quality of our projects. Burns & McDonnell is an industry leader in providing professional services that meet and often exceed requirements. We maintain this high standard by continually reinvesting in our people and processes. A quality management system directs the development of all project-related work products.

Our Quality Assurance Department maintains and communicates policies, monitors implementation and evaluates effectiveness to foster improvement. A quality assurance manager from each global practice and regional office helps implement corporate quality standards, concentrating on initiatives and activities that provide the most value.

Our Quality Management System is a set of policies, processes and practices associated with the planning, execution, evaluation and improvement of our services and deliverables. The system helps identify and mitigate risk and creates a framework to provide innovative solutions for our clients' complex challenges.

Quality is integrated throughout the project process, and frequent visioning sessions anticipate and identify issues with the greatest client impact. Our quality manual defines requirements and best practices. Metrics are measured and delivered to decision-makers for constant evaluation.

A key attribute of our quality approach is an atmosphere of integrity and personal accountability. All employee-owners contribute to the program's continuous improvement by individually striving for excellence in every step of project development. As employee-owners, we believe every work product is an opportunity to put our best foot forward.

QUALITY IN A PANDEMIC

From construction sites to plants and facilities, in 2020, companies took social distancing measures seriously, restricting travel and minimizing the number of workers on-site. By implementing the right technology tools, project teams continue to effectively collaborate, manage and execute projects, completing essential tasks ranging from capital planning to scheduling to facility inspections.

To keep up with changing project environments during the pandemic, members of our supplier quality team moved fast. Within just 48 hours of the onset of travel restrictions, they implemented a new way to facilitate inspections at supplier sites. The program, called Blitzz, uses technology to conduct remote inspections and monitor equipment, then communicates that information virtually across Microsoft Teams.

Additionally, we expanded our use of videoconferencing technology by hosting 800 on-site video calls, saving $2 million in travel costs and delivering $10 million in other benefits. We also rely on the integration of wearables and software on job sites, which helps with field data collection, reporting and data capture through in-field work processes.

GLOBAL QUALITY CERTIFICATIONS

Teams within Burns & McDonnell have earned certification with the International Organization for Standardization (ISO) and Occupational Health and Safety Assessment Series (OHSAS) — globally recognized standards validating that quality control processes and standards are followed.

Teams and their certifications:

Burns & McDonnell U.K.

- ISO 9001:2015 for quality management
- ISO 14001:2015 for environmental management
- OHSAS 18001:2007 for safety and health management

Burns & McDonnell Transmission & Distribution, Kansas City, and Burns & McDonnell India

- ISO 9001:2015 certification for engineering design of electrical transmission, distribution, oil and gas, energy and network telecommunications for power infrastructure

Change is constant in our industry, and you have to be nimble in response. Technology is more integrated than ever, but computers and the construction environment don't always get along. Our quality processes help us harness information for the benefit of project goals."

Tammy Lynam
Quality Manager

ENVIRONMENT

We are committed to protecting the environment as we focus on stewardship in how we operate our company and deliver projects for our clients worldwide. This section tells the story of our efforts in energy, emissions, water, waste and materials, and biodiversity.

RESILIENCY

No matter the challenges a community faces, when working on critical infrastructure projects we must anticipate future conditions and increase resiliency accordingly. Constantly improving design standards for the development of sustainable and resilient infrastructure enhances the long-term safety and welfare of all. We're always thinking about advancing the standard with these, and other, methods:

- **Making bold and future-facing decisions.** Looking ahead — in light of observed and projected operating conditions affected by changes in the frequency, volatility, magnitude, range, and intensity of environmental events — helps us plan beyond the current need and balance investment costs with risk.
- **Utilizing data.** We rely on the latest science and data — from floodwater level and sea level projections to greenhouse gas emissions inventories and extreme heat estimates — to design infrastructure that anticipates the world of the future.
- **Leveraging smart infrastructure.** Smart cities create the potential for a self-healing electrical grid, efficient traffic management, automatic water supply leak detection, smarter airport security systems and more.
- **Engaging the community.** It's our responsibility to listen to and incorporate the ideas of the people who will use the infrastructure we design and build. We reach out to stakeholders and invite them to share their concerns so projects can support their community goals and reflect their values and priorities.
- **Approaching extreme weather challenges holistically.** Because extreme weather events have no borders, resilient infrastructure should be assessed at the regional scale. A key element of this strategy is the cross-departmental implementation that helps align priorities across regions and sees that initiatives are sustainable and socially equitable.

ENERGY

We incorporate energy-saving methods into all phases of our project development process, including at our own world headquarters.

At the primary buildings of our headquarters, our energy efficiency efforts in 2020 earned an ENERGY STAR score in the 90th percentile. This signifies that the buildings are top performers for energy efficiency, based on U.S. Environmental Protection Agency methodology.

We continue to deploy techniques for reducing electricity and natural gas consumption at our headquarters and our offices around the globe, including:

- High-efficiency lighting and LED lighting retrofits, saving an estimated 228,903 kWH annually
- Energy-efficient HVAC systems, including high efficiency chillers
- Energy-efficient doors and windows
- Motion sensor lighting
- Optimized building system control

We've been at the forefront of a changing energy sector for more than a century, from coal to petroleum products to renewable energy sources, and highlights of some of our key projects are included in this section.

2020 ENERGY USAGE*

ELECTRICITY USAGE:

4,520 kWh

PER PERSON

NATURAL GAS FOR HEATING USAGE:

73 THERMS

PER PERSON

**Per-person averages based on overall annual energy consumption at world headquarters.*

PROJECT SPOTLIGHT

MAYFLOWER OFFSHORE WIND ENERGY

We're proud to be involved in the majority of planned offshore wind projects in the U.S., including providing front-end engineering design services and market engagement support for an offshore wind project with Mayflower Wind, a joint venture project of Shell and Ocean Winds.

Mayflower Wind is developing a lease area near Nantucket, Massachusetts, that could eventually support up to 1,600 MW of offshore wind, providing enough energy to power more than 500,000 homes.

Wind power from the project is expected to eliminate 2.5 million metric tons of greenhouse gas emissions annually, the equivalent of taking 5.3 million cars off the road.

The project would help train New England workers for jobs in the offshore wind industry. Manufacturing and supply chain development for the industry could grow to represent thousands of new jobs across the Northeastern U.S.

PROJECT SPOTLIGHT

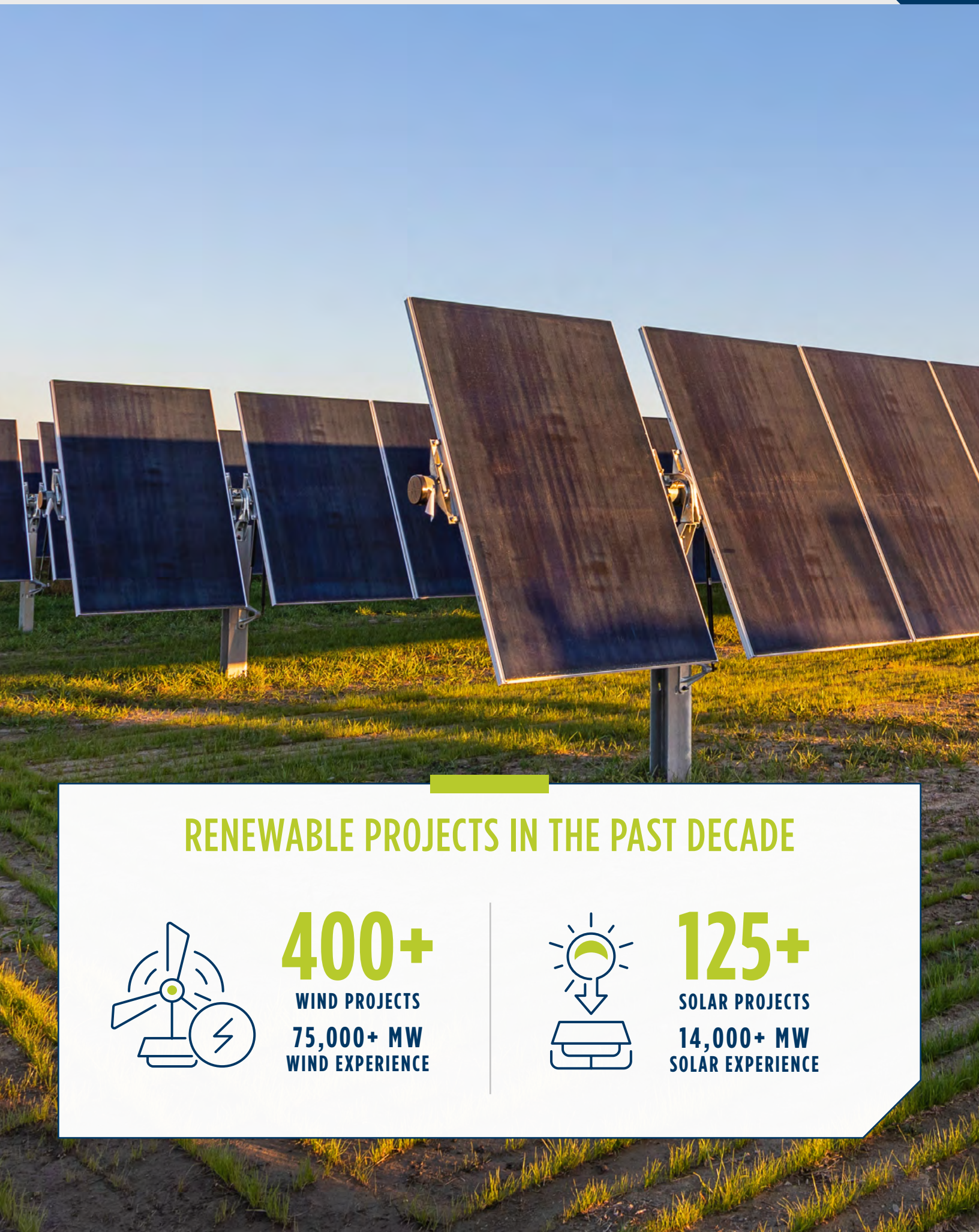
TROY SOLAR FARM

The Troy Solar Generation Project is a 50-megawatt (MW) universal solar array in eastern Spencer County, Indiana. At the time of commissioning, it is the largest utility-scale solar plant for CenterPoint Energy. The plant utilizes First Solar 440-watt, thin-film modules in conjunction with a single-axis tracking system. Consisting of approximately 150,000 solar panels distributed across 300 acres, the Troy installation will support surrounding communities for decades. It can produce clean, efficient solar power for more than 12,000 homes.

The installation is setting the stage for the company's successful transition into renewable power generation. The direct-hire engineering-construction project also is notable for Burns & McDonnell, as it utilized our AZCO company for direct-hire construction, elevating our team's efficiency and improving project sustainability. The approach streamlined project delivery with parallel engineering, procurement and construction activities.

Drone imagery and mapping was used to obtain preliminary topography information, allowing the site design team to conduct the preliminary site assessment and acquire as-built data. Drone imagery was also used for progress documentation throughout the project. Pairing data developed during the structural design phase with GPS-equipped pile-driving equipment further improved project efficiencies.

Safety, one of our core principles, was a top priority, and the project was executed with more than 164,000 safe work hours with zero days away and zero lost time incidents. While on-site, mobile applications supported safety management, daily reporting, quality forms and more.



RENEWABLE PROJECTS IN THE PAST DECADE

400+
WIND PROJECTS
75,000+ MW
WIND EXPERIENCE

125+
SOLAR PROJECTS
14,000+ MW
SOLAR EXPERIENCE

PROJECT SPOTLIGHT

PEARL MICROGRID

The Pacific Energy Assurance and Renewables Laboratory (PEARL) at Joint Base Pearl Harbor-Hickam is the first of six microgrids planned to boost energy assurance, resiliency and cybersecurity on the island of Oahu, helping defend the base's F-22 mission.

Our team designed and built the microgrid with capabilities including solar photovoltaic integration, battery energy storage, and the ability to transition to independent operation instantaneously with less than a 10% voltage drop to critical loads. It also supports the state of Hawaii's 2045 goal for 100% carbon-free energy sources.

In addition to its sustainable benefits, the microgrid increases energy assurance for the base. If the grid were to destabilize due to changes in power flow from other resources, it will isolate itself from the utility and stabilize without loss of critical power.

EMISSIONS

Our team brings a depth of experience to the utility electrification space, from high-level market assessments and studies to site evaluations, engineering design and construction.

As a leader in the industry, we are uniquely positioned to reduce carbon emissions by promoting energy efficiency and incorporating renewable sources in client projects and our own buildings around the world. At our offices, we work to reduce greenhouse gases (GHGs) by implementing several in-house solutions that reduce the consumption of water, electricity and natural gas.

While we value the relationships we've built face to face, we've also seen the benefit of augmented and virtual reality technologies for collaboration. These tools help us decrease the need for business travel, which reduces both associated carbon emissions and project costs. As we continued to expand our regional presence in 2020, we recruited locally to decrease the physical distance between our employee-owners and clients. More than half of our employee-owners work outside of our world headquarters.

DEFINING OUR CARBON FOOTPRINT

Our carbon footprint is the total amount of greenhouse gases (GHGs) emitted to directly and indirectly support the human activities associated with our company's work. We use an environmental management system to track GHG emissions measured in metric tons of CO_2-equivalent gas.

The Greenhouse Gas Protocol is a joint effort of the World Resources Institute and the World Business Council for Sustainable Development. It establishes global standards for the measurement and the management of GHGs. The protocol categorizes GHG emissions as Scope 1, 2 or 3 based on the source of the emission. We've calculated our 2020 impact in accordance with the protocol's guidelines.

Greenhouse Gas Protocol

- **Scope 1 — Direct GHG:** Emissions from sources owned or controlled by the company, including office natural gas consumption and fleet gas consumption.
- **Scope 2 — Energy Indirect GHG:** Emissions from the consumption of purchased electricity.
- **Scope 3 — Other Indirect GHG:** Emissions that are a consequence of our company's operation, but not directly owned or controlled by us. This scope includes business travel, employee commuting, and purchased products and materials.

2020

CARBON FOOTPRINT*

Carbon Dioxide Equivalent ($mtCO_2e$)

- SCOPE 1 — DIRECT GHG
- SCOPE 2 — ENERGY INDIRECT GHG
- SCOPE 3 — OTHER INDIRECT GHG

**Data gathered through our Environmental Management System.*

PROJECT SPOTLIGHT

EV CHARGING PROGRAM

The transportation sector is undergoing a transformation due to the rapid advancements made on electric vehicle (EV) technology in recent years. Vehicle electrification programs can contribute to achieving net zero carbon goals. As utilities develop and implement transportation electrification infrastructure, it is important to consider how EVs will affect the grid. A forward-thinking approach such as this is one way to manage increased demand for EVs.

Through a pilot program, a confidential utility client aims to provide EV infrastructure to customers across its state. Open to businesses, government agencies, nonprofits and communities with multifamily dwellings, the program provides the purchase and installation of the equipment and infrastructure necessary to power EV chargers at no charge to the customer. The utility company installs and maintains the heavy-duty charger sites.

The make-ready infrastructure design program has a budget of $11 million. Work on the four-year project began in 2019. For each site, our team upgrades utility infrastructure, installs metering and distribution equipment, and builds four Level 2 chargers.

The program takes a tiered approach to infrastructure deployment and program design. The main objective is to ultimately integrate EVs into the grid in a way that maximizes the use of existing infrastructure, lowers the rates utility customers pay, and accelerates the transition to a clean energy system.

PROJECT SPOTLIGHT

PROJECT TUNDRA CARBON CAPTURE

Carbon capture, utilization and storage technologies make it possible to prevent up to 90% of a power plant's carbon dioxide emissions from entering the atmosphere. To jump-start the commercialization of carbon capture technologies, the U.S. Department of Energy (DOE) awarded $110 million in federal funding for research and development projects in late 2019. Burns & McDonnell is assisting Minnkota Power Cooperative with driving forward the advancement of carbon capture and storage technology for North Dakota power plants.

The effort included evaluating the feasibility of installing the largest flue gas CO_2 capture facility in the world, capturing 90% of the CO_2 from the flue gas produced from either generator for sequestration or future utilization in enhanced oil recovery. A pilot-scale test unit — including a sulfur dioxide scrubber, a CO_2 absorber and a regenerator — that could capture the equivalent of a ton of CO_2 per day was used to test the technology.

Burns & McDonnell led the balance of plant design to support the development of the carbon capture process at Milton R. Young Station. If the project moves forward, Minnkota Power Cooperative will provide steam and power to the CO_2 capture facility, significantly lowering the station's carbon footprint while providing economic power to the cooperative members and supporting local industry jobs.

SUSTAINABILITY CREDENTIALS

Buildings and construction represent nearly 40% of global energy-related emissions, according to the World Green Building Council. Nearly three-quarters of such energy-related emissions attributed to buildings and construction comes from energy related to operations: heating, cooling and lighting facilities. The remainder is embodied carbon: the energy and emissions from materials and construction.

These figures represent opportunities for improvement. Guided by our Envision-credentialed and LEED-accredited professionals, we design and construct high-efficiency infrastructure and facilities that save project resources.

We've built campuses with net zero energy use and microgrids that integrate renewables, batteries, electric vehicles and other smart technologies. We often specify low-carbon materials on jobs.

Our environmental professionals track evolving rules and regulations to support air quality and compliance. Our team estimates emissions, conducts air pollution control analyses, prepares air permit applications and predicts ambient air impacts through dispersion modeling.

CERTIFIED GREEN

300+
LEED-ACCREDITED PROFESSIONALS

320+
ENVISION SUSTAINABILITY PROFESSIONALS (ENV SPs)

PROJECT SPOTLIGHT

BPX OILFIELD ELECTRIFICATION

Oilfield electrification at bpx energy — BP's U.S. onshore oil and gas business unit — led to a significant reduction in carbon emissions at its Grand Slam facility in the Permian-Delaware Basin. Our initial study analyzed solutions to meet load requirements for a private electric grid, revealing the potential for more than 40% in savings and the added benefit of greenhouse gas reduction when converting from on-site diesel generation to electrical grid power — including 300 miles of electrical distribution line, nine switchyards and four substations.

Our 1898 & Co. team also established a power system plan to assess and map the existing transmission system, creating an accurate foundation for recommendations on physical upgrades to the electric infrastructure.

Grand Slam's electric grid was fully operational within a year of the project's planning and design phase, with a reduction in routine flaring of excess natural gas that was released in the oil drilling process from 16% to below 2%. The project is anticipated to offer a rate of return in less than three years, with additional benefits through long-term operation.

WATER

An ever-expanding population, changing environmental regulations and persisting drought conditions are increasing the demand for water. To better manage water resources, lessen the supply-demand gap and establish a sustainable path toward water security, direct and indirect water reuse is playing an increasingly significant role in how water resources are handled in the U.S. and around the globe.

Apart from protecting the environment, a key reason for diligence in managing water usage and wastewater discharge is growing water scarcity. The availability of both surface water and groundwater is declining, and facilities need to secure water from alternative sources, including from industrial process water reuse systems.

We protect water resources by building vital infrastructure for drinking water supply, treatment, and distribution, as well as wastewater and stormwater management. We assist clients in conserving, cleansing and capitalizing on what is retained and released through these activities.

Our company was founded on the principles of providing clean water and efficient wastewater systems, and we remain an industry leader in this space more than a century later. Whether handling a project for a small rural water provider or a large regional wastewater district, we deliver innovative solutions for our clients as they face increased demand, aging infrastructure and evolving regulations.

Along with our clients and partners, we develop and construct sustainable water systems. We stay knowledgeable about the regulatory landscape. We explore the science of wetlands and other bodies of water. Above all, we act as problem-solvers to meet the demands of the communities our clients serve.

Our own facilities benefit from the same approach. Water management techniques at our offices include:

- Aerators at sink fixtures
- Drought-tolerant landscaping
- Dual-flush toilets
- Reclaimed water for landscaping and irrigation
- Stormwater management systems

2020 WATER USAGE*

8.3K GALLONS PER PERSON

**Per-person average based on overall annual energy consumption at world headquarters.*

PROJECT SPOTLIGHT

THORNTON WATER TREATMENT PLANT

The City of Thornton is committed to providing a sustainable, high-quality water supply for its residents and for future generations. Our project team worked diligently to support this commitment throughout the design and construction of the Thornton Water Treatment Plant.

In addition to addressing the city's water quality, taste and odor concerns, the project team developed an innovative design solution that capitalized on the hilly topography of the greenfield site — turning a challenge into an advantage.

The team constructed the water treatment plant at different elevations to use gravity, rather than pumps, to move water throughout the plant. This solution will save the city more than $4 million in electricity costs over the facility's projected life cycle. Another energy-saving feature of the plant is its 90% efficient HVAC equipment. The team also designed the plant to utilize up to 300 KW of solar energy to power the treatment plant.

Our project team successfully established the plant as a state-of-the-art, zero-liquid discharge facility by designing a feature that recycles the facility's backwash water and residuals back to the front of the facility for treatment.

The facility and site are also prepared for the future installation of a solar farm that will offset power consumption, thus reducing the carbon footprint.

WASTE AND MATERIALS

Solid waste management and resource recovery provide opportunities for promoting sustainability while keeping communities clean and the environment safe. From material recycling and composting facilities to landfills and transfer stations, we design and construct solid waste management facilities and assist clients in the development of new conversion technologies and systems.

As advocates for circular, closed-loop material streams, we apply best practices in our offices, offering durable and compostable goods that help protect the environment and public health, conserve resources, and minimize waste. In our clients' projects, we reach beyond traditional recycling by reusing materials and designing innovative, smart solutions to reduce solid waste.

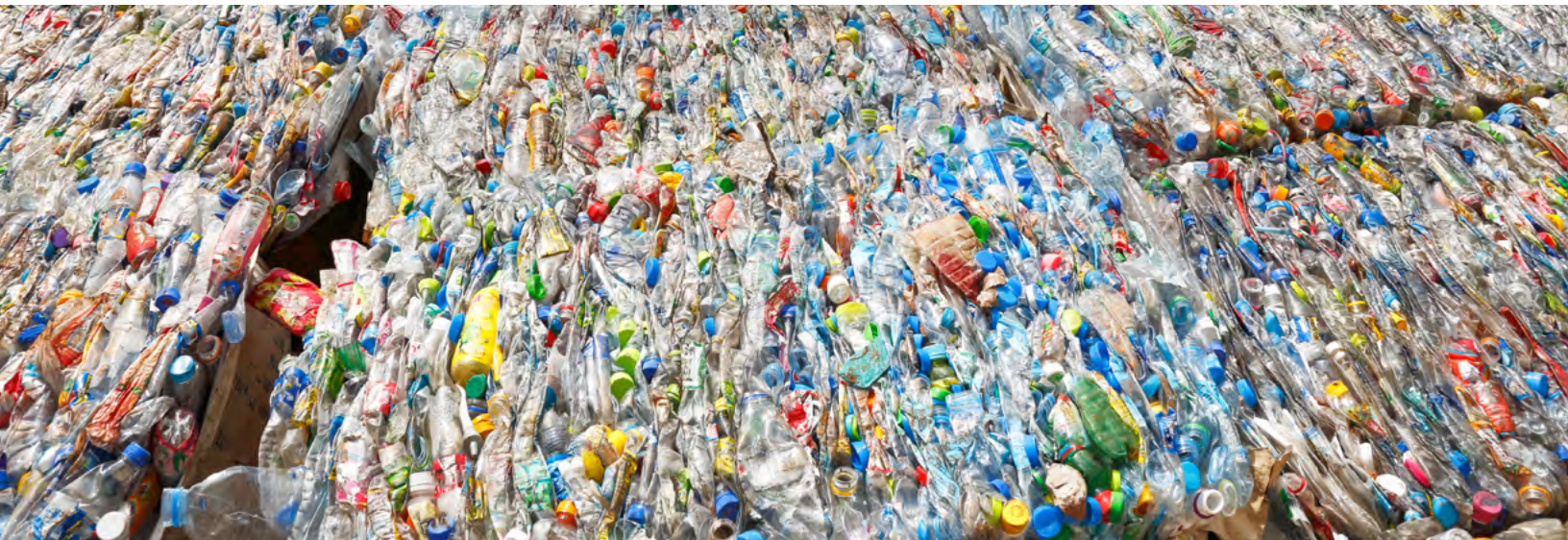
Our policies and procedures to minimize waste include:

- Comprehensive recycling programs at offices and job sites
- Digital documentation and archival systems to reduce the need for printed copies and paper file storage
- Digital transfer of plans and drawings to suppliers, clients and subcontractors
- 3D scanning and building information modeling (BIM) software for design development
- Durable dishware and dishwashing equipment to minimize use of paper goods and single-use plastics
- Green cleaning programs

With our sustainable purchasing policy, our goal is that at least 60% of ongoing consumables comply with one or more of these criteria:

- Contains at least 10% post-consumer and/or 20% pre-consumer material
- Contains at least 50% rapidly renewable material
- Contains materials of which at least 50% are harvested and processed within 500 miles of the facility
- Consists of at least 50% Forest Stewardship Council (FSC)-certified paper products

Our world headquarters is certified LEED Gold for the operations and maintenance of existing buildings, reflecting our achievement in solid waste management, indoor air quality, purchasing, water efficiency, energy, and atmosphere and operational innovation.



PROJECT SPOTLIGHT

RIVER DES PERES GREENWAY

Burns & McDonnell completed a trail realignment and reconstruction project for a multiuse greenway that spans 2.5 miles along the River des Peres in St. Louis, Missouri. Our team developed several alignment options for consideration by a diverse group of stakeholders including the City of St. Louis, Metropolitan St. Louis Sewer District, Missouri Department of Transportation, U.S. Army Corps of Engineers and Metro Transit.

The selected option connected the greenway to adjacent communities and a light rail system, created scenic views, modified a city park and stabilized stream banks. It also incorporated stormwater management best practices, including rain gardens and bioswales. The scope included paving, earthwork, drainage, retaining walls, structures, permitting, traffic signal modifications, striping, rest areas and signage.

The path for the greenway follows a flowing, nonlinear route that hugs the contours of the area, creating a finish that is ADA-accessible and pleasing to use for pedestrians and bicyclists.

PROJECT SPOTLIGHT

KANSAS CITY'S SMART SEWER PROGRAM

The Smart Sewer program is KC Water's commitment to reduce and prevent overflows from the sewer system. At the end of 2020, the program team expected a modified federal consent decree and began to plan accordingly. The multidecade, $2.3 billion program creates a cleaner, healthier environment for the community and improves the quality of the water returned to area waterways.

The largest infrastructure investment in the city's history, it's also a national leader in the use of green infrastructure and adaptive management to reduce combined sewer overflows, including the integration of more than 480 green acres to the city's combined sewer system area. The 30-year program targets the capture or treatment of 85% of sewer overflows by 2040.

We're closely partnered with KC Water in the planning, design, construction and post-construction monitoring phases of more than 100 capital projects throughout 16 basins, covering 318 square miles of combined and separate sanitary sewer areas. The effort also includes the development of Smart Sewer University to target capacity expansion of small, local, minority- and woman-owned businesses in preparation for significant SLBE, MBE and WBE spending.

BIODIVERSITY

Beginning with environmental assessments, conscientious planning and management can help protect biodiversity. Our environmental scientists and specialists in protection of soils, wetlands, forests, and various vulnerable and endangered species focus on developing strategies that are effective in preserving sensitive habitats.

We provide environmental services throughout every project's life cycle, from initial ecological assessments through post-construction environmental monitoring. We help clients mitigate the effects of project activity by locating, planning and designing projects with biodiversity in mind from the outset:

- During siting and routing studies, we identify wetlands, habitats, nesting and hibernation areas, and archaeological and historic site elements to be respected.
- Through project planning, we identify best management practices (BMPs) to implement during construction. These may include application of portable timber matting to protect soils, placement of temporary barriers to prevent erosion, and use of brightly colored flags to delineate buffer zones around sensitive areas.
- In construction, field inspectors and our environmental monitoring staff work together to confirm compliance with BMPs and regulations.
- Post-construction, we revegetate sites, including with native seed mixes, and monitor the progress of restorative measures.

PROJECT SPOTLIGHT

EAGLE PROTECTION AND OFFSET PROGRAM

To help minimize and offset impacts to eagles as regulated by the Bald and Golden Eagle Protection Act, the U.S. Fish and Wildlife Service (USFWS) issues Eagle Incidental Take Permits (EITP) that allow for the incidental take of eagles when properly mitigated. One mitigation approach is to retrofit high-risk utility circuits in eagle habitats to meet Avian Power Line Interaction Committee recommendations.

We have received approval from the USFWS to operate the Eagle Protection and Offset Program (EPOP), which implements a nationwide approach to eagle mitigation. As a mitigation solution, EPOP provides benefits to eagles and allows development projects to move forward without delay. The EPOP works similarly to a conservation bank, where the use of credits helps permittees save time and eliminate permitting uncertainties.

Our team of environmental scientists and project managers leading the EPOP works directly with an EITP permittee to review the project location and identify potential impacts and required offsets. The program representatives then collaborate with utility partners to complete necessary circuit-by-circuit rebuilds, reframes or replacements, providing permanent EITP compensatory mitigation offsets and improved conservation for eagles across the U.S.

PROJECT SPOTLIGHT

MORE'S LAKE RESTORATION

The City of Columbia, Missouri, decided to close the More's Lake coal combustion residuals (CCR) site to focus on removing and decontaminating all areas affected by coal ash to meet new U.S. Environmental Protection Agency regulations.

Our team developed closure plans, designed and constructed a network of site groundwater monitoring wells, performed groundwater monitoring, provided regulatory submittals, and certified the closure of an inactive CCR impoundment. The plans also specified using the coal ash as an embankment fill to create a new landfill access road, preventing the use of 13,000 cubic yards of landfill space and, therefore, preserving the potential for $600,000 in future revenue from tipping fees.

The effort doesn't stop there. Responding to the city's desire to return the lake to its original recreational use, the project also includes plans for the development of a public park.

PROJECT SPOTLIGHT

LOS PEÑASQUITOS LAGOON RESTORATION

Rising sea levels and changing rainfall patterns are shifting traditional approaches to sustainability efforts, particularly for resilient infrastructure design. As a direct response to climate change, industry professionals are taking sustainability to the next level, analyzing environmental impacts on communities and identifying how to address those changes through system designs that can adapt and endure.

We are currently working with the City of San Diego on the Los Peñasquitos Lagoon Restoration project. Historical cattle ranching, construction of railroads and recent urbanization of the watershed have resulted in impacts to the lagoon that have converted historical salt marsh habitat to freshwater marsh and degraded salt marsh in the upper lagoon. Increased sediment loading and year-round freshwater inputs have reduced the functionality and diversity of the lagoon habitats and allowed for the establishment and dominance of nonnative species. Increased sedimentation in the flood channel that drains into the lagoon has reduced channel capacity and increased flooding that impacts local businesses.

Burns & McDonnell is leading a multidisciplinary team to develop the restoration design for Phase 1 that provides many benefits to the area. These benefits include restoration of high-valued salt marsh habitat, enhancement of riparian habitats, water quality improvements, flood management, and educational and recreational opportunities. The team is designing the project for long-term resiliency and sustainability, taking into account effects of climate change — including less frequent but more intense storms, as well as rising sea levels — on flood management infrastructure and the salt marsh restoration.

We are incorporating into the design habitat transition zones that account for sea level rise and measures to reduce flooding that impacts businesses and reduce erosion at stormwater outfalls that enter the lagoon.

PEOPLE

Our people deliver world-changing solutions to clients around the globe, give of themselves to help their communities and support one another at every turn. Burns & McDonnell provides industry-leading benefits that keep our employee-owners safe, healthy, happy and fulfilled. From meeting client needs to everyone reaching their own personal and professional goals, our corporate culture focuses on helping our employee-owners realize their highest level of potential.

We care about the well-being of our employee-owners as well as the communities in which we all work, live and play. This section illustrates our community investments, employee ownership principles and how we support our people as we work to create exceptional projects — and build our own exceptional lives.

COMMUNITY

We partner with communities in ways big and small, offering help where it's needed most. The values we hold dear and our commitment to our mission are clearly reflected in the work we do and the organizations we support.

We are devoted to making a sustained positive impact in the lives of those around us through community service and critical infrastructure projects. Our client projects contribute to the delivery of clean water, safe roads, renewable energy and a strong economy. Our philanthropic support is equally as impactful, whether it's teaching science, technology, engineering and math (STEM) concepts to young people, offering food to those who may feel forgotten or supporting other meaningful actions in neighborhoods through our charitable partners.

In contributing our time, resources and talents, we do more than draw upon our extensive technical knowledge as engineers, scientists, architects and builders. We share our exceptional and true passion for giving back.

BURNS & McDONNELL FOUNDATION

It's in our company's DNA to invest in a better world. The Burns & McDonnell Foundation is a 501(c)(3) organization largely focused on education, community development and health, and its mission is to empower organizations making a substantive difference in the lives of others.

While travel and public health guidelines restricted in-person opportunities for volunteering, that didn't deter our employee-owners from helping people in need. Just because we couldn't get together much didn't mean we didn't hit the trail, road or treadmill to raise funds for organizations through virtual walks, runs and rides. Employee-owners exercised their right to give by supporting Bike MS, the Alzheimer's Association, HomeWalk and dozens of United Way chapters across the country.

Every year, our Corporate Citizenship Committee — which includes a representative from each business practice and regional office — supports charitable giving and encourages employee-owner

COVID-19 COMMUNITY RESPONSE AND RECOVERY FUND

31
UNITED WAY AFFILIATES THAT RECEIVED FUNDS COMPANYWIDE

4,177
FAMILIES HAVE BEEN SERVED THROUGH HOMELESS PREVENTION PROGRAMS IN ORANGE COUNTY, CALIFORNIA

254K
INDIVIDUALS HAVE BENEFITED FROM THE FUND IN MINNEAPOLIS-ST. PAUL

involvement. Just a few highlights of our philanthropic efforts in 2020 include:

- Employee-owners in Chicago partnering with the Catholic Charities Food Bank to create 483 food bundles for seniors in need during the pandemic.
- Several offices, including in Kansas City, Chicago and the Mid-Atlantic region, donating monitors and laptops to help support virtual learning for students without access to equipment.
- Employee-owners in Fort Worth joining the IEEE Power & Energy Society to help clean their adopted section of the Trinity River for the Tarrant Regional Water District Trinity Trash Bash.
- Our Greenville office hosting a blood drive on Sept. 11, in honor of individuals who lost their lives in the terrorist attacks.
- Employee-owners in Florida participating in the Volusia County Thanksgiving Basket Brigade, putting together 58 holiday food baskets for area families.
- Employee-owners from offices in Houston, Ohio, Massachusetts, New York, Mumbai and elsewhere assembling care packages, visiting hospitals and sharing knowledge virtually.
- Projects in Ecuador, Kenya, Ethiopia and other locations around the globe benefiting from employee-owner support through our Engineers Without Borders partnership.

“2020 was a year of unexpected challenges, especially for those who needed help most and the community organizations that assisted them. Our employee-owners had to get creative in the way we gave back during this unprecedented year. We showed a deep commitment and unwavering resolve to invest for a better world through our generosity.”

Julee Koncak
Director, Burns & McDonnell Foundation

2020

COMMUNITY INVESTMENT

NEARLY
$10M
TOTAL GIVING

$1.5M
DONATED TO UNITED WAY'S COVID-19 COMMUNITY RESPONSE AND RECOVERY FUND

$4M+
RAISED COMPANYWIDE FOR UNITED WAY, SUPPORTING INITIATIVES ACROSS THE U.S.

$170K
RAISED THROUGH THE EMPLOYEE MATCHING GIFTS PROGRAM FOR A TOTAL OF
$340K
CULTIVATING THE CAUSES THAT MATTER TO OUR EMPLOYEE-OWNERS

700
UNITS OF BLOOD DONATED COMPANYWIDE

$350K
TO LOCAL HOSPITALS AND HEALTH RESEARCH, INCLUDING THE UNIVERSITY OF KANSAS HEALTH SYSTEM, AMERICAN HEART ASSOCIATION, LEUKEMIA & LYMPHOMA SOCIETY AND RONALD McDONALD HOUSE CHARITIES

$205K
GIVEN BY EMPLOYEE-OWNERS ON GIVING TUESDAY AS PART OF A SPECIAL GRATITUDE INITIATIVE

$245K
TO STEM EDUCATION INITIATIVES INCLUDING ARIZONA SCIENCE CENTER, CONNECTICUT SCIENCE CENTER, GIRL SCOUTS AND JUNIOR ACHIEVEMENT

$36K
FOR CHARITIES ACROSS THE COUNTRY THROUGH DENIM DAYS, WHEN EMPLOYEE-OWNERS MAKING A CHARITABLE DONATION CAN WEAR JEANS TO WORK

$285K
TO COMMUNITY DEVELOPMENT ORGANIZATIONS SERVING YOUTH INCLUDING BOYS & GIRLS CLUBS, CASA DE ESPERANZA AND OPERATION BREAKTHROUGH

STEM EDUCATION

Our professionals' curiosity and creativity are critical to the breakthroughs we see in the world. It's an honor for our employee-owners to share an enthusiasm for science, technology, engineering and math with students of all ages and backgrounds across the country.

We believe in the future of STEM. In fact, half of our Burns & McDonnell Foundation funds are contributed toward STEM outreach and programs. We support programs that put these subjects into the hands and hearts of young people, awakening their curiosity, expanding their imaginations and broadening their opportunities. The biggest testament to our youth STEM commitment is Burns & McDonnell Battle of the Brains — a K-12 academic competition where kids design a million-dollar science exhibit that is built at Science City in Kansas City.

In 2020, Burns & McDonnell employee-owners offered STEM support, including:

- Job shadowing to give students the chance to explore STEM careers through the eyes of employee-owners working in various industries.
- Resources and virtual instruction for teachers on how to engage students in STEM learning.
- A career fair introducing young girls to opportunities in the field of engineering and real-life perspectives from our female employee-owners.
- Volunteering at For Inspiration and Recognition of Science and Technology (FIRST) programs, science fairs and MATHCOUNTS.
- College and career fairs for high school students, offered in partnership with the African-Centered College Preparatory Academy and the Ewing Marion Kauffman Foundation.
- Access to resources, stories, videos and STEM activities through the launch of @BurnsMacSTEM pages on Twitter, Facebook and Pinterest.
- Financial support to science events and centers including the Atlanta Science Festival, Arizona Science Center, Fort Worth Museum of Science and History and The Works Museum in Minneapolis.
- Financial assistance to STEM organizations supporting underserved audiences, including the ACE Chicago Mentor Program, KC STEM Alliance in Kansas City, and Guadalupe Centers.

SPOTLIGHT ON STEM

BURNS & McDONNELL BATTLE OF THE BRAINS

Every two years, thousands of students compete to design a science center exhibit as part of Burns & McDonnell Battle of the Brains, one of the nation's most unique K-12 STEM programs. In 2020, Tonganoxie Middle School earned $50,000 in grant money and the opportunity to work with our STEM professionals to transform their idea into a $1 million exhibit at Science City in Kansas City, Missouri.

The exhibit — Step Right Up! — uses common carnival games to explain concepts like probability, statistics and the laws of physics. Bringing the exhibit to life was no easy feat. A team of people from Burns & McDonnell and Science City contributed more than 3,800 hours to its design, construction and branding.

Since Battle of the Brains began more than a decade ago, more than 30,000 students have benefited from the immersive STEM learning experience it provides. We've seen the impact firsthand, as we've hired six former participants as employee-owners in a variety of roles, including positions in environmental science and electrical engineering.

EMPLOYEE-OWNERS

HIRING AND RETENTION

We are committed to providing amazing solutions to our clients by offering them access to the best and brightest talent. Our goal is to provide a "best place to work" environment for our employee-owners to thrive. From the coasts to the Midwest to India and the United Kingdom, we seek in our candidates an ideal blend of skills, drive, entrepreneurialism and attitude. It's been our strategy since the beginning to hire great people, create great careers and deliver a great employment experience.

During the pandemic, we focused on keeping our employee-owners and interns safe. Instead of canceling our highly regarded internship program, we transitioned to a virtual program. This allowed us to continue cultivating exceptional university students. Also, while work ebbed and flowed due to pandemic-related issues, we kept our talent engaged by sending our employee-owners to where help was needed most.

Workplace dynamics are shifting with the pandemic. With many companies transitioning to a work-from-home environment long term, this factor, among others, is making the marketplace more competitive. We're casting a wider net and recruiting from more locations, schools, online sources, diverse organizations and referral pools than ever before. We recognize the value of skills created elsewhere and work to identify top talent worldwide. We're also engaging our employee-owners to be our best recruiters by leveraging their connections in the business world and turning their contacts into new hires.

Work-life balance is always a focus for us, and the past year brought a new set of challenges to this space. We are passionate about providing resources and amenities to make life more manageable for those we hire. One of our unique perks at world headquarters is MacKids Learning Academy, which provides on-site childcare and STEM-oriented curriculum for children of our employee-owners.

We believe our reputation as a stellar company — combined with the benefits of our firm's employee ownership — speaks for itself. That's why we encounter levels of attrition that hover around 3%-4%, below industry and national averages.

2020 HIRING

915
EMPLOYEES HIRED INCLUDING 273 NEW GRADS

20
APPLICATIONS, ON AVERAGE, PER OPENING

WORKPLACE DIVERSITY

At Burns & McDonnell, we embrace differences that enrich the way we see the world, our business and each other. We're proud of our culture of inclusion and believe in harnessing the strength of our collective diversity. We support representation on all levels and believe everyone should be treated with dignity and respect, no matter their background, life experiences or beliefs.

We recognize that diverse perspectives generate better business decisions. We want everyone to have a seat at the table — and feel comfortable sharing their voice — in order to drive our corporate conversation and business pursuits forward. Every employee-owner's unique story and perspective is valued regardless of race, ethnicity, religion, gender, sexual preference or family background.

We've seen firsthand how diversity leads to better, more creative solutions for our clients. We also know engaging a diverse workforce results in better financial performance for the company, which in turn benefits all employee-owners since we're 100% employee-owned.

As we seek to fill our engineering and other professional positions, we seek top candidates by recruiting with a substantial commitment to diversity, equity and inclusion. We recruit at historically Black colleges and universities, and connect with potential candidates through organizations that serve veterans, members of the LGBTQ community and people with disabilities.

In 2020, this commitment included:

- A monthly "Real Talk" conversation series featuring live conversations with company leaders on diversity, inclusion and equity. This forum provides a safe space for our employee-owners to ask tough questions of our leaders in real time.
- The first Utility Diversity Roundtable provided a virtual forum for utility leaders to have candid and constructive discussions about diversity, equity and inclusion with respect to their organizations, suppliers and customers.
- The creation of a Multicultural Perspectives Group to help facilitate conversations about how different groups engage in the workplace. This informal group connects people of different backgrounds through open, honest and transparent conversations.
- A keynote speech from Sybil Morial, a leading voice for civil rights. From suing the state of Louisiana for minority teachers' rights to fighting 1984 World Fair organizers to include more minority representation in U.S. history recaps, her story shows the need for driving change locally.
- Ongoing unconscious bias training from the NeuroLeadership Institute — along with other research-driven opportunities — that dives into the business case and brain science for inclusive and diverse teams.
- A Veterans Day panel featuring employee-owners sharing their unique experiences on how serving in the military helped shape their lives.
- Presentations from guest speakers on a variety of important topics, including how to build on our learnings of implicit associations to uncover tangible "unconscious bias hacks," as well as disability awareness and education.

45
DIFFERENT LANGUAGES SPOKEN

800+
UNIVERSITIES REPRESENTED

SUPPLIER DIVERSITY

The Business Diversity and Development team develops procedures and policies supporting diverse business inclusion, seeing that the company engages, utilizes and assists in the growth of diverse firms across the globe. The pandemic presented additional challenges for the small and minority business community, and we responded with efforts including:

- Increasing our overall spend with diverse firms by $28.7 million.
- Hosting our second Community of Inclusion & Equity Symposium to discuss the opportunities, challenges and best practices of leading companies in various sectors.
- Intentionally purchasing masks from diverse businesses. One company, located in a small town, produces face masks with carbon extracted from locally grown bamboo plants.
- Building on a long-standing relationship with a Minority/Women Owned Business Enterprises (M/WBE) firm specializing in construction support services including the application of advanced, high-performance sanitizing techniques.
- Continuing as working members of diverse chambers and other organizations across the country that focus on the growth and development of small and diverse firms, as well as continuing financial commitments to these organizations.
- Partnering with BJM Solutions, an MBE firm, we provided small and diverse business owners in Wichita, Kansas, with a series of executive education sessions that focused on entrepreneurship and innovation.

The capabilities of all businesses we work with are determined by factors that include:

- Quality products and service
- Demonstrated safety results
- Innovation and strategy
- Work experience, knowledge and skills
- Cost and schedule considerations
- Bonding capability
- Ability to support requirements in the project location
- Applicable current licenses

HEALTH AND WELLNESS

Health and wellness are integral to maintaining employee satisfaction, productivity and morale. We recognize that our continued success delivering solutions to clients rests on the health and well-being of our employee-owners.

All eligible employee-owners are offered a robust health and welfare benefits plan, which is reviewed annually to evolve our offerings according to the needs of team members across the company. In 2020, we added live chat virtual benefits fairs to help employee-owners make the best benefits choices for themselves and their families.

Our wellness program entails everything from screening and vaccination clinics to health learning opportunities and activities. Our robust wellness incentive program allows employee-owners and their spouses to better understand their health status and potential risk factors while earning points through various events and activities. We understand and value the importance of convenience and our wellness committee's mission is to develop, educate and embed a culture that supports programs that make living healthier lives more convenient and accessible to employee-owners.

Other pre-pandemic benefits offered include: Lunch-n-Learns, in-person health fairs and farmers markets, free youth sports physicals, flu shot clinics, and dermatology, biometric and mammogram screenings. As we return to a new normal, these programs will resume, although likely in a different form.

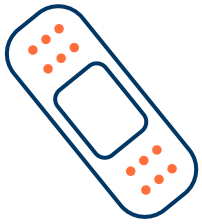
From the start of the pandemic, we supported employee-owners by offering COVID-19 testing and easy access to vaccinations. Additionally, we encouraged our employee-owners and their families to utilize virtual health options to continue to focus on their health and well-being during the pandemic. We will continue to do all we can to encourage employee-owners to stay safe as it relates to COVID-19.

3,051

BIOMETRIC SCREENINGS CONDUCTED IN 43 LOCATIONS

76%

OF EMPLOYEE-OWNERS RECEIVED OUR WELLNESS INCENTIVE PROGRAM DISCOUNT



4,785

TOTAL VISITS TO OUR ON-SITE HEALTH CENTER

14,742

PRESCRIPTIONS FILLED AT OUR ON-SITE PHARMACY

PROFESSIONAL DEVELOPMENT

Lifelong learning and continuing education is a firmwide priority, and we provide resources and training to create a consistent employee experience for our employee-owners across the organization. Our programs directly improve both the technical skills of employee-owners and the overall knowledge we offer our clients.

The learning environment we foster is intended to move employee-owners' careers forward. Our programs include live and on-demand classes through Burns & McDonnell University (BMU), which offers more than 28,000 training courses for technical and general business skills. Our BMU portal helps professionals receive Professional Development Hours to fulfill licensing requirements by providing easy access to training that aligns with their roles.

We invest in our employee-owners' education so they can maximize their potential and pursue their interests. Full-time employee-owners are eligible for tuition assistance for advanced technical degrees, master's degrees in business administration and select undergraduate courses. We also cover fees associated with employee-owners joining professional societies and organizations.

1,500
INTERNAL CLASSES

570
EMPLOYEE-OWNER INSTRUCTORS

59,919
TOTAL HOURS OF TRAINING

$6,294
AVERAGE TUITION REIMBURSEMENT

REIMAGINING A BETTER WORLD

Every day at Burns & McDonnell, our engineers, construction professionals, architects, technologists and scientists shape the facilities and infrastructure of the future — work that comes with a unique duty to make tomorrow better.

We believe we are a more innovative, caring, nimble and resilient organization when we put sustainability first. We're committed to the safety and well-being of our employee-owners, focused on helping our communities, conscious of the impact of the projects we bring to life, and driven by personal accountability and a desire to improve our world. Join us, and together let's create amazing.

To learn more about our sustainability efforts, contact us at sustainability@burnsmcd.com.

CREATE AMAZING.

9400 Ward Parkway, Kansas City, MO 64114

burnsmcd.com | Offices Worldwide

LakeCounty

VENDOR DISCLOSURE STATEMENT

Vendor Name:	1898 & Co.		
Address:	9400 Ward Parkway Kansas City, MO 64114		
Contact Person:	David Naumann	Contact Phone #:	(816) 822-4207
Bid/RFP/SOI/Contract/Renewal:	#22134		

Vendors wishing to contract with Lake County for goods and services in an amount greater than $30,000 shall submit this form in advance of award. This disclosure statement is not required for utility companies regulated by the Illinois Commerce Commission or local units of government. Vendors shall disclose:

- A familial relationship between a Lake County elected official, department director, deputy director and manager and owners, principals, executives, officers, account managers or other similar managerial positions of the vendor's company. Familial relationship is defined as a spouse (including civil partner), child, stepchild, parent, stepparent, grandparent, in-laws (including parent, grandparent, sibling, or child), relatives and non-relatives living in the same residence, and offspring born to any aforementioned person.
- All political campaign contributions made by the vendor or an owner, principal, executive, officer, account manager, or other similar managerial position of the vendor to any county board member, county board chair, or countywide elected official within the last five years.

If there is nothing to report in a section, please state none in the appropriate space.

FAMILIAL RELATIONSHIPS

List names and departments/agencies of Lake County employees or public officials with whom owners, principals, or officers of the vendor's company have a familial relationship and the nature of the relationship. Attach additional pages, as necessary. (Provide all names or state none in the space below. Do not leave blank.)

Name and Department/Agency of Lake County Employee/Public Official	Familial Relationship
N/A	

CAMPAIGN CONTRIBUTIONS

List campaign contributions that have been made within the last five years that exceed $150 annually. Attach additional pages, as necessary. (Provide all names or state none in the space below. Do not leave blank.)

Recipient	Donor	Description (e.g., cash, type of item, in-kind service, etc.)	Amount/Value	Date Made
N/A				

Continuing disclosure is required if information changes. This Vendor Disclosure Statement form is available at www.lakecountyil.gov.

The full text of the County's Ethics and Procurement policies and ordinances are available at www.lakecountyil.gov.

I hereby acknowledge that the information above is accurate and complete, that I am an authorized signer on behalf of the vendor, that I have read and understand these disclosure requirements, and that I agree to update this information if there are any related changes by submitting a new Vendor Disclosure Statement.

Authorized Signature:	Chris Underwood	Title:	General Manager
Printed Name:	Chris Underwood	Date:	September 15, 2022

Vendors must insert "x" in the following box indicating exception and provide a brief narrative for exception. ☐

LakeCounty

VENDOR CERTIFICATION FORM

Bid/RFP/SOI Number:	#22134		
Vendor Name:	1898 & Co., part of Burns & McDonnell		
Address:	9400 Ward Parkway, Kansas City, MO 64114		
Primary Contact Name:	David Naumann		
Primary Contact Email Address:	david.naumann@1898andco.com		
Primary Contact Phone Number:	(816) 822-4207		
Project Manager Name:	David Naumann		
Project Manager Email Address:	david.naumann@1898andco.com		
Project Manager Phone Number:	(816) 822-4207		
# Years in Business:	124 years	Number of Employees:	10,000
Annual Sales:	$4.76 B	Dunn & Bradstreet #:	05-545-1405

Vendor Certification Statement: Please identify all the following that apply to the ownership of this firm. This information is collected for reporting purposes only and not vendor selection. Please include a copy of the certification. (Definitions are included on the second page of Vendor Certification Form).

	Contractor certifies as a Minority – Business Enterprise (MBE)
	Contractor certifies as a Women Business Enterprise (WBE)
	Contractor certifies as a Veteran-Owned (VBE) Business Enterprise
	Contractor certifies as a Persons with Disabilities Owned Business Enterprise (PDBE)
	Contractor certifies as a Service-Disabled Veteran-Owned (SDVBE) Business Enterprise
	Contractor certifies as a Business Enterprise Program (BEP)
	Contractor certifies as a Small Disadvantaged Businesses (SDB)
	Contractor certifies as a Veteran-Owned Small Business (VOSB)
	Local Business
	None
Other (Specify)	
Certification Number:	
Certified by (Agency):	

I certify that this information is accurate to the best of my knowledge and that I am authorized to provide this information on behalf of my company.

Chris Underwood	Chris Underwood, General Manager	September 15, 2022
Signature, Title	**Printed Name, Title**	**Date**

1898 & CO SM

PART OF BURNS McDONNELL

www.1898andCo.com