



July 30, 2018

TO ALL UTILITY COMMISSION MEMBERS:

GERRY WARNER
BOB MULLEN
DAN CASEY
PAT BECKER
MIKE KASTENS

This is to inform you that there will be a Utility Commission Meeting on **Wednesday, August 1, 2018** at **8:00 a.m.** in the Administrator's office at the Civic Center.

AMENDED AGENDA

1. Call to order
2. Adoption of agenda
3. Approval of previous commission meeting minutes (July 11, 2018)
4. Approval of bills and disbursements – July 1-24, 2018
5. Public Comment
6. 2Q18 Financial Report
7. Capital Improvement Plan
8. Water & Sewer RFP
9. Pole Attachment Agreement with Baldwin Telecom, Inc.
10. Wood Pole Testing Update
11. Private Septic and Sewer Request – 1745 115th Street***
12. Staff Reports
13. Communications and miscellaneous correspondence
14. Adjourn

A handwritten signature in black ink, appearing to read "Mike Darrow". The signature is fluid and cursive, with a large initial "M" and "D".

Mike Darrow
Utility Manager

*** Agenda Item Added

A majority of the members of the New Richmond City Council may be present at the above meeting.

Pursuant to State ex rel. Badke v. Greendale Village Board, 173 Wis. 2d 553, 494 N.W. 2nd 408 (1993) such attendance may be considered a meeting of the City Council and must be noticed as such, although the Council will not take action at this meeting.

**NEW RICHMOND UTILITY COMMISSION MINUTES
JULY 11, 2018**

The regular meeting of the New Richmond Utility Commission was held on July 11, 2018 at 8:00 a.m. at the Electric Shop.

Pat Becker called the meeting to order at 8:00 a.m.

Members Present: Bob Mullen, Dan Casey, Gerry Warner, Mike Kastens, and Pat Becker.

A motion was made by Mike Kastens to approve the agenda, seconded by Dan Casey, and carried.

A motion was made by Mike Kastens to approve the minutes of the June 6, 2018 meeting, seconded by Dan Casey, and carried.

A motion was made by Gerry Warner to approve June 2018 bills and disbursements, seconded by Bob Mullen, and carried.

Public Comment:

None

Capital Improvement Plan:

Joel Enders reviewed Capital Improvements.

- Fox Run Lift Station Pump & Control, project year 2019, estimated cost \$25,000, funding from Sewer Utility
- Sewer Lining, project year 2019 – 2022, estimated cost \$25,000 per year, funding from Sewer Utility
- Auto-Dialer Alarm System, project year 2019, estimated cost \$6,000, funding from Sewer & Water Utility
- Replace Truck #60, project year 2019, estimated cost \$25,000, funding from Water Utility
- Highview to White Pine Loop, project year 2019 or 2020, estimated cost \$253,000 – Staff has identified this project at critical
- Additional OH Capacitor Banks, project year 2018, estimated cost \$40,000, funding from Electric Utility
- Replace Truck #33 Digger Derrick, project year 2020, estimated cost \$220,000, funding from Electric Utility
- Airport Loop, project year 2019, estimated cost \$150,000, funding from Electric Utility
- Replace Truck #36, project year 2018, estimated cost \$55,000, funding from Electric Utility
- Electric & Water Shop – planning for future space needs

Water Tower Lease Amendment/Backup Generator:

Through conversations with St. Croix County, staff have identified an opportunity to add a fixed backup generator to support Water and Sewer SCADA systems in the event of a power failure. The County is willing to allow New Richmond access to this backup generator in exchange for an annual payment fixed at \$1,500 for the first five years and adjusted thereafter at five-year intervals based on average meter readings. This arrangement is significantly less expensive than the purchase and maintenance of a separate generator. Further, the generator is of a capacity to support both County and City systems in the event of a power failure. Dan Casey moved to proceed with the generator contract with St. Croix County as presented, seconded by Gerry Warner, motion carried.

2019 Budget Process:

Rae Ann Ailts updated the commission. She will be meeting with members individually. The goal is to have the Utility budget ready to present to the City Council by October. Mike Darrow stated

they are also looking at a two-year budget in 2020. This will be brought back to the commission with the pros & cons.

Election of Officers:

Current officers are Pat Becker, president and Gerry Warner, secretary. Dan Casey moved to keep the officers as is, seconded by Gerry Warner, motion carried.

Private Well and Septic – 1186 HWY 64:

Mike stated this was a late addition. This will be brought back to meeting in August.

Department Reports

Bob Meyer, Water Superintendent:

- Working on line extension and a hydrant in Whispering Prairie
- Extended Arch Avenue service
- Leak on GG completed with no asphalt disturbed
- Leak on Circle Pine Drive
- Checking services in the alley to see if we can repair or if we need to dig them, these will be dug with the West First and West Second project.
- Abandon lead goosenecks and replacing with copper over the curbstops.
- DNR survey completed with rep from Eau Claire.
- Lakeside Foods is running full capacity
- Very busy with locates, and meter installation
- N Knowles – bad service valve, need to research on where the leak is

Steve Skinner, Lead Wastewater Treatment Plant Operator:

- Staff is working with 45th Parallel to gather more sampling data requested by biosolids facility.
- Main Lift Station #1 VFD has been replaced.
- The phosphorous level has been gradually increasing over the month of June. In search for the source of the problem, it was determined that Alum was crystalizing in the lines. Lines were cleaned out and issue resolved.
- Steve has received estimates to put a gutter and downspouts on the shed with a cost of just over \$1,000. Staff is hoping this will reduce ice on the sidewalk in the winter, and rain water passing through the building in the summer.
- Biosolids processing cost may increase next year due to the increase in processing costs. Steve will keep the commission updated.

Weston Arndt, Electric Superintendent:

- Scottie Ard, Pat Becker and himself attended the WPPI Regional dinner.
- Busy updating job descriptions.
- Reviewed 2014 Electric Distribution Study with Dave Krause, Krause Power Engineering.
- Having discussions with Anita Gallucci from Boardman & Clark regarding annexations to make sure we have exclusive utility rights to those parcels.
- In discussions with KBA Technologies regarding installation of electric vehicle charging stations along Knowles or within downtown.
- The float for the parade has been canceled; we will work on something in October during Public Power Week. They are also looking at helping to fund the replacement trees on Knowles Avenue.

Rae Ann Ailts, Finance Director:

- The water & sewer rate case bids came back ranging from \$27,000 – \$39,000. Interviews will be set up next week. Formal recommendation will be brought back to the August meeting.
- Busy summer for office staff with move in and move outs.

- 27 disconnects took place this week. Staff is working with 2 customers that are currently still disconnected.

Jeremiah Wendt, Director of Public Works:

- Noble Road extension has been completed.
- Richmond Prairie Condo project is finishing.
- Starting 125th Street project, pre-construction open house will be held on Thursday, July 12 from 5:30 – 6:30. They will be starting the week of July 30th finishing by the first week in September.
- East 4th Street project will start late August and finish early October.

Mike Darrow, Utility Manager:

- WPPI offers an Orientation to WPPI Energy, great way to know the facility.
- WPPI Annual meeting will be held September 12-14.
- Carlson, Dettman Consultants will take an independent look at all the positions in the City. This will be a 4-5 month process and staff will be involved.
- 85 building permits for new dwellings have been pulled this year.
- Results from the feasibility study will be brought back in the next several months regarding short term and long term space needs.

There being no further business, a motion was made by Gerry Warner to adjourn, seconded by Mike Kastens, and carried. The meeting adjourned at 9:03 a.m.

Pat Becker, President

Gerry Warner, Secretary

New Richmond Utilities

July 1-24, 2018

Check Register

Check #	Date	Amount	Vendor Name	Description
002056	7/6/2018	60,611.24	CITY OF NEW RICHMOND	PAYROLL 7-6-18
002057	7/6/2018	14,977.10	US BANK	JUNE PCARD STATEMENT
002058	7/6/2018	1,665.84	SUPER AMERICA	JUNE FUEL BILL
002059	7/19/2018	24,351.64	WI DEPT OF REVENUE	JUN18 SALES TAX
002060	7/20/2018	19,560.00	LOCAL GOVERNMENT INVESTMENT POOL	JUN18 WTR IMPACT & SAC COLLECT
002061	7/20/2018	88,420.00	LOCAL GOVERNMENT INVESTMENT POOL	JUL18 INVESTMENTS
002062	7/20/2018	51,125.00	LOCAL GOVERNMENT INVESTMENT POOL	JUL18 INVESTMENTS LGIP#5, 8,10
002063	7/19/2018	61,688.90	CITY OF NEW RICHMOND	PAYROLL 7-20-18
002064	7/19/2018	7,518.80	CITY OF NEW RICHMOND	MONTHLY BILL
002065	7/19/2018	20,025.75	CITY OF NEW RICHMOND	2ND QTR ADMIN
002066	7/19/2018	423.89	CITY OF NEW RICHMOND	INVOICES N 4TH ST MAY & JUNE
002067	7/19/2018	110.25	CITY OF NEW RICHMOND	BENEFIT EXTRAS MONTHLY FSA, HR
002068	7/19/2018	916.63	CITY OF NEW RICHMOND	EMPLOYER HSA CONTRIBUTION
002069	7/19/2018	22,905.20	CITY OF NEW RICHMOND	HEALTH INSURANCE
002070	7/19/2018	6,353.05	CITY OF NEW RICHMOND	INSURANCE
002071	7/19/2018	42.87	CITY OF NEW RICHMOND	LIFE INSURANCE
002072	7/19/2018	431.83	CITY OF NEW RICHMOND	LONG TERM DISABILITY INS
002073		0.00	CK NUMBER USED IN 2004	CK NUMBER USED IN 2004
002074	7/19/2018	392.70	CITY OF NEW RICHMOND	SHORT TERM DISABILITY INS
002075		0.00	CK NUMBER USED IN 2004	CK NUMBER USED IN 2004
002076	7/19/2018	5,000.00	CITY OF NEW RICHMOND	RENT
002077	7/19/2018	7,909.35	CITY OF NEW RICHMOND	RECYCLING
002078	7/19/2018	24,854.96	CITY OF NEW RICHMOND	STORM WATER
002079	7/19/2018	4,900.42	DAKOTA SUPPLY GROUP INC	ITRON METERS
002080	7/19/2018	316.84	GOLDCOM VOICE & DATA SUPPLY	RED MARKING PAINT
002081	7/19/2018	244.00	HYDRODESIGNS	CROSS CONNECT INSPECT REPORT
002082	7/19/2018	2,182.45	INFOSEND, INC	JUNE POSTAGE & BILLING
002083	7/19/2018	760.35	MAILFINANCE	POSTAGE MACHINE LEASE
002084	7/19/2018	5,759.78	NEW RICHMOND UTILITIES	JUN CTCO COLLECTIONS
002085	7/19/2018	200.92	QUILL	LABELWRITER, LABELS, POST ITS
002086	7/19/2018	25.00	WISCONSIN STATE LAB OF HYGIENE	FLUORIDE
035723	7/3/2018	8,709.40	LOCATORS & SUPPLIES, INC	LINE LOCATOR/TRACER
035724	7/6/2018	1,012.68	AMERIPRIDE LINEN & UNIFORM SERVICES	WATER DEPT UNIFORM SVC
035725	7/6/2018	2,500.00	BAKER TILLY VIRCHOW KRAUSE LLP	FINANCIAL STATEMENT AUDIT
035726	7/6/2018	207.77	BALDWIN TELCOMM	JUNE PHONE BILL
035727	7/6/2018	439.90	COUNTRYSIDE PLUMBING & HEATING	BACKFLOW INSPECTION-REBUILD
035728	7/6/2018	330.07	FRONTIER COMMUNICATIONS	JUNE PHONE BILL
035729	7/6/2018	321.49	KWIK TRIP	JUN FUEL BILL
035730	7/6/2018	246.44	VERIZON WIRELESS	JUN CELL PHONE BILL
035731	7/16/2018	315.00	CITY OF NEW RICHMOND	NATHAN SELK -PYMT WAS FOR HGR
035732	7/17/2018	131.19	THE DORIS SETTE REVOCABLE TRUST	CR REF ACCT# 1623900-21
035733	7/19/2018	26,205.50	BERNARD'S NORTH TOWN INC	2018 RAM MODEL 3500 PU
035734	7/19/2018	360.00	AMERICAN WATER WORKS ASSN	MEMBERSHIP DUES
035735	7/19/2018	4,462.50	ESRI	ARCGIS CONCURRENT USE UPGRADE
035736	7/19/2018	21.64	FORUM COMMUNICATIONS COMPANY	AD WATER REPORT
035737	7/19/2018	4,526.00	FRESCO INC	LED LIGHT FIXTURES
035738	7/19/2018	19,767.36	STUART C IRBY CO	TAP CONN, VINYL COLOR CODING
035739	7/19/2018	1,133.78	MACQUEEN EQUIPMENT INC	FLOAT BALL CAGE, SHROUD
035740	7/19/2018	200.00	MATT BROWN	SAFETY BOOTS
035741	7/19/2018	96.86	MY RECEPTIONIST, INC	ANSWER SERVICE 6-27 - 7-24
035742	7/19/2018	3,039.25	SHORT ELLIOTT HENDRICKSON INC	115TH ST, N TANK, T-MOBILE, N
035743	7/19/2018	194.00	TCIC, INC	ANTENNA
035744	7/19/2018	305.51	WESCO RECEIVABLES CORP	GROUNDING CLAMPS
035745	7/19/2018	520.00	WISCONSIN RURAL WATER ASSN	SYSTEM MEMBERSHIP RENEWAL

Total **\$ 508,721.10**

Total Checks & Wires



156 East First Street
New Richmond, WI 54017
715-246-4268
www.newrichmondwi.gov

MEMORANDUM

TO: Utility Commission

FROM: Joel Enders, Management Analyst

DATE: July 24, 2018

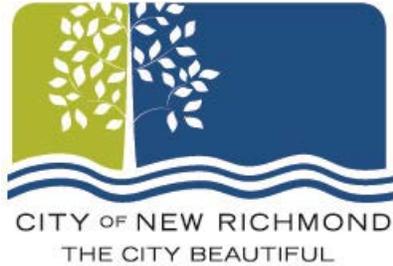
SUBJECT: Second Quarter 2018 Financial Report

BACKGROUND

Staff will present second quarter 2018 financial results and provide analysis at the August 1, 2018 meeting.

RECOMMENDATIONS

Discussion item only – no action is being requested of the Commission at this time.



156 East First Street
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MEMORANDUM

TO: Utility Commission

FROM: Joel Enders, Management Analyst

DATE: July 24, 2018

SUBJECT: CIP Discussion – Important Projects

BACKGROUND

Staff will present the Utility Commission with an overview of “Important” projects proposed for the 2018 – 2022 Capital Improvement Plan at the August 1, 2018 meeting. Important projects are defined as “A capital project that would be nice, but does not directly impact the safety or health of the community.”

Staff anticipate providing the Utility Commission with a combined CIP document, including funding source details, at the September meeting.

RECOMMENDATIONS

Discussion item only – no action is being requested of the Commission at this time.



156 East First Street
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MEMORANDUM

TO: Utility Commission

FROM: Rae Ann Ailts, Finance Director
Joel Enders, Management Analyst

DATE: July 24, 2018

SUBJECT: Water & Sewer Rate Case RFP

BACKGROUND

New Richmond Utility's current water rates have been in place since 2013, while sewer rates have been in place since 2012. Over the intervening 5-6 year period, population growth has increased demand and inflation has increased the costs of operation and maintenance. During the June meeting the Utility Commission approved the issuance of the request for proposal for a rate study for the water and sewer utility.

The Utility received the following bids from three firms:

Firm	Cost
Ehlers	\$27,000
Trilogy Consulting, LLC	\$31,735
Baker Tilly	\$39,000

Proposals were evaluated on multiple criteria including firm qualifications, experience, cost and timeline. Interviews were held with Ehlers and Trilogy Consulting on July 19th where the interview committee was able to take a deeper dive into each firms proposal and sample work.

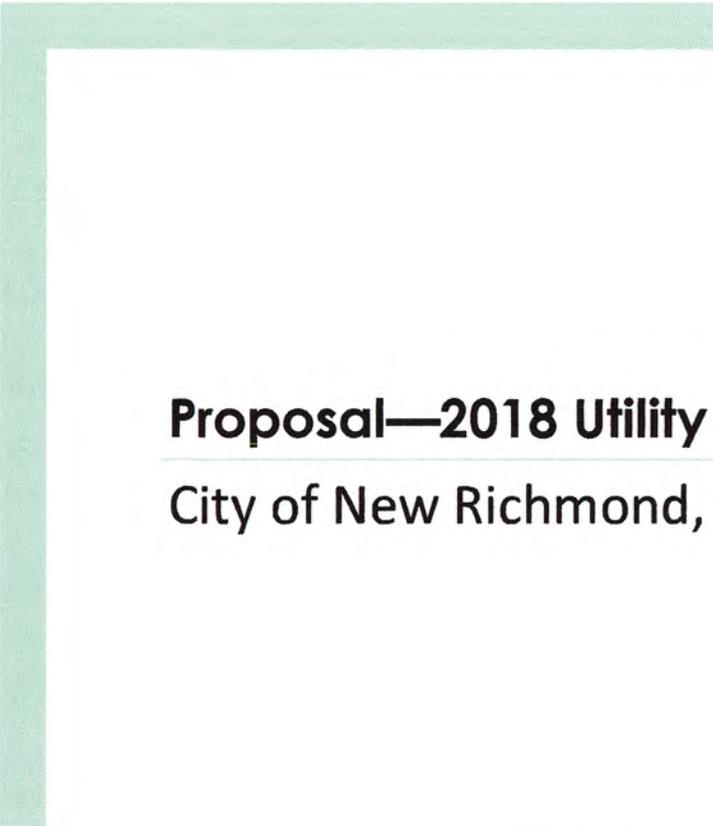
Both firms have extensive experience in water and sewer rate cases within Wisconsin and experience in leading rate cases with the PSC. The interview committee was impressed with both firms experience. However, Trilogy's communication approach and visual presentation of information was well received by the interview committee. The interview committee recommends awarding the water and sewer rate case to Trilogy Consulting, LLC. If approved by

the Utility Commission the kick off meeting would occur in mid-August with a tentative final report issued in February 2019.

A copy of Trilogy Consulting, LLC proposal is attached to this memorandum.

RECOMMENDATIONS

Staff recommend authorization to award the water and sewer rate case to Trilogy Consulting, LLC in the amount of \$31,735.



Proposal—2018 Utility Rate Study

City of New Richmond, Wisconsin



Submitted by Trilogy Consulting, LLC

July 9, 2018

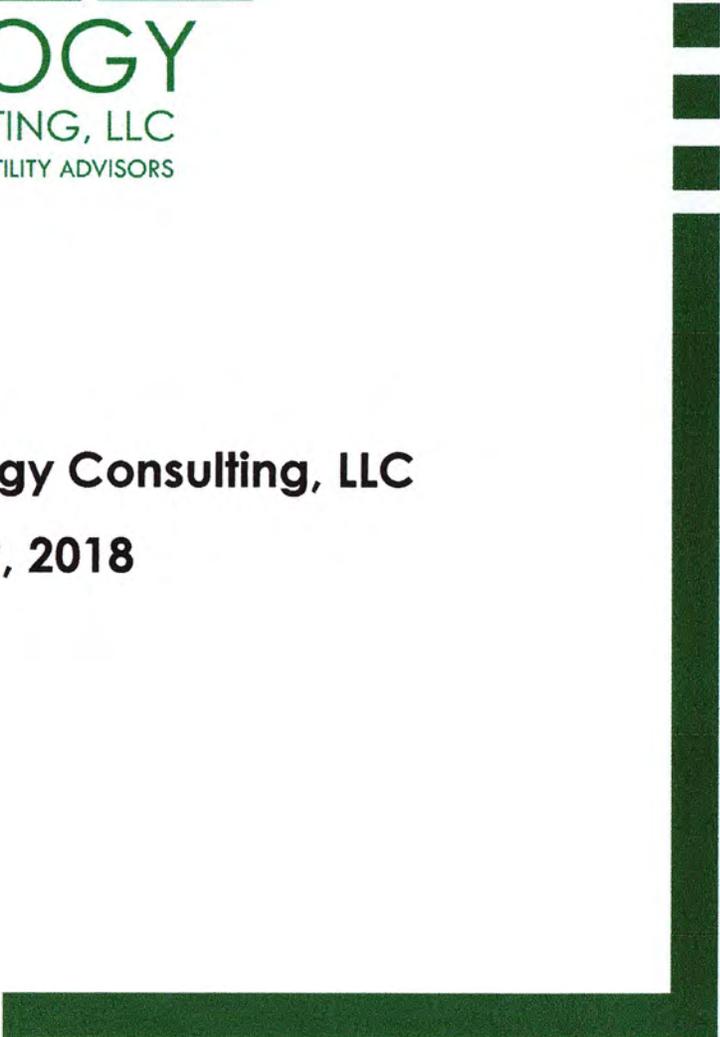


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Experience	5
Similar Projects	11
Proposed Compensation	18
Project Timeline	20
Copy of Example Rate Study	Att.

Firm Qualifications

169 E. Wisconsin Ave., Suite R
Oconomowoc, WI 53066
Phone: 920-723-2169
Fax: 262-436-2102
Email: egranum@trilogy-llc.com



Trilogy Consulting, LLC offers local governments and utilities an objective, independent perspective on planning, administrative and financial issues. Our core services include sewer, storm water and water user charge rate studies and financial plans; utility customer demand studies; funding for capital improvement plans; economic feasibility studies; ordinance preparation; intergovernmental cooperation studies and agreements; impact fees; and specialized economic and policy analysis.

Trilogy was formed in November 2011 and is jointly owned by our principals, Erik Granum and Christine DeMaster. Erik and Christine have 31 years of experience working with dozens of municipalities on a wide variety of issues related to managing, operating, regulating and funding local government infrastructure and services, particularly sanitary sewer service, water service and stormwater management. We do not have any additional staff at this time, so all of our consulting services are provided by our principals. As owners of the company, we are passionate about providing excellent customer service and the highest quality work.

Trilogy Consulting, as well as each of our principals, is a registered municipal advisor with the Securities Exchange Commission and Municipal Securities Rulemaking Board. This registration is required for professionals offering advice regarding the potential issuance of municipal securities to finance capital improvements. Both Christine and Erik have passed the MSRB's Series 50 Exam for Municipal Advisor Representatives. As registered municipal advisors, we provide independent advice to our client communities regarding potential funding and financial plans.

Both Erik and Christine are members of the national and Wisconsin chapter of the American Water Works Association, with Christine serving on the AWWA Rates and Charges Committee. Christine recently co-authored an AWWA paper discussing utility reserve policies. Additionally, both Erik and Christy served on the Review Committee for the Wisconsin Public Service Commission (PSC) Docket 5-WI-104, which was a PSC-sponsored docket evaluating alternative methodologies in determining appropriate costs and rates for public fire protection in Wisconsin. Christine is the 2018 Chair of the Audit and Finance Committee for the Wisconsin section of AWWA.

Specific to the requirements of this proposal, Trilogy's qualifications and experience includes:

- Preparing dozens of water and sewer rate studies and financial plans for municipal utilities.
- Experience with financial plans and rate studies for utilities similar to New Richmond, such as Mukwonago, Grafton, Port Washington, Ashland, and River Falls, Wisconsin.
- Experience working with state regulatory agencies in a variety of situations, including obtaining approval for new rate-setting approaches and contested rate cases.

Firm Qualifications

-
- Preparing water cost of service rate studies using the proper techniques for cost allocation with the base-extra capacity method.
 - Detailed analysis of monthly, week, daily and/or hourly water use data for sampled customers or customer classes to develop seasonal rates, irrigation rates, and inclining block rates tied closely to actual customer demand patterns and extra capacity needs.
 - Implementation of a wide variety of water rate structures including conservation rates, outdoor irrigation rates, uniform rates, inclining block rates, and separate rates for different customer classes based on analysis of customer demand patterns by class (peaking ratios, seasonality, etc).
 - Sewer rate cost of service studies according to industry accepted methods, allocating costs to billable volume, infiltration and inflow, customer costs, BOD, TSS, Phosphorus, and TKN.
 - Development of sewer rates for fixed charges (flat or equivalent meter), domestic strength volume, sampled high strength customers, classified (but not sampled) high strength customers, septic and hauled waste, and wholesale customers.
 - Detailed analysis of wastewater treatment plant influent flows and wastestrengths compared to customer billed usage to estimate infiltration and inflow and wastestrength assumptions.
 - Preparing long-range financial plans for utilities that incorporate forecasts of changes in customer demand and expenses, alternative funding plans for capital improvements, existing and recommended cash reserve levels, debt service, and debt coverage, in order to forecast future rate increases and test the sensitivity of changes in capital financing, customer demand and other variables.

Christine A. DeMaster

Principal / Senior Consultant

169 E. Wisconsin Ave., Suite R
Oconomowoc, WI 53066
Phone: 262-470-2277
Fax: 262-436-2102
Email: ccramer@trilogy-llc.com



Christine has been a consultant to local governments and utilities since 1997, providing analysis and advice on a wide variety of planning, economic and fiscal issues. While her work experience varies widely the common theme is a focus on helping local governments and utilities develop fair and equitable long-term plans and policies.

Christine is a member of the national and Wisconsin chapter of the American Water Works Association, and serves on the AWWA Rates and Charges Committee and sub-committees charged with developing recommendations for utility reserve policies and preparing revisions to the AWWA Manual M-1 Principles of Water Rates, Fees and Charges. Christine is the 2018 Chairman of the WIAWWA Audit and Finance Committee.

Recent presentations and publications include:

- “Utility Cash Reserves”, Money Matters Column, Journal of the American Water Works Association, April 2018
- “Funding Annual Water Infrastructure Replacement”, Annual Meeting of the Wisconsin Chapter AWWA, September 2017

Experience & Expertise

- Water and Sewer Rate Studies
- Cost-of-Service Rate Studies
- Specialized Rate Design, including Conservation Water Rates and High-Strength Sewer Rates
- Capital Infrastructure Cost Allocations
- Storm Water Utility Rate Studies and Development
- Public Facilities Needs Assessments and Impact Fee Studies
- Utility Creation and Acquisition Feasibility Studies
- Redevelopment, Site and General Planning Services
- Long-Term Capital Infrastructure Planning and Financial Analysis
- Tax Incremental Financing Planning and Analysis
- Expert Witness Testimony and Litigation Support
- Specialized Economic and Statistical Analysis
- Public Policy Research and Analysis
- Ordinance Drafting, Review and Updating

Education:

- Master’s of Urban Planning, University of Wisconsin—Milwaukee, 1997
- Bachelor of Science, Physics, Carroll College, 1994

Professional Affiliations:

- American Planning Association, Wisconsin Chapter
- American Water Works Association, Wisconsin Chapter

Professional Certification:

- Municipal Securities Rulemaking Board Series 50 Exam

Christine A. Cramer

Recent Projects



Water Utility Rate Study—Ashland, WI

In 2016, Christine worked with the City to complete a water and sewer rate study. The application to increase water rates was approved by the Public Service Commission in November 2016. The study involved analyzing the revenue requirements, including a cash flow analysis that evaluated and planned for the City's ability to implement its capital improvement plan, performing a full cost-of-service rate study for and recommending a revised rate structure that better reflected the actual demands placed on the utility by its various customer classes.

Water and Sewer Rate Study—River Falls, WI

Christine completed a water and sewer rate study for the City of River Falls, Wisconsin in 2016. The Wisconsin Public Service Commission approved the new rates in May 2016, with implementation in June 2016. The study involved analyzing the revenue requirements, including a cash flow analysis that evaluated the City's capital improvement plan, performing a full cost-of-service rate study for each utility and recommending a rate structure to fully recover the revenue requirements.

Water Rate Study—Madison, WI

Trilogy performed a full water rate study and long-term plan for the City of Madison Water Utility in 2014/2015. This was a comprehensive study that included the following services:

- Developing the revenue requirements, including working with utility staff on updating the net investment rate base and working with the Wisconsin Public Service Commission staff on acceptance of the proposed revenue requirements.
- Performing a long-term cash flow and rate analysis that would seek to eliminate the need for future rate spikes while maintaining adequate revenues to fund the Utility's significant capital improvement program.
- Performing a full cost-of-service study. This, along with the rate design, utilized data from the Utility's new Advanced Metering Infrastructure (AMI) system that had been installed throughout the entire system. For this analysis, the data was used to determine updated actual peak demand allocation factors for all retail and wholesale customer classes in the system, which had previously been based on outdated assumptions.
- Development and evaluation of alternative rate structures. Again, this analysis utilized the Utility's AMI data by taking a detailed examination of the demand patterns within each retail customer class. The final proposed rates included different rate structures for each customer class, including inclining-block conservation rates for the residential class.

The PSC hearing occurred in September 2015, with final implementation in October 2015.

Rate Case Consulting Services—Milwaukee Water Works, WI

Between 2013 and 2014, Trilogy assisted with preparation for Milwaukee's 2014 water rate case as their owner's rep. Services include working with staff on the cost-of-service methodology, outreach to the major customers, and potential research, preparation and assistance with expert witness testimony.

Christine A. Cramer

Recent Projects



Customer Demand Study—Milwaukee Water Works, WI

In 2014, Trilogy completed a study for the Milwaukee Water Works on demand characteristics of its various customer classes, which included historical data analysis, preparing samples of customers within those classes and analyzing sample daily and hourly water consumption data that was collected during 2012 and 2013.

Sewer Rate Study and Capital Funding Evaluation—Town of Beloit, WI

In 2014, Trilogy completed a full sewer rate study for the Town of Beloit, Wisconsin. The final rate recommendation included a 3-step rate increase that would fully fund all of the utility's revenue requirements and maintain adequate cash flow and fund reserves for flexibility in funding the utility's future capital improvement plans. The rate analysis included designing rates for different customer classes and levels of service for Town of Beloit customers, as well as in the adjoining Town of Rock. A portion of flow related costs were allocated to demand costs and recovered through a fixed customer cost. The study included evaluating the allocation percentages used to allocate costs to utility functions.

Recently, Trilogy evaluated numerous alternative funding plans for a specific area of the Town that includes new sewer and water service and road replacement. This project is complicated due to separation of this area from the existing sewer utility collection and treatment systems as well as ownership issues with the City of Beloit.

Presentations and Papers

"Utility Cash Reserves", Money Matters Column, Journal of the American Water Works Association, April 2018

"Funding Annual Water Infrastructure Replacement", Annual Meeting of the Wisconsin Chapter AWWA, September 2017

"Straight Talk About Water Finance" - Wisconsin Water Association Annual Conference, September 2013

"Balancing Declining Revenues and Increasing Costs" - Wisconsin Water Association Management Seminar, August 2013

"Managing the State Budget Crisis at the Local Level" – League of Wisconsin Municipalities Annual Conference, October 2011

"Doing More With Less: Collaborative Leadership for Service Delivery Workshop" – Local Government Institute of Wisconsin, April 2011

"Storm Water Utilities – Lessons Learned" - Waukesha County Storm Water Management Workshop, March 2011

"Tax Incremental Finance Basics" – Wisconsin Government Finance Officers Association, December 2010

"Racine Revenue Sharing Program" – Wisconsin Legislative Council, Special Committee on Local Service Consolidation, November 2010

"Managing Impact Fees" – Wisconsin Municipal Clerks and Treasurers Institute, UW-Green Bay Local Government Education, July 2010

Erik A. Granum

Principal / Senior Consultant

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Oconomowoc, WI 53066
Phone: 920-723-2169
Fax: 262-436-2102
Email: egranum@trilogy-llc.com



Erik has been working in the field of municipal and utility consulting since 2007, performing a wide variety of financial, economic and planning-related consulting services. His philosophy to municipal consulting is to provide an objective, fair and independent perspective for the client, while recognizing the political difficulties in public policy decision-making. He excels in developing alternative scenarios that meet the objectives of the municipality, while being reasonable and defensible for government decision makers that are held accountable to the residents and businesses in their communities.

Erik believes in providing local government officials and decision-makers recommendations that are based on the best available information so that public policy is sound, fair and logical. His passions lie in using available data and interpreting it into something that is understandable and has a positive real impact on communities.

Education:

- Master's of Urban Planning, University of Wisconsin—Milwaukee, 2009
- Bachelor of Business Administration, Marketing & Operations Management, University of Wisconsin—Whitewater, 2004

Professional Affiliations:

- American Water Works Association, Wisconsin Chapter

Professional Certification:

- Municipal Securities Rulemaking Board Series 50 Exam

Experience & Expertise

- Water and Sewer Rate Studies
- Cost-of-Service Rate Studies
- Specialized Rate Design, including Conservation Water Rates and High-Strength Sewer Rates
- Capital Cost Allocation
- Storm Water Utility Rate Studies and Development
- Public Facilities Needs Assessments and Impact Fee Studies
- Utility Creation and Acquisition Feasibility Studies
- Land Use Planning Services
- Long-Term Capital Planning and Financial Analysis
- Geographic Information Systems (GIS) - Mapping & Spatial Analysis
- Tax Incremental Financing Planning and Analysis
- Expert Witness Testimony and Litigation Support
- Specialized Economic and Statistical Analysis
- Public Policy Research and Analysis
- Ordinance Review and Updating
- Fiscal Impact Analysis
- Life Cycle Cost Analysis
- Analysis of New Funding Methods
- Grant Funding Research and Preparation of Applications

Erik A. Granum

Recent Projects



Water Utility Rate Study—Ashland, WI

In 2016, Erik completed a water and sewer rate study for the City of Ashland, Wisconsin. The application to increase water rates was approved by the Wisconsin Public Service Commission in November 2016. The study involved analyzing the revenue requirements, including a cash flow analysis that evaluated and planned for the City's ability to implement its capital improvement plan, performing a full cost-of-service rate study for and recommending a revised rate structure that better reflected the actual demands placed on the utility by its various customer classes.

Water Rate Study—Madison, WI

Trilogy performed a full water rate study and long-term plan for the City of Madison Water Utility between 2014 and 2015. This was a comprehensive study that included the following services:

- Developing the revenue requirements, including working with utility staff on updating the net investment rate base and working with the Wisconsin Public Service Commission staff on acceptance of the proposed revenue requirements.
- Performing a long-term cash flow and rate analysis that would seek to eliminate the need for future rate spikes while maintaining adequate revenues to fund the Utility's significant capital improvement program.
- Performing a full cost-of-service study. This, along with the rate design, utilized data from the Utility's new Advanced Metering Infrastructure (AMI) system that had been installed throughout the entire system. For this analysis, the data was used to determine updated actual peak demand allocation factors for all retail and wholesale customer classes in the system, which had previously been based on outdated assumptions.
- Development and evaluation of alternative rate structures. Again, this analysis utilized the Utility's AMI data by taking a detailed examination of the demand patterns within each retail customer class. The final proposed rates included different rate structures for each customer class, including inclining-block conservation rates for the residential class.

The PSC hearing occurred in September 2015, with final implementation in October 2015.

Water and Sewer Rate Study—River Falls, WI

In 2015, Erik assisted in completing a water and sewer rate study for the City of River Falls, Wisconsin. The Wisconsin Public Service Commission approved the new rates in May 2016, with implementation in June 2016. The study involved analyzing the revenue requirements, including a cash flow analysis that evaluated the City's capital improvement plan, performing a full cost-of-service rate study for each utility and recommending a rate structure to fully recover the revenue requirements.

Rate Case Consulting Services—Milwaukee Water Works, WI

Between 2013 and 2014, Trilogy assisted with preparation for Milwaukee's 2014 water rate case as their owner's rep. Services include working with staff and their consultants on cost-of-service methodology, outreach to the major customers, and potential research, preparation and assistance with expert witness testimony.

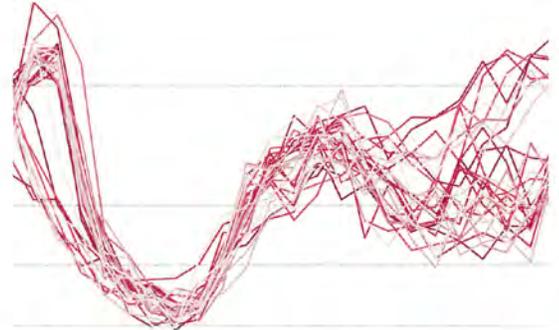
Erik A. Granum

Recent Projects



Customer Demand Study—Milwaukee, WI

In 2014, Trilogy completed a study for the Milwaukee Water Works on demand characteristics of its various customer classes, which included historical data analysis, preparing samples of customers within those classes and analyzing sample daily and hourly water consumption data that was collected during 2012 and 2013.



Sewer Rate Study and Capital Funding Evaluation—Town of Beloit, WI

In 2014, Trilogy completed a full sewer rate study for the Town of Beloit, Wisconsin. The final rate recommendation included a 3-step rate increase that would fully fund all of the utility's revenue requirements and maintain adequate cash flow and fund reserves for flexibility in funding the utility's future capital improvement plans. The rate analysis included designing rates for different customer classes and levels of service for Town of Beloit customers, as well as in the adjoining Town of Rock.

Recently, Trilogy evaluated numerous alternative funding plans for a specific area of the Town that includes new sewer and water service and road replacement. This project is complicated due to separation of this area from the existing sewer utility collection and treatment systems as well as ownership issues with the City of Beloit.

Sewer Rate Study—Clinton, WI

In 2013, Trilogy completed a sewer rate study for the Village of Clinton, with a goal of determining the level of rates necessary to adequately fund all obligations of the utility, while avoiding future rate increases and creating a financing plan for the utility's capital improvements over a 7-year period. As a part of the study, Erik also created a plan that will stop significant cash subsidy from the general fund and reconcile interfund cash flows.

Similar Projects

Village of Mukwonago, WI (Population 7,820)

The Village of Mukwonago owns and operates a wastewater treatment plant and wastewater collection system, and a groundwater water supply and distribution system that serves customers in the Village.

Water and Wastewater Rate Study

Trilogy is currently working for the Village on a water and wastewater rate study and application to the Wisconsin Public Service Commission to increase water rates. The wastewater rates were implemented in fall of 2017 and the application for water rates is currently under review by PSC staff.

The study included a detailed long-term cash flow analysis for each utility that included evaluation of the utility's current financial condition relative to a variety of metrics, a financial sensitivity analysis and a recommended strategy for funding future capital improvements.

Services provided by Trilogy for this project include:

- Development of revenue requirements
- 5-year cash flow analysis that evaluated the current and future financial condition of the utilities, recommended a plan for capital funding and a plan for future monitoring and adjustments to rates
- Full cost-of-service rate study for each utility
- Evaluation of alternative rate structures to fully recover the revenue requirements
- Evaluation of the feasibility of upgrading the wastewater treatment plant to accept septage and the establishment of a septage rate
- Preparation and submittal of an application to the Wisconsin Public Service Commission to increase water rates.

Reference:

Dave Brown
Utility Director
414-550-2509
dbrown@villageofmukwonago.com

Village of Grafton, WI (Population 11,568)

The Village of Grafton owns and operates a wastewater treatment plant and wastewater collection system, and a groundwater water supply and distribution system that serves customers in the Village.

Water and Wastewater Rate Study

Trilogy recently completed a water and wastewater rate study and application to the Wisconsin Public Ser-

Similar Projects

vice Commission to increase water rates. Wastewater rates were implemented in September 2017, and water rates were approved by the PSC in February 2018.

The study included a detailed five-year cash flow analysis for each utility that included evaluation of the utility's current financial condition relative to a variety of metrics, a financial sensitivity analysis, evaluation of the utility's borrowing capacity, a recommended strategy for funding future capital improvements, and a recommended plan for the ongoing monitoring, timing and methods for adjusting rates during the five-year forecast period.

Alternative cost of service studies were prepared for each utility, with a focus on options for increasing the share of utility revenues generated by fixed service and public fire protection charges.

Services provided by Trilogy for this project include:

- Development of revenue requirements
- 5-year cash flow analysis that evaluated the current and future financial condition of the utilities, recommended a plan for capital funding and a plan for future monitoring and adjustments to rates
- Evaluation of billing procedures and other fees and charges
- Full cost-of-service rate study for each utility
- Evaluation of alternative rate structures to fully recover the revenue requirements
- Preparation and submittal of an application to the Wisconsin Public Service Commission to increase water rates.

Reference:

Larry Roy
Facility Operations Coordinator
262-375-5300
lroy@village.grafton.wi.us

City of Ashland, WI (Population 7,957)

The City of Ashland owns and operates a wastewater treatment plant and wastewater collection system, and a surface water treatment plant and distribution system that serve customers in the City.

Water Utility Rate Study

In 2016, Trilogy completed a water rate study for the City of Ashland, Wisconsin. The application to increase water rates was filed with the Wisconsin Public Service Commission in April 2016 and rates were approved in November 2016.

Similar Projects

A cash flow analysis was also prepared to guide the City for future planning of rate increases over a 10-year period and implementation of an extensive capital improvement program. This included analysis of existing debt service and debt coverage requirements, evaluation of alternative financing scenarios for future capital construction and projection of future rate increases and possible debt issuance to accomplish the City's objectives.

The proposed rate structure that was approved by the City Council eliminated different rate blocks for different amounts of usage, replacing the structure with a single, uniform rate for all water used by customers, regardless of usage.

Services provided by Trilogy for this study included:

- Analyzing the revenue requirements
- 10-year cash flow analysis including an analysis of existing debt service and debt coverage requirements, evaluation of alternative financing scenarios for future capital construction and projection of future rate increases and possible debt issuance to accomplish the City's objectives.
- Performing a full cost-of-service rate study
- Recommending a rate structure to fully recover the revenue requirements
- Preparation and submittal of an application to the Wisconsin Public Service Commission to increase water rates

Sewer Rate Study

In 2016, Trilogy analyzed sewer rates for the City of Ashland and prepared several alternative cost of service allocations and proposed rate structures. The City's rate structure included fixed charges and a volumetric rate. The City had an unusual system of fixed charges that charged a reduced rate to customers with residential sized meters, to provide these customers with the benefit of a grant received from the Clean Water Fund. Trilogy evaluated the equity of this charge, in light of the fact that the debt for the project had been retired, and proposed alternative methods of allocating costs to a fixed charge. The recommended approach was to increase the allocation to fixed costs, based on significant system I/I and phase out the differential fixed charges. The study analyzed the percentage change in revenues per year for each customer class and the annual bill impacts for example customers under multiple options for phasing out the differential rates.

Reference:

Julie Vaillancourt
Finance Director
715-682-7190
jvaillancourt@coawi.org

Similar Projects

City of Port Washington, WI (Population 11,642)

Water Rate Study—2016

In 2016, Trilogy prepared a water rate study for the City of Port Washington. The City, located on the western shore of Lake Michigan, operates a surface water treatment plant that supplies water to City residents. The City was planning to upgrade its treatment plant to provide UV disinfection, and also had a significant ongoing program of water main replacements. The study included preparation of two alternative 5-year cash flow scenarios with different financing, evaluation of current and future bond coverage, recommendations for minimum reserve levels, five-year forecasts of customers and water demand based on trend analysis, and a detailed cost of service study using the Base-Extra Capacity method. A rate application requesting was submitted to the Wisconsin Public Service Commission in September, 2016 and an overall rate increase of 4.56 percent was approved in July 2017.

Services provided for this study included:

- Preparation of an application to the Wisconsin Public Service Commission to increase water rates
- Two alternative 5-year cash flow forecasts
- Detailed cost of service study using the Base-Extra Capacity method
- Rate design for residential, multi-family, commercial, industrial, and public authority classes and public fire protection rates
- Recommendations regarding reserve levels
- Summary report and presentation to the City Council

Reference:

Mark Grams
City Administrator
262-284-5585
mgrams@ci.port-washington.wi.us

City of River Falls, WI (Population 15,339)

Water and Sewer Rate Study

The City of River Falls, located in northwestern Wisconsin, owns and operates its own wastewater treatment plant, wastewater collection system, and groundwater supply and distribution system. In 2015 and

Similar Projects

2016, Trilogy completed a water and sewer rate study for the City. The most recent rate increase had been in 2012, and a combination of declining water demand, increased operation and maintenance expenses and substantial ongoing capital replacement needs led to the need to reevaluate and increase utility rates. The City was also interested in analyzing customer demand patterns and developing rate structures to allocate costs more fairly between customer classes and encourage water conservation for residential customers.

The Wisconsin Public Service Commission, in May 2016, approved a new water rate structure that includes separate rates charged to different customer classes:

- Inclining block conservation rates for residential customers;
- Uniform volumetric rates for multi-family customers;
- Declining block rates for non-residential customers, including government-owned meters;
- Uniform volumetric rates for irrigation-only customers, which make up a significant amount of total usage with the City's utility.

The sewer rate study included evaluating capital needs for system replacement, fixed charges to recover costs associate with I/I, a potential change to billing sewer usage based on non-peak usage, in order to avoid charging for water consumed for outdoor use and evaluating the customer bill impacts and revenue impacts of that change.

Services for this study included:

- Development of revenue requirements
- 5-year cash flow analysis that evaluated the City's capital improvement plan financing
- Bill frequency analysis and analysis of monthly peaking patterns by customer class
- Full cost-of-service rate study for each utility
- Evaluation of alternative rate structures to fully recover the revenue requirements and better match customer demand patterns
- Preparation and submittal of an application to the Wisconsin Public Service Commission to increase water rates.

Reference:

Julie Bergstrom
Finance Director/Asst. City Administrator
715-426-3416
JBergstrom@RFCITY.org

Similar Projects

Town of Beloit, WI (Population 7,600)

The Town of Beloit, located adjacent to the City of Beloit in south-central Wisconsin, owns and operates its own wastewater treatment plant serving a portion of the Town and customers in the adjacent Town of Rock. Water service is provided to a portion of the Town on a retail basis by the City of Beloit Water Utility.

West Bank Service Area Funding Study—2015-2016

In 2008, the Town of Beloit signed an intergovernmental agreement with the City of Beloit regarding the 208 sewer service area on the west side of the Rock River (West Bank service area). This agreement allowed the West Bank service area to be in the Town's sewer service area but be served by the City's wastewater treatment facility on a wholesale basis. The agreement required the Town to complete construction of the sanitary sewer mains and water mains to serve the area by 2018. Sewer mains will be owned and operated by the Town with wastewater treatment provided by the City on a wholesale basis; water mains will be transferred to the City's water utility. The West Bank service area is a particularly challenging area for extending and funding service due to the costs of the improvements and the large amount of vacant land without a developer.

In 2015, the Town hired Trilogy Consulting to analyze various scenarios for the financing and funding of the costs for construction of water and sewer main improvements and road reconstruction, as well as sewer operation and maintenance, in the West Bank service area. Services for this study included:

- Development of multiple scenarios for initial capital funding and charges for ongoing O&M
- Analyzing the Town's existing budget and debt margins to evaluate the feasibility of project financing options
- Estimating debt service payments for the improvements for a variety of sources of financing
- Estimating operation and maintenance expenses for the new service area
- Preparing long-term cash flow forecasts taking into account O&M and debt service expenses and revenues from special assessments, user charges, and tax levies
- For each of the potential scenarios, evaluating the projected impact on the Town general fund and sewer utility, property tax rates, user charge rates and property owners both within and outside of the proposed service area
- Conducting multiple workshops with the Town Board to discuss the scenarios and the projected impacts and narrow down and refine the options

Sewer Rate Study and Capital Funding Evaluation—2014 and 2018

In 2014, Trilogy completed a full sewer rate study for the Town of Beloit, Wisconsin. The final rate recommendation included a 3-step rate increase that would fully fund all of the utility's revenue requirements and maintain adequate cash flow and fund reserves for flexibility in funding the utility's future capital improve-

Similar Projects

ment plans. The rate analysis included designing rates for different customer classes and levels of service for Town of Beloit customers, as well as in the adjoining Town of Rock. A portion of flow related costs were allocated to demand costs and recovered through a fixed customer cost. Trilogy is currently in the process of updating the sewer rate study for 2018.

Trilogy's services for this project included:

- Detailed forecasts of customer counts and wastewater flows and loadings based on analysis of historical trends
- Evaluation of the Town's budget to identify additional general and overhead costs to allocate to the utility
- Determination of annual revenue requirements using a utility basis—O&M, depreciation and return on investment
- Analysis of required replacement fund contributions and balance
- Capital improvement financing plan and estimation of future debt service payments
- Preparation of alternative 6-year cash flow forecasts under different rate increase scenarios, including analysis of debt coverage and reserve balances versus recommended reserve balances
- Detailed cost of service study allocating each O&M budget line item, depreciation expenses and each category of plant assets to Demand, Volume, BOD, TSS, Phosphorus and Customer costs
- Evaluation of three alternative rate structures
- Evaluation of alternative plans for stepped rate increases

Reference:

Ian Haas
Town Administrator
608-364-2980 x5
ihaas@town.beloit.wi.us

Compensation



Our proposal was prepared based on the scope of work outlined in the RFP and our budget was determined in order to complete all study objectives, requirements, and elements. The scope of work will be performed with a not-to-exceed amount of compensation of \$31,735. Both principals of Trilogy would be involved in the project tasks, as shown in the breakdown of costs by task below.

Task	Estimated Hours			Rate	Cost
	Granum	DeMaster	Total		
Project Kickoff Meeting					
Prepare draft information request	2.00		2.00		
Conference call for kickoff meeting	2.00	2.00	4.00		
Task Subtotal	4.00	2.00	6.00	\$ 110.00	\$ 660.00
Review of Water and Wastewater Rates and Utility Financial Status					
Review and compile information	6.00	3.00	9.00		
Follow up with City staff	1.00	1.00	2.00		
Perform O&M trend analysis	4.00	2.00	6.00		
Customer usage trend analysis and projections	4.00	1.00	5.00		
Develop projected revenues at current rates based on projected customer demand	4.00	1.00	5.00		
Develop projected operating expenses	2.00	0.50	2.50		
Develop projections for other operating revenues and non-operating revenues	1.00	0.50	1.50		
Input existing debt service schedules	2.00	0.50	2.50		
Evaluate age of infrastructure and depreciation for capital needs	4.00	1.00	5.00		
Review and input capital improvement program costs	2.00	0.50	2.50		
Task Subtotal	30.00	11.00	41.00	\$ 110.00	\$ 4,510.00
Analyze Rate Alternatives and Cash Flow Forecasts for Water and Wastewater Utilities					
Evaluate alternative methods of capital financing for each Utility	1.00	4.00	5.00		
Prepare cash flow scenarios for each Utility to test alternative funding plans and rate alternatives including: rate decrease, no rate increase, and rate increases for 2019-2023	3.00	6.00	9.00		
Analyze debt coverage, reserve levels and rate of return by year	3.00	3.00	6.00		
Prepare draft 25-year plan for capital funding and rate increases	4.00	2.00	6.00		
Prepare reserves and funding analysis for specific needs	4.00	2.00	6.00		
Develop sensitivity analysis for impact of changes in growth	8.00	4.00	12.00		
Task Subtotal	23.00	21.00	44.00	\$ 110.00	\$ 4,840.00
Cost of Service and Rate Structure Analysis for Water and Wastewater Utilities					
<i>Water Utility Cost-of-Service Analysis</i>					
Compile and analyze individual customer demand patterns, by rate tier and customer class, for equity analysis	10.00	1.00	11.00		
Allocation of transmission and distribution mains	2.00	0.50	2.50		
Allocation of costs to utility function	2.00	0.50	2.50		
Proportionate customer demand analysis	3.00	-	3.00		
Allocation to customer classes	2.00	-	2.00		
Allocation of fire protection	3.00	0.50	3.50		

Compensation



Task	Estimated Hours			Rate	Cost
	Granum	DeMaster	Total		
Sewer Utility Cost-of-Service Analysis					
Review system data to identify allocation methods and factors	3.00	0.50	3.50		
I/I and wastestrength analysis	3.00	0.50	3.50		
Allocation of costs to utility function	3.00	0.50	3.50		
Proportionate customer demand analysis	3.00	0.50	3.50		
Allocation to customer classes	2.00	0.50	2.50		
Rate Structure Recommendations					
Calculate rates based on current rate structures	2.00	0.50	2.50		
Develop alternative rate structures	12.00	2.00	14.00		
Prepare summary comparisons of rates and impacts on example customers for each alternative	5.00	1.00	6.00		
Evaluate equity of proposed rate structures relative to customer demand characteristics	4.00	1.00	5.00		
Prepare price elasticity of demand analysis	10.00	4.00	14.00		
Prepare community comparison of rates for regional and state utilities	6.00	1.00	7.00		
Task Subtotal	75.00	14.50	89.50	\$ 110.00	\$ 9,845.00
Preliminary Report					
Prepare draft report that includes rate structure alternatives	15.00	4.00	19.00		
Discuss draft report with City staff after review	3.00	3.00	6.00		
Make changes to draft report based on discussions with City	6.00	2.00	8.00		
Prepare PowerPoint presentation for Utility Commission meeting	8.00	2.00	10.00		
Present revised draft report to Utility Commission at meeting	2.00	2.00	4.00		
Task Subtotal	34.00	13.00	47.00	\$ 110.00	\$ 5,170.00
Final Report					
Prepare final report based on changes discussed at Utility Commission meeting	6.00	2.00	8.00		
Prepare PowerPoint presentation for final report	3.00	-	3.00		
Present final report to Utility Commission at meeting	2.00	2.00	4.00		
Present final report to City Council at meeting	2.00	2.00	4.00		
Task Subtotal	13.00	6.00	19.00	\$ 110.00	\$ 2,090.00
Prepare PSC Application to Increase Rates					
Input all data into PSC application	15.00	2.00	17.00		
Discuss completed application with City staff	2.00	2.00	4.00		
Make any revisions to PSC application and submit to PSC	3.00	1.00	4.00		
Coordinate response to any PSC questions	8.00	3.00	11.00		
Review PSC exhibits and revise cost-of-service and rate proposal accordingly	3.00	1.00	4.00		
Attend PSC rate case hearing telephonically	1.00		1.00		
Review final PSC order and assist with implementation	1.00		1.00		
Task Subtotal	33.00	9.00	42.00	\$ 110.00	\$ 4,620.00
Grand Total	212.00	76.50	288.50		\$ 31,735.00

Project Timeline

Task Milestones	Target Date
Project Kickoff Meeting	8/15/2018
Review of Water and Wastewater Rates and Utility Financial Status	
Review and compile information	
Follow up with City staff	8/29/2018
Overall Task	9/30/2018
Analyze Rate Alternatives and Cash Flow Forecasts for Water and Wastewater Utilities	
Prepare reserves and funding analysis for specific needs	10/31/2018
Develop sensitivity analysis for impact of changes in growth	11/7/2018
Overall Task	11/7/2018
Cost of Service and Rate Structure Analysis for Water and Wastewater Utilities	
<i>Water Utility Cost-of-Service Analysis</i>	10/31/2018
<i>Sewer Utility Cost-of-Service Analysis</i>	11/7/2018
<i>Rate Structure Recommendations</i>	11/30/2018
Preliminary Report	
Prepare draft report that includes rate structure alternatives	12/21/2018
Discuss draft report with City staff after review	12/31/2018
Make changes to draft report based on discussions with City	1/8/2019
Prepare PowerPoint presentation for Utility Commission meeting	1/13/2019
Present revised draft report to Utility Commission at meeting	1/15/2019
Final Report	
Prepare final report based on changes discussed at Utility Commission meeting	2/1/2019
Prepare PowerPoint presentation for final report	2/6/2019
Present final report to Utility Commission at meeting	2/8/2019
Present final report to City Council at meeting	2/22/2019
Prepare PSC Application to Increase Rates	
<i>Note: This task's schedule is dependent on PSC scheduling and a specific completion date cannot be guaranteed. This schedule is based on our recent experience with rate cases.</i>	
Input all data into PSC application	3/15/2019
Discuss completed application with City staff	3/22/2019
Make any revisions to PSC application and submit to PSC	3/31/2019
Coordinate response to any PSC questions	6/30/2019
Review PSC exhibits and revise cost-of-service and rate proposal accordingly	7/31/2019
Attend PSC rate case hearing telephonically	9/15/2019
Review final PSC order and assist with implementation	9/30/2019

Water Utility Rate Study

Prepared for the

Village of Grafton

by Trilogy Consulting, LLC

May 2017



EXECUTIVE SUMMARY

The purpose of this study was to recommend rates that will collect adequate revenues for the Village of Grafton Water Utility to fulfill all its current and upcoming obligations. Specifically, revenues need to be adequate to recover operation and maintenance, depreciation and the Village's return on its investment in its water assets. These current revenues, along with the reserves in the water fund, must be sufficient to provide cash flow to fund the water system's capital needs.

The results of the study indicate a rate increase is required for funding the Utility's capital improvement program over the next five years without the need for incurring any additional debt. Even with the increase, the Utility will need to rely somewhat on its cash reserves to completely fund its capital program. Currently, the Village's water rates are below average among communities in Grafton's surrounding area. Following this increase, they would increase rates to be slightly above the average of surrounding communities' current rates.

Two alternative rate structures were considered based on different methods of allocating costs: one based on the same methodology as was implemented during the last rate study and one that allocates additional costs to fixed charges, which reflects the Utility's re-investment in fixed infrastructure. Both were calculated to provide about the same overall amount of revenue. The two alternative analyses and rate structures are included as Appendices in this report, with the recommended rate structure summarized below.

RECOMMENDED RATES

The following tables summarize the current rates and proposed rates under the recommended cost-of-service analysis and rate structure:

Public Fire Protection Charges:	Current Rates	Proposed Rates	% Change
Municipal Charge (annual):	\$216,300	\$216,300	0.0%
Direct Charges (quarterly):			
5/8" meter	\$5.25	\$5.25	0.0%
3/4" meter	\$5.25	\$5.25	0.0%
1" meter	\$13.29	\$13.29	0.0%
1 1/4" meter	\$20.70	\$20.70	0.0%
1 1/2" meter	\$27.81	\$27.81	0.0%
2" meter	\$43.26	\$43.26	0.0%
3" meter	\$80.34	\$80.34	0.0%
4" meter	\$132.87	\$132.87	0.0%
6" meter	\$265.74	\$265.74	0.0%
8" meter	\$423.33	\$423.33	0.0%
10" meter	\$633.45	\$633.45	0.0%
12" meter	\$846.66	\$846.66	0.0%

Private Fire Protection Charges:	Current Rates	Proposed Rates	% Change
Quarterly Charges:			
2" or smaller connection	\$15.90	\$18.00	13.2%
3" connection	\$30.00	\$35.00	16.7%
4" connection	\$51.00	\$58.00	13.7%
6" connection	\$99.00	\$115.00	16.2%
8" connection	\$159.00	\$184.00	15.7%
10" connection	\$237.00	\$276.00	16.5%
12" connection	\$318.00	\$403.00	26.7%
14" connection	\$396.00	\$460.00	16.2%
16" connection	\$477.00	\$621.00	30.2%

General Service Charges:	Current Rates	Proposed Rates	% Change
Fixed Charges (quarterly):			
5/8" meter	\$20.86	\$30.70	47.2%
3/4" meter	\$20.86	\$30.70	47.2%
1" meter	\$31.93	\$46.10	44.4%
1 1/4" meter	\$43.26	\$61.60	42.4%
1 1/2" meter	\$51.50	\$75.70	47.0%
2" meter	\$77.25	\$114.40	48.1%
3" meter	\$121.54	\$178.60	46.9%
4" meter	\$185.40	\$261.90	41.3%
6" meter	\$329.60	\$440.90	33.8%
8" meter	\$501.61	\$651.70	29.9%
10" meter	\$725.12	\$926.30	27.7%
12" meter	\$951.72	\$1,200.90	26.2%
Volume Charges (per quarter):			
Residential & Multi-Family:			
All water used, per 1,000 gals	\$2.68	\$2.64	-1.5%
Non-residential:			
First 30,000 gallons, per 1,000 gals	\$2.68	\$2.70	0.7%
Next 470,000 gallons, per 1,000 gals	\$2.55	\$2.56	0.4%
Over 500,000 gallons, per 1,000 gals	\$2.28	\$2.29	0.4%

Additional Meter Rental Charges:	Current Rates	Proposed Rates	% Change
Installation Charge:	\$45.00	\$45.00	0.0%
Quarterly Rental Charges:			
5/8" meter	\$9.90	\$9.90	0.0%
3/4" meter	\$9.90	\$9.90	0.0%
1" meter	\$15.30	\$15.30	0.0%
1 1/4" meter	\$21.00	\$21.00	0.0%
1 1/2" meter	\$24.90	\$24.90	0.0%
2" meter	\$37.50	\$37.50	0.0%

Other Charges:	Current Rates	Proposed Rates	% Change
Non-Sufficient Funds Charge:	\$30.00	\$30.00	0.0%
Special Billing Charge:	\$25.00	\$25.00	0.0%
Special Meter Reading Charge:	\$25.00	\$25.00	0.0%
Missed Appointment Charge:			
Normal business hours	\$25.00	\$25.00	0.0%
After normal business hours	\$40.00	\$40.00	0.0%
Real Estate Closing Account Charge	\$25.00	\$25.00	0.0%
Reconnection Charge:			
Normal business hours	\$45.00	\$45.00	0.0%
After normal business hours	\$60.00	\$60.00	0.0%

Bulk Water Charges:	Current Rates	Proposed Rates	% Change
Trucked Bulk Water:			
Annual Permit:	n/a - \$45.00	\$100.00	
Per Load Charge:	service charge	\$5.00	
Volume Charge (per 1,000 gals):	\$2.68	\$2.64	-1.5%
OR			
No Annual Permit	n/a - \$45.00		
Per Load Charge:	service charge	\$25.00	
Volume Charge (per 1,000 gals):	\$2.68	\$2.64	-1.5%
Meter Rental Bulk Water:			
2" or smaller meter (per month):	Varies	\$45.00	
3" or greater meter (per week):	Varies	\$25.00	
Volume Charge (per 1,000 gals):	\$2.68	\$2.64	-1.5%

IMPETUS FOR THE RATE INCREASE

The Village of Grafton owns and operates a water supply and distribution system that provides water service to approximately 5,000 customers. The Village last applied for a full rate case with the Wisconsin Public Service Commission (PSC) in October 2013, for a 2014 test year. In February 2014, the PSC approved an overall increase of approximately 8 percent in water rates. In August 2016, the Village implemented a PSC-approved simplified rate increase of 3 percent, which is reflected in the current water rates for the Village.

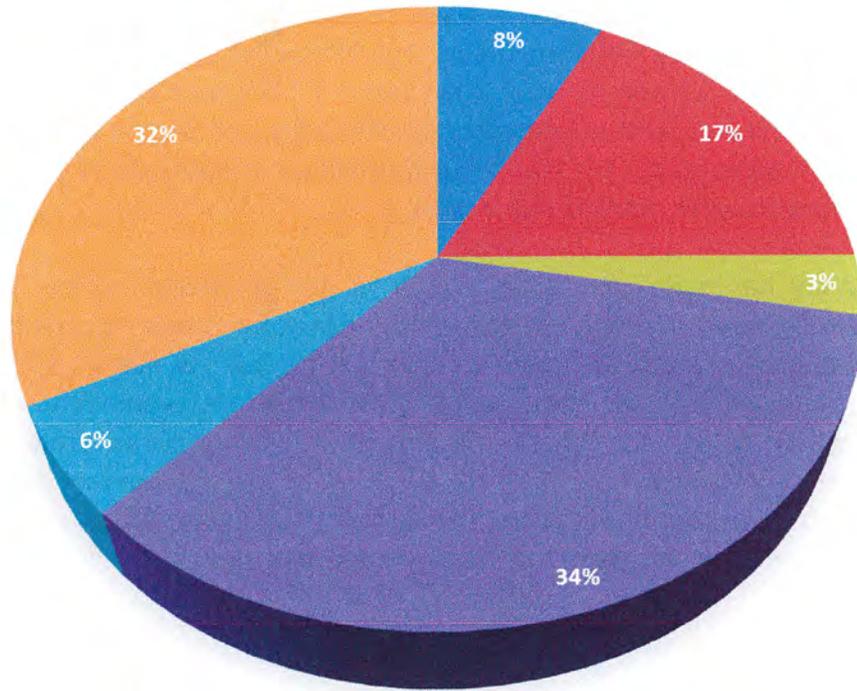
Although the utility has been generating a positive net operating income, with return on investment of 3.53 percent during 2016, the utility needs to increase its cash flow in order to fund routine annual capital expenses without the need to borrow funds and related interest costs. The Village has significant expenditures planned for the foreseeable future for water main replacement projects and other capital replacement and rehabilitation projects. In addition, operation and maintenance expenses have increased since the last water rate increase, resulting in reduced operating income. In order to provide for an adequate program of infrastructure maintenance and renewal and keep the utility financially sound, regular rate updates are necessary.

REVENUE REQUIREMENTS

The following table summarizes two alternative revenue requirement proposals that were evaluated and discussed with Village staff – one under the benchmark rate of return and one with a lower rate of return that would minimize the level of rate increase while still allowing the utility to cash finance its upcoming main replacement projects – and compares them to the approved revenue requirements from the 2014 water rate increase. As shown, the increase in revenue requirements has outpaced the growth in user charge revenues. Under a benchmark rate of return of 5.00%, an overall rate increase of \$310,379 would be projected for the 2017 test year, or an increase of about 18 percent over current revenues. Under a rate of return of 4.00%, an overall rate increase of \$212,295 would result for the 2017 test year, or an increase of about 12.5 percent over current revenues. The reasons for considering requesting a lower rate of return from the PSC are discussed in the following section on cash flow projections.

Additionally, the following chart shows the breakdown of operation and maintenance expenses into different categories of costs. As shown, about two-thirds of the expenses are for transmission and distribution costs and general and administrative costs, most of which are fixed in nature as part of the operation of the utility.

Breakdown of Test Year Operation & Maintenance Expenses



■ SOURCE OF SUPPLY EXPENSES
 ■ PUMPING EXPENSES
 ■ WATER TREATMENT EXPENSES
■ TRANSMISSION AND DISTRIBUTION EXPENSES
 ■ CUSTOMER ACCOUNTS EXPENSES
 ■ GENERAL AND ADMINISTRATIVE EXPENSES

	2014 (after approved rate increase) ⁽¹⁾	2017 Proposal – Benchmark Rate of Return	Change	2017 Proposal – Lower Rate of Return	Change
Revenue Requirements:					
Operation and Maintenance	\$837,700	\$1,099,920	31.3%	\$1,099,920	31.3%
Taxes	\$223,716	\$222,431	-0.6%	\$222,431	-0.6%
Depreciation	\$294,524	\$340,307	15.5%	\$340,307	15.5%
Return on Investment	\$430,764	\$487,269	13.1%	\$389,815	-9.5%
Total	\$1,786,704	\$2,149,927	20.3%	\$2,052,473	14.9%
Net Investment Rate Base	\$8,615,284	\$9,745,371	13.1%	\$9,745,371	13.1%
Rate of Return on Investment	5.00%	5.00%		4.00%	
Revenues at Current Rates	\$1,617,494	\$1,670,100	3.3%	\$1,670,100	3.3%
Required Increase in Revenues		\$310,379		\$212,925	
% Increase in Revenues	8%	18.1%		12.5%	

⁽¹⁾ 2014 Total Revenues at Current Rates and User Charge Revenues at Current Rates were the projected revenues after the rate increase.

NET CASH FLOW PROJECTIONS

While the revenue requirements as determined by the utility method utilized by the PSC show one aspect of the financial requirements of the Utility, it is also necessary to examine current and future debt obligations, Utility reserves, other capital improvement needs and cash flow in order to evaluate the complete needs of the Utility. This analysis was performed under the two alternative scenarios, and was used to evaluate the Village's ability to finance future capital improvements.

The following table shows the projected cash flow for the 2017 test year, under the benchmark rate of return and a lower rate of return, as in the previous section:

	2017 Proposal – 5.00% Rate of Return	2017 Proposal – 4.00% Rate of Return
Sources of Cash:		
Operating Revenues	\$2,149,613	\$2,053,043
Non-Operating Revenues	\$45,000	\$45,000
Total	\$2,194,613	\$2,098,043
Cash Needs:		
O&M Expenses	\$1,099,920	\$1,099,920
Taxes	\$222,431	\$222,431
Debt Service	\$151,294	\$151,294
Capital Outlay	\$723,016	\$723,016
Total	\$2,196,661	\$2,196,661
Net Cash Flow	-\$2,049	-\$98,619

Under the above cash flow scenarios, it would appear that neither the benchmark rate of return nor lower rate of return would provide a positive cash flow. However, one must also consider the level of utility reserves on hand to cover operating costs and capital replacements, any other utility obligations, plus current and future capital needs. Even though under PSC regulations, utilities' rates are set based on a single test year rather than future years, it is still important to consider upcoming needs, especially in light of the limitations on the frequency that utilities can feasibly implement rate increases under PSC regulations.

As of December 31, 2016, the Utility had total reserve funds totaling \$3,419,755. A small amount of these were restricted funds to be held as debt reserves, meaning they cannot be used for any other use, such as operating losses or ongoing capital improvements. The majority of the reserves were unrestricted, meaning they can be used for any purpose, including capital improvements, operating expenses, or debt service payments. The cash flow analysis also developed a recommended minimum amount of reserves the Utility should keep on hand, for those purposes

and as a rate stabilizer. This amount was determined to be approximately \$900,000 for the next several years, comfortably below the Utility's actual reserve levels as of the end of 2016. These facts illustrate the importance of examining the cash flow over multiple years in order to understand the Utility's ability to build, maintain and strategically use reserves for ongoing utility needs.

The following table shows cash flow projections assuming the benchmark rate of return would be requested for the current rate increase application and that the Utility requests two additional future inflationary rate increases to maintain cash flow. This cash flow projection shows that no new debt financing would be required to complete the utility's identified capital improvements through 2026. Under this scenario, the Utility would use some of its reserves over the ten-year period, but would maintain a level of reserves in excess of the minimum recommended amount by a significant margin. The year 2026 is also the final year that the Utility would have any outstanding debt from its current obligations.

Village of Grafton
2017 Water Rate Study

Test Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Projected Demand Change		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Assumed Annual Inflation		1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Projected Rate Increase	18.1%	0.0%	3.0%	0.0%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Revenues										
Total Cash In	\$2,194,613	\$2,170,322	\$2,233,212	\$2,235,045	\$2,300,334	\$2,300,852	\$2,297,505	\$2,298,347	\$2,298,895	\$2,299,187
Expenses										
Subtotal O&M	\$1,099,920	\$1,110,919	\$1,122,028	\$1,133,249	\$1,144,581	\$1,156,027	\$1,167,587	\$1,179,263	\$1,191,056	\$1,202,966
Subtotal Taxes	\$222,431	\$218,581	\$219,052	\$219,484	\$219,968	\$220,429	\$220,034	\$220,330	\$220,591	\$220,818
Debt Service	\$151,294	\$156,552	\$156,213	\$158,929	\$161,359	\$158,701	\$160,909	\$159,893	\$114,946	\$113,463
Capital Outlay	\$723,016	\$1,207,825	\$502,652	\$794,476	\$707,078	\$672,495	\$764,025	\$681,345	\$718,934	\$705,925
Total Cash Out	\$2,196,661	\$2,693,877	\$1,999,945	\$2,306,137	\$2,232,986	\$2,207,652	\$2,312,556	\$2,240,831	\$2,245,527	\$2,243,173
Net Cash Flow	(\$2,049)	(\$523,556)	\$233,266	(\$71,093)	\$67,348	\$93,200	(\$15,051)	\$57,516	\$53,369	\$56,014
Reserves										
Beginning Balance	\$3,419,755	\$3,417,706	\$2,894,151	\$3,127,417	\$3,056,324	\$3,123,672	\$3,216,872	\$3,201,821	\$3,259,337	\$3,312,706
Net Cash Flow	(\$2,049)	(\$523,556)	\$233,266	(\$71,093)	\$67,348	\$93,200	(\$15,051)	\$57,516	\$53,369	\$56,014
Ending Balance	\$3,417,706	\$2,894,151	\$3,127,417	\$3,056,324	\$3,123,672	\$3,216,872	\$3,201,821	\$3,259,337	\$3,312,706	\$3,368,720
Recommended Reserve										
Operating Reserve	\$274,980	\$277,730	\$280,507	\$283,312	\$286,145	\$289,007	\$291,897	\$294,816	\$297,764	\$300,742
Debt Reserve	\$151,294	\$156,552	\$156,213	\$158,929	\$161,359	\$158,701	\$160,909	\$159,893	\$114,946	\$113,463
Rate Stabilization Reserve	\$276	\$30,263	\$27,957	\$47,707	\$39,660	\$60,400	\$81,289	\$101,668	\$120,103	\$138,642
Depreciation/Capital Reserve	\$340,409	\$361,023	\$379,763	\$393,201	\$409,006	\$423,762	\$438,927	\$454,281	\$469,036	\$484,110
Total	\$766,958	\$825,568	\$844,440	\$883,148	\$896,171	\$931,871	\$973,021	\$1,010,657	\$1,001,849	\$1,036,957
Net Income	\$486,853	\$459,090	\$489,347	\$464,257	\$499,030	\$472,366	\$446,037	\$418,710	\$391,902	\$364,690
Rate of Return	4.99%	4.42%	4.49%	4.15%	4.31%	3.98%	3.66%	3.37%	3.10%	2.84%
% Debt	11.1%	9.3%	8.1%	6.8%	5.5%	4.3%	3.0%	1.8%	0.9%	0.0%
% Equity	88.9%	90.7%	91.9%	93.2%	94.5%	95.7%	97.0%	98.2%	99.1%	100.0%

Further analysis was performed to evaluate the impact for requesting a lower-than-benchmark rate of return from the PSC that would allow the Utility to use up more of its reserves and still fund a routine capital improvement program. For purposes of comparison, the same annual capital investment was assumed as under the previous scenario. The following cash flow scenarios assume a rate of return of 4.00 percent (compared to 5.00 percent at benchmark) for the 2017 test year and the same future inflationary rate increases. This scenario would still not require any new debt to finance the utility's capital improvement program. The 2017 rate increase under this scenario would generate approximately \$100,000 less revenue per year as compared to benchmark rate of return. The initial rate increase would be reduced to about 12.5 percent from the 18.1 percent.

The Public Service Commission typically authorizes any rate of return at or below the benchmark unless a utility needs additional revenues to meet its existing debt service and debt coverage requirements (an additional amount of revenues over and above actual debt service that is often required for utility revenue bonds), which is not necessary for the Village to request. Therefore, it is recommended that the Utility request a 4.0 percent rate of return at this time, in order to reduce the immediate rate increase, but closely monitor its net income and rate of return and request additional rate increases as needed to keep its reserves healthy while funding its capital needs.

It should also be noted that these future projections of cash flow are for planning purposes only and are not a recommendation that the Village or the Utility never consider issuing debt if circumstances change or the Village would find it advantageous to do so. The Village and the Utility should continue to assess the financial, physical and operational conditions of the Utility on an annual basis in order to make decisions regarding which capital improvement projects to undertake, how those projects should be financed and the appropriate rate increase that may be needed in order to meet the revenue requirements of the Utility. It should also be noted that the projections include the assumption that the PILOT expense continues to remain at a level similar to the current expense, as has been past Village policy.

Village of Grafton
2017 Water Rate Study

Test Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Projected Demand Change		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Assumed Annual Inflation		1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Projected Rate Increase	12.5%	0.0%	3.0%	0.0%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Revenues										
Total Cash In	\$2,098,016	\$2,073,726	\$2,133,718	\$2,135,551	\$2,197,855	\$2,198,373	\$2,195,026	\$2,195,868	\$2,196,417	\$2,196,708
Expenses										
Subtotal O&M	\$1,099,920	\$1,110,919	\$1,122,028	\$1,133,249	\$1,144,581	\$1,156,027	\$1,167,587	\$1,179,263	\$1,191,056	\$1,202,966
Subtotal Taxes	\$222,431	\$218,581	\$219,052	\$219,484	\$219,968	\$220,429	\$220,034	\$220,330	\$220,591	\$220,818
Debt Service	\$151,294	\$156,552	\$156,213	\$158,929	\$161,359	\$158,701	\$160,909	\$159,893	\$114,946	\$113,463
Capital Outlay	\$723,016	\$1,207,825	\$502,652	\$794,476	\$707,078	\$672,495	\$764,025	\$681,345	\$718,934	\$705,925
Total Cash Out	\$2,196,661	\$2,693,877	\$1,999,945	\$2,306,137	\$2,232,986	\$2,207,652	\$2,312,556	\$2,240,831	\$2,245,527	\$2,243,173
Net Cash Flow	(\$98,645)	(\$620,152)	\$133,772	(\$170,587)	(\$35,131)	(\$9,279)	(\$117,530)	(\$44,962)	(\$49,110)	(\$46,465)
Reserves										
Beginning Balance	\$3,419,755	\$3,321,110	\$2,700,958	\$2,834,731	\$2,664,144	\$2,629,013	\$2,619,734	\$2,502,204	\$2,457,242	\$2,408,132
Net Cash Flow	(\$98,645)	(\$620,152)	\$133,772	(\$170,587)	(\$35,131)	(\$9,279)	(\$117,530)	(\$44,962)	(\$49,110)	(\$46,465)
Ending Balance	\$3,321,110	\$2,700,958	\$2,834,731	\$2,664,144	\$2,629,013	\$2,619,734	\$2,502,204	\$2,457,242	\$2,408,132	\$2,361,667
Recommended Reserve										
Operating Reserve	\$274,980	\$277,730	\$280,507	\$283,312	\$286,145	\$289,007	\$291,897	\$294,816	\$297,764	\$300,742
Debt Reserve	\$151,294	\$156,552	\$156,213	\$158,929	\$161,359	\$158,701	\$160,909	\$159,893	\$114,946	\$113,463
Rate Stabilization Reserve	\$48,574	\$78,561	\$77,704	\$97,454	\$90,900	\$111,640	\$132,528	\$152,907	\$171,343	\$189,881
Depreciation/Capital Reserve	\$340,409	\$361,023	\$379,763	\$393,201	\$409,006	\$423,762	\$438,927	\$454,281	\$469,036	\$484,110
Total	\$815,256	\$873,866	\$894,187	\$932,895	\$947,411	\$983,110	\$1,024,261	\$1,061,897	\$1,053,088	\$1,088,196
Net Income	\$390,257	\$362,494	\$389,853	\$364,763	\$396,551	\$369,888	\$343,558	\$316,231	\$289,423	\$262,212
Rate of Return	4.00%	3.49%	3.57%	3.26%	3.43%	3.12%	2.82%	2.54%	2.29%	2.04%
% Debt	11.1%	9.3%	8.1%	6.8%	5.5%	4.3%	3.0%	1.8%	0.9%	0.0%
% Equity	88.9%	90.7%	91.9%	93.2%	94.5%	95.7%	97.0%	98.2%	99.1%	100.0%

COST OF SERVICE STUDY

The attached studies summarize the cost of service analysis, allocating the revenue requirements first to utility functions and then to each customer class. Two alternative methods were employed in the analysis: a base model that mimicked the way costs were allocated in the previous rate study, and an alternative model that allocates more costs to fixed charges than the previous rate study. Costs were first allocated to the functions served by the utility, using the base-extra capacity method. This method is widely used across the country and is the standard method employed by the Public Service Commission. Under this method, each of the utility's costs is split between costs to provide base (or average daily) water demand, costs to provide maximum day demand, costs to provide maximum hour demands, costs that are relatively fixed per customer, and costs to provide water for public fire protection.

Costs were then allocated to each customer class (residential, multi-family, commercial, industrial, public authority and fire protection) based on the demand characteristics of each customer class. The same allocation methodology extra capacity (demand over and above average day demand during a peak day and peak hour) ratios were used as in the previous rate case; however, in the current cost of service study; the multi-family customers are treated as a separate customer class. Based on experience with other utilities, the multi-family class was assigned the same extra capacity ratios as the commercial class.

The following summarizes the differences in the alternative methods of allocating costs:

- Functional Cost Allocation
 - a. Alternative 1 allocates individual cost categories to the functions of base, extra-capacity, customer and fire protection. The base and extra-capacity costs are recovered through volumetric rates and the customer and fire protection costs are recovered through fixed charges.
 - b. Alternative 2 has added an additional customer-based cost category that represents having access to the distribution main network. Under this alternative, a portion of the capital costs (depreciation, taxes and return on investment) related to the distribution main network are allocated to the customer function and are therefore proposed to be recovered through fixed charges. The basis for this change is that the Utility is replacing a certain length of distribution mains on an annual basis, which is not directly related to water sales but part of the fixed infrastructure network.
- Customer Class Demand Allocation
 - a. Alternative 1 allocates the functional costs to customer classes according to their proportionate share of those functions, which is based on water sales for each class and an assumed amount of water required needed during a fire event. These costs are then recovered through the volumetric water rate structure.
 - b. Alternative 2 similarly allocates the functional costs, but also introduces an allocation for lost water – water that is pumped into the distribution system, but is then not sold to customers nor used for any operational purpose. The costs that

are allocated to lost water are then re-distributed to the customer classes in the next step and recovered through a fixed charge.

Each alternative shows the amounts allocated to each customer class and the percentage increase in revenues to be recovered from each customer class. Under the first alternative, the changes in user charge revenues would range from an increase of 4.13 percent for the residential class, to an increase of 13.3 percent for the commercial class, and a 33.66 percent increase in fire protection revenues. Under the second alternative method, the changes in user charge revenues would range from an increase of 7.61 percent for the multi-family class, to an increase of 19.22 percent for the residential class, and less than a one percent decrease in fire protection revenues. Under either alternative, the rate structure should strive to recover as close as possible to the appropriate amount of revenues from each customer class. The following table shows the overall cost allocated to each customer class under each alternative method.

	Revenues at Present Rates	Cost-of-Service Alternative 1	Cost-of-Service Alternative 2
Allocated Costs:			
Residential	\$925,938	\$964,195	\$1,103,939
Multi-Family	\$84,479	\$91,393	\$90,907
Commercial	\$194,311	\$220,161	\$212,804
Industrial	\$92,100	\$101,994	\$99,783
Public Authority	\$24,745	\$26,374	\$29,162
Total Fire Protection	\$387,612	\$518,094	\$385,617
Total Costs	\$1,709,185	\$1,922,211	\$1,922,211

RATE STRUCTURE EVALUATION

Each alternative analysis shows the detail of the rate calculations for the rate structures that were calculated based on each method. Alternative 1 keeps the same basic rate structure as is currently used, with separate volumetric rates for residential and non-residential customers, and with a tiered structure for non-residential customers. Alternative 2 maintains that same rate structure, but has higher fixed meter charges compared to Alternative 1, based on the results of the cost allocation.

The following summarizes the water rate structures that were calculated under each method:

- General Service Charges
 - a. Fixed charges
 - i. Under Alternative 1, fixed meter charges could be lowered to match their costs by 24 to 26 percent. This approach only recovers the costs related to billing, meters and service laterals through the fixed charge.

- ii. Under Alternative 2, fixed meter charges would be increased significantly, by between 26 and 48 percent. This reflects the additional allocations to fixed costs for investment in the distribution main network and provides for a greater share of revenues recovered through fixed charges.
 - b. Volumetric rate alternatives
 - i. Under Alternative 1, volumetric rates for water use are proposed to increase by 22.8 percent for residential customers and between 15.4 and 23.1 percent for non-residential customers, depending on water usage. It should be noted that multi-family customers would also begin to be charged the same rate as residential customers, rather than non-residential customers. This reflects an updated PSC rule that states that unless multi-family customers have a separate rate, they are to be charged the same rate as residential customers.
 - ii. Under Alternative 2, rates for water use are proposed to decrease slightly for residential customers (1.5 percent) and increase slightly for non-residential customers (less than one percent). Again, this reflects the alternative methodology that allocates more to fixed costs compared to the previous study.
- Fire Protection Charges
 - a. Private fire protection charges are proposed to be set at the level that matches the cost-of-service under each method, resulting in an overall increase of about 55.4 percent under Alternative 1 and about 15.7 percent under Alternative 2.
 - b. Public fire protection charges
 - i. Under Alternative 1, public fire protection charges would substantially increase, by between 72 and 83 percent, depending on meter size.
 - ii. Under Alternative 2, public fire protection charges would remain the same. The cost-of-service shows that they could be reduced slightly, but that would reduce the total amount that the Utility would receive from fixed charges.

Each alternative summarizes the estimated bill impacts for customers of various sizes in each customer class, including public fire protection, general service charges, and volumetric rates. Under Alternative 1, bill impacts for residential customers would be an increase of about 6 to 21 percent, with larger water users experiencing larger increases compared to smaller water users. Under Alternative 2, residential users would experience a wide range of increases, between 1 and 24 percent, only with smaller users seeing the higher increases compared to larger users. The reason for this is that the fixed charges make up a greater proportion of the smaller users' total bills, so a higher increase in fixed charges impacts the smaller users more than the larger users.

Multi-family users' bills would increase by between 20 and 28 percent under Alternative 1 and only by between 6 to 7 percent under Alternative 2. Under Alternative 2, they would see a higher fixed charge, like the residential customers. However, the impacts are spread more uniformly for differently sized customers because they would now be charged the same volumetric rate as

residential customers (a uniform rate for all water usage) rather than the tiered rate for non-residential customers (where the rate decreases as usage increases). Under Alternative 1, they see a greater impact because the volumetric charges make up a greater proportion of their total bill compared to fixed charges.

Non-residential users' bills would vary depending on their amount of usage and the method. Under Alternative 1, bills would increase about 16 percent to 21 percent, with increases to individual customers varying based on a combination of meter size and water usage. Under Alternative 2, bill impacts show a greater variety of rate increases, potentially ranging from about 1 percent up to 14 percent. Smaller customers generally would see higher increases under this method, again due to the higher fixed charges.

COMMUNITY RATE COMPARISON

In order to provide context for the proposed rates for Grafton, a comparison with the water user rates charged by other communities in the region was prepared. The basis of the charges, the estimated total annual bill for a residential customer and the date of the most recent rate increase for each community are shown in the following table. As shown, for a customer using 45,000 gallons or 6,016 cubic feet of water per year, the estimated annual bill under current rates would be \$204.04 per year, excluding public fire protection. Under Alternative 1, this would increase to \$211.25 per year; under Alternative 2, this would increase to \$241.60. The bills are sorted from highest to lowest without public fire protection because several of the comparison communities do not collect some or all of the public fire protection through a direct customer charge, but through a municipal charge, so the comparison is misleading. Ultimately, the level of rates of various utilities are due to a combination of factors, and are also affected by the average amount of water sold per customer.

RECOMMENDATIONS

It is the recommendation of this report that the Utility adopt Alternative 2 that increases the fixed meter charges as the proposal that will be submitted to the Public Service Commission for approval. This structure allows the Utility to collect a greater amount of fixed revenues than it does currently, which reflects the realities that many costs of the Utility are fixed in nature. Ultimately, the PSC has the final authority to set rates for the Village.

APPENDIX A: ALTERNATIVE 1 COST-OF-SERVICE MODEL AND RATE STRUCTURE

Wastewater Rate Study

Prepared for the

Village of Grafton

by Trilogy Consulting, LLC

May 2017

TRILOGY
CONSULTING, LLC
MUNICIPAL & UTILITY ADVISORS

EXECUTIVE SUMMARY

The purpose of this study was to recommend rates that will collect adequate revenues for the Village of Grafton Wastewater Utility to fulfill all its current and upcoming obligations. Specifically, revenues need to be adequate to recover operation and maintenance, depreciation and the Village's return on its investment in the wastewater system. These current revenues, along with the reserves in the wastewater fund, must be sufficient to provide funding for the wastewater system's capital needs, whether cash financing or payment of debt service.

The results of the study indicate a significant rate increase is required for funding the utility's \$10.3 million capital improvement program over the next five years as well as increasing the level of reserve funds available to cover ongoing equipment replacements, unexpected replacement and rehabilitation needs, or unexpected fluctuations in revenues or expenses. Currently, the Village's wastewater rates are lower than most communities in Grafton's surrounding area. Following this recommendation would increase rates to be above the average of surrounding communities' current rates over the next five years, not considering any increases to wastewater rates that other communities also may be implementing in the interim. However, this is recommended as necessary to allow the utility to continue with the program of capital improvements that have been identified in the Capital Improvement Plan.

A plan for phasing in the recommended rate increase is recommended for consideration by the Village Board; one that phases in most the rate increase over three years, followed by two years of cost-of-living type increases. The recommended rate increases would increase the utility's revenues by \$1.1 million per year over the next five years.

It is recommended that the Village adopt a five-year schedule of rate adjustments as shown in the following table:

Billing Cycle - Quarterly
Billing Units - 1,000 Gallons

Flat Charge

Connection Size	Current Charge	Proposed										
		Charge - 2017	Percent Change	Charge - 2018	Percent Change	Charge - 2019	Percent Change	Charge - 2020	Percent Change	Charge - 2021	Percent Change	
5/8	\$24.41	\$37.70	54%	\$49.10	30%	\$51.00	4%	\$52.00	2%	\$53.00	2%	
3/4	\$24.41	\$37.70	54%	\$49.10	30%	\$51.00	4%	\$52.00	2%	\$53.00	2%	
1	\$40.95	\$64.20	57%	\$84.30	31%	\$87.60	4%	\$89.40	2%	\$91.20	2%	
1 1/4	\$56.70	\$86.70	53%	\$112.70	30%	\$116.90	4%	\$119.20	2%	\$121.60	2%	
1 1/2	\$72.45	\$110.50	53%	\$143.40	30%	\$148.70	4%	\$151.70	2%	\$154.70	2%	
2	\$107.10	\$164.40	54%	\$213.90	30%	\$221.90	4%	\$226.30	2%	\$230.80	2%	
3	\$189.00	\$290.70	54%	\$378.50	30%	\$392.80	4%	\$400.70	2%	\$408.70	2%	
4	\$305.55	\$470.80	54%	\$613.70	30%	\$636.90	4%	\$649.60	2%	\$662.60	2%	
6	\$601.65	\$923.70	54%	\$1,202.00	30%	\$1,247.20	4%	\$1,272.10	2%	\$1,297.50	2%	
8	\$954.45	\$1,465.90	54%	\$1,907.90	30%	\$1,979.60	4%	\$2,019.20	2%	\$2,059.60	2%	
10	\$1,426.95	\$2,189.80	53%	\$2,849.10	30%	\$2,956.10	4%	\$3,015.20	2%	\$3,075.50	2%	
12	\$1,896.30	\$2,912.10	54%	\$3,790.10	30%	\$3,932.60	4%	\$4,011.30	2%	\$4,091.50	2%	
Usage Charge	\$/1,000 gallons	\$5.47	\$6.10	12%	\$6.70	10%	\$6.78	1.2%	\$6.92	2.0%	\$7.05	1.9%
Holding Tank Waste	\$/1,000 gallons	\$7.50	\$7.50	0%	\$7.50	0%	\$7.50	0.0%	\$7.50	0.0%	\$7.50	0.0%
Septic Tank Waste	\$/1,000 gallons	\$45.00	\$45.00	0%	\$45.00	0%	\$45.00	0.0%	\$45.00	0.0%	\$45.00	0.0%
Septage Load Rate	\$/load	\$5.00	\$5.00	0%	\$5.00	0%	\$5.00	0.0%	\$5.00	0.0%	\$5.00	0.0%
Septage Annual Permit Fee		\$100.00	\$100.00	0%	\$100.00	0%	\$100.00	0.0%	\$100.00	0.0%	\$100.00	0.0%

High-Strength Surcharges

Pollutant	Units	Current Rate	Proposed									
			Rate -	Percent Change								
BOD	\$/lb.	\$0.495	\$0.553	12%	\$0.603	9%	\$0.612	1%	\$0.624	2%	\$0.636	2%
TSS	\$/lb.	\$0.386	\$0.540	40%	\$0.673	25%	\$0.695	3%	\$0.709	2%	\$0.723	2%
P	\$/lb.	\$4.516	\$6.853	52%	\$8.873	29%	\$9.201	4%	\$9.385	2%	\$9.573	2%
NH3	\$/lb.	\$1.068	\$1.245	17%	\$1.398	12%	\$1.423	2%	\$1.452	2%	\$1.481	2%

INTRODUCTION

The Village of Grafton owns and operates a wastewater collection system and Wastewater Treatment Facility that provides wastewater service to over 4,700 customers within the Village, plus treatment of holding and septic tank waste. In addition to treating septage, the Village has several industrial customers with 'high-strength' wastewater, or wastewater with higher concentrations than normal domestic sewage of constituents that the Village is required to treat at its wastewater treatment plant: organic pollutants (BOD), suspended solids (TSS), phosphorus and ammonia (NH-3).

The Village last conducted a wastewater user rate study in 2014. The user rate study at that time recommended an overall increase of 9.0% to wastewater rates, which was implemented by the Village effective January 2014. Another increase of 5.0% was implemented in third-quarter 2016.

IMPETUS FOR STUDY

The wastewater utility has gone a few years since formally updating the user rates study and is planning on significant capital investment in the upcoming years on wastewater main replacements, upgrades to the Wastewater Treatment Facility, and equipment replacements. For these reasons, the Village hired Trilogy Consulting to conduct a formal Wastewater User Rate Study. The study consisted of determining recommended user rates based on a detailed cost of service study for 2017, with a focus on the potential to increase the fixed charge portion of the rates. The study also included reviewing the Village's capital needs for the wastewater utility and providing recommendations on the methods and timing of financing the planned improvements. A ten-year projection of user rates and cash flows was then prepared to develop a plan to complete all necessary capital improvement projects and meet all debt requirements while also mitigating any large spikes in the user rates and maintaining the financial health of the utility.

STUDY METHODOLOGY

The results of the study follow. The study is generally organized into three sections:

1. An analysis of historical conditions including historical revenues, expenses, and usage statistics.
2. Projections for the next ten years, including wastewater usage projections, and projections of future operating and maintenance expenses. The analysis of the next ten fiscal years also takes into consideration the Village's 5-year wastewater capital improvement needs, as well as estimates of capital improvements for years 6-10 based on prior years' investments, and scheduled annual debt service payments for existing utility debt. A mix of funding options was utilized in preparing the capital improvement

plan. The projection of utility capital funding in future years includes special assessments, revenues generated from annual rates, new debt issuances and utility reserves.

3. Allocation of costs and detailed rate calculations.

Because it is recommended that the rate increase be phased in over a period of three years, the user rates were calculated based on a 2019 test year using a utility-based method. The utility-based method calculates rates to recover the cost of operating and maintenance expenses, administrative expenses, depreciation expenses and a return on net investment rate base (ROI), which is a percentage return on all utility financed assets. The ROI is set at a level such that it, along with the depreciation expenses, recovers revenues sufficient to fund all annual principal and interest payments for outstanding debt, any debt coverage requirements, annual capital outlay expenses and any deposits into reserve funds.

HISTORICAL AND FORECAST CUSTOMER DEMANDS

Table 1 shows the analysis of historical trends in total wastewater treated at the wastewater treatment plant, as well as number of customers, customer volume of wastewater and estimated loadings (BOD, TSS, phosphorus and NH-3) for domestic strength customers, high-strength customers, and hauled holding tank and septic waste.

Wastewater Treatment Plant Influent

The total volume of wastewater treated at the plant has fluctuated over the last three years. During a typical year, approximately 60% of the volume is 'billable' waste, or wastewater generated by customers as estimated by metered water use. The remaining 40% of the volume is clearwater infiltration and inflow, water that seeps into the system via cracks in wastewater mains or customer service laterals, or through sewer manholes. At certain times of year, such as periods of high precipitation, infiltration and inflow (I/I) may be the majority of water volume arriving at the treatment plant. Wastewater entering the plant is sampled daily for wastestrengths, so the total pounds of BOD, TSS, phosphorus and NH-3 entering the plant per year can be estimated. Total pounds of these constituents have declined slightly over the last three years. Forecast flows for 2017 are slightly higher than the three-year average, while pollutant loadings are forecast to be less than prior years.

Customer Demand

The Wastewater Utility serves three general types of customers: domestic sewage customers (residential, multi-family, commercial, industrial and public authority, i.e. government); high strength customers, consisting of certain industrial customers with higher concentrations of one or more pollutant; and septage waste.

Domestic Waste

The volume of domestic strength waste has increased slightly over the last three years, driven by increases in residential usage. The estimates of pounds of pollutant loadings for domestic strength waste are based on domestic strength assumptions that are slightly higher than have been used in past rate studies. Past rate studies assumed 200 mg/l for BOD, 250 mg/l for TSS, 6 mg/l for phosphorus, and 20 mg/l for NH-3. A comparison of total pounds being treated at the plant versus estimated pounds from domestic strength sewage, high strength sewage and hauled waste indicated a significant gap between actual and estimated pounds of pollutants. Since high strength waste and hauled waste are periodically sampled, the utility has an estimate of pounds of pollutants from these two sources. Therefore, it is logical to assume that domestic strength waste contains higher pollutant concentrations than has been assumed in the past. One of the recommendations of this study is to increase the domestic strength definitions to the following: 275 mg/l for BOD, 275 mg/l for TSS, 6 mg/l for phosphorus, and 26 mg/l for NH-3. While this change would not account for 100 percent of the estimated pollutants entering the treatment plant, it would reduce the gap. The remaining pollutant loadings could be generated by a combination of sources, as neither the hauled waste or high strength waste are sampled on a continuous basis.

High Strength Waste

High strength waste volume has increased slightly over the last three years, but the amount of pollutants over and above domestic strength have declined. If the domestic strength definitions are increased, a smaller amount of these customer's pollutant loadings would be 'excess' loadings over and above domestic strength. The forecasts for pounds of excess pollutants in 2017 reflect the recommended change in domestic strength definitions.

Septage Waste

The Village experienced a steep decline in the volume of septic tank waste discharged at its wastewater treatment plant in 2016, but continues to treat a significant volume of holding tank waste. The decrease in septic waste can be attributed to waste being diverted to other area treatment plants that added capacity or lowered their rates for septic waste.

Table 1: Historical Wastewater Treatment Demands

	2014	2015	2016	3 Year Average	Use
WWTP Influent					
Total Annual Inflow	526,266,000	508,131,000	541,501,000	525,299,333	528,655,188
Total Billable Flow	309,223,800	312,803,744	319,971,396	313,999,647	317,193,113
Billable Flow as % of Inflow	58.8%	61.6%	59.1%	59.8%	60.0%
Inflow/Infiltration	217,042,200	195,327,256	221,529,604	211,299,687	211,462,075
I/I as % of Inflow	41.2%	38.4%	40.9%	40.2%	40.0%
Maximum Day Flow	5,712,000	10,890,000	3,579,000	6,727,000	5,793,482
Average Day Flow	1,441,825	1,392,140	1,479,511	1,439,176	1,448,370
Max Day/Average Day Ratio	3.96	7.82	2.42	4.73	4.00
BOD (lbs)	1,118,247	948,754	949,308		768,888
TSS (lbs)	1,071,856	903,286	904,426		812,456
P (lbs)	24,184	22,351	21,376		18,147
NH3 (lbs)	108,463	107,161	91,192		74,419
Customer Demand					
Residential Sewer Usage	193,797,000	194,548,000	200,061,000	196,135,333	197,209,952
Residential Customers	4,349	4,361	4,373	4,361	4,385
Usage / Customer	44,561	44,611	45,749	44,974	44,974
Multi-Family Sewer Usage			20,998,000	20,998,000	20,998,000
Multi-Family Customers			71	71	71
Usage / Customer	#DIV/0!	#DIV/0!	295,746	57,529	295,746
Commercial Sewer Usage	82,694,000	84,181,000	65,882,000	77,585,667	65,882,000
Commercial Customers	288	290	226	268	226
Usage / Customer	287,132	290,279	291,513	289,642	291,513
Industrial Sewer Usage	16,759,000	18,653,000	15,954,000	17,122,000	17,122,000
Industrial Customers	63	63	63	63	63
Usage / Customer	266,016	296,079	253,238	271,778	271,778
Public Authority Sewer Usage	4,335,000	3,968,000	4,007,000	4,103,333	4,101,804
Public Authority Customers	20	19	19	19	19
Usage / Customer	216,750	208,842	210,895	212,162	212,162
Total Domestic Strength Usage	297,585,000	301,350,000	306,902,000		305,313,756
Estimated BOD (lbs.)	682,511	691,146	703,880		700,237
Estimated TSS (lbs.)	682,511	691,146	703,880		700,237
Estimated Phos. (lbs.)	14,891	15,080	15,357		15,278
Estimated NH-3 (lbs.)	64,528	65,345	66,549		66,204
High-Strength Cat "B" Usage	8,086,000	8,331,000	9,012,000	8,476,333	9,012,000
High-Strength Excess BOD (lbs.)	15,200	15,136	11,986	14,107	8,712
High-Strength Excess TSS (lbs.)	14,739	13,471	13,626	13,945	11,980
High-Strength Excess Phos. (lbs.)	665	489	379	511	382
High-Strength Excess NH-3 (lbs.)	1,775	1,986	871	1,544	782
High-Strength Customers	10	10	12	11	12
Usage / Customer	808,600	833,100	751,000	797,567	751,000
Septic Tank Haulers	183,300	218,350	17,450	139,700	17,450
Holding Tank Haulers	11,452,659	11,169,165	12,963,895	11,861,906	11,861,906
No. Hauled Waste Loads	2,841	2,646	2,972	2,820	2,820
BOD (lbs.)		34,413	48,701	41,557	59,939
TSS (lbs.)		22,120	29,459	25,789	100,238
Phosphorus (lbs.)		1,099	1,078	1,089	2,488
NH-3 (lbs.)		5,950	5,842	5,896	7,433
Total Estimated BOD (lbs.)	697,711	740,696	764,567		768,888
Total Estimated TSS (lbs.)	697,251	726,737	746,964		812,456
Total Estimated Phos. (lbs.)	15,556	16,668	16,814		18,147
Total Estimated NH-3 (lbs.)	66,303	73,281	73,261		74,419

Forecast Revenues at Present Rates

Table 2 shows the forecast revenues at present rates for the 2017 test year, based on the forecast number of customers, volume of sewer usage and excess pollutant loadings from high strength customers. The Village currently charges the following user charges:

- Sewer Usage Charge of \$5.47 per 1,000 gallons of wastewater (estimated based on metered water use) for all users except septage waste
- Flat Charge based on the size of customer's water meter
- Surcharges for pollutant loadings more than domestic strength waste for certain industrial customers, charged as a rate per pound
- Septage Charges, which include a flat charge of \$5.00 per load, plus \$7.50 per 1,000 gallons for holding tank waste or \$45.00 per 1,000 gallons for septic tank waste, and a \$100 per year permit fee

Forecast user charge revenues of \$2,303,394 are slightly higher than 2016 user charge revenues of \$2,220,205. While forecast usage is slightly lower compared to 2016, the rate increase that was implemented in late 2016 will be in effect for the entire year in 2017.

Table 2: Revenues at Present Rates
Test Year: 2017

	Residential	Multi-Family	Commercial	Industrial	Public Authority	Total	
Sewer Usage Charges							
Usage	1,000 Gallons	197,210	20,998	65,882	17,122	4,102	305,314
Revenues	\$5.47	\$1,078,738	\$114,859	\$360,375	\$93,657	\$22,437	\$1,670,066
Flat Charges							
Meters							
5/8-inch	4,376		134	16	2		4,528
3/4-inch	-						-
1-inch	8		58	20	7		93
1 1/4-inch	-		7				7
1 1/2-inch	-		50	11	2		63
2-inch	1		41	12	3		57
3-inch	-		4	2	5		11
4-inch	-		3	1			4
6-inch	-			1			1
8-inch	-						-
10-inch	-						-
12-inch	-						-
	4,385	-	297	63	19		4,764
Rate/Meter							
\$24.41	\$427,273	\$0	\$13,084	\$1,562	\$195		\$442,114
\$24.41	\$0	\$0	\$0	\$0	\$0		\$0
\$40.95	\$1,310	\$0	\$9,500	\$3,276	\$1,147		\$15,233
\$56.70	\$0	\$0	\$1,588	\$0	\$0		\$1,588
\$72.45	\$0	\$0	\$14,490	\$3,188	\$580		\$18,257
\$107.10	\$428	\$0	\$17,564	\$5,141	\$1,285		\$24,419
\$189.00	\$0	\$0	\$3,024	\$1,512	\$3,780		\$8,316
\$305.55	\$0	\$0	\$3,667	\$1,222	\$0		\$4,889
\$601.65	\$0	\$0	\$0	\$2,407	\$0		\$2,407
\$954.45	\$0	\$0	\$0	\$0	\$0		\$0
\$1,426.95	\$0	\$0	\$0	\$0	\$0		\$0
\$1,896.30	\$0	\$0	\$0	\$0	\$0		\$0
	\$429,011	\$0	\$62,917	\$18,308	\$6,987		\$517,223
High Strength Surcharges							
		Units	Rates	Revenues			
BOD		8,712	\$0.495	\$4,312			\$4,312
TSS		11,980	\$0.386	\$4,624			\$4,624
Phophorus		382	\$4.516	\$1,724			\$1,724
NH-3		782	\$1.068	\$835			\$835
Subtotal				\$11,496			\$11,496
Total Metered Customers	\$1,507,750	\$114,859	\$423,291	\$123,461	\$29,424		\$2,198,785
Septage							
		Units	Rates	Revenues			
Septic Tank (1,000 gallons)		17.45	\$45.00	\$785			\$785
Holding Tank (1,000 gallons)		11,861.91	\$7.50	\$88,964			\$88,964
No. of Loads		2,972	\$5.00	\$14,860			\$14,860
Subtotal				\$104,610			\$104,610
					Total		\$2,303,394

CASH FLOW FORECASTS

To estimate the overall level of immediate and future rate increases, a ten-year cash flow forecast was prepared. Alternative cash flow forecasts were prepared for various scenarios of financing for the utility's capital improvement program and level and timing of immediate and future rate increases. Each forecast was evaluated relative the following criteria:

- Generating positive cash flow – cash flow may fluctuate from year to year and it is not necessary to generate positive cash flow every year, but the rates should be sufficient to generate positive cash flow if the utility reserves need to be increased or minimize negative cash flows if the utility has sufficient reserves.
- Providing sufficient debt coverage for outstanding revenue debt – revenue debt is backed by a pledge of utility revenues. Revenue bonds usually require that the utility maintain net revenues (revenues minus operation and maintenance expenses) that are equal to the total annual payments on revenue debt plus a coverage factor of 10 to 25 percent.
- Building the utility's reserves to recommended levels – it is important for utilities to maintain sufficient cash reserves to manage cash flow fluctuations throughout the year, to absorb unexpected fluctuations in operating revenues or expenses, to fund unexpected capital costs to rehabilitate or replace infrastructure that wears out faster than expected, or to cash finance planned capital improvements. Utilities that have an outstanding loan through the state's Clean Water Fund Program are also required to maintain an equipment replacement fund to pay for replacement of mechanical and other equipment.
- Avoiding or mitigating the need for issuance of new debt for routine wastewater main and equipment replacement – most utilities issue debt from time to time to fund major capital projects, and sometimes to fund more routine ongoing replacement and renewal projects if current revenues or reserves funds are insufficient. Issuing debt for major, infrequent projects provides a means of spreading the costs of the project over a longer period rather than requiring current customers to pay the entire cost. However, debt financing increases the capital costs of the utility and should be used with caution for ongoing annual programs of renewal and replacement, such as equipment replacement or an annual main replacement program.
- Rate of return on utility assets – the rate of return is the net operating income of the utility as a percentage of the utility's investment in infrastructure, net of accumulated depreciation. There is no recommended rate of return for wastewater utilities, but for most utilities a very low rate of return may indicate that either the utility is not generating sufficient revenues to fund reinvestment in its infrastructure or that the utility has very low debt service payments and does not need to generate much of a return on investment. A high rate of return may indicate that the utility is generating excess revenues or that it is highly leveraged with debt financing and requires a high rate of

return. The current benchmark rate of return for water utilities in Wisconsin (set by the Public Service Commission), is 5.00%.

- Percentage of debt financing versus equity – As with the rate of return, the appropriate percentage of debt financing depends on the specific conditions of the utility system. A very new system or one that has recently replaced a significant percentage of its infrastructure may have a relatively higher percentage of debt financing. On the other hand, an older utility system that has deferred infrastructure replacements or has undertaken replacements on an incremental basis with cash financing will probably have a very low percentage of debt. General guidelines indicate a mix of 50 percent debt, 50 percent equity as a healthy balance for the average utility. If a utility has a percentage of debt financing that is more than 50 percent and the level of debt financing is increasing, steps should be taken to reduce the reliance on debt financing over time. If a utility has a lower percentage of debt financing and has the resources to cash finance a sufficient program of infrastructure renewal and replacement, there is no need to increase its reliance on debt financing, as this will only add to its capital costs.

All the alternative cash flow scenarios were based on the following common assumptions:

- No change in future customer demand (number of customers, sewage volume, high strength 'excess' loadings, etc.)
- Addition of one full-time Wastewater Utility employee
- Inflation of one percent per year in operation and maintenance expenses
- Continuation of a similar level of other operating revenues and non-operating revenues as contained in the 2017 budget
- Completion of all the projects listed in the utility's capital improvement budget for 2017 and capital improvement plan for 2018-2022
- Any future debt issuances would be for 20 years at 3.50% interest with a level annual payments
- Recommended reserve levels include the following:
 - Operating reserve equal to 3 months of annual operating expenses
 - Debt service reserve equal to current year's debt service payments
 - Equipment replacement fund equal to 10% of the total original cost of equipment in service (generally includes items such as pumps, laboratory equipment, transportation equipment, computer and office equipment and similar assets with a service life less than 20 years)
 - Depreciation/Capital reserve equal to one year's depreciation expense for utility assets not covered by the equipment replacement fund (mains, structures, etc.)

Following evaluation of multiple alternatives, one alternative was selected for consideration by the Village Board. This scenario, shown in Table 3, would phase the rate increase in over three years, with cost-of-living type increases thereafter.

Key findings and recommendations regarding the utility's financial condition are as follows:

- The utility had significant positive cash flow in 2016, but this was due to \$2.9 million in borrowing.
- While the utility had an adequate equipment replacement fund as of the end of 2016, the utility's overall reserve levels, at \$1.6 million, were less than the recommended reserves of \$2.5 million.
- The utility had more than sufficient revenue debt coverage in 2016. This was the case because debt coverage is only calculated for revenue debt (most of the utility's debt is general obligation debt backed by the taxing powers of the Village) and coverage is calculated before capital expenditures.
- In 2016, the utility's rate of return (net operating income divided by net utility plant) was approximately 0.15%, which is very low.
- Currently, debt as a percentage of utility plant is quite low at approximately 13 percent.
- The utility has utility-financed capital improvements totaling \$10.3 million, or an average of \$1.7 million per year, planned for the period 2017-2022.
- An increase in user charge revenues of approximately 48 percent over the next five years is needed to generate sufficient revenues to fund more of the capital improvement program with current revenues and increase the cash reserves to the recommended level. Even with a rate increase, the utility will need to issue debt for part of its CIP. As debt service and utility plant increases, so will the recommended level of reserves.

The recommended plan, shown in Table 3, would phase most of the rate increase in over three years. With this scenario, the utility would borrow approximately \$5.4 million over the next six years. This would increase the percentage of debt financing to approximately 30 percent of total utility assets, which is still well below the general industry guideline of 50 percent.

It should be noted that these future projections of cash flow are for planning purposes only. The Village and the utility should continue to assess the financial, physical, and operational conditions of the utility on an annual basis to respond to changing conditions and make decisions regarding which capital improvement projects to undertake, how those projects should be financed and the appropriate rate increase that may be needed to meet the revenue requirements of the utility.

Table 3: Forecast Cash Flow with Phased In Rate Increase

	Test Year										
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Projected Demand Change				0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Assumed Annual Inflation				1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Projected Rate Increase	5.0%	20.1%	15.5%	2.5%	2.0%						
Revenues											
User Charge Revenues	\$2,220,205	\$2,765,520	\$3,193,150	\$3,273,018	\$3,338,478	\$3,405,248	\$3,473,353	\$3,542,820	\$3,613,676	\$3,685,950	\$3,685,950
Other Operating Revenues	\$16,988	\$19,724	\$19,724	\$19,724	\$19,724	\$19,724	\$19,724	\$19,724	\$19,724	\$19,724	\$19,724
Non-Operating Revenues	\$162,466	\$113,000	\$137,733	\$125,367	\$131,550	\$128,458	\$130,004	\$129,231	\$129,618	\$129,424	\$129,521
Total Cash In	\$2,399,658	\$2,898,244	\$3,350,607	\$3,418,109	\$3,489,752	\$3,553,430	\$3,623,081	\$3,691,775	\$3,763,018	\$3,835,098	\$3,835,195
Expenses											
Subtotal O&M&R	\$1,425,340	\$1,516,547	\$1,531,712	\$1,547,030	\$1,562,500	\$1,578,125	\$1,593,906	\$1,609,845	\$1,625,944	\$1,642,203	\$1,658,625
Debt Service	\$472,436	\$740,303	\$768,252	\$661,918	\$869,084	\$919,620	\$837,270	\$840,326	\$841,386	\$816,908	\$787,900
Capital Outlay	\$2,440,465	\$1,611,106	\$978,209	\$3,770,110	\$2,125,957	\$2,376,804	\$2,341,126	\$1,240,025	\$1,298,059	\$1,345,110	\$1,351,539
Less: Special Assessments	\$0	\$0	\$0	\$0	\$0	\$1,134,100	\$1,742,790	\$0	\$0	\$0	\$0
Less: Utility Capital Funded by TIF	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Less: Borrowing	\$2,910,000	\$1,068,056	\$733,657	\$2,892,101	\$738,000	\$0	\$0	\$0	\$0	\$0	\$0
Total Cash Out	\$1,428,240	\$2,799,900	\$2,544,517	\$3,086,957	\$3,819,541	\$3,740,449	\$3,029,512	\$3,690,197	\$3,765,389	\$3,804,221	\$3,798,063
Net Cash Flow	\$971,418	\$98,345	\$806,090	\$331,152	(\$329,788)	(\$187,019)	\$593,569	\$1,578	(\$2,371)	\$30,877	\$37,131
Reserves											
Beginning Balance	\$678,690	\$1,650,108	\$1,748,453	\$2,554,543	\$2,885,694	\$2,555,906	\$2,368,887	\$2,962,456	\$2,964,034	\$2,961,663	\$2,992,541
Net Cash Flow	\$971,418	\$98,345	\$806,090	\$331,152	(\$329,788)	(\$187,019)	\$593,569	\$1,578	(\$2,371)	\$30,877	\$37,131
Ending Balance	\$1,650,108	\$1,748,453	\$2,554,543	\$2,885,694	\$2,555,906	\$2,368,887	\$2,962,456	\$2,964,034	\$2,961,663	\$2,992,541	\$3,029,672
Recommended Reserve											
Operating Reserve	\$356,335	\$379,137	\$387,928	\$386,757	\$390,625	\$394,531	\$398,477	\$402,461	\$406,486	\$410,551	\$414,656
Debt Reserve	\$472,436	\$740,303	\$768,252	\$661,918	\$869,084	\$919,620	\$837,270	\$840,326	\$841,386	\$816,908	\$787,900
Equipment Replacement Fund	\$920,578	\$962,686	\$982,507	\$1,067,422	\$1,133,147	\$1,194,603	\$1,194,173	\$1,219,478	\$1,244,670	\$1,271,628	\$1,300,064
Other Depreciation/Capital Reserve	\$338,200	\$369,312	\$384,671	\$393,522	\$425,042	\$437,387	\$468,236	\$490,596	\$501,761	\$513,844	\$526,105
Total	\$2,087,549	\$2,451,438	\$2,518,358	\$2,509,619	\$2,817,898	\$2,907,141	\$2,899,154	\$2,952,861	\$2,994,302	\$3,012,931	\$3,028,725
Debt Coverage	1263%	1765%	1602%	1347%	807%	762%	812%	857%	906%	961%	988%
Rate of Return	0.15%	2.36%	3.87%	3.69%	3.39%	3.17%	3.10%	3.09%	3.18%	3.27%	3.10%
% Debt	13.2%	30.5%	31.0%	37.4%	36.2%	31.8%	28.2%	25.9%	23.5%	21.1%	18.8%
% Equity	86.8%	69.5%	69.0%	62.6%	63.8%	68.2%	71.8%	74.1%	76.5%	78.9%	81.2%

REVENUE REQUIREMENTS AND COST-OF-SERVICE ANALYSIS

The tables attached to this report as an appendix summarize the cost of service analysis, allocating the utility's revenue requirements first to utility functions and then to each customer class, the rate calculations, and the estimated revenues at the proposed rates for 2019 (the year by which most the increase would be in place). Utility revenue requirements include operation and maintenance expense, depreciation expense, and return on investment. To determine the proposed schedule of three years of rate increases, 2019 revenue requirements were used for the cost allocation and 2019 rates were first calculated, then 2018 and 2017 rates were determined based on the desired increase in overall revenues per year.

Costs were first allocated to the functions served by the utility, using the base-extra capacity method. Under this method, each of the utility's costs is split between costs to provide collector and interceptor sewer conveyance, wastewater treatment for average daily volume, costs to provide peak (maximum day) treatment capacity, costs to treat pollutant loadings (BOD, TSS, phosphorus and NH-3), and customer costs that are relatively fixed per customer or meter.

Costs were then allocated to each customer class (residential, multi-family, commercial, industrial, public authority, high strength industrial, septic tank and holding tank waste) based on the demand characteristics of each customer class. A portion of the conveyance system, average day and peak day flow costs were allocated to infiltration and inflow (I/I) based on forecast percentage of I/I on an average and peak day basis. Costs allocated to I/I are proposed to be recovered through the flat charge, as the amount of I/I in the system is related more closely to the number of customers, size of sewer laterals and feet of sewer main rather than the volume of wastewater generated by each customer.

PROPOSED RATE SCHEDULE

The targeted overall increase in user charge revenues over the period 2017-2022 is approximately 48 percent. The recommended schedule of rate increase would increase user charge rates an average of 20 percent in 2017, 15.5 percent in 2018, 2.5 percent in 2019, and 2 percent in 2020 and 2021. Rate increases for specific types of charges may vary from the overall rate increase, as shown in the following detailed schedule of proposed rate increases.

Table 4: Current and Proposed Rate Schedules

Billing Cycle - Quarterly												
Billing Units - 1,000 Gallons												
Flat Charge												
		Current	Proposed	Percent	Proposed	Percent	Proposed	Percent	Proposed	Percent	Proposed	
Connection Size		Charge	Charge -	Change	Charge -							
			2017		2018		2019		2020		2021	
				Change		Change		Change		Change		
5/8		\$24.41	\$37.70	54%	\$49.10	30%	\$51.00	4%	\$52.00	2%	\$53.00	2%
3/4		\$24.41	\$37.70	54%	\$49.10	30%	\$51.00	4%	\$52.00	2%	\$53.00	2%
1		\$40.95	\$64.20	57%	\$84.30	31%	\$87.60	4%	\$89.40	2%	\$91.20	2%
1 1/4		\$56.70	\$86.70	53%	\$112.70	30%	\$116.90	4%	\$119.20	2%	\$121.60	2%
1 1/2		\$72.45	\$110.50	53%	\$143.40	30%	\$148.70	4%	\$151.70	2%	\$154.70	2%
2		\$107.10	\$164.40	54%	\$213.90	30%	\$221.90	4%	\$226.30	2%	\$230.80	2%
3		\$189.00	\$290.70	54%	\$378.50	30%	\$392.80	4%	\$400.70	2%	\$408.70	2%
4		\$305.55	\$470.80	54%	\$613.70	30%	\$636.90	4%	\$649.60	2%	\$662.60	2%
6		\$601.65	\$923.70	54%	\$1,202.00	30%	\$1,247.20	4%	\$1,272.10	2%	\$1,297.50	2%
8		\$954.45	\$1,465.90	54%	\$1,907.90	30%	\$1,979.60	4%	\$2,019.20	2%	\$2,059.60	2%
10		\$1,426.95	\$2,189.80	53%	\$2,849.10	30%	\$2,956.10	4%	\$3,015.20	2%	\$3,075.50	2%
12		\$1,896.30	\$2,912.10	54%	\$3,790.10	30%	\$3,932.60	4%	\$4,011.30	2%	\$4,091.50	2%
Usage Charge	\$/1,000 gallons	\$5.47	\$6.10	12%	\$6.70	10%	\$6.78	1.2%	\$6.92	2.0%	\$7.05	1.9%
Holding Tank Waste	\$/1,000 gallons	\$7.50	\$7.50	0%	\$7.50	0%	\$7.50	0.0%	\$7.50	0.0%	\$7.50	0.0%
Septic Tank Waste	\$/1,000 gallons	\$45.00	\$45.00	0%	\$45.00	0%	\$45.00	0.0%	\$45.00	0.0%	\$45.00	0.0%
Septage Load Rate	\$/ load	\$5.00	\$5.00	0%	\$5.00	0%	\$5.00	0.0%	\$5.00	0.0%	\$5.00	0.0%
Septage Annual Permit Fee		\$100.00	\$100.00	0%	\$100.00	0%	\$100.00	0.0%	\$100.00	0.0%	\$100.00	0.0%
High-Strength Surcharges												
		Current	Proposed	Percent	Proposed	Percent	Proposed	Percent	Proposed	Percent	Proposed	
Pollutant		Rate	Rate -	Change	Rate -							
Units												
BOD	\$/lb.	\$0.495	\$0.553	12%	\$0.603	9%	\$0.612	1%	\$0.624	2%	\$0.636	2%
TSS	\$/lb.	\$0.386	\$0.540	40%	\$0.673	25%	\$0.695	3%	\$0.709	2%	\$0.723	2%
P	\$/lb.	\$4.516	\$6.853	52%	\$8.873	29%	\$9.201	4%	\$9.385	2%	\$9.573	2%
NH3	\$/lb.	\$1.068	\$1.245	17%	\$1.398	12%	\$1.423	2%	\$1.452	2%	\$1.481	2%

COMMUNITY RATE COMPARISON

To provide context for the proposed rates for Grafton, a comparison with the sewer user rates charged by other communities in the region was prepared. The basis of the charges, and the estimated total annual bill for a residential customer for each community are shown in the following tables. As shown, for a customer using 45,000 gallons or 6,016 cubic feet of water per year, the estimated annual bill under current Grafton rates would be \$343.79 per year. Under the proposed rate increases, this would increase to \$425.30 in 2017 and \$529.25 by 2021, or a total increase of \$46 per quarter between now and 2021.

Table 5: Community Rate Comparison

Community	Fixed Charge	Bills per Year	Volume Rate	Annual Usage	Units	Annual Bill
Belgium	\$115.14	4	\$5.86	45,000	gallons	\$724.26
Mequon			\$5.89	45,000	gallons	\$265.05 ⁽¹⁾
Thiensville	\$154.00	4				\$616.00
Cedar Grove	\$69.50	4	\$7.41	45,000	gallons	\$611.45
Grafton (proposed - 2021)	\$53.00	4	\$7.05	45,000	gallons	\$529.25
Germantown	\$40.01	4	\$6.91	45,000	gallons	\$471.13
Saukville	\$40.82	4	\$6.30	45,000	gallons	\$446.78
Fredonia	\$56.75	4	\$4.42	45,000	gallons	\$425.90
Grafton (proposed - 2017)	\$37.70	4	\$6.10	45,000	gallons	\$425.30
Jackson	\$46.33	4	\$4.89	45,000	gallons	\$405.37
Cedarburg	\$14.00	12	\$5.22	45,000	gallons	\$402.90
Slinger	\$5.46	12	\$7.18	45,000	gallons	\$388.62
Port Washington	\$30.46	6	\$2.94	6,040	ccf	\$360.34
Grafton (current)	\$24.41	4	\$5.47	45,000	gallons	\$343.79
West Bend	\$16.60	4	\$2.10	6,040	ccf	\$193.25
Average (current)						\$465.75

Notes:

1) Does not include the MMSD tax, which is estimated at \$403.92 for a \$250,000 home in 2016.

RECOMMENDATION AND CONCLUSIONS

It is recommended that the Village adopt a five-year schedule of rate increases as shown in Table 4. This will allow the Wastewater Utility to phase in the rate increase needed to provide adequate funding for the utility's capital improvement program while mitigating the increase in the amount of outstanding debt and building up the utility's reserve funds to recommended levels.



156 East First Street
New Richmond, WI 54017
715-246-4268
www.newrichmondwi.gov

MEMORANDUM

TO: Utility Commission

FROM: Joel Enders, Management Analyst

DATE: July 24, 2018

SUBJECT: Pole Attachment Agreement with Baldwin Telecom, Inc.

BACKGROUND

In mid-June, the City received an application from Baldwin Telecom to attach fiber optic cables to NRU overhead lines along a portion of South Minnesota Avenue and the alleyway in-between Minnesota and Knowles from West 1rd to West 3rd (map accompanies attached application). Private telecom and electric utility attachments are commonplace throughout the US, but have been declining in favor of underground installations. New Richmond currently has four companies that attach lines and/or equipment to municipal utility poles, including Xcel Energy, Frontier Communications, Cellnet Technology, and Northwest Communications.

The attached agreement defines the attachment process, the responsibilities of Baldwin Telecom and the City, certain limitations and conditions necessary to protect the City's interests, and the annual rental fee collected by the City.

In exchange for the use of municipal poles, cities usually charge a rental fee that is based on a standard space allocation percentage and the revenue that must be generated annually to cover the cost of owning and maintaining the poles upon which attachments are made. Exhibit 3 of the attached agreement shows New Richmond's fee methodology.

RECOMMENDATIONS

Staff recommend approval of the attached Agreement.

ATTACHMENTS

1. Application for Pole Attachment
2. Pole Attachment Agreement



POLE ATTACHMENT APPLICATION

Please return completed application and supporting materials to:

ATTN: Electric Superintendent
 156 East 1st Street
 New Richmond WI 54017

or via email at:

warndt@newrichmondwi.gov

Once received, staff will check the application for completeness and prepare a standard Pole Attachment Agreement that will be forwarded to your authorized agent for signature. The signed agreement will then be placed on the next available Utility Commission agenda for consideration and approval. Staff will use the contact information specified under Applicant Information if there are questions or if additional information is needed. Staff may request a walk-through and/or meeting to review the proposed route as part of the application process.

Applicant Information	
Date	
Company Name	
Company Address	
Company Contact Name	
Company Contact Telephone	
Company Contact Email	

Attachment Information	
Number of proposed attachments	
Pole locations (include pole numbers, nearest address, and map)	Attach separate sheet, label Attachment 1
Description of equipment to be attached	Attach separate sheet, label Attachment 2
Special provisions requested	Attach separate sheet, label Attachment 3

Emergency Contact Information	
Emergency contact name	
Emergency contact email	
Emergency Contact Telephone	

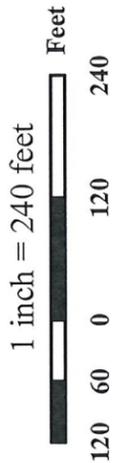
Authorized Agent	
Name	
Title	
Phone Number	
Email	



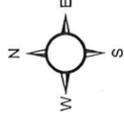
NOTE: Pole locations note exact.

NOTE: Pole was missing in GIS dataset

● Downtown_Alley_Poles_2
● Poles



Downtown Alley Poles



Grid: WI CRS St. Croix (Feet)
 Projection: Transverse Mercator
 Datum: NAD 83
 Date: 20 June 2018



1. Install one 96 strand fiber optic cable (.125 lbs/ft)
2. Cable to be lashed to an ¼' galvanized strand (.117 lbs/ft)
3. Install riser guards on poles – 3B1201, 3B1602, & 3B0602.
4. Necessary hardware to secure strand and fiber cable.
5. The span from pole 3B1602 to 3B0602 will be directionally bore along the south back of curb area of W 3RD St.

715-684-3346

930 MAPLE STREET, BALDWIN WI 54002

✦ DIGITAL PHONE ✦ HIGH-SPEED INTERNET ✦ HIGH-DEFINITION TELEVISION

POLE ATTACHMENT AGREEMENT

THIS AGREEMENT (“Agreement”) is entered into this 1st day of August 2018, (the “Effective Date”) by and between the City of New Richmond, a municipal corporation of the State of Wisconsin (the “Municipality”), with its principal offices located at 156 East First Street, New Richmond, WI, 54017, and Baldwin Telecom, Inc. (the “Company”) with its principal offices located at 930 Maple Street, Baldwin, Wisconsin 54013. The Municipality and the Company are at times collectively referred to as the “Parties” or individually as the “Party.”

RECITALS

- A. The Municipality is engaged in the distribution and sale of electrical energy within its corporate limits and surrounding environs.
- B. The Company is a provider of communication services in various locations throughout the State of Wisconsin.
- C. The Company desires to place and maintain cables, equipment, and related facilities associated with the delivery of communications services on Municipal utility poles.
- D. The Company has submitted a Pole Attachment Application (“Application”) to the Municipality for review.
- E. The Municipality supports the deployment of competitive, high-speed broadband networks within its corporate limits.
- F. The Municipality is willing to authorize the attachment of Company cables, equipment, and related facilities to its poles in exchange for an annual pole rental fee as stated herein, provided that said attachments do not compromise the safety or reliability of the Municipality’s electric distribution system.

AGREEMENT

NOW THEREFORE, in consideration of the mutual agreements, terms, covenants, and conditions herein contained, the Parties do hereby mutually covenant and agree as follows:

- 1. Incorporation of Recitals. The Recitals set forth above are incorporated herein by this reference.
- 2. Rental of Utility Pole Space. The Municipality, subject to the terms and conditions contained herein, agrees to rent space on the utility poles listed in **Exhibit 1** and depicted in **Exhibit 2**.
- 3. Right to Reject Attachments. The Municipality may reject the attachment of any particular cable or piece of equipment where, in the Municipality’s sole discretion, there are concerns relating to safety, reliability, capacity, or any engineering issue regarding particular poles.

4. Compliance with Codes, Rules, and Statutes. All pole attachments covered by this Agreement shall at all times be in compliance with the Wisconsin State Electrical Code and any amendments or revisions thereof, together with any rules or orders that may be issued from time to time by the Public Service Commission of Wisconsin, the Wisconsin Department of Industry, Labor, and Human Relations, or other authorities having jurisdiction.
5. Space Reservations. Space for Company attachments on any pole covered by this Agreement shall consist of not more than three feet of vertical height. All attachments shall comply with the minimum separation distances and vertical clearance heights specified in the Wisconsin State Electrical Code.
6. Specific Placements. Specific cable and equipment placements, attachment methods, and attachment heights may be specified by the Municipality, at the Municipality's sole discretion.
7. Pre-Attachment Survey and Make-Ready Work. The Municipality will conduct a survey of the utility poles listed in the Application. If any rearrangements, changes, or additions to Municipal poles or equipment are necessary to accommodate proposed attachments, the Municipality shall assess the cost of required work and submit an itemized estimate to the Company. The Company shall pay the total amount indicated in the estimate to the Municipality within forty-five (45) days of receipt.
8. Authorization. Following the completion of (1) any rearrangements, changes, or additions to Municipal poles or equipment necessary to accommodate proposed attachments, and (2) the execution of this Agreement by both Parties, the Municipality shall authorize the Company in writing to make attachments to the utility poles listed in **Exhibit 1**. The Company shall not commence attachment work prior to Municipal authorization.
9. Post-Attachment Inspection. The Company shall promptly notify the Municipality when all attachment work covered by this Agreement has been completed. The Municipality shall perform an inspection of completed attachments within thirty (30) days of notification and inform the Company in writing of any rearrangements or changes necessary to meet the terms and conditions of this Agreement. Any work required as a result of the post-attachment inspection shall be completed by the Company at the Company's expense within thirty (30) days of notification.
10. Maintenance of Lines and Equipment. The Company shall maintain all of its attachments in a safe and serviceable condition and shall perform all work in a manner to avoid interference with any other use of the poles by the Municipality or by any other authorized user.
11. Maintenance of Poles. The Municipality shall maintain all poles covered under this agreement in a safe and serviceable condition. The Company shall have the privilege of inspecting any pole upon which it maintains attachments and may request replacement if

the pole is found not to be in safe and serviceable condition, as determined by the Municipality.

12. Pole Replacement or Relocation. Each Party shall bear its own costs to comply with Municipal or State initiated pole relocations, replacements, or facility relocations. In cases where pole replacement or relocation is required due solely to proposed additional attachments by the Company, the entire cost of replacement or relocation shall be borne by the Company.
13. Cost of Attachments. The Company shall place, maintain, rearrange, transfer, and remove its own attachments at its own expense.
14. Attachment of Third Parties. The Municipality may, in its sole discretion, confer on third parties by contract or otherwise, the right to make attachments to its poles on the condition that such attachments shall not impair the use, function, or maintenance of the Municipality's or the Company's attachments.
15. Interruption of Service. The Municipality reserves the right to maintain its poles and operate its facilities thereon in such a manner as will best enable it to fulfill its own service requirements. The Municipality shall be not be liable to the Company for any interruption of Company services or for interference with the operation of Company attachments.
16. Rental Fee. An annual rental fee due to the Municipality from the Company shall be calculated based on the methodology shown in **Exhibit 3** for each pole upon which space is occupied or reserved by the Company. The exact rental fee shall be reviewed and adjusted annually.
17. Rental Payments. Annual rental payments shall be based on pole space reserved or occupied during previous calendar year. On or before July 31 of each year, the Municipality shall submit an invoice to the Company providing rental fee calculations and the number of poles on which space was reserved or occupied for Company use as of December 31 the previous year. Rental fees shall be prorated in instances where space was not occupied by the Company for the full calendar year previous.
18. Nonpayment. In the event the Company does not submit annual rental payment within thirty (30) days of invoice receipt, the Municipality shall have the option to terminate this Agreement any time thereafter, at its sole discretion.
19. Unauthorized Attachments. If, as a result of an audit, inventory, or inspection, the Municipality determines that the Company has made attachments to poles outside the scope of this Agreement, the Municipality may, at its sole discretion:
 - a. Terminate this Agreement;
 - b. Require the Company to remove all unauthorized attachments at the Company's expense;

- c. Remove unauthorized attachments and bill the Company for the cost of removal; and
 - d. Require the Company to sign a revised agreement covering any cable and equipment not removed within thirty (30) days of notification.
20. Limitation of Liability. **The Municipality shall not be liable to the Company, its agents, representatives, customers, or employees for any lost revenue, lost profits, interruption or loss of data, loss of service, incidental, punitive, indirect, special, or consequential damages, even if advised of the possibility of such damages, whether under theory of contract, tort (including negligence), strict liability, or otherwise.**
21. Indemnification. The Company shall indemnify, save, and hold harmless the Municipality, its elected officials, officers, agents, volunteers, and employees from and against any and all claims of any nature including all costs and expenses which may arise out of, or be caused by, the attachment, installation, maintenance, repair, presence, use, or removal of any cables, wires, equipment, or other facilities to, on, or upon the Municipality's poles and facilities, or by proximity to Municipal cables, equipment, poles, or other facilities.
22. Insurance. The Company warrants that they are able to comply with the aforementioned indemnity requirements through an insurance or self-insurance program and have minimum coverage consistent with the liability limits contained in Wisconsin Statutes.
23. Termination. Notwithstanding the provisions of Section 17 and Section 18 above, this Agreement may be terminated by either party at any time after five (5) years following the Effective Date of this Agreement by giving six (6) months prior written notice. Upon the termination of this Agreement for any reason, the Municipality may require the Company to remove any and all of its attachments. If the Company fails to remove its attachments, the Municipality shall have the right to remove Company attachments at the Company's expense.
24. Non Waiver. The failure of either party to insist on strict performance of any of the terms or conditions of this Agreement or to exercise any of its rights under this Agreement will not waive such rights and such Party will be permitted to enforce such rights at any time and take such other actions as may be lawful and authorized under this Agreement, whether at law or in equity.
25. Assignment. The Company may not transfer or assign any of its rights or obligations under this Agreement without the prior written consent of the Municipality.
26. Severability. If any term or section of this agreement is found to be void or invalid, such invalidity shall not affect the remaining terms of this Agreement, which shall continue in full force and effect.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed on the Effective Date written above.

CITY OF NEW RICHMOND:

BALDWIN TELECOM:

By:

By:

Name:

Name:

Title:

Title:

Date:

Date:

By:

By:

Name:

Name:

Title:

Title:

Date:

Date:

EXHIBIT 1

LISTING OF UTILITY POLES COVERED BY THIS AGREEMENT

Pole ID Number	Nearest Intersection
3B1201	W 6th - Rail Bridge Trail
3B1301	W 6th - Minnesota
3B1402	W 5th - Minnesota
3B2501	W 4th - Minnesota
3B1501	W 4th - Minnesota
3B1603	W 3rd - Minnesota
3B1602	W 3rd - Minnesota
3B0602	W 3rd - S Knowles
3B0601	W 3rd - S Knowles
3B0701	W 3rd - Minnesota
3B0702	W 3rd - Minnesota
3B0703	W 2nd - Minnesota
3B0802	W 2nd - Minnesota
3B0801	W 2nd - Minnesota
3B0901	W 2nd - Minnesota
3B0902	W 1st - Minnesota



● Company Attachments
● Other Municipal Poles

NOTE: Pole locations note exact.

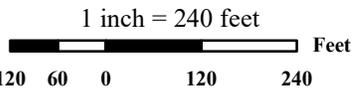
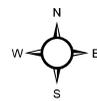


EXHIBIT 2

MAP DEPICTING UTILITY POLES COVERED BY THIS AGREEMENT



Grid: WI CRS St. Croix (Feet)
 Projection: Transverse Mercator
 Datum: NAD 83
 Date: 24 July 2018

EXHIBIT 3

ANNUAL RENTAL FEE EXAMPLE

The annual rental fee is calculated by determining the revenue that must be generated annually to cover the cost of owning and maintaining a single pole (Carrying Charge × Installed Cost per Pole), then assigning a percentage of that cost to the attaching Company based on a standard space allocation (20% for a single attachment) and multiplying by the number of Company attachments. A detailed calculation is shown below:

SAMPLE CALCULATIONS OF POLE CONNECTION FEES 12/31/17 (For 2018 Invoices)

ELECTRIC UTILITY AVERAGE BASE VALUE			
	12/1/2016	12/31/2016	2016 AVERAGE
Plant In Service	\$14,104,817.00	\$14,647,214.00	\$14,376,015.50
Construction In Progress (107)	\$122,843.00	\$163,219.00	\$143,031.00
Materials and Supplies (154)	\$294,220.00	\$280,698.00	\$287,459.00
	\$14,521,880.00	\$15,091,131.00	\$14,806,505.50

CARRY CHARGE CALCULATION			
Tax Rate Percent:		1.73%	
2016 Tax Expense	\$256,015.00		<i>Tax rate that the Electric Utility was subject to in 2016</i>
Average Base Value (From Above)	\$14,806,505.50		$\frac{256,015.00}{14,806,505.50}$
Operating and Maintenance Expense:		6.24%	
Total Accounts 583 & 593 (OH Line Expenses)	\$92,164.20		<i>Percentage of O&M dedicated to overhead line costs</i>
Total Accounts 580 & 590 (Supervision & Engineering)	\$72,915.74		
Total Distribution Expenses (Sum of Accounts 580-598)	\$255,729.19		
Total Accounts 364 & 365 (Poles, Towers, & Fixtures + OH Conductors & Devices)	\$1,898,864.63		
		$\frac{((92,164.20) \times 72,915.74) + 92,164.20}{1,898,864.63}$	
Administrative and General Expenses:		3.91%	
Total Admin & Gen. Exp. (Accts 920-932)	\$578,638.25		<i>Percentage of admin and general expenses</i>
Average Base Value (From Above)	\$14,806,505.50		
Annual Carrying Charge:		22.13%	
Depreciation (PSC Defined):	4.00%		
Return on Investment (PSC Defined):	6.25%		
Tax Rate:	1.73%		
Operation & Maintenance Costs:	6.24%		
Administration & General Costs:	3.91%		
Total Carrying Charge	22.13%		

REVENUE REQUIREMENT CALCULATION

Net Pole Investment:

Total Account 364 (Poles, Towers, & Fixtures)	\$466,556.43	×	85.00%	=	\$396,572.97
					<i>Current total Electric Utility investment in Poles, Towers, & Fixtures, minus 15 percent</i>

Installed Cost Per Pole:

(1,228 total poles)	\$396,572.97	÷	1,228	=	\$322.94 per pole
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Revenue Requirement Per Pole Per Year:

	22.13%	×	\$322.94	=	\$71.48 per pole, per year
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SAMPLE RENTAL FEE CALCULATION

1.	\$71.48	×	20%	=	\$14.30
	<i>Per-Pole Revenue Requirement</i>		<i>Standard Space Allocation</i>		<i>Per-Pole Annual Rental Fee</i>

2.	16	×	\$14.30	=	\$228.74
	<i>Number of Company Attached Poles</i>		<i>Per-Pole Annual Rental Fee</i>		<i>Total Annual Rental Fee</i>



MEMORANDUM

TO: Utility Commission

FROM: Weston Arndt, Electric Superintendent

DATE: July 25, 2018

SUBJECT: Wood Pole Testing Update

Background

Wood pole inspections and replacement of reject poles was listed as a priority in the 2014 Distribution Study performed by Dave Krause and has been included in recent budgets. The pole failure and subsequent outage on North Fourth St in May increased the awareness and importance of this issue.

Update

Three firms that perform wood pole testing were contacted to receive quotes and discuss scope of work and schedule availability. The three firms were Osmose, Mi-Tech, and Karscz Utility Services. All have performed comparable work with investor-owned utilities, municipalities, and electric cooperatives. All of the firms also shared availability would be late summer or into the fall based on existing workload. Based on discussions with the firms, Karscz Utility Services, based in Pulaski, WI was chosen to perform this work. Partial excavation with sound and bore is the method that will be most utilized to identify rejects, and Karscz offered the best pricing for this service. Attached is the quote provided which would complete testing for the bulk of our distribution system. From a timing standpoint, we expect to complete roughly one-third of our system when their technicians are performing similar work for St Croix Electric. This is scheduled for late August. Additional testing may be accomplished later this fall, or will continue in the spring of 2019.



2018 Wood Pole Inspection Pricing for



Visual Inspection (Poles less than 10 years old)	\$9.00/Pole
Sound with Selective Partial Excavation	\$10.50/Pole
Partial Excavation Sound and Bore	\$11.75/Pole
Reject Pole	\$14.00/Pole
Off Road	\$7.00/Pole
GPS 1-3-meter accuracy	\$0.00 /Pole

Estimate:

1000 Poles total tested

100 Visuals (10%)	\$900.00
350 Sound with Selective Partial Excavation (35%)	\$3,675.00
450 Partial Excavation Sound and Bore (45%)	\$5,287.50
100 Reject Poles (10%)	\$1,400.00
50 Off Road (5%)	\$350.00

TOTAL 11,612.50

Pricing includes GPS coordinates for each pole and map after project completion



156 East First Street
New Richmond, WI 54017
Ph 715-246-4268 Fax 715-246-7129
www.newrichmondwi.gov

TO: Utility Commissioners
FROM: Jeremiah Wendt, Director of Public Works
DATE: July 30, 2018
RE: Request from Greg Anderson for private well and septic systems

Background

Mr. Greg Anderson approached City staff with a request for a private well and septic system. Please see Mr. Anderson's letter of request below:

I am requesting an approval to put a private well and septic system on my property, located at 1745 115th St, in lieu of City water and sewer. This parcel was recently annexed into the City and does not have readily accessible City water and sewer hook-ups.

To access City water and sewer, a trench would need to be dug, crossing an easement road and a privately-owned parcel that cannot be improved. Because of the easement road disturbance and the significant presence of lime-rock, a trench running over 900' from building site to City hook-ups would cost \$87,520. I have also received verbal quotes from a boring company that exceed \$110,000, plus the labor and material for the actual hookup.

The cost to install a private well and septic system is less than \$20,000.

Since the parcel adjacent to the south boundary of the easement road cannot be improved (see Exhibit AB), and since my property will only contain an out-building and a single-family home (see Exhibit BB) with no further development or sub-dividing, installing a City water and sewer line would be cost-prohibited as it would not ever serve any other buildings in the future.

The significant cost differences, in addition to not serving any other buildings in the future, leads me to request the approval to install a private well and septic.

In your packet Mr. Anderson provided the legal documents that state he owns the property that he is making this request on. Secondly, he has provided a map that shows where his driveway easement

exists onto the Wastewater Treatment Road. Thirdly, he has provided estimates for putting in city services and the estimates for private well and septic will be available for review at the meeting.

Recommendation

City staff recommends approval of a private well and septic since this property is annexed into the City and that the property has a significant presence of lime rock and trenching is over 900 ft. The stipulations for approval would be to have the City Attorney draft an agreement that states when the well and septic fail this issue will need to be brought back to the Utility Commission and that if this property is ever subdivided city services will need to be put in.

To Whom It May Concern:

I am requesting an approval to put a private well and septic system on my property, located at 1745 115th St, in lieu of City water and sewer. This parcel was recently annexed into the City and does not have readily accessible City water and sewer hook-ups.

To access City water and sewer, a trench would need to be dug, crossing an easement road and a privately-owned parcel that cannot be improved. Because of the easement road disturbance and the significant presence of lime-rock, a trench running over 900' from building site to City hook-ups would cost \$87,520. I have also received verbal quotes from a boring company that exceed \$110,000, plus the labor and material for the actual hookup.

The cost to install a private well and septic system is less than \$20,000.

Since the parcel adjacent to the south boundary of the easement road cannot be improved (see Exhibit AB), and since my property will only contain an out-building and a single-family home (see Exhibit BB) with no further development or sub-dividing, installing a City water and sewer line would be cost-prohibited as it would not ever serve any other buildings in the future.

The significant cost differences, in addition to not serving any other buildings in the future, leads me to request the approval to install a private well and septic.

Thank you,



Greg Anderson

30 July 2018

exhibit AB Y6



8 3 6 4 2 5 9
Tx:4303653

1027623

BETH PABST
REGISTER OF DEEDS
ST. CROIX CO., WI
04/19/2016 11:11 AM
EXEMPT#: NA
REC FEE: 30.00
TRANS FEE: 120.00
PAGES: 2

State Bar of Wisconsin Form 1-2003
WARRANTY DEED

Document Number _____ Document Name _____
THIS DEED, made between Patrick J. Doar and Nancy Prince Doar, husband and wife as survivorship marital property
_____ ("Grantor," whether one or more),
and Michelle Carlson and Ryan Carlson, wife and husband as survivorship marital property

_____ ("Grantee," whether one or more),
Grantor, for a valuable consideration, conveys to grantee the following described real estate, together with the rents, profits, fixtures and other appurtenant interests, in St. Croix County, State of Wisconsin ("Property") (if more space is needed, please attach addendum):

See attached Exhibit "A" for Legal Description

DEED RESTRICTION: ~~XXXXXXXXXXXXXXXXXXXX~~
By Accepting this Deed, Grantee agrees that it shall not improve the Property located south of the easement given to the City for use by the Waste Water Treatment Plant.

Recording Area _____
Name and Return Address _____
WESTconsin Title Services
533
South Broadway
Menomonee, WI 54751 ms
261-1210-93-050
Parcel Identification Number (PIN) _____

This is not homestead property.
(is) (is not)

Grantor warrants that the title to the Property is good, indefeasible in fee simple and free and clear of encumbrances except: Easements, encumbrances and restrictions of record.

Dated: April 13, 2016

Patrick J. Doar (SEAL)
*Patrick J. Doar

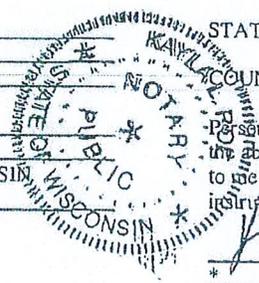
Nancy Prince Doar (SEAL)
*Nancy Prince Doar

AUTHENTICATION

Signature(s) _____
authenticated on _____

* _____
TITLE: MEMBER STATE BAR OF WISCONSIN
(If not, _____
authorized by Wis.Stat § 706.06)

THIS INSTRUMENT DRAFTED BY:
Tony R. Schrader, Attorney
(715) 235-3403 File No. OR-16-07195



ACKNOWLEDGMENT

STATE OF WISCONSIN)
COUNTY OF St. Croix) ss.
Personally came before me on April 13, 2016
the above-named Patrick J. Doar and Nancy Prince Doar
to me known to be the person(s) who executed the foregoing
instrument and acknowledged the same,
Kayla L. Rop
* Notary Public, State of Wisconsin
My Commission (is permanent) (expires: 5-1-17)

(Signatures may be authenticated or unacknowledged, both are not necessary.)
NOTE: THIS IS A STANDARD FORM. ANY MODIFICATIONS TO THIS FORM SHOULD BE CLEARLY IDENTIFIED.
WARRANTY DEED ©2003 STATE BAR OF WISCONSIN FORM NO. 1-2003
*Type name below signatures.

EXHIBIT "A"
LEGAL DESCRIPTION

Located in part of the Southwest Quarter (SW ¼) of the Northeast Quarter (NE ¼) of Section Four (4), Township Thirty (30) North, Range Eighteen (18) West, City of New Richmond, St. Croix County, Wisconsin described as follow:

Commencing at the North Quarter (N ¼) corner of Section Four (4);

Thence South 00° 50' 01" East, along the North-South Corner of Lot One (1) of the Certified Survey Map recorded in Volume 5, Page 1474 at the St. Croix County Register of Deeds Office; thence North 89° 30' 17" East, along the South line of said Lot One (1), a distance 235.28 feet to the Southerly extension of the Easterly line of the lot described on the Certified Survey Map recorded in Volume 5, Page 1398 at the St. Croix County Register of Deeds Office; thence South 00° 50' 01" East, along said Southerly lot line extension, 507.03 feet; thence South 85° 01' 58" East 296 feet, more or less; thence South 83° 41' 29" East 185.65 feet to a point of curvature; thence 130.04 feet along the arc of a curve, concave to the Northwest, with a center angle of 62° 05' 22", a radius of 120.00 feet and a chord which bears North 65° 15' 50" East 123.77 feet to a point of non-tangency; thence South 55° 45' 50" East 80.00 feet to a point of non-tangential curvature; thence 216.72 feet along the arc of a curve, concave to the Northwest, with a central angle of 62° 04' 58", a radius of 200.00 feet and a chord which bears South 65° 16' 02" West 206.26 feet to a point of tangency; thence North 83° 41' 29" West 184.71 feet to a point of non-tangential curvature; thence 209.74 feet along the arc of a curve, concave to the Northwest, with a central angle of 19° 07' 35", a radius of 628.30 feet and a chord which bears South 14° 31' 48" West 207.77 feet to a point on the South line of said Southwest Quarter (SW ¼) of the Northeast Quarter (NE ¼); thence North 89° 57' 54" West 465.79 feet to the Southwest corner of the Southwest Quarter (SW ¼) of the Northeast Quarter (NE ¼); thence North 00° 50' 01" West, along the North-South Quarter (NS ¼) line of said Section, 812.07 feet to the point of beginning and there termination.

EXHIBIT "B"

Located in part of the Southwest Quarter (SW ¼) of the Northeast Quarter (NE ¼) of Section Four (4), Township Thirty (30) North, Range Eighteen (18) West, City of New Richmond, St. Croix County, Wisconsin described as follow:

Commencing at the North Quarter (N ¼) corner of Section Four (4);

Thence South 00° 50' 01" East, along the North-South Quarter line of said Section, 1913.51 feet to the Point of Beginning and the Southwest Corner of Lot One (1) of the Certified Survey Map recorded in Volume 5, Page 1474 at the St. Croix County Register of Deeds Office; thence North 89° 30' 17" East, along the South line of said Lot One (1), a distance 235.28 feet to the Southerly extension of the Easterly line of the lot described on the Certified Survey Map recorded in Volume 5, Page 1398 at the St. Croix County Register of Deeds Office; thence South 00° 50' 01" East, along said Southerly lot line extension, 507.03 feet; thence South 85° 01' 58" East 296 feet, more or less; thence South 83° 41' 29" East 185.65 feet to a point of curvature; thence 130.04 feet along the arc of a curve, concave to the Northwest, with a center angle of 62° 05' 22", a radius of 120.00 feet and a chord which bears North 65° 15' 50" East 123.77 feet to a point of non-tangency; thence South 55° 45' 50" East 80.00 feet to a point of non-tangential curvature; thence 216.72 feet along the arc of a curve, concave to the Northwest, with a central angle of 62° 04' 58", a radius of 200.00 feet and a chord which bears South 65° 16' 02" West 206.26 feet to a point of tangency; thence North 83° 41' 29" West 184.71 feet to a point of non-tangential curvature; thence 209.74 feet along the arc of a curve, concave to the Northwest, with a central angle of 19° 07' 35", a radius of 628.30 feet and a chord which bears South 14° 31' 48" West 207.77 feet to a point on the South line of said Southwest Quarter (SW ¼) of the Northeast Quarter (NE ¼); thence North 89° 57' 54" West 465.79 feet to the Southwest corner of the Southwest Quarter (SW ¼) of the Northeast Quarter (NE ¼); thence North 00° 50' 01" West, along the North-South Quarter (NS ¼) line of said Section, 812.07 feet to the point of beginning and there termination.

Concerning the parcel purchased by from Pat Doar and Nancy Prince Doar.

Buyer and seller agree that upon notice from Pat Doar or the sale of his adjacent property to the south, that an easement will be established from the existing driveway to the NR treatment plant. In a width of 66' feet, south to adjacent property.

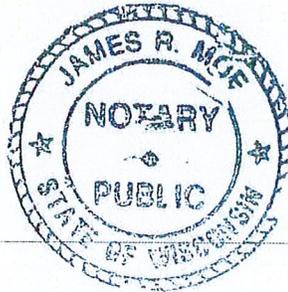
If said notice is given by Pat Doar to Michelle and Ryan Carlson all expenses shall be incurred by Pat Doar.

If at any given time, Michelle and Ryan Carlson sell the property to any other party but themselves, said easement will be given to Pat Doar at the expense of Michelle and Ryan Carlson at their sole and complete expense.

See attached Exhibit "A" for Legal Description

DEED RESTRICTION: By accepting this Deed, Grantee agrees that it shall not improve the Property located south of the easement given to the City for use by the Waste Water Treatment Plant.

Acknowledgment: James R. McF
Notary Public
State of Wisconsin my commission expires 4-6-18



County of: St. Croix

Personally came before me on 4-13-16

The above-named Patrick J Doar to be known to be the person who executed the foregoing instrument and acknowledged the same.

The above-named Michelle Carlson to be known to be the person who executed the foregoing instrument and acknowledged the same.

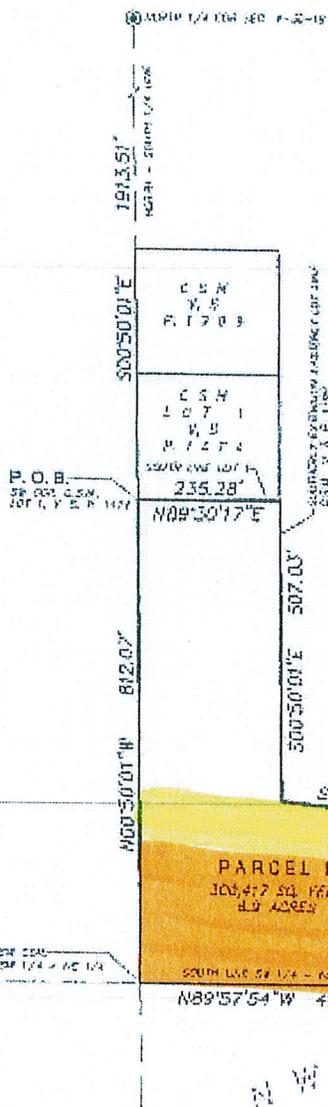
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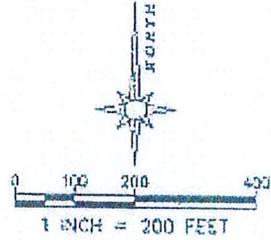
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PARCEL D DESCRIPTION SKETCH
THIS IS NOT A BOUNDARY SURVEY



This description and sketch were prepared by piecing together surrounding legal descriptions and surveys. No actual field measurements or observations were used in its preparation. Many of the surrounding legal descriptions and surveys have deficiencies which therefore may result in the distances, bearings and acreage in this legal description subject to change.



- C1**
 $\Delta = 62^{\circ}05'22''$
 $R = 120.00'$
 $L = 130.04'$
 $ChD. = 123.77'$
 $ChD. BRC. = N65^{\circ}15'50''E$
- C2**
 $\Delta = 62^{\circ}04'58''$
 $R = 200.00'$
 $L = 216.72'$
 $ChD. = 206.36'$
 $ChD. BRC. = S65^{\circ}46'02''W$
- C3**
 $\Delta = 19^{\circ}07'36''$
 $R = 628.30'$
 $L = 208.74'$
 $ChD. = 208.77'$
 $ChD. BRC. = S14^{\circ}31'48''W$

BEARINGS ARE REFERENCED TO THE NORTH - SOUTH 1/4 LME SECTION 4-30N-18W ASSUMED TO BEAR 500'50'01"E



Wind Rose
Land Surveyors

P.O. BOX 11
NEW RICHMOND, WI 53017
715-441-0320

PROJECT NO. 2014-01
CREATED BY J. VOGEL
DATE: MARCH 13, 2014

easement to City Waste Water Treatment Plant

Un-improvable Property



J & S General Contracting
 P.O. Box 27
 Osceola WI 54020-0027
 Office: 715-294-2748 Fax: 715-294-3268
 www.jsgeneralcontracting.com



Estimate

DATE	ESTIMATE #
7/30/2018	6571

Name and Address
Greg Anderson New Richmond, WI 54017

PROJECT

DESCRIPTION	QTY	COST	TOTAL
Saw cut and remove asphalt section of the street. Excavate from manhole on north side of street to new home location. (Approximately 900 ln ft) Excavate from water valve on north side of street to new home location. Excavate rock from trench and replace with pipe bedding sand. Screen outcroppings from excavation and save onsite. Deliver, place, and compact 8 inches of class 5 base material on road area. Install 3.5 inches of asphalt on road area. Install lawn seed, starter fertilizer, and straw mulch on disturbed areas. Deliver, place, and compact Trap Rock class 5 gravel on disturbed driveway area. Includes all labor, 1.5" water tap and line, 2" sewer line, and lift station with pump. Permits provided by owner. Any retainage by owner.		87,520.00	87,520.00
Sales Tax		5.50%	0.00
TOTAL			\$87,520.00

If this estimate is acceptable and you would like us to proceed with your project, please e-mail us or call our office at 715-294-2748 so we can add you to our schedule.

TIM BUTTERFIELD DRILLING INC
 Quality Water Testing
 395 Reed Street
 Somerset, WI 54025 US
 (715) 247-4873
 info@timbutterfielddrilling.com
 http://www.timbutterfielddrilling.com



ESTIMATE

ADDRESS

GREG ANDERSON
 P.O. BOX 179
 NEW RICHMOND, WI 54017

SHIP TO

GREG ANDERSON
 WELL LOCATION
 1745 115th Street
 New Richmond, WI

ESTIMATE # 4072

DATE 09/19/2017

DESCRIPTION	QTY	RATE	AMOUNT
6" Steel Well Drilling	160	21.00	3,360.00
Upper Drill Hole (required if bedrock is encountered in less than 40')	0	1,000.00	0.00
Carbide Cutting Drive Shoe	1	225.00	225.00
Well Development and Test Pumping	1	250.00	250.00
Disinfecting, Bacteria & Nitrate Water Test	1	100.00	100.00
Pump System 10 gpm	1	2,285.00	2,285.00
Lakos Particle Filter 1"/100 Mesh	1	125.00	125.00
Pump Labor	1	385.00	385.00
Backhoe	1	350.00	350.00
6" Steel Well Casing	120	17.00	2,040.00
6" Steel Benseal Grouting	1	125.00	125.00
WI DNR Well Permit	1	75.00	75.00
Additional Waterline if well over 8 ft. from house, add \$8/ft	0	8.00	0.00
Additional waterline/wire under slab	0	4.00	0.00

PLEASE NOTE: This estimate is based on average depths of wells in the area. Final well cost and depth will be determined by geology encountered.

TERMS: 50% Down-Balance due upon completion. 1.5% will be charged per month on all accounts not paid in full upon completion of work. By signing this agreement well owner acknowledges that they accept the above terms and conditions. Sign, date, and print name below.

TOTAL

\$9,320.00

Accepted By

Accepted Date