NewGen Strategies & Solutions

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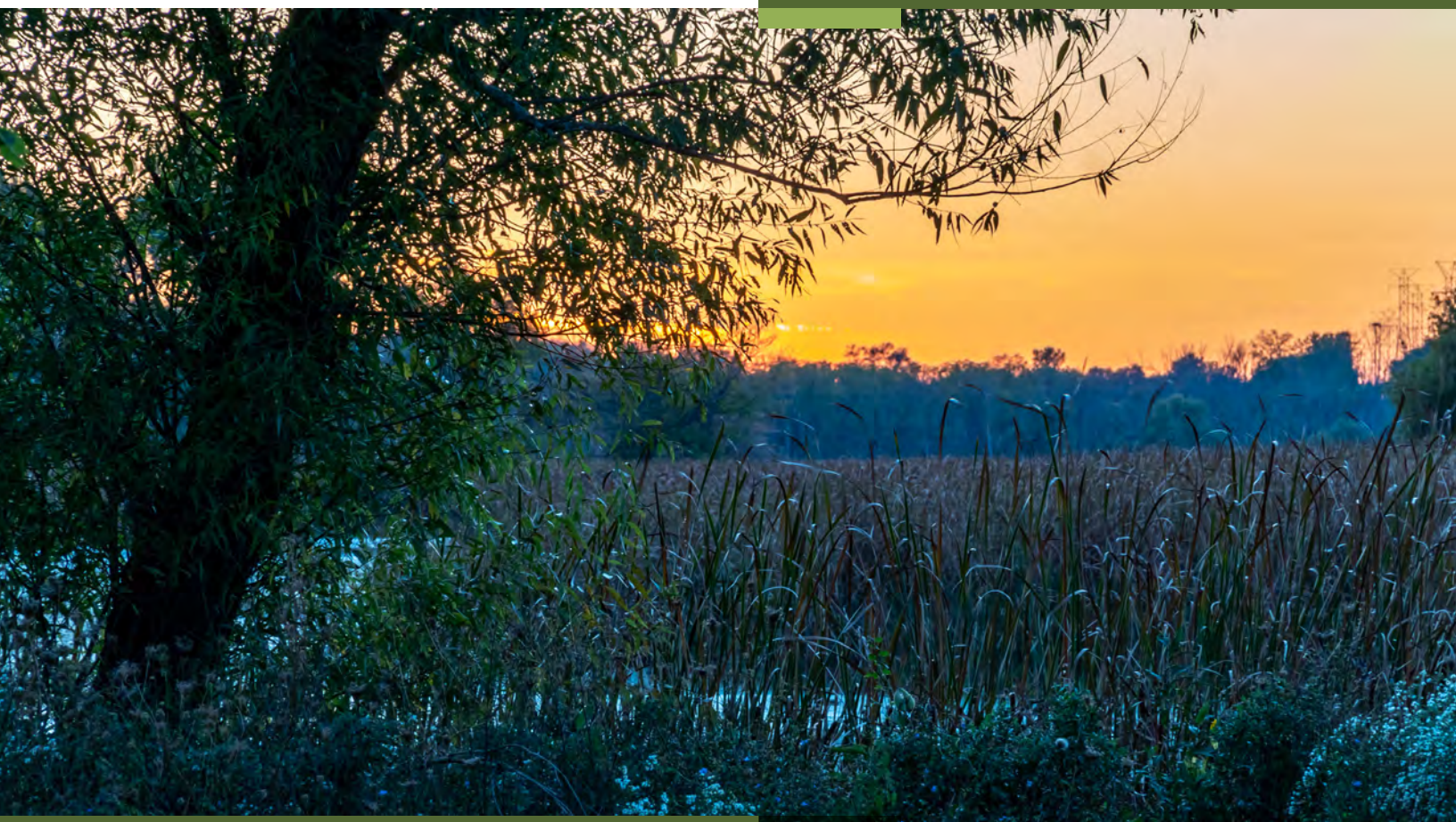
WORK EFFORT #3: WATER RATE STUDY



RFP #: 21-035

WATER: METER REPLACEMENT EVALUATION, LEAK DETECTION, AND RATE STUDY

AUGUST 20, 2021

ORLAND PARK

Prepared for:
Village of Orland Park
14700 South Ravinia Avenue
Orland Park, Illinois 60462

NewGen Strategies & Solutions
911-A Commerce Road
Annapolis, MD 21401

TRANSMITTAL LETTER

August 20, 2021

Village of Orland Park
14700 South Ravinia Avenue
Orland Park, IL 60462

Subject: **RFP #21-035 – Work Effort #3: Water: Meter Replacement Evaluation, Leak Detection, and Rate Study**

To Whom It May Concern:

The Village of Orland Park's water, sewer, and stormwater systems operate in a complex and ever-evolving landscape to provide public services that are affordable, reliable and sustainable. At the same time, the pace of change in the utility market is accelerating, directly impacting your ability to provide quality service to your customers. Navigating the challenges of balancing long-term infrastructure investment, maintaining customer satisfaction, and the sheer amount of data available to drive decision making is overwhelming. How do you optimize data analysis to identify and inform the best strategic approach to deliver the right services, address stakeholder demands, and ensure public trust?

Understanding your community, your organization and your data are the three essential elements to developing actionable strategies to sustain your future service. NewGen Strategies and Solutions, LLC (NewGen) believes that strategy dictates everything. Our approach incorporates your data, market, and community to provide an integrated view designed to allow you to make long-term decisions with confidence. We leverage innovative modelling technology and market expertise to solve your most complicated issues. We design strategies to be responsive, transparent, and reliable while paving the way for successful buy-in across all your stakeholders.

NewGen Strategies and Solutions, LLC (NewGen) is pleased to submit our proposal to perform a Water, Sewer, and Stormwater rate study for the Village (Work Effort #3). While the enclosure to this letter sets forth our project approach, experience, qualifications and schedule, there are a few key points we would like to stress:

- **Uniquely Qualified Staff** – The Project Manager and Project Director identified in our proposal performed the Village's two previous rate studies (in 2007 and 2015) when they were employees of the Municipal and Financial Services Group (MFSG). MFSG merged with NewGen on July 1, 2019. Therefore, NewGen is intimately familiar with the Village's financial structure and the operation of its water, sewer, and stormwater utilities. We will have no learning curve when beginning this engagement.

- **Broad and Deep Market Insights** – The issues being faced by the Village are like those being faced by NewGen's clients throughout the country and in the State of Illinois. NewGen's project team members have successfully completed cost of service and other projects for the Illinois clients shown in the graphic to the right.
- **Data Analysis** – NewGen makes data operational resulting in actionable decisions with defensible results. We harness existing and untapped data to optimize operations, develop demand management strategies, estimate the impacts of capital investments, and identify the rational nexus underlying rate structure decisions. NewGen has helped our clients recover costs, improve service delivery, and respond to changing market conditions.
- **Stakeholder Communication** – NewGen simplifies complex concepts by combining visual tools and our training expertise to ensure that clients gain a deep understanding of how the issues and underlying data drive our recommendations and scenarios. This directly impacts the evaluation of the scenarios we present, streamlines decision making, and successfully obtains buy-in from elected officials, advisory committees, regulatory bodies, utility senior management, and utility customers.
- **Client Endorsements** – We have provided outstanding service to our water, sewer, and stormwater clients in Illinois. We have included several references in our proposal and strongly encourage the Village to contact them to learn more about our firm and specific project team members.

Our proposal is a firm and irrevocable offer for a period of 90 days from the date of this letter. We look forward to working with you on this important and interesting study. Please contact me on my direct line at (443) 951-4207 or by e-mail at ecallocchia@newgenstrategies.net if you would like to discuss our project team, qualifications, or approach.

Sincerely,

NEWGEN STRATEGIES AND SOLUTIONS, LLC

DocuSigned by:
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Eric Callocchia
Executive Consultant

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Edward J. Donahue
Director

PROPOSAL

CONTENT

PROJECT EXPERIENCE

PROJECT EXPERIENCE

NewGen has an established client base nationwide and encourages the Village to contact any of the representative professional references listed below. These clients can speak to our ability to provide quality work similar to the services requested by the Village.

VILLAGE OF ORLAND PARK, IL – STORMWATER, WATER AND SEWER COST OF SERVICE/ RATE STUDY

REFERENCE: Sarah Schuler, Assistant Finance Director (at time of 2015 study, now Finance Director at Villar of Lisle) | 630-271-4133 | SSchueler@villageoflisle.org

The Village of Orland Park hired NewGen (then MFSG) to develop a cost of service and rate methodology for stormwater, water, and sewer funds. NewGen developed a comprehensive financial model to facilitate the cost-of-service analysis. The financial model included the operating and capital budgets for Village operations as well as necessary reserves. Key study issues included:

- Indirect Cost Allocation evaluation
- Water Main Replacement funding ($2.0 million/yr.)
- Sanitary Sewer I/I reduction ($0.5 million/yr.)
- Stormwater Flood Study Improvements ($11.0 million over 10 years)

A key recommendation developed by NewGen (and adopted by the Village Board of Trustees) was the addition of a fourth tier to the Village's water rate structure. Before the study, the Village charged usage in three blocks – from 0 to 9 kgal, 10 to 18 kgal, and over 18 kgal. NewGen developed a more aggressive conservation focused rate structure with tiers from 0 to 7 kgal, 8 to 12 kgal, 13 to 22 kgal, and over 22 kgal. The four-tier rate structure remains in effect to today.

NewGen's financial model was also utilized to examine three methods of assessing the cost of providing stormwater to the Village residents. The methods considered for charging for stormwater included basing the fee on the following:

- Billed water usage (the current method),
- Impervious acreage per customers and
- Assessed property value, as an Ad Valorem tax.

After discussion with Village staff, the Village decided to continue to charge stormwater fees based on billed water usage. This option was selected primarily because impervious acreage data was not available at the time. The financial model developed during the study will allow the Village to move to a charge based on impervious acreage should the data required become available. NewGen recommended significant increases (100%) to the stormwater fee based on the actual cost of providing this service to Village residents. The recommendations presented by NewGen were adopted by the Village Board of Trustees.

VILLAGE OF LIBERTYVILLE, IL - WATER AND SEWER RATE STUDY (2016, 2019) AND STORMWATER UTILITY FEE (2021)

REFERENCE: Nicholas Mostardo | Finance Director | 118 West Cook Avenue, Libertyville, IL 60048 | 847.918.2102 | nmostardo@libertyville.com

Libertyville, an affluent suburban community with an area of approximately nine square miles, is about seven miles inland from Lake Michigan on the Des Plaines River; the City of Chicago lies about thirty-five miles south of the Village. The Village's water system consists of about 127 miles of distribution system; potable water is purchased by Libertyville from the Central Lake County Joint Action Water Agency ("CLCJAWA"). There are about 7,000 customer accounts in the Village's water system. Total water pumped in 2014 was about 908 million gallons; the average daily water use was about 2.5 million gallons (MGD). The sewer system consists of about 95 miles of sanitary sewer collection lines plus treatment facilities. There is about the same number of miles of storm sewers as sanitary sewers in the community.

Members of NewGen, as MFSG, was engaged by the Village in 2015 to complete a water and sewer rate study. The Village was facing major capital improvement costs related to upgrading its sewer treatment facility. NewGen was tasked with determining the proper funding plan that would allow the Village to maintain the financial health of its utility fund. Assignments and tasks completed for this project included:

- Development of formal cost of service/rate models for the Village (both water and sewer)
- Development of alternative rate structures for both water and sewer service
- Development of formal policies by the Board dealing with the establishment of reserves and the target balances for such reserves

The proposed alternative rate structure, which included 5% revenue increases for water and a 37% increase in sewer revenues was recommended for adoption by the Village Board. The Village Board unanimously approved the recommended rates and rate structure.

In 2019, NewGen was again engaged by the Village to update the cost and revenue projections adopted as a part of the original study. NewGen completed its update in May 2019 and recommended no change in the projected water rate increases and a slight increase in the necessary sewer rate increases due to the increased cost of the Village's mandatory wastewater treatment plant upgrades.

Due to localized surface flooding in numerous locations during moderate to heavy rainfall events in 2017, the Village initiated the development of a village-wide Master Stormwater Management Plan (MSMP) to identify and develop proposed flood reduction projects to the drainage problems throughout the Village.

The MSMP identified long-term capital improvement projects including increasing storm sewer sizes, adding relief storm sewers, and incorporating stormwater detention storage totaling over $45.5 million.

In 2019, the Village engaged NewGen to complete a feasibility study to project the costs of implementing the MSMP and determine the appropriate methodology to charge Village citizens the costs of the MSMP planned projects. The Village also tasked NewGen with developing credit policies and manuals, appeal procedures, and an appropriate Stormwater Ordinance.

The study was completed in two Phases. NewGen's Phase I scope of work included:

- Assessment of Existing and Future Level of Service
- Development of Stormwater Rate Policy and Revenue Analysis
- Development of Implementation Requirements

NewGen developed a financial model that projected the twenty-year cost of the Village's MSMP and the various impervious are based cost allocation methods the Village could adopt as a funding mechanism. To develop the potential stormwater fees, NewGen:

- Developed a twenty-year MSMP implementation cost projection
- Developed an impervious area database containing each parcel within the Village's corporate limits, based on Lake County GIS data
- Identified impervious area funding mechanism alternatives (ERU, IDF, DCIA, etc.)
- Projected the stormwater bill for each customer under each fee alternative
- Developed a Stormwater Credit Manual, Credit Appeal Process, and Stormwater Fee Ordinance

NewGen's feasibility study allowed Village staff and elected officials to evaluate the various stormwater funding alternatives and implement industry best practices for the administration of its stormwater management program. Based on NewGen's analysis, the Village agreed to move to Phase II in late 2020. NewGen's Phase II scope included:

- Finalization of the Village's parcel database and alignment with its water/sewer utility billing database
- Finalization of the Village's projected MSMP implementation costs and stormwater fees
- Public outreach prior to the adoption of the Stormwater Fee

NewGen finalized the impervious area and utility billing databases and coordinated with Village staff to develop interactive an online fee lookup tool that allowed Village citizens to see their potential stormwater fee before it became effective. NewGen also worked with Village staff to conduct two Town Hall style public information sessions prior to the fee becoming effective. The Village's stormwater fee is planned to become effective in September 2021.

BLOOMINGTON AND NORMAL WATER RECLAMATION DISTRICT - WASTEWATER RATE STUDY (ONGOING)

REFERENCE: Timothy Ervin | Director of Finance | 2015 West Oakland Avenue, Bloomington, IL 61701 | 309.827.4396 | tervin@bnwrd.org

The Bloomington-Normal Water Reclamation District (BNWRD) provides economical treatment of domestic, industrial and combined sewer wastes from the District of Bloomington, the Town of Normal, the Bloomington Township Public Water District, and the Village of Downs, all in McLean County, Illinois. The District is responsible for the construction and maintenance of interceptor sewers, stream and streambank improvements, and treatment plant facilities for disposal of sewage. The District operates two wastewater treatment facilities (West Plant and Southeast Plant). The West Plant was constructed in 1928 and the Southeast Plant constructed in 2004.

The District is being required to convert its treatment process to Biological Nutrient Removal (BNR), as mandated by Federal and State EPA requirements. The District hired NewGen to complete a cost of service study to determine the financial impact of the required BNR improvements, projected to cost over $162 million. NewGen's study determined the rate increases needed to support the BNR improvements, as well as the ongoing asset maintenance required for the system. NewGen's study included:

- Twenty-year projections of new debt required for BNR upgrades
- Funding sensitivity analysis focusing on the balance between ad valorem taxes and user fees
- Asset replacement analysis resulting in fully funded system depreciation

NewGen's financial model was used to demonstrate to Illinois EPA officials that the District had the financial capacity to fund the mandated BNR upgrades. NewGen is currently under contract to update the study annually until all debt issues related to the upgrades are finalized.

CIITY OF MARYVILLE, MO - WATER AND SEWER COST OF SERVICE AND RATE STUDY (2021)

REFERENCE: Denise Town, CPA, CPFO | Finance Director | 415 N. Market Street, Maryville, MO 64468 | 660.562.8009 | townden@maryville.org

The City of Maryville, Missouri engaged NewGen to conduct a comprehensive water and sewer rate study to independently assess and evaluate the City's water and sewer rates and provide recommendations. The broad objective of the study was to:

- Adequately fund water and sewer utility operations, capital costs, and bonded debt
- Minimizing rates to the greatest degree possible
- Address the City's needs over the next five (5) years, but also extending projections for the next twenty (20) years.

The need for this analysis is driven in large part by a recent Water Treatment Alternatives Analysis that revealed the potential need for a new water treatment plant estimated at $37.5 million in the next seven to ten years.

The City provides service to both inside and outside City customers, as well as wholesale water service to Public Water Supply District #1 (Rural Water).

NewGen developed a water and sewer rate model to address the key financial and operational issues of the City's system. NewGen made the following recommendations at the conclusion of the study:

- Increase water and sewer rates over 30% to align current costs with system revenues
- Increase water rates an additional 20% when the new Water Treatment Plan is built in year six of the study's projections
- Align the City's fixed meter charges with AWWA standard meter ratios
- Increase Fire Protection fees by over 500%
- Increase the outside City rate differential from 1.10 to 1.55
- Consider a modified contract with Public Water Supply District #1 that is based on the utility basis of revenue requirements

NewGen delivered to the City a dynamic financial model that details the functional costs of each system and the Base/Extra Capacity allocations of water system demand and Flow/BOD/TSS allocations for the sewer system.

VILLAGE OF ADDISON, IL – WATER, SEWER, AND STORMWATER RATE STUDY (2020)

REFERENCE: Roseanne M. Benson | Finance Director/Treasurer | 1 Friendship Plaza, Room 1100, Addison, IL 60101 | 630.693.7561 | rbenson@addison-il.org

The Village of Addison is located in DuPage County, IL, about 20 miles from downtown Chicago. The Village provides water, wastewater, and stormwater service to its customers. The Village purchases water wholesale from the DuPage Water Commission (DWC) and maintains standby wells in the case of a supply emergency. The Village has over 120 miles of sanitary sewer of various sizes and 2,500 manholes structures. Between the Village's two wastewater treatment facilities over 2.0 billion gallons of municipal wastewater is treated annually under guideline levels set forth in the Village's Federal National Pollutant Discharge Elimination System (NPDES) Permit.

Within the Village boundaries there are 73 miles of storm sewer of various materials and sizes. The system also contains 1,400 manholes and over 2,200 inlets of various types. All storm conveyance systems discharge into an open waterway (Salt Creek, Westwood Creek, or DuPage River).

NewGen was engaged by the Village to conduct a comprehensive water, wastewater, and stormwater rate study. The Village's two utility funds (O&M and Debt Service) are supported by both user fees and transfers from the General Fund. NewGen's study focused on the increased capital needs of the Village's systems, as well as the following major considerations:

- Alternative user rate structures with a focus on increasing fixed charges
- Reduction of the Water and Sewer Fund's dependence on General Fund transfers

- Alternative stormwater funding mechanisms, including fees based on impervious area
- Formal reserve and debt coverage policies and their impact on rates and fees

NewGen's study identified several key areas in which the Village could enhance the financial stability of the Water and Sewer Fund while mitigating large, one-time increases in customer bills. NewGen's financial plan for the Village included both revenue increases and rate structure changes that allowed the Village to fund over $35 million in capital improvements between its three services.

CITY OF GALESBURG, IL - WATER RATE STUDY (2021)

REFERENCE: Wayne E. Carl, P.E. | Director of Public Works | 55 W Tompkins St, Galesburg, IL 61401 | 309.345.36241 | wcarl@ci.galesburg.il.us

The City of Galesburg (City) is located on Interstate 74 in Northwest Illinois and is approximately 50 miles east of the Mississippi River. The City is a home rule municipality and has operated under the Council-Manager form of government since 1956. The City of Galesburg was chartered for the purpose of providing its residents with several municipal services, including the provision of clean water.

The City obtains its groundwater from an aquifer near Oquawka, Illinois, which is located along the Mississippi River. Utilizing a collector well and three gravel-pack wells, the water is pumped approximately 32 miles to Galesburg through 36 inch and 42-inch transmission lines. There are nine million gallons of storage capacity at the Galesburg Water Plant and two million gallons of overhead storage in three water towers throughout the City. The average daily water pumpage is approximately six million gallons with a peak demand of nine and a half million gallons. The water is pumped through a distribution system of approximately 210 miles of water mains. The distribution system also consists of approximately 1,400 fire hydrants. The City serves approximately 12,800 water users with retail, wholesale, and fire protection service.

The City engaged NewGen Strategies and Solutions, LLC (NewGen) to complete a water rate study with the following general objectives:

- Develop a long-term financial plan that maintains the financial health of the City's Water Enterprise Fund while funding the appropriate level of capital investment in the water system.
- Update the rates and fees charged to the City's customers, including inside city, outside city, and wholesale rates customers based on defensible industry standards.
- Examine the agreements between the City and its wholesale customers and identify any opportunities to update the rate setting methodology or policies therein.
- Examine the policies regarding the charges to multi-unit customers (including mobile home parks), identify the impacts of modifying these policies, and recommend changes, if appropriate.
- Review the methodology of the administrative fee charged to the Galesburg Sanitary District and recommend any appropriate changes.

NewGen's study resulted in several recommendations, including alternative rate structures that addressed small user affordability by adjusting both fixed fees and usage allowances. NewGen's

recommendations allowed the City to finance over $20.0 million in capital projects over the ten-year planning period with modest (3.0%) annual increases in water rate revenue.

VILLAGE OF LOMBARD, IL - WATER AND SEWER RATE STUDY (ONGOING)

REFERENCE: Jamie Cunningham | Assistant Director of Finance | 255 East Wilson Avenue, Lombard, IL 60148 | 630.620.5910 | cunninghamj@villageoflombard.org
Carl Goldsmith | Director of Public Works | 1051 S. Hammerschmidt Avenue, Lombard, IL 60148630.620.5740 | goldsmithc@villageoflombard.org

The Village of Lombard was incorporated in 1869 and is located 30 miles west of the City of Chicago. The Village covers approximately 10.5 square miles and includes just over 16,000 individual parcels, the majority of which are quarter or half acre lots containing single-family residential homes. The Village is managed under the Council-manager form of government. MFSG was engaged by the Village of Lombard in 2016 to complete a water and sewer rate study. The Village will be reaching the end of a moratorium on increases to its capital rate (used strictly for capital financing) as well as a phased-in reduction to tax revenues slated to fund utility projects. NewGen (as MFSG) was tasked with several assignments for the study, including:

- Development of a ten-year financial plan for the Village's water, sewer and stormwater systems
- Development of capital financing plans that did not include tax revenues
- Development of alternative rate structures for stormwater service, particularly the allocation of stormwater costs based on impervious area rather than water consumption / tax base
- Development of formal policies by the Village dealing with the establishment of an asset replacement reserve based on current assets

Throughout the course of the study, NewGen staff (as MFSG) met not only with Village staff, but also with the Village's Public Works and Finance and Administration committees, comprised of Village citizens. NewGen developed public friendly presentations to summarize and explain the need for increased rates, particularly the need to increase the percentage of the Village's utility rate revenue that is generated by fixed fees rather than variable unit rates.

CITY OF PARK RIDGE, IL - WATER AND SEWER RATE STUDY (2016)

REFERENCE: Andrea Lamberg, CPA | Finance Director | 505 Butler Place, Park Ridge, IL 60068 | 847.318.5214 | ahatcher@parkridge.us

The City of Park Ridge is located approximately 15 miles northwest of Chicago in Cook County. Land use is predominantly residential, as well as a downtown business district and a large hospital campus. The City is fully developed and no major changes in future water usage are anticipated. The City purchases treated Lake Michigan water from the City of Chicago and distributes the water to its customers. The City's distribution system consists of approximately 138 miles of water main, 1,585 fire hydrants, 15.2 million gallons of storage capacity and over 12,600 water meters. All municipal wastewater and stormwater runoff are conveyed through a City-owned and maintained combined sewer system consisting of approximately 133 miles of sanitary and storm sewers. Sewage is discharged to the Metropolitan Water Reclamation District of Greater Chicago (MWRD) for treatment.

The City contracted with members of NewGen, as MFSG, to perform a water and sewer rate study, primarily to analyze the cost of the possible implementation of Advanced Metering Infrastructure (AMI) through the City. MFSG's study developed:

- A full cost of service model that projected costs under various AMI funding scenarios
- An alternative rate structure focused on the collection of fixed fees vs. variable rate revenues
- Recommendations for the City's fund balance given the increased level of capital investment planned by the city

CITY OF PROSPECT HEIGHTS, IL - SEWER RATE STUDY (2017)

REFERENCE: Joe Wade | City Administrator | 8 North Elmhurst Road, Prospect Heights, IL 60070 | 847.398.6070 x-202 | jwade@prospect-heights.org

The City of Prospect Heights is a suburb of the City of Chicago, located about 12 miles west of Lake Michigan and eight miles north of Chicago O'Hare International Airport. The City's Public Works Department provides for the preventative maintenance, annual cleaning and inspection of the City's sanitary and stormwater/drainage system in compliance with National Pollutant Discharge Elimination System (NPDES) and Community Rating Service (CRS) programs. Public Works maintains the system to ensure its efficient operation, maximize flow capacity and reduce the possibility of sewage back-up in residences.

The City system is comprised of 37 miles of sewer mains, of which 30 belong to the "Old Town" system which the City acquired in 2015. Mains range in size from 6" to 18", and the system has one lift station. The City's collection system drains to the Metropolitan Water Reclamation District of Greater Chicago, to which residents pay a portion of their property taxes to cover treatment costs.

The City engaged members of NewGen, as MFSG, in 2016 to properly determine the costs of operating this system (O&M, Capital, debt, etc.) based on limited data and limited historical context. NewGen

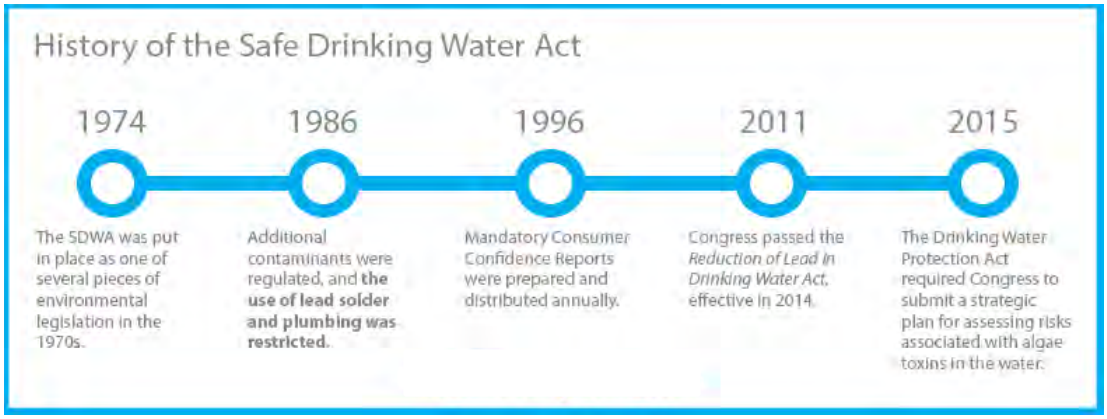
developed a financial model that projected various operational and capital scenarios, allowing the City to instantly determine the customer impact of any future plans.

NewGen continues to provide expert advice and recommendations to the City and plans on providing an updated five-year financial plan that will fully fund the system's needs beginning in fiscal year 2022.

PROJECT UNDERSTANDING

GENERAL ILLINOIS LEGAL/REGULATORY FRAMEWORK

The first major regulation affecting the pricing and costs of water and wastewater was set forth in Section 204(b)1 of the Clean Water Act, which specifies that any publicly owned treatment works (POTW) that accepted federal grant funds under the Clean Water Act must impose a series of user charges that recover the operating, maintenance and replacement costs of the POTW from all discharges to the POTW, and that such use charges must be based on the volume and strength of the discharges of each user or user class. The Chicago Metropolitan Sewerage District (MSD, now MWRD) was a test case as to how this section of the federal law would be implemented, because MSD wanted to use property taxes to pay for wastewater treatment, to incentivize industry to remain in Cook County. Prolonged discussions with USEPA's Region V ultimately led to litigation, and a clarification of the federal statute that effectively allowed for the use of dedicated ad valorem taxes to pay for residential wastewater treatment, with surcharges based on strength and volume used for non-residential customers. Grantees such as MWRD are required to impose ("pass on") the same requirements to satellite dischargers (e.g., suburban wholesale customers).

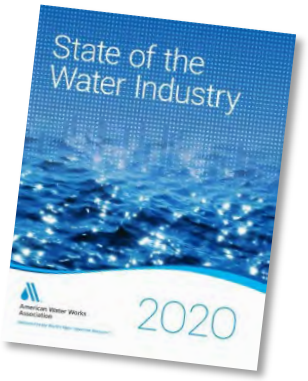


The Clean Water Act was followed by the Safe Drinking Water Act (SDWA), which promulgated federal standards in one law that had either been enacted in piece-meal fashion in other legislation, or that were completely lacking. SDWA also regulated inter-basin transfers of water, and SDWA attempted to reflect and incorporate some of the treaty provisions that had been adopted by treaty between the United States and Canada as part of the Great Lakes cleanup program. One of the outcomes of the Great Lakes program was the adoption of regulations by the State of Illinois (reflected in various permits required of water and wastewater utilities) regulating withdrawals of water from Lake Michigan and the consumptive use of that water once taken from the Lake. A series of criteria and priorities was also established to govern the allocation of water withdrawn from Lake Michigan.

The professional and industry associations that are perceived as having authority over the financial operations of water and wastewater utilities are GFOA and AWWA/WEF. To a certain extent, entities such as NARUC (National Association of Regulated Utility Commissioners) become involved in municipal ratemaking, because some states require that local water and sewer utilities subscribe to standards such as NARUC's chart of accounts. In Illinois, the State Commerce Commission has no jurisdiction over municipally owned water and sewer utilities.

INDUSTRY WIDE CHALLENGES

According to AWWA's 2020 State of the Water Industry Report, the five most important issues facing the industry are currently:

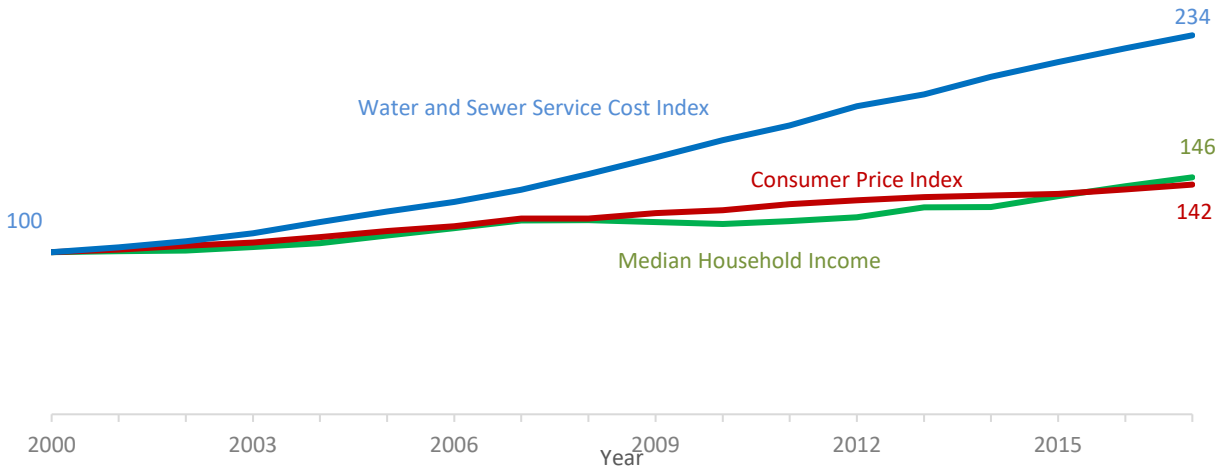


- Renewal and replacement of aging water and wastewater infrastructure
- Financing for capital improvements
- Long-term water supply availability
- Public understanding of the value of water systems and services
- Watershed/source water protection

Like all water and wastewater utilities across the country, the Village of Orland Park is affected by several, if not all, of these inter-related issues. Utility infrastructure installed decades ago continues to age. Water and wastewater main breaks have become a common daily occurrence. Energy and chemical prices continue to increase, and compliance with tighter federal (CWA, SDWA) and state (IEPA) regulations continues to require more costly and complex distribution, collection, and treatment solutions.

Finding ways to pay for deferred maintenance and supply and treatment solutions required to comply with increasing regulations is impacting the bottom line of water and wastewater utilities and the affordability of bills for customers. The following chart shows the country-wide inflation adjusted increases in three indices tracked by the Bureau of Labor and Statistics: Median Household Income, the Consumer Price Index, and the Water and Sewer Service Cost Index:

Exhibit 1. Historic Cost Index Increases – 2000 through 2020



Index: 2000 = 100; Bureau of Labor Statistics (BLS), Bureau of the Census

Combined with the cost increases shown above, many utilities have experienced a loss of revenue due to declining water usage (and therefore sewage generation) per capita. Reasons for consumption declines include stricter conservation policies, energy efficient appliances, and smaller household sizes.

Even after considering the above stated impacts, municipal water service is still a relative bargain compared with alternatives such as bottled water. There will always be, however, customers for which the affordability of these services will be burdensome. Public education is key to having the public understand what costs are required in delivering water and collecting wastewater and why these costs are incurred.

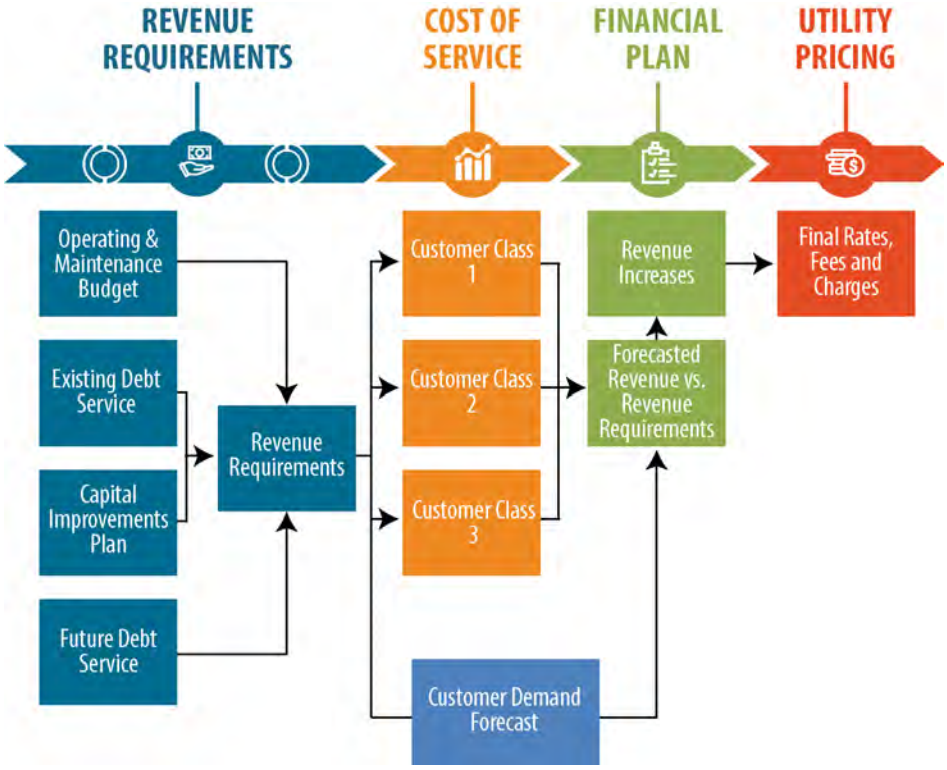
GENERAL METHODOLOGY

Collaboration between client staff and our project team is important to develop policy guidelines that reflect the needs and desires of the Village. Our approach to reviewing and evaluating municipal sewer rates is governed by the view that the ideal rate structure must satisfy seven criteria:

- ***Equity*** requires that rates and charges result in no undue discrimination among customers or customer classes. Although equity is normally related to the cost of service, it should be realized that customer acceptance will center on preconceived notions of equity and fairness.
- ***Efficiency*** refers to the ability of the rate schedule to encourage wise use of the resources devoted to the services that the utility provides. Efficiency considerations require that:
  - Rates should reflect the cost of providing service.
  - Rates should be similar for customers or customer classes served under similar conditions.
  - Customers should be able to understand the rate schedules so that they can make rational decisions regarding their purchase of additional service.
- ***Revenue Adequacy*** is the most fundamental of all considerations. Revenue Adequacy recognizes that it is necessary that rates produce revenues sufficient to operate the system even if there are changes in demand for service.
- ***Affordability*** means that the recommended rates must result in bills that are realistically within the ability of customers to pay.
- ***Sustainability*** means that the objective of the rate methodology is to keep rates low over time, not to merely keep them low for the short-term by omitting or deferring needed expenses such as maintenance and funding of necessary cash reserves.
- ***Administrative Simplicity*** recognizes that limits must be placed on the complexity of the rate schedules to keep them easy to administer and understandable to the public.
- ***Legal and Regulatory Compliance*** is a prime consideration because rate structures must incorporate applicable local, state, and federal statutes, as well and any interjurisdictional agreements.

The application of these criteria should recognize that a rate schedule is a form of public policy statement, setting forth those values that the utility considers important. Rate structures must be tailored to community perceptions, realities, and values. While each utility's budgeting, financial reporting and flow of funds is unique, a generalized schematic illustrating our approach to a cost of service/rate study is shown in the following graphic.

Exhibit 1. General Rate Study Process



Our standard approach to completing a cost of service and rate study is predicated on a four-step process which includes:

- **Revenue Requirements** - Development of the full cost of providing service including those costs that may not be explicitly identified such as the need for repair and replacement (deferred maintenance).
- **Cost of Service** - Allocation of revenue requirements to customer classes or types of customers based on the cost of providing service.
- **Financial Plan** - Development of a long-term financial plan to fund system revenue requirements taking into account customer and usage demand forecasts.
- **Utility Pricing** - Review of the current and alternative rate designs based on revenue needs and rate design pricing objectives with specific rate projections.

Every financial model we develop in support of a cost of service and rate is fully customized to suit the client's data and needs and is formatted to tie directly to the client's budgeting and account structures and breakdowns.

PROPOSED SCOPE OF WORK

When undertaking a cost of service or rate study for a municipal utility, it is important that participants in the study have a shared vision of the objectives and characteristics that must be reflected in the study.

In its RFP the Village identified six objectives that are essential to a successful study. The following table shows a task reference for each objective to where it will be accomplished in NewGen's workplan:

Table 1. Successful Study Desired Outcomes – NewGen Task Reference

#	Successful Study Desired Outcome	NewGen Task
1	Reflect the true cost of service to ensure financial coverage while meeting level of service objectives and achieving fairness in allocation of costs between customer classes;	2, 4
2	Provide for planned infrastructure improvements, ensuring that revenues are sufficient to meet any financing needed for such improvements;	2, 4
3	Be easy to understand and administer by the Village of Orland Park and its customers;	5, 6, 7
4	Reduce revenue volatility from variables such as seasonality, weather conditions and other factors that affect water usage;	3, 4
5	Recommend policies with respect to adequate reserves for operations, rate stabilization and infrastructure needs;	2
6	Provide for other impacts as identified and/or required.	6, 7

TASK 1 – DATA REVIEW AND PROJECT KICKOFF MEETING

As part of the kickoff meeting, we will discuss the financial and rate policies currently in place as they will serve as key guideposts for our review. We will also discuss potential policy issues that may need to be addressed.

Immediately upon receipt of notice to proceed, NewGen will submit to the Village a detailed request for information, identifying the data that is needed to perform the scope of work. As the Village furnishes this data, it will be loaded into an online storage site, indexed and stored to enable access by project personnel and others authorized by the Village. This will ensure that all interested parties have access to all data and that all have the most current data available.

A project kickoff meeting will be held, to which all key Project Team and Village personnel will be invited to attend and participate. The purpose of this meeting is to review, update and validate the proposed work plan, introduce key personnel to one another, identify any roadblocks to timely completion, agree to key dates, provide Village personnel with contact information for consultant personnel, and establish the formal and informal reporting relationships that are necessary for a smooth project.

As part of the kickoff meeting, we will discuss the financial and rate policies currently in place as they will serve as key guideposts for our review. We will also want to discuss potential policy issues that may need to be addressed during the review.

Task 1 Deliverables

- Request for Information
- Kickoff meeting materials
- Creation of a shared project database
- Updated scope of work and schedule (if necessary)

TASK 2 – DEVELOP WATER, SEWER, AND STORMWATER REVENUE REQUIREMENTS

One of the primary tasks for the study is the identification of the cost of providing water, sewer, and stormwater service. Our approach includes a detailed review of each of the costs incurred by the Village to ensure a true cost of service is developed. The cost analysis can be broken down into four main categories of costs: operating and maintenance costs, capital improvements, existing debt service and any contributions to reserves. The following section of our proposal describes our approach to reviewing and identifying each of these costs. The total amount of cash required on an annual basis for all purposes and from all sources constitutes the revenue requirement.

The completion of this task will provide a comprehensive 10-year forecast of the Village's utility revenue requirements.

REVIEW O&M COSTS

Using the Village's current operating budget as a starting point, we will review the adequacy of budgeted operating and maintenance costs. To the extent that costs are directly identified to specific functions of the water, sewer, or stormwater systems, they will be so documented. O&M expenses will be forecast based on estimated annual inflation rates at the budgetary account line-item level. The forecast of operating expenditures will be based on:

- Review of historical operating expenditure increases by individual budget account line item,
- Any additional information that would increase the accuracy of the estimates (i.e., staffing increases/decreases, new facilities coming on-line, old facilities being retired, etc.),
- Identifying and assessing the impact of the current capital improvement program on operating expenditures.

REVIEW ADMINISTRATIVE OVERHEAD ALLOCATIONS

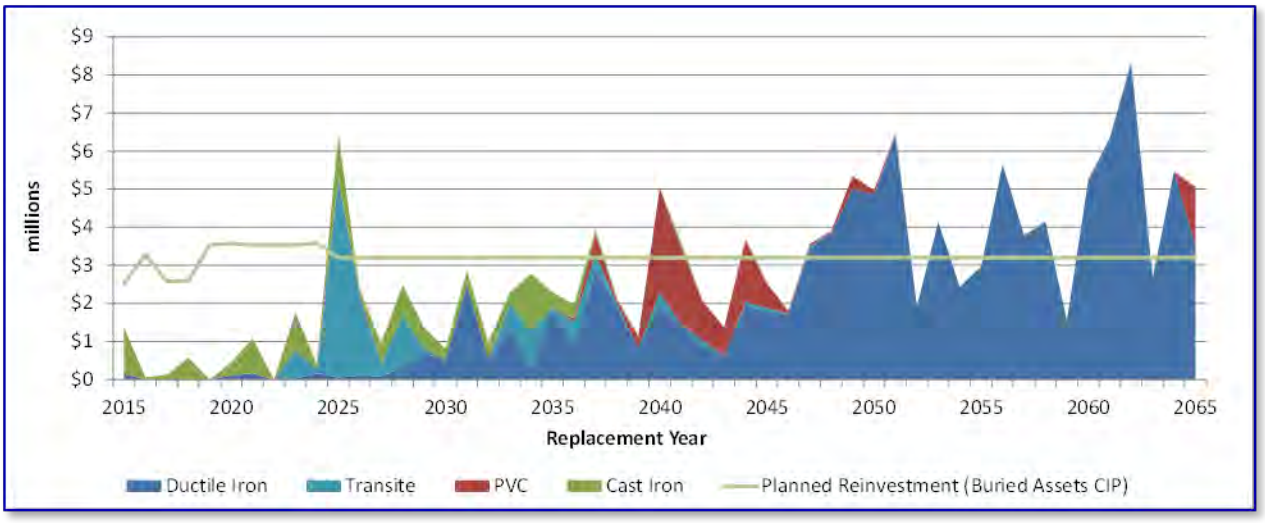
NewGen will review the overhead allocations currently used to direct Village-wide services to the water, sewer, and stormwater utilities. There are various methodologies to allocated shared services to the Village's utilities and NewGen will make recommendations to the Village if there are alternative methods that are more appropriate. Some consideration of staff time, materials and supplies, and other requirements may influence the Village's indirect cost allocations.

REVIEW CAPITAL IMPROVEMENTS PROGRAM

NewGen will review the Village's most recently adopted capital improvement plans for the water, sewer, and stormwater systems to ensure that they are appropriate and complete. This will be accompanied by an analysis of the age, useful life and replacement cost associated with the Village's water, sewer, and

stormwater infrastructure to identify if the planned investments result in realistic replacement schedules. A sample output of a buried asset analysis is shown below as Exhibit 4.

Exhibit 2. Age and Replacement Analysis – Buried Infrastructure



EVALUATE POTENTIAL FINANCING SOURCES

The types and levels of various funding sources to pay for the capital and operating costs of the utility systems will be examined, and the impacts of various approaches will be quantified. While it is presumed that all operating and maintenance costs will be funded via user rates, there are various approaches to funding capital expenses. They can be paid from operating revenues ("pay as you go" funding, the most conservative financial approach), from grants or developer contributions, from long-term debt (e.g., bonds, VRA loans, etc.) or existing cash reserves. Typically, a utility might use a mix of these financing sources. Based on current Village policy and our industry expertise, we will recommend an approach to funding each major capital project or project category within the Village's multi-year capital plan. Projects contained in the CIP that are anticipated to be debt-funded will be identified, and projections of debt service will be developed.

ANALYZE CURRENT AND PROJECTED DEBT SERVICE

The annual principal and interest payments for existing debt service related to the utility systems will be documented. Those projects or categories of projects contained in the CIP and which are anticipated to be debt-funded will be identified, and projections of debt service will be developed. The Village's practices on types of debt (general obligation bonds, revenue bonds, use of IEPA loans, frequency of borrowing, etc.) will be determined, as will typical debt structure (e.g., payment term, level principal payments vs. level debt service) and assumed interest rate.

DEVELOP REVENUE REQUIREMENTS

The sum of the O&M costs, annualized capital costs (debt service plus cash purchases of capital assets) and any contributions to reserves constitutes the revenue requirement – the amount of money that must be raised from all revenue sources over a given year.

Task 2 Deliverables

- Ten-year projection of water, sewer, and stormwater system Revenue Requirements
- Financial plan and specific revenue increases (if necessary) to support the projected revenue requirement
- Key financial performance indicators, such as Debt Service Coverage and Operating Ratios
- Recommendations regarding fund balance or debt service coverage ratios to ensure utility fund financial health

TASK 3 – FORECAST DEMANDS

Task 3 consists of two components which include the development of customer and demand forecast for the Village's service area and a detailed analysis of historical customer usage to examine customer usage patterns.

DEMAND PROJECTIONS

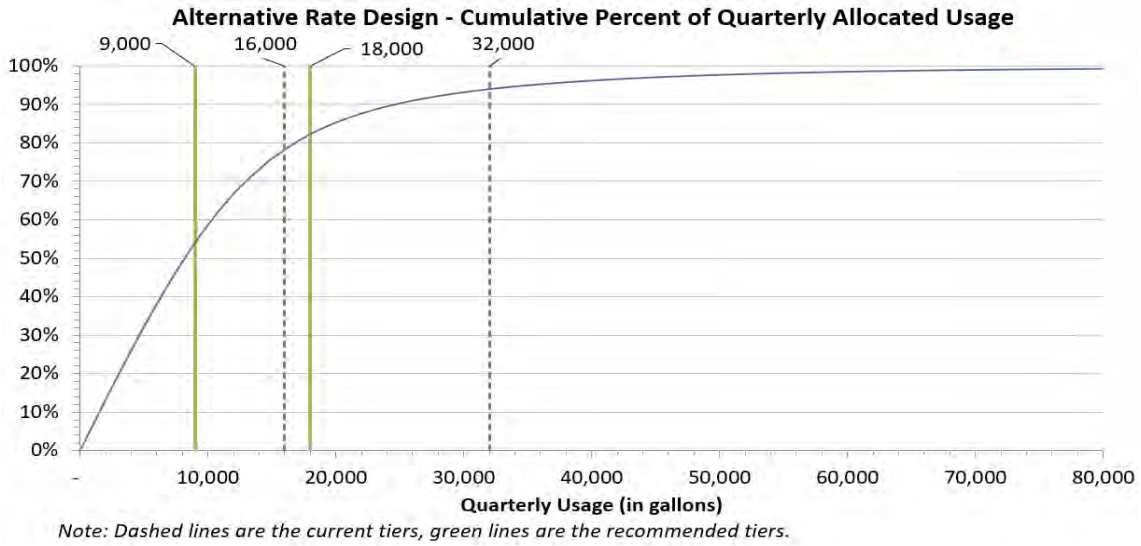
The demand forecast will be based on historical usage patterns, water facilities plans and discussions with the Village as to projected water demand. The projections will be developed for at least a twenty-year period, by customer class. One of the key variables that must be developed is the rate of change in the utilities, including the numbers and types of new customers to be added year-by-year as well as increases (or decreases) in water usage over time by existing customers. Recent national trends indicate an average decrease in per capita consumption of about 1% per year; in some places recurring decreases of 1% - 2% per capita per year have been documented. As a result, it may not be accurate to assume a consistent growth in the number of customers and usage. To develop an accurate demand forecast the usage trends on per account basis must be examined. The demand forecast will include adjustments in customer usage due to price elasticity (the impact of raising rates on customer usage).

DETAILED USAGE ANALYSIS / PEAK DEMANDS

A key step in the rate study is to gain an understanding of the make-up of the customers serviced by the system and how and when they use water and generate sewage throughout the year, particularly how various customers peak the system. This is necessary for determining appropriate cost allocations, to develop demand projections, to evaluate the appropriateness of the current rate structure and to evaluate potential alternative rate structures. To facilitate this review, NewGen will request several years of detailed consumption at the customer account level. The customer and customer usage data will be statistically analyzed to identify usage patterns, including seasonal usage and customer class peaking. Demand ratios (max week, max day, max hour, etc.) will be identified and considered in this analysis, as will peak demands related to any large customers or customer classes.

A focus of this task will be a tier analysis of the Village's customer base, by class. The results of this analysis will provide a basis for any adjustments to the Village's current water rate structure. A typical demand / tiered usage analysis is presented on the following page.

Exhibit 3. Sample Water Usage Tier Analysis



Note: Dashed lines are the current tiers, green lines are the recommended tiers.

Task 3 Deliverables

- Ten-year projection of water, sewer, and stormwater system customer accounts and demands
- Tiered usage analysis to determine appropriate water rate tiers

TASK 4 - REVENUE ADEQUACY AND FINANCIAL PLANS

The sum of the annual water, sewer, and stormwater revenue requirement developed in Task 2 and the revenue generated under existing water, sewer, and stormwater rates and projected demand developed in Task 3 will be compared to evaluate the sufficiency of the Village's current water, sewer, and stormwater rates. NewGen will project water, sewer, and stormwater cash flow for a ten-year planning period.

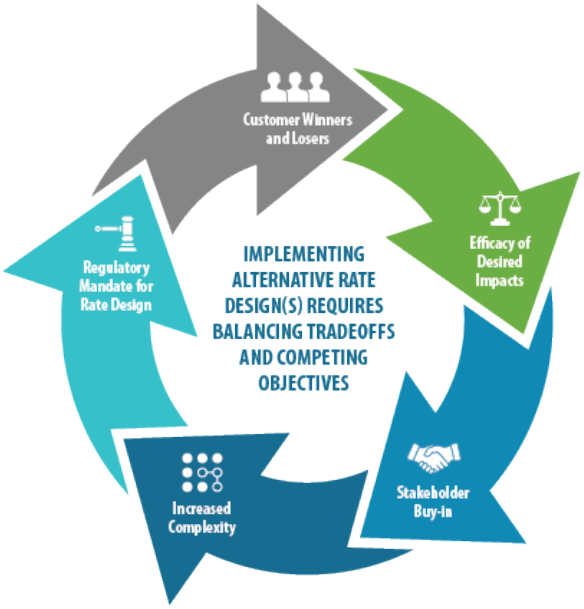
The wise use and management of financial reserves provides many advantages to a utility: rate stabilization and "smooth" rate increases, as well as enhanced credit ratings and resulting interest savings. We will review the adequacy of the Village's current reserves and reserve policies in light our industry expertise. Specific financial metrics will be developed as standards to which each utility's financial health can be measured. These may include calculations of days of O&M cash on hand, debt coverage ratios, or other benchmarks deemed important to the Village. Task 4 will define the projected revenue and cash flow needs of each system.

Task 4 Deliverables

- Ten-year projection of water, sewer, and stormwater system cash flows
- Financial plan and specific revenue increases (if necessary) to support the projected revenue requirement
- Key financial performance indicators, such as Debt Service Coverage and Operating Ratios
- Recommendations regarding fund balance or debt service coverage ratios to ensure utility fund financial health

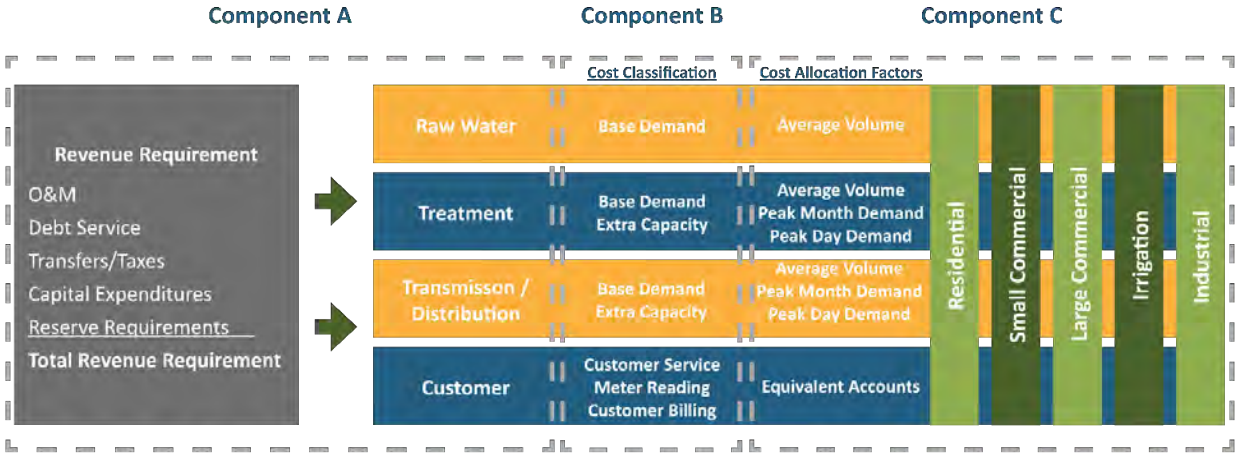
TASK 5 –RATE AND FEE REVIEW AND RATE ALTERNATIVES

In addition to projecting sufficient rates given the Village's current rate structure in Task 4, NewGen will review each of the Village's water, sewer, and stormwater rates to determine if their structure is appropriate. It must be kept in mind that the issue of rate design is a "zero-sum" game; that is, the amount of money to be raised from rates is the same, regardless of the rate design. There are many rate designs that comply with industry practice and will withstand legal challenge. The policy determinations and preferences of the Village are important factors in determining the preferred water rate and fee design. Ultimately the Village may not need to change the current rate structure but rather change the allocation of costs among the components of the rate structure.



WATER COST OF SERVICE ANALYSIS

The revenue requirements from rates and the detailed usage will be allocated as necessary by class to serve as the basis for rate determination for each class. To complete the cost-of-service analysis, we will follow the methodology described in American Water Works Association's Manual M-1, *Principles of Water Rates, Fees, and Charges* (as modified to comply with Prop 218 and Prop 26 [if necessary]) for identifying or allocating water system revenue requirements.

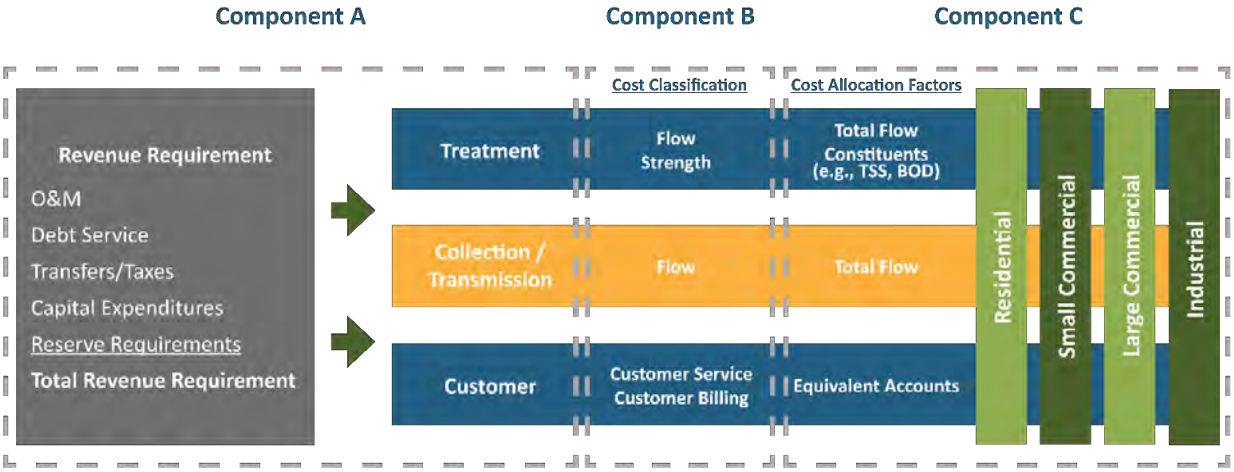


Note: For illustrative purposes only. Functions and allocators may change to align with utility operations/services.

To the extent that there is no appreciable difference in average unit costs allocated among classes, rate classes may be combined to reduce the number of rate classes. To the extent that significantly differing usage or demand patterns among customers or customer classes exist, or to the extent required by external agreements, costs will be functionalized or segregated as necessary. Costs related to consumption of water will be allocated based on base use, maximum day and peak hour (if data is available). Costs not related to consumption will be allocated to customers based on factors such as meter size and hydrant and/or fire line size.

WASTEWATER COST OF SERVICE ANALYSIS

The methodology utilized by our project team to develop sewer rates is consistent with and based on the principles provided by the Water Environment Federation's *Financing and Charges for Wastewater Systems* (WEF Manual of Practice 27).



Note: For illustrative purposes only. Functions and allocators may change to align with utility operations/services.

Operating and capital expenses of the Village's sewer collection system will be allocated to fixed costs and variable costs (flow). The current revenues from each class will be compared with the allocated cost of service to identify any discrepancies in the current allocations.

FIXED VS. VARIABLE COST ALLOCATION

NewGen will review the fixed and variable portion of each rate and the cost components that should be collected based on fixed or variable charges. While it may be unrealistic to generate an identical proportion of fixed and variable costs in the revenue structure of the Village, NewGen will strive to increase cash flow stability using fixed charges where appropriate.

MISCELLANEOUS FEE EVALUATION

NewGen will evaluate each of the miscellaneous fees charged to the Village's water, sewer, and stormwater customers to ensure that the basis for each fee is appropriate and up to date. When calculating the various fees, the initial step is to determine the amount of work hours that go into completing the tasks associated with the fee in order to calculate the cost. Relevant material costs are also added to this total to create the total cost for each fee. In any case in which NewGen identifies an opportunity to modify a Village's miscellaneous fees, the adjustment justification will be documented.

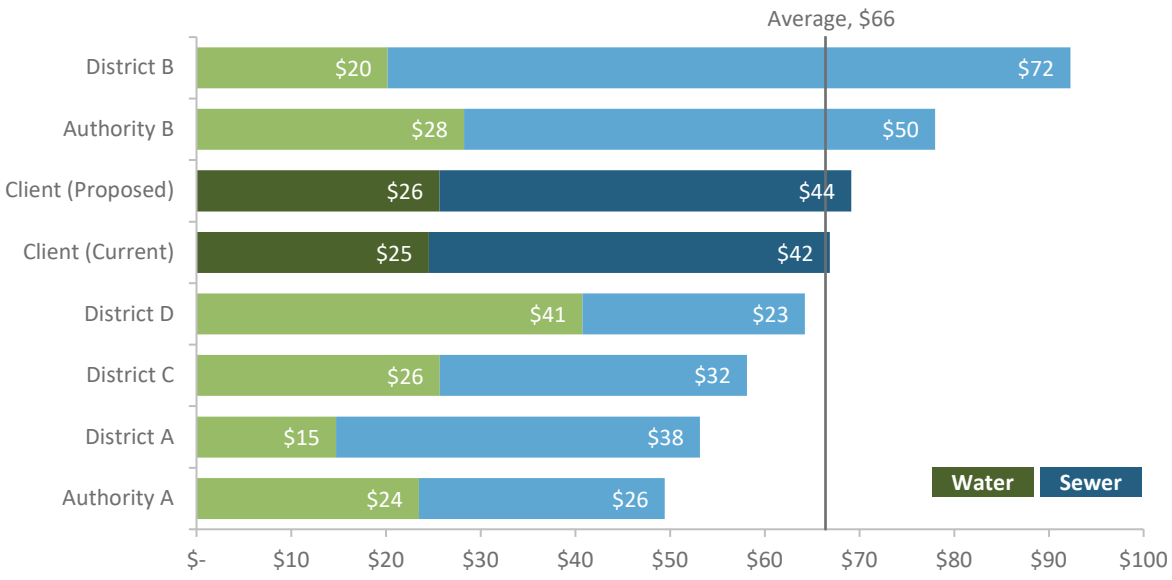
ADVERSE IMPACTS TO CUSTOMER GROUPS

Any rate structure change will have disproportionate impacts on certain customer groups. For example, increasing the proportion of revenue raised from fixed charges disproportionately impacts small users, as a higher proportion of their bill is due to the fixed fee. These impacts will be noted and explained for each rate structure recommended as a part of the study and implementation strategies will be developed to mitigate or phase in each impact.

CUSTOMER BILL IMPACT BENCHMARKING

NewGen will conduct a benchmarking evaluation to facilitate comparison of the Village's current and proposed water bills will be for a typical customers of each classification compared to a similar customer in surrounding utilities of similar size. A sample chart representing this comparison is shown below.

Exhibit 4. Sample Regional Bill Comparison Chart



Task 5 Deliverables

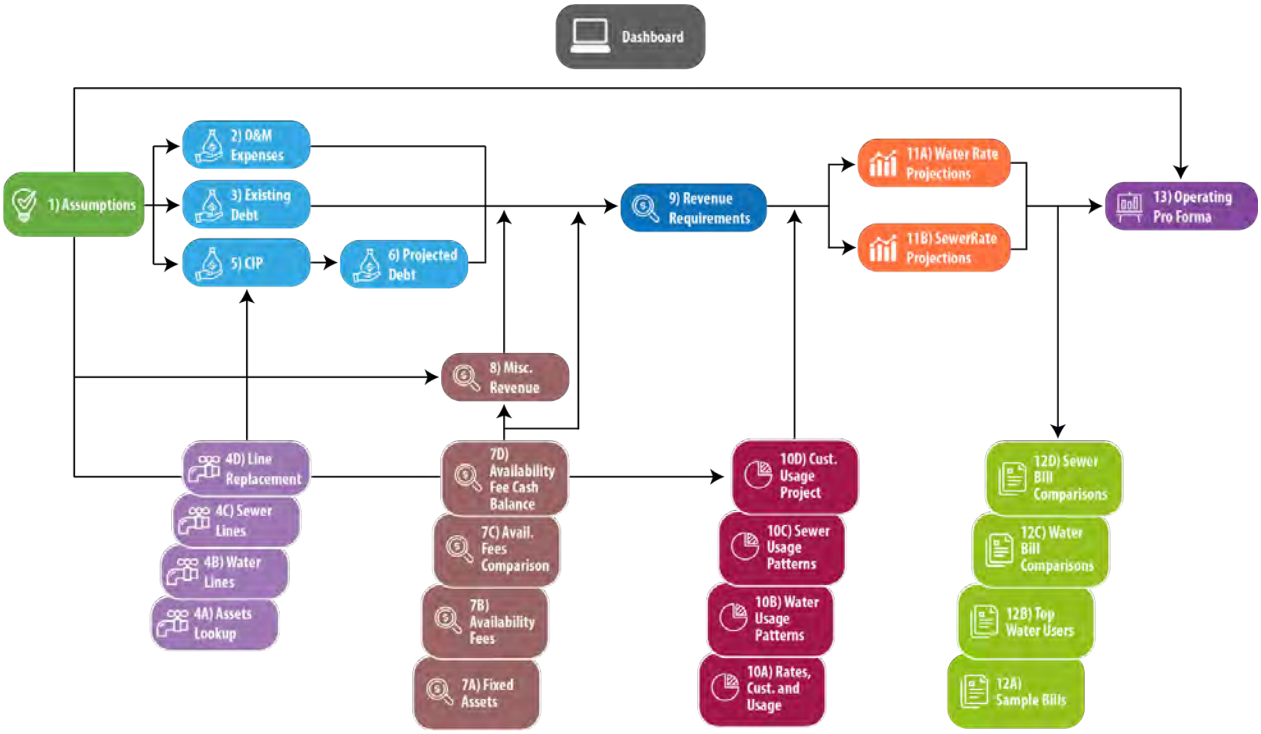
- Ten-year projection of specific water, sewer, and stormwater rates sufficient to sustain the financial plans developed in Task 4
- One (1) alternative rate structure each for water, sewer, and stormwater rates
- Regional bill comparison under current and recommended rates

TASK 6 - FINANCIAL MODEL

NewGen's model will utilize Microsoft Excel® software. The model will produce a series of interactive schedules, each of which will address a principal topic (O&M costs, debt service, demand/usage, cost of service, etc.). Built into the model is a series of summary-level graphics that can be used as stand-alone charts that are fed by the data contained in the model and are produced with no additional effort on the part of the user.

A detailed diagram of the type of interactive financial plan/rate analysis model that will be developed for the Village is provided as Exhibit 7. The schematic depicts the Table of Contents for our typical water, sewer, and stormwater financial model, with each linked box representing a schedule within the model and the arrows indicating the linked relationship between each schedule. Every model we develop is fully customized to suit the client's data and needs and is formatted to tie to the client's budgeting and account structures and breakdowns.

Exhibit 5. Schematic Diagram of Financial Plan / Rate Analysis Model



Built into the model is a Dashboard of summary-level graphics that show high level projections of revues, expenses, and cash flows under the model's current scenario. A sample rate model dashboard from is shown in the exhibit below.

Exhibit 6. Sample Financial Model Dashboard

The model developed during the study will be licensed to the Village at no charge at the conclusion of the study. NewGen does not charge any form of licensing fee or royalty for continued use of the model. The model's schedules are all linked to facilitate updating and to minimize input errors. NewGen's financial models are extremely user-friendly, and we make every effort to ensure that the model is a useful tool

for the Village. The model will not be a black box but rather a tool that can easily be used, understood, and updated.

TASK 7 – REPORTING AND PRESENTATIONS

NewGen will document all work performed in the water, sewer, and stormwater rate study in a concise narrative report. The report will include an executive summary that will be written in easy-to-understand terms so that it is public-friendly. All data sources relied upon in the study will be identified and documented, and all assumptions clearly set forth. NewGen will attend a public work session with the Village Board of Trustees to discuss the study's findings and recommendations. The study's results will be presented as a summary slideshow in Microsoft PowerPoint® and will present all study data, results, and recommendations.

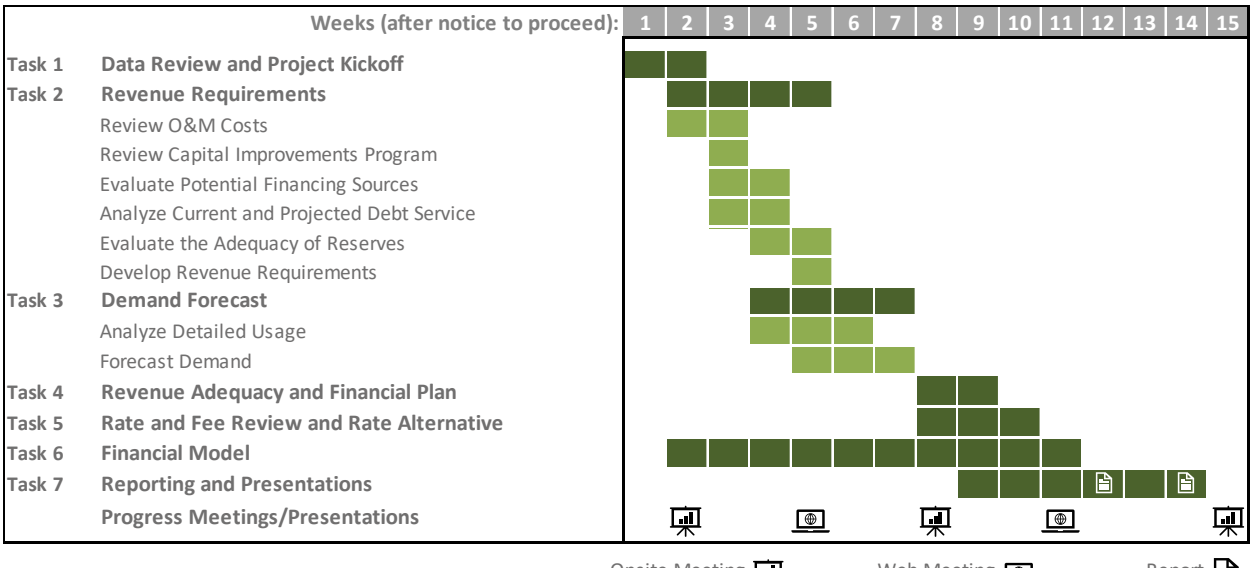
Task 7 Deliverables

- Draft and Final Rate Study Report
- Rate Study Results Presentation to the Village Board of Trustees

PROPOSED TIMELINE

The technical approach outlined in this proposal will result in delivery of a draft report fourteen (14) weeks after notice to proceed and a final report two weeks after meeting with Village staff to discuss the draft results. Conference calls and web meetings with Village staff will occur monthly throughout the study. Our planned project schedule, by task, is shown in Exhibit 2.

Exhibit 7. Project Schedule



Key Deliverables / Milestones

Week 2	Kickoff Meeting	Week 12	Draft Report
Week 5	Status Meeting	Week 14	Final Report
Week 8	Status Meeting	TBD	Presentation
Week 11	Status Meeting		

Of course, NewGen is willing to adjust these expected delivery dates and the number of meetings if needed to accommodate the City's schedule.

ADDITIONAL VALUE-ADDED SERVICES

NewGen is experienced in a broad range of services above and beyond those required in City's water and wastewater rate study. Among the service we have provided and can provide to Village are:

- Litigation support and expert witness testimony
- Preparation of and defense against claims
- Negotiation support for wholesale customers
- Preparation of special reports, analyses and presentations
- Development of "big data" analyses and capabilities resulting from the use of AMI systems, allowing much more detailed and timely usage and demand data

NewGen will be pleased to discuss these and any other related services that we can provide to support Village in accomplishing its mission. It should be noted that NewGen does not charge any premium to its standard billing rates for any special services, including expert witness testimony.

OPERATING HISTORY

NEWGEN EXPERIENCE

Rooted in our broad experience and perspectives, NewGen aligns our approach to your organization's goals and objectives to ensure your success. We listen first, then tailor our approach to each unique situation to make the complex clear and defensible.

NewGen is a management and economic consulting firm specializing in serving the utility industry and market. Established as a Limited Liability Corporation in August 2012, NewGen primarily serves public sector utilities and provides nationally recognized expertise in load forecasting, utility cost of service (COS) and rate design studies, financial feasibility studies, municipalization efforts, depreciation and appraisal studies, litigation support for state and federal regulatory proceedings, utility financial planning, and stakeholder engagement for electric, water, wastewater, solid waste, and natural gas utilities.

We recognize the need for strategic intent behind our clients' actions by applying the latest market insights, technologies, and tactics to support our recommendations. Our results empower decision makers to implement sound public policy, incorporating community input, market direction, and regulatory mandates.

Understanding your community, your organization, and your data are the three essential elements to developing actionable strategies to maximize the future. NewGen believes that strategy dictates everything. Our approach utilizes your data, markets, and communities to provide an integrated view designed to make long-term decisions with confidence. We leverage our modeling technology and market expertise in energy, water, wastewater, and solid waste to solve your most complicated issues. Through proactive collaboration, we upgrade or design strategies for you to ensure they are responsive, transparent, and reliable while paving the way for successful buy-in across all your stakeholders.

We are well versed and experienced in providing management and financial advice related to every aspect of municipal utility services. Some of the specialized services that we offer to our clients include Cost of Service/Rate Studies, System Development Charges/Capacity Fee Studies, Operational Reviews/Management Audits, Comparative Analyses/Benchmarking, Financial Feasibility Studies, Infrastructure Management/ GASB 34, and Conservation Studies.

NewGen employs nearly 50 professional and administrative staff, with 11 ownership members and a Board. Our current staff has the capability to work on simultaneous assignments, and we have the capacity to add staff and/or expand support from a network of teaming partners, if needed. NewGen has 12 offices located nationwide.

FINANCIAL STABILITY

NewGen is a financially stable company, with revenues, working capital, and reinvestment in the company growing each year since our launch in 2012. As a sign of our growth, stability, and reputation, NewGen continually wins and performs high profile projects for utilities throughout North America.

NewGen also believes it is important to give back to the community. Each year NewGen donates 1% of our gross revenues to charitable organizations in the communities in which we are located to share our success with causes that are close to us as a company, or individually. In 2020, a total of $98,000 was spread amongst 50 organizations nationwide, including the Juvenile Diabetes Research Foundation, Cystic Fibrosis Foundation, and the Cure Alzheimer's Fund. Since our inception, we have donated almost $400,000 to charities nationwide.

ANNUAL REVENUES:	
CY 2020	$11.1M
CY 2019	$8.7M
CY 2018	$8.4M

PROJECT MANAGEMENT

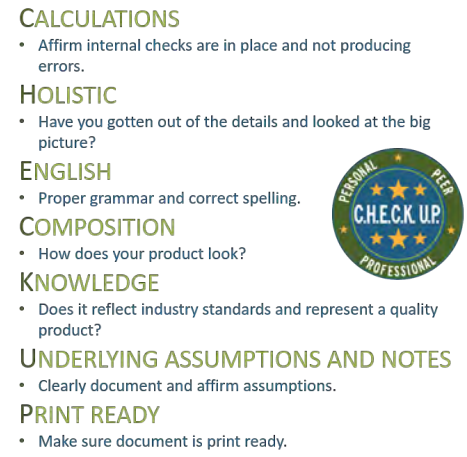
NewGen seeks to be a trusted advisor to all our clients. We recognize that to facilitate this relationship, it requires that our Project Teams be available when the need arises to be responsive to the unique challenges and opportunities faced by our clients. To facilitate this role, each of NewGen's offices conducts routine meetings wherein we plan and forecast workload to ensure timely and responsive service to each client. At the same time, we recognize that last-minute requests may occur, which necessitate immediate service not included in the workload plan. NewGen utilizes the latest technological tools to interconnect its Project Teams, which allow such requests to be quickly assigned and completed while minimizing the impact on the ongoing workload plan. Our proposed Project Manager will be available to the Village and responsible for ensuring the City's needs are addressed with the utmost quality of service. Additionally, our proposed Client Liaison and Financial Model lead are located in our Nashville office and can be available in person at Metro's discretion.

QUALITY ASSURANCE/QUALITY CONTROL

NewGen recognizes that the quality of our analysis and work product is of paramount importance. To serve as a trusted advisor to our clients, it is critical that our work be of the highest caliber. Mistakes challenge our credibility with colleagues and clients, and can lead to serious negative consequences including, but not limited to, potential litigation. Given this, each engagement must be conducted under strict quality assurance/quality control (QA/QC) procedures. NewGen's internal QA/QC program involves three key levels of review for every project:

LEVEL 1 – PERSONAL

At the first level of our QA/QC program, every consultant is personally responsible for their work product. Any product developed internally should be considered "client-ready" prior to being submitted to higher levels of management for review. To assist consultants in ensuring that their work product meets these standards, NewGen has developed and utilizes a "CHECK-UP" process, as demonstrated by the graphic to the right. Utilizing this as an acronym, NewGen encourages its consultants to apply each of these standards to every analysis conducted or work product prepared.



LEVEL 2 – PEER

The second level of our QA/QC process involves a peer review of all analysis and work product. As part of this process, NewGen has designated experts in each subject matter area to serve as "qualified reviewers." Each analysis or work product is reviewed and approved by a qualified reviewer prior to further transmission to a client.

LEVEL 3 – PRODUCT

The final level of review in our QA/QC process seeks to ensure that the product we develop and publish is reflective of the high-standards of our Firm. Each deliverable is reviewed by our administrative staff to ensure it meets the quality standards of a NewGen product, regardless of the individual or office that produced the product. Additionally, integrated and embedded in the product is a QA/QC process of more automated checking of calculations and formulas that ensure the model is operating properly and concisely, and notifies users if the model was updated or if any errors are present.

IMPLEMENTATION

NewGen conducts annual training for employees on the QA/QC process. This includes in-person, multi-day workshops on project management and the proper application of the QA/QC procedures. Furthermore, each employee's annual performance review has an entire section devoted to work quality, and assesses the employee's application of the above outlined process.

PROJECT TEAM
QUALIFICATIONS

PROJECT TEAM

NewGen evaluates the needs of each project and responds by assembling a project team of knowledgeable professionals who are uniquely qualified to provide the services needed.

The project team assembled for this project are widely recognized cost of service, rate-making and financial forecasting experts that possess unique knowledge of water resources and industry trends as well as best practices in the areas of water and wastewater.

The following are brief bios of our proposed project team. Detailed resumes are included in Appendix A.

ERIC CALLOCCHIA, EXECUTIVE CONSULTANT | PROJECT MANAGER

EDUCATION: BA, Economics/Mathematics, Johns Hopkins University

AFFILIATIONS: AWWA, WEF, CWEA, GFOA
AWWA Rates and Charges Committee - Cost of Service Subcommittee

PUBLICATIONS: Contributing author, WEF Manual of Practice (MOP) 27 – *Financing and Charges for Wastewater Systems*; AWWA Manual M1 – *Principles of Water Rates, Fees and Charges*

Mr. Callocchia has over eleven years of utility cost of service and financial consulting experience. His expertise is related to a broad range of industry issues, including revenue stability, customer affordability, operational sustainability, and public education. He has experience with establishing new stormwater utilities through the analysis of impervious area modeling and the implementation of best management practices. He is involved in water and wastewater industry associations and is a contributing author to the most recent edition of the Water Environment Federation's Manual of Practice 27 – ***Financing and Charges for Wastewater Systems***. He is an active member of the American Water Works Association (AWWA) Rates and Charges Committee, and a contributing author to the upcoming eighth edition of AWWA's Manual M1 – ***Principles of Water Rates, Fees and Charges***. He is accredited as an expert witness concerning utility rate setting matters by the Maryland Tax Court.

Mr. Callocchia has worked with over 100 water, wastewater, and stormwater utilities throughout the United States. Through his efforts, clients have realized new stormwater utilities, justified revenue increases, adopted rate structure changes, enhanced reserve policies, funded capital financing plans, and applied other industry best practices. Mr. Callocchia regularly presents at industry conferences to keep peers informed of the cutting-edge methodologies developed as a part of his projects.

EDWARD J. DONAHUE, DIRECTOR | PRINCIPAL-IN-CHARGE / QA

EDUCATION: MBA, Finance, Government-Business Relations, George Washington University
BS, Accounting, Johns Hopkins University

REGISTRATIONS & CERTIFICATIONS: Certified Management Consultant (U.S., Canada)

AFFILIATIONS: AWWA, WEF, GFOA
Active member of the AWWA Finance, Accounting & Management Controls Committee

PUBLICATIONS: Contributing editor, update, and expansion, AWWA Manual M29, *Capital Financing*; Contributing author, *Financial Management for Water Utilities*

Mr. Donahue has almost fifty years' relevant experience, having performed cost of service, rate, and feasibility work for more than 125 clients, including work for cities, counties and special purpose authorities and commissions in more than twenty states. He is currently serving as an expert witness and technical advisor to the San Diego County Water Authority. He has served as chairman of AWWA's Finance, Accounting and Management Controls Committee and currently chairs that organization's GASB 34 Task Force; he is a contributing author and editor for AWWA's Manual M-29, *Capital Financing*, and served the same role for the recent AWWA/GFOA textbook Financial Management for Water Utilities. He has been accredited and served as an expert witness in accounting, contract, and construction and rate matters before courts and regulatory agencies.

ZAK WRIGHT | LEAD ANALYST

EDUCATION: Master of Business Administration, Belmont University; Bachelor of Business Administration in Finance, University of Tennessee Knoxville

REGISTRATIONS AND CERTIFICATIONS: Accredited Senior Appraiser (ASA) by the American Society of Appraisers

Mr. Zak Wright is a Senior Consultant and has worked at NewGen for six years and has worked in the banking and telecommunications industries. Zak assists with appraisals, financial planning, and rate analysis. Zak has experience in underwriting, banking, corporate finance, pro forma financial analysis, financial modeling, and strategic and capital planning, and prior to joining NewGen, he worked as a Commercial Credit Analyst.

NICK SHORT, CONSULTANT | ANALYST

EDUCATION: BS, Economics, Towson University

AFFILIATIONS: AWWA, WEF

Mr. Short applies financial modeling skills to a broad range of rate design projects for clients. He has served as lead data analyst for several water, sewer, stormwater and/or solid waste rate studies throughout the United States. In addition to rate design projects, Mr. Short has also assisted in operation and management, benchmarking and performance management studies.

PROPOSED FEE

BASIS OF COST PROPOSAL

We develop our cost proposals by estimating the number of hours of effort that will be required by key individual/classification of employee and multiplying this number by the standard hourly rate that has been established for each administrative classification of employee. To this estimate of professional fees, we add estimated out-of-pocket expenses (e.g., travel, telephone, printing, express services, etc.) at actual cost, with no profit or overhead added to out-of-pocket expenses. Any discounts received (car rentals, hotels, etc.) are passed through to the client.

COST PROPOSAL

Task		Callocchia	Donahue	Wright	Short	Hours	Professional Fees	Out-of-Pocket Expenses	Total
		$225	$345	$190	$135				
Task 1	Data Review and Project Kickoff	12	2	4	8	26	$ 5,230	$ 750	$ 5,980
Task 2	Develop Water, Sewer, and Stormwater Revenue Requirements	12	-	4	24	40	$ 6,700		$ 6,700
Task 3	Forecast Demands	8	-	4	24	36	$ 5,800		$ 5,800
Task 4	Revenue Adequacy and Financial Plans	12	-	4	24	40	$ 6,700		$ 6,700
Task 5	Rate and Fee Review and Rate Alternatives	12	-	12	24	48	$ 8,220	$ 750	$ 8,970
Task 6	Financial Model	12	-	12	24	48	$ 8,220		$ 8,220
Task 7	Reporting and Presentations	12	2	4	12	30	$ 5,770	$ 750	$ 6,520
	Labor Hours	80	4	44	140	268			
					Subtotal		$ 46,640	$ 2,250	
		Total Not-To-Exceed Study Cost							$ 48,890

FEE SCHEDULE

NewGen uses a rate/ fee schedule based on the personnel classifications/categories of its professional staff. The following fee schedule will apply to services in support of this engagement.

CLASSIFICATION	BILLING RATES
NewGen Strategies and Solutions, LLC	
Principal / Member / Director	$250 - 350
Executive Consultant / Project Manager	225 - 275
Consultant / Analyst	135 - 155

We guarantee these billing rates for all work performed through December 31, 2022. On January 1, 2023, and each January 1 thereafter, we reserve the right to adjust these billing rates. Out-of-pocket expenses incurred in direct support of this engagement are billed to the client at actual cost, with no overhead or profit added to the costs.

PERIOD OF PROPOSAL

This proposal is valid for 120 days from the date of its submission and may be extended by mutual written agreement.

REQUIRED FORMS

As required in the RFP, NewGen has provided the following forms in the following pages:

- Proposal Summary Sheet
- Certificate of Compliance
- References
- Insurance Requirements

PROPOSAL SUMMARY SHEET

RFP 21-035

Water: Meter Replacement Evaluation, Leak Detection, and Rate Study

Business Name: NewGen Strategies and Solutions, LLC

Street Address: 911-A Commerce Road]

City, State, Zip: Annapolis, MD 21401

Contact Name: Eric Callocchia

Title: Executive Consultant

Phone: 443-951-4207 Fax: 410-266-5545

E-Mail address: ecallocchia@newgenstrategies.net

Fixed Fee Price Proposal

(Firms may submit for one, two or three work efforts. Clearly indicate if there are discounts if awarded more than one work effort)

Work Effort #1: Meter Replacement Program Evaluation	$ -
Work Effort #2: Water System Loss Control and Leak Detection System	$ -
Work Effort #3: Water and Sewer Rates	$ 48,890
PROPOSAL TOTAL	$ 48,890

Alternate price proposal(s) (optional)

_____ $ _____

AUTHORIZATION & SIGNATURE

Name of Authorized Signee: Edward Donahue

Signature of Authorized Signee: DocuSigned by: Edward J. Donahue C4BD09BEEFB641F...

Title: Director Date: 8/19/2021

ORLAND PARK

CERTIFICATE OF COMPLIANCE

The undersigned Edward Donahue, as Director
(Enter Name of Person Making Certification) *(Enter Title of Person Making Certification)*

and on behalf of NewGen Strategies and Solutions, LLC, certifies that:
(Enter Name of Business Organization)

1) BUSINESS ORGANIZATION:

The Proposer is authorized to do business in Illinois: Yes [X] No [ ]

Federal Employer I.D.#: 46-0863326
(or Social Security # if a sole proprietor or individual)

The form of business organization of the Proposer is (*check one*):

___ Sole Proprietor
___ Independent Contractor *(Individual)*
___ Partnership
_X_ LLC
___ Corporation _____ _____
(State of Incorporation) *(Date of Incorporation)*

2) ELIGIBILITY TO ENTER INTO PUBLIC CONTRACTS: Yes [X] No [ ]

The Proposer is eligible to enter into public contracts, and is not barred from contracting with any unit of state or local government as a result of a violation of either Section 33E-3, or 33E-4 of the Illinois Criminal Code, or of any similar offense of "Bid-rigging" or "Bid-rotating" of any state or of the United States.

3) SEXUAL HARASSMENT POLICY: Yes [X] No [ ]

Please be advised that Public Act 87-1257, effective July 1, 1993, 775 ILCS 5/2-105 (A) has been amended to provide that every party to a public contract must have a written sexual harassment policy in place in full compliance with 775 ILCS 5/2-105 (A) (4) and includes, at a minimum, the following information: (I) the illegality of sexual harassment; (II) the definition of sexual harassment under State law; (III) a description of sexual harassment, utilizing examples; (IV) the vendor's internal complaint process including penalties; (V) the legal recourse, investigative and complaint process available through the Department of Human Rights (the "Department") and the Human Rights Commission (the "Commission"); (VI) directions on how to contact the Department and Commission; and (VII) protection against retaliation as provided by Section 6-101 of the Act. (Illinois Human Rights Act). (emphasis added). Pursuant to 775 ILCS 5/1-103 (M) (2002), a "public contract" includes "...every contract to which the State, any of its political subdivisions or any municipal corporation is a party."

4) EQUAL EMPLOYMENT OPPORTUNITY COMPLIANCE: Yes [X] No [ ]

During the performance of this Project, Proposer agrees to comply with the "Illinois Human Rights Act", 775 ILCS Title 5 and the Rules and Regulations of the Illinois Department of Human Rights published at 44 Illinois Administrative Code Section 750, et seq. The

Proposer shall: (I) not discriminate against any employee or applicant for employment because of race, color, religion, sex, marital status, national origin or ancestry, age, or physical or mental handicap unrelated to ability, or an unfavorable discharge from military service; (II) examine all job classifications to determine if minority persons or women are underutilized and will take appropriate affirmative action to rectify any such underutilization; (III) ensure all solicitations or advertisements for employees placed by it or on its behalf, it will state that all applicants will be afforded equal opportunity without discrimination because of race, color, religion, sex, marital status, national origin or ancestry, age, or physical or mental handicap unrelated to ability, or an unfavorable discharge from military service; (IV) send to each labor organization or representative of workers with which it has or is bound by a collective bargaining or other agreement or understanding, a notice advising such labor organization or representative of the Vendor's obligations under the Illinois Human Rights Act and Department's Rules and Regulations for Public Contract; (V) submit reports as required by the Department's Rules and Regulations for Public Contracts, furnish all relevant information as may from time to time be requested by the Department or the contracting agency, and in all respects comply with the Illinois Human Rights Act and Department's Rules and Regulations for Public Contracts; (VI) permit access to all relevant books, records, accounts and work sites by personnel of the contracting agency and Department for purposes of investigation to ascertain compliance with the Illinois Human Rights Act and Department's Rules and Regulations for Public Contracts; and (VII) include verbatim or by reference the provisions of this Equal Employment Opportunity Clause in every subcontract it awards under which any portion of this Agreement obligations are undertaken or assumed, so that such provisions will be binding upon such subcontractor. In the same manner as the other provisions of this Agreement, the Proposer will be liable for compliance with applicable provisions of this clause by such subcontractors; and further it will promptly notify the contracting agency and the Department in the event any subcontractor fails or refuses to comply therewith. In addition, the Proposer will not utilize any subcontractor declared by the Illinois Human Rights Department to be ineligible for contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations. Subcontract" means any agreement, arrangement or understanding, written or otherwise, between the Proposer and any person under which any portion of the Proposer's obligations under one or more public contracts is performed, undertaken or assumed; the term "subcontract", however, shall not include any agreement, arrangement or understanding in which the parties stand in the relationship of an employer and an employee, or between a Proposer or other organization and its customers. In the event of the Proposer's noncompliance with any provision of this Equal Employment Opportunity Clause, the Illinois Human Right Act, or the Rules and Regulations for Public Contracts of the Department of Human Rights the Proposer may be declared non-responsible and therefore ineligible for future contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations, and this agreement may be canceled or avoided in whole or in part, and such other sanctions or penalties may be imposed or remedies involved as provided by statute or regulation.

5) TAX CERTIFICATION: Yes [X] No [ ]

Contractor is current in the payment of any tax administered by the Illinois Department of Revenue, or if it is: (a) it is contesting its liability for the tax or the amount of tax in accordance with procedures established by the appropriate Revenue Act; or (b) it has entered into an agreement with the Department of Revenue for payment of all taxes due and is currently in compliance with that agreement.

6) AUTHORIZATION & SIGNATURE:

I certify that I am authorized to execute this Certificate of Compliance on behalf of the Contractor set forth on the Proposal, that I have personal knowledge of all the information set forth herein and that all statements, representations, that the Proposal is genuine and not collusive, and information provided in or with this Certificate are true and accurate. The undersigned, having become familiar with the Project specified, proposes to provide and furnish all of the labor, materials, necessary tools, expendable equipment and all utility and transportation services necessary to perform and complete in a workmanlike manner all of the work required for the Project.

ACKNOWLEDGED AND AGREED TO:

DocuSigned by:
Edward J. Donahue
C4BD00BEEFB641F...
Signature of Authorized Officer

Edward Donahue
Name of Authorized Officer

Director
Title

8/19/2021
Date

REFERENCES

Provide three (3) references for which your organization has performed similar work.

Bidder's Name: NewGen Strategies and Solutions, LLC
(Enter Name of Business Organization)

1. ORGANIZATION: Village of Libertyville, Illinois
   ADDRESS: 118 West Cook Avenue, Libertyville, IL 60048
   PHONE NUMBER: 847-918-2102
   CONTACT PERSON: Nicholas Mostardo
   YEAR OF PROJECT: 2016 and 2019

2. ORGANIZATION: Bloomington and Normal Water Reclamation District, Illinois
   ADDRESS: 2015 West Oakland Avenue, Bloomington, IL 61701
   PHONE NUMBER: 309-827-4396
   CONTACT PERSON: Timothy Ervin
   YEAR OF PROJECT: Ongoing

3. ORGANIZATION: City of Maryville, Missouri
   ADDRESS: 415 N. Market Street, Maryville, MO 64468
   PHONE NUMBER: 660-562-8009
   CONTACT PERSON: Denise Town
   YEAR OF PROJECT: 2021

ORLAND PARK

INSURANCE REQUIREMENTS

WORKERS' COMPENSATION & EMPLOYER LIABILITY
Full Statutory Limits - Employers Liability
$500,000 – Each Accident $500,000 – Each Employee
$500,000 – Policy Limit
Waiver of Subrogation in favor of the Village of Orland Park

AUTOMOBILE LIABILITY (ISO Form CA 0001)
$1,000,000 – Combined Single Limit Per Occurrence
Bodily Injury & Property Damage

GENERAL LIABILITY (Occurrence basis) (ISO Form CG 0001)
$1,000,000 – Combined Single Limit Per Occurrence
Bodily Injury & Property Damage
$2,000,000 – General Aggregate Limit
$1,000,000 – Personal & Advertising Injury
$2,000,000 – Products/Completed Operations Aggregate
Additional Insured Endorsements: ISO CG 20 10 or CG 20 26 and
CG 20 01 Primary & Non-Contributory
Waiver of Subrogation in favor of the Village of Orland Park

☑ PROFESSIONAL LIABILITY
$1,000,000 Limit - Claims Made Form, Indicate Retroactive Date
Deductible not-to-exceed $50,000 without prior written approval

☐ UMBRELLA LIABILITY (Follow Form Policy)
$2,000,000 – Each Occurrence $2,000,000 – Aggregate
EXCESS MUST COVER: General Liability, Automobile Liability, Employers' Liability

☐ UMBRELLA/EXCESS PROFESSIONAL LIABILITY
$1,000,000 Limit – Claims Made Form, Indicate Retroactive Date
Deductible not-to-exceed $50,000 without prior written approval

☐ BUILDERS RISK
Completed Property Full Replacement Cost Limits -
Structures under construction

☐ ENVIRONMENTAL IMPAIRMENT/POLLUTION LIABILITY
$1,000,000 Limit for bodily injury, property damage and remediation costs
resulting from a pollution incident at, on or mitigating beyond the job site

☐ CYBER LIABILITY
$1,000,000 Limit per Data Breach for liability, notification, response,
credit monitoring service costs, and software/property damage

Any insurance policies providing the coverages required of the Consultant, excluding Professional Liability, shall be specifically endorsed to identify **"The Village of Orland Park, and their respective officers, trustees, directors, officials, employees, volunteers and agents as Additional Insureds on a primary/non-contributory basis with respect to all claims arising out of operations by or on behalf of the named insured."** The required Additional Insured coverage shall be provided on the Insurance Service Office (ISO) CG 20 10 or CG 20 26 endorsements or an endorsement at least as broad as the above noted endorsements as determined by the Village of Orland Park. Any Village of Orland Park insurance coverage shall be deemed to be on an excess

or contingent basis as confirmed by the required (ISO) CG 20 01 Additional Insured Primary & Non-Contributory Endorsement. The policies shall also contain a Waiver of Subrogation in favor of the Additional Insureds in regard to General Liability and Workers' Compensation coverage. The certificate of insurance shall also state this information on its face. Any insurance company providing coverage must hold an A-, VII rating according to Best's Key Rating Guide. Each insurance policy required shall have the Village of Orland Park expressly endorsed onto the policy as a Cancellation Notice Recipient. Should any of the policies be cancelled before the expiration date thereof, notice will be delivered in accordance with the policy provisions. Permitting the contractor, or any subcontractor, to proceed with any work prior to our receipt of the foregoing certificate and endorsements shall not be a waiver of the contractor's obligation to provide all the above insurance.

Consultant agrees that prior to any commencement of work to furnish evidence of Insurance coverage providing for at minimum the coverages, endorsements and limits described above directly to the Village of Orland Park, Nicole Merced, Purchasing Coordinator, 14700 S. Ravinia Avenue, Orland Park, IL 60462. Failure to provide this evidence in the time frame specified and prior to beginning of work may result in the termination of the Village's relationship with the contractor.

ACCEPTED & AGREED THIS 19th DAY OF August, 2021

DocuSigned by:

Edward J. Donahue

64BD09BEEFB641F...

Signature

Authorized to execute agreements for:

Edward Donahue, Director

Printed Name & Title

NewGen Strategies and Solutions, LLC

Name of Company

Note: Sample Certificate of Insurance and Additional Insured Endorsement attached.

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 08/28/2020

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: John Davidson	
TriMountain Corporation 8301 East Prentice Avenue Suite 215 Greenwood Village CO 80111	PHONE (A/C, No, Ext): (720) 708-4155	FAX (A/C, No): (720) 708-4387
	E-MAIL ADDRESS: john@trimountaincorp.com	

INSURED	INSURER(S) AFFORDING COVERAGE	NAIC #
NewGen Strategies & Solutions, LLC 225 Union Blvd, #305 Lakewood CO 80228	INSURER A : ACE Property and Casualty Insurance Company	20699
	INSURER B : Chubb National Insurance Co.	10052
	INSURER C : Philadelphia Indemnity Insurance Company	18058
	INSURER D :	
	INSURER E :	
	INSURER F :	

COVERAGES **CERTIFICATE NUMBER:** CL2082802084 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	[X] COMMERCIAL GENERAL LIABILITY [ ] CLAIMS-MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: [X] POLICY [ ] PRO-JECT [ ] LOC [ ] OTHER:			D95586934	09/01/2020	09/01/2021	EACH OCCURRENCE	$ 1,000,000
							DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 300,000
							MED EXP (Any one person)	$ 10,000
							PERSONAL & ADV INJURY	$ 1,000,000
							GENERAL AGGREGATE	$ 2,000,000
							PRODUCTS - COMP/OP AGG	$ 2,000,000
							Employee Benefits	$ 1,000,000
A	AUTOMOBILE LIABILITY [ ] ANY AUTO [ ] OWNED AUTOS ONLY [ ] SCHEDULED AUTOS [X] HIRED AUTOS ONLY [X] NON-OWNED AUTOS ONLY			D95586934	09/01/2020	09/01/2021	COMBINED SINGLE LIMIT (Ea accident)	$ 1,000,000
							BODILY INJURY (Per person)	$
							BODILY INJURY (Per accident)	$
							PROPERTY DAMAGE (Per accident)	$
								$
A	[X] UMBRELLA LIAB [X] OCCUR EXCESS LIAB [ ] CLAIMS-MADE [ ] DED [ ] RETENTION $			D95586946	09/01/2020	09/01/2021	EACH OCCURRENCE	$ 3,000,000
							AGGREGATE	$ 3,000,000
								$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y / N: N If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		71791021	09/01/2020	09/01/2021	[X] PER STATUTE [ ] OTH-ER	
							E.L. EACH ACCIDENT	$ 1,000,000
							E.L. DISEASE - EA EMPLOYEE	$ 1,000,000
							E.L. DISEASE - POLICY LIMIT	$ 1,000,000
C	Professional Liabiliity (E&O)			PHSD1570651	09/01/2020	09/01/2021	Per Claim Limit	$3,000,000
							Aggregate Limit	$3,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Master only- Not valid w/o Certificate Holder information.

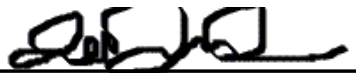
CERTIFICATE HOLDER

NewGen Strategies and Solutions

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE



AGENCY CUSTOMER ID: 00013688

LOC #:

ADDITIONAL REMARKS SCHEDULE

AGENCY	NAMED INSURED
TriMountain Corporation	NewGen Strategies & Solutions, LLC
POLICY NUMBER	
CARRIER / NAIC CODE	EFFECTIVE DATE:

ADDITIONAL REMARKS

THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,

FORM NUMBER: 25 **FORM TITLE:** Certificate of Liability Insurance

The general liability, auto, and umbrella policies include a notice of cancellation to the certificate holders endorsement, providing for 30 days advance notice if the policy is cancelled by the company other than for nonpayment of premium, for which 10 days notice is given.

NewGen Strategies & Solutions

APPENDIX A: RESUMES

RFP #: 21-035

WORK EFFORT #3: WATER RATE STUDY

Eric CALLOCCHIA

EXECUTIVE CONSULTANT

Mr. Callocchia has ten years of experience in the management of cost of service rate studies for owners of water, sewer, stormwater and solid waste utilities. His expertise includes rate design, dynamic cash flow modeling and benchmarking evaluations. He is a contributing author to the Water Environment Federation's Manual of Practice 27: Financing and Charges for Wastewater Systems. He is certified as an expert witness in rate setting matters by the State of Maryland Tax Court.

CONTACT

911-A Commerce Rd
Annapolis, MD 21401

Email: ecallocchia@newgenstrategies.net
Website: www.newgenstrategies.net

EDUCATION

Bachelor of Arts in Economics and Mathematics, Johns Hopkins University

PROFESSIONAL REGISTRATIONS/ CERTIFICATIONS

American Water Works Association

Active member of the AWWA Rates and Charges Committee and Cost of Service Subcommittee

Water Environment Federation

Government Finance Officers Association

KEY EXPERTISE

Financial Modeling

Water and Wastewater Cost of Service Analyses

Utility Rate and Fee Design

Economic Impact Analysis

Utility Management

Econometrics

Cash Flow Sensitivity Analysis

Public Finance

NewGen Strategies & Solutions

RELEVANT EXPERIENCE

Water/Sewer/Stormwater Rate Studies

Mr. Callocchia has provided water, wastewater, and stormwater industry expertise and policy guidance to Clients. His rate study approach involves the development of customized financial models that focus on the policy issues, cash needs, revenue requirements, and key performance indicators of each client. His models have provided clients with the necessary information to make critical capital financing decisions and rate adjustments to fully finance their system's operation and asset maintenance and replacement needs while also maintaining fund balance policies based on industry best practices. The models also have the capability of scenario analysis and can be incorporated with operating and capital expense and revenue projects. Mr. Callocchia has developed and recommended alternative rate structures and assisted in the implementation of a phased-in rate plans that address client issues and maintain the financial health of utility funds. Mr. Callocchia also provides expert guidance on the management of water, sewer, and stormwater utilities including the development of policies and procedures related to customer service, organizational communication, and public outreach.

Clients that Mr. Callocchia has provided these services to include:

- Albemarle County, VA
- Anne Arundel County, MD
- Village of Addison, IL
- City of Annapolis, MD
- Bloomington and Normal Water Reclamation District, IL
- Town of Barnstable, MA
- City of Charlottesville, VA
- City of Concord, CA
- Delaware County Regional Water Quality Control Authority (DELCROA), PA
- City of Prospect Heights, IL
- City of Dover, DE
- Town of Colonial Beach, VA
- Township of East Brunswick, NJ
- City of Falls Church, VA
- Frederick County, MD

Eric CALLOCCHIA

EXECUTIVE CONSULTANT

- City of Frederick, MD
- City of Fredericksburg, VA
- City of Hagerstown, MD
- City of Hampton, VA
- Town of Herndon, VA
- Jericho Water District, NY
- Village of Libertyville, IL
- Village of Lindenhurst, IL
- Village of Lombard, IL
- Town of Lovettsville, VA
- City of Naperville, IL
- City of North Kingstown, RI
- Village of Orland Park, IL
- City of Park Ridge, IL
- City of Portsmouth, VA
- Town of Purcellville, VA
- City of Richmond, VA
- Rivanna Water and Sewer Authority, VA
- City of Rockville, MD
- City of Salisbury, MD
- Somerset County Sanitary District, MD
- Town of Fairfield WPCA, CT
- Town of Elkton, MD
- Town of Vienna, VA
- Town of Wallingford, CT
- Wise County Public Service Authority, VA
- Village of Fox Lake, IL
- Town of Pound, VA
- City of Westminster, MD
- Town of Middleburg, VA
- City of Naperville, IL
- Washington Suburban Sanitary Commission, MD
- Town of Wallingford, CT
- Village of Westchester, IL
- Jurupa Community Services District, CA
- King George County Service Authority, VA
- Loudoun Water, VA
- Town of Lovettsville, VA

Stormwater Feasibility and Fee Studies

Libertyville, IL

In 2019, the Village engaged NewGen to complete a feasibility study to project the costs of implementing a Master Stormwater Management Plan (MSM) and to determine the appropriate methodology to charge Village citizens the costs of the MSMP planned projects. The Village also tasked NewGen with developing credit policies and manuals, appeal procedures, and an appropriate Stormwater Ordinance. Mr. Callocchia developed a financial model that projected the twenty-year cost of the Village's MSMP and the various impervious are based cost allocation methods the Village could adopt as a funding mechanism. Mr. Callocchia feasibility study allowed Village staff and elected officials to evaluate the various stormwater funding alternatives and implement industry best practices for the administration of its stormwater management program. Mr. Callocchia finalized the impervious area and utility billing databases and coordinated with Village staff to develop interactive an online fee lookup tool that allowed Village citizens to see their potential stormwater fee before it became effective. Mr. Callocchia also worked with Village staff to conduct two Town Hall style public information sessions prior to the fee becoming effective.

Westminster, MD

The City of Westminster serves as the County Seat and is in the center of Carroll County. Westminster is conveniently located near Maryland's largest cities, two state capitals, Annapolis and Harrisburg, and the nation's Capital. The City had historically faced challenges when funding stormwater operating and capital costs. The City in the past had not accounted in a detailed fashion the actual costs of stormwater management, with most of the costs absorbed by the City's streets and roads maintenance accounted for in the General Fund. The City engaged NewGen in 2019 to complete a feasibility study with several tasks: Identify and isolate the true cost of stormwater maintenance, develop and recommend a ten-year stormwater CIP given the City's asset listing and future stormwater needs, recommend policies regarding stormwater fees and credits, engage in a public information campaign to educate the City's citizens on the need for additional resources for stormwater management,

and assist in the implementation of a Stormwater Utility that properly accounts for the City's stormwater costs. Mr. Callocchia developed a financial model detailing the City's stormwater costs and helped the City implement a stormwater fee tied to the account information of City sewer users.

Frederick County, MD

Frederick County, Maryland was anticipating the issuance of a Municipal Separate Storm Sewer System (MS4) Permit from the Maryland Department of the Environment (MDE) that would place a certain cost burden on the County's 48,000 stormwater fee payers. Mr. Callocchia developed a financial model that determined the Maximum Extent Practicable (MEP) level that the county could reasonably fund given current levels of funding, median household income, and the County's procurement limitations. Mr. Callocchia's financial model allowed for a sensitivity analysis to determine the increase in funding that would be possible given several factors. The County used Mr. Callocchia's analysis to appeal the permit requirements and reduce the financial impact on the County's customers by both reducing the mandated spending related to the permit and lengthening the required implementation timeframe.

Water and Sewer Revenue Bond Feasibility Study

Mr. Callocchia developed for the City of Annapolis, Maryland a water and sewer rate model that projected various debt scenarios, including bond coverage calculations and cash on hand target projections. The City was able to generate ratings of AA-, Aa3, and AA- from the three major rating agencies and issue the revenue bonds in the amount of $30,755,000 on schedule thanks to the feasibility report generated by Mr. Callocchia's team.

Litigation Support

Water Rate Litigation

The San Diego County Water Authority (SDCWA) and The Metropolitan Water District of California (MWD) were engaged in litigation regarding the water rates charged to SDCWA by MWD. Mr. Callocchia developed a report on MWD's rate setting methodology and how it relates to the principles and industry standard practices detailed in the American Water Works Association (AWWA) Manual M1 - Principles of Water Rates, Fees, and Charges. Mr. Callocchia's evaluation assisted SDCWA in its efforts to show the illegality of MWD's rates based on their non-conformity to both AWWA standards and California Law (Proposition 26). Mr. Callocchia's work involved both cost-of-service analysis and knowledgeable explanation of industry standards to the Superior Courts of California. Subsequent to Mr. Callocchia's report, SDCWA was awarded about $235 million after a judge ruled in favor of the Water Authority, saying MWD's rates for 2011-2014 were illegal. Upon appeal, the appellate court did rule in favor of MWD on one issue out of twelve. The California Supreme Court denied a petition by SDCWA to review the appellate court ruling. The results of the dispute in which Mr. Callocchia was involved as an expert were:

- MWD must pay the Water Authority approximately $51 million for so-called "Water Stewardship" charges MWD added to the transportation rates it charged the Water Authority from 2011-2014; The decision prevents MWD from imposing more than $20 million in illegal charges annually going forward. Through 2047, those unlawful charges would have amounted to approximately $1.1 billion.
- MWD unlawfully under-calculated the Water Authority's statutory water right to MWD's water supply.
- A contract clause MWD used to disqualify local water supply projects in San Diego County from receiving funding from MWD was unconstitutional.

Eric CALLOCCHIA

EXECUTIVE CONSULTANT

Utility Billing Dispute

Silgan Plastics is the leading manufacturer of metal containers in North America and Europe, and the largest manufacturer of metal food containers in North America with a volume of approximately half the market share in the United States of America. They are also a leading worldwide manufacturer of metal, composite and plastic closures for food and beverage products. Mr. Callocchia led a team to evaluate the utility rates charges to a selection of Silgan's manufacturing plants and assist Silgan in settling rate disputes with local utility providers. Mr. Callocchia's detailed evaluations and expert analysis resulted in a settlement agreement for more than $500,000 above the amount previously offered to Silgan before Mr. Callocchia's involvement.

Benefit Assessment Dispute

The City of Westminster, Maryland was sued by a new customer who alleged that the methodology used by the City to calculate its water and sewer benefit assessments, commonly known in the utility industry as a System Development Charges, was unlawful. Mr. Callocchia served as an expert witness detailing the industry standard methodologies used to calculate these fees and provided the Court with the rationale and basis for the City's fees. The Court ultimately found that the City's fees were not illegally calculated based on the City's testimony, which included Mr. Callocchia's expert witness statements.

PRESENTATION AND PUBLICATIONS

Mr. Callocchia has given numerous presentations and participated in training and workshops. These presentations are shown below.

- "Setting Water and Sewer Rates in New York State While Addressing the Challenges of 2020" New York State GFOA 2020 Northeast Holiday Seminar
- ***WEF Manual 27, Financing and Charges for Wastewater Systems***, Contributing Author
- "Setting Water and Sewer Rates"; 2017 New York State GFOA 38th Annual Conference
- "A World without Crystal Balls: Attempting to Forecast Operating Expenses"; 2016 Tri-Association Conference
- "Enhanced General Fund Reimbursement by Enterprise Funds"; 2014 Brown Edwards Conference

Ed DONAHUE

DIRECTOR

Mr. Donahue has almost fifty years of experience, having performed cost of service, rate and feasibility work for more than 150 utilities across the country, from Maine to San Diego, from Nome to the Florida Keys. He has served as chairman of AWWA's Finance, Accounting and Management Controls Committee and currently chairs that organization's GASB 34 Task Force; he is a contributing author and editor for AWWA's Manual M-29, Capital Financing, and served the same role for the recent AWWA/GFOA textbook Financial Management for Water Utilities. He has been accredited and served as an expert witness in accounting, contract, and construction and rate matters before courts and regulatory agencies at state and federal levels.

Prior to coming to NewGen, Mr. Donahue established Municipal & Financial Services Group (MFSG) a specialized consulting practice that focuses on financial, management and economic issues facing public sector and infrastructure clients, especially those involved in large capital-intense activities. Prior to MFSG, Mr. Donahue directed a national consulting practice for a Big Four accounting firm. His career includes work as Financial Manager of R&D Operations for Westinghouse Electric Corporation and as a senior systems accountant at the U.S. Environmental Protection Agency.

CONTACT

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Website: www.newgenstrategies.net

EDUCATION

Master of Business Administration in Finance (Government Business Relations), George Washington University

Bachelor of Science in Accounting, Johns Hopkins University

PROFESSIONAL REGISTRATIONS/ CERTIFICATIONS

Certified Management Consultant (U.S., Canada)

American Water Works Association

Community Associations Institute

Government Finance Officers Association

Institute of Management Consultants (Past President, D.C. Chapter)

Water Environment Federation

KEY EXPERTISE

Financial Planning U Analysis

Litigation Support

Strategic Planning

Regulatory Analysis

Management Audits & Operational Reviews

NewGen Strategies & Solutions

RELEVANT EXPERIENCE

Financial Planning and Analysis

Mr. Donahue facilitated in the development of financial alternatives, capital improvement plans and financial feasibility studies for operating and capital costs, such as:

- Cost of service/rate studies for over 150 utilities (water, sewer, electric, solid waste, stormwater)
- Impact fees/capacity fees/system development charges
- Development of long-term business plans
- Negotiation of inter-jurisdictional agreements
- Evaluation of contracts and proposals; acquisition and disposal of assets; change orders
- Financial feasibility studies/debt affordability studies
- Bond related studies (coverage tests, arithmetic verifications, arbitrage compliance, parity tests, etc.)
- Tax revenue and expenditure analyses (tax and annexation disputes)
- Tax differential / tax setoff studies

Ed DONAHUE

DIRECTOR

Management and Organization

Mr. Donahue evaluates performance, efficiency and effectiveness of organizations; provides recommendations for the establishment of new organizations or consolidation of existing organizations or departments, including development of organizational structures and staffing needs, recruitment of key personnel, job descriptions, compensation programs, capital and operating budgets, revenue analysis, etc. He has conducted governance studies for boards of directors, commissions and authorities.

Asset Management

Mr. Donahue develops asset management processes and systems for infrastructure, including: optimization of operating and capital budgets; definition of service levels; condition assessments; identification and specification of software packages; life cycle costing analyses; development of planned and preventive maintenance programs.

Management Reporting

Mr. Donahue develops management reporting systems, including development of information needs, frequency and timing of reports, format of reports. He develops specifications for financial reporting systems for large municipal and federal agencies. Development of testing protocols to validate performance of management reporting with pre-established criteria.

Strategic Planning

Mr. Donahue facilitated in the development of strategic and long-range plans for non-profit and for-profit organizations.

Tax Exempt Financing

Mr. Donahue uses of creative approaches to finance economic development and industrial facilities with tax-exempt debt, and the use of special taxing districts (tax increment financing districts [TIF], special community benefit districts [SCBDs], etc.) to facilitate desirable development, including:

- Automotive coatings facilities
- Electric, steam and chilled water systems
- Paper manufacturing facilities
- Senior living communities

Hazardous Waste

Identification and evaluation of financial risks, and development of recommended assurance and insurance levels and mechanisms for a large fully permitted landfill accepting industrial and medical wastes; determination of risk management mix for hazardous waste operations.

Regulatory Analysis

Mr. Donahue evaluates financial and economic impact of various environmental laws and regulations, at industry, company and plant levels.

Ed DONAHUE

DIRECTOR

Litigation Support & Expert Witness Testimony

Mr. Donahue provides financial analysis and expert witness services to a wide variety of litigation and regulatory hearings. Typical areas of review include:

- Documentation/re creation of historical costs
- Forecasts/projections of costs/revenues
- Sensitivity analysis to identify critical issues for negotiations
- Development of/response to interrogatories
- Forensic accounting
- Financial models
- Cost allocations/rate schedules
- Construction claims/commercial disputes
- Civil bankruptcies (Chapters VII, IX and XI)
- Criminal bankruptcy
- Patent/trademark infringement (lost profits, reasonable royalties)

Zak C. WRIGHT

SENIOR CONSULTANT

Mr. Zak Wright joined NewGen Strategies and Solutions, LLC (NewGen) in April 2015. Mr. Wright assists with appraisals, financial planning and rate analysis. Prior to joining NewGen, he worked as a Commercial Credit Analyst and has experience in corporate finance, pro forma financial analysis, financial modeling, underwriting, banking, and strategic and capital planning. He attained his Master of Business Administration from the Massey School of Business at Belmont University.

CONTACT

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Brentwood, TN 37027

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Website: www.newgenstrategies.net

EDUCATION

Master of Business Administration, Belmont University

Bachelor of Business Administration in Finance, University of Tennessee Knoxville

PROFESSIONAL REGISTRATIONS/ CERTIFICATIONS

Accredited Senior Appraiser (ASA) by the American Society of Appraisers

KEY EXPERTISE

Appraisals and Valuation

Depreciation Useful Life Analyses

Cost of Service and Rate Design – Water and Wastewater

Financial Planning & Budgeting Model

Rate Benchmarking & Analysis

Municipalization Feasibility Analysis

Contract and Formula Rate Review

Power Supply Planning

NewGen Strategies & Solutions

RELEVANT EXPERIENCE

Appraisals and Valuation

Mr. Wright performed analyses on appraisals to develop indicators of value using the income, cost, and market approaches of valuation. His appraisal projects include:

Water and Wastewater Systems

- Town of Lexington, SC
- Conrad Consulting & Training LLC, IN
- King George County Service Authority, VA
- Canyon Lake Water Service Company
- Aqua Texas
- SouthWest Water, Inc.
- Clifford, Ross, Raudenbush & Cooper, LLC, AZ
- City of Lawrenceville, GA
- Sands Anderson, PC
- Dentons Bingham Greenebaum LLP
- York Water Company

Power Generation Assets

- Greer, Herz & Adams, LLP, TX
- Tri-State G&T Association, CO
- CPS Energy, TX
- Somervell County Appraisal District, TX
- Rusk County Appraisal District, TX
- Williams Mullen

Hydro-electric Generation Assets

- City of Hamilton, OH
- Walden Environmental Engineering

Power Distribution Assets

- MWH Corporation, TN
- Middle Tennessee Electric Membership Corp.
- City of Harrisonburg, VA

Zak C. **WRIGHT**

SENIOR CONSULTANT

Oil Refining Facilities

- Greer, Herz & Adams, LLP, TX

Gas Assets

- City of Rockport, TX

Waste-to-Energy Facilities

- Onandaga County Resource Recovery Agency, NY
- City of Lisbon, CT

Power Supply Contracts

- Basic Management, Inc., NV

Depreciation Useful Life Analyses

Mr. Wright performed actuarial life analyses to determine the estimated useful life span of generation plants for depreciation studies. These studies include:

- Los Angeles Department of Water and Power, CA
- Tri-State G&T Association, CO
- Kauai Island Utility Cooperative, HI

Cost of Service and Rate Design – Water and Wastewater

Mr. Wright assists in conducting wholesale and retail cost of service and rate design studies for water and wastewater utilities to help them understand the operational and financial impacts of their residential and commercial services. These studies include the creation of wholesale and retail rate models in Microsoft Excel that are customized to meet the needs of each client. His clients include:

- City of Bonham, TX
- City of Gatesville, TX
- City of Justin, TX
- City of Lewisville, TX
- City of Mansfield, TX
- City of Marshall, TX
- City of Mt. Pleasant, TX
- City of Paris, KY

Financial Planning & Budgeting Model

Mr. Wright developed comprehensive financial models to streamline utility rate design studies and determine the optimal level of funded debt and capital investment within various budget, usage, and customer base scenarios. His clients include:

- City of Denton, TX
- City of Fayetteville, NC
- Cleveland Public Power, OH
- Kentucky Municipal Energy Agency, KY
- City of Georgetown, KY
- Neel-Schaffer, Inc. (City of Biloxi), MS
- Fairbanks Natural Gas / Interior Gas Utility, AK

Zak C. **WRIGHT**

SENIOR CONSULTANT

Rate Benchmarking

Mr. Wright benchmarked various competitors' rates against those of the client to determine costs based on several factors including specific usage patterns and customer classes. He developed recommendations on the potential rate design. His benchmarking clients include:

- CPS Energy, TX
- City of Bardstown, KY
- Mayfield Electric and Water Systems, KY
- City of Nicholasville, KY

Rate Analysis

Mr. Wright analyzed the impact of fluctuating natural gas and funded debt prices on the economic viability of the construction of a natural gas distribution system and utility in Alaska. He assessed the customer conversion rate and its impact on the utility's ability to deliver gas at a lower price. Mr. Wright also conducted a rate review on behalf of Cumberland River Southeastern Power Administration (SEPA) end-use customers. The review helped illustrate to the power administration that building a 50-year rate that included the cost of all potential capital improvement projects during that period would make the power unmarketable to these customers. This analysis helped encourage the power authority to incorporate a compromise true-up approach into their rate design.

- Cumberland River Southeastern Power Administration (SEPA) customers
- Stantec (Interior Gas Utility), AK

Municipalization Feasibility Analysis

Mr. Wright compiled demographic information from comparable municipal electric districts to approximate customer base, usage, and revenue information in support of the client's investigation into forming a municipal electric system. He utilized the compiled data and the most recent incumbent utility's cost of service data to develop a financial model assessing the financial feasibility of this undertaking and its economic impact on the city and its residents. His municipalization projects include:

- City of Spearfish, SD

Contract and Formula Rate Review

Mr. Wright reviewed annual rate formulas to ensure they comply with settlement agreements between a group of municipal utilities and an investor-owned utility. He also verified that settlement formulas and calculations that the IOU filed with Federal Energy Regulatory Commission (FERC) accurately determined the monies due to the cities. Mr. Wright's clients include:

- Kentucky Municipal Group, KY
- Kentucky Municipal Energy Agency, KY
- City of Paris, KY
- City of Bardwell, KY
- City of Nicholasville, KY

Power Supply Planning

Mr. Wright reviewed request for proposal responses and developed a common-size expense model to determine all-in cost of each respondent's proposal. He also supported the development of the recommendation of project award. His projects include:

- Kentucky Municipal Group, KY
- Kentucky Municipal Energy Agency, KY
- City of Bardwell, KY
- City of Paris, KY

Nick SHORT

CONSULTANT

Mr. Short is a Consultant at NewGen Strategies and Solutions where he applies financial modeling skills to a broad range of rate design projects for clients. Mr. Short has extensive experience analyzing utility billing data in order to project cash flow and financing scenarios as a part of utility rate studies.

CONTACT

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Annapolis, MD 21401

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Website: www.newgenstrategies.net

EDUCATION

Bachelor of Arts in Economics, Towson University

KEY EXPERTISE

Financial Modeling
Cost of Service Analyses
Rates and Fee Design
Performance Metrics
Operational Benchmarking
Economics

NewGen Strategies & Solutions

RELEVANT EXPERIENCE

Water and Sewer Rate Studies

Mr. Short works with NewGen project managers to build financial models for utility clients. These models utilize industry standard cost allocation methodologies and allow clients to project the operating, capital, debt service and reserve requirements of their systems on both a short and long-term basis. Mr. Short provides expert utility billing analysis in order to properly project utility revenues. Clients that Mr. Short has provided these services to include:

- Village of Addison, IL
- Albemarle County, VA
- Albertson Water District, NY
- Anne Arundel County, MD
- City of Baltimore, MD
- County of Baltimore, MD
- Town of Barnstable, MA
- Bristol County Water Authority, RI
- City of Camden, NJ
- City of Canton, OH
- Calvert County, MD
- City of Charlottesville, VA
- Clermont County, OH
- City of Dover, DE
- Delaware County Regional Water Quality Control Authority, PA
- City of Dublin, OH
- Township of East Brunswick, NJ
- Fairfax County, VA
- City of Falls Church, VA
- Frederick County, MD
- City of Fredericksburg, VA
- City of Frederick, MD
- City of Hagerstown, MD
- City of Hampton, VA
- City of Hazelton, PA
- Town of Herndon, VA
- Hicksville Water Authority, NY
- Town of Highland Park, TX
- Town of Holly Springs, NC
- Jericho Water District, NY
- Village of Libertyville, IL
- Town of Middleburg, VA
- North Middleton Township, PA
- Ocean City, MD
- City of Perrysburg, OH
- Plainview Hamlet, NY
- City of Portsmouth, VA
- Port Washington Water District, NY
- City of Richmond, VA
- Rivanna Water and Sewer Authority, VA
- Town of Tyler, TX
- City of Vienna, VA
- City of Waco, TX
- Town of Wallingford, CT
- Water Authority of Great Neck North, NY
- WCPSA & Town of Pound, VA
- Town of Westlake, TX

NewGen Strategies & Solutions

APPENDIX B: SAMPLE REPORT

RFP #: 21-035

WORK EFFORT #3: WATER RATE STUDY

FINAL REPORT | March 18, 2021

WATER COST OF SERVICE AND RATE STUDY

City of Galesburg, Illinois

PREPARED BY:

NewGen Strategies & Solutions

ECONOMICS STRATEGY STAKEHOLDERS SUSTAINABILITY www.newgenstrategies.net

NewGen Strategies & Solutions

911-A Commerce Road
Annapolis, MD 21401
Phone: (410) 266-9101

March 18, 2021

Wayne E. Carl, P.E.
Director of Public Works
City of Galesburg
55 W Tompkins St.
Galesburg, IL 61401

Subject: Water Cost of Service and Rate Study Final Report

Dear Mr. Carl:

NewGen Strategies and Solutions, LLC (NewGen) is pleased to submit to the City of Galesburg this final report detailing our completed Water Cost of Service and Rate Study and including revisions based on feedback from the City Council work session held on February 22, 2021. This report details the results of our analysis of the forecasted costs of providing water service to the City's customers and our recommendations for recovering these costs over the next five years. The study provides a number of rate structure alternatives that will maintain the financial health and stability of the City's water operations while addressing service affordability for the City's customers.

We appreciate the opportunity to provide our professional services to the City and would like to express our sincere appreciation to City staff. The dedication and assistance provided by City staff was essential to the completion of this study. It has been a distinct pleasure to work with the City of Galesburg.

Should you require additional information regarding the enclosed report, please contact me at 443-951-4207 or via e-mail at ecallocchia@newgenstrategies.net.

Very truly yours,

Eric Callocchia
Executive Consultant
NewGen Strategies and Solutions, LLC

Table of Contents

List of Tables and Exhibits

EXECUTIVE SUMMARY

This section of the report summarized the major findings and proposed results of the study.

Projected Water System Revenue Requirement

The revenue requirement of the City's water system is the total of the projected Operating, Cash Capital, and Debt Service (existing and future) costs assuming conservative escalation of the FY 2021 budget and financing of the City's Capital improvement plan. The projected revenue requirement assumes that the City will spend an average of $2.6 million on cash capital spending each year and issue $12.2 million in new low interest IEPA loan debt over the ten year projection period. Miscellaneous non-rate revenues assume a reduction in Delinquent Turn On fees to $90,000 per year and a $50,000 increase in the fees charged to the Galesburg Sanitary District, both beginning in FY 2022.

Table E-1
Water Fund Net Revenue Requirement Projection

	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Operating Expenses	$4,615,430	$4,656,735	$4,754,253	$4,853,930	$4,955,816	$5,059,961
Cash Funded Capital	3,403,694	1,360,000	2,220,000	2,755,000	505,000	2,010,000
Existing Debt Service	1,380,749	1,371,149	1,380,199	1,378,699	1,376,099	1,379,724
New Debt Service	-	-	-	134,431	201,647	403,294
Total Rev. Req.	$9,399,873	$7,387,884	$8,354,453	$9,122,061	$7,038,562	$8,852,979
Less: Misc. Revenues	(550,750)	(446,600)	(496,600)	(496,600)	(496,600)	(496,600)
Net Rev. Req.	$8,849,123	$6,941,284	$7,857,853	$8,625,461	$6,541,962	$8,356,379

Recommended Revenue Increases

Given the revenue requirement projection detailed above and assuming the City does not increase any water rates or fees from their FY 2020 level, the following exhibits show that revenues would not be able to cover system expenses in the following five fiscal years and would nearly exhaust the City's Water Fund balance in FY 2026.

Exhibit E-2 Expenses vs. Revenues Under Current FY 2020 Rates

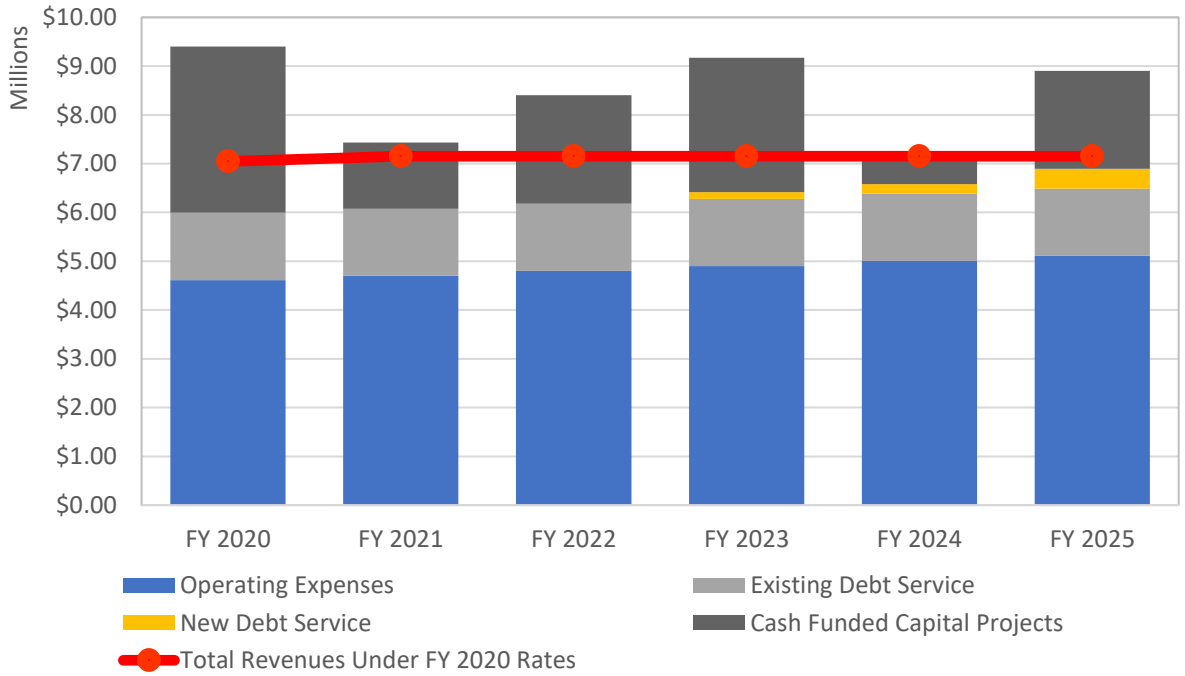
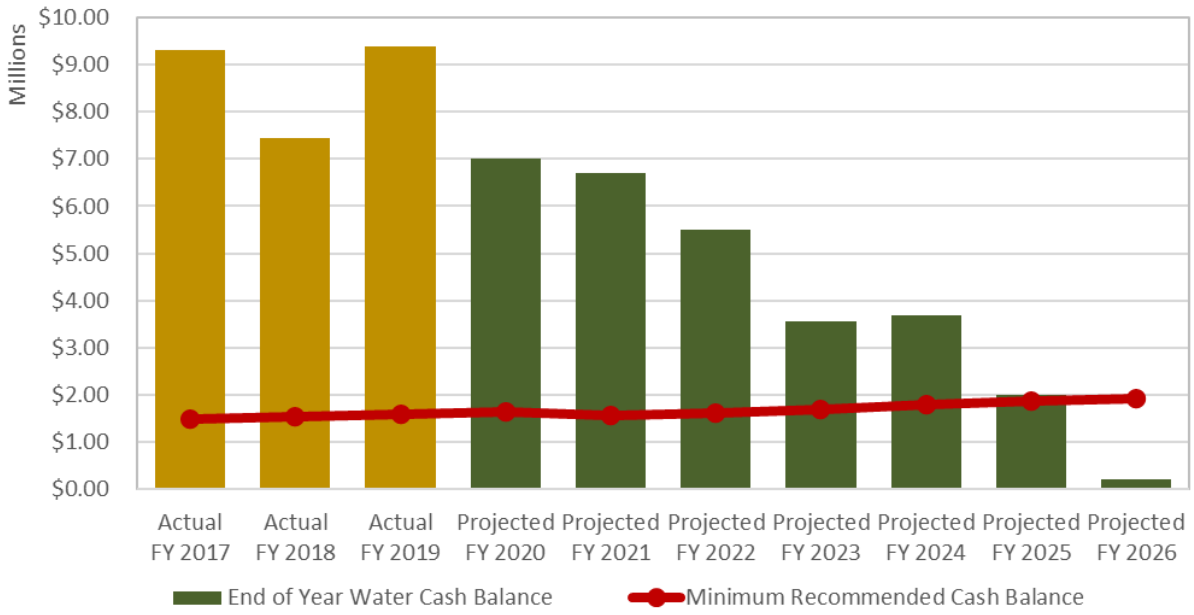


Exhibit E-3 Projected Water Fund Cash Balance Projection Under Current FY 2020 Rates



NewGen's study identified revenue increases for each of the City's water rates and fees that would sustain the City's water system under the assumed cost increases.

Table E-4
Recommended Revenue Increases

	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Cash Flow Shortfall at FY 2020 Revenues	($445,511)	($1,362,080)	($2,129,688)	($46,189)	($1,860,606)
EOY Cash Balance at FY 2020 Revenues	$6,571,142	$5,209,063	$3,079,375	$3,033,185	$1,172,579
Recommended Revenue Increases					
Fire Protection Fees	0.0%	3.5%	3.5%	3.5%	3.5%
Retail Facility Fees	0.0%	3.5%	3.5%	3.5%	3.5%
Retail Usage rates per CCF	0.0%	3.5%	3.5%	3.5%	3.5%
Wholesale Facility Fees	0.0%	3.5%	3.5%	3.5%	3.5%
Wholesale Usage rates per CCF[1]	0.0%	3.5%	3.5%	3.5%	3.5%
Cash Flow at Recommended Revenues	($445,511)	($1,134,812)	($1,667,198)	$659,757	($902,684)
EOY Cash at Recommended Revenues	$6,571,142	$5,436,331	$3,769,133	$4,428,890	$3,526,206

Rate Alternatives and Customer Impacts

NewGen developed several potential changes to the structure of the City's Retail and Wholesale Facility Fees and per CCR rates. Each alternative will generate the same amount of revenue as shown in Table E-4. The alternative rate structures have significant impacts on the distribution of City water costs among its customers, however in total revenues remain consistent with the study's revenue increase plan in Table E-4. The changes to the City's various retail water rate and fee structures that were developed during the study are as follows:

- **Facility Fee Alternative 1: Reduced Facility Fee:** While maintaining the existing meter size based Facility Fees, reduce the 5/8, 3/4 inch meter fee to $8.00 per month, adjust all other Facility Fees and per CCF rates accordingly.
- **Facility Fee Alternative 2: Change to a per Unit Facility Fee:** Change the City's Facility Fee structure to a per unit fee rather than a meter size based fee. Per CCF rates are adjusted as per Table 4-9 with no change in structure. All revenue from Facility Fees and Unit rates remains the same.
- **CCF Rate Alternative 1:** Change the City's per CCF Rate structure to include 4 CCF per account for each customer and charge a per CCF rate for usage above 4 CCF per account.
- **CCF Rate Alternative 2:** Change the City's per CCF Rate structure to include 4 CCF per unit for each customer and charge a per CCF rate for usage above 4 CCF per unit. This change is only consistent when in addition to Facility Fee Alternative 2. Otherwise, the City would be inconsistent in the manner in which it applies its fixed and variable fees. That is, CCF Rate Alternative 2 assumes the adoption of Facility Fee Alternative 2.

The impact on the City's median residential customer of each of the alternatives is as follows:

[1] Wholesale CCF rate increases vary under different alternatives rate structures. Table 4-9 assumes the City maintain the current rate structure.

Table 4-33
Projected Monthly Customer Bills – **Median Residential Customer (5/8" Meter, 1 Unit, 4 CCF)**

Sample Customer	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Current Rate Structure	$25.91	$25.91	$26.82	$27.76	$28.73	$29.73
5/8, 3/4 Meter	*$ Change*	*$0.00*	*$0.91*	*$0.94*	*$0.97*	*$1.01*
1 Unit 4 CCF	*% Change*	*0.0%*	*3.50%*	*3.50%*	*3.50%*	*3.50%*
Facility Fee Alt. 1	$25.91	$22.00	$22.77	$23.57	$24.39	$25.25
5/8, 3/4 Meter	*$ Change*	*($3.91)*	*$0.77*	*$0.80*	*$0.82*	*$0.85*
1 Unit 4 CCF	*% Change*	*(-15.1%)*	*3.50%*	*3.50%*	*3.50%*	*3.50%*
Facility Fee Alt. 2	$25.91	$24.45	$25.30	$26.19	$27.10	$28.05
5/8, 3/4 Meter	*$ Change*	*($1.46)*	*$0.86*	*$0.89*	*$0.92*	*$0.95*
1 Unit 4 CCF	*% Change*	*(-5.6%)*	*3.50%*	*3.50%*	*3.50%*	*3.50%*
CCF Alt. 1	$25.91	$15.91	$16.47	$17.04	$17.64	$18.26
5/8, 3/4 Meter	*$ Change*	*($10.00)*	*$0.56*	*$0.58*	*$0.60*	*$0.62*
1 Unit 4 CCF	*% Change*	*(-38.6%)*	*3.50%*	*3.50%*	*3.50%*	*3.50%*
CCF Alt. 2	$25.91	$14.45	$14.95	$15.48	$16.02	$16.58
5/8, 3/4 Meter	*$ Change*	*($11.46)*	*$0.51*	*$0.52*	*$0.54*	*$0.56*
1 Unit 4 CCF	*% Change*	*(-44.2%)*	*3.50%*	*3.50%*	*3.50%*	*3.50%*

The study found that the City's water utility is well managed both operationally and financially. Moderate rate increases are needed to support future cost increases. NewGen identified several rate alternatives that reduce the cost burden on the City's low income customers while maintaining revenue sufficiency for the system as a whole.

Section 1
PROJECT BACKGROUND AND SCOPE

Study Background

The City of Galesburg (the City) is located on Interstate 74 in Northwest Illinois and is approximately 50 miles east of the Mississippi River. The Illinois General Assembly organized the City under the provisions of an "Act to Incorporate the City of Galesburg" on February 14, 1857. The City is a home rule municipality and has operated under the Council-Manager form of government since 1956. The City Council is comprised of seven Councilmembers and a Mayor. The City of Galesburg was chartered for the purpose of providing its residents with several municipal services, including the provision of clean water.

The City obtains its groundwater from an aquifer near Oquawka, Illinois, which is located along the Mississippi River. Utilizing a collector well and three gravel-pack wells, the water is pumped approximately 32 miles to Galesburg through 36 inch and 42 inch transmission lines. There are nine million gallons of storage capacity at the Galesburg Water Plant and two million gallons of overhead storage in three water towers throughout the City. The average daily water pumpage is approximately six million gallons with a peak demand of nine and a half million gallons. The water is pumped through a distribution system of approximately 210 miles of water mains. The distribution system also consists of approximately 1,400 fire hydrants. The City serves approximately 12,800 water users with retail, wholesale, and fire protection service.

The City engaged NewGen Strategies and Solutions, LLC (NewGen) complete a water rate study with the following general objectives:

- Develop a long-term financial plan that maintains the financial health of the City's Water Enterprise Fund while funding the appropriate level of capital investment in the water system.
- Update the rates and fees charged to the City's customers, including inside city, outside city, and wholesale rates customers based on defensible industry standards.
- Examine the agreements between the City and its wholesale customers and identify any opportunities to update the rate setting methodology or policies therein.
- Examine the policies regarding the charges to multi-unit customers (including mobile home parks), identify the impacts of modifying these policies, and recommend changes, if appropriate.
- Review the methodology of the administrative fee charged to the Galesburg Sanitary District and recommend any appropriate changes.

This report details the data and methodologies used to develop recommended rates that accomplish the above stated objectives under the City's current rate structure and rate structure alternatives.

Study Objectives and Guiding Principles

The following principles were used to guide the rate study and were developed with input from City staff:

- The City's water utility must be financially self-supporting. It is assumed that the cost of operating and maintaining the water system will be supported by the water fees and charges collected from customers with no support or subsidy from other City revenues.
- The City's water rates shall be sufficient to ensure the funding of an appropriate level of system rehabilitation and replacement. It is assumed that the City will continually reinvest in the water system to replace assets as they reach the end of their useful lives.
- The City shall maintain appropriate reserves to provide for contingencies and unplanned expenses.
- The City's water rates shall be kept as low as possible over time. While it is possible to keep rates low for a period of time by not investing sufficiently in the maintenance of the water system, eventually the system will deteriorate and require substantial investments leading to the need for significant and immediate rate increases.
- The City's water service should be affordable for all customers, especially the City's low income customers.

The above stated guiding principles create conflicting goals and objectives for the City's system. Increasing asset investment creates upward pressure on the City's water rates. This creates affordability concerns, and may cause customers to reduce their water usage. The City's overall costs of providing water service are largely fixed (i.e. they do not vary substantially with changes in water demand). Any reduced demand creates upward pressure on rates, which creates a cycle of higher customer bills and additional affordability concerns. A carefully crafted financial plan and rate structure helps mitigate these impacts. The results of this study maintain a balance between the increasing costs to run the City's water infrastructure and the need to maintain affordable service for City customers.

Study Approach

NewGen's approach to developing sustainable water rates is governed by the view that the ideal rate structure must satisfy seven criteria:

- ***Equity*** requires that rates and charges result in no undue discrimination among customers or customer classes. Although equity is normally related to the cost of service, it should be realized that customer acceptance will center on preconceived notions of equity and fairness.
- ***Efficiency*** refers to the ability of the rate schedule to encourage wise use of the resources devoted to the services that the utility provides. Efficiency considerations require that:
    - Rates should reflect the cost of providing service.
    - Rates should be similar for customers or customer classes served under similar conditions.
    - Customers should be able to understand the rate schedules so that they can make rational decisions regarding their purchase of water service.
- ***Revenue Adequacy*** is the most fundamental of all considerations. Revenue Adequacy recognizes that it is necessary that rates produce revenues sufficient to operate the system even if there are changes in demand for service.
- ***Affordability*** means that the recommended rates must result in bills that are realistically within the ability of customers to pay.

- ***Sustainability*** means that the objective of the rate methodology is to keep rates low over time, not to merely keep them low for the short-term by omitting or deferring needed expenses such as maintenance and funding of necessary cash reserves.
- ***Administrative Simplicity*** recognizes that limits must be placed on the complexity of the rate schedules to keep them easy to administer and understandable to the public.
- ***Legal and Regulatory Compliance*** is a prime consideration because rate structures must incorporate applicable local, state, and federal statutes, as well and any interjurisdictional agreements.

The application of these criteria should recognize that a rate schedule is a form of public policy statement, setting forth those values that the City considers important. Rate structures must be tailored to community perceptions, realities, and values.

Fiscal Year

The City operates on a fiscal year beginning January 1st and ending on December 31st each year. All years shown in this report refer to the fiscal year ending that year. For example, 2021 refers to the fiscal year beginning January 1, 2021 and ending December 31, 2021.

Section 2
WATER SYSTEM REVENUE REQUIREMENTS

The first step of the rate study is to compile the costs of owning and operating the City's water utility system. The three cost components of the City's water system are: Operating and Maintenance, Capital Improvements, and Debt Service (both existing and future). These three cost components total to the amount needed each year to run the water system. While the study is based on the latest available actual data, there are several major assumptions that are included in the study's cost projections.

Major Study Assumptions

In order to project the operating, debt service, and capital expenses of the City's water system, several major assumptions must be made. NewGen's assumptions are conservative to ensure that the study's recommendations reflect a reasonable projection of the costs of the City's system.

Operating Budget Escalation Factors

NewGen's cost projections are based on the latest available actual and budgeted data. In order to reasonably project future costs, escalation and inflation factors must be applied to the City's budget line items. NewGen's financial model includes the following operating and maintenance budget line item inflation factors in Table 2-1. NewGen used the most up to date historical data related to the three items projected to increase in the future:

- United States Bureau of Labor Statistics (BLS) Employment Cost Index (ECI) current annualized increase in labor costs as of June 2020.
- United States Bureau of Labor Statistics (BLS) Consumer Price Index – Urban (CPI-U) at the end of 2019.
- Engineer News Record (ENR) Materials Cost Index (MCI) averages the increased cost of materials over the past 30 years.

Table 2-1
Operating Budget Escalation Factors

	Change Per Year	Source
Personnel Services	2.60%	BLS ECI – June 2020
Contractual Services	1.50%	ENR CPI – December 2019
Commodities	2.00%	ENR MCI 30 Year Average
Other Charges	0.00%	None

On average, NewGen projects that the Water utility operating budget will increase 2.1% per year over the five-year projection period.

Minimum Required Water Fund Cash Balance

Maintaining a minimum Water Fund cash balance is an essential component of the proper financial management of the City's water system. The wise management of resources and maintenance of a reasonable cash balance allows the City to be responsive to emergencies and to plan for long term sustainability. As a part of the water rate study, NewGen developed a formal policy regarding the minimum fund balance reserves that are appropriate for the City's water utility fund. There are two components to the study's recommended minimum cash balance:

- **Operating Reserve** – The minimum operating reserve balance shall be 90 days of each year's annual Operating and Maintenance (O&M) expenses (less debt service and depreciation).
- **Capital Reserve** – The minimum capital reserve balance shall be one year of system asset depreciation, estimated to be $1,043,128 in FY 2021. This value is arrived at by taking the FY 2021 budgeted depreciation of $975,235 and adding $67,893, which is one fiftieth (1/50) of the estimated FY 2020 capital investment of $3,394,632. This assumes an average useful life of 50 years for the City's water infrastructure.

As the City continues to invest in the water system, this annual depreciation of the system will increase, which will increase the capital reserve policy minimum. The minimum reserve projection is shown below in Table 2-2.

Table 2-2
Minimum Water Fund Cash Balance Recommendation

	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Operating Reserve	$506,537	$524,044	$537,669	$551,649	$565,992	$580,707
Capital Reserve	1,124,930	1,043,309	1,070,509	1,154,909	1,230,009	1,300,109
Total Minimum Cash Balance	$1,631,467	$1,567,353	$1,608,178	$1,706,558	$1,796,000	$1,880,816

The minimum cash balance policy drives the financial plan detailed in this report. Rates and fees are set in order to cover the operating, debt service, and capital needs of the system, as well as to maintain the minimum cash balance shown above. If at any time the projected rates in a given year would not sustain the minimum cash balance in the next fiscal year, it is assumed that rates must be increased to achieve the minimum required balance.

Operating and Maintenance Expenses

The operating and maintenance (O&M) expenses of the City's water system are organized into several categories:

- Personnel Services
- Contractual Services
- Commodities
- Other Charges

It should be noted that the rate study is predicated on the cash basis of utility rate setting. The City uses an operating budget structure that includes system depreciation. While recording and accounting for system depreciation is an important exercise, the study accounts for the annual cash outlays that are planned for the system. Therefore, while we exclude depreciation from the O&M costs, we include cash outlays and new debt service in the City's Capital Improvement Plan (CIP). The study ensures that the City will generate enough revenues each year to fund the actual investments needed in the system, which typically exceed the annual depreciation of existing assets.

The latest available O&M budget is the FY 2021 requested budget. The FY 2021 requested operating budget totals about $4.65 million as shown in Table 2-3 below.

Table 2-3
Projected Operating and Maintenance Expenses

	Actual FY 2019	Adopted FY 2020	Request FY 2021	Projected FY 2022	Projected FY 2023	Projected FY 2024	Projected FY 2025
Personnel Services	$1,975,368	$2,054,290	$2,125,290	$2,180,548	$2,237,242	$2,295,410	$2,355,091
Contractual Services	1,919,768	1,625,845	1,645,940	1,670,629	1,695,689	1,721,124	1,746,941
Commodities	630,766	928,080	878,590	896,162	914,085	932,367	951,014
Other Charges	116,262	7,215	6,915	6,915	6,915	6,915	6,915
Total O&M Expenses	$4,642,164	$4,615,430	$4,656,735	$4,754,253	$4,853,930	$4,955,816	$5,059,961
% Change		*(-0.6%)*	*0.9%*	*2.1%*	*2.1%*	*2.1%*	*2.1%*

The rates and fees developed in this study are sufficient to cover the increasing operating and maintenance costs of the water utility.

Existing Debt Obligations

From time to time, the City issues debt to fund a short term capital financing needs. As of 2020, the City is obligated to pay three outstanding debt issues – Series 2015 (GO Refunding Bonds), Series 2017 (GO Refunding Bonds, and a 2009 IEPA loan. Table 2-4 shows the projected loan payments over the five-year study planning period.

Table 2-4
Current Debt Service Obligations by Issue

	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
GO Refunding Bonds Series 2015	$622,013	$619,413	$626,513	$623,013	$624,213	$624,963
GO Refunding Series 2017	717,331	710,331	712,281	714,281	710,481	713,356
2009 IEPA	41,406	41,406	41,406	41,406	41,406	41,406
Total Annual Debt Service	$1,380,749	$1,371,149	$1,380,199	$1,378,699	$1,376,099	$1,379,724

The 2009 IEPA loan will be paid off in FY 2031. The Series 2015 GO bonds will be paid off in FY 2032. The Series 2017 GO bonds will be paid off in FY 2033. The rates and fees developed in this report are sufficient to fund the above stated debt obligations now and through their maturities.

Capital Improvement Plan

A major component of owning a sustainable water utility is the planning for the rehabilitation and replacement of the City's assets. The City's Capital Improvement Plan (CIP) is a detailed list of projects including when they are planned to be completed and how much they are projected to cost. NewGen's study includes funding for all CIP projects. The City can either pay cash for projects as they are completed (referred to as PAYGO funding), or the City may issue new debt to finance projects over a long term, typically 20 to 30 years. Table 2-5 details the projects included in the City's current CIP, developed by City

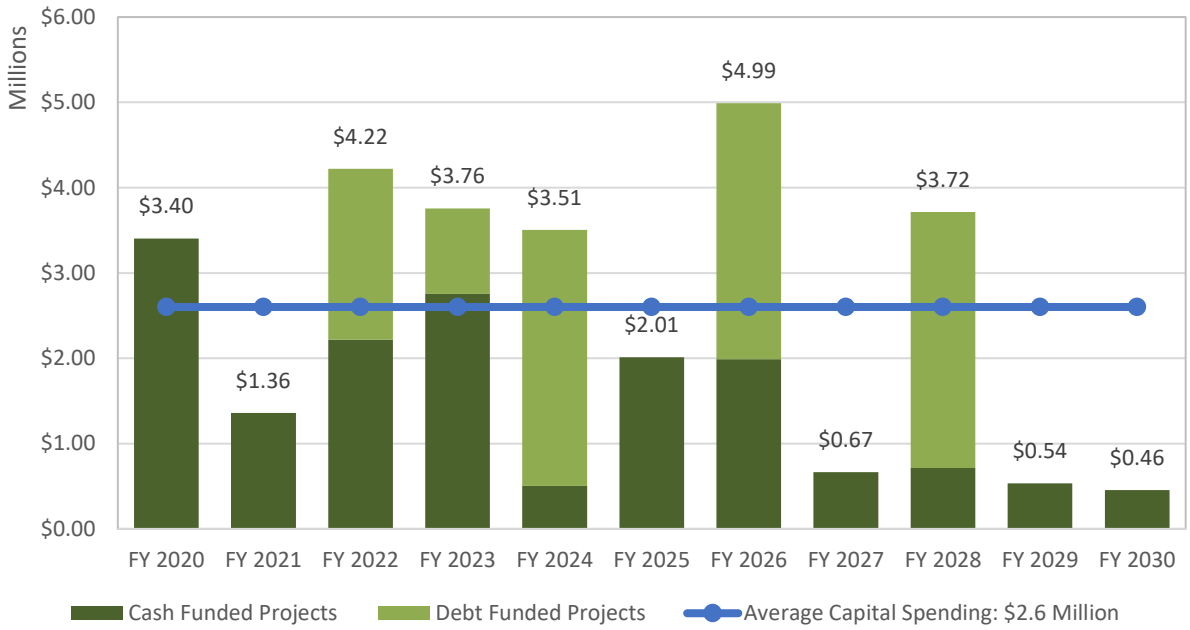
staff. The three highlighted projects are assumed to be financed with low interest Illinois Environmental Protection Agency (IEPA) loans. All other projects are assumed to be PAYGO funded – that is, the City will outlay cash for those projects in the year in which they are planned without taking on any additional debt.

Table 2-5
FY 2020 – FY 2025 Capital Projects

Project	Cost	Year	Financing
Filter Room Rehab Treatment Plant	$958,000	FY 2020	PAYGO
Service Vehicle Replacement	20,000	FY 2020	PAYGO
Service Vehicle Replacement	20,000	FY 2020	PAYGO
Gravel Pack #5	1,088,214	FY 2020	PAYGO
Boat And Motor	28,480	FY 2020	PAYGO
Roadway Reconstruction (Oquawka)	100,000	FY 2020	PAYGO
S. Seminary Street	879,000	FY 2020	PAYGO
Street Division Building	85,000	FY 2020	PAYGO
Historian Plus Software Upgrade	25,000	FY 2020	PAYGO
Gravel Pack Well #6	1,200,000	FY 2021	PAYGO
Equipment Purchase	50,000	FY 2021	PAYGO
Pump Rehab	60,000	FY 2021	PAYGO
Storage Building	70,000	FY 2021	PAYGO
Frank Street Water Main	120,000	FY 2021	PAYGO
Maple Ave. Water Main	400,000	FY 2022	PAYGO
Filter Room Repair	200,000	FY 2022	PAYGO
Aeration/Mixing Project	900,000	FY 2022	PAYGO
Inspection Of 5 Miles Pipeline	450,000	FY 2022	PAYGO
Equipment Purchases	110,000	FY 2022	PAYGO
Cherry St. Water Main	100,000	FY 2022	PAYGO
New Automatic Meters	3,000,000	FY 2022	IEPA Loan
Enterprise Ave. Water Main	200,000	FY 2023	PAYGO
Losey St. Water Main	600,000	FY 2023	PAYGO
Equipment Purchases	50,000	FY 2023	PAYGO
Co. Hwy 14 Water Main	200,000	FY 2023	PAYGO
Pump Room Reconstruction (Oquawka)	1,300,000	FY 2023	PAYGO
Parking Lot Rehab - Main Plant	100,000	FY 2023	PAYGO
Knox & Prairie St. Water Mains	800,000	FY 2025	PAYGO
Henderson St. & Lincoln Pk Water Main	750,000	FY 2025	PAYGO
Equipment Purchases	50,000	FY 2024	PAYGO
Transmission Line - Design	150,000	FY 2024	PAYGO
Grand Avenue Watermain Replacement	3,000,000	FY 2024	IEPA Loan
Equipment Purchases	120,000	FY 2025	PAYGO
Ranney Well Inspection	35,000	FY 2025	PAYGO
Transmission Line - Construction	3,000,000	FY 2026	IEPA Loan

In addition to the above projects, the City plans water main replacement projects of $245,000 each year and miscellaneous water capital projects of $60,000 each year, each being PAYGO funded. The City's FY 2020 through FY 2030 CIP is included in the rate study model. Exhibit 2-6 shows the annual variation of the City's planned CIP spending and the funding source assumed to develop the study's financial projections.

Exhibit 2-6 Ten-Year Capital Plan Summary by Funding Source



In addition to the projects detailed in Table 2-5, the study assumes that the City would finance (via IEPA loans) two additional transmission main replacement projects in FY 2028 and FY 2031, costing $3.0 million and $3.2 million respectively. A summary of the loan financed projects included in the above chart is shown in Table 2-7.

Table 2-7
FY 2020 – FY 2030 Debt Financed Capital Projects

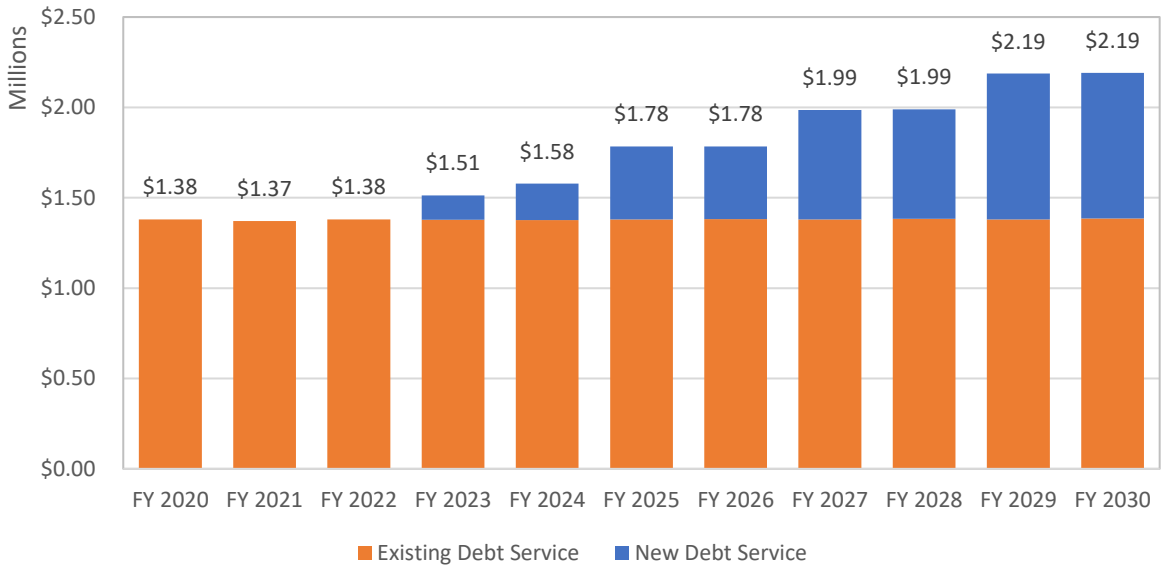
Project	Cost	Year
New Automatic Meters	$3,000,000	FY 2022
Grand Avenue Watermain Replacement	$3,000,000	FY 2024
Transmission Line - Construction	$3,000,000	FY 2026
Transmission Line - Construction	$3,000,000	FY 2028
Transmission Line - Construction	$3,200,000	FY 2031

The financial plan and rates developed during the study are projected to fully recover the cost of the above stated capital plan, including all cash outlays and additional debt service. The additional debt service projected for the loan financed projects is detailed in the next section of this report.

New Total Debt Service Projections

The loan funded projects described in the previous section will result in debt payments that will need to be paid by the City's water utility. The total projected debt service built into the study's financial plan are shown in Exhibit 2-8.

Exhibit 2-8 Total Water Debt Service Projections



The projected debt service payments shown above are fully funded in the financial plan and recommended rates contained within this report.

Debt Service Coverage Ratio

An important metric that should be evaluated when determining the financial prudence of issuing new debt is a system's Debt Service Coverage Ratio (DSCR). A system's DSCR is the ratio of the system's annual debt service payment to its annual revenues net of operating expenses. The standard debt service coverage ratio that is considered sufficient is 1.20, however utilities with the highest credit ratings often maintain debt service coverage ratios above 2.70[2].

The City's DSCR projections given the capital financing assumptions included in the study are shown in Table 2-9 below.

[2] Barnes, Glenn. "Key Financial Indicators for Water and Wastewater Systems: Debt Service Coverage Ratio." UNC Environmental Science Center - The Environmental Finance Blog [Chapel Hill, NC], 23 Apr. 2015, efc.web.unc.edu/2015/04/23/debt-service-coverage-ratio.

Table 2-9
Projected Debt Service Coverage Ratio – Current and Recommended Rates

	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Existing Debt Service	$1,380,749	$1,371,149	$1,380,199	$1,378,699	$1,376,099	$1,379,724
New Debt Service	-	-	-	134,431	201,647	403,294
Total Projected Debt Service	$1,380,749	$1,371,149	$1,380,199	$1,513,131	$1,577,747	$1,783,019
DSCR at FY 2020 Rates	1.76	1.67	1.62	1.41	1.29	1.08

Under the City's current FY 2020 water rates, the City's annual revenues would not be able to support the proposed capital plan while maintaining a sufficient DSCR. There must be a balance between meeting key financial performance metrics such as DSCR and the impact on the City's water customers. The financial plan and rates developed as a part of this study support the capital plan and maintain a favorable DSCR of 1.50 or greater even with the increases in debt service due to the City's capital improvement plan. Maintaining a DSCR above 1.50 reflects a sustainable debt financing plan that does unduly increase the City's water rates.

Miscellaneous Non-Rate Revenues

The City accounts for certain Water Fund revenues that are unrelated to the various retail, wholesale, and fire protection rates and fees charged to customers. These non-rate revenues may be highly volatile from year to year, and the City only budgets for a conservative amount each year. In order to determine the annual revenue needs of the water system, these non-rate revenues need to be taken into account. There are two key non-rate revenues that NewGen investigated as a part of the study – the billing fee charged by the City to the Galesburg Sanitary District and the City's estimated Delinquent Turn On Fees.

Galesburg Sanitary District Billing Agreement

One key non-rate revenue source for the City's Water Fund is the fee the City charges the Galesburg Sanitary District (GSD). The City contracts with the Sanitary District to collect the District's charges on City utility bills and remits payment to the Sanitary District, less an administrative. Currently, the fee is 3.0% of Sanitary District revenues collected. There are various methods used to identify a cost basis for such arrangements. One methodology is to estimate the cost of staff time, materials, postage, etc. that is needed to process payments to the Sanitary District and to provide customer service for billing questions.

In 2017, the City developed an estimated annual cost of providing billing services for the GSD. NewGen projected the 2017 costs into future dollars for the purpose of calculating the current cost of this service provided by the City. Table 2-10 provides a detailed breakdown of the City's billing costs.

Table 2-10
Projected Sanitary District Billing Cost

	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Finance Personnel	$262,995	$266,940	$270,944	$275,008	$279,133	$283,320
Water Personnel	$491,844	$499,222	$506,710	$514,311	$522,026	$529,856
Five Vehicles (Meter reading)	$10,457	$10,614	$10,773	$10,934	$11,098	$11,265
Radio Read Meters (MXUs)	$89,928	$91,277	$92,646	$94,036	$95,447	$96,878
Springbrook Maintenance	$18,093	$18,365	$18,640	$18,920	$19,204	$19,492
Copier (20%)	$345	$350	$356	$361	$366	$372
Postage (Monthly Billing)	$67,373	$68,384	$69,409	$70,451	$71,507	$72,580
Statements	$4,606	$4,675	$4,745	$4,817	$4,889	$4,962
NeoPost Equipment	$1,669	$1,694	$1,719	$1,745	$1,771	$1,798
PO Box Rental	$328	$333	$338	$343	$348	$354
Total Annual Cost	$947,639	$961,854	$976,282	$990,926	$1,005,790	$1,020,877
One Third of Annual Cost	$315,880	$320,618	$325,427	$330,309	$335,263	$340,292
GSD Monthly Cost	$26,323	$26,718	$27,119	$27,526	$27,939	$28,358
Average # of Monthly GSD Bills	12,229	12,229	12,229	12,229	12,229	12,229
Monthly Cost per GSD Bill	$2.15	$2.18	$2.22	$2.25	$2.28	$2.32

The total annual cost is for the water system as a whole. This total is divided by three to account for the fact that the water bill includes three distinct charges – water, refuse, and sanitary sewer. The one third amount represents the annual cost to the City of providing billing services to each utility included on its bills.

NewGen recommends that the City engage the Galesburg Sanitary District regarding an increase in the fee paid to the City. It should be noted that the customer base of the City water system and the GSD are largely the same – therefore, any increase in the fee charged by the City to the GSD will ultimately end up in the money being collected by the same customers. Therefore, NewGen is recommending only to increase the GSD fee to 5.0% of revenues from 3.0% of revenues. It is estimated that this will generate $50,000 more in revenue each year.

The projections in this report include the assumption that the fees charged to the GSD will increase by $50,000 in FY 2022 and remain at the FY 2022 level for the remainder of the projection period.

Delinquent Turn On Fees

It is typical for a water utility to charge for Turn On service – that is, the cost of sending a utility worker to a customer's property to physically turn on water service to that customer. The City's currently charges a one time, non-refundable Turn On fee of $27.00 for new water accounts at the time each account is established. The City considers a water account delinquent if there is an unpaid previous balance **and** an unpaid current charges balance for services after the due date listed on a customer's monthly bill. If

delinquent, a fee of $55.00 is added to the account and the customer's water service is discontinued. The account balance, including the $55.000 Delinquent Turn On Fee must be paid in full to restore the customer's water service. The City collected $239,195 in Delinquent Turn On Fees in 2019.

In response to the COVID-19 pandemic, the City instituted a moratorium on delinquent water account turn offs, and therefore did not collect Delinquent Turn On Fees for a majority of FY 2020. It is estimated that the City's FY 2020 Delinquent Turn On Fee revenue will be $76,000. At the time of this report, the COVID-19 pandemic continues, and the City estimates that Delinquent Turn On Fee revenue will remain lower than it has been historically. FY 2021 through FY 2030 estimated Delinquent Turn On Fee revenue is included in the study at $90,000 per year.

Projected Miscellaneous Non-Rate Revenues

The following Table 2-11 shows the revenues that are credited to the water utility but are not dependent on the rates charged to the systems users.

Table 2-11
Water System Non-Rate Revenues

	Actual FY 2019	Adopted FY 2020	Request FY 2021	Projected FY 2022	Projected FY 2023	Projected FY 2024	Projected FY 2025
Interest Income	$261,668	$150,000	$30,000	$30,000	$30,000	$30,000	$30,000
Unrealized Gain	(4,618)	-	-	-	-	-	-
Penalties	117,120	118,000	118,000	118,000	118,000	118,000	118,000
Turn-On-Fees	45,927	44,000	44,000	44,000	44,000	44,000	44,000
Delinquent Turn On Fees	239,195	76,000	90,000	90,000	90,000	90,000	90,000
Meter Resale	24,696	20,000	20,000	20,000	20,000	20,000	20,000
Pop Commission	180	250	100	100	100	100	100
Misc. Revenue	5,396	4,000	4,000	4,000	4,000	4,000	4,000
Federal Reimbursements	30,599	-	-	-	-	-	-
Lab Fees	15,640	12,000	12,000	12,000	12,000	12,000	12,000
Tap Fees	11,534	10,000	8,000	8,000	8,000	8,000	8,000
Penalties/Accounting	8,160	4,500	5,000	5,000	5,000	5,000	5,000
Lien Fees	5,731	5,000	5,500	5,500	5,500	5,500	5,500
Sanitary Service Fees	110,173	107,000	110,000	160,000	160,000	160,000	160,000
Misc. Other Revenue	3	-	-	-	-	-	-
Total Misc. Revenue	$871,405	$550,750	$446,600	$496,600	$496,600	$496,600	$496,600

In accordance with NewGen's conservative approach to developing future projections, miscellaneous revenues are projected to remain flat throughout the projection period after FY 2022.

Revenue Requirement Projection

Based on the latest available operating, debt service, and capital expense data and the methodologies and assumptions detailed above, NewGen developed a net revenue requirement forecast for the City's water system, shown in Table 2-12.

Table 2-12
Water Fund Net Revenue Requirement Projection

	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Operating Expenses	$4,615,430	$4,656,735	$4,754,253	$4,853,930	$4,955,816	$5,059,961
Cash Funded Capital	3,403,694	1,360,000	2,220,000	2,755,000	505,000	2,010,000
Existing Debt Service	1,380,749	1,371,149	1,380,199	1,378,699	1,376,099	1,379,724
New Debt Service	-	-	-	134,431	201,647	403,294
Total Rev. Req.	$9,399,873	$7,387,884	$8,354,453	$9,122,061	$7,038,562	$8,852,979
Less: Misc. Revenues	(550,750)	(446,600)	(496,600)	(496,600)	(496,600)	(496,600)
Net Rev. Req.	$8,849,123	$6,941,284	$7,857,853	$8,625,461	$6,541,962	$8,356,379

The net revenue requirement is the basis upon which all rates and fees are calculated for the City's system. Although the net revenue requirement varies from year to year, the financial plan developed during the study takes a long-term perspective in order to maintain stable rates and sufficient reserves.

Before a financial plan can be developed for the City's system, a detailed analysis of the system's customer base must be completed. The City's water customer base defines the number of accounts, units, and metered water that can be charged to generate revenues to fund the net revenue requirement. The next section of this report details the City's water customers and their use of the water system.

Section 3
CUSTOMERS AND CONSUMPTION

The City has several distinct types of water customers, each with separate, but sometimes related, rates and fees:

- Inside City Retail
- Outside City Retail
- Pipeline Retail
- Outside City Wholesale
- Inside City Sprinklers
- Outside City Sprinklers
- Inside City Firelines
- Outside City Firelines (with water service)
- Outside City Firelines (without water service)
- Bulk Water

The latest full year of customer and consumption data available for the study is FY 2019. Each subsection in Section 3 details the FY 2019 data used to develop the revenue and rate projections during NewGen's study.

Retail Customers and Consumption

The City serves about 12,480 retail customers, both inside and outside the City. The City's current rate structure includes a monthly Facility Fee and a consumption rate per metered water unit, with a unit being one hundred cubic feet, or CCF (748 gallons).

Inside City retail customers make up a majority of the City's water users. Outside City customers are still retail in nature (i.e. mostly homes and businesses), although they are located outside the City's municipal boundary.

Pipeline customers are a special type of customer that has granted the City easements to run water infrastructure through their property. Therefore, the City charges them a lower rate than Outside City customers that have not granted such easements.

Sprinkler meter customers are residential and business customers that have elected to install a separate meter to account for water used to irrigate. The water usage registered by these meters is charged the same rate as retail consumption. The sprinkler meter consumption is also used to calculate a customer's sewer usage by deducting the sprinkler usage from the retail meter usage.

The number of City water customers by meter size is shown in Table 3-1 below.

Table 3-1
FY 2019 Retail Customer Meters

Meter Size (inches)	Inside City	Outside City	Pipeline	Sprinklers
5/8, 3/4	11,773	204	11	77
1"-2"	313	8	17	32
2"-4"	139	7	1	2
4"-6"	6	-	-	0
6"+	2	1	-	0
Total Meters	12,234	220	29	111

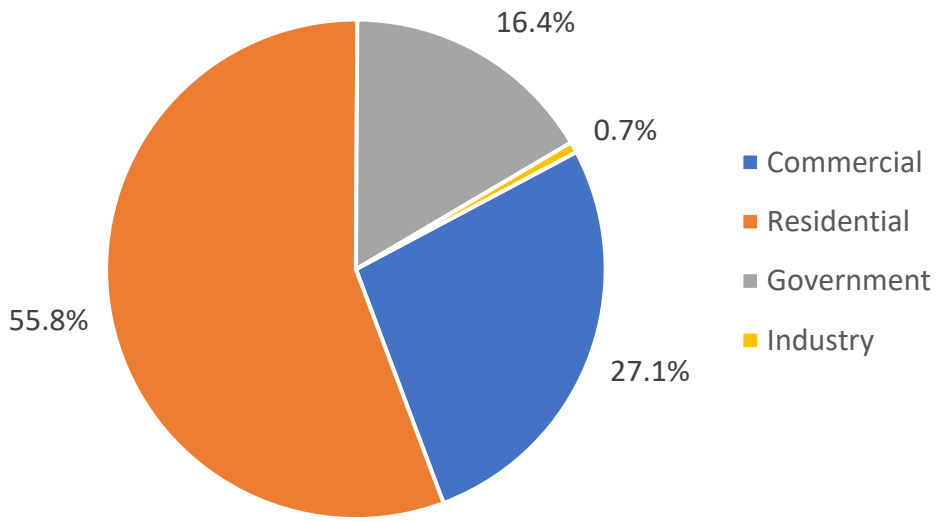
Table 3-2 shows the billable water usage breakdown of the City's FY 2019 retail customers.

Table 3-2
FY 2019 Retail Customer Usage by Customer Type (CCF)

Customer Type	Inside City	Inside City Sprinklers	Outside City	Pipeline
Commercial	321,486	6,278	7,652	8
Residential	670,478	5,135	12,306	2,745
Government	198,869	165	4	1,336
Industry	8,379	-	25,196	-
Total Usage	1,199,212	11,578	45,158	4,089

Government water usage is not that of the City of Galesburg. Government usage includes institutions such as schools and universities, the United State Social Security Administration building, Knox County Jail, and similar properties. Water usage of properties owned by the City of Galesburg is accounted for separately, but not billed and therefore not included in the above tables. A percentage breakdown of Inside City retail water revenue is shown in Exhibit 3-3.

Exhibit 3-3 Percent Breakdown of FY 2019 Usage (Inside City)



The number of retail customers and the retail usage is assumed to remain constant for the five-year projection period.

Wholesale Customers

The City provides wholesale treated water service to five municipalities and one subdivision each with separate agreements:

- Village of East Galesburg
- City of Abington
- City of Knoxville
- Village of Little York
- Village of Henderson
- Westport Subdivision

Wholesale service agreements are common in the water industry. The City has invested in major supply, treatment, and transmission infrastructure and has the capacity to provide service beyond its own retail system. Wholesale customers have limited access to the City's system, typically through larger capacity meters. The City provides potable water to these customers, however these customers do not make use of the City's local distribution system, and therefore do not pay the full retail rate. Currently, the Wholesale customers pay a monthly Facility Fee based on meter size and a unit rate per CCF equal to 68% of the Inside City rate. Table 3-4 shows the number of Wholesale accounts and FY 2019 billable wholesale usage.

Table 3-4
FY 2019 Wholesale Customer Meters and Usage

Meter Size (inches)	Wholesale Customers
5/8, 3/4	1
1"-2"	1
2"-4"	2
4"-6"	3
6"+	3
Total Meters	10
Total Usage (CCF)	309,392

Other Retail Water Revenue Sources

The City has two other sources of water revenue that are retail in nature but do not fit within its retail fee structure.

Bulk Water Usage

The City makes water available on a temporary basis in two ways. The City maintains a Bulk Water station where City residents can purchase bulk water on an as-needed basis. The City also provides temporary bulk water meters that can be attached to City fire hydrants. These temporary meters are typically used for construction needs. The rate charged in both cases for bulk water is $1.25 per 100 gallons. There is no Facility Fee related to bulk water service. NewGen's study includes increases in the bulk water fee that are equal to the recommended increase in retail usage rates. The annual revenue generated by bulk water sales is about $10,000, which is small relative to the City's other service rates and fees. The study assumes that any rate increase adopted for retail rates per CCF would also apply to the City's Bulk Water rate per CCF.

Master Meter

The City has a special case master meter agreement with an owner of a mobile home park located within the City. This customer is charged a single master meter Facility Fee of $200.00 per month for a single meter at the point where water enters the mobile home park, which contains 62 units. Metered water usage is based solely on this meter. This arrangement is a special case, and therefore no increases in this Master Meter fee is included in NewGen's study. NewGen recommends re-evaluating this special arrangement based on the policies adopted by the City Council as a result of this study.

Fire Protection Customers

The City provides fire protection throughout its service area. A majority of the fire protection is provided to the public via approximately 1,400 public fire hydrants. The cost of public fire protection is accounted for in the City's retail water rates, as the cost of this service should be borne by the entire retail system. However, the City provides private fire protection to private customers via Fireline connections. A Fireline

is the portion of a water line preceding a backflow prevention assembly (BPA), supplying water to a fire sprinkler system or private fire hydrant. The City's private Fireline customers are shown in Table 3-5 below.

Table 3-5
FY 2019 Inside City Fireline Accounts

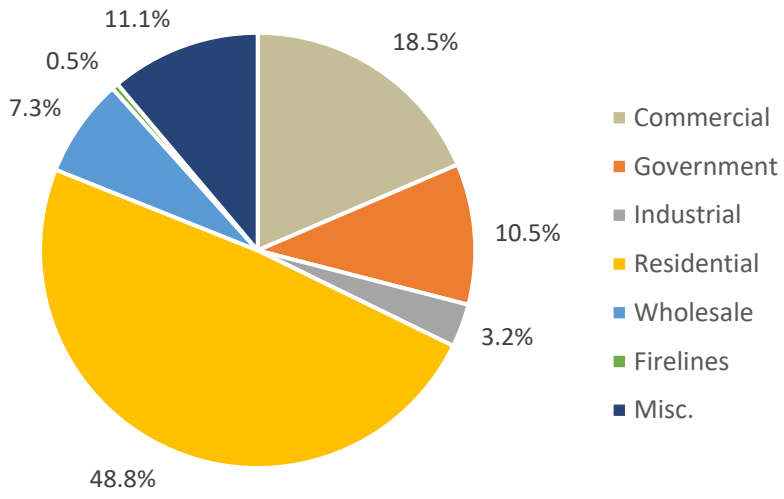
Meter Size (inches)	Accounts
2"	2
3"	1
4"	52
6"	80
8"	31
10"	4
12"	-
Total Accounts	170

The City publishes Fireline fees for Outside City customers and Outside City customers without Water Service, however there are currently no connections in those customer classes. The number of Inside City Fireline customers is assumed to remain constant for the five-year projection period.

Total Revenue Breakdown

The percentage breakdown of the City's 2019 Water Fund revenue is shown in Exhibit 3-6.

Exhibit 3-6 FY 2019 Revenue Percentage Breakdown



A majority of the City's Water Fund revenues come from retail rates, with almost half of total revenues coming from residential customers. Non-Rate revenues account for about 11% of the City's water revenues. It is important to understand this revenue profile when evaluating customer impacts because a change in residential bills many more users than a large change in other fees due to the proportional magnitude of the City's revenue sources.

Section 4
FINANCIAL PLAN AND RECOMMENDED RATES

Financial Projections Under Current Rates

NewGen developed cash flow and cash balance projections assuming the revenue requirements detailed in Section 2 of this report and that the City does not increase any water rates or fees. This establishes a baseline projection to which revenue increase alternatives can be compared.

In order to project revenues under the current water rates and fees, NewGen compiled each rate and fee charged by the City in FY 2020. The City's FY 2020 rates are summarized below.

FY 2020 Retail Rates

The City's current (FY 2020) water rates have two components. The first component is a Facility Fee that is charged on a monthly basis and based on the meter size of each retail customer. This is a fixed fee, meaning that no volume of water is included in this Facility Fee. If a customer does not use any water in a given month, then their bill would consist only of the Facility Fee. Table 4-1 details the FY 2020 Facility Fees for the City's retail customers.

Table 4-1
FY 2020 Retail Rates – Monthly Facility Fees

Meter Size (inches)	Inside City	Outside City	Pipeline	Sprinklers
5/8, 3/4	$15.91	$31.82	$15.91	$3.18
1"-2"	$33.05	$66.10	$33.05	$6.61
2"-4"	$66.10	$132.20	$66.10	$13.22
4"-6"	$165.35	$330.70	$165.35	$33.07
6"+	$413.40	$826.80	$413.40	$82.68

The second component of the City's current retail rates is a usage rate per hundred cubic feet, or CCF (748 gallons) that is charged to each unit of metered consumption for all retail customers. The FY 2020 CCF rate structure of the City's system is shown in Table 4-2.

Table 4-2
FY 2020 Retail Rates – Usage Rate per CCF

	Inside City[3]	Outside City	Pipeline
Rate per CCF	$2.50	$5.00	$2.75

[3] The Inside City CCF rate is also charged to sprinkler usage.

FY 2020 Private Fire Protection Rates

The FY 2020 private fire protection rates charged by the City are summarized below in Table 4-3.

Table 4-3
FY 2020 Fire Protection Fees

Meter Size (inches)	Inside City	Outside City (with water)	Outside City (without water)
2"	$8.75	$14.00	$24.50
3"	$10.50	-	-
4"	$12.25	$21.00	$31.50
6"	$15.75	$28.00	$24.25
8"	$19.25	$36.75	$49.00
10"	$24.50	$45.50	$57.57
12"	$29.75	$56.00	$68.25

FY 2020 Wholesale Rates

The rates charged to the City's wholesale customers are shown in Table 4-4 below. The Wholesale Facility Fees are identical to the Outside City retail Facility Fees. The Wholesale unit rate per CCF is currently set at 68% of the Inside City unit rate per CCF.

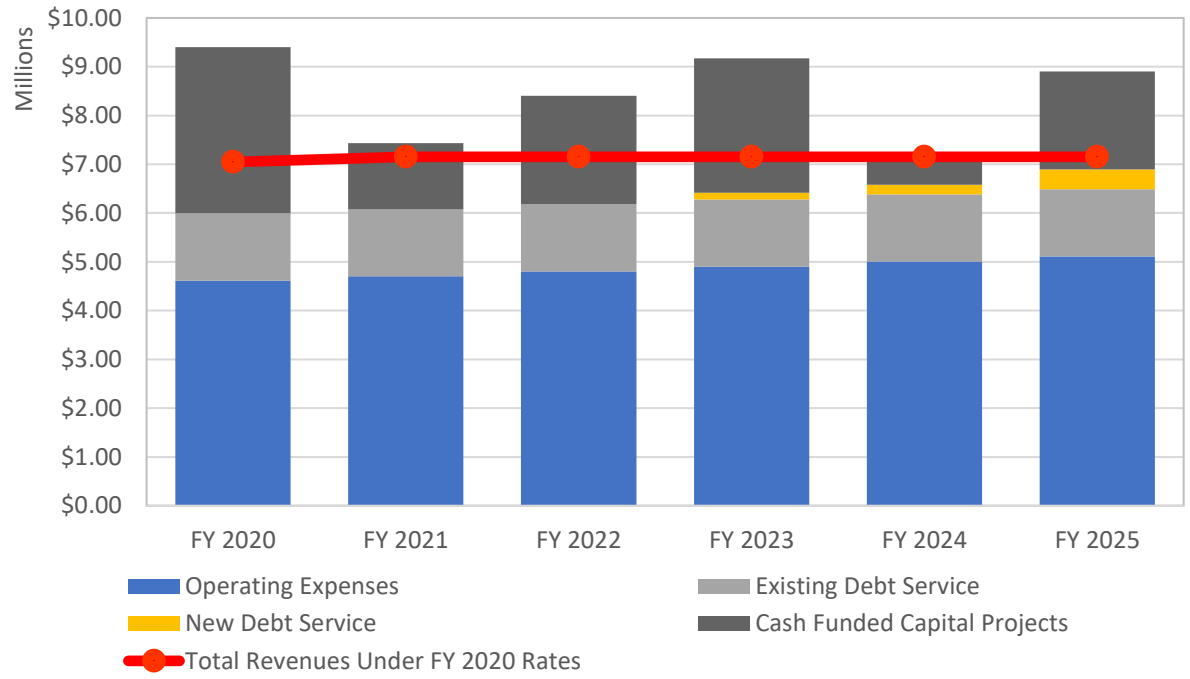
Table 4-4
FY 2020 Wholesale Facility Fees and Usage Rate

Meter Size (inches)	Monthly Facility Fee
5/8, 3/4	$31.82
1"-2"	$66.10
2"-4"	$132.20
4"-6"	$330.70
6"+	$826.80
Usage Rate per CCF	$1.70

Cash Flow and Fund Balance Projections Under Current Rates

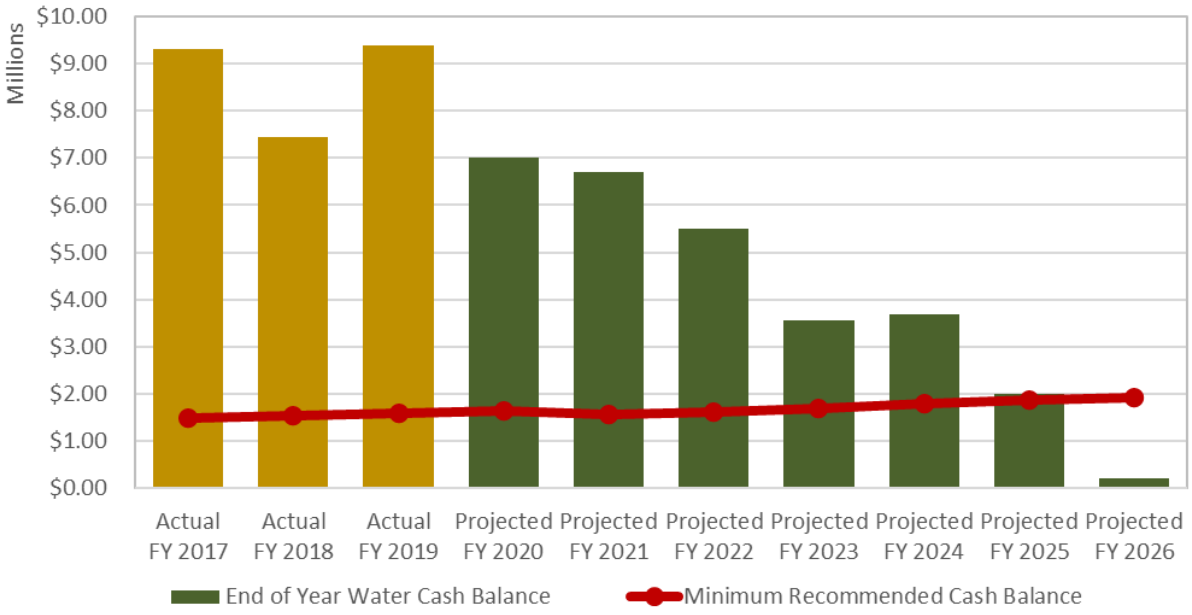
The revenue generated by the FY 2020 rates alone cannot sustain the City Water Fund's annual revenue requirements in any of the next five fiscal years (FY 2021 – FY 2025). The expenses shown in the following charts include the projected operating, existing debt, new debt, and cash funded capital projects discussed in Section 2 of this report. The projected revenues assume that the City does not increase any water rates or fees in any fiscal year. The projected revenues and expenses are shown in Exhibit 4-5.

Exhibit 4-5 Expenses vs. Revenues Under Current FY 2020 Rates



For the past three years since FY 2017 the City's Water Fund cash balance has fluctuated between $9.3 million and $7.4 million. As of December 31, 2019, the Water Fund cash balance was $9.37 million. If the City were not to raise rates in any of the next five years, then current reserves would need to be relied upon to support the water system's capital plan. However, the projected cash deficits would nearly exhaust the water utility's cash balance by FY 2026 as shown in Exhibit 4-6.

Exhibit 4-6 Projected Water Fund Cash Balance Projection Under Current FY 2020 Rates



The current revenues generated by the City's FY 2020 water rates and the City's Water Fund cash reserves cannot support the projected operating, capital, debt service, and reserve requirements of the water system. Cash reserves can be relied upon in the short term (three to five years) to mitigate large, one-time rate increases, however, incremental rate increases over that time period are necessary to increase revenues so that the City's water operating and capital needs are met and the City maintains adequate Water Fund reserves.

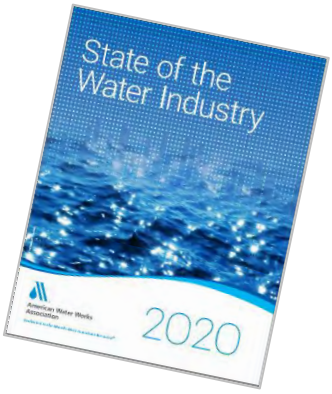
Based on the expenses projected in Section 2 of this report, the City's water customers and usage detailed in Section 3, and the City's FY 2020 water rates detailed previously in this section, NewGen's rate study has determined that revenue increases are necessary to sustain the City's water system. A key focus of the study is the impact any revenue increases will have on customers – particularly those who can afford cost increases the least.

Residential Customer Affordability

Water service affordability is an increasingly relevant topic throughout the United States. As the country's water infrastructure ages, the rehabilitation and replacement of water assets continues to cost more each year. Simultaneously, household incomes remain largely stagnant. Therefore, as a percentage of household spending, water service continues to rise. A key focus of NewGen's study was the cost impact of any recommended revenue increases on the City's residential, low-income customers.

Industry Wide Challenges

According to AWWA's 2020 State of the Water Industry Report, the five most important issues facing the industry are currently:

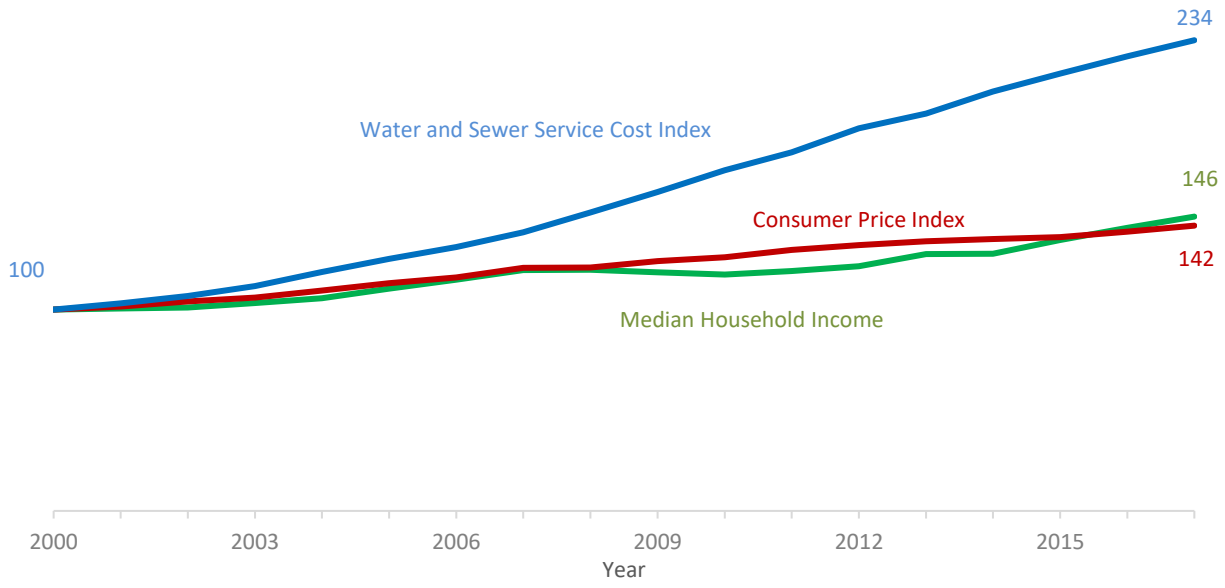


- Renewal and replacement of aging water and wastewater infrastructure
- Financing for capital improvements
- Long-term water supply availability
- Public understanding of the value of water systems and services
- Watershed/source water protection

Like all water utilities across the country, the City is affected by several, if not all, of these inter-related issues. Utility infrastructure installed decades ago continues to age. Water and wastewater main breaks have become a common daily occurrence. Energy and chemical prices continue to increase, and compliance with tighter federal (CWA, SDWA) and state (Illinois EPA) regulations continues to require more costly and complex distribution, collection, and treatment solutions.

The following chart shows the country-wide inflation adjusted increases in three indices tracked by the Bureau of Labor and Statistics: Median Household Income, the Consumer Price Index, and the Water and Sewer Service Cost Index:

Exhibit 4-7 – Historical Cost Increases, 2000 - 2018



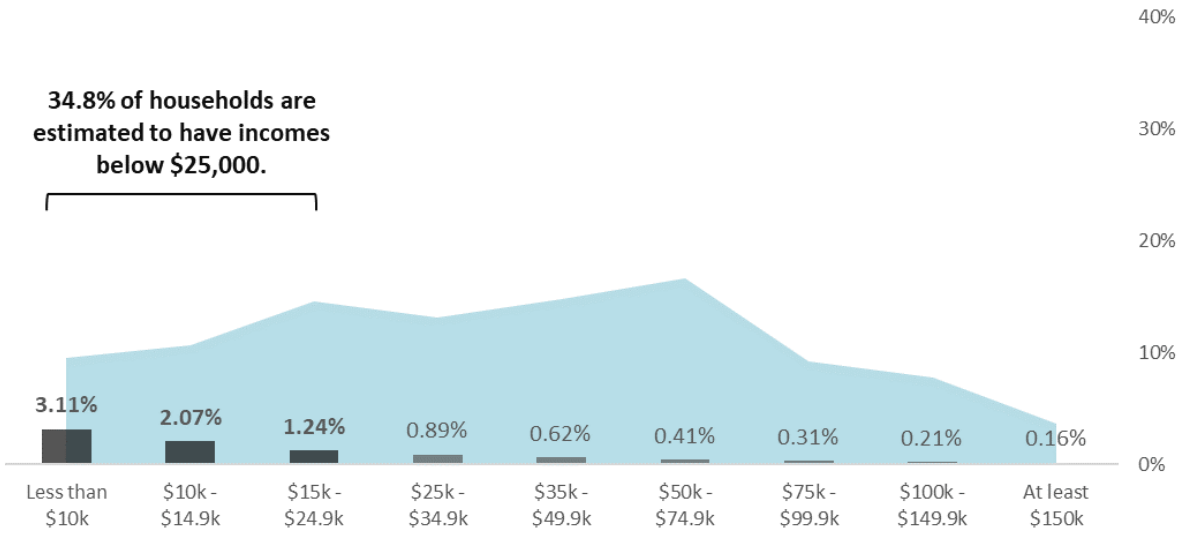
Index: 2000 = 100; Bureau of Labor Statistics (BLS), Bureau of the Census

A key focus area of NewGen's study was the affordability of the City's water service for residential customers. Prior to the study, NewGen compiled income data from the United States Census Bureau to evaluate the affordability of the City's FY 2020 rates. There are several assumptions built into the affordability analysis:

- The metric used to evaluate the affordability of water service within the City was the United States Environmental Protection Agency's guidance that water service is "affordable" if it costs no more than 2.5% of a household's income.
- It is assumed that the distribution of income of residents within the City matches the distribution of income of the City's water users. They City's 2019 household income data is sourced from the U.S. Census Bureau's American Community Survey.[4]
- The U.S. states of California[5] and Texas[6] have each identified 50 gallons per day per capita (gpcd) as indoor efficiency standards to meet essential needs for drinking, cooking, cleaning, and sanitation. For the purposes of arriving at a round number of CCFs, this analysis used 46 gpcd.
- In 2019 the City had 2.14 persons per household[7], resulting in an estimated indoor monthly water usage of 4.0 CCF (46 gpcd x 2.14 persons = 2,953 gallons per 30 day month, or 3.95 CCF rounded to 4 CCF). **This is also the City's actual FY 2019 median inside city residential monthly usage based on actual 2019 billing data**.

The result of the analysis at the City's current FY 2020 rates is shown in Exhibit 4-8.

Exhibit 4-8 – Residential Customer Affordability Analysis – FY 2020 Rates



At the current FY 2020 rates, approximately 19% of the City's residential customers are either exceeding or approaching the EPA affordability guideline of 2.5% of household income spent on water, assuming

[4] U.S. Census Bureau's American Community Survey, Report DP03: Selected Economic Characteristics table.
[5] California State Water Resources Control Board. 2018. "Water Efficiency Legislation will Make California More Resilient to Impacts of Future Droughts," Fact Sheet. Sacramento, CA: State Water Resources Control Board
[6] Texas Water Development Board. 2004. Water Conservation Implementation Task Force Report to the 79th Legislature. Austin, TX: Texas Water Development Board
[7] https://www.census.gov/quickfacts/fact/table/galesburgcityillinois,US#

that household uses 4 CCF per month. A foundational element of developing an alternative rate structure was to address this affordability issue.

Recommended Revenue Increases

In order to increase revenues that will sustain the water system, NewGen recommends the following revenue increases for the City's water rates and fees. The percentages in Table 4-9 represent only the increase in revenues for each rate component, regardless of rate structure. Each rate alternative NewGen developed during the study raises the same revenue. A full discussion of rate alternatives and the specific rate changes and bill impacts will follow.

Table 4-9
Recommended Revenue Increases

	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Cash Flow Shortfall at FY 2020 Revenues	($445,511)	($1,362,080)	($2,129,688)	($46,189)	($1,860,606)
EOY Cash Balance at FY 2020 Revenues	$6,571,142	$5,209,063	$3,079,375	$3,033,185	$1,172,579
Recommended Revenue Increases					
Fire Protection Fees	0.0%	3.5%	3.5%	3.5%	3.5%
Retail Facility Fees	0.0%	3.5%	3.5%	3.5%	3.5%
Retail Usage rates per CCF	0.0%	3.5%	3.5%	3.5%	3.5%
Wholesale Facility Fees	0.0%	3.5%	3.5%	3.5%	3.5%
Wholesale Usage rates per CCF[8]	0.0%	3.5%	3.5%	3.5%	3.5%
Cash Flow at Recommended Revenues	($460,528)	($1,150,354)	($1,683,284)	$643,107	($919,917)
EOY Cash at Recommended Revenues	$6,556,126	$5,405,772	$3,722,488	$4,365,595	$3,445,678

Assuming that the City increase its water revenues consistent with the table above, the result is that the City is able to fund the system's projected operating, capital, and debt service expenses while also maintaining the recommended reserves. The determination of which rate structure can be used to generate the above stated revenue increases and cash flow will be discussed in the next sections of this report.

Projected Rates with No Change in Rate Structure

The City may choose only to increase the FY 2020 rates by the recommended percentages above. In that case, all City rates would increase uniformly for all Facility Fees, Usage rates, and Fireline charges.

Projected Fireline Fees with No Change in Rate Structure

If the City adopts the revenue increase in Fireline charges as stated above without altering the Fireline rate structure to better align with industry standards, the following Fireline fees would generate the

[8] Wholesale CCF rate increases vary under different alternatives rate structures. Table 4-9 assumes the City maintain the current rate structure.

revenue sufficient to cover the fire protection services provided by the City, phased-in over a five year period.

Table 4-10
Monthly Fireline Rates – No Rate Structure Change

Meter Size (inches)	# of Customers	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Inside City							
2"	2	$8.75	$8.75	$9.06	$9.37	$9.70	$10.04
3"	1	$10.50	$10.50	$10.87	$11.25	$11.64	$12.05
4"	52	$12.25	$12.25	$12.68	$13.12	$13.58	$14.06
6"	80	$15.75	$15.75	$16.30	$16.87	$17.46	$18.07
8"	31	$19.25	$19.25	$19.92	$20.62	$21.34	$22.09
10"	4	$24.50	$24.50	$25.36	$26.25	$27.16	$28.11
12"	-	$29.75	$29.75	$30.79	$31.87	$32.98	$34.14

The Outside City Firelines and Outside City Firelines with No Water Service customer classes would maintain their rate differential of 2.0 and 2.8 respectively. That is, Outside Firelines would pay twice the rates shown in Table 4-10 and Outside City Firelines with No Water Service would pay 2.8 times the rates in table 4-10. A full discussion of the recommended Fireline rates is provided in the next section of this report.

Projected Facility Fees with No Change in Rate Structure

If the City adopts the recommended revenue increases in each year from FY 2021 through FY 2025, then the City's retail Facility Fees would be as shown in Table 4-11.

Table 4-11
Projected Facility Fees – No Rate Structure Change

Meter Size (inches)	# of Customers	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Inside City							
5/8, 3/4	11,773	$15.91	$15.91	$16.47	$17.04	$17.64	$18.26
1"-2"	313	$33.05	$33.05	$34.21	$35.40	$36.64	$37.93
2"-4"	139	$66.10	$66.10	$68.41	$70.81	$73.29	$75.85
4"-6"	6	$165.35	$165.35	$171.14	$177.13	$183.33	$189.74
6"+	2	$413.40	$413.40	$427.87	$442.84	$458.34	$474.39

Table 4-11
Projected Facility Fees – No Rate Structure Change

Meter Size (inches)	# of Customers	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Outside City							
5/8, 3/4	204	$31.82	$31.82	$32.93	$34.09	$35.28	$36.51
1"-2"	8	$66.10	$66.10	$68.41	$70.81	$73.29	$75.85
2"-4"	7	$132.20	$132.20	$136.83	$141.62	$146.57	$151.70
4"-6"	-	$330.70	$330.70	$342.27	$354.25	$366.65	$379.49
6"+	1	$826.80	$826.80	$855.74	$885.69	$916.69	$948.77
Pipeline							
5/8, 3/4	11	$15.91	$15.91	$16.47	$17.04	$17.64	$18.26
1"-2"	17	$33.05	$33.05	$34.21	$35.40	$36.64	$37.93
2"-4"	1	$66.10	$66.10	$68.41	$70.81	$73.29	$75.85
4"-6"	-	$165.35	$165.35	$171.14	$177.13	$183.33	$189.74
6"+	-	$413.40	$413.40	$427.87	$442.84	$458.34	$474.39
Inside City Sprinklers							
5/8, 3/4	77	$3.18	$3.18	$3.29	$3.41	$3.53	$3.65
1"-2"	32	$6.61	$6.61	$6.84	$7.08	$7.33	$7.59
2"-4"	2	$13.22	$13.22	$13.68	$14.16	$14.66	$15.17
4"-6"	-	$33.07	$33.07	$34.23	$35.43	$36.67	$37.95
6"+	-	$82.68	$82.68	$85.57	$88.57	$91.67	$94.88

The City has no Outside City Sprinkler customers.

Projected CCF Rates with No Change in Rate Structure

If the City were to not change the retail per CCF rate structure, then the following rates shown in Table 4-12 are projected to fully support the future operating, capital, debt service, and reserve requirements of the system.

Table 4-12
Projected CCF Rates

	# of Customers	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Inside City	12,234	$2.50	$2.50	$2.59	$2.68	$2.77	$2.87
Outside City	220	$5.00	$5.00	$5.18	$5.36	$5.54	$5.74
Pipeline	29	$2.75	$2.75	$2.85	$2.95	$3.05	$3.16

Projected Wholesale Rates with No Change in Rate Structure

The City's Wholesale water customers would continue to pay the Outside City Facility Fees and 68% of the Inside City rate per CCF, as shown in Table 4-13.

Table 4-13
FY 2020 Wholesale Facility Fees and Usage Rate

Meter Size (inches)	# of Customers	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Facility Fee							
5/8, 3/4	1	$31.82	$31.82	$32.93	$34.09	$35.28	$36.51
1"-2"	1	$66.10	$66.10	$68.41	$70.81	$73.29	$75.85
2"-4"	2	$132.20	$132.20	$136.83	$141.62	$146.57	$151.70
4"-6"	3	$330.70	$330.70	$342.27	$354.25	$366.65	$379.49
6"+	3	$826.80	$826.80	$855.74	$885.69	$916.69	$948.77
Usage Rate per CCF		$1.70	$1.70	$1.76	$1.82	$1.88	$1.95

Customer Bill Impact of Increased Rates with No Change in Rate Structure

Table 4-14 shows the customer bill impact for several different types of customers if the City were to adopt the revenue increases shown in Table 4-9 but were not to alter any of the rate structures of its various fees.

Table 4-14
Projected Monthly Customer Bills – No Rate Structure Change

Sample Customer	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Single Person	$20.91	$20.91	$21.64	$22.40	$23.18	$23.99
5/8, 3/4 Meter	*$ Change*	*$0.00*	*$0.73*	*$0.76*	*$0.78*	*$0.81*
1 Unit 2 CCF	*% Change*	*0.0%*	*3.5%*	*3.5%*	*3.5%*	*3.5%*

Table 4-14
Projected Monthly Customer Bills – No Rate Structure Change

Sample Customer	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Median Residential	$25.91	$25.91	$26.82	$27.76	$28.73	$29.73
5/8, 3/4 Meter	*$ Change*	*$0.00*	*$0.91*	*$0.94*	*$0.97*	*$1.01*
1 Unit 4 CCF	*% Change*	*0.0%*	*3.50%*	*3.50%*	*3.50%*	*3.50%*
Family of Four	$38.41	$38.41	$39.75	$41.15	$42.59	$44.08
5/8, 3/4 Meter	*$ Change*	*$0.00*	*$1.34*	*$1.39*	*$1.44*	*$1.49*
1 Unit 9 CCF	*% Change*	*0.0%*	*3.5%*	*3.5%*	*3.5%*	*3.5%*
Family of Six	$58.41	$58.41	$60.45	$62.57	$64.76	$67.03
5/8, 3/4 Meter	*$ Change*	*$0.00*	*$2.04*	*$2.12*	*$2.19*	*$2.27*
1 Unit 17 CCF	*% Change*	*0.0%*	*3.5%*	*3.5%*	*3.5%*	*3.5%*
Large Healthcare	$3,966.10	$3,966.10	$4,104.91	$4,248.59	$4,397.29	$4,551.19
2"-4" Meter	*$ Change*	*$0.00*	*$138.81*	*$143.67*	*$148.70*	*$153.91*
1 Unit 1560 CCF	*% Change*	*0.0%*	*3.5%*	*3.5%*	*3.5%*	*3.5%*
Large Government	$37,566.10	$37,566.10	$38,880.91	$40,241.75	$41,650.21	$43,107.96
2"-4" Meter	*$ Change*	*$0.00*	*$1,314.81*	*$1,360.83*	*$1,408.46*	*$1,457.76*
1 Unit 15,000 CCF	*% Change*	*0.0%*	*3.5%*	*3.5%*	*3.5%*	*3.5%*
Typical Wholesale	$27,332.20	$27,332.20	$28,288.83	$29,278.94	$30,303.70	$31,364.33
2"-4" Meter	*$ Change*	*$0.00*	*$956.63*	*$990.11*	*$1,024.76*	*$1,060.63*
1 Unit 16,000 CCF	*% Change*	*0.0%*	*3.5%*	*3.5%*	*3.5%*	*3.5%*

Recommended Rate Structure Alternatives

The first rate alternative that this report will detail is the industry standard approach to calculating the City's fire protection fees.

Fire Protection Revenue Increases and Rate Alternative

NewGen calculated an industry standard approach to allocating fire protection costs within the City's system. The standard methodology for allocating these costs is detailed in the American Water Works Association (AWWA) *Manual M1 – Principles of Water Rates, Fees and Charges* (M1). Chapter IV.8 of M1 is titled *Rates for Fire Protection Service*. The methodology recommended by NewGen utilizes the Maine Curve, developed by the Maine Public Utilities Commission in 1961, that gives the percentage of a water system's revenue requirements that can be attributed to fire protection service.

Calculated Fire Protection Cost Allocation Methodology

In order to determine the dollar amount to allocate to private fire protection customers of a water system, it is necessary to determine the total fire protection costs of the utility system. This is done by using system pumping data in gallons per minute (gpm). These costs are then allocated to public and private fire protection costs based on the customer base of each class of service. Then, rates can be developed to fully collect the costs of providing both public and private fire protection. The data points needed to determine the total cost of providing fire protection are:

- Total System Fire Protection Meter Equivalents based on National Fire Protection Association (NFPA) Fire Flow Demand Factors
- Average System Water Pumped (in gpm)
- Peak System Water Pumped (in gpm)
- Population Served (in thousands)

The above data points allow for the calculation of the Required Fire Flow (RFF) of the system based on the fire flow requirement formula determined by the National Board of Fire Underwriters (NBFU), now known as Insurance Services Office (ISO):

$$1,020\sqrt{P}(1-.01\sqrt{P})$$

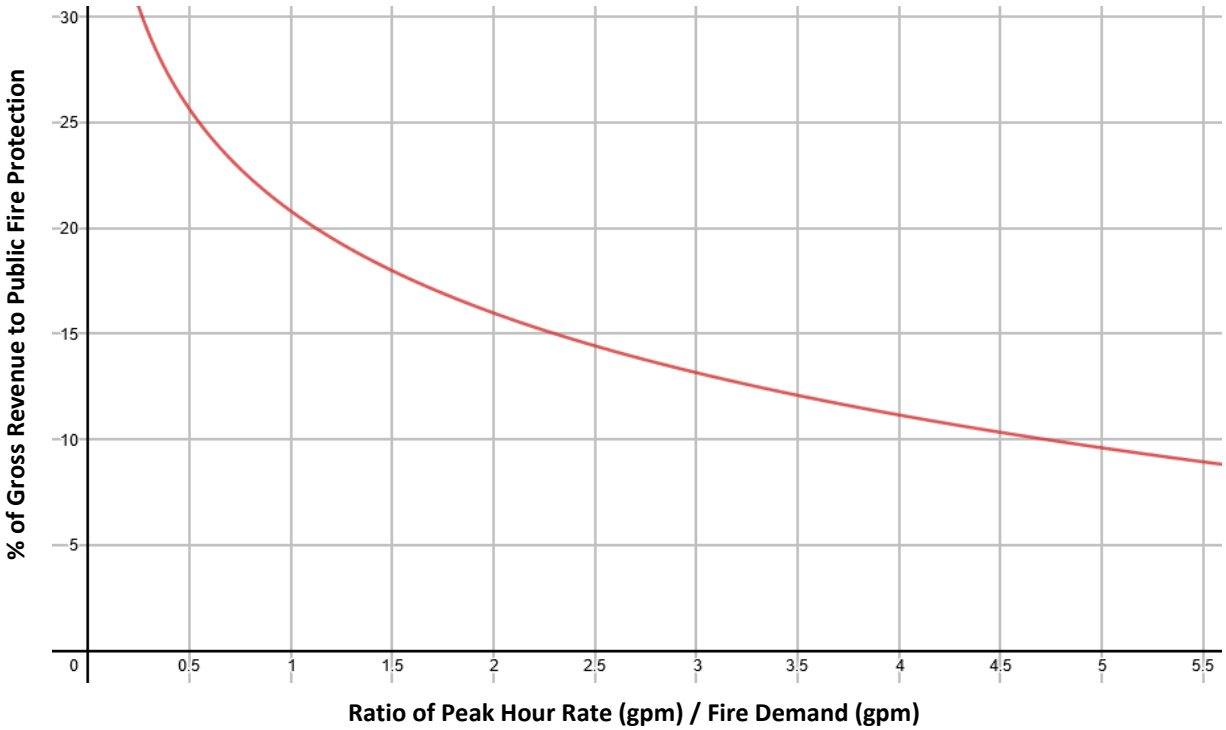
Where *P* is the population served by the utility in thousands. This value is then compared the system's peak hourly flow based on actual FY 2019 pumping data. In FY 2019, the system's maximum pumping day occurred in January 2019 with a total of 8,153,000 gallons pumped. Averaged to a per minute rate. this equates to 5,662 gallons per minute. The total system pumped 2,364,875,000 gallons in FY 2019, equating to a 4,499 gpm average.

The ratio of the Peak System Flow to the Required Fire Flow is used to determine the percentage of total system costs that are incurred for fire protection (both public and private). The methodology used to determine that percentage is dictated by the Maine Curve:

$$y = -6.962ln(x) + 20.805$$

A graphical representation of the Maine Curve is shown in Exhibit 4-15 below:

Exhibit 4-15 The Maine Curve[9]



The ratio of Peak System Flow to the Required Fire Flow is shown on the x-axis of the chart above. Where that ratio intersects the Maine Curve determines the percentage of total system costs (gross revenue) to allocate to fire protection.

These costs are then allocated to public fire hydrants, public fire hydrants, and Firelines based on equivalent flow factors. The equivalent flow factors are derived by taking the Fireline size in inches raised to the power of 2.63.[10] The City does not currently serve any Outside City Fireline customers, therefore the analysis shows only Inside City Fireline customers and public fire hydrants.

[9] AWWA. 2017. Manual M1: *Principles of Water Rates, Fees, and Charges*, Seventh Edition. Denver, CO: American Water Works Association. at p. 159

[10] AWWA. 2017. Manual M1: *Principles of Water Rates, Fees, and Charges*, Seventh Edition. Denver, CO: American Water Works Association. at p. 163

Table 4-16
FY 2020 Fire Protection Meter Equivalent Calculation

Meter Size (inches)	Inside City Firelines	Current Meter Factors	Current Equivalent Lines in Service	AWWA Flow Factors	AWWA Equivalent Lines in Service
2"	2	1.00	2	6.19	12
3"	1	1.20	1	17.98	18
4"	52	1.40	72	38.32	1,977
6"	80	1.80	145	111.31	8,951
8"	31	2.20	67	237.21	7,255
10"	4	2.80	11	426.58	1,742
12"	-	3.40	-	689.04	-
Totals	170		299		19,955
Public Fire Hydrants	1,435	N/A	N/A	111.31	159,731

The current meter factors are based on the ratio of the current Fireline fee to the 2" meter fee. The updated flow factors are based on AWWA industry standard methodology. Based on feedback from the City Council, we developed a phased-in approach to aligning the City's existing Fireline meter equivalents with the industry standard in order to lessen the one time impact on these customers. The phased-in meter equivalent plan is shown in Table 4-17 below.

Table 4-17
Fire Protection Meter Equivalent Phase-In Plan

Meter Size (inches)	FY 2020 Factors (Current)	Year 1 FY 2021	Year 2 FY 2022	Year 3 FY 2023	Year 4 FY 2024	Year 5 FY 2025 (AWWA)
2"	1.00	2.04	3.08	4.11	5.15	6.19
3"	1.20	4.56	7.91	11.27	14.63	17.98
4"	1.40	8.78	16.17	23.55	30.94	38.32
6"	1.80	23.70	45.60	67.51	89.41	111.31
8"	2.20	49.20	96.20	143.20	190.21	237.21
10"	2.80	87.56	172.31	257.07	341.82	426.58
12"	3.40	140.53	277.66	414.79	551.91	689.04

To further smooth out the impact on fire protection rates, our study assumed a five-year averaging of the system revenue requirement for the purposes of calculating fire protection revenues. This has the impact of smoothing out the rate increases without the variability of the annual revenue requirement. Over the five year period, revenues remain the same in total. The full calculation of the AWWA cost allocation for the City's fire protection service is shown in Table 4-18.

Table 4-18
Fire Protection Cost Allocation Calculation

	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Five-Year Average Rev. Req.	$8,151,188	$8,151,188	$8,151,188	$8,151,188	$8,151,188
Population Served[11]	30,197	30,197	30,197	30,197	30,197
Total System Pumpage (gallons)	2,364,875,000	2,364,875,000	2,364,875,000	2,364,875,000	2,364,875,000
Average Gallons per Day (gpd)	6,479,110	6,479,110	6,479,110	6,479,110	6,479,110
Average Gallons per Minute (gpm)	4,499	4,499	4,499	4,499	4,499
Peak Flow (gpm)	5,662	5,662	5,662	5,662	5,662
Required Fire Flow (gpm)	5,297	5,297	5,297	5,297	5,297
Maine Formula Ratio	1.07	1.07	1.07	1.07	1.07
Fire Protection Allocation of RR	20.34%	20.34%	20.34%	20.34%	20.34%
Total Fire Protection Expenses	$1,658,067	$1,658,067	$1,658,067	$1,658,067	$1,658,067
Public Hydrant Equivalents	159,731	159,731	159,731	159,731	159,731
Fireline Equivalents	19,955	19,955	19,955	19,955	19,955
Allocated – Public Fire Hydrants	$1,473,933	$1,473,933	$1,473,933	$1,473,933	$1,473,933
Allocated – Firelines	$184,134	$184,134	$184,134	$184,134	$184,134

The public hydrants allocation is assumed to be collected in the City's retail water rates. The remaining cost is allocated to private Firelines based on flow demand factors.

Industry Standard Fire Protection Fees

Based on the above calculations, which include a phase-in of fire protection increases, the fire protection rates would be as shown in Table 4-19.

[11] July 1, 2019 estimate from US Census data, https://www.census.gov/quickfacts/fact/table/galesburgcityillinois,US/PST045219

Table 4-19
Industry Standard Monthly Fireline Fees

Meter Size (inches)	# of Connections	Current FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Inside City							
2"	2	$8.75	$8.75	$8.75	$8.75	$8.75	$8.75
3"	1	$10.50	$10.50	$10.50	$10.50	$11.25	$13.83
4"	52	$12.25	$12.25	$12.43	$18.11	$23.79	$29.47
6"	80	$15.75	$18.23	$35.07	$51.91	$68.75	$85.59
8"	31	$19.25	$37.83	$73.98	$110.12	$146.26	$182.40
10"	4	$24.50	$67.33	$132.50	$197.68	$262.85	$328.02
12"	-	$29.75	$108.06	$213.51	$318.96	$424.40	$529.85

The incremental difference between the meter size charges are significantly different year-to-year under the recommended methodology. This is due to the alignment of the Fireline charges with the AWWA recommended flow factors, which has different impacts on each meter size. In fact, some meter size fees are not adjusted until the recommended AWWA meter equivalent impact results in a higher fee. The 2" meter fee remains consistent throughout the five-year period.

The above fees represent an industry standard approach to the calculation of private fire protection fees. The revenue generated by the above fees would increase the City's current fire protection from about $31,000 in FY 2020 to about $184,000 in FY 2025. Although this increase is substantial, the methodologies used to develop the fees is based on actual pumping, population, and flow capacity data. The phase-in also lessens the annual impact on fees.

The additional revenue generated by the Fireline fees above would reduce the revenue needed to be generated by the City's retail water customers. However, due to the major increases in the larger meter fees, NewGen is recommending increasing Fireline Fees at the same rate as other rates and fees, which is 3.5% per year beginning in FY 2022.

Retail and Wholesale Rate Alternative Scenarios

NewGen developed several potential changes to the structure of the City's retail and wholesale Facility Fees and per CCR rates. Each alternative will generate the same amount of revenue as recommended in Table 4-9. The alternative rate structures have significant impacts on the distribution of City water costs among its customers, however in total revenues remain consistent with the rate increase plan in Table 4-9. There were several changes to the City's various retail water rate and fee structures that were developed during the study. They are as follows:

- **Facility Fee Alternative 1: Reduced Facility Fee:** While maintaining the existing meter size based Facility Fees, reduce the 5/8, 3/4 inch meter fee to $8.00 per month, adjust all other Facility Fees and per CCF rates accordingly.
- **Facility Fee Alternative 2: Change to a per Unit Facility Fee:** Change the City's Facility Fee structure to a per unit fee rather than a meter size based fee. Per CCF rates are adjusted as per Table 4-9 with no change in structure. All revenue from Facility Fees and Unit rates remains the same.
- **CCF Rate Alternative 1:** Change the City's per CCF Rate structure to include 4 CCF per account for each customer and charge a per CCF rate for usage above 4 CCF per account.
- **CCF Rate Alternative 2:** Change the City's per CCF Rate structure to include 4 CCF per unit for each customer and charge a per CCF rate for usage above 4 CCF per unit. This change is only consistent when in addition to Facility Fee Alternative 2. Otherwise, the City would be inconsistent in the manner in which it applies its fixed and variable fees. That is, CCF Rate Alternative 2 assumes the adoption of Facility Fee Alternative 2.

This section will detail the alternative methods above individually and show the customer bill impact for a variety of City water customers.

Wholesale Rates under Alternative Structures

Typically, the rates charged to wholesale water customers are separate and distinct from those charged to retail customers. This allows a water supplier to tailor individual wholesale rates based on negotiated contracts. While Galesburg's wholesale water customers have separate contracts, the contracts share language regarding the price of water service. All of the City's wholesale contracts include a statement that the wholesale customer "shall be subject to the rate charged by Galesburg for users outside the city limits of Galesburg." The City of Knoxville's contract limits the rate increase imposed by the City of Galesburg to 5.0% per year or the percent increase the City adopted for Inside City customers, whichever is less. These contractual requirements create a direct link between the retail rates and wholesale rates.

NewGen would typically recommend a separate methodology to calculate wholesale water rates. Given the contractual limitations on the changes possible to the City's wholesale rates, NewGen did not calculate or develop any wholesale rate alternatives that differ from the current methodology.

NewGen recommends continuing to charge Wholesale customers using the current methodology, with a Facility Fee per unit equal to that of Outside City customers and a reduced per CCF rate. This methodology recognizes that the Wholesale customers do not use a significant portion of the City's retail system, such as the City's local distribution system. Wholesale rates depend on the changes in retail rates because of the contractual language in the City's wholesale agreements. Therefore, as this report details the several rate alternatives described above, wholesale rates will be presented for each alternative.

Facility Fee Alternative 1: Reduced Facility Fee

Facility Fee Alternative 1 included a reduction in the Inside City 5/8. 3/4 inch meter size Facility fee from $15.91 per month to $8.00 per month in FY 2021. Facility Fees are then increased according to the revenue increases recommended in Table 4-9. All meter size and Inside/Outside/Pipeline differentials remain unchanged.

Table 4-20
Projected Facility Fees – Alternative 1: Reduced Facility Fee

Meter Size (inches)	# of Connections	Current FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Inside City							
5/8, 3/4	11,773	$8.00	$8.28	$8.57	$8.87	$9.18	$8.00
1"-2"	313	$16.62	$17.20	$17.80	$18.43	$19.07	$16.62
2"-4"	139	$33.24	$34.40	$35.60	$36.85	$38.14	$33.24
4"-6"	6	$83.14	$86.05	$89.06	$92.18	$95.41	$83.14
6"+	2	$207.87	$215.14	$222.67	$230.47	$238.53	$207.87
Outside City							
5/8, 3/4	204	$16.00	$16.56	$17.14	$17.74	$18.36	$16.00
1"-2"	8	$33.24	$34.40	$35.60	$36.85	$38.14	$33.24
2"-4"	7	$66.47	$68.80	$71.21	$73.70	$76.28	$66.47
4"-6"	-	$166.29	$172.11	$178.13	$184.36	$190.82	$166.29
6"+	1	$415.74	$430.29	$445.35	$460.94	$477.07	$415.74
Pipeline							
5/8, 3/4	11	$8.00	$8.28	$8.57	$8.87	$9.18	$8.00
1"-2"	17	$16.62	$17.20	$17.80	$18.43	$19.07	$16.62
2"-4"	1	$33.24	$34.40	$35.60	$36.85	$38.14	$33.24
4"-6"	-	$83.14	$86.05	$89.06	$92.18	$95.41	$83.14
6"+	-	$207.87	$215.14	$222.67	$230.47	$238.53	$207.87
Inside City Sprinklers							
5/8, 3/4	77	$1.60	$1.65	$1.71	$1.77	$1.83	$1.60
1"-2"	32	$3.32	$3.44	$3.56	$3.69	$3.81	$3.32
2"-4"	2	$6.65	$6.88	$7.12	$7.37	$7.63	$6.65
4"-6"	-	$16.63	$17.21	$17.81	$18.44	$19.08	$16.63
6"+	-	$41.57	$43.03	$44.53	$46.09	$47.71	$41.57

The reduced Facility Fees would result in a decrease in Facility Fee revenue of about $1.3 million in FY 2021. This revenue must be recovered by increased CCF rates in order to maintain the financial plan projection recommended in this report.

Per CCF Rate Impact of Facility Fee Alternative 1

In order to maintain the recommended total system revenue under Facility Fee Alternative 1, the City's per CCF rates must be adjusted as follows in Table 4-21.

Table 4-21
Projected CCF Rates – Facility Fee Alternative 1: Reduced Facility Fee

	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Inside City	$2.50	$3.50	$3.62	$3.75	$3.88	$4.02
Outside City	$5.00	$7.00	$7.25	$7.50	$7.76	$8.03
Pipeline	$2.75	$3.85	$3.98	$4.12	$4.27	$4.42

The large increases in per CCF Rates under Facility Fee Alternative 1 are necessary to maintain revenues consistent with the financial plan developed as a part of this study.

Wholesale Rate Impact of Facility Fee Alternative 1

The changes in the Facility Fee and per CCF rates under Facility Fee Alternative 1 would result in the Wholesale Facility Fees and unit rates per CCF are shown in Table 4-22.

Table 4-22
Wholesale Facility Fees and Usage Rates – Alternative 1: Reduced Facility Fee

Meter Size (inches)	Customers	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Facility Fee							
5/8, 3/4	1	$31.82	$31.82	$32.93	$34.09	$35.28	$36.51
1"-2"	1	$66.10	$66.10	$68.41	$70.81	$73.29	$75.85
2"-4"	2	$132.20	$132.20	$136.83	$141.62	$146.57	$151.70
4"-6"	3	$330.70	$330.70	$342.27	$354.25	$366.65	$379.49
6"+	3	$826.80	$826.80	$855.74	$885.69	$916.69	$948.77
Usage Rate per CCF		$1.70	$1.70	$1.76	$1.82	$1.88	$1.95

The Wholesale rate increase complies with the language in the Knoxville contract limiting increases to the lower of the Inside City rate increase or 5.0%.

Customer Bill Impact of Facility Fee Alternative 1: Reduced Facility Fee

The combined impact of a reduction in the monthly Facility Fee and the increase in the per CCF rates necessary under Facility Fee Alternative 1 would have the following impact on the sample customers beginning in FY 2021.

Table 4-23
Projected Monthly Customer Bills – Facility Fee Alternative 1

Sample Customer	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Single Person	$20.91	$15.00	$15.53	$16.07	$16.63	$17.21
5/8, 3/4 Meter	*$ Change*	*($5.91)*	*$0.52*	*$0.54*	*$0.56*	*$0.58*
1 Unit 2 CCF	*% Change*	*(-28.3%)*	*3.5%*	*3.5%*	*3.5%*	*3.5%*
Median Residential	$25.91	$22.00	$22.77	$23.57	$24.39	$25.25
5/8, 3/4 Meter	*$ Change*	*($3.91)*	*$0.77*	*$0.80*	*$0.82*	*$0.85*
1 Unit 4 CCF	*% Change*	*(-15.1%)*	*3.50%*	*3.50%*	*3.50%*	*3.50%*
Family of Four	$38.41	$39.50	$40.88	$42.31	$43.79	$45.33
5/8, 3/4 Meter	*$ Change*	*$1.09*	*$1.38*	*$1.43*	*$1.48*	*$1.53*
1 Unit 9 CCF	*% Change*	*2.8%*	*3.5%*	*3.5%*	*3.5%*	*3.5%*
Family of Six	$58.41	$67.50	$69.86	$72.31	$74.84	$77.46
5/8, 3/4 Meter	*$ Change*	*$9.09*	*$2.36*	*$2.45*	*$2.53*	*$2.62*
1 Unit 17 CCF	*% Change*	*15.6%*	*3.5%*	*3.5%*	*3.5%*	*3.5%*
Large Healthcare	$3,966.10	$5,493.24	$5,685.50	$5,884.49	$6,090.45	$6,303.62
2"-4" Meter	*$ Change*	*$1,527.14*	*$192.26*	*$198.99*	*$205.96*	*$213.17*
1 Unit 1560 CCF	*% Change*	*38.5%*	*3.5%*	*3.5%*	*3.5%*	*3.5%*
Large Government	$37,566.10	$52,533.24	$54,371.90	$56,274.92	$58,244.54	$60,283.10
2"-4" Meter	*$ Change*	*$14,967.14*	*$1,838.66*	*$1,903.02*	*$1,969.62*	*$2,038.56*
1 Unit 15,000 CCF	*% Change*	*39.8%*	*3.5%*	*3.5%*	*3.5%*	*3.5%*
Typical Wholesale	$27,332.20	$28,626.47	$29,628.40	$30,665.39	$31,738.68	$32,849.54
2"-4" Meter	*$ Change*	*$1,294.27*	*$1,001.93*	*$1,036.99*	*$1,073.29*	*$1,110.85*
1 Unit 16,000 CCF	*% Change*	*4.7%*	*3.5%*	*3.5%*	*3.5%*	*3.5%*

Although the Wholesale customer's bill appears to increase disproportionately to the Inside City customers, the CCF rate charged to the Inside City is actually increased by 40.0%, whereas the wholesale rate is only increased 5.0%. The bill impact is due to the reduction in the Facility Fee, which does not impact Wholesale customers as much as small Inside City customers. The nominal rate increases are consistent with the Wholesale contract language.

Facility Fee Alternative 2: Per Unit Facility Fee

Currently the City charges monthly Facility Fees based on each customer's meter size. As a part of this study, the City requested an evaluation of an alternative fixed charge methodology that was based on each customer's units. A "unit" is a measure of equivalent demand for each customer. For instance, a 2" meter serving an apartment building may serve 12 units under one meter. The policy of charging per meter or per unit has varying impacts on single and multi-unit customers.

While NewGen's evaluation was focused on multi-unit customers, if the City were to alter the Facility Fee for one group of customers, then we recommend applying the change to all customers. Therefore, NewGen developed a unit based Facility Fee that recovers the same revenue as the current meter based Facility Fees. First, an accounting of the system's units must be done. The total system units compared to accounts by meter size is shown in Table 4-24.

Table 4-24
FY 2019 Retail Customer Meters vs Units

Customer Class	Accounts	Units
Inside City		
5/8, 3/4	11,773	12,280
1"-2"	313	1,059
2"-4"	139	1,314
4"-6"	6	10
6"+	2	2
Totals	12,234	14,666
Inside City Sprinklers		
5/8, 3/4	77	77
1"-2"	32	32
2"-4"	2	2
4"-6"	-	-
6"+	-	-
Totals	111	111
Outside City		
5/8, 3/4	204	204
1"-2"	8	8
2"-4"	7	42
4"-6"	-	-
6"+	1	1
Totals	220	255

Table 4-24
FY 2019 Retail Customer Meters vs Units

Customer Class	Accounts	Units
Pipeline		
5/8, 3/4	11	11
1"-2"	17	17
2"-4"	1	1
4"-6"	-	-
6"+	-	-
Totals	29	29

In general, larger meters tend to serve more units per account.

The advantage of charging a Facility Fee based on units is that multi-unit accounts are better accounted for in terms of their reservation of system capacity. Also, under a unit based Facility Fee, it does not matter if the City bills a master meter based on the number of units it serves, or each unit separately. The total revenue generated by a per unit fee from such a group of units is identical.

The disadvantage of a unit based Facility Fee is that larger, one unit meters are underrepresented in terms of their reservation of system capacity. If a larger meter does not service multiple units, then its contribution to the fixed costs of the system are understated under a unit based Facility Fee. However, including a per-unit allowance for billable consumption offsets this impact, and generates more revenue from billable water consumption of larger meters. NewGen's CCF Rate Alternative 1 includes this modification and will be discussed later in this report.

NewGen developed a per unit Facility Fee alternative that charges each unit the same monthly amount. The alternative maintains the differential between inside City, outside City, and pipeline customers and generates the same amount of revenue as the current fees charged to those customers. The updated per Unit Facility Fees for5/8, 3/4 Meter Sizes are shown in Table 4-25. All meter size and Inside/Outside/Pipeline differentials remain unchanged.

Table 4-25
Facility Fee Alternative 2: Per Unit Facility Fees – 5/8, 3/4 Meter Size

	# of Units	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Inside City	14,666	$15.91	$14.45	$14.95	$15.48	$16.02	$16.58
Outside City	255	$31.82	$28.90	$29.91	$30.95	$32.03	$33.15
Pipeline	29	$15.91	$14.45	$14.95	$15.48	$16.02	$16.58
Inside City Sprinkler	111	$3.18	$2.89	$2.99	$3.09	$3.20	$3.31
Outside City Sprinkler	-	$6.36	$5.78	$5.98	$6.19	$6.40	$6.63

CCF Rate und Facility Fee Alternative 2

The change in Facility Fees under Alternative 2 would generate the same Facility Fee revenue as the unmodified Facility Fee structure. Therefore, the City's CCF rates would remain the same as if the City maintained the meter size based Facility Fees. Table 4-26 shows the CCF rates for retail customers under Facility Fee Alternative 2.

Table 4-26
Projected CCF Rates – Alternative 2A

	# of Customers	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Inside City[12]	12,234	$2.50	$2.50	$2.59	$2.68	$2.77	$2.87
Outside City	220	$5.00	$5.00	$5.18	$5.36	$5.54	$5.74
Pipeline	29	$2.75	$2.75	$2.85	$2.95	$3.05	$3.16

Wholesale Rates Under Facility Fee Alternative 2

The City's Wholesale rates would still comply with the contractual language setting the Facility Fee to the Outside City Facility Fee and the CCF rate to 68% of the Inside City CCF rate, as shown in Table 4-27.

Table 4-27
Projected Wholesale Facility Fees and CCF Rates – Alternative 2A

	# of Customers	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Facility Fee per Unit	10	$31.82	$28.90	$29.91	$30.95	$32.03	$33.15
Usage Rate per CCF		$1.70	$1.79	$1.85	$1.91	$1.98	$2.05

Customer Bill Impact of Facility Fee Alternative 2: Per Unit Facility Fee

The following Table 4-28 shows the impact of modifying the City's Facility Fee structure to a per unit monthly fee.

Table 4-28
Projected Monthly Customer Bills – Facility Fee Alternative 2

Sample Customer	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Single Person	$20.91	$19.45	$20.13	$20.83	$21.56	$22.31
5/8, 3/4 Meter	*$ Change*	*($1.46)*	*$0.68*	*$0.70*	*$0.73*	*$0.75*
1 Unit 2 CCF	*% Change*	*(-7.0%)*	*3.5%*	*3.5%*	*3.5%*	*3.5%*

[12] Includes Inside City Sprinkler customers

Table 4-28
Projected Monthly Customer Bills – Facility Fee Alternative 2

Sample Customer	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Median Residential	$25.91	$24.45	$25.30	$26.19	$27.10	$28.05
5/8, 3/4 Meter	*$ Change*	*($1.46)*	*$0.86*	*$0.89*	*$0.92*	*$0.95*
1 Unit 4 CCF	*% Change*	*(-5.6%)*	*3.50%*	*3.50%*	*3.50%*	*3.50%*
Family of Four	$38.41	$36.95	$38.24	$39.58	$40.96	$42.40
5/8, 3/4 Meter	*$ Change*	*($1.46)*	*$1.29*	*$1.34*	*$1.38*	*$1.43*
1 Unit 9 CCF	*% Change*	*(-3.8%)*	*3.5%*	*3.5%*	*3.5%*	*3.5%*
Family of Six	$58.41	$56.95	$58.94	$61.00	$63.14	$65.35
5/8, 3/4 Meter	*$ Change*	*($1.46)*	*$1.99*	*$2.06*	*$2.13*	*$2.21*
1 Unit 17 CCF	*% Change*	*(-2.5%)*	*3.5%*	*3.5%*	*3.5%*	*3.5%*
Large Healthcare	$3,966.10	$3,914.45	$4,051.45	$4,193.25	$4,340.02	$4,491.92
2"-4" Meter	*$ Change*	*($51.65)*	*$137.01*	*$141.80*	*$146.76*	*$151.90*
1 Unit 1560 CCF	*% Change*	*(-1.3%)*	*3.5%*	*3.5%*	*3.5%*	*3.5%*
Large Government	$37,566.10	$37,514.45	$38,827.45	$40,186.41	$41,592.94	$43,048.69
2"-4" Meter	*$ Change*	*($51.65)*	*$1,313.01*	*$1,358.96*	*$1,406.52*	*$1,455.75*
1 Unit 15,000 CCF	*% Change*	*(-0.1%)*	*3.5%*	*3.5%*	*3.5%*	*3.5%*
Typical Wholesale	$27,332.20	$27,228.90	$28,181.91	$29,168.27	$30,189.16	$31,245.78
2"-4" Meter	*$ Change*	*($103.30)*	*$953.01*	*$986.37*	*$1,020.89*	*$1,056.62*
1 Unit 16,000 CCF	*% Change*	*(-0.4%)*	*3.5%*	*3.5%*	*3.5%*	*3.5%*

Although it appears that all customer bills would decrease in FY 2021, the increased costs would be to customers with more than one unit.

CCF Rate Alternative 1: 4 CCF Allowance per Account

Affordability of water service for small users is an increasingly becoming a concern for water utilities. One way to target small water users, who tend to be single person or small family households, is to provide water service of a certain level at a reduced cost or at no cost. The reduced cost is sometimes called a "lifeline rate". To provide water at no cost is typically called a "minimum allowance" or simple an "allowance". The alternative developed for the City as a part of NewGen's study is a 4 CCF allowance per account. That is, each account would not pay for the first 4 CCFs of water consumption each month. All customers at or below 4 CCF per month would only pay the monthly Facility Fee.

Of course, this means that the monthly billable CCFs of the City's customer base will be reduced. Therefore, in order to produce the same amount of CCF rate revenue, the rate charged per CCF over the 4 CCF allowance must increase. Table 4-29 shows the breakdown of usage assuming the City does not bill any customer for the first 4 CCF of water consumption.

Table 4-29
FY 2021 Estimated Retail Customer Usage – 4 CCF Allowance per Account

	Inside City[13]	Outside City	Pipeline	Wholesale	Totals	% of Total
Up to 4 CCF per Account	411,704	7,128	836	437	420,105	27%
Over 4 CCF per Account	799,086	38,176	3,253	308,955	1,149,470	73%
Total Usage	1,210,790	45,304	4,089	309,392	1,569,575	100%

CCF Rates under CCF Rate Alternative 1

Table 4-28 shows that about 27% of the system's usage would not be billed under CCF Rate Alternative 1. Therefore, the per CCF rate applied to usage above 4 CCF per account per month will be higher than the projected rate under the current per CCF structure. Table 4-30 shows the CCF rates necessary to support the system if the City were to adopt a 4 CCF allowance per account per month.

Table 4-30
Projected CCF Rates under CCF Rate Alternative 1: 4 CCF Allowance per Account

	# of Customers	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Inside City[14]	12,234	$2.50	$3.71	$3.84	$3.98	$4.12	$4.26
Outside City	220	$5.00	$7.43	$7.69	$7.96	$8.24	$8.52
Pipeline	29	$2.75	$4.09	$4.23	$4.38	$4.53	$4.69
Wholesale	10	$1.70	$1.79	$1.85	$1.91	$1.98	$2.05

The CCF rates above generate the same revenue as the CCF rates under the current rate structure when applied to usage above 4 CCF per month per account.

Customer Bill Impact of CCF Rate Alternative 1: 4 CCF Allowance per Account

The table below assumes that the City maintain its current Facility Fee structure and increase Facility Fees consistent with the financial plan in this report.

Table 4-31
Projected Monthly Customer Bills – CCF Rate Alternative 1

Sample Customer	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Single Person	$20.91	$15.91	$16.47	$17.04	$17.64	$18.26
5/8, 3/4 Meter	*$ Change*	*($5.00)*	*$0.56*	*$0.58*	*$0.60*	*$0.62*
1 Unit 2 CCF	*% Change*	*(-23.9%)*	*3.5%*	*3.5%*	*3.5%*	*3.5%*

[13] Includes Inside City Sprinkler usage
[14] Includes Inside City Sprinkler customers

Table 4-31
Projected Monthly Customer Bills – CCF Rate Alternative 1

Sample Customer	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Median Residential	$25.91	$15.91	$16.47	$17.04	$17.64	$18.26
5/8, 3/4 Meter	*$ Change*	*($10.00)*	*$0.56*	*$0.58*	*$0.60*	*$0.62*
1 Unit 4 CCF	*% Change*	*(-38.6%)*	*3.50%*	*3.50%*	*3.50%*	*3.50%*
Family of Four	$38.41	$34.48	$35.69	$36.94	$38.23	$39.57
5/8, 3/4 Meter	*$ Change*	*($3.93)*	*$1.21*	*$1.25*	*$1.29*	*$1.34*
1 Unit 9 CCF	*% Change*	*(-10.2%)*	*3.5%*	*3.5%*	*3.5%*	*3.5%*
Family of Six	$58.41	$64.19	$66.44	$68.77	$71.17	$73.66
5/8, 3/4 Meter	*$ Change*	*$5.78*	*$2.25*	*$2.33*	*$2.41*	*$2.49*
1 Unit 17 CCF	*% Change*	*9.9%*	*3.5%*	*3.5%*	*3.5%*	*3.5%*
Large Healthcare	$3,966.10	$5,845.21	$6,049.80	$6,261.54	$6,480.69	$6,707.52
2"-4" Meter	*$ Change*	*$1,879.11*	*$204.58*	*$211.74*	*$219.15*	*$226.82*
1 Unit 1560 CCF	*% Change*	*47.4%*	*3.5%*	*3.5%*	*3.5%*	*3.5%*
Large Government	$37,566.10	$55,762.49	$57,714.18	$59,734.18	$61,824.87	$63,988.74
2"-4" Meter	*$ Change*	*$18,196.39*	*$1,951.69*	*$2,020.00*	*$2,090.70*	*$2,163.87*
1 Unit 15,000 CCF	*% Change*	*48.4%*	*3.5%*	*3.5%*	*3.5%*	*3.5%*
Typical Wholesale	$27,332.20	$28,685.06	$29,689.04	$30,728.15	$31,803.64	$32,916.77
2"-4" Meter	*$ Change*	*$1,352.86*	*$1,003.98*	*$1,039.12*	*$1,075.49*	*$1,113.13*
1 Unit 16,000 CCF	*% Change*	*4.9%*	*3.5%*	*3.5%*	*3.5%*	*3.5%*

The inclusion of 4 CCF per month has the impact of reducing the total water bill for small users of the City's system. However, the impact on large water users is disproportionately higher due to the increased per CCF rate for usage above 4 CCF per month. Large water users will exceed 4 CCF quickly and pay the higher per CCF rate on most of their monthly usage. Similarly to the reduced Facility Fee option, this alternative disproportionately impacts Inside City customers when compared to Wholesale customers, but the nominal rate increases are consistent with the Wholesale agreements.

CCF Rate Alternative 2: Per Unit Facility Fee and 4 CCF Allowance per Unit

Should the City adopt the Facility Fee Alternative 2, then there would be a consistent basis to apply a CCF allowance per Unit for each account. The current Facility Fee structure does not account for the number of units behind each meter – therefore, an allowance for usage per unit would not be appropriate. Facility Fee Alternative 2 accounts for the number of units behind each meter, and therefore a per unit allowance would account for the fixed portion of each customer's bill in a consistent manner.

NewGen developed a CCF rate alternative that includes a four (4) CCF allowance per unit for all customers. Usage over the 4 CCF per unit allowance would be charged at a flat rate per CCF.

CCF Rates under CCF Rate Alternative 2

If the City adopts Facility Fee Alternative 2, then there would be an opportunity to develop a per Unit CCF allowance for each account. NewGen developed an alternative unit rate structure that provides an allowance for usage included in the monthly per unit Facility Fee. This allowance is allocated on a per Unit basis, so that all customers are treated equally. NewGen developed the allowance based on the median inside and outside City residential usage, which is four (4) CCF per month.

Table 4-32
FY 2021 Estimated Retail Customer Usage – 4 CCF Allowance per Unit

	Inside City[15]	Outside City	Pipeline	Wholesale	Totals	% of Total
Up to 4 CCF per Unit	478,502	7,886	836	437	487,661	31%
Over 4 CCF per Unit	732,288	37,418	3,253	308,955	1,081,914	69%
Total Usage	1,210,790	45,304	4,089	309,392	1,569,575	100%

Because there are more Units than there are Accounts, a larger percentage of the City's usage falls under 4 CCFs per Unit than under 4 CCFs per account. Table 4-31 shows the per unit percentage to be 31%, which is 4% higher than the usage under 4 CCF per Account from CCF Rate Alternative 1. Therefore, per CCF rate must be even higher under CCF Rate Alternative 2.

NewGen's CCF Rate Alternative 2 rate design assumes that each water account will not be charged for the first 4 CCF per unit each month. Each CCF above the minimum amount would be charged at the following rates shown in Table 4-33.

Table 4-33
CCF Rates Alternative 2: 4 CCF Allowance per Unit

	# of Customers	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Inside City[16]	12,234	$2.50	$4.03	$4.17	$4.31	$4.46	$4.62
Outside City	220	$5.00	$8.05	$8.34	$8.63	$8.93	$9.24
Pipeline	29	$2.75	$4.43	$4.58	$4.75	$4.91	$5.08
Wholesale	10	$1.70	$1.79	$1.85	$1.91	$1.98	$2.05

The revenues generated by the rates above is identical to the projections under the current rate structure.

Customer Bill Impact of CCF Rate Alternative 2

The CCF Rate Alternative 2 is only recommended if the City also chooses to apply Facility Fees on a per unit basis. Therefore, the bill impacts shown in Table 4-34 include both Facility Fee Alternative 2 and CCF Rate Alternative 2 impacts.

[15] Includes Inside City Sprinkler usage
[16] Includes Inside City Sprinkler customers

Table 4-34
Projected Monthly Customer Bills – CCF Rate Alternative 2

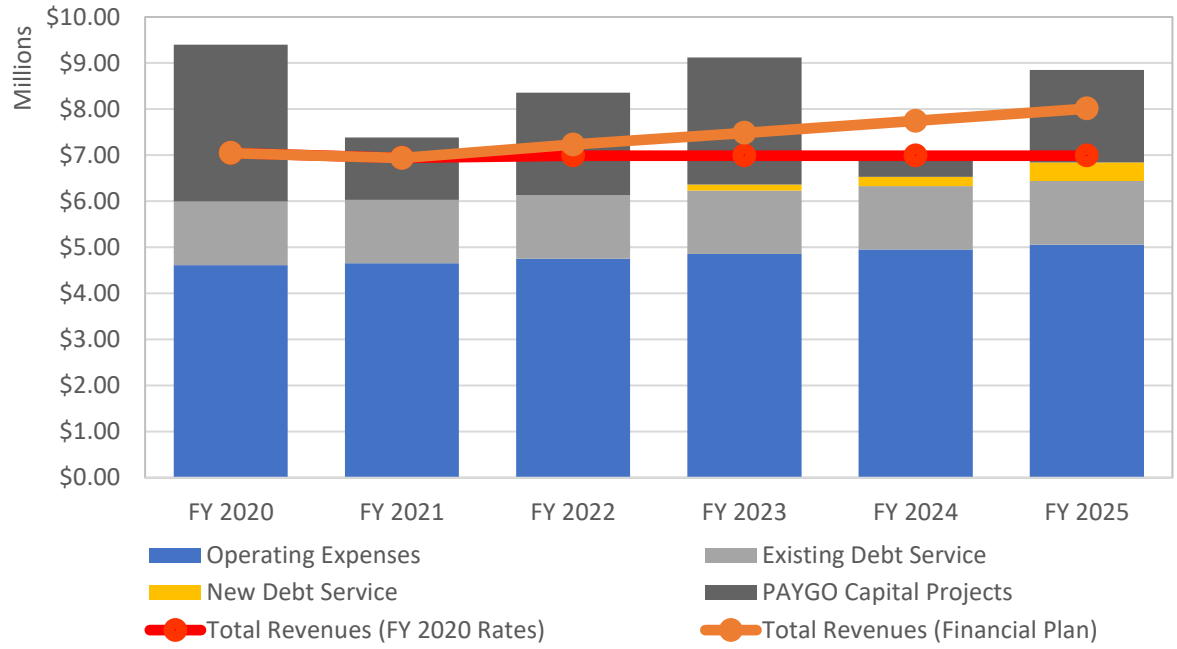
Sample Customer	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Single Person	$20.91	$14.45	$14.95	$15.48	$16.02	$16.58
5/8, 3/4 Meter	*$ Change*	*($6.46)*	*$0.51*	*$0.52*	*$0.54*	*$0.56*
1 Unit 2 CCF	*% Change*	*(-30.9%)*	*3.5%*	*3.5%*	*3.5%*	*3.5%*
Median Residential	$25.91	$14.45	$14.95	$15.48	$16.02	$16.58
5/8, 3/4 Meter	*$ Change*	*($11.46)*	*$0.51*	*$0.52*	*$0.54*	*$0.56*
1 Unit 4 CCF	*% Change*	*(-44.2%)*	*3.50%*	*3.50%*	*3.50%*	*3.50%*
Family of Four	$38.41	$34.58	$35.79	$37.05	$38.34	$39.68
5/8, 3/4 Meter	*$ Change*	*($3.83)*	*$1.21*	*$1.25*	*$1.30*	*$1.34*
1 Unit 9 CCF	*% Change*	*(-10.0%)*	*3.5%*	*3.5%*	*3.5%*	*3.5%*
Family of Six	$58.41	$66.80	$69.14	$71.56	$74.06	$76.65
5/8, 3/4 Meter	*$ Change*	*$8.39*	*$2.34*	*$2.42*	*$2.50*	*$2.59*
1 Unit 17 CCF	*% Change*	*14.4%*	*3.5%*	*3.5%*	*3.5%*	*3.5%*
Large Healthcare	$3,966.10	$6,280.54	$6,500.36	$6,727.87	$6,963.35	$7,207.06
2"-4" Meter	*$ Change*	*$2,314.44*	*$219.82*	*$227.51*	*$235.47*	*$243.72*
1 Unit 1560 CCF	*% Change*	*58.4%*	*3.5%*	*3.5%*	*3.5%*	*3.5%*
Large Government	$37,566.10	$60,404.11	$62,518.25	$64,706.39	$66,971.11	$69,315.10
2"-4" Meter	*$ Change*	*$22,838.01*	*$2,114.14*	*$2,188.14*	*$2,264.72*	*$2,343.99*
1 Unit 15,000 CCF	*% Change*	*60.8%*	*3.5%*	*3.5%*	*3.5%*	*3.5%*
Typical Wholesale	$27,332.20	$28,581.76	$29,582.12	$30,617.49	$31,689.10	$32,798.22
2"-4" Meter	*$ Change*	*$1,249.56*	*$1,000.36*	*$1,035.37*	*$1,071.61*	*$1,109.12*
1 Unit 16,000 CCF	*% Change*	*4.6%*	*3.5%*	*3.5%*	*3.5%*	*3.5%*

Similarly to the reduced Facility Fee option, this alternative disproportionately impacts Inside City customers when compared to Wholesale customers, but the nominal rate increases are consistent with the Wholesale agreements.

Cash Flow Under Recommended Revenue Increases

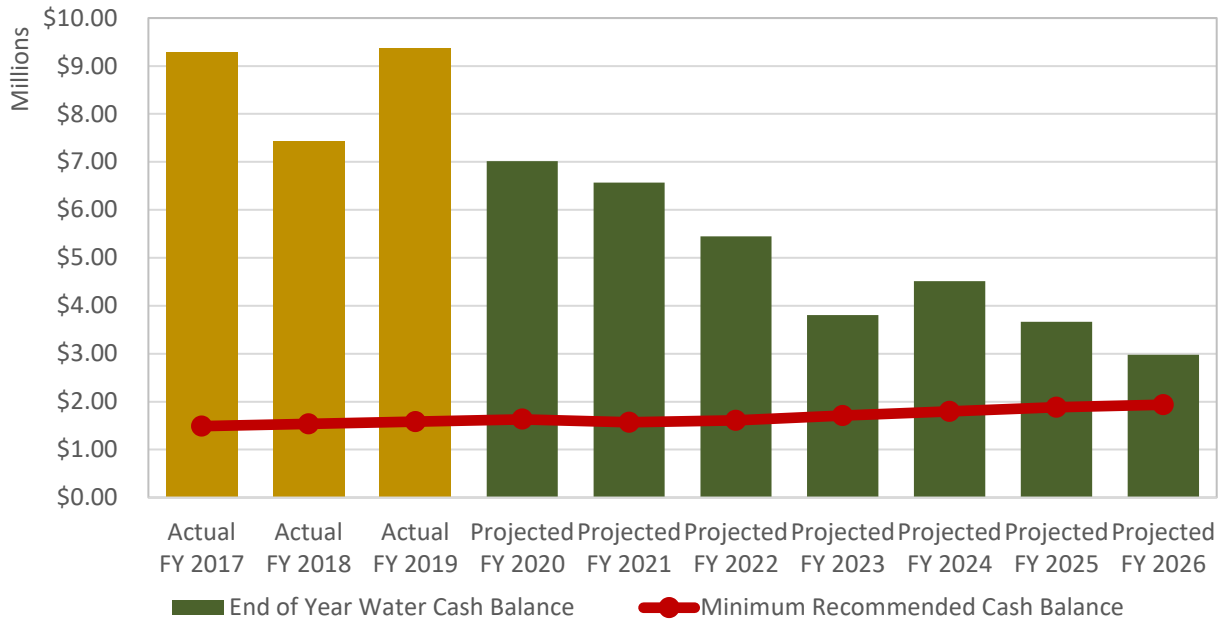
Each of the proposed rate alternatives discussed previously result in approximately the same amount of revenue each year. Therefore, the financial projections are identical for each scenario, assuming that the City increases revenues consistent with the financial plan in Table 4-9. Exhibit 4-35 shows the projected expenses and revenues under the proposed revenue increase plan.

Exhibit 4-35 Expenses vs. Revenues Under Recommended Rate Increases



Although the revenues projected in FY 2021 through FY 2025 do not fully fund the annual revenue requirement in most years, the City's Water Fund cash reserves are sufficient to support the system as revenues are increases incrementally over the five year projection. The phasing in of revenue increases by supporting the system with existing reserves allows the City to slowly increase water revenues over time rather than all at once. This reduces the one-time cost increase on customers. Exhibit 4-36 shows the City's historical cash balance based on the City's FY 2017 through FY 2019 financial statements and projected cash balance of the City' water fund under the recommended revenue increases.

Exhibit 4-36 Projected Water Utility Cash Balance Under Recommended Rates



The City's Water Fund cash reserves can support the system during the revenue increase phase in period of FY 2021 through FY 2025.

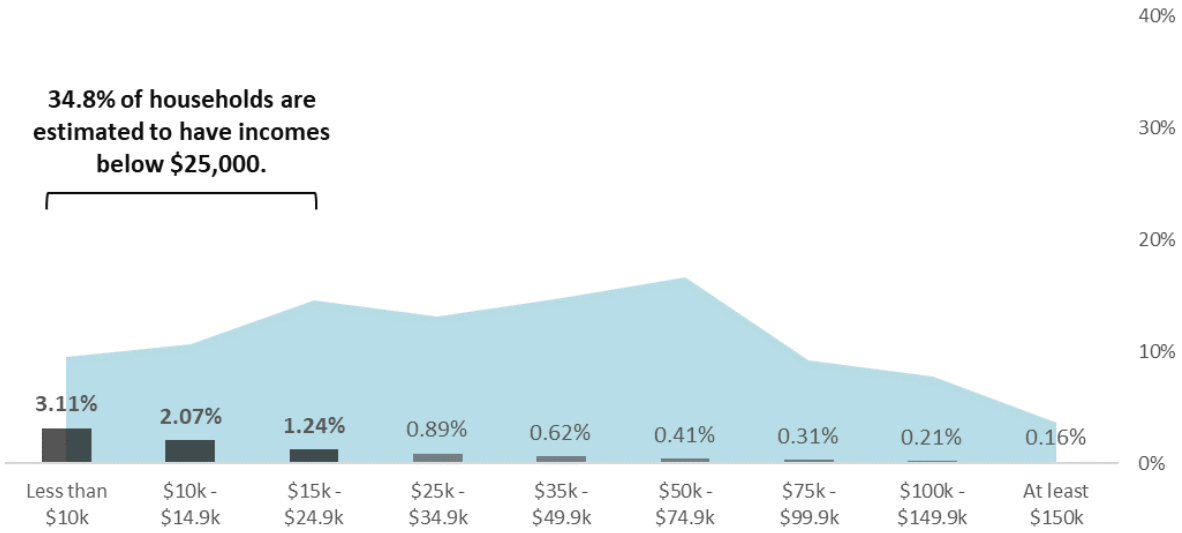
Section 5
CUSTOMER AFFORDABILITY IMPACTS AND BILL COMPARISONS

A major consideration when developing any utility financial plan is the impact on the system's customer bills. The recommendations detailed in this report will result in revenue increases, and therefore cost increases to many of the system's customers. This section will outline the impact on the system's customers and a comparison the total customer bill as compared to surrounding utilities. Each chart in this section assumes a customer with a 5/8, 3/4" meter, 1 Unit, and 4 CCF usage per month.

Residential Customer Affordability Impact

The impact on low income City water customers of the alternative rate structure is shown below in Exhibit 5-2. The usage and income assumptions remain the same as the analysis of the City's current FY 2020 rates.

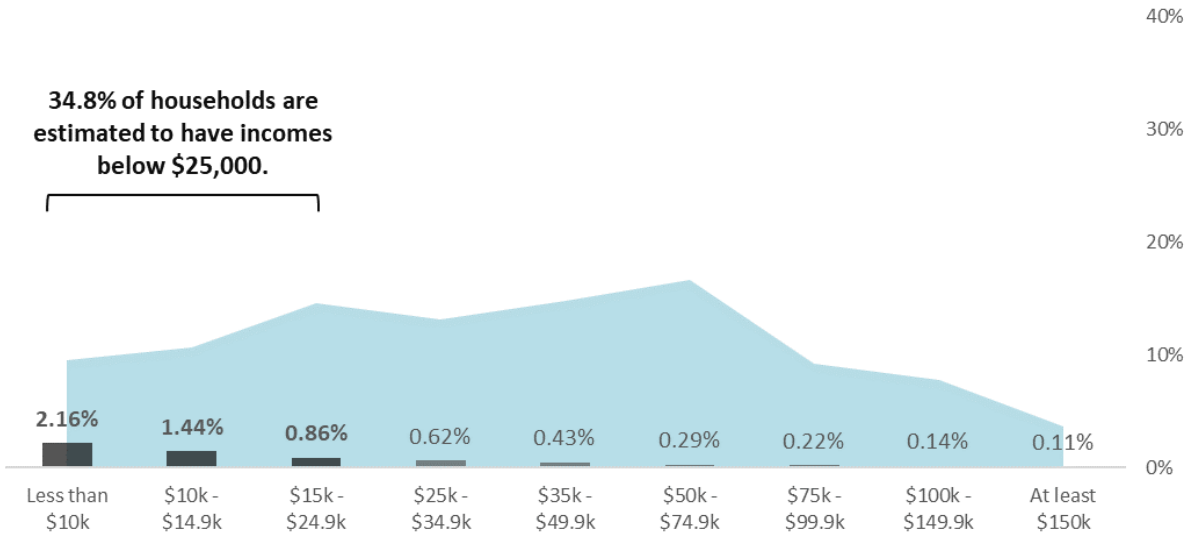
Exhibit 5-1 Residential Customer Affordability Analysis – FY 2020 Rates



As previously stated, the analysis estimates that a significant proportion of the City's water customer base is exceeding or approaching the EPA guideline of unaffordable water service. Each alternative rate structure developed during the study addresses this issue for most of the City's low water users.

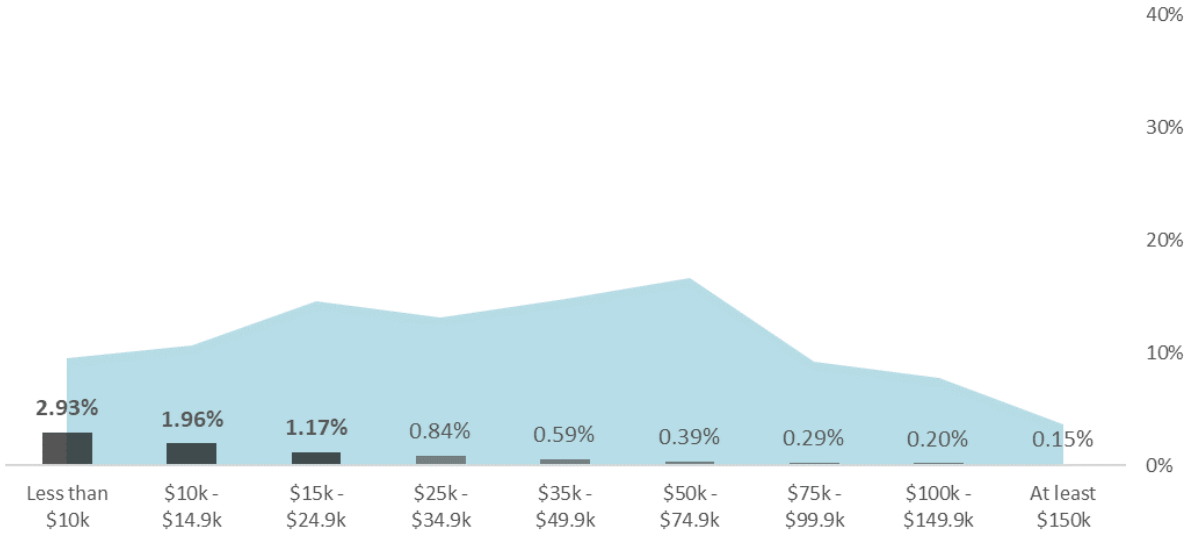
Exhibit 5-2 shows the result of the affordability analysis assuming the City adopt only Facility Fee Alternative 1: Reduced Facility Fees.

Exhibit 5-2 Residential Customer Affordability Analysis – FY 2021 Facility Fee Alternative 1



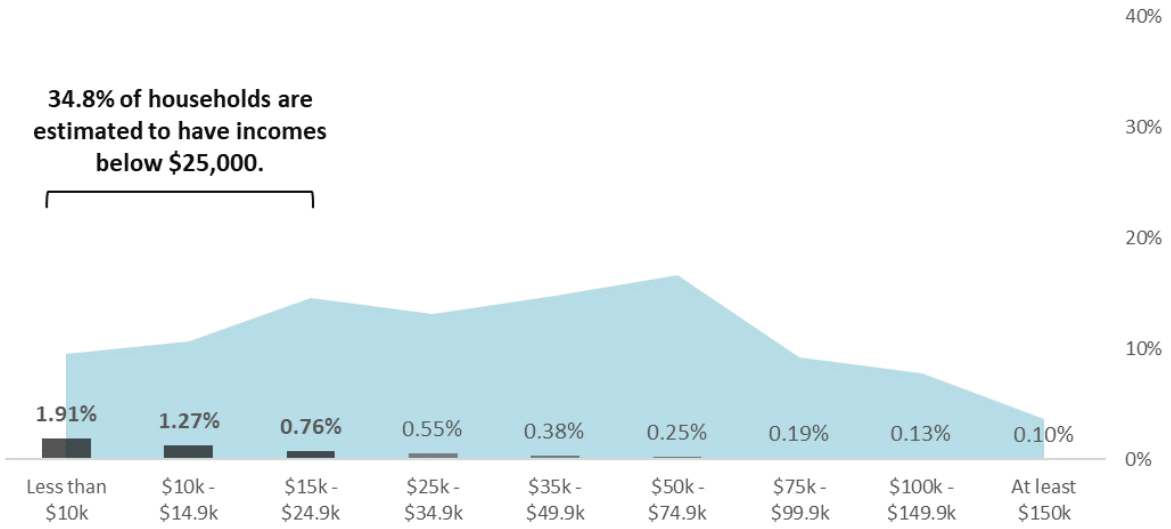
While Facility Fee Alternative 1 does reduce the cost burden on a median Residential customer, customers with a household income less than $10,000 per year are still nearing the EPA unaffordability guideline of 2.5% of household income spent on water service.

Exhibit 5-3 Residential Customer Affordability Analysis – FY 2021 Facility Fee Alternative 2



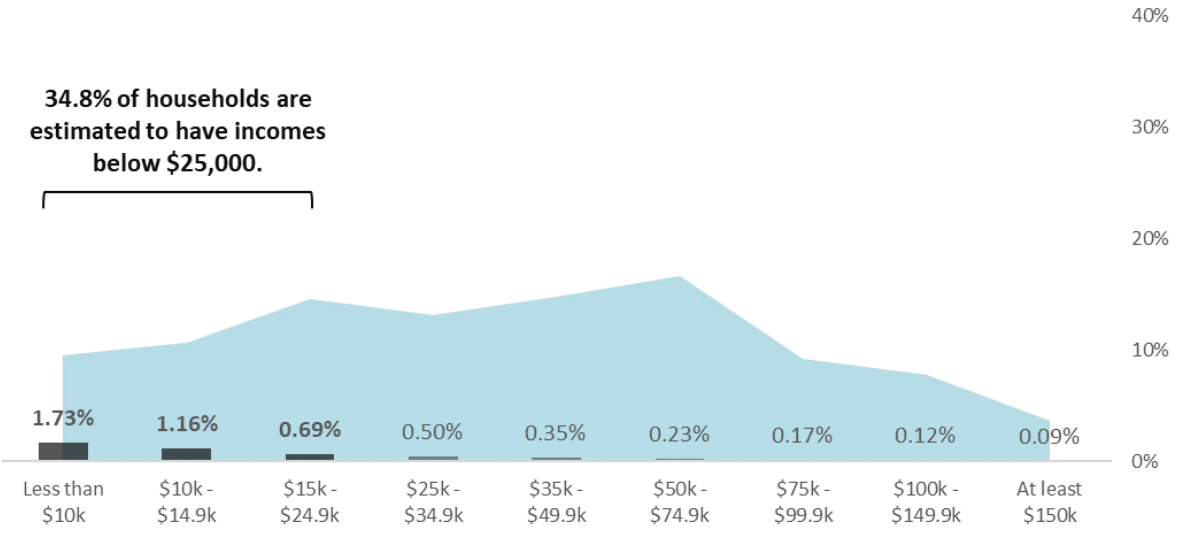
Facility Fee Alternative 2, which would charge all customers a per unit Facility Fee, does little to reduce the cost burden on the City's lowest income customers. There is only a 0.18% difference in the cost burden (in terms of % of household income) on the City's lowest income customers.

Exhibit 5-4 Residential Customer Affordability Analysis – CCF Rate Alternative 1



CCF Rate Alternative 1, which would provide an allowance of 4 CCF per month to each water account, has a noticeable impact on the affordability of water service for the City's lowest income residents. In fact, these residents would only pay the Facility Fee each month under this alternative.

Exhibit 5-5 Residential Customer Affordability Analysis – CCF Rate Alternative 2

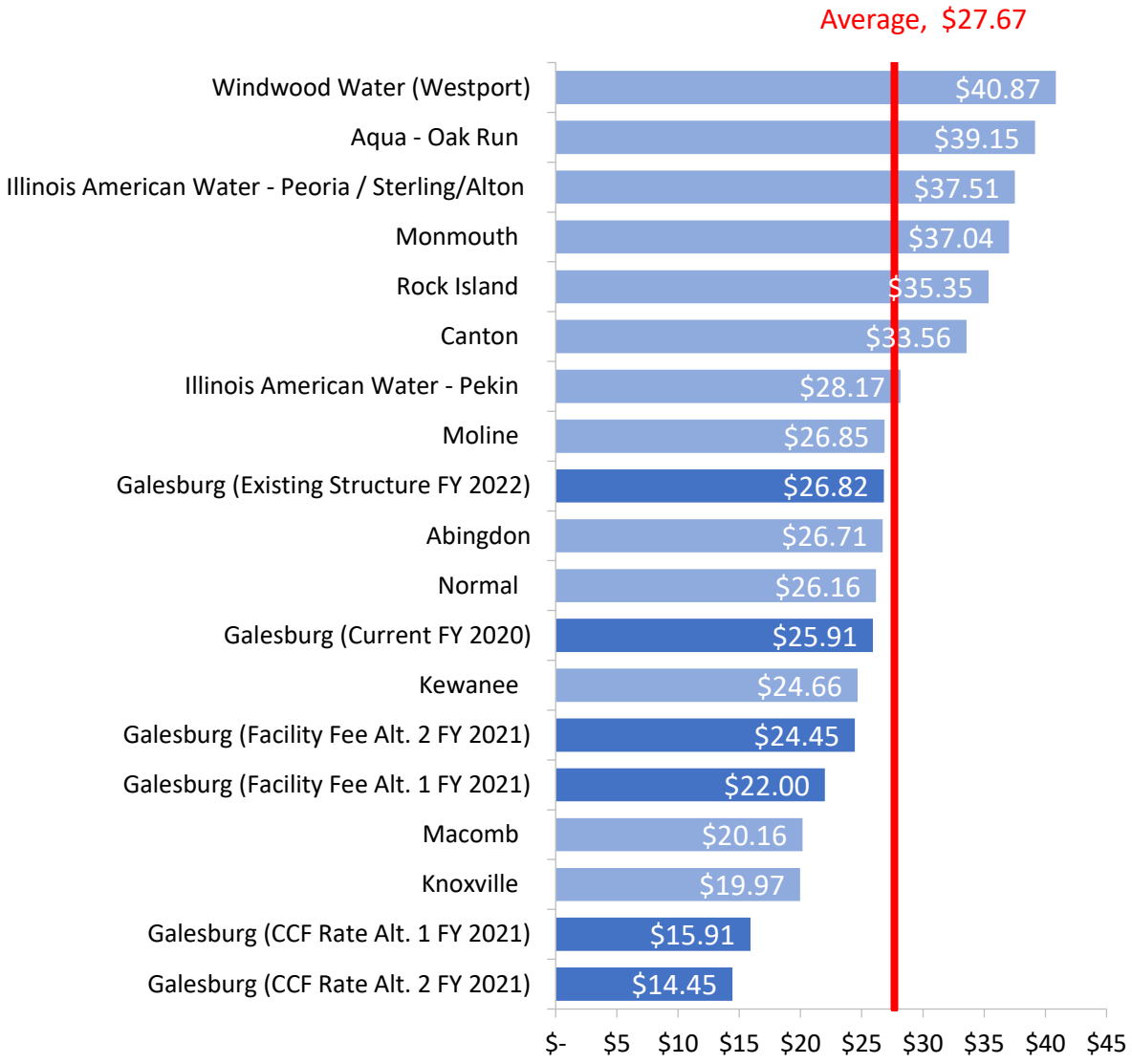


CCF Rate Alternative 2 also includes Facility Fee Alternative 2. By implementing a per unit Facility Fee and including 4 CCF of water usage for each unit, the cost of water service further falls for the City's median residential customer.

Regional Bill Comparison

The following exhibit shows a comparative bill for a median Inside City retail customer (5/8" meter, 1 Unit, 4 CCF monthly usage) in surrounding water service areas.

Exhibit 5-6 **Sample Customer Bill, 5/8" Meter,** 1 Unit, 4 CCF Monthly Usage



While regional comparisons may provide some context, the ranking of individual customer bills is not a consideration when developing a financial plan and rate structure. The City's cash needs are independent of the rates in the surrounding jurisdictions, and this comparison is provided for information only.

Section 6
LONG TERM FINANCIAL PROJECTIONS

This report details the short term, five-year impacts of the various revenue and rate structure options developed as a part of NewGen's study. It is recommended that the City re-evaluate rate increases based on previous year actual data every year, and re-evaluate rate structures every three to five years as a part of a full rate study. The charts below assume that the City implements the revenue increases shown in Table 6-1 below.

Table 6-1
Ten-Year Projected Revenue Increases

	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
Facility Fees	0.0%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Unit Rates	0.0%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Fireline Fees	0.0%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%

The projected revenue increase needs are subject change based on future rate evaluations, given changes in cost escalation, customer base, customer demand patterns, and capital financing needs. There may be material differences in future conditions that are unknown at this time. Using the latest data available and the conservative assumptions detailed in this report, the ten-year expense vs. revenue and cash balance projections are shown in Exhibits 6-2 and 6-3.

Exhibit 6-2 Ten-Year Expense vs. Revenue Projection

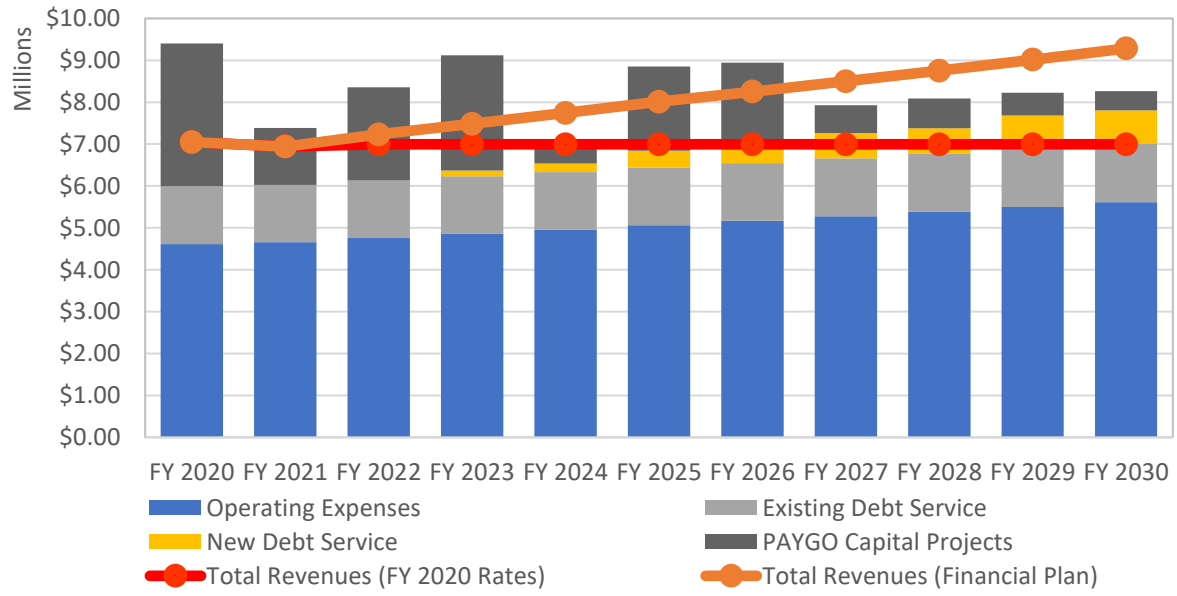
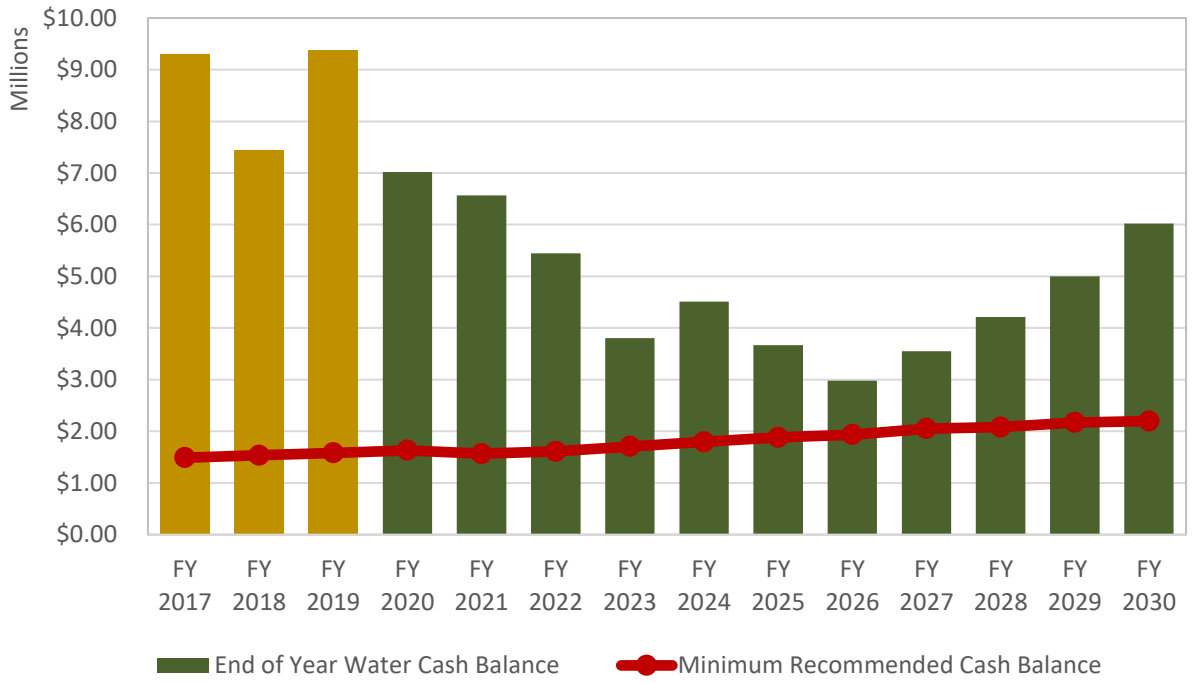


Exhibit 6-3 Ten-Year Cash Balance Projection



With gradual revenue increases beginning in FY 2022, the City will be able to draw down on reserves in the early years of the projections. As revenues increase to match expenses, the City balances annual revenues and expenses and maintains cash reserves in the out years of the projections.

Section 7
FINDINGS AND RECOMMENDATIONS

The following findings and recommendations are based on our analysis and the feedback from City staff and elected officials during the rate study work session held on February 22, 2021.

Findings

- The City's water system is well managed financially and operationally.
- The City's planned capital spending is appropriate for the size and value of the City's system and reflects a sufficient level of investment in the City's water infrastructure.
- The City's FY 2020 water rates and fees are not adequate to fully fund the future operating, capital, and reserve requirements of the City's system.
- The City's fire protection rates are not aligned with industry standard Fireline fee calculation methodology.
- The City's cost to provide billing service to the Galesburg Sanitary District (GSD) is higher than the current revenue generated by the City's fee to the GSD.

Based on the above stated findings, NewGen recommends several action items to address the necessary revenue increases needed within the water fund.

Recommendations

- Increase water rates and fees by the following amounts in each of the next five years:

Table 7-1
Recommended Revenue Increases

	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Fire Protection Fees	0.0%	3.5%	3.5%	3.5%	3.5%
Retail Facility Fees	0.0%	3.5%	3.5%	3.5%	3.5%
Retail Usage rates per CCF	0.0%	3.5%	3.5%	3.5%	3.5%
Wholesale Facility Fees	0.0%	3.5%	3.5%	3.5%	3.5%
Wholesale Usage rates per CCF	0.0%	3.5%	3.5%	3.5%	3.5%
Wholesale Usage rates per CCF	0.0%	3.5%	3.5%	3.5%	3.5%

- Adjust the fee charged to the GSD for billing services from 3.0% of revenues collected to 5.0%.
- Increase Fire Line Fees as follows:

Table 7-2
Recommended Monthly Fireline Rates

Meter Size (inches)	# of Connections	Current FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Inside City							
2"	2	$8.75	$8.75	$9.06	$9.37	$9.70	$10.04
3"	1	$10.50	$10.50	$10.87	$11.25	$11.64	$12.05
4"	52	$12.25	$12.25	$12.68	$13.12	$13.58	$14.06
6"	80	$15.75	$15.75	$16.30	$16.87	$17.46	$18.07
8"	31	$19.25	$19.25	$19.92	$20.62	$21.34	$22.09
10"	4	$24.50	$24.50	$25.36	$26.25	$27.16	$28.11
12"	-	$29.75	$29.75	$30.79	$31.87	$32.98	$34.14

- Evaluate the potential Facility Fee and CCF rate alternatives in this report and, if the determination is made to adopt any changes:
  - ✓ Reach out to any customer or customer classes that may be impacted by the change in rate structure.
  - ✓ Test the new rate structure within the City's billing software to ensure that the revenue generated by the new fees is close to the projected revenues contained in this report.
- Identify low-income customers and programs that may assist them in addressing water service affordability, particularly if the City does not adopt any change in its rate structure.

NewGen Strategies & Solutions

THANK YOU!

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