

**VILLAGE OF DOWNERS GROVE**  
**Report for the Village Council**  
**7/9/2019**

<b>SUBJECT:</b>	<b>SUBMITTED BY:</b>
Water Rate Study Agreement	Judy Buttny Finance Director

**SYNOPSIS**

A motion is requested to authorize an agreement with Stantec Consulting Services Inc., of Washington DC for a water rate study in a not-to-exceed amount of \$29,744.

**STRATEGIC PLAN ALIGNMENT**

The goals for 2017-2019 include *Steward of Financial, Environmental and Neighborhood Sustainability and Top Quality Infrastructure.*

**FISCAL IMPACT**

The FY19 Budget provides \$40,000 in the Water Fund for this service.

**RECOMMENDATION**

Approval on the July 9, 2019 Consent Agenda.

**BACKGROUND**

The goal of the water rate study is to review current and future water rates to ensure adequate funding is available for current operations and maintenance as well as for identified capital maintenance and improvement projects into the future. The objectives of this project include:

1. Proposing water rates that:
  - Are fair and objective and ensure that water service is provided on a self-supporting basis
  - Fund capital projects as identified and approved in the Village's Community Investment Plan
  - Encourage water conservation
2. Develop a sound financial plan for a ten-year period to support the operation, maintenance, capital replacement, and future regulatory requirements of the Water Fund.
3. Review system development charges for water and make recommendations.
4. Review current reserve policy for operations, capital replacement and emergencies, and make recommendations for improvements, if needed.

The Village issued a Request for Proposal (RFP) to analyze and update water rates in June 2019 and received 4 responses. A staff team reviewed the RFP responses and recommends Stantec Consulting Services Inc. The key criteria utilized by staff in evaluating the proposals were experience, qualifications of assigned staff, fee, and the firm's approach to the project. Stantec is a specialized management consulting practice that has extensive experience in the financial and management needs of public sector infrastructure.

The Village last conducted a comprehensive water rate study in 2010. Through the study, the Village determined that water rates as of 2010 were not generating adequate revenues to cover the costs of operating and maintaining the water system in 2011 or future years. The study concluded that the Village should restructure water rates to a uniform rate structure with a base rate relating to meter size and a consumption charge per 100 cubic feet, increase water rates, make needed improvements to the water system, and issue bonds at regular intervals to pay for water system improvements. These rates have been increased during the past nine years in order to keep up with increased material and personnel costs and aging infrastructure replacement.

To continue to construct replacement watermains throughout the system, the Village issued \$10 million in bonds in 2012 and \$5 million in 2015. In 2016 the Village entered into an agreement with the Illinois Environmental Protection Agency for low interest water loans from 2016-20. The debt service payments on these borrowings are below market rates and are less than projected in the water rate model. Consequently, the Village has been able to minimize rate increases since the cost of financing infrastructure improvements has been less than anticipated.

## **ATTACHMENTS**

Agreement

Village of Downers Grove



## REQUEST FOR PROPOSAL (Professional Services)

Name of Proposing Company: Stantec Consulting Services Inc.

Project Name: Consulting Services to Analyze and Update Water Utility Rates & System Development Charges

Proposal No.: RFP-0-45-2019/DC

Proposal Due: Tuesday, July 2nd @ 3:00pm

**Required of Awarded Contractor:**

Certificate of Insurance: Required

Legal Advertisement Published: June 21, 2019

Date Issued: June 21, 2019

This document consists of 25 pages.

Return **original** and **two duplicate copies** of proposal in a **sealed envelope** marked with the Proposal Number as noted above to:

JUDY BUTTNY  
FINANCE DIRECTOR  
VILLAGE OF DOWNERS GROVE  
801 BURLINGTON AVENUE  
DOWNERS GROVE, IL 60515  
PHONE: 630/434-5528  
FAX: 630/434- 5571  
[www.downers.us](http://www.downers.us)

Village of Downers Grove

The VILLAGE OF DOWNERS GROVE will receive proposals Monday thru Friday, 8:00 A.M. to 5:00 P.M. at the Village Hall, 801 Burlington Avenue, Downers Grove, IL 60515.

**SPECIFICATIONS MUST BE MET AT THE TIME THE PROPOSAL IS DUE.**

The Village Council reserves the right to accept or reject any and all proposals, to waive technicalities and to accept or reject any item of any proposal.

The documents constituting component parts of this Contract are the following:

- I. REQUEST FOR PROPOSALS
- II. TERMS & CONDITIONS
- III. DETAILED SPECIFICATIONS
- IV. PROPOSER'S RESPONSE TO RFP (Professional Services)
- V. PROPOSAL/CONTRACT FORM

**DO NOT DETACH ANY PORTION OF THIS DOCUMENT. INVALIDATION COULD RESULT.** Proposers MUST submit an original, and 2 additional paper copies of the total proposal.

Upon formal award of the proposal this RFP document shall become the Contract, the successful Proposer will receive a copy of the executed Contract.

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**I. REQUEST FOR PROPOSALS****1. GENERAL**

- 1.1 Notice is hereby given that the Village of Downers Grove will receive sealed Proposals up to Tuesday, July 2nd @ 3:00pm.
- 1.2 Proposals must be received at the Village of Downers Grove by the time and date specified. Proposals received after the specified time and date will not be accepted and will be returned unopened to the Proposer.
- 1.3 Proposal forms shall be sent to the Village of Downers Grove, ATTN: Judy Buttny, in a sealed envelope marked "SEALED PROPOSAL". The envelope shall be marked with the name of the project, date, and time set for receipt of Proposals.
- 1.4 All Proposals must be submitted on the forms supplied by the Village and signed by a proper official of the company submitting the Proposal. Telephone, email and fax Proposals will not be accepted.
- 1.5 By submitting this Proposal, the Proposer certifies under penalty of perjury that they have not acted in collusion with any other Proposer or potential Proposer.

**2. PREPARATION OF PROPOSAL**

- 2.1 It is the responsibility of the Proposer to carefully examine the specifications and proposal documents and to be familiar with all of the requirements, stipulations, provisions, and conditions surrounding the proposed services. **DO NOT SUBMIT A PROPOSED CONTRACT. UPON ACCEPTANCE BY THE VILLAGE, THIS RFP DOCUMENT SHALL BECOME A BINDING CONTRACT.**
- 2.2 No oral or telephone interpretations of specifications shall be binding upon the Village. All requests for interpretations or clarifications shall be made in writing and received by the Village at least five (5) business days prior to the date set for receipt of Proposals. All changes or interpretations of the specifications shall be made by the Village in a written addendum to the Village's proposers of record.
- 2.3 In case of error in the extension of prices in the Proposal, the hourly rate or unit price will govern. In case of discrepancy in the price between the written and numerical amounts, the written amount will govern.
- 2.4 All costs incurred in the preparation, submission, and/or presentation of any Proposal including any Proposer's travel or personal expenses shall be the sole responsibility of the Proposer and will not be reimbursed by the Village.
- 2.5 The Proposer hereby affirms and states that the prices quoted herein constitute the total cost to the Village for all work involved in the respective items and that this cost also includes all insurance, bonds, royalties, transportation charges, use of all tools and equipment, superintendence, overhead expense, all profits and all other work, services and conditions

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necessarily involved in the work to be done and materials to be furnished in accordance with the requirements of the Contract Documents considered severally and collectively.

### **3. MODIFICATION OR WITHDRAWAL OF PROPOSALS**

- 3.1 A Proposal that is in the possession of the Village may be altered by a letter bearing the signature of the person authorized for submitting a Proposal, provided that it is received prior to the time and date set for the Proposal opening. Telephone, email or verbal alterations of a Proposal will not be accepted.
- 3.2 A Proposal that is in the possession of the Village may be withdrawn by the Proposer, up to the time set for the Proposal opening, by a letter bearing the signature of the person authorized for submitting Proposals. Proposals may not be withdrawn after the Proposal opening and shall remain valid for a period of ninety (90) days from the date set for the Proposal opening, unless otherwise specified.

### **4. RESERVED RIGHTS**

- 4.1 The Village reserves the exclusive right to waive sections, technicalities, irregularities and informalities and to accept or reject any and all Proposals and to disapprove of any and all subcontractors as may be in the best interest of the Village. Time and date requirements for receipt of Proposals will not be waived.

## **II. TERMS AND CONDITIONS**

### **5. VILLAGE ORDINANCES**

- 5.1 The successful Proposer will strictly comply with all ordinances of the Village of Downers Grove and laws of the State of Illinois.

### **6. USE OF VILLAGE'S NAME**

- 6.1 The Proposer is specifically denied the right of using in any form or medium the name of the Village for public advertising unless express permission is granted by the Village.

### **7. INDEMNITY AND HOLD HARMLESS AGREEMENT**

- 7.1 To the fullest extent permitted by law, the Proposer shall indemnify, keep and save harmless the Village and its agents, officers, and employees, against all injuries, deaths, losses, damages, claims, suits, liabilities, judgments, costs and expenses, which may arise directly or indirectly from any negligence or from the reckless or willful misconduct of the Proposer, its employees, or its subcontractors, and the Proposer shall at its own expense, appear, defend and pay all charges of attorneys and all costs and other expenses arising therefrom or incurred in connection therewith, and, if any judgment shall be rendered against the Village in any such action, the Proposer shall, at its own expense, satisfy and discharge the same. This agreement shall not be construed as requiring the Proposer to indemnify the Village for its own negligence. The Proposer shall indemnify, keep and save harmless the Village only where a loss was caused by the negligent, willful or reckless acts or omissions of the Proposer, its employees, or its subcontractors.

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**8. NONDISCRIMINATION**

8.1 Proposer shall, as a party to a public contract:

- (a) Refrain from unlawful discrimination in employment and undertake affirmative action to assure equality of employment opportunity and eliminate the effects of past discrimination;
- (b) By submission of this Proposal, the Proposer certifies that it is an "equal opportunity employer" as defined by Section 2000(e) of Chapter 21, Title 42, U.S. Code Annotated and Executive Orders #11136 and #11375, which are incorporated herein by reference. The Equal Opportunity clause, Section 6.1 of the Rules and Regulations of the Department of Human Rights of the State of Illinois, is a material part of any contract awarded on the basis of this Proposal.

8.2 It is unlawful to discriminate on the basis of race, color, religion, sex, marital status, national origin or ancestry, age, physical or mental disability unrelated to ability, military status, order of protection status, sexual orientation, sexual identity, or an unfavorable discharge from military service. Proposer shall comply with standards set forth in Title VII of the Civil Rights Act of 1964, 42 U.S.C. Sec. 2000 et seq., The Human Rights Act of the State of Illinois, 775 ILCS 5/1-101 et. seq., and The Americans With Disabilities Act, 42 U.S.C. Sec. 12101 et. seq.

**9. SEXUAL HARASSMENT POLICY**

9.1 The Proposer, as a party to a public contract, shall have a written sexual harassment policy that:

- 9.1.1 Notes the illegality of sexual harassment;
- 9.1.2 Sets forth the State law definition of sexual harassment;
- 9.1.3 Describes sexual harassment utilizing examples;
- 9.1.4 Describes the Proposer's internal complaint process including penalties;
- 9.1.5 Describes the legal recourse, investigative and complaint process available through the Illinois Department of Human Rights and the Human Rights Commission and how to contact these entities; and
- 9.1.6 Describes the protection against retaliation afforded under the Illinois Human Rights Act.

**10. EQUAL EMPLOYMENT OPPORTUNITY**

10.1 In the event of the Proposer's non-compliance with the provisions of this Equal Employment Opportunity Clause, the Illinois Human Rights Act or the Rules and Regulations of the Illinois Department of Human Rights ("Department"), the Proposer may be declared ineligible for future contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations, and the Contract may be canceled or voided in whole or in part, and such other sanctions or penalties may be imposed or remedies invoked as provided by statute or regulation. During the performance of this Contract, the Proposer agrees as follows:

- 10.1.1 That it will not discriminate against any employee or applicant for employment

## Village of Downers Grove

because of race, color, religion, sex, marital status, national origin or ancestry, age, physical or mental disability unrelated to ability, order of protection status, military status, sexual orientation, sexual identity or an unfavorable discharge from military service; and further that it will examine all job classifications to determine if minority persons or women are underutilized and will take appropriate affirmative action to rectify any such underutilization.

- 10.1.2 That, if it hires additional employees in order to perform this Contract or any portion thereof, it will determine the availability (in accordance with the Department's Rules and Regulations) of minorities and women in the area(s) from which it may reasonably recruit and it will hire for each job classification for which employees are hired in such a way that minorities and women are not underutilized.
- 10.1.3 That, in 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, physical or mental disability unrelated to ability, order of protection status, military status, sexual orientation, or an unfavorable discharge from military services.
- 10.1.4 That it will 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 Proposer's obligations under the Illinois Human Rights Act and the Department's Rules and Regulations. If any such labor organization or representative fails or refuses to cooperate with the Proposer in its efforts to comply with such Act and Rules and Regulations, the Proposer will promptly so notify the Department and the contracting agency and will recruit employees from other sources when necessary to fulfill its obligations thereunder.
- 10.1.5 That it will submit reports as required by the Department's Rules and Regulations, 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 the Department's Rules and Regulations.
- 10.1.6 That it will permit access to all relevant books, records, accounts and work sites by personnel of the contracting agency and the Department for purpose of investigation to ascertain compliance with the Illinois Human Rights Act and the Department's Rules and Regulations.
- 10.1.7 That it will include verbatim or by reference the provisions of this clause in every subcontract it awards under which any portion of the contract obligations are undertaken or assumed, so that such provisions will be binding upon such subcontractor. In the same manner as with other provisions of this Contract, 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.

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In addition, the Proposer will not utilize any subcontractor declared by the Illinois Human Rights Commission to be ineligible for contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations.

**11. DRUG FREE WORK PLACE**

Proposer, as a party to a public contract, certifies and agrees that it will provide a drug free workplace by:

- 11.1 Publishing a statement: (1) Notifying employees that the unlawful manufacture, distribution, dispensation, possession or use of a controlled substance, including cannabis, is prohibited in the Village's or Proposer's workplace. (2) Specifying the actions that will be taken against employees for violations of such prohibition. (3) Notifying the employee that, as a condition of employment on such contract or grant, the employee will: (A) abide by the terms of the statement; and (B) notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five (5) days after such conviction.
- 11.2 Establishing a drug free awareness program to inform employees about: (1) the dangers of drug abuse in the workplace; (2) the Village's or Proposer's policy of maintaining a drug free workplace; (3) any available drug counseling, rehabilitation and employee assistance programs; (4) the penalties that may be imposed upon employees for drug violations.
- 11.3 Providing a copy of the statement required above to each employee engaged in the performance of the contract or grant and to post the statement in a prominent place in the workplace.
- 11.4 Notifying the contracting or granting agency within ten (10) days after receiving notice of any criminal drug statute conviction for a violation occurring in the workplace from an employee or otherwise receiving actual notice of such conviction.
- 11.5 Imposing a sanction on, or requiring the satisfactory participation in a drug abuse assistance or rehabilitation program by, any employee who is so convicted as required by section 5 of the Drug Free Workplace Act.
- 11.6 Assisting employees in selecting a course of action in the event drug counseling, treatment and rehabilitation is required and indicating that a trained referral team is in place.
- 11.7 Making a good faith effort to continue to maintain a drug free workplace through implementation of the Drug Free Workplace Act.

**12. PATRIOT ACT COMPLIANCE**

- 12.1 The Proposer represents and warrants to the Village that neither it nor any of its principals, shareholders, members, partners, or affiliates, as applicable, is a person or entity named as a Specially Designated National and Blocked Person (as defined in Presidential Executive Order 13224) and that it is not acting, directly or indirectly, for or on behalf of a Specially Designated National and Blocked Person. The Proposer further represents and warrants to the Village that the Proposer and its principals, shareholders, members, partners, or affiliates, as applicable are not, directly or indirectly, engaged in, and are not facilitating, the

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transactions contemplated by this Contract on behalf of any person or entity named as a Specially Designated National and Blocked Person. The Proposer hereby agrees to defend, indemnify and hold harmless the Village, and its elected or appointed officers, employees, agents, representatives, engineers and attorneys, from and against any and all claims, damages, losses, risks, liabilities and expenses (including reasonable attorney's fees and costs) arising from or related to any breach of the foregoing representations and warranties.

### **13. INSURANCE REQUIREMENTS**

- 13.1 The Proposer shall be required to obtain, from a company or companies lawfully authorized to do business in the jurisdiction in which the project is located, such general liability insurance which, at a minimum, will protect the Proposer from the types of claims set forth below which may arise out of or result from the Proposer's operations under this Contract and for which the Proposer may legally liable:
- 13.1.1 Claims under workers compensation, disability benefit and other similar employee benefit acts which are applicable to the operation to be performed;
  - 13.1.2 Claims for damages resulting from bodily injury, occupational sickness or disease, or death of the Proposer's employees;
  - 13.1.3 Claims for damages resulting from bodily injury, sickness or disease, or death of any person other than the Proposer's employees;
  - 13.1.4 Claims for damages insured by the usual personal injury liability coverage which are sustained: (1) by a person as a result of an offense directly or indirectly related to employment of such person by the Proposer, or (2) by another person;
  - 13.1.5 Claims for damages, other than to the work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
  - 13.1.6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
  - 13.1.7 Claims for damages as a result of professional or any other type of negligent action by the Proposer or failure to properly perform services under the scope of the agreement between the Proposer and the Village.
- 13.2 The Proposer shall demonstrate having insurance coverage for a minimum of \$2 million for professional liability (errors and omissions).
- 13.3 As evidence of said coverages, Proposer shall provide the Village with certificates of insurance naming the Village of Downers Grove as an additional insured and include a provision for cancellation only upon at least 30 days prior notice to the Village.

### **14. CAMPAIGN DISCLOSURE**

- 14.1 Any contractor, proposer, bidder or vendor who responds by submitting a bid or proposal to the Village shall be required to submit with its submission, an executed Campaign

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Disclosure Certificate, attached hereto.

- 14.2 The Campaign Disclosure Certificate is required pursuant to the Village of Downers Grove Council Policy on Ethical Standards and is applicable to those campaign contributions made to any member of the Village Council.
- 14.3 Said Campaign Disclosure Certificate requires any individual or entity bidding to disclose campaign contributions, as defined in Section 9-1.4 of the Election Code (10 ILCS 5/9-1.4), made to current members of the Village Council within the five (5) year period preceding the date of the bid or proposal release.
- 14.4 By signing the bid or proposal documents, contractor/proposer/bidder/vendor agrees to refrain from making any campaign contributions as defined in Section 9-1.4 of the Election Code (10 ILCS 5/9-1.4) to any Village Council member and any challengers seeking to serve as a member of the Downers Grove Village Council.

### **15. SUBLETTING OF CONTRACT**

- 15.1 No contract awarded by the Village shall be assigned or any part subcontracted without the written consent of the Village Manager. In no case shall such consent relieve the Proposer from its obligation or change the terms of the Contract.

All approved subcontracts shall contain language which incorporates the terms and conditions of this Contract.

### **16. TERM OF CONTRACT**

- 16.1 The term of this Contract shall be as set forth in the Detail Specifications set forth in Section III below. This Contract is subject to the Village purchasing policy with regard to any extensions hereof.

### **17. TERMINATION OF CONTRACT**

- 17.1 In the event of the Proposer's nonperformance, breach of the terms of the Contract, or for any other reason, and/or that sufficient funds to complete the Contract are not appropriated by the Village, the Contract may be canceled, in whole or in part, upon the Village's written notice to the Proposer. The Village will pay the Proposer's costs actually incurred as of the date of receipt of notice of default. Upon termination, the Proposer will deliver all documents and products of whatever kind, and their reproducible originals related to the project, which have been produced to the date of the notice of termination.

### **18. BILLING & PAYMENT PROCEDURES**

- 18.1 Payment will be made upon receipt of an invoice referencing Village purchase order number. Once an invoice and receipt of materials or service have been verified, the invoice will be processed for payment in accordance with the Village payment schedule. The Village will comply with the Local Government Prompt Payment Act, 50 ILCS 505/1 et seq., in that any bill approved for payment must be paid or the payment issued to the Proposer within 60 days of receipt of a proper bill or invoice. If payment is not issued to the Proposer within this 60 day period, an interest penalty of 1.0% of any amount approved and unpaid shall be added for each month or fraction thereof after the end of this 60 day period, until final payment is

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made.

- 18.2 The Village shall review in a timely manner each bill or invoice after its receipt. If the Village determines that the bill or invoice contains a defect making it unable to process the payment request, the Village shall notify the Proposer requesting payment as soon as possible after discovering the defect pursuant to rules promulgated under 50 ILCS 505/1 et seq. The notice shall identify the defect and any additional information necessary to correct the defect.
- 18.3 Please send all invoices to the attention of Village of Downers Grove, Accounts Payable, 801 Burlington, Downers Grove, IL 60515.

**19. RELATIONSHIP BETWEEN THE PROPOSER AND THE VILLAGE**

- 19.1 The relationship between the Village and the Proposer is that of a buyer and seller of professional services and it is understood that the parties have not entered into any joint venture or partnership with the other.

**20. STANDARD OF CARE**

- 20.1 Services performed by Proposer under this Contract will be conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions. No other representations express or implied, and no warranty or guarantee is included or intended in this Contract, or in any report, opinions, and documents or otherwise.
- 20.2 If the Proposer fails to meet the foregoing standard, Proposer will perform at its own cost, and without reimbursement from the Village, the professional services necessary to correct errors and omissions caused by Proposer's failure to comply with the above standard and reported to Proposer within one (1) year from the completion of Proposer's services for the Project.
- 20.3 For Professional Service Agreements: Project site visits by Proposer during construction or equipment installation or the furnishing of Project representatives shall not make Proposer responsible for: (i) constructions means, methods, techniques, sequences or procedures; (ii) for construction safety precautions or programs; or (iii) for any construction contractor(s') failure to perform its work in accordance with contract documents.

**21. GOVERNING LAW AND VENUE**

- 21.1 This Contract will be governed by and construed in accordance with the laws of the State of Illinois without regard for the conflict of laws provisions. Venue is proper only in the County of DuPage and the Northern District of Illinois.

**22. SUCCESSORS AND ASSIGNS**

- 22.1 The terms of this Contract will be binding upon and inure to the benefit of the parties and their respective successors and assigns; provided, however, that neither party will assign this Contract in whole or in part without the prior written approval of the other. The Proposer will provide a list of key staff, titles, responsibilities, and contact information to include all

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expected subcontractors.

**23. WAIVER OF CONTRACT BREACH**

23.1 The waiver by one party of any breach of this Contract or the failure of one party to enforce at any time, or for any period of time, any of the provisions hereof will be limited to the particular instance and will not operate or be deemed to waive any future breaches of this Contract and will not be construed to be a waiver of any provision except for the particular instance.

**24. AMENDMENT**

24.1 This Contract will not be subject to amendment unless made in writing and signed by all parties.

**25. NOT TO EXCEED CONTRACT**

25.1 The contract price is a "not-to-exceed" cost. At any time additional work is necessary or requested, and the not-to-exceed price is increased thereby, any change, addition or price increase must be agreed to in writing by all parties who have executed the Contract.

**26. SEVERABILITY OF INVALID PROVISIONS**

26.1 If any provisions of this Contract are held to contravene or be invalid under the laws of any state, country or jurisdiction, contravention will not invalidate the entire Contract, but it will be construed as if not containing the invalid provision and the rights or obligations of the parties will be construed and enforced accordingly.

**27. NOTICE**

27.1 Any notice will be in writing and will be deemed to be effectively served when deposited in the mail with sufficient first class postage affixed, and addressed to the party at the party's place of business. Notices shall be addressed to the Village as follows:

**Village Manager  
Village of Downers Grove  
801 Burlington Ave.  
Downers Grove, IL 60515**

And to the Proposer as designated in the Contract Form.

**28. COOPERATION WITH FOIA COMPLIANCE**

28.1 Contractor acknowledges that the Freedom of Information Act does apply to public records in possession of the Contractor or a subcontractor. Contractor and all of its subcontractors shall cooperate with the Village in its efforts to comply with the Freedom of Information Act. (5 ILCS 140/1 et seq.)

**30. COPYRIGHT or PATENT INFRINGEMENT**

30.1 The Proposer agrees to indemnify, defend, and hold harmless the Village against any suit, claim, or proceeding brought against the Village for alleged use of any equipment, systems, or services provided by the Proposer that constitutes a misuse of any proprietary or trade secret information or an infringement of any patent or copyright.

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**III. DETAIL SPECIFICATIONS****CONSULTING SERVICES TO ANALYZE AND UPDATE WATER UTILITY RATES & SYSTEM DEVELOPMENT CHARGES****Introduction**

The Village of Downers Grove is requesting proposals from qualified consultants to conduct a two part analysis. The first component of this project will be a comprehensive water rate study. The goal of this study is to independently assess and evaluate the Village's existing water delivery service cost structure and provide a new 10-year plan with rates and guidelines. The broad objective of the study is to adequately fund water utility operations and infrastructure costs, while minimizing rates to the greatest degree possible. The study will be based on a comprehensive review of the Village of Downers Grove's water fund and budgets, customer classes, current usage data, future planned growth of the Village, Water Master Plans, and any other information deemed necessary. A second component of this project will be a review of existing system development charges for Water.

**Description**

Downers Grove is located in DuPage County, Illinois, approximately 22 miles west of Chicago. Convenient access to Chicago via rail and several major expressways make Downers Grove a prime location to live, work and do business. Several major corporations have business operations in Downers Grove including Advocate Health Care, Dover Corporation, Pepperidge Farm, DeVry, Inc. and Sanford, maker of Sharpie and Paper Mate. Highly ranked schools were a top factor in Downers Grove being named one of the Top 10 Livable Cities for kids by Livability.com. Downers Grove has also been recognized by Forbes as one of America's Friendliest Towns. The current population is 48,867. Service is provided to approximately 17,000 water accounts. The Village's total budgeted revenues/expenditures for fiscal year 2019 are \$20.5M/\$23.5M for the water fund with an ending fund balance of \$7.4M. Cash balances were built up to allow for cash funding of capital projects, which will be spent over the next several years. The Village uses Tyler's Eden accounting software on a Windows based server.

**Background**

The Village last conducted a comprehensive water rate study in 2010. Through the study, the Village determined that water rates as of 2010 were not generating adequate revenues to cover the costs of operating and maintaining the water system in 2011 or future years. The study concluded that the Village should restructure water rates to a uniform rate structure with a base rate relating to meter size and a consumption charge per 100 cubic feet, increase water rates, make needed improvements to the water system, and issue bonds at regular intervals to pay for water system improvements. These rates have been increased during the past nine years in order to keep up with increased material and personnel costs and aging infrastructure replacement.

To continue to construct replacement watermains throughout the system, the Village issued \$10 million in bonds in 2012 and \$5 million in 2015. In 2016 the Village entered into an agreement with the Illinois Environmental Protection Agency for low interest water loans from 2016-20. The debt service payments on these borrowings are below market rates and are less than

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projected in the water rate model. Consequently, the Village has been able to minimize rate increases since the cost of financing infrastructure improvements has been less than anticipated.

### **Scope of Work**

#### **STUDY OBJECTIVES**

1. Propose water rates that:
  - are fair and objective, reflect costs of service, and ensure that water service is provided on a self-supporting basis
  - fund capital projects as identified and approved in the Village's Community Investment Plan
  - encourage water conservation
2. Develop a sound financial plan for a ten-year period to support the operation, maintenance, capital replacement, and future regulatory requirements of the Water Fund.
3. Review system development charges for water and make recommendations
4. Review current reserve policy for operations, capital replacement and emergencies, and make recommendations for improvements, if needed.

#### **C. STUDY REQUIREMENTS**

The study is to be performed in conformance with the following policy directions:

1. The recommended rates shall be based on a cost of service analysis, and a revenue sufficiency analysis in order to meet the short and long-term revenue requirements of the Village of Downers Grove's water utility operations.
2. The study shall recommend a rate structure that considers and makes provisions for the following factors:
  - a) Current and future cost of providing water in accordance with established and anticipated standards and regulations.
  - b) Projected demands.
  - c) Availability of supply.
  - d) Age and condition of system and the need to fund long-term capital projects.
  - e) Impact of current and future environmental regulations.
  - f) Other impacts as identified.
3. The recommended rate structure shall provide direct identification of revenues appropriate to fund operating activities and infrastructure.
4. Compare any proposed new rates to other utilities providing water services in the county and region.
5. The rate study shall be consistent with industry practice for utility rate making in Illinois. The study shall recommend a rate structure based upon standard rate practices that meet the criteria.
6. The recommended financial plan shall consider the type and amount of reserves appropriate to the Village's water operations taking into consideration reserves for cash flow, catastrophes, infrastructure replacement and other appropriate purposes.

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7. The rate study shall include an easy-to-use electronic model, in either Microsoft Excel or Access to be used by the Village of Downers Grove for future rate setting.

### D. STUDY ELEMENTS

In making its financial plan and rate recommendations, the final report shall explicitly include the following elements and analysis:

1. **Current Rate Structure:** Assess the current rate structure's performance as a baseline for comparing any recommended changes.
2. **Equity and Affordability:** Assess the equity and affordability of recommended water rates.
3. **Conservation Impacts:** Assess the interaction between the water conservation elements of the recommended rate structure and their impacts on the ability to fund water operations as well as their impact on the economic well-being of the community.
4. **Environmental Regulations:** The study shall include an assessment of the revenue stream generated by the recommended rate structure and its ability to continue to fully fund water system costs under the impacts of future water quality and environmental regulations and standards.
5. **Other Service Charges:** Assess existing customer service fee structure and identify other potential areas for service and system charges (shut-down activities, backflow devices, plan reviews, water service shut-offs, etc.) and recommend changes, if appropriate. Assessment is to note any resulting increase in liability the Village may incur as result of assessing the fees.
6. **Annual operating fund balance targets.** Recommend reserve levels for operating, capital replacement, bond requirements, as well as cash flow and unforeseen events.
7. **Electronic Rate Model.** Provide an easy-to-use electronic rate model for the Village of Downers Grove to use in future rate setting.

### E. SERVICES TO BE PROVIDED BY CONSULTANT

1. Conduct a detailed review of the existing water rates and status of the Water Fund, and develop a general familiarity with the Village of Downers Grove's billing system.
2. Meet or confer with staff as needed.
3. Attend two evening meetings to include presentation to the Village Council (VC), and Village Council public hearing where rates are considered for adoption.
4. Conduct analyses as required to address the scope of work.
5. Rate Study presentation and Draft Report:
  - a) Prepare report outlining rate survey and option analyses results and suggest preferred options available to best accomplish stated objectives.
  - b) Submit electronic, reproducible copies.
  - c) Meet with the Village Council to obtain preferred option(s) for further evaluation.
6. Final Report
  - a) Incorporate changes pursuant to comments received at the Village Council formal public hearing.
  - b) Submit electronic, reproducible copies.
  - c) Provide a disk with report in MS Word format, with spreadsheets in Excel format.

## Village of Downers Grove

7. Supply a time schedule for developing the preliminary and final reports. The final report shall be delivered to the Village by September 30, 2019.
8. Provide an easy-to-use electronic rate model in MS Excel or Access for the Village of Downers Grove to use in future rate setting.

### F. SERVICES TO BE PROVIDED BY THE VILLAGE OF DOWNERS GROVE

The services to be provided by the Village of Downers Grove include, but are not necessarily limited to the following:

1. Furnish all reasonably available records and information, including financial reports, budgets, consumption data, meter sizes and customer classes for the Village of Downers Grove.
2. Provide information on the Village's Community Investment Plan.
3. Provide staff support and assistance as required and agreed to in advance of the study.

### PROPOSAL SUBMITTAL

#### A. TECHNICAL PROPOSAL

The following information is to be submitted as part of the proposal. The proposal is not to be more than twelve pages in length including single page resumes of persons to be assigned to the project. Five copies of the proposal are to be provided. Other material may be attached as deemed appropriate, to include a copy of a rate study performed by the applicant that most closely fits the scope of work outlined above. The proposal is to be organized as follows:

1. **Approach to the Project:** Describe your approach to this project and any special ideas, techniques or suggestions that you think might make the project proceed smoothly.
2. **Experience:** Describe the experience of the firm and of the individuals assigned with related projects of a similar nature. Provide at least three references for recent projects of similar scope.
3. **Qualifications:** Describe your staff's unique qualifications and training for this type of work.
4. **Schedule:** Describe your plan/schedule for completing the work.
5. **Fee:** Provide a Time and Materials "Not to Exceed" fee for proposed scope with hourly rate for assigned staff.

#### B. SELECTION OF CONSULTANT

A technical review committee will evaluate the proposals. The following criteria (listing in alphabetical order) will be used to evaluate consultants' proposals:

- Capability and qualifications of consulting firm and key project personnel to handle the project in terms of workload, experience, and efficient staff utilization.
- Fee

## Village of Downers Grove

- Recent successful water rate studies completed and implemented with analysis of results
- Technical approach in evaluating and setting rate structures.
- Understanding of the project.

Final selection will be based on the evaluation of proposals unless it is deemed necessary by the committee to conduct interviews. The consultant determined best qualified to perform this project will be recommended to the Village Council for contract award.

The Village of Downers Grove reserves the right to reject any and all proposals for any reason deemed appropriate by the Village.

## Village of Downers Grove

## IV. PROPOSER'S RESPONSE TO RFP (Professional Services)

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### 1. UNDERSTANDING AND APPROACH TO THE PROJECT

#### UNDERSTANDING

The Village of Downers Grove (Village) manages an extensive water distribution system that provide water service to approximately 17,000 water accounts within the Village. It has been nearly ten years since the Village last formally examined its water rates. Since the last rate study, the Village has exercised prudent financial management of the system including the use of Illinois EPA (IEPA) low interest water loans to fund capital investments in the water system, which have helped to reduce the cost of financing system improvements.

Based on effective management of the Water Fund, the Village currently maintains a cash balance of approximately \$7.4 million in the fund. To ensure the continued financial health and stability of the Water Fund, the Village desires to engage an independent consultant to complete a comprehensive rate study. The study should examine existing water rates and other charges (including system development charges) and provide a 10-year financial plan.

Stantec Consulting Services is pleased to provide the following proposal to complete the requested services. Our project team will be led by David Hyder, who served as the project manager for the last water rate study completed for the Village in 2010. David also managed the development of the Village's stormwater utility in 2012. David's experience working for and with the Village will be complemented by a project team, resources, and financial modeling tools that will allow Stantec to complete the water rate study in an extremely effective and efficient manner. Our project team will deliver a comprehensive water rate study within the specific schedule requested by the Village. The remainder of our proposal outlines our approach, experience, qualification, schedule and fee to complete the study.

#### APPROACH

Our approach to conducting a water rate study is centered on our **interactive decision support process** that engages **your staff, Council, and other stakeholders**. While our team will facilitate all aspects of the study, provide industry expertise, and give specific recommendations, we believe that input that the Village provides is essential to achieving successful outcomes.

It is vital for the study to reflect the unique nature and specific needs of the Village, and it is vitally important that the Village and key stakeholders participate along the way. Our interactive process effectively facilitates this input in an efficient manner while providing transparency and ultimately a comprehensive review of Village's water utility system. Our approach to completing the study is outlined below with a narrative description of each task we will complete as part of the study.

We actively promote our interactive approach because it showcases our strengths: **strong communication, thought leadership, innovative solutions, and transparent modeling tools**.

#### Task 1: Project Initiation & Data Collection

To initialize the study, we will submit a data request to the Village. Shortly thereafter, we will conduct a Kickoff Meeting with staff to:

- discuss key goals and objectives of the study;
- discuss key issues, roles and responsibilities for all members participating in the study;
- confirm data requirements; and
- discuss the data already received and finalize the project schedule, including milestones and deliverables.

Once all data has been received, we will review it in detail – including reports, past studies, historical information, etc. Follow-up calls with staff will be made to ensure full understanding of all data received.

**Task 2: Determine Revenue Requirements and Revenue Sufficiency**

We will prepare an analysis to determine the revenue required to support Village Water Fund. This will include the identification of the full water system revenue requirements (operations and maintenance, existing debt service and future capital). We will use our financial model to develop a long-term financial management plan for the water system (a projection period of at least 10-years) and will identify projected annual revenue requirements. The projection of revenue requirements will be compared with a forecast of water revenues at current rates, to determine the sufficiency of the rates to meet the needs of the water system over a ten-year period.

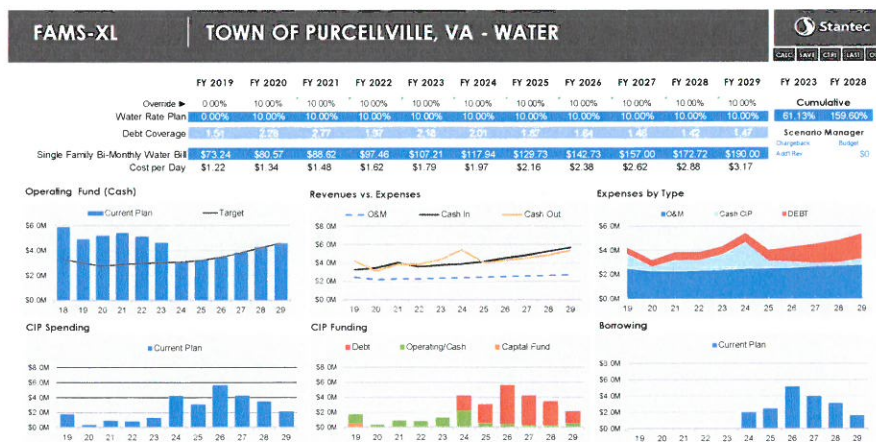
Within the model, we will examine historical operating expenses (budget execution), growth and consumption trends, alternative capital improvement spending levels, debt service coverage ratios, levels of operating and capital reserves, and other financial policies that drive the revenue requirements of the water utility.

Through our experience with local and national municipal utilities, along with our participation in industry groups and rating agencies, we are uniquely able to provide insight and recommendations for certain key financial policies related to debt coverage, reserve levels, and capital funding strategies.

In addition to evaluating financial goals and objectives, we will also evaluate alternative demand projections, cost escalation factors, changes in usage patterns, elasticity of customer demand in response to rate increases, and other variables that could affect the financial performance of the water utility. The financial model allows for the distinction of revenue types by customer class that can be grouped into fixed and variable components.

One item of particular importance in a utility’s financial plan is the projection of volumetric sales, especially as it relates to the possibility of adopting rate structure changes. Water consumption patterns are influenced by price signals, and this change in customer behavior can be enhanced by other non-price factors, such as rainfall and economic conditions. We will incorporate estimates of price elasticity and analyze estimates of the probable range of responses to different degrees of rate increases and rate structure changes. Additionally, our project team will conduct a detailed analysis of historical water usage and weather patterns within the Village that will be used to develop water usage forecasts utilized in the financial model.

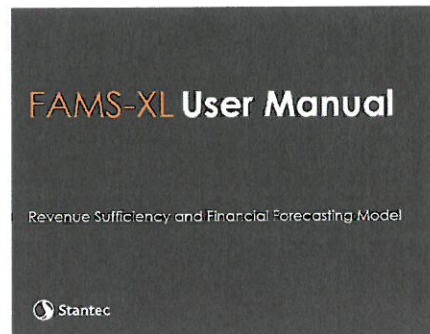
Our financial model provides a valuable capital planning tool which we will use to review the Village’s projections for capital improvements, and to evaluate the impacts of alternative projects, costs, timing, and funding sources. For all scenarios reviewed, the financial model will develop a funding plan, including the identification of the amount, timing, and type of borrowing required as may be necessary. We will examine the water utility’s use of debt versus cash financing for capital improvements and build a financing plan to support a proper balance of debt coverage and rate stabilization over the planning period.



The financial plan will also address the impacts of potential costs associated with environmental regulations (both operating costs and capital costs). The potential impacts of new regulations will be quantified and documented in the study.

At the conclusion of the study, we will provide the Village with financial modeling tools used during the study at no additional cost. The models you will receive are fully functioning Excel-based models and can be used by staff for future updates.

We will prepare customized user manual for the model as well as onsite training for staff to ensure the future beneficial use of the model by the Village. For each tab of the model, the user manuals present the purpose and important features of each tab, describe how to update each tab, and identify other tabs within the model that are dependent upon or linked to each tab.



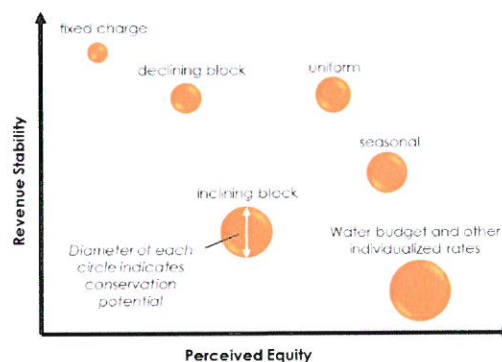
### Task 3: Financial Plan Development

Based on the revenue sufficiency analysis and financial model development completed in Task 2, our project team will examine and develop financial management plans of annual rate adjustments necessary to meet the needs of the water system. Multiple financial plans will be developed for discussion with Village staff including plans that provide gradual rate adjustments, one-time adjustments and combinations. The goal of this task is to develop an optimal financial plan for a ten-year projection period. The financial management plans will include an evaluation of the adequacy of the Village's current utility reserves.

Adequate reserves are fundamental to achieving financial stability and can help some systems to avoid sudden or disruptive rate adjustments in the face of unanticipated operating or capital needs or changes in demand. We will examine the Village's current reserve balances and incorporate these balances and alternative reserve policies into the financial planning model and financial plan.

### Task 4: Evaluate Rate Structure, Affordability and Benchmarking

As part of the study, our project team will examine the performance of the current rate structure. This review will include an assessment of the equity of the structure based on how the structure recovers the cost of providing water service to the Village customer base. Our project team will assess the portion of the system revenue requirements recovered from the fixed portion of the water rates and the costs recovered from the variable water usage rates. Based on our review of the existing water rate structure we will provide an assessment of the performance and document any appropriate modifications.



Our project team will evaluate the affordability of water service within the Village at the current rates and under the recommended financial plan. The affordability analysis will be based on the use of industry metrics such as the guidance provided by the U.S. EPA regarding the utility bill as a portion of the median household income within the service area.

Finally, as part of this task we will complete a benchmarking analysis of water rates for comparable communities to demonstrate how the Village water rates and customer bills compare with surrounding and comparable water systems.

### Task 5: Evaluation of Other Service Charges

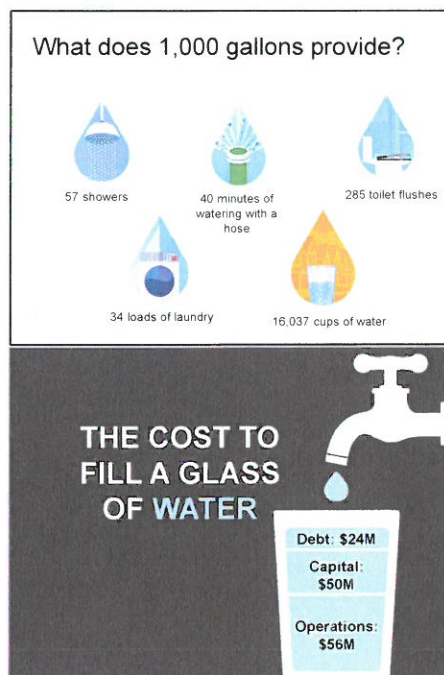
The Village imposes a number of services fees and charges associated with providing water service outside of normal water usage rates. The purpose of this task will be to evaluate the current service charges to determine if they are set at the appropriate level and if the structure of the fees is appropriate. The review will include an evaluation of the Village system development charges to ensure that the Village is recovering the cost of provide water service to new customers joining the Village water system and/or increasing

capacity demands on the water system. Specific recommendations will be developed and documented for the Village service charges to allow for potential implementation at the end of the study.

### Task 6: Report & Presentations

The Village will gain long-term value in a report that clearly and comprehensively documents the results of the study. We will first prepare a draft for your review, incorporate comments into a final draft report, and incorporate final comments into a final report. The report provides a simplified and straightforward synopsis of the analysis, and includes appendices that contain a series of graphs, charts, and tables that provide the supporting details of the study.

During and at the conclusion of the study, we will attend meetings with the Village Council to discuss various components of the study and specific recommendations. The meetings will be designed to answer specific questions and concerns from the Village Council in an effort to develop an agreed upon long-term financial plan for the Village water system. At the conclusion of the study, we will meet with the Village Council at a formal public hearing in support of the adoption of the water rate study recommendations. In total, we anticipate meeting with the Village Council on two occasions during the study.



## 2. EXPERIENCE

Not just a group of experienced professionals with relevant experience, we represent a team constructed to **provide technical diversity, years of experience, fresh approaches, national perspective, and knowledge of the County's needs**. We are pleased to present the Village with a complete and well-rounded project team. Our carefully selected project team has a depth of experience in each service requested by the Village, including:

- **Development of Multi-Year Financial Management Plans and Rate Programs**, for systems of similar size operated by local government agencies, including capital and operations & maintenance expense budgeting, grant funding, and ensuring financial best practices
- **Rate Structure Concepts** and their practical application to address specific local policy objectives (such as affordability, conservation, fixed cost recovery/revenue stability) while conforming to accepted industry practice and legal precedent (both nationally and locally)
- **Financial Policy Review** including the development of specific targets relative to various types of reserves, capital spending, debt levels, affordability, and other metrics
- **Development of Specific Fees and Charges**, including tap fees, connection fees, and system development charges
- **Preparation of Public Education and Outreach Initiatives**, including special purpose public engagement meetings and presentation of information about the rate study process, identification of key system issues/challenges, necessity of any rate adjustments, national trends and local benchmarking, as well as customer impacts

Our Financial Services Practice has over 30 professional consultants qualified to provide the requested services to the Village in the rare situation that a substitute team member is required. Moreover, we have team members who will dedicate a significant portion of their time to quality assurance and quality control reviews in order to provide internal auditing of the work products we prepare for the Village.

Resumes for the key project team members are provided on the following pages.



## David Hyder

*Project Manager*

David Hyder is a Principal with Stantec, applying engineering, environmental and financial expertise to a broad range of projects for clients. He has 20 years of professional experience, and he specializes in assisting public sector clients with the financial and managerial aspects of environmental infrastructure.

He has served as a project manager for hundreds of cost of service and rate studies for water, wastewater, storm water, reclaimed water and solid waste utilities, including development of financial plans, cost of service analysis, rate structure design and evaluation, and project reporting. He has also assisted several communities around the country with the establishment of storm water utilities.

David currently serves on the AWWA Rates and Charges Committee and served as a contributing author for the recent editions of the AWWA Manual M1 – Principles of Water Rates, Fees and Charges, including contributions to the System Development Charge chapter.

### Education

Master of Business Administration,  
Finance, Johns Hopkins University,  
2002

Bachelor of Science,  
Civil/Environmental Engineering,  
Michigan State University, 1998

### Membership

Rates and Charges Committee,  
American Water Works Association

### Publications & Presentations

Utility Management Conference: Budget  
Based Rates, February 2018

AWWA National: Pricing Reclaimed  
Water, An Approach that Makes Sense,  
June 2017

WEF National Conference: Basics of  
Water and Sewer Rates Workshop,  
September 2012

AWWA National: Declining Revenues  
and Your Rate Structure, June 2012

WE&T Magazine: Rate Setting for  
Community Systems, June 2009

Principals of Water Rates, Fees and  
Charges, AWWA Manual M1:  
Contributing Author, Sixth Addition

### Relevant Project Experience

#### Village of Glenview, Illinois

David recently served as project manager for a comprehensive financial plan and rate study for the Village. The study included a full utility cost of service and water rate study with a specific emphasis on identification and funding of system repair and replacement needs. Additional key focus areas included evaluation of system connection fees, water rate structure design with a focus on the development of appropriate fixed charges and full documentation of customer impacts.

#### City of Batavia, Illinois

David served as project manager for a comprehensive water and sewer rate study for the City, including the development of a financial forecasting model, cost of service analysis and water rate structure evaluation. A key component of the study was an evaluation of the City's current rate of reinvestment in the water distribution system and development of a plan to place the City on a realistic reinvestment cycle. The study included the development of a phased approach to increasing water and sewer rates to reduce customer impacts and to ensure the financial health of the City's Water and Sewer Enterprise Fund.

#### Village of South Elgin, Illinois

David served as the project manager for a comprehensive water and sewer rate study for the Village, including development of a financial plan, cost of service and rate study. The Study also evaluated the two sets of rates and fees maintained by the Village resulting from the acquisition of a private water and sewer system located within the Village.



## Kyle Stevens

*Senior Consultant*

Kyle Stevens has seven years of experience in populating and customizing the long-term financial planning, cost allocation, rate design, impact fee, and miscellaneous service fee modules of our financial modeling system. He has superior financial, business and analytical skills and has provided our clients with exemplary financial analysis based on application of sound financial and economic concepts. Kyle has a high level of proficiency within our modeling system, and he has been very involved in recent engagements requiring substantial model customization and in providing ongoing support services to our clients using our financial forecasting module.

### Education

Master of Applied Economics,  
Florida State University, 2010

Bachelor of Arts, Economics,  
Florida State University, 2008

### Memberships

American Water Works Association

### Publications & Presentations

Utility Management Conference: Using  
AMI for Rate Setting, February 2018

### Relevant Project Experience

#### City of Olathe, Kansas

Kyle recently served as a senior consultant for a comprehensive financial plan and water rate study for the Village. The study included a full utility cost of service and rate study with a specific emphasis on identification and funding of system repair and replacement needs. Additional key focus areas included evaluation of system connection fees, water and sewer rate structure design with a focus on the development of appropriate fixed charges and full documentation of customer impacts

#### Village of Glenview, Illinois

Kyle recently served a senior consultant for a comprehensive financial plan and water rate study for the Village. In his role, Kyle led the development of the financial model including the development of a ten-year financial plan to support the ongoing needs of the water utility. He also assisted with the evaluation of the water rate structure and ancillary fees and charges imposed by the Village.

#### City of Fort Lauderdale, Florida

Kyle has served as the Project Consultant for a long-term financial modeling and sustainability analysis for the City in which he developed a common financial forecasting modeling platform that could be used for real-time evaluation and understanding for its key services, including its General Fund and seven separate major funds (Water/Sewer, Regional Wastewater, Stormwater, Sanitation, Airport, Parking, and Building funds). He customized individual models for each fund and linked each model together to evaluate and understand a variety of decision alternatives and their current and future consequences to each fund. As part of the City's annual budget process, we perform simultaneous updates to all the models.



## Deborah Kloeckner

*Senior Analyst*

Deb Kloeckner has a background in economics and is skilled in data analysis and forecasting. As a Senior Analyst, Deb works with other consultants to provide support in statistical analysis, development of financial models, and rate design. She is experienced in financial planning, statistical research, and providing in-depth analysis of a community's socioeconomic condition, which plays an important role in financial capability assessment and affordability studies.

### Education

Bachelor of Arts, Economics,  
University of Colorado, 2016

### Relevant Project Experience

#### **Loudoun Water, Virginia**

Deb served as an analyst for a water and sewer financial plan and rate design study for Loudoun Water. The study included the development of a comprehensive water and sewer financial plan, cost of service and rate design analysis. Deb developed the financial modeling tools used to complete the comprehensive study and participated in the interactive work session with the Authority.

#### **City of Ann Arbor, Michigan**

Deb served as an analyst for the City to conduct an update to the 2007 rate study. To begin the study, she assisted our team in reviewing in detail the City's existing stormwater rate structure and developed potential modifications to enhance conformance with legal precedent and accepted industry practice while providing an equitable distribution of costs to customers based upon available data.

#### **City of Bismarck, North Dakota**

For a recent water, sewer and stormwater rate study, Deb used financial data, customer characteristics, and capital plans to determine revenue requirements. She allocated costs to customer classes based on impact to storm sewer system and determined appropriate customer rates based on expenses of the system and customer allocations.

#### **City of Rockville, Maryland**

Deb assisted with updating and customizing the City's water and sewer financial models in order to help them meet their long-term financial goals. She met with City staff to discuss models and address current and future needs.

## CLIENT REFERENCES

As requested, we have included three sample projects with specific references for projects completed by our project team that are relevant to the study requested by the Village. In addition to the specific project examples provided herein members of our project team including David Hyder (project manager), have served numerous communities in Illinois with water rate study services. These include communities such as Batavia, Downers Grove, Effingham, Morton Grove, Moline, Orland Park, South Elgin, Wheaton and Winnetka. Given our level of experience serving clients in Illinois and suburban Chicago, our project team understands how each community has its own characteristics, how these can influence the pricing of water service and the importance of completing a rate study in a manner that is custom-tailored to the community. A sample report for a study our project team recently completed for the Loudoun Water Authority in Virginia is provided to demonstrate the level of detail included in our study documents.

### Water Rate Study

Village of Glenview, IL

#### Reference:

Amy Ahner, AICP, GISP  
 Director of Administrative Services  
 2500 East Lake Avenue  
 Glenview, IL 60026  
 (847) 724-1700  
 aahner@glenview.il.us



Stantec recently completed a comprehensive water rate study for the Village of Glenview. To begin, we conducted a revenue sufficiency analysis which included the development of a multi-year plan of water rate revenue increases that would satisfy the annual operating, debt service, and capital costs of the utility, as well as the establishment and maintenance of adequate reserves. The financial management plans included gradual increases to reserve levels in order to restore reserves to recommended levels by the end of the six-year planning period and recommended increases in readiness-to-serve charges in order to enhance the fiscal stability and fixed cost recovery of the utility. The Village Council adopted all of the study recommendations at the conclusion of the study.



### Water and Sewer Rate Study

City of Geneva, IL

#### Reference:

Bob Van Gyseghem  
 Superintendent of Water and Sewer  
 1800 South Street  
 Geneva, Illinois 60134  
 (630) 232-1551  
 bvangyseghem@geneva.il.us

Stantec recently conducted a water and wastewater utility rate study for the City of

Geneva. The objectives of the study were to complete updates to their financial model including the addition of wastewater treatment plan upgrade and modeling of IEPA funding, evaluation of the potential rate structure options and provide water and sewer bill comparisons for surrounding and comparable communities.

We developed a five-year financial forecast of annual expenditures including operating and maintenance and capital expenses. A key factor impacting the water system was the capital investment required to fund the ongoing repair and replacement. The investments are necessary regardless of usage, so the City, like many communities, adopted infrastructure replacement charges to address these ongoing funding needs with a dependable revenue stream, which will also increase the percentage of fixed revenues collected on a monthly basis, lessening the revenue volatility within the water system.

## Water Rate Analysis and Negotiation Consulting Services

Village of Skokie, IL

### Reference:

Max Slankard,  
Director of Public Works  
5127 Oakton St.  
Skokie IL 60077  
(847) 448-8198  
max.slankard@skokie.org

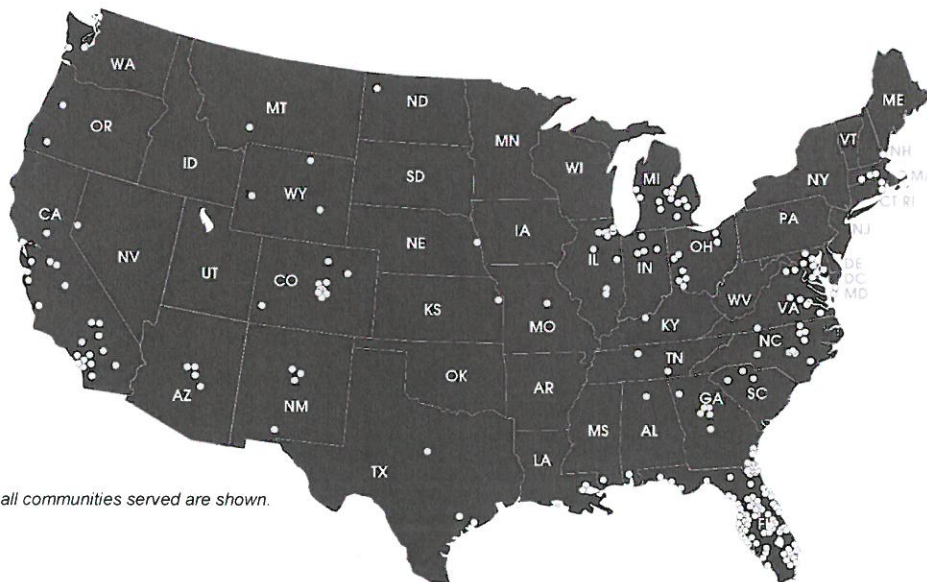


The Village of Skokie has purchased water on a wholesale basis from the City of Evanston for several decades. The current water purchase agreement expired 2017. The City of Evanston has developed a new wholesale water rate for the Village based on the use of a modified utility basis cost of service approach. The Village hired Stantec to evaluate the wholesale rate methodology based on accepted industry standard approaches for determining wholesale water rates.

Stantec has also provided assistance to the Village as part of the wholesale rate negotiation, conducting meetings with the City of Evanston to discuss the approach used by the City and potential modifications to the approach to conform to industry standards. Our project team also helped determine an appropriate rate for wheeling water through the Skokie system from the City of Evanston to surrounding communities. The methodology used to determine the wheeling water rate was based on the outlined approach in the AWWA M1 Manual, Principals of Water, Rates, Fees, and Charges. The wheeling water rate analysis was completed to determine a unit rate for wheeling water based on the current Village system and a potential rate given necessary investments in the system to ensure that the distribution system can handle the additional quantities of water.

## 3. QUALIFICATIONS

With **long-term commitment to the people and places we serve**, Stantec has the unique ability to connect to projects on a personal level and advance the quality of life in communities across the globe. **Members of Stantec's Financial Services Practice have proudly served over 275 municipal utilities across the United States.** The map below depicts the location of many of these clients.

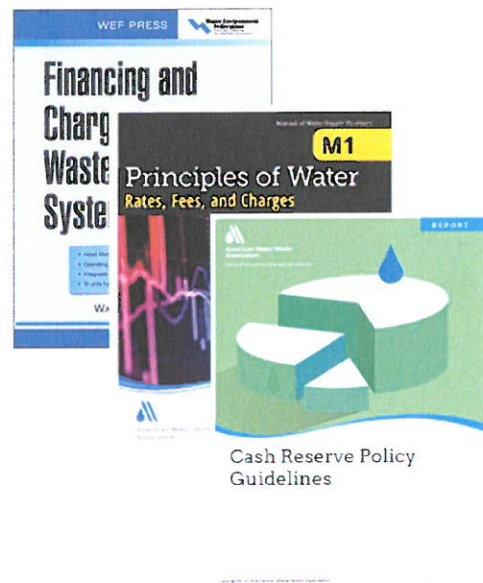


*Note: Not all communities served are shown.*

The Stantec community unites more than 22,000 employees working in over 400 locations across the world. Our local strength, knowledge, and relationships, coupled with our world-class expertise, have allowed us to go anywhere to meet our clients' needs in more creative and personalized ways. With over 30 professionals with a variety of experience in the municipal financial sector, Stantec's Financial Services Practice has over 300 years of experience. This combination of diverse backgrounds and experience has made us who we are today – a trusted source to our clients in providing independent and objective financial management services to local governments and utilities throughout the country.

It is this deep bench of experience that brings value to your project. As a group, we work together and build upon each other's experiences. This sharing of knowledge and expertise will be brought to your project as well. You can be assured that our team will develop a comprehensive and balanced solution to this study.

We have a tremendous amount of experience with and knowledge of a variety of accepted ratemaking and cost of service methodologies, including practices and approaches identified in [American Water Works Association \(AWWA\)](#) and [Water Environment Federation](#) manuals. Also, we are very familiar with the financial criteria used by the municipal ratings agencies in evaluating the financial health of municipal water and wastewater systems. In fact, in the past five years alone, members of our team have conducted financial feasibility analyses and other services in support of the issuance of \$1 billion in utility bonds.



The senior members of our Financial Services Practice have been recognized as industry experts in various state and federal utility ratemaking proceedings. Our involvement in AWWA's Rates and Charges Committee, contributions to AWWA Manual M1 – Principles of Water Rates, Fees and Charges, and current involvement in WEF's update of Manual of Practice 27 connect us with current industry best practices in financial forecasting, management, cost of service, and rate making. Our project team include individuals with qualifications and experience in provide a wide range of utility consulting services including the following:

**Rate Studies**

- Water & Wastewater
- Solid Waste & Recycling
- Reclaimed Water
- Stormwater
- Electric / Gas
- General Government Services

**Long-Term Financial & Capital Plans**

- Setting financial goals and KPI's
- Managing reserve levels
- Bond feasibility plans
- Live scenario analysis
- Sensitivity analysis
- Bond rating improvement plans

**System Development Fees/Capacity Fees**

- Legal compliance evaluation
- Buy-in fee development
- Incremental fee development
- Expert witness assistance
- Hybrid fee approaches
- Developer reimbursement plans

**Benchmarking**

- Proprietary U.S. database
- 100 data points per record
- 50,000 financial metrics
- Audited financial statements
- 1, 3, 5-year industry averages
- Custom group comparisons

**Affordability**

- Innovative approach (WARi®)
- Industry-changing technique
- Multi-year affordability metrics
- Output to high-definition maps
- Regulatory case support
- Low-income programs

## 4. SCHEDULE

To accomplish the work plan outlined in our approach, we developed the project schedule outlined below. Given the relatively short duration for the study, it will be necessary for our team to receive the data required for the study as close to the notice to proceed date as possible. The duration for each of the tasks are outlined in the schedule. The schedule will allow for the completion of the study by September 30, 2019, consistent with the timeline requested by the Village.

### Village of Downers Grove Water Utility Rates and System Development Charge Study Project Schedule

Tasks	July	August	September
Task 1 Project Initiation			
Task 2 Revenue Requirements & Revenue Sufficiency			
Task 3 Financial Plan Development			
Task 4 Rate Structure, Affordability and Benchmarking			
Task 5 Evaluation of Other Service Charges			
Task 6 Report and Presentations			
Model Development	<i>Development of Modeling Tools included in Tasks above</i>		

## 5. NOT TO EXCEED FEE ESTIMATE

Based on the scope of work requested by the Village for the water rate study, we have developed the following not-to-exceed fee. The fee is based on the time and materials required for the key project team members assigned to the study.

### Village of Downers Grove Water Utility Rates and System Development Charge Study Cost Estimate Schedule

Task	Project Manager \$270	Senior Consultant \$190	Financial Analyst \$150	Total Hours	Cost per Task
Task 1 Project Initiation	2	2	2	6	\$1,220
Task 2 Revenue Requirements & Revenue Sufficiency	8	14	20	42	\$7,820
Task 3 Financial Plan Development	4	8	14	26	\$4,700
Task 4 Rate Structure, Affordability and Benchmarking	4	6	8	18	\$3,420
Task 5 Evaluation of Other Service Charges	4	6	12	22	\$4,020
Task 6 Report and Presentations	8	10	12	30	\$5,860
Total Hours and Direct Labor	30	46	68	144	\$27,040
Direct Expenses					\$2,704
<b>Total Not-to-Exceed Project Cost</b>					<b>\$29,744</b>

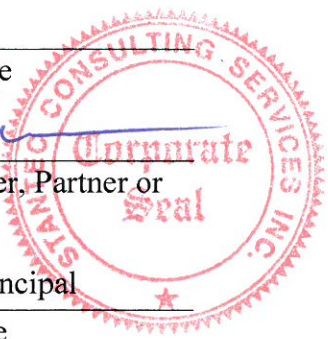
Village of Downers Grove

**V. PROPOSAL/CONTRACT FORM**

**\*\*\*THIS PROPOSAL, WHEN ACCEPTED AND SIGNED BY AN AUTHORIZED SIGNATORY OF THE VILLAGE OF DOWNERS GROVE, SHALL BECOME A CONTRACT BINDING UPON BOTH PARTIES.**

**Entire Block Must Be Completed When A Submitted Proposal Is To Be Considered For Award**

<b>PROPOSER:</b>	
Stantec Consulting Services Inc. Company Name	Date: June 24, 2019
1101 14th Street NW, Suite 1200 Street Address of Company	David.hyder@stantec.com Email Address
Washington DC 20005 City, State, Zip	David Hyder Contact Name (Print)
202-585-6391 Business Phone	443-538-1175 13-Hour Telephone
813-204-3337 Fax	 Signature of Officer, Partner or Sole Proprietor
ATTEST: If a Corporation  Signature of Corporation Secretary	David Hyder, Principal Print Name & Title



**VILLAGE OF DOWNERS GROVE:**

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

ATTEST:

\_\_\_\_\_  
Signature of Village Clerk

\_\_\_\_\_  
Date

In compliance with the specifications, the above-signed offers and agrees, if this Proposal is accepted within 90 calendar days from the date of opening, to furnish any or all of the services upon which prices are quoted, at the price set opposite each item, delivered at the designated point within the time specified above.

Village of Downers Grove



**VENDOR W-9 REQUEST FORM**

The law requires that we maintain accurate taxpayer identification numbers for all individuals and partnerships to whom we make payments, because we are required to report to the I.R.S all payments of \$600 or more annually. We also follow the I.R.S. recommendation that this information be maintained for all payees including corporations.

Please complete the following substitute W-9 letter to assist us in meeting our I.R.S. reporting requirements. The information below will be used to determine whether we are required to send you a Form 1099. Please respond as soon as possible, as failure to do so will delay our payments.

**BUSINESS (PLEASE PRINT OR TYPE):**

**NAME:** Stantec Consulting Services Inc

**ADDRESS:** 1101 14th Street NW

**CITY:** Washington

**STATE:** DC

**ZIP:** 20005

**PHONE:** 202-585-6391      **FAX:** 813-204-3337

**TAX ID #(TIN):** 11-2167170

(If you are supplying a social security number, please give your full name.)

**REMIT TO ADDRESS (IF DIFFERENT FROM ABOVE):**

**NAME:** Stantec Consulting Services Inc

**ADDRESS:** 100 North Tryon Street

**CITY:** Charlotte

**STATE:** NC      **ZIP:** 28202

**TYPE OF ENTITY (CIRCLE ONE):**

- |                      |  |
|----------------------|--|
| Individual           | Limited Liability Company – Member-Managed |
| Sole Proprietor      | Limited Liability Company- Manager-Managed |
| Partnership          | Medical Corporation                        |
| Charitable/Nonprofit | Government Agency                          |

**SIGNATURE:** 

**DATE:** 6/24/19

Village of Downers Grove

**PROPOSER'S CERTIFICATION (page 1 of 3)**

Consulting Services to Analyze and Update Water Utility Rates & System Development Charges  
With regard to \_\_\_\_\_, Proposer Stantec Consulting Services Inc. hereby certifies  
(Name of Project) (Name of Proposer)  
the following:

1. Proposer is not barred from bidding this Contract as a result of violations of Section 720 ILCS 5/33E-3 (Bid Rigging) or 720 ILCS 5/33E-4 (Bid-Rotating);
2. Proposer certifies that it has a written sexual harassment policy in place and is in full compliance with 775 ILCS 5/2-105(A)(4);
3. Proposer certifies that it is in full compliance with the Federal Highway Administrative Rules on Controlled Substances and Alcohol Use and Testing, 49 C. F.R. Parts 40 and 382 and that all employee drivers are currently participating in a drug and alcohol testing program pursuant to the Rules.
4. Proposer further certifies that it is not delinquent in the payment of any tax administered by the Department of Revenue, or that Proposer is contesting its liability for the tax delinquency or the amount of a tax delinquency in accordance with the procedures established by the appropriate Revenue Act. Proposer further certifies that if it owes any tax payment(s) to the Department of Revenue, Proposer has entered into an agreement with the Department of Revenue for the payment of all such taxes that are due, and Proposer is in compliance with the agreement.

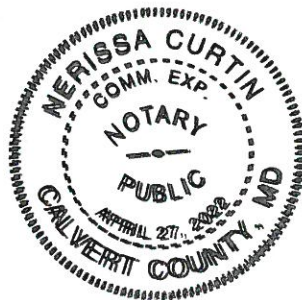
BY: [Signature]  
Proposer's Authorized Agent

1 1 - 2 1 6 7 1 7 0

**FEDERAL TAXPAYER IDENTIFICATION NUMBER**

or \_\_\_\_\_  
Social Security Number

Subscribed and sworn to before me  
this 24<sup>th</sup> day of June, 2019.



[Signature]  
Notary Public

**PROPOSER'S CERTIFICATION (page 2 of 3)**

Village of Downers Grove

(Fill Out Applicable Paragraph Below)

(a) **Corporation**

The Proposer is a corporation organized and existing under the laws of the State of New York, which operates under the Legal name of Stantec Consulting Services Inc, and the full names of its Officers are as follows:

President: Gordon Johnston

Secretary: Christopher Heisler

Treasurer: Theresa Jang

and it does have a corporate seal. (In the event that this Proposal is executed by other than the President, attach hereto a certified copy of that section of Corporate By-Laws or other authorization by the Corporation which permits the person to execute the offer for the corporation.)

**Limited Liability Company (LLC)**

The Bidder is a LLC organized and existing under the laws of the State of \_\_\_\_\_, which operates under the legal name of \_\_\_\_\_, and the full names of its managers or members are as follows:

Manager or Member: \_\_\_\_\_

Manager or Member: \_\_\_\_\_

Manager or Member: \_\_\_\_\_

Manager or Member: \_\_\_\_\_

(c) **Partnership**

Names and Addresses of All Members of Partnership:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The partnership does business under the legal name of: \_\_\_\_\_

which name is registered with the office of \_\_\_\_\_ in the State of \_\_\_\_\_.

(d) **Sole Proprietor**

**PROPOSER'S CERTIFICATION (page 3 of 3)**

## Village of Downers Grove

The Proposer is a Sole Proprietor whose full name is: \_\_\_\_\_  
 and if operating under a trade name, said trade name is: \_\_\_\_\_  
 which name is registered with the office of \_\_\_\_\_ in the State of  
 \_\_\_\_\_.

5. Are you willing to comply with the Village's preceding insurance requirements within 13 days of the award of the contract? Yes

Insurer's Name Lloyds of London

Agent Lockton Companies

Street Address 444 W. 47th Street Suite 900  
 City, State, Zip Code Kansas City, MO 64112

Telephone Number (816)960 9000

**I/We affirm that the above certifications are true and accurate and that I/we have read and understand them.**

Print Name of Company: Stantec Consulting Services Inc.

Print Name and Title of Authorizing Signature: David Hyder, Principal

Signature: 

Date: June 24, 2019

## Village of Downers Grove

### Suspension or Debarment Certificate

Non-Federal entities are prohibited from contracting with or making sub-awards under covered transactions to parties that are suspended or debarred or whose principals are suspended or debarred. Covered transactions include procurement for goods or services equal to or in excess of \$100,000.00. Contractors receiving individual awards for \$100,000.00 or more and all sub-recipients must certify that the organization and its principals are not suspended or debarred.

By submitting this offer and signing this certificate, the Proposer certifies to the best of its knowledge and belief, that the company and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from covered transactions by any federal, state or local governmental entity, department or agency;
2. Have not within a three-year period preceding this Proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction, or convicted of or had a civil judgment against them for a violation of Federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
3. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (2) of this certification; and
4. Have not within a three-year period preceding this application/proposal/contract had one or more public transactions (Federal, State or local) terminated for cause or default.

**If the Proposer is unable to certify to any of the statements in this certification, Proposer shall attach an explanation to this certification.**

Company Name: Stantec Consulting Services Inc

Address: 1101 14th Street NW Suite 1200

City: Washington DC Zip Code: 20005

Telephone: ( 202) 585-6391 Fax Number: ( )

E-mail Address: David.hyder@stantec.com

Authorized Company Signature: 

(Print )Name: David Hyder Title of Official: Principal

Date: June 24, 2019

### Campaign Disclosure Certificate

Village of Downers Grove

Any contractor, proposer, bidder or vendor who responds by submitting a bid or proposal to the Village of Downers Grove shall be required to submit with its bid submission, an executed Campaign Disclosure Certificate.

The Campaign Disclosure Certificate is required pursuant to the Village of Downers Grove Council Policy on Ethical Standards and is applicable to those campaign contributions made to any member of the Village Council.

Said Campaign Disclosure Certificate requires any individual or entity bidding to disclose campaign contributions, as defined in Section 9-1.4 of the Election Code (10 ILCS 5/9-1.4), made to current members of the Village Council within the five (5) year period preceding the date of the bid or proposal release.

By signing the bid or proposal documents, contractor/proposer/bidder/vendor agrees to refrain from making any campaign contributions as defined in Section 9-1.4 of the Election Code (10 ILCS 5/9-1.4) to any Village Council member and any challengers seeking to serve as a member of the Downers Grove Village Council.

Under penalty of perjury, I declare:

Proposer/vendor has not contributed to any elected Village position within the last five (5) years.

  
Signature

David Hyder  
Print Name

Proposer/vendor has contributed a campaign contribution to a current member of the Village Council within the last five (5) years.

Print the following information:

Name of Contributor: \_\_\_\_\_  
(company or individual)

To whom contribution was made: \_\_\_\_\_

Year contribution made: \_\_\_\_\_ Amount: \$ \_\_\_\_\_

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Print Name



## Loudoun Water

# Water and Sewer Rate Study Report

October 4, 2018





October 4, 2018

Mr. Brian Carnes  
Director of Finance  
Loudoun Water  
44865 Loudoun Water Way  
Ashburn, VA 20147

Re: Water and Sewer Rate  
Study Report

Dear Mr. Carnes,

Stantec is pleased to present this Report on the Water and Sewer Rate Study (Study) that was conducted for Loudoun Water. We appreciate the professional assistance provided by you and all of the members of Loudoun Water who participated in the study.

If you or others at Loudoun Water have any questions, please do not hesitate to call us at (202) 585-6391 or email me at [David.Hyder@stantec.com](mailto:David.Hyder@stantec.com). We appreciate the opportunity to be of service to Loudoun Water, and we look forward to the possibility of doing so again in the near future.

Sincerely,

A handwritten signature in black ink, appearing to read "David Hyder", written in a cursive style.

David A. Hyder  
Principal

1101 14<sup>th</sup> Street NW  
Washington DC 20005  
(202) 585-6391  
[David.hyder@stantec.com](mailto:David.hyder@stantec.com)

Enclosure

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## EXECUTIVE SUMMARY

### E.1 INTRODUCTION

This Executive Summary presents an overview of the results of the Water and Sewer Rate Study (Study) that was conducted for Loudoun Water by Stantec Consulting Services (Stantec). While the Executive Summary presents the primary conclusions and recommendations developed during the study, the full report outlines all of the key assumptions and detailed analysis completed to arrive at the results of the Study and should be consulted to gain a full understanding of the analysis.

### E.2 SCOPE OF WORK

The principal components of the Comprehensive Water and Sewer Rate Study are as follows:

**Revenue Sufficiency Analysis and Financial Plan** – Develop a three-year financial plan for Loudoun Water's water and sewer systems that will determine the level of annual revenue required to satisfy projected annual operating, debt service, and capital cost requirements as well as the maintenance of adequate reserves. The financial plan is designed to support the short and long-term needs of Loudoun Water in an effort to provide fiscal sustainability while minimizing customer impacts.

**Reclaimed Water Rate Analysis** – Evaluate the cost of providing reclaimed water service to determine if adjustments to the reclaimed water rates are warranted in light of the cost of service and forecasted changes in reclaimed water system demands within the Loudoun Water service area.

**Availability Charge Analysis** – Evaluate the methodology used by Loudoun Water to determine water and sewer availability charges and recommend modifications if appropriate. Develop a forecast of availability charges based on the cost of providing water and sewer system capacity to new customers joining the Loudoun Water systems.

**Developer Fee Analysis** – Review the current plan review and inspection fees charged by Loudoun Water to determine if the fees are set at a level that recovers the cost of providing these services and recommend modifications to the fees if the fees are set below the cost of service.

**Benchmarking and Customer Impacts** – Benchmark Loudoun Water's rates, fees and charges with comparable and local utilities. Demonstrate the impacts of any recommended changes to rates, fees and charges on customers of the systems in the form of customer bill impact comparisons.

Based on the completion of the scope of work, Stantec has developed several conclusions and recommendations for Loudoun Water's consideration. The key conclusions and recommendations are outlined herein.

### E.3 REVENUE SUFFICIENCY ANALYSIS AND FINANCIAL PLAN

A revenue sufficiency analysis was completed for a ten-year period covering 2019 to 2028. The revenue sufficiency analysis was used to determine if Loudoun Water's current rates, fees and charges will be adequate to meet the system revenue requirements (operating expenditures, debt service and capital investments) over the planning period. The revenue requirements were developed based on Loudoun Water's budget documents, capital improvement program and assumed cost escalation factors. The following conclusions and recommendations are provided based on the revenue sufficiency analysis.

- The revenue sufficiency analysis developed for the planning period, reveals that Loudoun Water's revenues generated from current rates and fees will not be sufficient to meet the annual revenue requirements of the water and sewer system. If additional revenues are not generated over the planning period, Loudoun Water will not be able to provide adequate funds to meet the revenue requirements and will draw the cash balance below the minimum balance requirement established by Loudoun Water.
- The primary drivers for the increases in revenue requirements over the planning period include the following key items:
  - Loudoun Water will commence full operations of the Trap Rock Water Treatment Plant in 2019. Operation of the plant will reduce the amount of water purchased from Fairfax Water. The reduction in Purchased Water will be more than offset by the cost to produce water at Trap Rock.
  - In 2018, DC Water began charging Loudoun Water an additional \$1.5 million per year for wastewater treatment services. These costs will continue over the planning period and will likely increase annually at an inflationary level.
  - Loudoun Water continues to invest significant funds to expand the water and sewer services to meet the requirements of new demand placed on the water and sewer systems, while at the same time funding the ongoing repair and replacement of the systems.
- To address the funding requirements of the system, we recommend that Loudoun Water adopt a three-year financial plan that will adjust water and sewer rates by 3.5% in 2019, 2020 and 2021, respectively. The financial management plan will allow Loudoun Water to provide adequate and sustainable funds for the operation, maintenance and replacement of the water and sewer systems, while minimizing the impacts on its water and sewer customers. The recommended rates under the financial plan are shown in the following tables.

**Table E-1 Recommended Water Rates**

	Current	Jan 1, 2019	Jan 1, 2020	Jan 1, 2021
<b>Residential Rates</b>				
Basic Charge	\$33.46	\$34.63	\$35.84	\$37.09
Tier 1: 0 - 25,000 Gallons	\$2.44	\$2.53	\$2.62	\$2.71
Tier 2: 25,001 - 50,000 Gallons	\$6.80	\$7.04	\$7.29	\$7.55
Tier 3: Over 50,000 Gallons	\$9.11	\$9.43	\$9.76	\$10.10
<b>Commercial Rates</b>				
Basic Charge				
5/8"	\$33.46	\$34.63	\$35.84	\$37.09
3/4"	\$47.12	\$48.77	\$50.48	\$52.24
1"	\$99.08	\$102.55	\$106.14	\$109.85
1 1/2"	\$156.51	\$161.99	\$167.66	\$173.53
2"	\$252.21	\$261.04	\$270.18	\$279.63
3"	\$416.27	\$430.84	\$445.92	\$461.53
4"	\$689.71	\$713.85	\$738.83	\$764.69
6"	\$1,373.30	\$1,421.37	\$1,471.12	\$1,522.60
Tier 1: Up to Purchased Capacity	\$3.21	\$3.32	\$3.44	\$3.56
Tier 2: Over Purchased Capacity	\$5.53	\$5.72	\$5.92	\$6.13
All Other Uses*	\$6.80	\$7.04	\$7.29	\$7.55

\* Includes, but not limited to, fire hydrant special use, construction water and irrigation/submeters for which an availability charge has not been paid.

**Table E-2 Recommended Sewer Rates**

	Current	Jan 1, 2019	Jan 1, 2020	Jan 1, 2021
<b>Residential Rates</b>				
Basic Charge	\$33.43	\$34.60	\$35.81	\$37.06
Usage Rate per 1,000 gallons*	\$4.80	\$4.97	\$5.14	\$5.32
<b>Commercial Rates</b>				
Basic Charge				
5/8"	\$33.43	\$34.60	\$35.81	\$37.06
3/4"	\$47.82	\$49.49	\$51.23	\$53.02
1"	\$102.61	\$106.20	\$109.92	\$113.77
1 1/2"	\$163.13	\$168.84	\$174.75	\$180.87
2"	\$264.02	\$273.26	\$282.82	\$292.72
3"	\$436.97	\$452.26	\$468.09	\$484.48
4"	\$725.21	\$750.59	\$776.86	\$804.05
6"	\$1,445.81	\$1,496.41	\$1,548.79	\$1,603.00
Usage Rate per 1,000 gallons	\$4.80	\$4.97	\$5.14	\$5.32

\*Usage capped at winter quarter average consumption plus 3,000 gallons, residential only

- The recommended adjustments to water and sewer rates will result in the continued health and stability of the water and sewer systems, and will accomplish the following:
  - Ensure that the debt service coverage requirements are met during the projection period.

- Allow Loudoun Water to fund at or near 50% of annual depreciation on the water and sewer system assets in the form of funding of annual replacement projects or contributions to the repair and replacement reserve.
- Maintain unrestricted net asset balances within the target range over the projection period.

## E.4 RECLAIMED WATER RATE ANALYSIS

A cost of service analysis was completed for Loudoun Water's reclaimed water operations to determine the appropriate pricing for reclaimed water service over the projection period. Based on our analysis of the reclaimed water system we have developed the following conclusions and recommendations.

- The cost of providing reclaimed water service is closely linked with the operations of Loudoun Water's Broad Run Water Reclamation Facility (WRF), and therefore costs are anticipated to trend with the cost of operating and maintaining the WRF.
- The current reclaimed water rates are not sufficient to meet the annual revenue requirements of the reclaimed system in the near term. Given the shortfall in revenues compared to expenses, and the linkage between the WRF and the cost of providing reclaimed water service, we recommend that Loudoun Water increase the reclaimed water rates at 3.5% per year for the next three years, consistent with the adjustments to sewer user rates over the same period. The recommended rates are presented in the following table.

**Table E-3 Recommended Reclaimed Water Rates**

	Current	Jan 1, 2019	Jan 1, 2020	Jan 1, 2021
Usage Rate per 1,000 gallons	\$1.50	\$1.55	\$1.61	\$1.66

## E.5 AVAILABILITY CHARGE ANALYSIS

Loudoun Water currently collects water and sewer availability charges from new customers joining the water and sewer system to recover the cost of providing system capacity. The Availability Charge is calculated for a residential connection, or equivalent resident connection (ERC). As part of the rate study, the current methodology used to calculate the charges was evaluated along with the level of the current charges. Based on our analysis, the following conclusions and recommendations were developed during the course of the study.

- The overall methodology used to determine the availability charges is appropriate and reflects the cost of providing water and sewer system capacity, however some minor changes to the methodology are recommended to provide greater stability within the determination of the charges on a year over year basis. The recommended changes include:

- The cost of system investments should be scaled using the National Engineering News Record (ENR) Construction Cost Index instead of the index for the City of Baltimore due to the variability of the Baltimore index.
- The distribution system component of the water system charge should be based on the existing distribution system pipes plus those identified in the Loudoun Water Master Plan to reflect the average cost of providing distribution system assets.
- Along with the changes to the methodology, availability charges should be adopted for a three-year period to provide clarity within the community. The recommended availability charges are presented in the following table.

**Table E-4 Recommended Availability Charges**

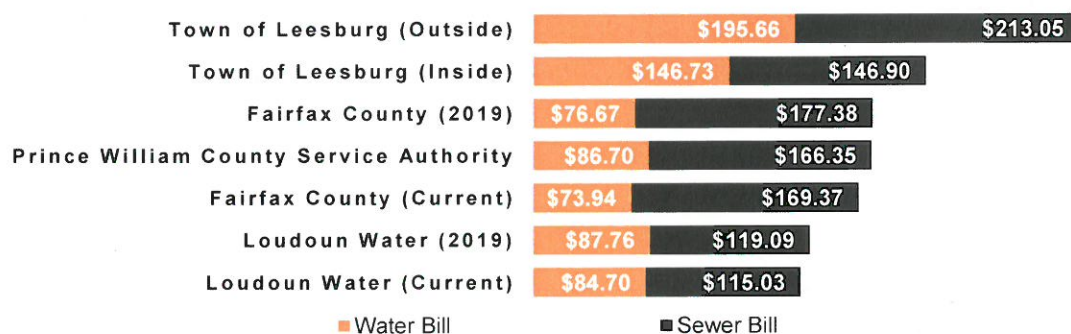
	Current	Jan 1, 2019	Jan 1, 2020	Jan 1, 2021
Water Availability Charge per ERC	\$6,766	\$6,901	\$7,039	\$7,180
Sewer Availability Charge per ERC	\$8,209	\$8,373	\$8,540	\$8,711

## E.6 BENCHMARKING AND CUSTOMER IMPACTS

As part of the Study, benchmarking of comparable rates, fees and charges and resulting average customer water and sewer bill impacts were completed. The following findings and conclusions are provided based on the comparisons.

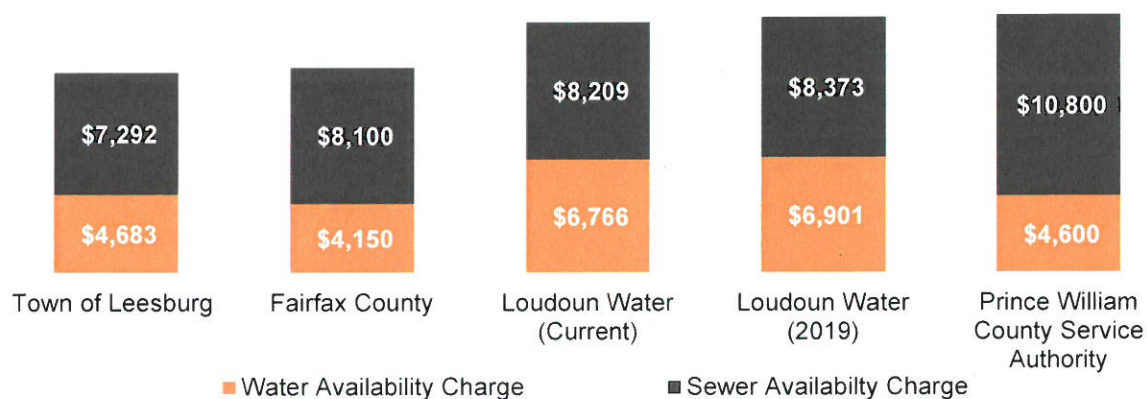
- Loudoun Water's average residential bill for 21,000 gallons per quarter was compared with neighboring and comparable jurisdictions. Based on the comparison, Loudoun Water's average bills remain among the lowest within the neighboring utilities. Given the modest adjustments recommended as part of this Study, Loudoun Water customers will continue to pay utility bills at the lower end of the scale. The figure on the following page demonstrates how Loudoun Water's current and proposed 2019 average water and sewer bill compares with those of surrounding jurisdictions. It is important to note that the bills for comparison utilities represent current bills and do not include likely future annual increases which are not yet publicly available. Additionally the sewer bill for Loudoun Water is capped at 17,000 gallons assuming a winter quarter average consumption of 14,000 gallons.

**Figure E-1 Combined Water & Sewer Bill Comparison**



- Availability charges were benchmarked against the same utilities. The following figure presents the comparison.

**Figure E-2 Availability Charge Comparison**



## 1. INTRODUCTION

Stantec has conducted a comprehensive Water and Sewer Rate Study (Study) for the water, sewer and reclaimed water systems operated and maintained by Loudoun Water. This report presents the objectives, approach, methodologies, source data, assumptions, as well as the findings, conclusions and recommendations of the Study.

### 1.1 BACKGROUND

Loudoun Water was created by action of the Board of Supervisors of Loudoun County, VA under the Virginia Water and Wastewater Authorities Act and was chartered with the State Corporation Commission (SCC) in 1959. In accordance with the Charter, Loudoun Water is to provide water and wastewater service to the residents who live outside incorporated areas of Loudoun County. Loudoun Water is responsible for constructing, improving, and otherwise maintaining the water and sewer systems within portions of Loudoun County. The cost of operating and maintaining the water and sewer systems is fully funded by the rates, fees and charges collected by Loudoun Water from users of the systems.

The eastern portion of the water and wastewater system is considered the “Central System” and serves approximately 78,700 water and sewer accounts. Loudoun Water also owns and operates a number of community water and wastewater systems in the rural portion of the County. In 2016, Loudoun Water adopted a uniform rate for all metered customers.

The Loudoun Water Board is authorized to fix and revise rates, fees and other charges for water and sewer service by Section 15.2-5136 of the Virginia Code. Prior to action on proposed rates, Loudoun Water conducts a public hearing as required by the Virginia Code. After approval by the Loudoun Water Board, the rates become effective on the dates specified in the Board's action and require no further review or approval. In 2015, Loudoun Water engaged a rate consultant to complete a cost of service analysis and rate study. The study resulted in the adoption of rates and charges for 2016 - 2018. The Loudoun Water Board adopted the recommended rates developed during the study, and water and sewer rates have been adjusted annually per the plan over the last three years.

#### 1.1.1 Water System

Loudoun Water delivers water to its customers through a water distribution system consisting of 1,285 miles of water mains and 8 storage tanks with a storage capacity of over 18 million gallons. Loudoun Water currently purchases the majority of its source water from Fairfax Water which supplies approximately 19 million gallons per day (MGD). The remainder of the water, about 6.0 MGD, is supplied from Goose Creek and is treated at Loudoun Water's Goose Creek Water Treatment Plant. Over the last several years, Loudoun Water has been developing the Potomac Water Supply Program (PWSP). The PWSP includes an intake on the Potomac River, transmission lines, quarry storage and the Trap Rock Water Treatment Plant. The new plant will have the ability to produce up to 20 MGD. Loudoun Water

anticipates that Trap Rock will be fully operational by January 2019. The plant will completely replace the operations of the Goose Creek plant and reduce the purchases of water from Fairfax Water. Loudoun Water anticipates that Trap Rock will produce 10 MGD, which will be augmented with purchases from Fairfax Water. As demands on the Loudoun Water system increase, it is currently assumed that the additional water will be purchased from Fairfax Water, as Loudoun Water anticipates continuing to operate Trap Rock at 10 MGD in the near future.

### 1.1.2 Wastewater System

Wastewater is treated at two different facilities. Loudoun Water owns, operates and maintains the WRF which currently treats approximately 6 MGD of wastewater. The WRF has treatment capacity of 11 MGD. The remainder is treated by DC Water at their Blue Plains Wastewater Treatment Plant. Loudoun Water currently sends about 13.3 MGD to Blue Plains. Based on the current agreement, Loudoun Water has a maximum treatment capacity in the Blue Plains plant of 13.8 MGD. In addition to the WRF, Loudoun Water maintains over 900 miles of gravity wastewater mains and 49 miles of wastewater force mains.

### 1.1.3 Reclaimed Water System

Loudoun Water provides reclaimed water to commercial customers located within the Central System. The reclaimed water is produced at the WRF. The reclaimed water is distributed through a distribution system consisting of 14 miles of reclaimed mains. The reclaimed water system in 2017 delivered approximately 1.3 MGD of reclaimed water to 30 commercial customers.

### 1.1.4 Study Overview

Loudoun Water maintains a practice of completing a comprehensive water and sewer rate study at least every three years. Historically the rate studies have been used to establish rates, fees and charges for a three-year period. This practice allows Loudoun Water to ensure that the charges for service are sufficient, equitable and predictable within the service area. In January of 2018, Loudoun Water engaged Stantec to complete a comprehensive water, sewer and reclaimed water rate study consistent with Loudoun Water's practices. The scope of work for the study, established between Stantec and Loudoun Water includes several related tasks. The specific tasks are summarized below.

- 1) **Revenue Sufficiency Analysis and Financial Plan** – Develop a three-year financial plan for Loudoun Water's water and sewer systems that will determine the level of annual revenue required to satisfy projected annual operating expenses, debt service, and capital cost requirements as well as the maintenance of adequate reserves. The financial plan is designed to support the short and long-term needs of Loudoun Water in an effort to provide fiscal sustainability while minimizing customer impacts.
- 2) **Reclaimed Water Rate Analysis** – Evaluate the cost of providing reclaimed water service to determine if adjustments to the reclaimed water rates are warranted in light of the cost of service

and forecasted changes in reclaimed water system demands within the Loudoun Water service area.

- 3) **Availability Charge Analysis** – Evaluate the methodology used by Loudoun Water to determine water and sewer availability charges and recommend modifications if appropriate. Develop a forecast of availability charges based on the cost of providing water and sewer system capacity to new customers joining the Loudoun Water systems.
- 4) **Developer Fee Analysis** – Review the current plan review and inspection fees charged by Loudoun Water to determine if the fees are set at a level that recovers the cost of providing these services and recommend modifications if the fees are set below the cost of service.
- 5) **Benchmarking and Customer Impacts** – Benchmark Loudoun Water's rates, fees and charges with comparable and local utilities. Demonstrate the impacts of any recommended changes to rates, fees and charges on customers of the systems in the form of customer bill impact comparisons.

The remaining sections of this report outline the analysis, assumptions, findings, conclusions and recommendations related to the completion of the scope of work.

## 2. REVENUE SUFFICIENCY ANALYSIS AND FINANCIAL PLAN

This section of the report presents the financial management plan and corresponding plan of water and sewer rate adjustments developed in the revenue sufficiency analysis (RSA) that was conducted as part of the Study. The following sub-sections of the report present a description of the approach, source data, assumptions and results of the RSA.

### 2.1 APPROACH

The water and sewer rate study was completed as a collaborative effort with Loudoun Water staff. During the Study, Stantec reviewed alternative multi-year financial management plans and corresponding water and sewer rate revenue adjustment plans through several interactive work sessions with Loudoun Water staff. During these work sessions, Stantec examined the impact of various inputs or assumptions upon key financial indicators by use of tabular and graphical output and extensive review of inputs, assumptions, and relationships between key variables. In this way, Stantec developed the recommended financial management plan and corresponding plan of annual water and sewer rate revenue adjustments presented in this report, which will allow Loudoun Water to fund its cost requirements throughout the planning period and meet its financial performance goals and objectives.

Loudoun Water provided historical and budgeted financial information regarding the operation of its water and sewer systems, as well as historical customer counts and volume data by class of customer. Loudoun Water also provided a multi-year capital improvement program (CIP), and documented current debt service obligations and covenants, relative to net income coverage requirements, reserves, etc. Following review of the data, we discussed with Loudoun Water staff key assumptions and policies that would affect the financial performance of the Utility, such as trends in demands, planned developments/customer growth, debt coverage levels, levels of reserves, capital funding sources, earnings on invested funds, escalation rates for operating costs, and purchased resources.

All of this information was entered into the financial module of our Financial Analysis and Management System interactive modeling system. The model is used to produce a 10-year projection of the sufficiency of the revenue provided by the current rates of the system to meet current and projected financial requirements and determined the level of rate revenue increases necessary in each year of the projection period to satisfy the system's annual financial requirements. While the model is developed for a ten-year period, the period shown in the main body of this report includes the next five years from 2019 to 2023.

## 2.2 SOURCE DATA

The following presents the key source data relied upon in conducting the Study:

### 2.2.1 Cash Balances

While Loudoun Water maintains a single fund to account for the operations of the utility, Loudoun Water maintains several internal accounts to track how the funds are generated and their intended use. The accounts used for tracking the funds and available balances include the following:

- **Operating Account** - The Operating Account serves as working capital reserve to provide for the potential lag between operating revenues and operating expenditures, fluctuations on budgets and unexpected minor expenses. The Operating Account is set to equal at least 3 months of operating expenses of the systems.
- **Repair and Replacement Account** - The Repair and Replacement Account serves to provide future funds for the repair and replacement of aging system assets. Rather than set a specific minimum target for the account, Loudoun Water has a goal maintained a practice of contributing to the account on an annual basis a minimum equivalent to 50-percent of annual depreciation expense on the system assets.
- **Availability Charge Account** - The Availability Charge Account serves as a funding mechanism for expansion related capital projects (cash funding and retirement of expansion related debt service).

Loudoun Water staff provided the cash balances within each of the accounts as of January 1, 2018. The account balances are shown in Table 2-1.

**Table 2-1 Cash Balances at January 2018**

Account	Beginning Balance
Operating	\$15,681,184
Repair and Replacement	\$101,518,816
Availability Charge	\$143,900,000
<b>Total</b>	<b>\$261,100,000</b>

### 2.2.2 Revenues

The revenues utilized in the analysis reflect an evaluation of multiple years of historical results, 2017 actuals, and the 2018 Proposed Budget. Revenues consist of fixed and commodity charges, availability charges, wholesale water service, hydrant commodity charges, late payment penalty fees and miscellaneous service charges. Rate revenue is based upon 2017 actual results, adjusted annually to reflect assumed customer growth and changes in demands. Projections of all other revenues reflect the amounts within the 2018 Budget, excluding interest income, which was calculated annually based upon

projected average account balances and assumed interest rates. Revenue from availability charges is calculated based on the assumed growth in new accounts and current rates.

### 2.2.3 Operating Expenditures

Loudoun Water's operating expenditures include all operating and maintenance (O&M) expenses and minor capital outlay. The rate study analysis based O&M expenditure projections on individual expense categories and expense amounts within Loudoun Water's 2018 budget, adjusted annually thereafter based upon assumed cost escalation factors. These were reviewed with Loudoun Water staff and outlined in the next section. The O&M expenses for 2019 include full operation of the Trap Rock Water Treatment plant which replaces the majority of operational costs at the Goose Creek Water Treatment plant. It is important to note that in 2018, Loudoun Water received notice from DC Water that an additional \$1.5 million in annual costs would be required for wastewater conveyance services. The \$1.5 million is anticipated to continue during the entire projection period and increase annually at an inflationary level.

### 2.2.4 Debt Service

The annual debt service schedules for existing outstanding debt were provided by Loudoun Water. Loudoun Water currently has nine outstanding debt issues totaling approximately \$280 million in outstanding principal at the beginning of 2018. Loudoun Water currently recovers 20% of annual principal payments on existing debt from user rates (existing customers) and the remaining 80% is recovered from availability charges (new customers). This allocation is based on the types of projects funded with bond proceeds. The interest on existing debt service is recovered from user rates. The existing debt payments (principal and interest) are shown in Table 2-2.

**Table 2-2 Existing Debt Payments**

System	2019	2020	2021	2022	2023
Water	\$9,018,615	\$9,022,119	\$9,059,193	\$9,058,430	\$9,067,326
Sewer	12,918,428	12,916,598	13,016,550	\$13,006,112	\$13,027,279
<b>Total</b>	<b>\$21,937,043</b>	<b>\$21,938,717</b>	<b>\$22,075,743</b>	<b>\$22,064,542</b>	<b>\$22,094,605</b>

### 2.2.5 Capital Improvement Program

Loudoun Water provided the multi-year capital improvement program (CIP) at the detailed project level for the period 2018 through 2027. A summary of the five-year capital improvement program by project category for the water system is presented in Table 2-3 followed by a summary for the sewer system in Table 2-4.

**Table 2-3 Water Capital Improvement Program**

Project Category	2019	2020	2021	2022	2023
Administrative	\$2,800,600	\$1,344,200	\$730,400	\$2,261,600	\$1,122,000
Community Systems	2,125,000	1,295,000	45,000	25,000	25,000
Finance	6,260,000	5,100,000	5,090,000	6,490,000	5,350,000
Potomac Water Supply	2,650,000	26,340,000	27,100,000	24,160,000	9,220,000
Repair & Replacement	1,855,000	885,000	895,000	595,000	65,000
Other Water	13,460,000	8,190,000	12,350,000	3,810,000	19,790,000
<b>Total</b>	<b>\$29,150,600</b>	<b>\$43,154,200</b>	<b>\$46,210,400</b>	<b>\$37,341,600</b>	<b>\$35,572,000</b>

**Table 2-4 Sewer Capital Improvement Program**

Project Category	2019	2020	2021	2022	2023
Administrative	\$3,564,400	\$1,710,800	\$929,600	\$2,878,400	\$1,428,000
Broad Run WRF	9,280,000	8,840,000	38,870,000	43,690,000	3,900,000
Community Systems	5,365,000	25,000	25,000	25,000	25,000
Finance	6,830,000	5,490,000	5,170,000	5,250,000	5,250,000
Repair & Replacement	8,845,000	4,960,000	1,735,000	3,370,000	3,225,000
Reclaimed System	450,000	2,900,000	2,500,000	0	1,500,000
Other Sewer	17,990,000	3,320,000	2,250,000	4,080,000	6,340,000
<b>Total</b>	<b>\$52,324,400</b>	<b>\$27,245,800</b>	<b>\$51,479,600</b>	<b>\$59,293,400</b>	<b>\$21,668,000</b>

As part of the Study, we worked with Loudoun Water staff to examine the specific funding for each of the capital projects included in the CIP. Loudoun Water staff identified which projects or portions of projects should be funded by existing users, and which projects were growth related and should be funded from availability charges. Table 2-5 presents Loudoun Water's anticipated capital spending by funding source over the next five years.

**Table 2-5 Capital Improvement Summary by Funding Source**

Funding Source	2019	2020	2021	2022	2023
Availability Charges	\$33,232,500	\$37,251,000	\$68,897,500	\$77,516,500	\$31,672,000
User Rates	48,242,500	33,149,000	28,792,500	19,118,500	25,568,000
<b>Total</b>	<b>\$81,475,000</b>	<b>\$70,400,000</b>	<b>\$97,690,000</b>	<b>\$96,635,000</b>	<b>\$57,240,000</b>

As demonstrated in the table, approximately 40-percent of the five-year capital plan will be funded from user rates with the balance funded from availability charges. The specific funding for the capital

improvements plan, including the issuance of debt to fund a portion of the CIP and the assumed execution rate for the projects are discussed in the next section of the report.

## 2.3 ASSUMPTIONS

The following presents the key assumptions utilized in the completion of the study.

### 2.3.1 Cost Escalation

Annual cost escalation factors for the various types of operating and maintenance expenses were developed based upon a review of historical trends, our industry experience, and detailed discussions with Loudoun Water staff. Table 2-6 presents a summary of the water and sewer system annual cost escalation factors used in the Study to forecast operating expenses for the period 2019 to 2027.

**Table 2-6 O&M Cost Escalation Assumptions**

Budget Category	Annual Inflation
Salaries and Wages	5.0%
Fringe Benefits	5.0%
Electric	7.0%
Contractual Services	3.0%
Repairs and Maintenance	3.0%
Operating Supplies	3.0%
Other Operating Expenses	3.0%
Wholesale Sewer*	3.5%
Purchased Water**	3.6%

\*Assumed escalation in DC Water treatment expenses

\*\*Assumed escalation in purchased water costs from Fairfax Water

Based on discussions with Loudoun Water staff and review of historical budget to actual operating and maintenance spending, an assumed execution rate of 97-percent of budget was used in the forecast of annual operating and maintenance expenses.

### 2.3.2 Interest Earnings

Interest Income throughout the projection period is calculated annually based upon projected average fund balances and assumed interest rates. The assumed interest rates are presented in Table 2-7.

**Table 2-7 Interest Rates**

Funding Source	2019	2020	2021	2022	2023
Interest Rate on Balances	1.50%	1.75%	2.00%	2.25%	2.50%

### 2.3.3 Customer Growth & Volume Forecast

The growth in new connections to the Loudoun Water systems was based on Loudoun County population projections. Historically, Loudoun Water has seen an average increase of approximately 3.5-percent in connections per year. The County projections provide growth forecasts that are consistent with this historical level of growth, but with slowed growth over time. The changes in water system demands are based on a combination of the increase in the number of ERCs and an assumed decrease in the per ERC usage of approximately 1% per year. The decrease in per account usage is based on historical trends demonstrated within Loudoun Water's customer usage patterns and is consistent with national trends. Table 2-8 presents the anticipated customer growth and incremental increases in system demand over the planning period.

**Table 2-8 Water Connection Growth and Volume Forecast**

Year	Increase in ERCs	% Change in ERCs	Increase in Demands <sup>1</sup>	% Change in Demands
2019	3,000	3.90%	212,397	2.48%
2020	2,900	3.52%	197,458	2.25%
2021	2,900	3.28%	192,632	2.15%
2022	2,800	3.18%	178,244	1.95%
2023	2,750	2.97%	168,991	1.81%
<b>Total</b>	<b>14,350</b>		<b>949,722</b>	

<sup>1</sup>Thousand gallons, assumes declining per connection usage (-1.0% per year)

Loudoun Water currently maintains a water rate structure with two customer classes (Residential and Commercial) with increasing water rates proportional to water usage. To accurately forecast future water rate revenues under the existing structure, it was necessary to determine the amount of consumption that falls within the current Residential and Commercial tiers. Loudoun Water currently defines the Residential tiers for quarterly usage as:

- Tier 1: 0 to 25,000 gallons
- Tier 2: Over 25,001 to 50,000 gallons
- Tier 3: Over 50,000 gallons

The current Commercial Tiers for quarterly usage are:

- Tier 1: Consumption up to reserved capacity purchased with availability charge
- Tier 2: Consumption in excess of the reserved capacity purchased

Table 2-9 shows the percentage breakdown of customers and consumption within the current rate structure. It should be noted that the percentages in Table 2-9 are based on annual numbers and therefore are influenced by seasonal variations.

**Table 2-9 Consumption Usage Patterns in Current Water Rate Structure**

	2015	2016	2017
<b>Residential</b>			
Tier 1: 0 – 25,000 gallons	84.9%	83.1%	86.4%
Tier 2: 25,001 – 50,000 gallons	10.9%	11.7%	10.3%
Tier 3: Over 50,000 gallons	4.2%	5.2%	3.4%
<b>Commercial</b>			
Tier 1: Up to purchased capacity	92.0%	92.8%	95.1%
Tier 2: Over purchased capacity	8.0%	7.2%	4.9%

Table 2-9 shows that there has been some fluctuation over the last three years in the usage by tier. The changes are most likely due to the amount of rainfall experienced each year. 2017 was an abnormally wet year and the amount of water sold in the higher tiers likely reflects this fact. This concept is further discussed in Section 3 of the report.

### 2.3.4 Cash Balance Guidelines

Loudoun Water maintains a policy that the total cash balance should be maintained within the range of two to three times the three-year rolling average of operating and maintenance expenses, and debt service.

Table 2-10 presents the calculated target range for each year over the next five years. The target range balance was used in the study to evaluate the sufficiency of current revenues to meet the minimum balance and to develop the financial plan discussed later in this section of the report.

**Table 2-10 Unrestricted Balance Targets**

	2019	2020	2021	2022	2023
Maximum (3 x O&M and Debt)	\$263,175,258	\$276,829,403	\$290,017,191	\$299,369,138	\$309,075,278
Minimum (2 x O&M and Debt)	\$175,450,172	\$184,552,935	\$193,344,794	\$199,579,425	\$206,050,185

### 2.3.5 Funding of the Capital Improvements Program

Based on discussions with Loudoun Water staff and utilizing the capital optimization function of the financial model, the capital improvements program (CIP) over the planning period will be funded from a combination of existing cash balances (from user rates and availability charges), annual revenues “pay-go” funding (from user rates and availability charges) and with long-term borrowing. Our financial analysis assumes that Loudoun Water will borrow approximately \$74 million in 2021 to fund capital project needs, and that the remainder of the CIP will be funded from current revenues and available balances within the availability charge account and the repair and replacement account. The exact size and timing of the borrowing will depend on the specific funding requirements in future years.

## 2. Revenue Sufficiency Analysis and Financial Plan

Given the magnitude of the CIP, one of the key assumptions for the financial planning analysis is the anticipated execution rate of the capital projects. Historically the CIP has not fully executed on a year to year basis. Based on discussions with Loudoun Water staff and review of historical capital spending, the financial planning analysis assumes that Loudoun Water will execute the CIP as shown in Table 2-11.

**Table 2-11 Capital Improvement Summary at Execution**

	2019	2020	2021	2022	2023
Total Planned CIP	\$81,475,000	\$70,400,000	\$97,690,000	\$96,635,000	\$57,240,000
Assumed Execution Rate	90%	90%	90%	90%	110%
<b>Total CIP Funded</b>	<b>\$73,327,500</b>	<b>\$63,360,000</b>	<b>\$87,921,000</b>	<b>\$86,971,500</b>	<b>\$62,964,000</b>

**2.3.6 Funding of Repair and Replacement Account**

Loudoun Water currently maintains a goal that approximately 50-percent of the annual depreciation expense on water and sewer system assets will be contributed to the Repair and Replacement Account on an annual basis. These contributions ensure that adequate funds are generated from user rates to fund at least a portion of the depreciation. While we recommend that Loudoun Water continue to follow this practice, it is important to recognize that as the system ages there will be years when the amount of required funding for repair and replacement will be significant. During these years, it may be unrealistic to fund contributions to the reserve account and fund current replacement projects at the same time. The most important factor is that user rates are set at a level that fund at least 50% of depreciation each and every year. In some years, the revenues may be used immediately to fund projects, and in other years they can be contributed to the Repair and Replacement Account. Table 2-12 presents the annual funding of depreciation and shows that Loudoun Water will be funding at or above 50-percent of depreciation from user rates over the five-year planning period.

**Table 2-12 Annual Funding of Depreciation**

	2019	2020	2021	2022	2023
Annual System Depreciation	\$49,044,293	\$51,760,127	\$54,106,793	\$57,363,127	\$60,584,293
Annual Funding of Depreciation	\$22,685,600	\$27,950,469	\$31,381,940	\$34,417,876	\$39,379,790
<b>% of Depreciation Funded from Rates</b>	<b>46%</b>	<b>54%</b>	<b>58%</b>	<b>60%</b>	<b>65%</b>

### 2.3.7 Debt Service and Coverage

One of the most important covenants Loudoun Water makes relative to the issuance of debt is that its annual net revenues (revenues less operating expenses) will be at least 1.2 times greater than its senior lien debt service requirements. It is important to note that these revenue covenants (often referred to as debt service coverage requirements) represent minimum requirements established in Loudoun Water's bond covenants. Should Loudoun Water be unable to meet these requirements, it could be found in technical default. This would result in Loudoun Water facing a potential downgrade in its credit rating, which would affect the interest rate and terms of any future financing initiatives. As a policy decision, utilities often measure revenue sufficiency and set rates based upon a higher debt service coverage level, to ensure compliance with these type of covenants in the event future projections of revenue and expenses do not occur as predicted (due to extended drought conditions, unanticipated capital requirements or operating cost increases, natural disasters, etc.). In accordance with Loudoun Water policy, we have assumed that Loudoun Water will maintain debt service coverage of at least 1.5. This level of debt coverage is typical within the utility industry and will help to ensure water and sewer revenues are kept at a level that satisfies Loudoun Water's bond covenants.

## 2.4 REVENUE SUFFICIENCY AND FINANCIAL PLANNING RESULTS

To evaluate the sufficiency of existing rates, fees and charges to fund Loudoun Water's system revenue requirements over the planning period, a projection of system revenue requirements and revenues at current rates was developed. It is important to note that Loudoun Water's availability charges are determined based on the cost of providing system capacity as compared to annual cash requirements. As a result, the revenue sufficiency is focused on the revenues generated from user rates. The evaluation of availability charges is discussed in Section 4 of this Report. However, any changes in availability charges and reclaimed water rates are factored into the overall revenues of the utility.

### 2.4.1 Revenue Requirement Projection

Based on the data and assumptions outlined in the prior sections of this report, a forecast of the water and sewer system revenue requirements was developed. The forecasts for the water system and the sewer system are presented on the following page in Tables 2-13 and 2-14, respectively.

## 2. Revenue Sufficiency Analysis and Financial Plan

**Table 2-13 Forecast of Annual Water Revenue Requirements**

Expenditure Type	2019	2020	2021	2022	2023
Personnel	\$13,348,070	\$14,015,473	\$14,716,247	\$15,452,060	\$16,224,663
Purchased Water	5,515,716	5,686,536	5,857,356	6,028,176	6,198,996
Trap Rock Operations	4,459,250	4,593,028	4,730,818	4,872,743	5,018,925
Other Operating	10,092,256	10,449,265	10,820,780	11,207,503	11,610,175
<b>Total Operating</b>	<b>33,415,292</b>	<b>34,744,302</b>	<b>36,125,201</b>	<b>37,560,482</b>	<b>39,052,759</b>
Existing Debt Service	9,018,615	9,022,118	9,059,193	9,058,430	9,067,326
Projected Debt Service <sup>1</sup>	-	-	2,026,022	3,030,260	3,030,260
Cash Funded Capital	26,097,571	39,083,850	21,770,910	22,297,050	19,093,800
<b>Total Capital</b>	<b>35,116,186</b>	<b>48,105,968</b>	<b>32,856,125</b>	<b>34,385,740</b>	<b>31,191,386</b>
<b>Total Water Expenses</b>	<b>\$68,531,478</b>	<b>\$82,850,270</b>	<b>\$68,981,326</b>	<b>\$71,946,222</b>	<b>\$70,244,145</b>

<sup>1</sup> Assumes interest only payments in first year of new issue

**Table 2-14 Forecast of Annual Sewer Revenue Requirements**

Expenditure Type	2019	2020	2021	2022	2023
Personnel	\$18,605,429	\$19,485,159	\$20,407,359	\$21,374,108	\$22,387,586
Broad Run WRF	5,053,212	5,255,341	5,465,554	5,684,177	5,911,544
Sewage Disposal	8,264,557	8,617,583	8,919,198	9,231,370	9,554,468
Other Operating	4,188,472	4,325,616	4,471,442	4,624,540	4,785,388
<b>Total Operating</b>	<b>36,111,670</b>	<b>37,683,699</b>	<b>39,263,553</b>	<b>40,914,195</b>	<b>42,638,986</b>
Existing Debt Service	12,918,428	12,916,599	13,016,550	13,006,113	13,027,279
Projected Debt Service <sup>1</sup>	-	-	700,178	1,047,235	1,047,236
Cash Funded Capital	47,229,930	24,276,150	40,236,840	47,467,800	15,745,400
<b>Total Capital</b>	<b>60,148,358</b>	<b>37,192,749</b>	<b>53,953,568</b>	<b>61,521,148</b>	<b>29,819,915</b>
<b>Total Sewer Expenses</b>	<b>\$96,260,028</b>	<b>\$74,876,448</b>	<b>\$93,217,121</b>	<b>\$102,435,343</b>	<b>\$72,458,901</b>

<sup>1</sup> Assumes interest only payments in first year new issue

As demonstrated in the tables above, there is a significant amount of fluctuation in the annual revenue requirements for the water and sewer systems over the projection period due primarily to the annual capital needs and how the specific capital projects are funded.

### 2.4.2 Revenue Projections at Current Rates and Cash Flow Projection

Based on the data and assumptions outlined above, a revenue forecast over the planning period was developed using the current rates, fees and charges. The revenue forecasts for the water and sewer system are presented in Tables 2-15 and 2-16, respectively.

**Table 2-15 Projection Water Revenues at Current Rates, Fees and Charges**

Revenue Type	2019	2020	2021	2022	2023
Water User Rates	\$41,443,722	\$42,510,059	\$43,560,715	\$44,549,973	\$45,501,846
Other Operating	2,666,550	2,711,821	2,757,998	2,805,098	2,853,140
Availability Charges	20,298,000	19,621,400	19,621,400	18,944,800	18,606,500
Investment Income	1,481,592	1,610,455	1,734,175	1,766,298	1,878,550
<b>Total Water Revenues</b>	<b>\$65,889,864</b>	<b>\$66,453,735</b>	<b>\$67,674,288</b>	<b>\$68,066,169</b>	<b>\$68,840,036</b>

**Table 2-16 Projection Sewer Revenues at Current Rates, Fees and Charges**

Revenue Type	2019	2020	2021	2022	2023
Sewer User Rates	\$48,816,211	\$50,077,478	\$51,320,031	\$52,489,771	\$53,615,123
Reclaimed Water Rates	700,000	700,000	700,000	700,000	700,000
Other Operating	3,272,584	3,328,145	3,384,816	3,442,621	3,501,581
Availability Charges	24,627,000	23,806,100	23,806,100	22,985,200	22,574,750
Investment Income	1,818,317	1,976,466	2,128,306	2,167,728	2,305,493
<b>Total Sewer Revenues</b>	<b>\$79,234,112</b>	<b>\$79,888,189</b>	<b>\$81,339,253</b>	<b>\$81,785,320</b>	<b>\$82,696,947</b>

A comparison of the projected total revenue requirements (Tables 2-13 and 2-14) and revenues at current rates within the water and sewer systems reveal that the current rates, fees and charges are not sufficient to meet the future annual revenue requirements. Tables 2-17 and 2-18 present a comparison of the annual revenue requirements for each system and the forecasted revenues at current rates.

**Table 2-17 Projection of Water Revenue Requirements and Current Revenues**

	2019	2020	2021	2022	2023
Water Expenses	<b>\$68,531,478</b>	<b>\$82,850,270</b>	<b>\$68,981,326</b>	<b>\$71,946,222</b>	<b>\$70,244,145</b>
Water Revenues	65,889,864	66,453,735	67,674,288	68,066,169	68,840,036
(Shortfall) / Surplus	<b>(\$2,641,614)</b>	<b>(\$16,396,535)</b>	<b>(\$1,307,038)</b>	<b>(\$3,880,053)</b>	<b>(\$1,404,109)</b>

Based on the forecast, the water system will experience a cumulative shortfall of approximately \$25 million over the five-year forecast period should the water revenues at current rates, fees and charges remain in place.

**Table 2-18 Projection of Sewer Revenue Requirements and Current Revenues**

	2019	2020	2021	2022	2023
Sewer Expenses	\$96,260,028	\$74,876,448	\$93,217,121	\$102,435,343	\$72,458,901
Sewer Revenues	79,234,112	79,888,189	81,339,253	81,785,320	82,696,947
<b>(Shortfall) / Surplus</b>	<b>(\$17,025,916)</b>	<b>\$5,011,741</b>	<b>(\$11,877,868)</b>	<b>(\$20,650,023)</b>	<b>\$10,238,046</b>

Based on the forecast, the sewer system will experience a cumulative shortfall of approximately \$30 million over the five-year forecast period based on sewer revenues at current rates, fees and charges. The annual shortfalls in the water and sewer system would not allow Loudoun Water to maintain its minimum unrestricted net asset balance target as shown in Table 2-19.

**Table 2-19 Forecast of Year End Cash Balance**

	2019	2020	2021	2022	2023
Beginning Balance	\$234,223,060	\$214,555,530	\$203,170,736	\$189,985,830	\$165,455,754
(Shortfall) / Surplus	(19,667,530)	(11,384,794)	(13,184,906)	(24,530,076)	8,833,937
<b>Ending Balance</b>	<b>214,555,530</b>	<b>203,170,736</b>	<b>189,985,830</b>	<b>165,455,754</b>	<b>174,289,691</b>
<b>Target Minimum</b>	<b>\$175,450,172</b>	<b>\$184,552,935</b>	<b>\$193,344,794</b>	<b>\$199,579,425</b>	<b>\$206,050,185</b>

The table demonstrates that by 2021, the cash balance would fall below the minimum target and continue the downward trend over the subsequent years.

### 2.4.3 Recommended Financial Plan

Based on the annual revenue requirements, the necessity to maintain the minimum unrestricted net asset balance and maintain the financial viability of the utility, a recommended plan of user rate increases was developed. The adjustments in user rates were developed in concert with the calculated availability charges and reclaimed water rates discussed later in this report and recognize the additional revenues that will be generated should Loudoun Water adjust these charges and rates. The recommended increases in water and sewer rates are proposed for 2019, 2020 and 2021. Based on our financial analysis we forecast that additional increases will be required in subsequent years. Table 2-20 presents the recommended rate adjustments and an estimate of future adjustments.

**Table 2-20 Recommended Water and Sewer User Rate Adjustments**

	2019	2020	2021	2022	2023
Water Rate Adjustment	3.5%	3.5%	3.5%	3.0%	3.0%
Sewer Rate Adjustment	3.5%	3.5%	3.5%	3.0%	3.0%

## 2. Revenue Sufficiency Analysis and Financial Plan

The recommended rate adjustments should be applied to all components of the water and sewer user rates and for both residential and commercial customers. The recommended water and sewer rates are presented in the following tables.

**Table 2-21 Recommended Water Rates**

	Current	Jan 1, 2019	Jan 1, 2020	Jan 1, 2021
<b>Residential Rates</b>				
Basic Charge	\$33.46	\$34.63	\$35.84	\$37.09
Tier 1: 0 - 25,000 Gallons	\$2.44	\$2.53	\$2.62	\$2.71
Tier 2: 25,001 - 50,000 Gallons	\$6.80	\$7.04	\$7.29	\$7.55
Tier 3: Over 50,000 Gallons	\$9.11	\$9.43	\$9.76	\$10.10
<b>Commercial Rates</b>				
Basic Charge				
5/8"	\$33.46	\$34.63	\$35.84	\$37.09
3/4"	\$47.12	\$48.77	\$50.48	\$52.24
1"	\$99.08	\$102.55	\$106.14	\$109.85
1 1/2"	\$156.51	\$161.99	\$167.66	\$173.53
2"	\$252.21	\$261.04	\$270.18	\$279.63
3"	\$416.27	\$430.84	\$445.92	\$461.53
4"	\$689.71	\$713.85	\$738.83	\$764.69
6"	\$1,373.30	\$1,421.37	\$1,471.12	\$1,522.60
Tier 1: Up to Purchased Capacity	\$3.21	\$3.32	\$3.44	\$3.56
Tier 2: Over Purchased Capacity	\$5.53	\$5.72	\$5.92	\$6.13
All Other Uses*	\$6.80	\$7.04	\$7.29	\$7.55

\*Includes, but not limited to, fire hydrant special use, construction water and irrigation/submeters for which an availability charge has not been paid.

## 2. Revenue Sufficiency Analysis and Financial Plan

**Table 2-22 Recommended Sewer Rates**

	Current	Jan 1, 2019	Jan 1, 2020	Jan 1, 2021
<b>Residential Rates</b>				
Basic Charge	\$33.43	\$34.60	\$35.81	\$37.06
Usage Rate per 1,000 gallons*	\$4.80	\$4.97	\$5.14	\$5.32
<b>Commercial Rates</b>				
Basic Charge				
5/8"	\$33.43	\$34.60	\$35.81	\$37.06
3/4"	\$47.82	\$49.49	\$51.23	\$53.02
1"	\$102.61	\$106.20	\$109.92	\$113.77
1 1/2"	\$163.13	\$168.84	\$174.75	\$180.87
2"	\$264.02	\$273.26	\$282.82	\$292.72
3"	\$436.97	\$452.26	\$468.09	\$484.48
4"	\$725.21	\$750.59	\$776.86	\$804.05
6"	\$1,445.81	\$1,496.41	\$1,548.79	\$1,603.00
Usage Rate per 1,000 gallons	\$4.80	\$4.97	\$5.14	\$5.32

\*Usage capped at winter quarter average consumption plus 3,000 gallons, residential only

Sample customer bill impacts resulting from the recommended water and sewer rates are presented in Section 7 of the report.

The adjustments to water and sewer rates along with proposed adjustments to reclaimed water rates and availability charges (both discussed later in this report) will allow Loudoun Water to maintain an unrestricted net asset balance that remains above the minimum balance, meet debt service coverage requirements and fund the operations and maintenance of the water and sewer systems. The detailed pro-forma cash flow results with the recommended changes is presented in Section 6 of the report.

## 3. EVALUATION OF WATER AND SEWER USER RATES

This section of the report examines the pricing of water and sewer service within Loudoun Water's system. While our scope of work for the study does not include the development of alternative water and sewer user rate structures, we were tasked with evaluating how well the current rate structures comport with intended cost of service recovery for each component of the rate structure. The design and structure of the current rates are discussed below.

### 3.1 EVALUATION OF WATER AND SEWER USER RATE STRUCTURE

As demonstrated in the prior section of the report, Loudoun Water's current water and sewer rates include fixed basic charges and volumetric or commodity rates that are charged based on the metered water used each quarter. The basic charges for commercial customers are based on the size of the meter serving each connection account. Volumetric rates are differentiated by the customer class between residential and commercial customers. Loudoun Water maintains specific cost of service recovery objectives for each component of the water and sewer user rates.

#### 3.1.1 Basic Charges

Basic charges represent the fixed charges billed to customers regardless of actual water use. Fixed basic charges are important because they provide a minimum amount of fixed revenue regardless of changes in customers' water usage patterns. There has been an overall trend within the utility industry to increase the amount of fixed revenue generated from user rates due to the ongoing declines in customer usage patterns.

The amount of revenue generated from the basic charge can be modified simply by increasing or decreasing the magnitude of the basic charge per account based on what percentage of revenues should be collected by the basic charge. Loudoun Water maintains a rate goal that the basic charge should recover between 25% and 30% of total rate revenues. To evaluate whether the current rate structure is meeting, and will continue to meet this revenue target, the current revenues and future revenues from the basic charge under the financial plan were estimated over the projection period. Table 3-1 shows the percentage of basic charge revenue that will be generated in 2019 through 2023 under the financial plan.

**Table 3-1 Basic Charge Analysis**

	2019	2020	2021	2022	2023
Basic Charge Revenue	\$28,907,513	\$30,901,366	\$33,005,288	\$35,009,241	\$37,085,079
Total Revenue	\$94,438,909	\$100,496,801	\$106,713,048	\$112,613,943	\$118,572,336
% of Total Revenue	30.6%	30.7%	30.9%	31.1%	31.3%

## 3. Evaluation of Water and Sewer User Rates

Table 3-1 demonstrates that under Loudoun Water's current rate structure basic charges will generate at least 25% of revenues each year during the projection period, therefore meeting the revenue target.

### 3.1.2 Volumetric Charges

Variable charges represent the portion of the water and sewer bill that is based on metered water use. The key issues related to the variable charges are related to the intended cost of service recovery for each component of the structure. Loudoun Water currently charges residential and commercial customers different rates for different levels of metered water consumption. These structures are intended to recover the costs incurred by Loudoun Water at the varying levels of customer usage. The specific components of the revenue requirements recovered in the current water rate structure tiers include the following:

- Residential Tiers 1 and 2 combined with Commercial Tier 1 plus a portion of basic charges and a portion of other miscellaneous revenues should fund all operating and maintenance expenses and the annual debt service payments allocated to user rates.
- Residential Tier 3 and Commercial Tier 2 revenue, irrigation revenues, a portion of basic charges and a portion of miscellaneous revenues should fund a majority of the capital replacement reserve contribution.

The design of the water variable charges reinforces the idea that overuse of the system will result in higher replacement costs for the system as a whole and therefore the users who overuse the system will be paying for this increased replacement cost. Essentially these customers are "renting" additional capacity above and beyond the capacity that was reserved when availability charges were paid. Table 3-2 presents the results of the current variable rate structure performance under the proposed financial plan. It should be noted that the revenues from Residential Tiers 1 and 2 and Commercial Tier 1 include the 90-percent of the basic charge revenue. The Residential Tier 3 and Commercial Tier 2 revenues include the remaining 10-percent of the basic charge revenue.

**Table 3-2 Water Tiered Rate Structure Analysis**

	2019	2020	2021	2022	2023
Water O&M and Debt	\$36,982,980	\$38,453,826	\$40,051,042	\$41,646,640	\$43,307,508
Residential Tiers 1 & 2 and Commercial Tier 1	\$37,200,735	\$39,493,267	\$41,899,292	\$44,150,425	\$46,504,285
<b>Target Met?</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
Annual R&R Reserve Contribution	\$12,076,593	\$12,800,368	\$13,570,546	\$14,194,778	\$14,813,116
Residential Tier 3 and Commercial Tier 2	\$9,856,192	\$10,431,601	\$11,070,707	\$11,667,290	\$12,408,423
<b>% of Funding from Residential Tier 3 and Commercial Tier 2</b>	<b>82%</b>	<b>81%</b>	<b>82%</b>	<b>82%</b>	<b>84%</b>

## 3. Evaluation of Water and Sewer User Rates

Table 3-2 demonstrates that the current Residential Tier 1 and 2 and Commercial Tier 1 rates will meet the desired cost recovery from these tiers during the five-year forecast period. Table 3-2 demonstrates that the revenues from Residential Tier 3 and Commercial Tier 2 will fund the majority of the contribution to the R&R account. It should be noted that in the past the level of revenue from Residential Tier 3 and Commercial Tier 2 has been able to fully fund the R&R reserve contributions. However as shown in Table 3-2, based on current usage patterns, these tiers are not anticipated to fully fund the contributions. This is primarily due to reductions in water sold at the highest tiers.

Over the last several years, Loudoun Water has seen a reduction in the amount of water sold at Residential Tier 3 and Commercial Tier 2 rates likely as a result of conservation, water fixture change outs and recent weather patterns. This result demonstrates that these customers are currently not “overusing” as much water as they have in the past. However it is important to note that the current usage patterns used in the study are from a period of time in which precipitation has been higher than recent history within the Loudoun Water service area. Table 3-3 shows the monthly rainfall amounts during the typical irrigation months over the past five years measured at the Dulles International Airport. The table demonstrates that 2017 and particularly 2018 have been unusually wet summers.

**Table 3-3 Monthly Rainfall Amounts - Dulles International Airport**

Inches of Rainfall <sup>(1)</sup>	2014	2015	2016	2017	2018
May	6.34	2.5	6.08	8.49	8.92
June	4.62	7.44	6.35	1.28	4.15
July	2.09	4.89	3.02	8.80	11.21
August	4.98	1.09	0.96	3.77	7.23
<b>Total</b>	<b>18.03</b>	<b>15.92</b>	<b>16.41</b>	<b>22.34</b>	<b>31.51</b>

<sup>(1)</sup> National Oceanic and Atmospheric Administration

We recommend that Loudoun Water continue to monitor customer usage patterns over the next three years to determine average demands in a year with normal precipitation levels. If precipitation patterns return to more recent historic levels but water sales at the higher tiers do not return to historic levels, the recent trends may represent a more fundamental shift in customer usage. If over the next few years, Loudoun Water learns that this is in fact the case, it would be worthwhile to investigate whether the current water tiers are set at the appropriate levels.

## 4. RECLAIMED WATER RATES

This section of the report outlines our evaluation of the current and projected cost of providing reclaimed water service within the Loudoun Water service area. The analysis includes an evaluation of whether adjustments to existing reclaimed water rates are warranted in light of the financial forecast and the anticipated demands for reclaimed water within the service area.

### 4.1 BACKGROUND

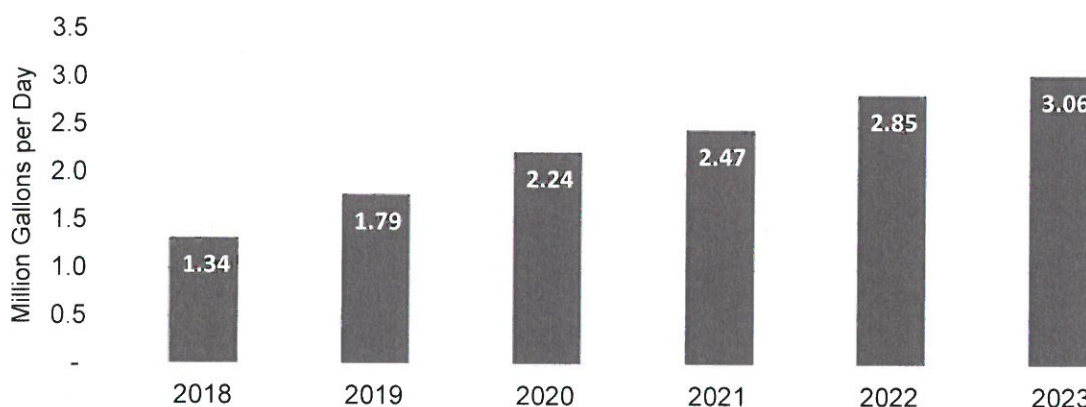
While the majority of the effluent from Loudoun Water's Broad Run Water Reclamation Facility (BRWRF) is discharged into Broad Run, a tributary of the Potomac River, a portion of effluent is delivered in the form of reclaimed water to commercial customers for various non-potable uses, such as irrigation and cooling water.

Loudoun Water has not increased reclaimed water rates since 2014. Since this time, the reclaimed water system has expanded in size, scope and the number of customers served by the system. The following sections of the report examine the growth in the system, the cost of providing service and specific recommendations for modifications to the existing reclaimed water rates.

### 4.2 RECLAIMED CUSTOMERS AND DEMAND FORECAST

Loudoun Water's reclaimed customer base includes 30 customers plus BRWRF onsite use, which is not billed. The customer base includes commercial customers that use reclaimed water for irrigation and as cooling water for data processing operations. In 2017, Loudoun Water supplied approximately 1.3 MGD of reclaimed water. Based on discussions with Loudoun Water staff, the reclaimed water demands are expected to grow substantially over the next five to ten years. The forecast of demand for the system is shown in Figure 4-1.

**Figure 4-1 Reclaimed Water Demand Forecast**



### 4.3 REVENUE REQUIREMENTS

The cost of providing reclaimed water is closely related to the operational costs of Loudoun Water's WRF, given that the reclaimed water is generated at this facility. While it is challenging to quantify all costs associated with producing reclaimed water, there are expenditures that can be identified as specifically related to providing the service. These costs include:

- Customer service staff assigned to the reclaimed water system
- Chemicals required to produce the reclaimed water
- Pumping power costs associated with producing reclaimed water
- Funding of the repair and replacement of the reclaimed water system

As part of the study, the cost of each of these individual expense line items were quantified for 2018 and forecasted over the projection period. To develop the forecast of reclaimed water revenue requirements based on these cost components several escalation factors were utilized. The factors are included in Table 4-1.

**Table 4-1 O&M Cost Escalation Assumptions**

Expenditure Type	Annual Inflation
Salaries and Wages	5.0%
Fringe Benefits	5.0%
Electric	7.0%
Chemicals	3.0%

The annual contribution to the repair and replacement of the reclaimed water system was set at 50% of the annual depreciation on the existing reclaimed water system assets. Table 4-2 presents the specific costs associated with the reclaimed water system. It is important to note that the annual expenditures for chemicals and electricity increase based on the cost escalation factor and the increase in demands on the reclaimed water system.

**Table 4-2 Reclaimed Water Revenue Requirements and Projected Revenues**

Expenditure Type	2019	2020	2021	2022	2023
Personnel	\$176,853	\$185,696	\$194,981	\$204,730	\$214,966
Chemicals	81,105	108,478	128,259	157,823	181,536
Electric	10,220	13,140	14,600	17,520	19,345
R&R Contribution	927,701	927,701	927,701	927,701	927,701
<b>Total Expenditures</b>	<b>\$1,195,879</b>	<b>\$1,235,015</b>	<b>\$1,265,541</b>	<b>\$1,307,774</b>	<b>\$1,343,548</b>
<b>Revenues at Current Rates</b>	<b>\$980,653</b>	<b>\$1,225,816</b>	<b>\$1,354,526</b>	<b>\$1,557,705</b>	<b>\$1,674,533</b>

## 4. Reclaimed Water Rates

Table 4-2 shows that the current reclaimed water rates will not cover the anticipated expenditures on the reclaimed water system until 2021. Additionally, this catch up in revenues is highly dependent on growth in customer demands. If the demands do not materialize, the revenues will remain below the annual revenue requirements. Finally, it is important to note that the costs shown in Table 4-2 represent only those costs that can easily be identified directly to reclaimed water service. There are additional costs that Loudoun Water incurs that are associated with the BRWRF that are difficult to extract and quantify but are required to provide reclaimed water service.

#### 4.4 FINANCIAL PLAN

Based on our review of the reclaimed water system revenue requirements and anticipated revenues from existing reclaimed water rates, we recommend that Loudoun Water adjust reclaimed water rates at the same rate as the sewer user rates. This approach will allow reclaimed water revenue to keep pace with the cost identified in Table 4-2 as well as the increasing costs incurred at the BRWRF. The recommended adjustments and resulting reclaimed water rates are presented in Table 4-3.

**Table 4-3 Recommended Reclaimed Water Rates**

	Current	Jan 1, 2019	Jan 1, 2020	Jan 1, 2021
Reclaimed Water Rate Adjustment		3.5%	3.5%	3.5%
Reclaimed Water Rate Per 1,000 gallons	\$1.50	\$1.55	\$1.61	\$1.66

The average customer bill impact resulting from the adjustments to the reclaimed water rates are presented in Section 7 of the report.

## 5. AVAILABILITY CHARGES

Loudoun Water collects availability charges from new customers joining the water and/or sewer system to recover the cost of providing water and sewer system infrastructure. The charges are also assessed to existing customers requiring increased system capacity. The availability charges are used to fund expansion projects or retire annual debt service related to system expansion. The proper establishment of availability charges is necessary to ensure that costs required to meet growth in the customer base are funded by these customers so that “growth pays for growth.”

This section of the report outlines our evaluation of the current availability charges collected by Loudoun Water and our recommended modifications to the current charges.

### 5.1 CURRENT AND PROPOSED METHODOLOGY

There are a number of methods that are typically utilized to calculate water and sewer availability charges. The basic premise behind the determination of the charges is that they should represent the cost of providing water and sewer infrastructure and be applied based on the specific capacity required for each connection. The methodology used to calculate Loudoun Water’s current availability charges was established as part of a study completed by an engineering firm in the late 1980s. Based on this methodology, Loudoun Water has evaluated the availability charges on an annual basis, making adjustments to the charges as appropriate to ensure that they continue to reflect the cost of providing water and sewer system capacity. The current methodology includes the calculation of the unit cost of capacity for each of the major components of water and sewer infrastructure. The components include:

- Water Distribution
- Water Treatment/Transmission/Storage
- Other Water System Improvements
- Sewer Collection
- Sewer Treatment/Conveyance/Disposal
- Other Sewer System Improvements

Over the last several years, during the annual updates to the availability charges, Loudoun Water staff have identified a couple of areas within the current methodology that have resulted in variability within the calculation of the charges. The key areas and our proposed changes in methodology to address each is discussed below.

- Loudoun Water has historically utilized the Engineering News Record (ENR) Construction Cost index (CCI) for the City of Baltimore to scale the cost of infrastructure. The index for Baltimore has been used as it is the only local index provided by ENR. However, since this index is representative of only one location, there has historically been a significant amount of variation in this index year over year. To address this issue, we recommend that Loudoun Water use the National CCI to scale the cost of infrastructure within the availability charge calculation. This approach will provide significantly less variability year over year in the charge calculations.

## 5. Availability Charges

- The current methodology for the determination of the unit cost of water system distribution is based on the cost of the distribution system in a typical development plus backbone distribution system assets. To determine the unit cost of capacity, the cost of the distribution system for the development portion is divided by the typical number of ERCs within a development, and the backbone distribution system is divided by the estimated number of new connections over the next 10 years. The methodology used for this second component (the backbone distribution piping) results in a unit cost that increases as growth slows down within the service area. This result is not necessarily an accurate representation of the cost of providing the infrastructure as it's an artifact of slowing growth rather than the cost of providing backbone distribution piping. To address this issue, we recommend that Loudoun Water change the methodology for this component of the charge to include the entire existing distribution system backbone costs plus those assets included in the Loudoun Water Master Plan and divide by the total estimated number of ERCs at system buildout. This approach will result in an average cost of backbone distribution system per ERC, and reduce the variability associated with the gradual reduction of growth within the Loudoun Water service area.
- Loudoun Water has historically calculated availability charges on an annual basis and adopted new availability charges annually, if deemed necessary. This approach does not provide clarity in regard to where the charges may be set from one year to another. To address this issue, we recommend that Loudoun Water adopt availability charges over a three-year period. For purposes of developing multiple years of availability charges, we recommend that the availability charges be escalated based on the historical ENR construction cost index. On a periodic basis (every three to five years) Loudoun Water should perform a full detailed analysis to ensure that the charges reflect the true cost of providing water and sewer system capacity.

## 5.2 RECOMMENDED AVAILABILTY CHARGES

Based on the methodology changes outlined above, the availability charges were calculated for each of the next three years. The recommended availability charges are presented in Table 5-1.

**Table 5-1 Recommended Availability Charges**

	Current	Jan 1, 2019	Jan 1, 2020	Jan 1, 2021
Water Availability Charge per ERC	\$6,766	\$6,901	\$7,039	\$7,180
Sewer Availability Charge per ERC	\$8,209	\$8,373	\$8,540	\$8,711

## 6. CASH FLOW PROJECTIONS AND DEBT SERVICE COVERAGE

This section of the report presents the results of operation of the water and sewer systems under the recommended financial plan including the appropriate maintenance of cash balances and debt service coverage compliance.

### 6.1 FIVE YEAR PRO-FORMA CASH FLOW FORECAST

Based on the recommended financial plan including adjustments to water and sewer user rates, reclaimed water rates and availability charges, a five-year pro-forma cash flow forecast demonstrating the financial performance of the combined utility was developed and is presented in Table 6-1.

**Table 6-1 Five-Year Pro-forma Cash Flow Forecast**

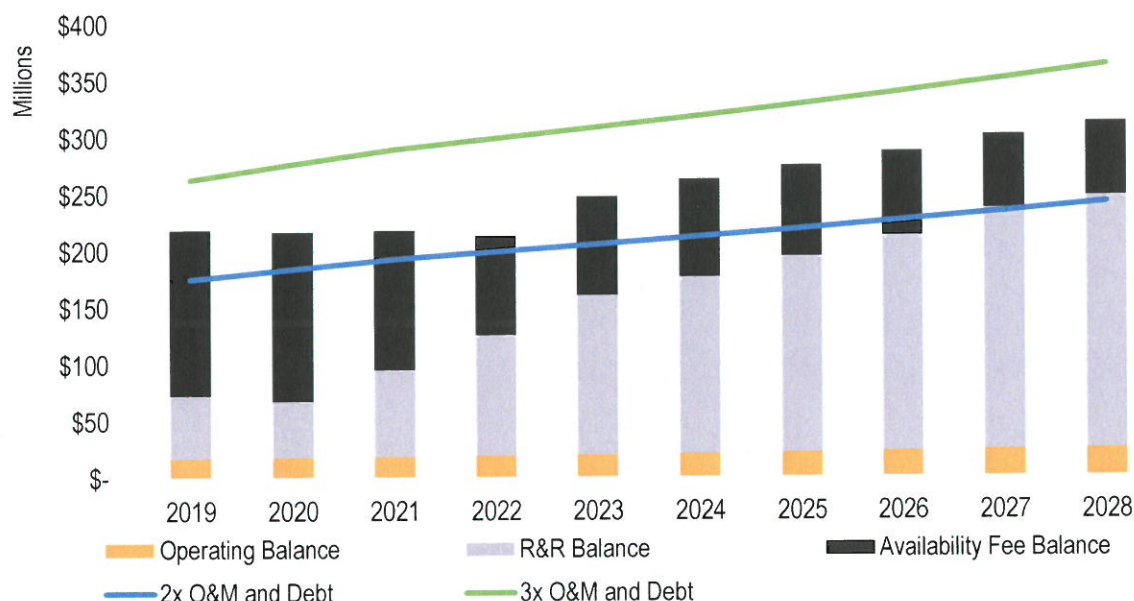
	2019	2020	2021	2022	2023
Operating Revenues	\$100,492,713	\$106,643,688	\$112,963,164	\$118,968,396	\$125,034,419
Operating Expenses	(69,526,963)	(72,428,001)	(75,388,754)	(78,474,676)	(81,691,745)
<b>Net Operating Revenues</b>	<b>30,965,750</b>	<b>34,215,687</b>	<b>37,574,410</b>	<b>40,493,720</b>	<b>43,342,674</b>
Non-Operating Revenues	49,223,783	48,998,825	50,438,924	50,689,219	52,132,705
<b>Net Revenue</b>	<b>80,189,533</b>	<b>83,214,512</b>	<b>88,013,334</b>	<b>91,182,939</b>	<b>95,475,379</b>
Total Debt Service	(21,937,043)	(21,938,717)	(24,801,943)	(26,142,038)	(26,172,101)
<b>Amount Available for Capital Projects</b>	<b>58,252,490</b>	<b>61,275,795</b>	<b>63,211,391</b>	<b>65,040,901</b>	<b>69,303,278</b>
<b>Beginning Cash Balance</b>	<b>234,223,060</b>	<b>219,148,050</b>	<b>217,063,845</b>	<b>218,267,486</b>	<b>213,543,537</b>
<b>Surplus Available for Capital Projects</b>	<b>58,252,490</b>	<b>61,275,795</b>	<b>63,211,391</b>	<b>65,040,901</b>	<b>69,303,278</b>
Bond Proceeds	-	-	25,913,250	17,206,650	28,124,800
Capital Expenditures	(73,327,500)	(63,360,000)	(87,921,000)	(86,971,500)	(62,964,000)
<b>Ending Cash Balance</b>	<b>\$219,148,050</b>	<b>\$217,063,845</b>	<b>\$218,267,486</b>	<b>\$213,543,537</b>	<b>\$248,007,615</b>
<b>Minimum Cash Balance</b>	<b>\$175,450,172</b>	<b>\$184,552,935</b>	<b>\$193,344,794</b>	<b>\$199,579,425</b>	<b>\$206,050,185</b>

Table 6-1 demonstrates that under the proposed financial plan, Loudoun Water will maintain a cash balance (unrestricted net asset balance) that is above the minimum target in each year of the projection

6. Cash Flow Projections and Debt Service Coverage

period. It should be noted that the forecast presented in Table 6-1 assumes 3% adjustments to water, sewer and reclaimed water rates in 2022 and 2023. The unrestricted net asset balance is made up of cash that has been designated for specific purposes into individual accounts including the operating reserve account, repair and replacement reserve account and the availability charge account. Figure 6-1 presents the forecast of cash balances within each account over the long-term projection period and demonstrates that the cash balance will remain within the target range over the entire projection period. It should be noted that the long-term forecast assumes annual 3% increase in water and sewer rates.

**Figure 6-1 Ten-Year Forecast of Cash Balance by Account**



## 6.2 DEBT SERVICE COVERAGE

Another measure of the financial health of Loudoun Water is the system’s debt coverage. The main test of Loudoun Water’s debt coverage is the level of revenues less operating expenses compared to the annual debt service of the system. In order to maintain a favorable financial position, Loudoun Water’s debt covenants require the ratio of these totals to be 1.50. That is, net revenues less operating expenses should be at least 150% of annual debt service. Additional coverage tests are also included to demonstrate the impacts of not including a portion of availability charges and the inclusion of a portion of reserves, referred to as Test 2A and 2B respectively within Loudoun Water’s bond covenants. Table 6-2 shows the results of the financial plan on Loudoun Water’s debt coverage for each of the coverage tests.

## 6. Cash Flow Projections and Debt Service Coverage

Table 6-2 Debt Service Coverage Tests

	2019	2020	2021	2022	2023
<b>Debt Coverage</b>					
Net Revenues Available for Debt Service	\$76,789,250	\$79,397,658	\$83,660,021	\$86,325,065	\$89,705,990
Annual Debt Service	\$21,937,043	\$21,938,717	\$24,801,943	\$26,142,038	\$26,172,101
<b>Coverage (Min 1.5)</b>	<b>3.50</b>	<b>3.62</b>	<b>3.37</b>	<b>3.30</b>	<b>3.43</b>
<b>Test 2A</b>					
Net Revenues Available for Debt Service*	\$53,877,500	\$56,806,672	\$60,617,216	\$63,409,393	\$66,524,332
Senior Lien Annual Debt Service	\$21,409,988	\$21,411,662	\$24,274,889	\$25,614,984	\$25,645,047
<b>Pass / Fail</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>
<b>Test 2B</b>					
Net Revenues Available for Debt Service **	\$163,451,525	\$165,338,595	\$169,750,959	\$170,181,161	\$190,528,140
Senior Lien Annual Debt Service	\$21,409,988	\$21,411,662	\$24,274,889	\$25,614,984	\$25,645,047
<b>Coverage (Min 1.0)</b>	<b>7.63</b>	<b>7.72</b>	<b>6.99</b>	<b>6.64</b>	<b>7.43</b>

\*Net revenues available for debt service less 50% of availability charge revenues

\*\*Net revenues available for debt service less 50% of availability charge revenues plus 50% of cash balance

Table 6-2 demonstrates that the financial plan will allow Loudoun Water to meet all of the debt service coverage test requirements during each year of the projection period.

## 7. CUSTOMER IMPACTS AND UTILITY COMPARISONS

The recommended changes to the water, sewer and reclaimed water rates will have an impact on customers of the Loudoun Water systems. This section of the report provides a summary of the impacts in the form of sample bills. This section also provides comparisons of the water and sewer bills for customers served by comparable and/or local utilities within the region along with a comparison of availability charges for new customers joining the water and sewer system.

### 7.1 WATER AND SEWER USER RATE BILL IMPACTS

The recommended increases in water and sewer user rates will result in modest increases in Loudoun Water customer bills over the planning period. To demonstrate the impacts of the changes, sample bills are provided for a cross section of customers in Tables 7-1, 7-2 and 7-3.

**Table 7-1 Quarterly Residential Bill (21,000 gallons)**

	Current	2019	2020	2021
Water Bill	\$84.70	\$87.76	\$90.86	\$94.00
Sewer Bill*	\$115.03	\$119.09	\$123.19	\$127.50
Total Bill	\$199.73	\$206.85	\$214.05	\$221.50
<b>Quarterly \$ Change</b>		<b>\$7.12</b>	<b>\$7.20</b>	<b>\$7.45</b>
<b>Quarterly % Change</b>		<b>3.5%</b>	<b>3.5%</b>	<b>3.5%</b>

\*Sewer bill based on 14,000 gallons of average winter quarter consumption (capped at 17,000 gallons)

**Table 7-2 Monthly Commercial Bill (30,000 gallons - 1" Meter)**

	Current	2019	2020	2021
Water Bill	\$129.33	\$133.78	\$138.58	\$143.42
Sewer Bill	\$178.20	\$184.50	\$190.84	\$197.52
Total Bill	\$307.53	\$318.28	\$329.42	\$340.94
<b>Monthly \$ Change</b>		<b>\$10.75</b>	<b>\$11.14</b>	<b>\$11.52</b>
<b>Monthly % Change</b>		<b>3.5%</b>	<b>3.5%</b>	<b>3.5%</b>

## 7. Customer Impacts and Utility Comparisons

**Table 7-3 Monthly Commercial Customer (150,000 gallons - 3" Meter)**

	Current	2019	2020	2021
Water Bill	\$620.26	\$641.61	\$664.64	\$687.84
Sewer Bill	\$865.66	\$896.25	\$927.03	\$959.49
Total Bill	\$1,485.91	\$1,537.87	\$1,591.67	\$1,647.33
<b>Monthly \$ Change</b>		<b>\$51.95</b>	<b>\$53.80</b>	<b>\$55.66</b>
<b>Monthly % Change</b>		<b>3.5%</b>	<b>3.5%</b>	<b>3.5%</b>

**7.2 RECLAIMED WATER BILL IMPACTS**

The recommended increases in the reclaimed water rates will result in modest increases in Loudoun Water reclaimed customer bills over the planning period. Table 7-4 presents the bill impacts for the average reclaimed water customer. It should be noted that there is significant variation in the reclaimed water use by Loudoun Water's current reclaimed customers and that the average customer shown in the table represents the average use across the current 30 reclaimed customers.

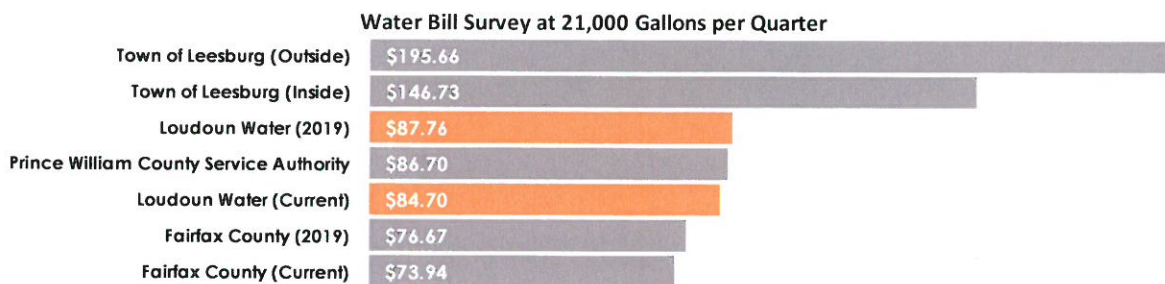
**Table 7-4 Monthly Reclaimed Water Customer (2,000,000 gallons)**

	Current	2019	2020	2021
Reclaimed Water Bill	\$3,000.00	\$3,105.00	\$3,213.68	\$3,326.15
<b>Monthly \$ Change</b>		<b>\$105.00</b>	<b>\$108.68</b>	<b>\$112.48</b>
<b>Monthly % Change</b>		<b>3.5%</b>	<b>3.5%</b>	<b>3.5%</b>

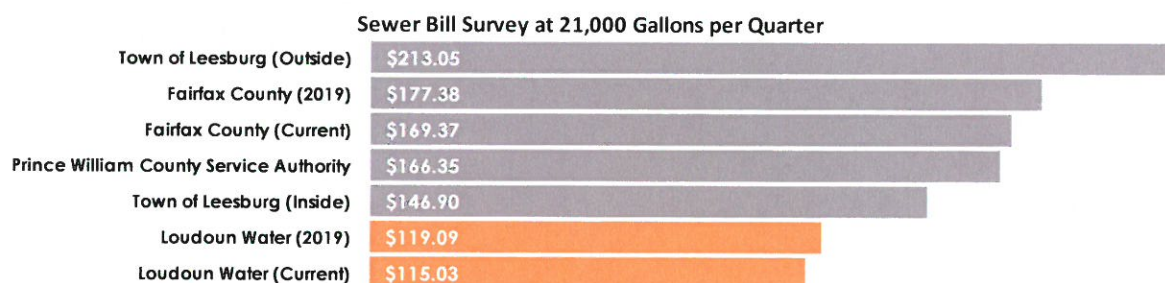
**7.3 WATER AND SEWER BILL COMPARISON SURVEY**

To provide perspective on how the calculated water and sewer bills for Loudoun Water compare with neighboring communities, a bill comparison survey was developed of peer utilities. The figures below show a comparison of Loudoun Water's water, sewer and total residential monthly bill with those of neighboring utilities. The figures show the current water, sewer and combined bills for Loudoun Water and the bills under the recommended rate adjustments for 2019. As can be seen in the figures, the Loudoun Water bills are in the bottom range of benchmarked utilities. It should be noted that the bills for most of the comparison utilities represent current bills, and do not include likely future annual increases which are not yet publicly available.

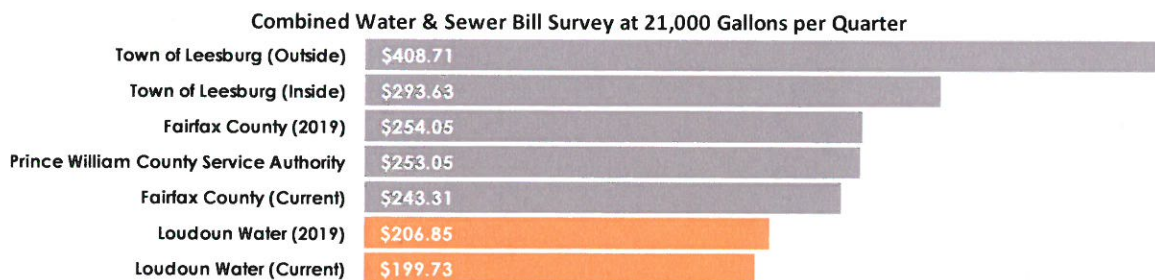
**Figure 7-1 Water Bill Comparison**



**Figure 7-2 Sewer Bill Comparison**



**Figure 7-3 Combined Bill Comparison**



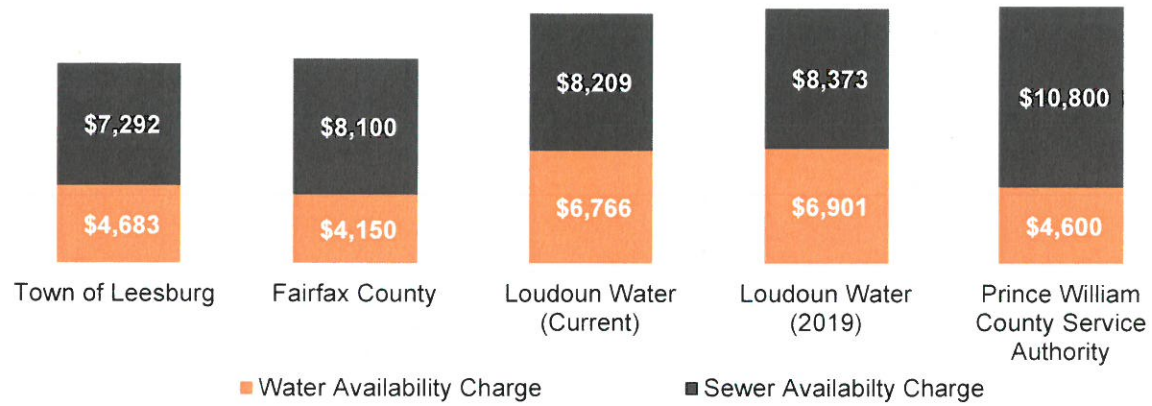
It is important to note that while bill comparisons can be informative, there are a number of factors that determine water and sewer rates within a community at a given time. Factors such as level of system reinvestment, support from the general fund or other sources and rate structure will all have a significant influence on the bills and must be taken into account. Therefore, bill comparisons should be taken as one data point for consideration, but the needs of each community are unique and the rates may be based on different variables.

## 7.4 AVAILABILITY CHARGE COMPARISONS

All of the utilities included in the bill survey also collect availability charges from new customers joining their respective utility. A comparison of the availability charge for each community is presented in Figure 7-4.

7. Customer Impacts and Utility Comparisons

**Figure 7-4 Availability Charge Comparisons**



The comparison of availability charges demonstrates that Loudoun Water's charges are at the higher end of the range, but in line with comparable utilities such as the Prince William County Service Authority.

## Disclaimer

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