# **ASSET MANAGEMENT PROGRAM**

for Water Utility Systems



**Prepared for:** 

City of Big Rapids

Project No. 832090

December 2017 Revised May 2019



# **CONTENTS**

Executive Summary	1
Overview	<i>'</i>
Asset Inventory	<i>'</i>
Criticality Assessment	<i>'</i>
Level of Service Goals	<i>'</i>
Capital Improvement Plan	<i>'</i>
Funding Structure and Rate Methodology	
Asset Management Team	

### **List of Tables**

Table 1	Asset Rating
Table 2	Water Asset Inventory
Table 3	Level of Service Goals
Table 4	Capital Improvement Project Plan
Table 5	Ten Year Budget
Attachment 1	Current Water Rates
Attachment 2	Water User Charge Revenue Detail
Attachment 3	Water Institutional Rate Calculation
Attachment 4	Existing Water System Map

## **EXECUTIVE SUMMARY**

#### **OVERVIEW**

This report summarizes the Asset Management Program (AMP) for the City of Big Rapids water utility system. It is submitted to comply with Rule 1606 of Act 399 in which a community water supply that serves more than 1,000 people shall implement an asset management program as defined in R 325.10102 beginning January 1, 2018.

The City of Big Rapids, located in the northwest corner of Mecosta County in central Michigan, has a type 1 public water supply and distribution system with four production wells, an iron removal water treatment plant, two booster pump stations, two main pressure districts and one subdivision pressure district, and four elevated storage tanks. The water system is currently serving a population of about 2,261. The City has nine certified water department personnel to maintain the system.

#### **ASSET INVENTORY**

The system is comprised of four wells producing an average of 1,134,400 gpd, with a water treatment plant consisting of chlorine oxidization, two upflow clarifiers followed by gravity filtration through three filters. Orthophosphate and fluoride are added to the water after filtration. The system has four elevated storage tanks and two ground storage tanks with a total storage capacity of 2.75 MG, over 312,000 feet of watermain ranging from 4-inches to 20-inches in diameter, two booster pump stations, 484 fire hydrants with valves, and 450 watermain valves.

The water asset inventory is included in Table 2 and provides source asset description, year installed, location, manufacturer (where applicable), replacement cost, useful life and condition rating on a scale of 1-5. A map of the existing water system is included in Attachment 2

#### **CRITICALITY ASSESSMENT**

The criticality of the assets of the City's water utility system are based on a numerical (1-5) rating system of performance for Probability of Failure and Consequence of Failure. To determine criticality the following formula is used:

Criticality Factor = Probability of Failure x Consequence of Failure

Details of the asset rating system are included in Table 1. The water asset inventory in Table 2 contains the Criticality Factor for each asset in the City of Big Rapids water supply system.

#### LEVEL OF SERVICE GOALS

Level of Service (LOS) goals were developed with City's administrative staff. The LOS goals are detailed in Table 3.

#### CAPITAL IMPROVEMENT PLAN

A twenty-year Capital Improvement Plan (CIP) was developed for the City of Big Rapids based on the criticality assessment within this report and the recently completed Water Reliability Study dated June 2017. As a part of the AMP process, the CIP was reviewed with the City of Big Rapids. The water supply system CIP is included in Table 4.

#### FUNDING STRUCTURE AND RATE METHODOLOGY

The MDEQ requires a summary detailing the funding structure and rate methodology that provides sufficient resources to implement the AMP. For the City of Big Rapids, the current rate structure is included in Attachment 1 and an analysis of the budget over the next ten years is included in Table 5.

# **ASSET MANAGEMENT TEAM**

#### **Utility Information**

Utility Name: Big Rapids Water Utility System

Street Address: 730 Osceola Avenue

City: Big Rapids Zip Code: 49307

Phone Number: 231-796-6231

Number of Connections/ Customers: 2,261

#### **Personnel**

Contact Person: Heather Bowman
Title: DPW Director
Phone Number: 231-592-4018

Team Member: Mark Gifford
Title: City Manager
Phone Number: 231-592-4020

Team Member: Aaron Kuhn
Title: City Treasurer
Phone Number: 231-592-4010

Team Member: Steve Cook

Title: Water Treatment Plant Superintendent

Phone Number: 231-796-6231

Team Member: Van Johnson

Title: Street Superintendent

Phone Number: 231-796-8542

Team Member: Fleis & VandenBrink Engineering – Todd Richter

Title: Engineer

Phone Number: 616-977-1000



Column J	
	Condition Assessment
Condition Rating	Description
5	Asset Unserviceable - Over 50% of asset requires replacement
4	Significant deterioration - significant renewal/upgrade required (20 -40%)
3	Moderate deterioration - Significant maintenance required (10 -20%)
2	Minor Deterioration - Minor maintenance required (5%)
1	New or Excellent Condition - Only normal maintenance required

Column K							
Probability of Failure							
Performance Rating	Description						
5	Imminent - Likely to occur in the life of the item						
	Probable - Will occur several times in the life of an						
4	item						
	Occasional - Likely to occur some- time in the life of						
3	an item						
	Remote - Unlikely but possible to occur in the life of						
2	an item						
	Improbable - So unlikely, it can be assumed						
1	occurrence may not be experienced						

Column L							
Co	onsequence of Failure *						
Performance Rating	Description						
5	Catastrophic disruption						
4	Major disruption						
3	Moderate disruption						
2	Minor disruption						
1	Insignificant disruption						

<sup>\*</sup> consider safety/social, economic/financial, environmental



					Source Assets						
Source Assets	Year Installed	Location	Latitude	Longitude	Manufacturer	Replacement Cost	Remaining Useful Life in Years	Condition	Probability of Failure	Consequence of Failure	Criticality Factor
Well No. 1 (12 in diameter @ 210 ft depth)	2001	N. of West Ave.	N43.717357	W085.497923		\$ 120,000	74	1	2	3	6
Well No. 2 (16 in diameter @ 155 ft depth)	2001	N. of West Ave.	N43.718532	W085.499409		\$ 130,000	74	1	2	3	6
Well No. 3 (16 in diameter @ 168 ft depth	2001	N. of West Ave.	N43.719926	W085.500755		\$ 130,000	74	1	2	3	6
Well No. 4 (16 in diameter @ 213 ft depth)	2001	N. of West Ave.	N43.721386	W085.502322		\$ 140,000	74	1	2	3	6
Wellhouse	2001	N. of West Ave.				\$ 150,000	74	1	2	3	6
Pump No. 1 (500 gpm @ 167 ft)	1998	N. of West Ave.	N43.717357	W085.497923	Floway	\$ 10,000	6	2	2	3	6
Pump No. 2 (1,200 gpm @ 96 ft)	2000	N. of West Ave.	N43.718532	W085.499409	Floway	\$ 12,000	8	2	2	3	6
Pump No. 3 (1,200 gpm @ 80 ft)	1999	N. of West Ave.	N43.719926	W085.500755	Floway	\$ 12,000	7	2	2	3	6
Pump No. 4 (800 gpm @ 118 ft)	2001/ 2016 O'haul	N. of West Ave.	N43.721386	W085.502322	Christensen	\$ 10,000	24	1	2	3	6
250 kW natural gas fixed generator	2000	N. of West Ave.			Cummins	\$ 60,000	8	1	2	2	4

					Treatment Assets							
Treatment Assets	Year Installed	Location	Latitude	Longitude	Manufacturer	Repla	cement Cost	Remaining Useful Life in Years	Condition	Probability of Failure	Consequence of Failure	Criticality Factor
WTP Building	1937	WTP				\$	400,000	10	2	2	2	4
Chemical Feed/ Storage	2003	WTP			Force Flow/ Carus Corporation/ PPG Industries	\$	50,000	76	1	1	3	3
Detention Tank No. 1 (405,000 gallons)	1968	WTP			Walker Process	\$	400,000	41	4	4	3	12
Detention Tank No. 2 (283,552 gallons)	1983	WTP			General Filter	\$	300,000	56	2	2	3	6
Gravity Rapid Sand Filter No. 1 (3 gpm/sft)	1983	WTP			Leopold and Micro Floc Media	\$	50,000	-19	1	1	2	2
Gravity Rapid Sand Filter No. 2 (3 gpm/sft)	1983	WTP			Leopold and Micro Floc Media	\$	50,000	-19	1	1	2	2
Gravity Rapid Sand Filter No. 3 (3 gpm/sft)	1983	WTP			Leopold and Micro Floc Media	\$	50,000	-19	1	1	2	2
Backwash Pump (7,000 gpm @ 27 ft)	1968/ 2005	WTP			Peerless	\$	15,000	3	3	3	3	9
Sludge Pump (220 gpm @ 150 ft)	1992	WTP			Wilden	\$	5,000	-10	1	1	3	3
Recycle Pump No. 1 (1,400 gpm @ 60 ft))	1959/ 2000 O'haul	WTP			Peerless	\$	5,000	-2	1	1	2	2
Recycle Pump No. 2 (1,400 gpm @ 60 ft)	1959/ 2000 O'haul	WTP			Peerless	\$	5,000	-2	1	1	2	2
Low Service Pump No. 1 (3750 gpm @ 50 ft)	2005	WTP			Peerless	\$	10,000	13	2	2	2	4
Low Service Pump No. 2 (3750 gpm @ 50 ft)	2005	WTP			Peerless	\$	10,000	13	2	2	2	4
High Service Pump No. 1 (3,750 gpm @ 194 ft)	1983/2008	WTP			Worthington	\$	10,000	16	2	2	2	4
High Service Pump No. 2 (2,500 gpm @ 168 ft)	1983/2007	WTP			Worthington	\$	10,000	15	2	2	2	4
High Service Pump No. 3 (1,600 gpm @ 160 ft)	1983/2010	WTP			Fairbanks Morse	\$	10,000	18	5	5	2	10
High Service Pump No. 4 (2,500 gpm @ 168 ft)	1983/ 2009	WTP			Worthington	\$	10,000	17	2	2	2	4
500 kW diesel fixed generator	2010	WTP			Cummins/Genset	\$	90,000	25	2	2	2	4

Storage Assets											
Storage Assets	Year Installed	Material	Location / Label	Capacity	Manufacturer	Replacement Cost	Remaining Useful Life in Years	Condition	Probability of Failure	Consequence of Failure	Criticality Factor
Water Storage - Useful life: 90 years											
Ground Storage Tank No. 1	1983	Steel	WTP	0.5 MG	Prairie Tank Company	\$ 500,00	0 56	1	1	3	3
Ground Storage Tank No. 2	1959	Steel	WTP	1.0 MG	Hammond Tanks	\$ 1,000,00	0 32	2	2	3	6
Single- Pedestal Spheroid Tower	1968	Steel	Bjornson St	0.25 MG	Universal Tank	\$ 1,000,00	0 41	2	2	3	6
Single- Pedestal Spheroid Tower	1952	Steel	State St	0.3 MG	Pitt-Des Moines	\$ 1,200,00	0 25	3	3	3	9
Single- Pedestal Spheroid Tower	1968	Steel	Perry St	0.2 MG	Universal Tank	\$ 800,00	0 41	1	1	3	3
Single- Pedestal Spheroid Tower	1996	Steel	Ferris St	0.5 MG	Chicago Bridge and Iron	\$ 2,000,00	0 69	1	1	3	3



					Distribution Assets						
					Distribution Assets		Remaining Useful Life in			Consequence of	
Distribution Assets	Year Installed	Material	Diameter (in)	Total Length (ft)/Quantity	Manufacturer	Replacement Cost	Years	Condition	Probability of Failure	Failure	Criticality Factor
Booster Station											
State Street Booster Station											
Booster Station Building	1961					\$ 100,000	34	1	1	3	3
Pump No. 1 (970 gpm)	1961				Peerless	\$ 10,000	-31	2	2	3	6
Pump No. 2 (970 gpm)	1961				Peerless	\$ 10,000	-31	2	2	3	6
Pump No. 3 (1,940 gpm)	1994				Peerless	\$ 10,000	2	2	2	3	6
Hills of Mitchell Creek Booster Station											
Booster Station Building	2005				Gorman-Rupp	\$ 75,000	78	3	3	3	9
Pump No. 1 (260 gpm)	2005				Patterson	\$ 6,000	13	2	2	3	6
Pump No. 2 (260 gpm)	2005				Patterson	\$ 6,000	13	2	2	3	6
Watermain - Useful Life Based on Material											
Replacement cost*:	1900	CI	4	16,144		\$ 1,937,280	8	3	3	1	3
8" @ \$120 per foot	1900	CI	6	21,047		\$ 2,525,640	8	3	3	2	6
10"-12" @ \$130 per foot	1900	CI	8	4,769		\$ 572,280	8	3	3	2	6
16"-20" @ \$160 per foot	1900	CI	12	5,596		\$ 727,480	8	3	3	3	9
	1910	CI	4	647		\$ 77,640	18	3	3	1	3
	1910	CI	6	2,737		\$ 328,440	18	3	3	2	6
	1910	CI	8	1,644		\$ 197,280	18	3	3	2	6
	1940	CI	4	903		\$ 108,360	48	2	2	1	2
	1940	CI	6	3,404		\$ 408,480	48	2	2	2	4
	1950	CI	4	2,678		\$ 321,360	58	2	2	1	2
	1950	CI	6	9,022		\$ 1,082,640	58	2	2	2	4
	1950	CI	8	2,176		\$ 261,120	58	2	2	2	4
	1950	CI	10	5,005		\$ 650,650	58	2	2	3	6
	1950	CI	12	2,493		\$ 324,090	58	2	2	3	6
	1960	DI	4	1,496		\$ 179,520	53	2	2	1	2
	1960	DI	6	15,278		\$ 1,833,360	53	2	2	2	4
	1960 1960	DI	8	12,218 1,447		\$ 1,466,160	53	2	2	2	4
	1960	DI DI	10			\$ 188,110 \$ 2 152 280	53	2	2	3	6
	1970	DI	12	16,556 1,680		\$ 2,152,280 \$ 201,600	53 63	2	2 2	1	2
	1970	DI	6	12,186		\$ 1,462,320	63	2	2	2	4
	1970	DI	8	7.650		\$ 918,000	63	2	2	2	4
	1970	DI	12	9,785		\$ 1,272,050	63	2	2	3	6
	1980	DI	4	1,758		\$ 1,272,030	73	2	2	1	2
	1980	DI	6	16,434		\$ 1,972,080	73	2	2	2	4
	1980	DI	8	25,901		\$ 3,108,120	73	2	2	2	4
	1980	DI	10	720		\$ 93,600	73	2	2	3	6
	1980	DI	12	16,716		\$ 2,173,080	73	2	2	3	6
	1990	DI	6	6,338		\$ 760,560	83	1	1	2	2
	1990	DI	8	8,082		\$ 969,840	83	1	1	2	2
	1990	DI	12	16,548		\$ 2,151,240	83	1	1	3	3
	1990	DI	16	857		\$ 137,120	83	1	1	4	4
	1990	DI	20	8,307		\$ 1,329,120		1	1	5	5
	2000	DI	16	367		\$ 58,720		1	1	4	4
	2000	DI	20	745		\$ 119,200	93	1	1	5	5
	2001	DI	8	5,369		\$ 644,280	94	1	1	2	2
	2001	DI	12	756		\$ 98,280	94	1	1	3	3
	2001	DI	16	4,080		\$ 652,800	94	1	1	4	4
	2002	DI	8	965		\$ 115,800	95	1	1	2	2
	2002	DI	12	1,139		\$ 148,070	95	1	1	3	3
	2003	DI	8	329		\$ 39,480	96	1	1	2	2
	2003	DI	12	4,162		\$ 541,060	96	1	1	3	3
	2004	DI	4	600		\$ 72,000	97	1	1	1	1
	2004	DI	12	884		\$ 114,920	97	11	1	3	3
	2004	DI	16	3,124		\$ 499,840	97	11	1	4	4
	2005	DI	8	7,704		\$ 924,480	98	1	1	2	2
	2005	DI	12	8,294		\$ 1,078,220		1	1	3	3
	2005	DI	16	5,553		\$ 888,480	98	11	1	4	4
	2006	DI	12	1,535		\$ 199,550	99	11	1	3	3
	2007	DI	12	2,284		\$ 296,920	100	1	1	3	3
	2008	DI	8	744		\$ 89,280	101	1	1	2	2
1	2009	DI	6	1,146		\$ 137,520	102	1	1	2	2



Distribution Assets	Year Installed	Material	Diameter (in)		Manufacturer	Replacement Cost	Remaining Useful Life in	Condition	Probability of Failure	Consequence of	
Biotribution Access	2010	DI	8	1,985	indididotal of	\$ 238,200	Years 103	1	1	Failure 2	Criticality Factor
	2010	DI	12	493		\$ 238,200	103	1	1	3	3
	2016	DI	12	2,505		\$ 325,650	109	1	1	3	3
Hydrants - Useful Life: 90 Years	20.0			2,000		Ψ 020,000				· ·	- J
Replacement cost @ \$3,000 each	1900			74		\$ 222,000	-27	4	4	2	8
	1910			8		\$ 24,000	-17	4	4	2	8
	1940			6		\$ 18,000	13	3	3	2	6
	1950			33		\$ 99,000	23	3	3	2	6
	1960 1970			72 48		\$ 216,000 \$ 144,000	33 43	2	2 2	2	4
	1980			95		\$ 285,000	53	1	1	2	2
	1990			62		\$ 186,000	63	1	1	2	2
	2000			2		\$ 6,000	73	1	1	2	2
	2001			15		\$ 45,000	74	1	1	2	2
	2002			3		\$ 9,000	75	1	1	2	2
	2003			7		\$ 21,000	76	1	1	2	2
	2004 2005			7		\$ 21,000	77	1	1	2	2
	2005		+	33 3		\$ 99,000 \$ 9,000	78 79	1	1	2	2 2
	2007		<del> </del>	3		\$ 9,000	80	1	1 1	2	2
	2008		1	2		\$ 6,000	81	1	1	2	2
	2009			3		\$ 9,000	82	1	1	2	2
	2010			4		\$ 12,000	83	1	1	2	2
	2016			4		\$ 12,000	89	1	1	2	2
Valves - Useful Life: 70 Years	4000						4-7				
4"-6" @ \$1,800 each 8" @ \$2,000 each	1900 1900		6	23 30		\$ 41,400 \$ 54,000	-47 -47	4	4	2	8
10" @ \$2,500 each	1900		8	7		\$ 54,000	-47 -47	4	4	2	8
12" @ \$3,000 each	1900		12	8		\$ 24,000	-47	4	4	2	8
16" @ \$4,000 each	1910		4	1		\$ 1,800	-37	4	4	2	8
20" @ \$4,500 each	1910		6	4		\$ 7,200	-37	4	4	2	8
	1910		8	2		\$ 4,000	-37	4	4	2	8
	1940		4	1		\$ 1,800	-7	3	3	2	6
	1940 1950		6 4	5		\$ 9,000 \$ 7,200	-7	3	3	2	6
	1950		6	<u>4</u> 13		\$ 7,200	3 3	2 2	2 2	2	4
	1950		8	3		\$ 6,000	3	2	2	2	4
	1950		10	7		\$ 17,500	3	2	2	2	4
	1950		12	4		\$ 12,000	3	2	2	2	4
	1960		4	2		\$ 3,600	13	2	2	2	4
	1960		6	22		\$ 39,600	13	2	2	2	4
	1960 1960		8 10	18 2		\$ 36,000 \$ 5,000	13 13	2 2	2 2	2 2	4
	1960		12	24		\$ 72,000	13	2	2	2	4
	1970		4	2		\$ 3,600		1	1	2	2
	1970		6	18		\$ 32,400		1	1	2	2
	1970		8	11		\$ 22,000		1	1	2	2
	1970		12	14		\$ 42,000		1	1	2	2
	1980 1980		6	3 24		\$ 5,400 \$ 43,200		1	1 1	2	2 2
	1980		8	37		\$ 43,200		1	1 1	2	2
	1980		10	1		\$ 2,500		1	1	2	2
	1980		12	24		\$ 72,000	33	1	1	2	2
	1990		6	9		\$ 16,200	43	1	1	2	2
	1990		8	12		\$ 24,000		1	1	2	2
	1990		12	24		\$ 72,000		1	1	2	2
	1990 1990		16 20	1		\$ 4,000 \$ 54,000		1	1 1	2	2 2
	2000		16	12 1		\$ 54,000		1	1	2	2
	2000		20	1		\$ 4,500		1	1	2	2
	2001		8	8		\$ 16,000		1	1	2	2
	2001		12	1		\$ 3,000	54	1	1	2	2
	2001		16	6		\$ 24,000		1	1	2	2
	2002		8	1		\$ 2,000		1	1	2	2
	2002		12	2		\$ 6,000		1	1	2	2
	2003		12	6		\$ 18,000	56	1	1	2	2



Distribution Assets	Year Installed	Material	Diameter (in)		Manufacturer	Replacement Cost	Remaining Useful Life in Years	Condition	Probability of Failure	Consequence of Failure	Criticality Factor
	2004		4	1		\$ 1,800	57	1	1	2	2
	2004		12	1		\$ 3,000	57	1	1	2	2
	2004		16	4		\$ 16,000	57	1	1	2	2
	2005		8	11		\$ 22,000	58	1	1	2	2
	2005		12	12		\$ 36,000	58	1	1	2	2
	2005		16	8		\$ 32,000	58	1	1	2	2
	2006		12	2		\$ 6,000	59	1	1	2	2
	2007		12	3		\$ 9,000	60	1	1	2	2
	2009		6	2		\$ 3,600	62	1	1	2	2
	2010		8	3		\$ 6,000	63	1	1	2	2
	2010		12	1		\$ 3,000	63	1	1	2	2
	2016		12	4		\$ 12,000	69	1	1	2	2

<sup>\*</sup>Assume all watermain less than 8" in diameter will be replaced with 8" watermain

## Table 3 Level of Service Goals



The City of Big Rapids commits to maintaining and improving the water system to provide clean, safe drinking water and fire protection to the community while minimizing the long-term costs for their operation. The most cost effective means of the maintanence and improvements will be sought without sacrificing quality. The City is committed to providing excellent customer service to the constituants.

LOS Determinants	Define the goal	How often do you measure it
		Monitor water quality: monthly for bacteria,
	Meet federal and state water quality	annually for partial chemical, and triannually
NPDES requirements	standards.	for metals.
Safety	Safe work environment.	Safety meetings, no MIOSHA violations.
-	Secure water installations from	Maintain fenced, locked, and lit well houses
Security	tampering.	and water towers.
-	Certified operators to operate and	Maintain a minimum of two certified operators
Operator certification	maintain system.	at all times.
•		Respond to and investigate customer
		complaints within one business day of report,
Customer complaints	Provide excellent customer service.	then provide results to the customer.
		Attend conferences and training to keep
	Keep up with regulatory changes and	regulatory compliance current. Meet annually
Upcoming regulatory changes	comply in a timely fashion.	with MDEQ to ensure compliance.
		Respond to customer emergencies within 30
		minutes of receiving report. Give 24 hour
		advance notice of planned service
Response time	Provide excellent customer service.	interruptions.
	Funds to address unexpected	Maintain an operating reserve of 50% OM&R
Operating Reserves	breakdowns and major expenses.	budget.
	Balance internal vs external funding	Seek external funding for major projects as
Internal versus external funding	for projects.	they present themselves.
		Annual inspections of wells and pumps, then
		complete recommended improvements to
Water Supply	Sustain water supplies.	keep functioning as designed.
		Maintain water treatment equipment and flush
Water Quality	Provide quality, good tasting water.	watermains twice annually.
		Professional inspection every 5 years and
Water Storage	Maintain for longer lifespan.	complete recommended improvements.
		Flush watermains annually and maintain
	Maintain pipes, hydrants, and valves	normal condition pressure between 30 and 90
Distribution	to ensure good working order.	psi.
		Review discrepancies and correct in a timely
Administrative	Ensure accurate billing.	fashion.



# Table 4 Capital Improvement Project Plan

Recoat Interaction of the State Street water tower along with other miscellaneous improvements Replace 2.00 feet of 10-inch watermain with 12-inch watermain on 10 cark Street from Fuller Avenue to Morrison Avenue.  2 \$ 60,000 Replace 3.00 feet of 6-inch watermain with 12-inch watermain on Clark Street from Fuller Avenue to Morrison Avenue.  2 \$ 250,000 Replace 3.00 feet of 10-inch watermain with 12-inch watermain on Darwin Avenue from Catherine Street to Bjornson Street.  2 \$ 44,300 Replace 5.00 feet of 4-inch watermain with 12-inch watermain on Darwin Avenue from Catherine Street to Bjornson Street.  2 \$ 120,000 Replace 5.00 feet of 6-inch watermain with 12-inch watermain on Darwin Avenue from Early Drive to cul-de-sac.  2 \$ 72,000 Replace 5.00 feet of 6-inch watermain with 12-inch watermain on Subtraction of 10-inch watermain with 12-inch watermain on Subtraction 10-inch watermain with 12-inch watermain on Subtraction 10-inch watermain with 12-inch watermain on Subtraction 10-inch watermain on Subtraction 10-inch watermain with 12-inch watermain on Subtraction 10-inch watermain watermain on Subtraction 10-inch watermain watermain with 12-inch watermain on Subtraction 10-inch watermain on Subtraction 10-inch watermain on Subtraction 10-inch watermain on Subtraction 10-inch watermain 10-inch watermain on Subtraction 10-inch watermain 10-inch wa	Projects	Years Until Project Begins		jected Cost
Replace 1,200 feet of 10-inch watermain with 12-inch watermain on Clark Street to Magnolia.  Replace 5,100 feet of 1-inch watermain with 3-inch watermain on Clark Street from State Street to Stadium Dr.  2 \$50,000 Replace 1,300 feet of 1-inch watermain with 12-inch watermain on South Street from State Street to Stadium Dr.  2 \$20,000 Replace 1,500 feet of 4-inch watermain with 12-inch watermain on Darwin Avenue from Catherine Street to Bjornson Street.  2 \$120,000 Replace 5,100 feet of 4-inch watermain with 12-inch watermain on Deatre Avenue from Bally Drive to cut-de-sac.  2 \$72,000 Replace 50 feet of 6-inch watermain with 12-inch watermain on Deatre Avenue from Bally Drive to cut-de-sac.  2 \$72,000 Replace 10 feet of 6-inch watermain with 12-inch watermain on Bally Drive from Stadium Dr. to Demascus  3 \$10,000 Replace 1,300 feet of 6-inch watermain with 12-inch watermain on Bally Drive from Woodward Avenue for Demascus to Magnolia.  3 \$10,000 Replace 1,300 feet of 6-inch watermain with 12-inch watermain on Bally Drive from Woodward Avenue for Fuller Avenue.  3 \$10,000 Replace 1,300 feet of 6-inch watermain with 12-inch watermain on Bally Drive from Woodward Avenue for Fuller Avenue.  3 \$10,000 Replace 1,500 feet of 6-inch watermain with 12-inch watermain on Bally Drive from Woodward Avenue for Fuller Avenue.  3 \$10,000 Replace 1,500 feet of 6-inch watermain with 12-inch watermain on Clark Street to Cypress Street, then east 90 feet.  4 \$10,000 Replace 1,500 feet of 6-inch watermain with 12-inch watermain on Clark Street to Cypress Street, then east 90 feet.  4 \$10,000 Replace 1,500 feet of 6-inch watermain with 12-inch watermain on Clark Street to Cypress Street, then east 90 feet.  4 \$10,000 Replace 2,000 feet of 6-inch watermain with 12-inch watermain on Clark Street to Magnolia Street to Cypress Street, then east 90 feet.  4 \$10,000 Replace 2,000 feet of 6-inch watermain with 12-inch watermain on Clark Street to Street to Magnolia Avenue.  5 \$10,000 Replace 2,000 feet of 6-inch watermain with 12-inch water	Repaint 1.0 MG reservoir	1	\$	90,000
Replace 500 feet of 6-Inch watermain with 12-Inch watermain on Clark Street from State Street to Morrison Avenue.         2         \$ 60,000           Bulk water fill station         2         \$ 25,000           Replace 1,300 feet of 10-Inch watermain with 12-Inch watermain on Darvin Avenue from Catherine Street to Bjomson Street.         2         \$ 14,300           Replace 6,900 feet of 6-Inch watermain with 12-Inch watermain on Dexter Avenue from Baily Drive to oul-de-sac.         2         \$ 72,000           Replace 7,000 feet of 10-Inch watermain with 12-Inch watermain on Dexter Avenue from Damascus         3         \$ 91,000           Replace 1,100 feet of 10-Inch watermain with 12-Inch watermain on Insex Avenue from Demascus to Magnolia.         3         \$ 28,000           Replace 1,100 feet of 5-Inch watermain with 3-Inch watermain on Insex Avenue from Demascus to Magnolia.         3         \$ 28,000           Replace 1,100 feet of 5-Inch watermain with 3-Inch watermain on Insex Avenue from Demascus to Magnolia.         3         \$ 156,000           Loop 400 feet of 5-Inch watermain with 3-Inch watermain on Winter Avenue from Education of Company of the Water Plant of Street Water Plant Water Water Plant Water Water Water Water Plant Water Water Water Water Water Plant Water Water Water Water Water Water Water Water	Recoat the exterior of the State Street water tower along with other miscellaneous improvements	1	\$	250,000
Replace 1,300 feet of 10-nch watermain with 12-nch watermain on South Street from State Street to Stadium Dr.         2         \$ 250,000           Replace 0,100 feet of 4-inch watermain with 8-inch watermain on Darwin Avenue from Catherine Street to Bjornson Street.         2         \$ 120,000           Replace 0,100 feet of 4-inch watermain with 12-inch watermain on Darwin Avenue from Ball Drive to cut-led-seac.         2         \$ 120,000           Replace 700 feet of 10-inch watermain with 12-inch watermain on South Street from Stadium Dr. to Demascus         3         \$ 19,000           Replace 700 feet of 10-inch watermain with 12-inch watermain on South Street from Stadium Dr. to Demascus         3         \$ 19,000           Replace 1,500 feet of 5-inch watermain with 8-inch watermain on Bally Drive from Woodward Avenue to Fuller Avenue.         3         \$ 156,000           Leef lighting at the water plant         4         \$ 66,000           Replace 1,500 feet of 5-inch watermain with 8-inch watermain on Winter Avenue from Chestrual Street to Cypress Street, then east 90 feet.         4         \$ 66,000           Replace 2,100 feet of 6-inch watermain with 8-inch watermain on Green St. from Spring St. to Woodward Avenue         4         \$ 66,000           Replace 2,100 feet of 6-inch watermain with 8-inch watermain on Replace 2,100 feet of 6-inch watermain with 8-inch watermain on Spring St. to Woodward Avenue         4         \$ 9,000           Replace 2,00 feet of 6-inch watermain with 8-inch watermain on Replace Water St. to Water St. to Water	Replace 1,200 feet of 10-inch watermain with 12-inch watermain on Ives Avenue from Oak Street to Magnolia.	1	\$	158,000
Bulk water fill station Replace 600 feet of 4-inch watermain with 8-inch watermain on Darwin Avenue from Catherine Street to Bjornson Street.  2 \$ 14.300 Replace 600 feet of 6-inch watermain with 12-inch watermain on Dexter Avenue from Baily Drive to cul-ide-sac.  2 \$ 7.200 Replace 60 feet of 10-inch watermain with 12-inch watermain on low Street from Baily Drive to cul-ide-sac.  3 \$ 9.81,000 Replace 1,600 feet of 10-inch watermain with 12-inch watermain on lows Avenue from Demascus to Magnolia.  3 \$ 208,000 Replace 1,600 feet of 5-inch watermain with 8-inch watermain on Bulk Drive from Woodward Avenue to Fuller Avenue.  3 \$ 156,000 Replace 1,500 feet of 5-inch watermain with 8-inch watermain on Bulk Drive from Woodward Avenue to Fuller Avenue.  3 \$ 48,000 Replace 1,500 feet of 5-inch watermain with 8-inch watermain on Green St. from Spring St. to Woodward Avenue.  4 \$ 160,000 Replace 1,500 feet of 5-inch watermain with 8-inch watermain on Green St. from Spring St. to Woodward Avenue.  5 \$ 160,000 Replace 2,100 feet of 5-inch watermain with 8-inch watermain on Colburn Avenue from Bronson Avenue to Third Avenue.  5 \$ 100,000 Replace 900 feet of 5-inch watermain with 8-inch watermain on Colburn Avenue from Bronson Avenue to Third Avenue.  5 \$ 100,000 Replace 900 feet of 5-inch watermain with 8-inch watermain on Regardev Drive from Dexter Avenue to Fuller Avenue.  5 \$ 100,000 Replace 900 feet of 5-inch watermain with 8-inch watermain on Bronson Avenue to Third Avenue.  5 \$ 100,000 Replace 900 feet of 5-inch watermain with 8-inch watermain on Bronson Street from Dexter Avenue to Fuller Avenue.  5 \$ 100,000 Replace 900 feet of 5-inch watermain with 8-inch watermain on Bronson Street from Dexter Avenue for Fuller Avenue.  5 \$ 100,000 Replace 900 feet of 5-inch watermain with 8-inch watermain on Bronson Street from Dexter Avenue for Fuller Avenue.  5 \$ 100,000 Replace 900 feet of 5-inch watermain with 8-inch watermain on Bronson Street from Dexter Avenue for Fuller Avenue.  5 \$ 100,000 Replace 10 feet of 5-inch waterm	Replace 500 feet of 6-inch watermain with 8-inch watermain on Clark Street from Fuller Avenue to Morrison Avenue.	2	\$	60,000
Replace 0.000 feet of 4-Inch watermain with 8-Inch watermain on Darwin Avenue from Catherine Street to Bjørnson Street.         2         \$ 120,000           Replace 600 feet of 6-Inch watermain with 8-Inch watermain on South Street from Stadium Dr. to Demascus.         3         \$ 72,000           Replace 700 feet of 10-Inch watermain with 12-Inch watermain on Devs Avenue from Demascus to Magnolia.         3         \$ 208,000           Replace 7, 300 feet of 6-Inch watermain with 18-Inch watermain on Bally Drive from Woodward Avenue to Fuller Avenue.         3         \$ 15,000           Loop 400 feet of 6-Inch watermain with 8-Inch watermain on Bally Drive from Woodward Avenue to Fuller Avenue.         3         \$ 48,000           Loop 400 feet of 6-Inch watermain with 8-Inch watermain on Winter Avenue from Chestnut Street.         4         \$ 65,000           Loop 400 feet of 6-Inch watermain with 8-Inch watermain on Winter Avenue from Chestnut Street to Cypress Street, then east 90 feet.         4         \$ 65,000           Replace 8, 100 feet of 6-Inch watermain with 8-Inch watermain on Green St. from Spring St. to Woodward Ave.         4         \$ 96,000           Replace 2, 100 feet of 4-Inch watermain with 8-Inch watermain on Ridgeview Drive from Dexter Avenue to Fuller Avenue.         4         \$ 96,000           Replace 500 feet of 6-Inch watermain with 8-Inch watermain on Darwin Avenue from Dexter Avenue to Fuller Avenue.         5         \$ 108,000           Replace 500 feet of 4-Inch watermain with 8-Inch watermain on Bipomson Street for Maladon	Replace 1,300 feet of 10-inch watermain with 12-inch watermain on South Street from State Street to Stadium Dr.	2	\$	250,000
Replace 600 feet of 6-Inch watermain with 3-Inch watermain on Dexter Avenue from Baily Drive to cul-de-sac.  2 \$ 72,00 Replace 100 feet of 10-Inch watermain with 12-Inch watermain on Subt Street from Stadium Or, to Demascus  3 \$ 91,00 Replace 1,600 feet of 10-Inch watermain with 12-Inch watermain on Inch watermain on Uses Avenue from Demascus to Magnolia.  3 \$ 288,00 Replace 1,500 feet of 5-Inch watermain with 12-Inch watermain on Inch wate	Bulk water fill station	2	\$	44,300
Replace 700 feet of 101-inch watermain with 12-inch watermain on New Avenue from Demascus to Magnolia.         3         \$ 91,000           Replace 1, 300 feet of 10-inch watermain with 3-inch watermain on New Avenue from Demascus to Magnolia.         3         \$ 208,000           Replace 1, 300 feet of 6-inch watermain with 8-inch watermain on Baily Drive from Woodward Avenue to Wilner Street.         3         \$ 156,000           Loop 400 feet of 6-inch watermain with 8-inch watermain on Wirster Avenue to Wilner Street.         4         \$ 66,000           Loop 400 feet of 6-inch watermain with 8-inch watermain on Wirster Avenue from Chestrus Street, then east 90 feet.         4         \$ 66,000           Replace 500 feet of 6-inch watermain with 8-inch watermain on Ciser St. from Spring St. to Woodward Ave.         4         \$ 96,000           Replace 2, 100 feet of 6-inch watermain with 8-inch watermain on Colbural Avenue from Brosson Avenue to Third Avenue.         4         \$ 222,000           Replace 9, 100 feet of 6-inch watermain with 8-inch watermain on Ridgeview Drive from Dexter Avenue to Fuller Avenue.         5         110,000           Clarifier Painting         5         \$ 100,000         5         \$ 100,000           New pump and motor at State Street booster station         5         \$ 100,000         \$ 80,000           Replace 700 feet of 4-inch watermain with 8-inch watermain on Darwin Avenue from Dilaf Street to Bjornson Street.         5         \$ 100,000	Replace 1,000 feet of 4-inch watermain with 8-inch watermain on Darwin Avenue from Catherine Street to Bjornson Street.	2	\$	120,000
Replace 1,800 feet of 10-inch watermain with 12-inch watermain on lves Avenue from Demascus to Magnolia.  3 \$ 28,000 Replace 1,300 feet of 6-inch watermain with 8-inch watermain on Bally Drive from Woodward Avenue to Fuller Avenue.  3 \$ 48,000 Loop 400 feet of 8-inch watermain with 8-inch watermain on Winter Avenue from Chestrus 15 feet to Cypress Street, then east 90 feet.  4 \$ 68,000 Replace 1,500 feet of 6-inch watermain with 8-inch watermain on Winter Avenue from Chestrus 15 feet to Cypress Street, then east 90 feet.  4 \$ 86,000 Replace 2,100 feet of 6-inch watermain with 8-inch watermain on Colburn Avenue from Chestrus 15 feet to Cypress Street, then east 90 feet.  4 \$ 96,000 Replace 2,100 feet of 6-inch watermain with 8-inch watermain on Colburn Avenue from Bronson Avenue to Third Avenue.  4 \$ 96,000 Replace 2,100 feet of 4-inch watermain with 8-inch watermain on Ridgeview Avenue from Bronson Avenue to Third Avenue.  5 \$ 108,000 Replace 2,100 feet of 4-inch watermain with 8-inch watermain on Ridgeview Avenue from Dexter Avenue to Fuller Avenue.  5 \$ 108,000 Replace 900 feet of 4-inch watermain with 8-inch watermain on Davim Avenue from Dexter Avenue to Fuller Avenue.  5 \$ 108,000 Replace 900 feet of 4-inch watermain with 8-inch watermain on Davim Avenue from Old Street to Bjornson Street 1 See 100,000 Replace 900 feet of 4-inch watermain with 8-inch watermain on Davim Avenue from Million Avenue to Speer Avenue.  5 \$ 96,000 Install 1,400 feet of 12-inch watermain with 8-inch watermain on Montree Avenue from Million Avenue to Speer Avenue.  5 \$ 96,000 Replace 500 feet of 6-inch watermain with 8-inch watermain on Montree Avenue from Bellevue Street to Madison Steet.  6 \$ 182,000 Replace 500 feet of 6-inch watermain with 8-inch watermain on Montree Avenue from Bellevue Street to Madison Steet.  8 \$ 96,000 Replace 500 feet of 6-inch watermain with 12-inch watermain on Montree Avenue from Mildion Avenue from Steet 1 See 100,000 Replace 500 feet of 6-inch watermain with 12-inch watermain on Montree Avenue from M	Replace 600 feet of 6-inch watermain with 8-inch watermain on Dexter Avenue from Baily Drive to cul-de-sac.	2	\$	72,000
Replace 1,800 feet of 10-inch watermain with 12-inch watermain on lves Avenue from Demascus to Magnolia.  3 \$ 28,000 Replace 1,300 feet of 6-inch watermain with 8-inch watermain on Bally Drive from Woodward Avenue to Fuller Avenue.  3 \$ 48,000 Loop 400 feet of 8-inch watermain with 8-inch watermain on Winter Avenue from Chestrus 15 feet to Cypress Street, then east 90 feet.  4 \$ 68,000 Replace 1,500 feet of 6-inch watermain with 8-inch watermain on Winter Avenue from Chestrus 15 feet to Cypress Street, then east 90 feet.  4 \$ 86,000 Replace 2,100 feet of 6-inch watermain with 8-inch watermain on Colburn Avenue from Chestrus 15 feet to Cypress Street, then east 90 feet.  4 \$ 96,000 Replace 2,100 feet of 6-inch watermain with 8-inch watermain on Colburn Avenue from Bronson Avenue to Third Avenue.  4 \$ 96,000 Replace 2,100 feet of 4-inch watermain with 8-inch watermain on Ridgeview Avenue from Bronson Avenue to Third Avenue.  5 \$ 108,000 Replace 2,100 feet of 4-inch watermain with 8-inch watermain on Ridgeview Avenue from Dexter Avenue to Fuller Avenue.  5 \$ 108,000 Replace 900 feet of 4-inch watermain with 8-inch watermain on Davim Avenue from Dexter Avenue to Fuller Avenue.  5 \$ 108,000 Replace 900 feet of 4-inch watermain with 8-inch watermain on Davim Avenue from Old Street to Bjornson Street 1 See 100,000 Replace 900 feet of 4-inch watermain with 8-inch watermain on Davim Avenue from Million Avenue to Speer Avenue.  5 \$ 96,000 Install 1,400 feet of 12-inch watermain with 8-inch watermain on Montree Avenue from Million Avenue to Speer Avenue.  5 \$ 96,000 Replace 500 feet of 6-inch watermain with 8-inch watermain on Montree Avenue from Bellevue Street to Madison Steet.  6 \$ 182,000 Replace 500 feet of 6-inch watermain with 8-inch watermain on Montree Avenue from Bellevue Street to Madison Steet.  8 \$ 96,000 Replace 500 feet of 6-inch watermain with 12-inch watermain on Montree Avenue from Mildion Avenue from Steet 1 See 100,000 Replace 500 feet of 6-inch watermain with 12-inch watermain on Montree Avenue from M	Replace 700 feet of 10-inch watermain with 12-inch watermain on South Street from Stadium Dr. to Demascus	3	\$	91,000
Loop 400 feet of 8-inch watermain on Magnolia Street from Ives Avenue to Winter Street.  4 \$ 8,600 Replace 1,500 feet of 6-inch watermain with 8-inch watermain on Winter Avenue from Chestnut Street to Cypress Street, then east 90 feet.  4 \$ 180,000 Replace 1,500 feet of 6-inch watermain with 8-inch watermain on Winter Avenue from Chestnut Street to Cypress Street, then east 90 feet.  4 \$ 180,000 Replace 2,100 feet of 4-inch watermain with 8-inch watermain on Colburn Avenue from Bronson Avenue to Third Avenue.  4 \$ 96,000 Carlier Painting  5 \$ 108,000 Replace 2,100 feet of 4-inch watermain with 8-inch watermain on Colburn Avenue from Bronson Avenue to Third Avenue.  5 \$ 108,000 Replace 900 feet of 6-inch watermain with 8-inch watermain on Ridgeview Drive from Dexter Avenue to Fuller Avenue.  5 \$ 108,000 Replace 900 feet of 4-inch watermain with 8-inch watermain on Bronson Street from Milton Avenue from Olaf Street to Bjornson Street.  5 \$ 108,000 Replace 90 feet of 4-inch watermain with 8-inch watermain on Darwin Avenue from Olaf Street to Bjornson Street.  5 \$ 108,000 Replace 90 feet of 4-inch watermain with 8-inch watermain on Bjornson Street from Milton Avenue to Speer Avenue.  5 \$ 96,000 Replace 90 feet of 19-inch watermain in Painch watermain on Bjornson Street from Milton Avenue to Speer Avenue.  5 \$ 96,000 Replace 90 feet of 19-inch watermain with 8-inch watermain on Monroe Ave from Madison Street to Madison Street.  6 \$ 18,000 Replace 90 feet of 6-inch watermain with 8-inch watermain on Monroe Ave from Madison Street to Madison Street.  6 \$ 91,000 Install 700 feet of 19-inch watermain on Northland Drive from Gilbert Road.  7 \$ 95,000 Install 700 feet of 19-inch watermain on Northland Drive from Watermain Street to Williams Street, then west to Marion Avenue.  8 \$ 182,000 Replace 500 feet of 4-inch watermain with 12-inch watermain on Northland Drive from Watermain Street to Williams Street, then west to Marion Avenue.  8 \$ 195,000 Replace 500 feet of 4-inch watermain with 19-inch watermain on Stewart Aven	Replace 1,600 feet of 10-inch watermain with 12-inch watermain on Ives Avenue from Demascus to Magnolia.	3	\$	208,000
Loop 400 feet of 8-inch watermain on Magnola Street from Ives Avenue to Winter Street.  4 \$ 8,600 Replace 1,500 feet of 6-inch watermain with 8-inch watermain on Winter Avenue from Chestnut Street to Cypress Street, then east 90 feet.  4 \$ 18,000 Replace 2,100 feet of 6-inch watermain with 8-inch watermain on Colburn Avenue from Bronson Avenue to Third Avenue.  4 \$ 18,000 Replace 2,100 feet of 6-inch watermain with 8-inch watermain on Colburn Avenue from Bronson Avenue to Third Avenue.  5 \$ 108,000 Replace 9,100 feet of 6-inch watermain with 8-inch watermain on Colburn Avenue from Bronson Avenue to Third Avenue.  5 \$ 108,000 Replace 9,100 feet of 6-inch watermain with 8-inch watermain on Ridgeview Drive from Bexter Avenue to Fuller Avenue.  5 \$ 108,000 Replace 9,00 feet of 4-inch watermain with 8-inch watermain on Darwin Avenue from Olaf Street to Bjornson Street.  5 \$ 108,000 Replace 9,00 feet of 4-inch watermain with 8-inch watermain on Darwin Avenue from Olaf Street to Bjornson Street.  5 \$ 108,000 Replace 700 feet of 14-inch watermain with 8-inch watermain on Bjornson Street from Milton Avenue to Speer Avenue.  5 \$ 96,000 Replace 700 feet of 12-inch watermain in more Street from Milton Avenue to Speer Avenue.  5 \$ 96,000 Replace 400 feet of 6-inch watermain with 8-inch watermain on Morroe Ave from Madison Street.  6 \$ 48,000 Replace 400 feet of 6-inch watermain with 8-inch watermain on Morroe Ave from Madison Street to Madison Street.  6 \$ 48,000 Replace 400 feet of 6-inch watermain on Northland Drive from Gilbert Road.  1 \$ 96,000 Install 700 feet of 12-inch watermain on Northland Drive from Gilbert Road.  1 \$ 96,000 Install 700 feet of 12-inch watermain on Northland Drive from Waterion Street to Williams Street, then west to Marion Avenue.  8 \$ 182,000 Replace 500 feet of 4-inch watermain with 12-inch watermain on Northland Drive from Waterion Street to Williams Street, then west to Marion Avenue.  8 \$ 182,000 Replace 500 feet of 4-inch watermain with 12-inch watermain on Stewart Avenue from Elm Street to	Replace 1,300 feet of 6-inch watermain with 8-inch watermain on Baily Drive from Woodward Avenue to Fuller Avenue.	3	\$	156,000
Replace 20 feet of 6-inch watermain with 8-inch watermain on Winter Avenue from Chestnut Street to Cypress Street, then east 90 feet.  Replace 20 feet of 6 inch watermain with 8-inch watermain on Colburn Avenue from Bronson Avenue to Third Avenue.  4 \$ 252,00 Replace 2,100 feet of 4-inch watermain with 8-inch watermain on Colburn Avenue from Bronson Avenue to Third Avenue.  5 \$ 108,00 Inch Watermain with 8-inch watermain on Ridgeview Drive from Dexter Avenue to Fuller Avenue.  5 \$ 108,00 Inch Watermain With 8-inch watermain on Ridgeview Drive from Dexter Avenue to Fuller Avenue.  5 \$ 108,00 Inch Watermain With 8-inch watermain on Darwin Avenue from Better Avenue to Fuller Avenue.  5 \$ 108,00 Inch Watermain Watermain with 8-inch watermain on Darwin Avenue from Dexter Avenue to Fuller Avenue.  5 \$ 108,00 Inch Watermain Watermain with 8-inch watermain on Darwin Avenue from Dexter Avenue Speer Avenue.  5 \$ 108,00 Inch Watermain Watermain Watermain on Darwin Avenue to Speer Avenue.  5 \$ 108,00 Inch Watermain Watermain Watermain on Darwin Avenue from Bellevue Street to Madison Street.  6 \$ 182,00 Install 7,00 Feet of 12-inch watermain with 8-inch watermain on Finley Avenue from Bellevue Street to Madison Street.  6 \$ 48,00 Install 4,00 Feet of 6 inch watermain with 8-inch watermain on Mornor Ave from Madison St. to dead end  6 \$ 72,00 Install 7,00 Feet of 12-inch watermain on Northland Drive from Madison St. to dead end  6 \$ 91,00 Install 4,600 Feet of 6 inch watermain on Northland Drive from Waterloo Street to Williams Street, then west to Marion Avenue.  8 \$ 182,00 Replace 500 Feet of 8-inch watermain with 12-inch watermain on Northland Drive from Waterloo Street to Williams Street, then west to Marion Avenue.  8 \$ 182,00 Replace 500 Feet of 8-inch watermain with 12-inch watermain on Northland Drive from Waterloo Street to Femonti Street.  8 \$ 65,00 Replace 500 Feet of 8-inch watermain with 12-inch watermain on Marion Avenue from Waterloo Street to Femonti Street.  8 \$ 195,00 Replace 500 Feet of 8-inch watermain wi	Loop 400 feet of 8-inch watermain on Magnolia Street from Ives Avenue to Winter Street.	3		48,000
Replace 800 feet of 6 inch watermain with 8 inch watermain on Green St. from Spring St. to Woodward Ave.         4         \$ 96,00           Replace 2.100 feet of 4 inch watermain with 8-inch watermain on Colburn Avenue from Bronson Avenue to Third Avenue.         5         \$ 50,00           Replace 9.00 feet of 6-inch watermain with 8-inch watermain on Ridgeview Drive from Dexter Avenue to Fuller Avenue.         5         \$ 108,00           New pump and motor at State Street booster station         5         \$ 80,000           Replace 900 feet of 4-inch watermain with 8-inch watermain on Darwin Avenue from Olaf Street to Bjornson Street.         5         \$ 80,000           Replace 900 feet of 4-inch watermain with 8-inch watermain on Bjornson Street from Milton Avenue to Speer Avenue.         5         \$ 96,000           Install 1,400 feet of 12-inch watermain with 8-inch watermain on Flieldy Avenue from Bellevue Street to Madison Street.         6         \$ 182,00           Replace 800 feet of 6-inch watermain with 8-inch watermain on Flieldy Avenue from Bellevue Street to Madison Street.         6         \$ 48,00           Replace 600 feet of 6 inch watermain with 8-inch watermain on Morroe Ave from Madison St. to dead end         6         \$ 72,00           Install 700 feet of 5-inch watermain on 205th watermain on Street Madison St. to dead end         6         \$ 72,00           Install 2,600 feet of 6-inch watermain with 12-inch watermain on Marian Avenue from Waterloo Street to Walliams Street then west to Marion Avenue.         8	Led lighting at the water plant	4	\$	66,000
Replace 2,100 feet of 4-inch watermain with 8-inch watermain on Colburn Avenue from Bronson Avenue to Third Avenue.  4 \$ 252,00 Replace 900 feet of 6-inch watermain with 8-inch watermain on Ridgeview Drive from Dexter Avenue to Fuller Avenue.  5 \$ 108,000 Rew pump and motor at State Street booster station  8 \$ 110,000 New pump and motor at State Street booster station  8 \$ 100,000 Replace 700 feet of 4-inch watermain with 8-inch watermain on Darwin Avenue from Olaf Street to Bjornson Street.  5 \$ 80,000 Replace 700 feet of 4-inch watermain with 8-inch watermain on Bjornson Street from Milton Avenue to Speer Avenue.  5 \$ 96,000 Install 1,400 feet of 12-inch watermain with 8-inch watermain on Bjornson Street from Milton Avenue to Speer Avenue.  5 \$ 96,000 Install 1,400 feet of 6-inch watermain with 8-inch watermain on Finley Avenue from Bellevue Street to Madison Street.  6 \$ 948,000 Replace 400 feet of 6-inch watermain with 8-inch watermain on Finley Avenue from Bellevue Street to Madison Street.  6 \$ 948,000 Replace 400 feet of 6-inch watermain on Northand Drive from Gilbert Road to 14 Mile Road.  6 \$ 72,000 Install 7,000 feet of 12-inch watermain on Northand Drive from Gilbert Road to 14 Mile Road.  6 \$ 72,000 Install 7,000 feet of 12-inch watermain on Northand Drive from Gilbert Road to 14 Mile Road.  7 \$ 958,000 Replace 500 feet of 8-inch watermain with 12-inch watermain on Northand Drive from Waterloo Street to Williams Street, then west to Manon Avenue.  8 \$ 162,000 Replace 500 feet of 8-inch watermain with 12-inch watermain on Marion Avenue from Williams Street to Williams Street, then west to Manon Avenue.  8 \$ 162,000 Replace 500 feet of 8-inch watermain with 12-inch watermain on Marion Avenue from Williams Street to Williams Street, then west to Manon Avenue.  8 \$ 162,000 Replace 500 feet of 8-inch watermain with 8-inch watermain on Marion Avenue from Pine Street to Spruce Street.  8 \$ 162,000 Replace 500 feet of 8-inch watermain with 8-inch watermain on Marion Avenue from Elm Street to Spruce Street.	Replace 1,500 feet of 6-inch watermain with 8-inch watermain on Winter Avenue from Chestnut Street to Cypress Street, then east 90 feet.	4	\$	180,000
Replace 900 feet of 6-inch watermain with 8-inch watermain on Ridgeview Drive from Dexter Avenue to Fuller Avenue.  5 \$ 108,000 Clarifier Painting  5 \$ 110,000 New pump and motor at State Street booster station  8 \$ 108,000 New pump and motor at State Street booster station  8 \$ 108,000 New pump and motor at State Street booster station  8 \$ 108,000 New pump and motor at State Street booster station  8 \$ 108,000 New pump and motor at State Street booster station  8 \$ 108,000 New pump and motor at State Street booster station  8 \$ 108,000 New pump and motor at State Street booster station  8 \$ 108,000 New pump and motor at State Street booster station  8 \$ 108,000 New pump and motor at State Street State S	Replace 800 feet of 6 inch watermain with 8 inch watermain on Green St. from Spring St. to Woodward Ave.	4	\$	96,000
New pump and motor at State Street booster station  Replace 900 feet of 4-inch watermain with 8-inch watermain on Darwin Avenue from Olaf Street to Bjornson Street.  5 \$108,000  Replace 700 feet of 4-inch watermain with 8-inch watermain on Darwin Avenue from Milton Avenue to Speer Avenue.  5 \$96,000  Replace 700 feet of 4-inch watermain with 8-inch watermain on Bjornson Street from Milton Avenue to Speer Avenue.  6 \$182,000  Replace 400 feet of 6-inch watermain with 8-inch watermain on Finley Avenue from Bellevue Street to Madison Street.  6 \$48,000  Replace 400 feet of 6-inch watermain with 8-inch watermain on Monroe Ave from Madison St. to dead end  6 \$72,000  Install 700 feet of 12-inch watermain with 8-inch watermain on Monroe Ave from Madison St. to dead end  6 \$72,000  Install 700 feet of 12-inch watermain on Northland Drive from Gilbert Road to 14 Mile Road.  100 feet of 12-inch watermain on Northland Drive from Gilbert Road to 14 Mile Road.  100 feet of 6-inch watermain with 12-inch watermain on Northland Drive from Waterloo Street to Williams Street, then west to Marion Avenue.  100 Replace 500 feet of 8-inch watermain with 12-inch watermain on Northland Drive from Waterloo Street to Williams Street, then west to Marion Avenue.  100 Replace 500 feet of 8-inch watermain with 12-inch watermain on Northland Drive from Waterloo Street to Williams Street, then west to Marion Avenue.  100 Replace 500 feet of 8-inch watermain with 12-inch watermain, then continue with 900 feet of 12-inch watermain on West Avenue from Northland Drive to Sheridan Street.  100 Replace 500 feet of 4-inch watermain with 8-inch watermain, with 0-inch watermain on West Avenue from Pine Street to Spruce Street.  100 Replace 500 feet of 4-inch watermain with 8-inch watermain on Pine Street to Spruce Street, then west on Spruce to the alley.  101 Seplace 500 feet of 4-inch watermain with 8-inch watermain on Dekraft Avenue from Elm Street to Spruce Street, then west on Spruce to the alley.  101 Seplace 500 feet of 4-inch watermain with	Replace 2,100 feet of 4-inch watermain with 8-inch watermain on Colburn Avenue from Bronson Avenue to Third Avenue.	4	\$	252,000
New pump and motor at State Street booster station Replace 900 feet of 4-inch watermain with 8-inch watermain on Darwin Avenue from Olaf Street to Bjornson Street.  5 \$ 96,001 Replace 900 feet of 4-inch watermain with 8-inch watermain on Bjornson Street from Milton Avenue to Speer Avenue.  5 \$ 96,001 Install 1,400 feet of 12-inch watermain in mit 8-inch watermain on Fliney Avenue from Bellevue Street to Madison Street.  6 \$ 182,001 Install 1,400 feet of 12-inch watermain with 8-inch watermain on Fliney Avenue from Bellevue Street to Madison Street.  6 \$ 48,000 Replace 600 feet of 6-inch watermain with 8-inch watermain on Morroe Ave from Madison St. to dead end  6 \$ 72,001 Install 7,000 feet of 12-inch watermain on Northland Drive from Gilbert Road to 14 Mile Road.  10 Install 7,000 feet of 12-inch watermain on DoS <sup>th</sup> Avenue from 15 Mile Road south to west of Gilbert Road, then east to existing 12-inch watermain.  7 \$ 959,001 Replace 1,400 feet of 8-inch watermain with 12-inch watermain on Northland Drive from Waterioo Street to Williams Street, then west to Marion Avenue.  8 \$ 182,001 Replace 500 feet of 4-inch watermain with 12-inch watermain on Marion Avenue from Williams Street to Williams Street, then west to Marion Avenue.  8 \$ 65,001 Replace 500 feet of 4-inch watermain with 12-inch watermain on Marion Avenue from Williams Street from Street.  8 \$ \$ 195,001 Replace 500 feet of 4-inch watermain with 8-inch watermain on Marion Avenue from Pine Street to Spruce Street.  8 \$ \$ 195,001 Replace 1,000 feet of 4-inch watermain with 8-inch watermain on Stewart Avenue from Elm Street to Spruce Street.  8 \$ \$ 60,001 Replace 1,000 feet of 4-inch watermain with 12-inch watermain on Dekraft Avenue from Elm Street to Spruce Street, then west on Spruce to the alley.  9 \$ 144,001 Replace 1,000 feet of 8-inch watermain with 12-inch watermain on Elmon Street to 190 for Avenue.  8 \$ 60,001 Replace 1,000 feet of 8-inch watermain with 12-inch watermain on Elmon Street to 190 for Avenue.  9 \$ 10,000 Replace 500 feet of 8-inch	Replace 900 feet of 6-inch watermain with 8-inch watermain on Ridgeview Drive from Dexter Avenue to Fuller Avenue.	5	\$	108,000
New pump and motor at State Street booster station Replace 900 feet of 4-inch watermain with 8-inch watermain on Darwin Avenue from Olaf Street to Bjornson Street.  5 \$ 08,000 Install 1,400 feet of 14-inch watermain with 8-inch watermain on Bjornson Street from Milton Avenue to Speer Avenue.  5 \$ 96,000 Install 1,400 feet of 12-inch watermain with 8-inch watermain on Florey Avenue from Bellevue Street to Madison Street.  6 \$ 48,000 Replace 600 feet of 6-inch watermain with 8-inch watermain on Florey Avenue from Bellevue Street to Madison Street.  6 \$ 48,000 Replace 600 feet of 6-inch watermain with 8-inch watermain on Monroe Ave from Madison St. to dead end Install 700 feet of 12-inch watermain with 8-inch watermain on Monroe Ave from Madison St. to dead end Install 700 feet of 12-inch watermain on 12-inch watermain on Monroe Ave from Madison St. to dead end Install 700 feet of 12-inch watermain on 12-inch watermain on Monroe Ave from Waterloo Street to Williams Street, then west to Marion Avenue.  8 \$ 91,000 Install 4,600 feet of 12-inch watermain with 12-inch watermain on Marion Avenue from Waterloo Street to Williams Street, then west to Marion Avenue.  8 \$ 182,000 Replace 600 feet of 8-inch watermain with 12-inch watermain on Marion Avenue from Williams Street to Williams Street, then west to Marion Avenue.  8 \$ 182,000 Replace 600 feet of 4-inch watermain with 12-inch watermain on Marion Avenue from Williams Street for Fremont Street.  8 \$ 919,000 Replace 100 feet of 4-inch watermain with 12-inch watermain on Marion Avenue from Pine Street to Spruce Street.  8 \$ 99,000 Replace 100 feet of 4-inch watermain with 8-inch watermain on Stewart Avenue from Elm Street to Spruce Street.  8 \$ 90,000 Replace 100 feet of 4-inch watermain with 8-inch watermain on Dekraft Avenue from Elm Street to Spruce Street, then west on Spruce to the allely.  9 \$ 144,000 Replace 1,000 feet of 6-inch watermain with 12-inch watermain on Dekraft Avenue from Milton Avenue N, then install another 1,700 feet to Harding Drive.  9 \$ 1350,0	Clarifier Painting	5	\$	110,000
Replace 700 feet of 4-inch watermain with 8-inch watermain on Bjornson Street from Milton Avenue to Speer Avenue.  5 \$96,001 Install 1,400 feet of 12-inch watermain from 205th east to Gilbert Road  Replace 400 feet of 6 inch watermain with 8-inch watermain on Finley Avenue from Bellevue Street to Madison Street.  6 \$48,000 Replace 600 feet of 6 inch watermain with 8 inch watermain on Monroe Ave from Madison St. to dead end  6 \$72,000 Install 4,600 feet of 12-inch watermain on Vorthland Drive from Gilbert Road to 14 Mile Road.  8 \$91,000 Install 4,600 feet of 12-inch watermain on 205 <sup>th</sup> Avenue from 15 Mile Road south to west of Gilbert Road, then east to existing 12-inch watermain.  7 \$598,000 Install 4,600 feet of 12-inch watermain with 12-inch watermain on Northland Drive from Waterloo Street to Williams Street, then west to Marion Avenue.  8 \$98,000 Replace 600 feet of 6-inch watermain with 12-inch watermain on Northland Drive from Waterloo Street to Williams Street, then west to Marion Avenue.  8 \$65,000 Feet of 6-inch watermain with 12-inch watermain on Marion Avenue from Williams Street to Fremont Street.  8 \$65,000 Feet of 6-inch watermain with 12-inch watermain, then continue with 900 feet of 12-inch watermain on West Avenue from Northland Drive to Sheridan Street.  8 \$95,000 Feet of 6-inch watermain with 12-inch watermain on Marion Avenue from Pine Street to Spruce Street.  8 \$96,000 Feet of 6-inch watermain with 8-inch watermain on Stewart Avenue from Eim Street to Spruce Street.  8 \$96,000 Feet of 6-inch watermain with 8-inch watermain on Stewart Avenue from Eim Street to Spruce Street.  8 \$96,000 Feet of 6-inch watermain with 12-inch watermain on Dekraft Avenue from Eim Street to Spruce Street, then west on Spruce to the alley.  9 \$144,000 Feet of 6-inch watermain with 12-inch watermain on Dekraft Avenue from Milton Avenue N, then install another 1,700 feet to Harding Drive from Biomson Street to 190 Pin Avenue.  10 \$95,000 Feet of 6-inch watermain with 14-inch watermain on Eicott Street from Rust A	New pump and motor at State Street booster station	5		80,000
Install 1,400 feet of 12-inch watermain from 205th east to Gilbert Road Replace 400 feet of 6-inch watermain with 8-inch watermain on Finley Avenue from Bellevue Street to Madison Street. 6 \$ 48,000 Replace 600 feet of 6-inch watermain with 8-inch watermain on Monroe Ave from Madison St. to dead end 6 \$ 72,000 Install 700 feet of 12-inch watermain on Northland Drive from Gilbert Road to 14 Mile Road. 6 \$ 91,000 Install 700 feet of 12-inch watermain on Northland Drive from Gilbert Road to 14 Mile Road. 7 \$ 598,000 Replace 1,400 feet of 6-inch watermain on 205th Avenue from 15 Mile Road south to west of Gilbert Road, then east to existing 12-inch watermain. 7 \$ 598,000 Replace 500 feet of 6-inch watermain with 12-inch watermain on Northland Drive from Waterloo Street to Williams Street, then west to Marion Avenue. 8 \$ 65,000 Replace 500 feet of 6-inch watermain with 12-inch watermain on Marion Avenue from Williams Street to Fremont Street. 8 \$ 65,000 Replace 500 feet of 4-inch watermain with 8-inch watermain on Marion Avenue from Pine Street to Spruce Street. 8 \$ 919,5,000 Replace 500 feet of 4-inch watermain with 8-inch watermain on Stewart Avenue from Eim Street to Spruce Street. 8 \$ 60,000 Replace 1,000 feet of 4-inch watermain with 12-inch watermain on Stewart Avenue from Eim Street to Spruce Street, then west on Spruce to the alley. 9 \$ 225,000 Replace 1,200 feet of 3-inch watermain with 12-inch watermain on Stewart Avenue from Eim Street to Spruce Street, then west on Spruce to the alley. 9 \$ 144,000 Replace 1,000 feet of 3-inch watermain with 12-inch watermain on Dekraft Avenue from Milton Avenue N, then install another 1,700 feet to Harding Drive. 9 \$ 351,000 Replace 500 feet of 3-inch watermain with 8-inch watermain on Dekraft Avenue from Milton Avenue N, then install another 1,700 feet to Harding Drive. 9 \$ 144,000 Replace 500 feet of 3-inch watermain with 8-inch watermain on Dekraft Avenue to Sanborn Avenue. 10 \$ 156,000 Replace 500 feet of 5-inch watermain with 8-inch watermain on Escott Street from R	Replace 900 feet of 4-inch watermain with 8-inch watermain on Darwin Avenue from Olaf Street to Bjornson Street.	5	\$	108,000
Install 1,400 feet of 12-inch watermain from 205th east to Gilbert Road Replace 600 feet of 6-inch watermain with 8-inch watermain on Finley Avenue from Bellevue Street to Madison Street.  Replace 600 feet of 6-inch watermain with 8-inch watermain on Morroe Ave from Madison St. to dead end 6 \$ 72,00t Install 700 feet of 12-inch watermain on Northland Drive from Gilbert Road to 14 Mile Road. 6 \$ 91,00t Install 700 feet of 12-inch watermain on Northland Drive from Gilbert Road to 14 Mile Road. 7 \$ 598,00t Replace 600 feet of 6-inch watermain on 205th Avenue from 15 Mile Road south to west of Gilbert Road, then east to existing 12-inch watermain. 7 \$ 598,00t Replace 500 feet of 6-inch watermain with 12-inch watermain on Northland Drive from Waterloo Street to Williams Street, then west to Marion Avenue. 8 \$ 182,00t Replace 500 feet of 6-inch watermain with 12-inch watermain on Marion Avenue from Williams Street to Fremont Street. 8 \$ 65,00t Replace 500 feet of 4-inch watermain with 12-inch watermain on Marion Avenue from Williams Street to Fremont Street. 8 \$ 195,00t Replace 500 feet of 4-inch watermain with 8-inch watermain on Marion Avenue from Pine Street to Spruce Street. 8 \$ 195,00t Replace 100 feet of 4-inch watermain with 8-inch watermain on Stewart Avenue from Elm Street to Spruce Street, then west on Spruce to the alley. 9 \$ 225,00t Replace 1,200 feet of 4-inch watermain with 12-inch watermain on Stewart Avenue from Elm Street to Spruce Street, then west on Spruce to the alley. 9 \$ 144,00t Replace 1,000 feet of 6-inch watermain with 8-inch watermain on Stewart Avenue from Milton Avenue. 10 \$ 156,00t Replace 1,000 feet of 6-inch watermain with 8-inch watermain on Except Street to 190 the Avenue Street S	Replace 700 feet of 4-inch watermain with 8-inch watermain on Bjornson Street from Milton Avenue to Speer Avenue.	5		96,000
Replace 400 feet of 6-inch watermain with 8-inch watermain on Finley Avenue from Bellevue Street to Madison Street.  Replace 600 feet of 6 inch watermain with 8 inch watermain on Monroe Ave from Madison St. to dead end  6 \$ 72,00 Install 700 feet of 12-inch watermain on Northland Drive from Gilbert Road to 14 Mile Road.  6 \$ 91,00 Install 4,600 feet of 12-inch watermain on 205 <sup>th</sup> Avenue from 15 Mile Road south to west of Gilbert Road, then east to existing 12-inch watermain.  7 \$ \$ 598,00 Install 4,600 feet of 6-inch watermain with 12-inch watermain on Northland Drive from Waterloo Street to Williams Street, then west to Marion Avenue.  8 \$ \$ 182,001 Replace 500 feet of 6-inch watermain with 12-inch watermain on Marion Avenue from Williams Street to Fremont Street.  8 \$ \$ 65,001 Replace 600 feet of 4-inch watermain with 12-inch watermain, then continue with 900 feet of 12-inch watermain on West Avenue from Northland Drive to Sheridan Street.  8 \$ \$ 195,001 Replace 500 feet of 4-inch watermain with 8-inch watermain on Marion Avenue from Pine Street to Spruce Street.  8 \$ \$ 60,001 Replace 1500 feet of 4-inch watermain with 8-inch watermain on Stewart Avenue from Elm Street to Spruce Street, then west on Spruce to the alley.  9 \$ 225,000 Replace 1500 feet of 6-inch watermain with 12-inch watermain on Dekraft Avenue from Milton Avenue N, then install another 1,700 feet to Harding Drive.  9 \$ 351,001 Loop 1,300 feet of 8-inch watermain with 8-inch watermain on Dekraft Avenue from Milton Avenue N, then install another 1,700 feet to Harding Drive.  9 \$ 351,001 Replace 500 feet of 6-inch watermain on Marion Avenue from Rust Avenue to Sanborn Avenue.  10 \$ 60,000 Recoal the exterior, wet interior, and part of the dry interior of the Ferris water tower along with other miscellaneous improvements  10 \$ 199,001 Install 1,300 feet of 12-inch watermain on 14 Mile Road from Northland Drive to the University Park Suites  10 \$ 900,001 Redundant raw watermain from wellfield to treatment plant Phase II  11 \$ 600,001 Redundant ra	Install 1,400 feet of 12-inch watermain from 205th east to Gilbert Road	6		182,000
Install 700 feet of 12-inch watermain on Northland Drive from Gilbert Road to 14 Mile Road.  Install 4,600 feet of 12-inch watermain on 205 the Avenue from 15 Mile Road south to west of Gilbert Road, then east to existing 12-inch watermain.  7 \$ 598,00 Replace 1,000 feet of 6-inch watermain with 12-inch watermain on Northland Drive from Waterloo Street to Williams Street, then west to Marion Avenue.  8 \$ 182,000 Replace 500 feet of 8-inch watermain with 12-inch watermain on Northland Drive from Waterloo Street to Fremont Street.  8 \$ 65,000 Replace 600 feet of 4-inch watermain with 12-inch watermain, then continue with 900 feet of 12-inch watermain on West Avenue from Northland Drive to Sheridan Street.  8 \$ 195,000 Replace 500 feet of 4-inch watermain with 8-inch watermain on Marion Avenue from Pine Street to Spruce Street.  8 \$ 195,000 Replace 13,000 feet of 4-inch watermain with 8-inch watermain on Stewart Avenue from Pine Street to Spruce Street, then west on Spruce to the alley.  9 \$ 225,000 Replace 1,200 feet of 4-inch watermain with 12-inch watermain on Dekraft Avenue from Milton Avenue N, then install another 1,700 feet to Harding Drive.  9 \$ 351,000 Loop 1,300 feet of 6-inch watermain with 8-inch watermain on Descript Avenue from Milton Avenue N, then install another 1,700 feet to Harding Drive.  9 \$ 351,000 Replace 500 feet of 6-inch watermain with 8-inch watermain on Escott Street from Rust Avenue to Sanborn Avenue.  10 \$ 165,000 Replace 500 feet of 6-inch watermain on 14 Mile Road from Northland Drive to the University Park Suites  10 \$ 199,000 Redundant raw watermain from wellfield to treatment plant Phase II  11 \$ 600,000 Redundant raw watermain from wellfield to treatment plant Phase II  12 \$ 600,000 Redundant raw watermain from wellfield to treatment plant Phase II  13 \$ 600,000 Redundant raw watermain from wellfield to treatment plant Phase II  14 \$ 600,000 Redundant raw watermain from wellfield to treatment plant Phase II  15 \$ 350,000 Install 2,650 feet of 12 inch watermain on Waddron Way fro	Replace 400 feet of 6-inch watermain with 8-inch watermain on Finley Avenue from Bellevue Street to Madison Street.	6		48,000
Install 4,600 feet of 12-inch watermain on 205 <sup>th</sup> Avenue from 15 Mile Road south to west of Gilbert Road, then east to existing 12-inch watermain.  7 \$ 598,000 Replace 1,400 feet of 6-inch watermain with 12-inch watermain on Northland Drive from Waterloos Street to Williams Street, then west to Marion Avenue.  8 \$ 182,000 Replace 600 feet of 4-inch watermain with 12-inch watermain on Marion Avenue from Williams Street to Fremont Street.  8 \$ 65,000 Replace 600 feet of 4-inch watermain with 12-inch watermain, then continue with 900 feet of 12-inch watermain on West Avenue from Northland Drive to Sheridan Street.  8 \$ 195,000 Replace 500 feet of 4-inch watermain with 8-inch watermain on Marion Avenue from Pine Street to Spruce Street.  8 \$ 195,000 Replace 100 feet of 4-inch watermain with 8-inch watermain on Stewart Avenue from Elm Street to Spruce Street, then west on Spruce to the alley.  9 \$ 225,000 Replace 1,200 feet of 4-inch watermain with 8-inch watermain on Dekraft Avenue from Elm Street to Spruce Street, then west on Spruce to the alley.  9 \$ 144,000 Replace 1,000 feet of 6-inch watermain with 12-inch watermain on Dekraft Avenue from Milton Avenue N, then install another 1,700 feet to Harding Drive.  10 \$ 156,000 Replace 500 feet of 6-inch watermain with 8-inch watermain on Escott Street from Rust Avenue to Sanborn Avenue.  10 \$ 156,000 Replace 500 feet of 6-inch watermain with 8-inch watermain on Escott Street from Rust Avenue to Sanborn Avenue.  10 \$ 160,000 Redundant raw watermain mon the Mile Road from Northland Drive to the University Park Suites  11 \$ 600,000 Redundant raw watermain from wellfield to treatment plant Phase I  12 \$ 600,000 Redundant raw watermain from wellfield to treatment plant Phase II  13 \$ 600,000 Redundant raw watermain from wellfield to treatment plant Phase II  14 \$ 600,000 Redundant raw watermain from wellfield to treatment plant Phase II  15 \$ 350,000 Install 2,650 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase II  16 \$ 350,000 Install 2,300 fee	Replace 600 feet of 6 inch watermain with 8 inch watermain on Monroe Ave from Madison St. to dead end	6	\$	72,000
Install 4,600 feet of 12-inch watermain on 205 th Avenue from 15 Mile Road south to west of Gilbert Road, then east to existing 12-inch watermain.  7 \$ 598,000 Replace 1,400 feet of 6-inch watermain with 12-inch watermain on Northland Drive from Waterloo Street to Williams Street, then west to Marion Avenue.  8 \$ 182,001 Replace 500 feet of 8-inch watermain with 12-inch watermain on Marion Avenue from Williams Street to Fremont Street.  8 \$ \$ 65,000 Replace 600 feet of 4-inch watermain with 12-inch watermain, then continue with 900 feet of 12-inch watermain on West Avenue from Northland Drive to Sheridan Street.  8 \$ 195,000 Replace HS pump No. 3 with adequately sized pump  8 \$ 225,000 Replace HS pump No. 3 with adequately sized pump  9 \$ 225,000 Replace 1,200 feet of 4-inch watermain with 8-inch watermain on Stewart Avenue from Elm Street to Spruce Street, then west on Spruce to the alley.  9 \$ 144,000 Replace 1,000 feet of 6-inch watermain with 12-inch watermain on Dekraft Avenue from Milton Avenue N, then install another 1,700 feet to Harding Drive.  10 \$ 156,000 Replace 500 feet of 6-inch watermain with 8-inch watermain on Escott Street from Rust Avenue to Sanborn Avenue.  10 \$ 160,000 Replace 500 feet of 6-inch watermain with 8-inch watermain on Escott Street from Rust Avenue to Sanborn Avenue.  10 \$ 160,000 Record for the dry interior of the Ferris water tower along with other miscellaneous improvements  10 \$ 199,000 Redundant raw watermain from wellfield to treatment plant Phase I  11 \$ 600,000 Redundant raw watermain from wellfield to treatment plant Phase II  12 \$ 600,000 Redundant raw watermain from wellfield to treatment plant Phase II  13 \$ 600,000 Redundant raw watermain from wellfield to treatment plant Phase II  14 \$ 600,000 Redundant raw watermain from wellfield to treatment plant Phase II  15 \$ 350,000 Redundant raw watermain from wellfield to treatment plant Phase II  16 \$ 350,000 Redundant raw watermain in on Woodward from Bailey Dr. to Waldren Way Phase II  17 \$ 300,000 Redundant raw waterma	Install 700 feet of 12-inch watermain on Northland Drive from Gilbert Road to 14 Mile Road.	6		91,000
Replace 1,400 feet of 6-inch watermain with 12-inch watermain on Northland Drive from Waterloo Street to Williams Street, then west to Marion Avenue.  8 \$ 65,00 feet of 8-inch watermain with 12-inch watermain on Marion Avenue from Williams Street to Fremont Street.  8 \$ 65,00 feet of 8-inch watermain with 12-inch watermain, then continue with 900 feet of 12-inch watermain on West Avenue from Northland Drive to Sheridan Street.  8 \$ 195,00 feet of 8-inch watermain with 8-inch watermain on Marion Avenue from Pine Street to Spruce Street.  8 \$ 195,00 feet of 8-inch watermain with 8-inch watermain on Marion Avenue from Pine Street to Spruce Street.  8 \$ 60,00 feet of 8-inch watermain with 8-inch watermain on Dekraft Avenue from Elm Street to Spruce Street, then west on Spruce to the alley.  9 \$ 225,00 feet of 8-inch watermain with 12-inch watermain on Dekraft Avenue from Milton Avenue N, then install another 1,700 feet to Harding Drive.  100 feet of 6-inch watermain with 12-inch watermain on Escott Street from Rust Avenue to Sanborn Avenue.  100 feet of 6-inch watermain with 8-inch watermain on Escott Street from Rust Avenue to Sanborn Avenue.  100 feet of 6-inch watermain with 8-inch watermain on Escott Street from Rust Avenue to Sanborn Avenue.  100 feet of 6-inch watermain on 14 Mile Road from Northland Drive to the University Park Suites  100 feet of 8-inch watermain on 14 Mile Road from Northland Drive to the University Park Suites  101 \$ 199,00 feet of 12-inch watermain from wellfield to treatment plant Phase I  101 \$ 600,00 feet of 12-inch watermain from wellfield to treatment plant Phase II  102 \$ 600,00 feet of 12-inch watermain on Woodward from Bailey Dr. to Waldren Way Phase I  103 \$ 600,00 feet of 12-inch watermain on Woodward from Bailey Dr. to Waldren Way Phase II  103 \$ 600,00 feet of 12-inch watermain on Woodward from Bailey Dr. to Waldren Way Phase II  103 \$ 600,00 feet of 12-inch watermain on Woodward from Bailey Dr. to Waldren Way Phase II  104 \$ 600,00 feet of 12-inch watermain on Woodward from	Install 4.600 feet of 12-inch watermain on 205 <sup>th</sup> Avenue from 15 Mile Road south to west of Gilbert Road, then east to existing 12-inch watermain.	7		598,000
Replace 500 feet of 8-inch watermain with 12-inch watermain on Marion Avenue from Williams Street to Fremont Street.  Replace 600 feet of 4-inch watermain with 12-inch watermain, then continue with 900 feet of 12-inch watermain on West Avenue from Northland Drive to 8 \$ 195,000 Replace 500 feet of 4-inch watermain with 8-inch watermain on Marion Avenue from Pine Street to Spruce Street.  Replace 500 feet of 4-inch watermain with 8-inch watermain on Marion Avenue from Pine Street to Spruce Street.  Replace 1,200 feet of 8-inch watermain with 8-inch watermain on Stewart Avenue from Elm Street to Spruce Street, then west on Spruce to the alley.  Replace 1,200 feet of 6-inch watermain with 12-inch watermain on Dekraft Avenue from Milton Avenue N, then install another 1,700 feet to Harding Drive.  Replace 1,000 feet of 6-inch watermain on Harding Drive from Bjornson Street to 190 the Avenue.  Replace 500 feet of 8-inch watermain on Harding Drive from Bjornson Street to 190 the Avenue.  Replace 500 feet of 6-inch watermain on Harding Drive from Bjornson Street to 190 the Avenue to Sanborn Avenue.  Recoat the exterior, we tinterior, and part of the dry interior of the Ferris water tower along with other miscellaneous improvements  10 \$ 60,000 Redundant raw watermain from wellfield to treatment plant Phase I  Redundant raw watermain from wellfield to treatment plant Phase II  Redundant raw watermain from wellfield to treatment plant Phase II  Redundant raw watermain from wellfield to treatment plant Phase II  Redundant raw watermain from wellfield to treatment plant Phase II  Redundant raw watermain from wellfield to treatment plant Phase II  Redundant raw watermain from wellfield to treatment plant Phase II  Redundant raw watermain from wellfield to treatment plant Phase II  Redundant raw watermain from wellfield to treatment plant Phase II  Redundant raw watermain from wellfield to treatment plant Phase II  Redundant raw watermain from wellfield to treatment plant Phase II  Redundant raw watermain from wellfield to t		8	\$	182,000
Sheridan Street.  8 \$ 195,000 Replace 500 feet of 4-inch watermain with 8-inch watermain on Marion Avenue from Pine Street to Spruce Street.  8 \$ \$ 60,000 Replace HS pump No. 3 with adequately sized pump Replace 1,200 feet of 4-inch watermain with 8-inch watermain on Stewart Avenue from Elm Street to Spruce Street, then west on Spruce to the alley.  9 \$ 144,000 Replace 1,000 feet of 6-inch watermain with 12-inch watermain on Dekraft Avenue from Milton Avenue N, then install another 1,700 feet to Harding Drive.  9 \$ 351,000 Loop 1,300 feet of 8-inch watermain on Harding Drive from Bjornson Street to 190 <sup>th</sup> Avenue.  10 \$ 156,000 Replace 500 feet of 6-inch watermain with 8-inch watermain on Escott Street from Rust Avenue to Sanborn Avenue.  10 \$ 60,000 Recoat the exterior, wet interior, and part of the dry interior of the Ferris water tower along with other miscellaneous improvements  10 \$ 199,000 Install 1,300 feet of 12-inch watermain on 14 Mile Road from Northland Drive to the University Park Suites  10 \$ 200,000 Redundant raw watermain from wellfield to treatment plant Phase II  11 \$ 600,000 Redundant raw watermain from wellfield to treatment plant Phase II  12 \$ 600,000 Redundant raw watermain from wellfield to treatment plant Phase IV  13 \$ 600,000 Redundant raw watermain from wellfield to treatment plant Phase IV  14 \$ 600,000 Install 2,650 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase II  15 \$ 350,000 Install 2,650 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase II  16 \$ 350,000 Install 2,650 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase II  17 \$ 300,000 Replace 1,800 feet of 6-inch and 8-inch watermain with 12-inch watermain Northland Drive from Freemont to north  18 \$ 462,000 Install 2,400 feet of 61 inch and 8-inch watermain woodward south to 16 inch main west of Meijer  19 \$ 850,000 Install 7,100 feet of 61 inch watermain on Woodward from Waldron Way to 220th	Replace 500 feet of 8-inch watermain with 12-inch watermain on Marion Avenue from Williams Street to Fremont Street.	8		65,000
Replace 500 feet of 4-inch watermain with 8-inch watermain on Marion Avenue from Pine Street to Spruce Street.  Replace HS pump No. 3 with adequately sized pump  9 \$ 225,000  Replace 1,200 feet of 4-inch watermain with 8-inch watermain on Stewart Avenue from Elm Street to Spruce Street, then west on Spruce to the alley.  9 \$ 144,000  Replace 1,000 feet of 6-inch watermain with 12-inch watermain on Dekraft Avenue from Milton Avenue N, then install another 1,700 feet to Harding Drive.  10 \$ 351,000  10 \$ 156,000  Replace 500 feet of 6-inch watermain with 8-inch watermain on Escott Street from Rust Avenue to Sanborn Avenue.  10 \$ 156,000  Recoat the exterior, wet interior, and part of the dry interior of the Ferris water tower along with other miscellaneous improvements  10 \$ 199,000  Install 1,300 feet of 12-inch watermain from wellfield to treatment plant Phase II  11 \$ 600,000  Redundant raw watermain from wellfield to treatment plant Phase II  12 \$ 600,000  Redundant raw watermain from wellfield to treatment plant Phase III  13 \$ 600,000  Redundant raw watermain from wellfield to treatment plant Phase III  14 \$ 600,000  Install 2,650 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase II  15 \$ 350,000  Install 2,650 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase II  16 \$ 350,000  Install 2,300 feet of 6-inch and 8-inch watermain on Woodward south to 16 inch main west of Meijer  17 \$ 300,000  Install 2,400 feet of 6-inch and 8-inch watermain on Woodward to south	Replace 600 feet of 4-inch watermain with 12-inch watermain, then continue with 900 feet of 12-inch watermain on West Avenue from Northland Drive to			-
Replace 500 feet of 4-inch watermain with 8-inch watermain on Marion Avenue from Pine Street to Spruce Street.  Replace HS pump No. 3 with adequately sized pump  9 \$ 225,000  Replace 1,200 feet of 4-inch watermain with 8-inch watermain on Stewart Avenue from Elm Street to Spruce Street, then west on Spruce to the alley.  Replace 1,000 feet of 6-inch watermain with 12-inch watermain on Dekraft Avenue from Milton Avenue N, then install another 1,700 feet to Harding Drive.  10 \$ 351,000  Loop 1,300 feet of 8-inch watermain with 8-inch watermain on Escott Street from Rust Avenue to Sanborn Avenue.  10 \$ 156,000  Replace 500 feet of 6-inch watermain with 8-inch watermain on Escott Street from Rust Avenue to Sanborn Avenue.  10 \$ 60,000  Recoat the exterior, wet interior, and part of the dry interior of the Ferris water tower along with other miscellaneous improvements  10 \$ 199,000  Install 1,300 feet of 12-inch watermain on 14 Mile Road from Northland Drive to the University Park Suites  10 \$ 200,000  Redundant raw watermain from wellfield to treatment plant Phase II  11 \$ 600,000  Redundant raw watermain from wellfield to treatment plant Phase III  12 \$ 600,000  Redundant raw watermain from wellfield to treatment plant Phase IV  Install 2,650 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase II  Install 2,300 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase II  Install 2,300 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase II  Install 2,300 feet of 6-inch and 8-inch watermain on Woodward from Woodward South to 16 inch main west of Meijer  17 \$ 300,000  Install 2,400 feet of 6-inch and 8-inch watermain on Woodward to south  19 \$ 850,000  Install 7,100 feet of 6-inch watermain on 220th from Woodward to south	Sheridan Street.	8	\$	195,000
Replace HS pump No. 3 with adequately sized pump Replace 1,200 feet of 4-inch watermain with 8-inch watermain on Stewart Avenue from Elm Street to Spruce Street, then west on Spruce to the alley.  Replace 1,000 feet of 6-inch watermain with 12-inch watermain on Dekraft Avenue from Milton Avenue N, then install another 1,700 feet to Harding Drive.  Loop 1,300 feet of 8-inch watermain on Harding Drive from Bjornson Street to 190 <sup>th</sup> Avenue.  Replace 500 feet of 6-inch watermain with 8-inch watermain on Escott Street from Rust Avenue to Sanborn Avenue.  Recoat the exterior, wet interior, and part of the dry interior of the Ferris water tower along with other miscellaneous improvements  10 \$ 199,001  Install 1,300 feet of 12-inch watermain on 14 Mile Road from Northland Drive to the University Park Suites  10 \$ 200,000  Redundant raw watermain from wellfield to treatment plant Phase I  Redundant raw watermain from wellfield to treatment plant Phase III  Redundant raw watermain from wellfield to treatment plant Phase III  Redundant raw watermain from wellfield to treatment plant Phase III  Redundant raw watermain from wellfield to treatment plant Phase III  Redundant raw watermain from wellfield to treatment plant Phase III  Redundant raw watermain from wellfield to treatment plant Phase III  Redundant raw watermain from wellfield to treatment plant Phase III  Redundant raw watermain from wellfield to treatment plant Phase II  Redundant raw watermain from wellfield to treatment plant Phase II  Redundant raw watermain from wellfield to treatment plant Phase II  Redundant raw watermain from wellfield to treatment plant Phase II  Redundant raw watermain from wellfield to treatment plant Phase II  Redundant raw watermain from wellfield to treatment plant Phase II  Redundant raw watermain from wellfield to treatment plant Phase II  Redundant raw watermain from wellfield to treatment plant Phase II  Redundant raw watermain from wellfield to treatment plant Phase II  Redundant raw watermain from wellfield to treatment pla	Replace 500 feet of 4-inch watermain with 8-inch watermain on Marion Avenue from Pine Street to Spruce Street.	8		60,000
Replace 1,200 feet of 4-inch watermain with 8-inch watermain on Stewart Avenue from Elm Street to Spruce Street, then west on Spruce to the alley.  Replace 1,000 feet of 6-inch watermain with 12-inch watermain on Dekraft Avenue from Milton Avenue N, then install another 1,700 feet to Harding Drive.  9 \$351,000 Loop 1,300 feet of 8-inch watermain on Harding Drive from Bjornson Street to 190 th Avenue.  10 \$156,000 Replace 500 feet of 6-inch watermain with 8-inch watermain on Escott Street from Rust Avenue to Sanborn Avenue.  10 \$60,000 Recoat the exterior, wet interior, and part of the dry interior of the Ferris water tower along with other miscellaneous improvements  10 \$199,000 Install 1,300 feet of 12-inch watermain on 14 Mile Road from Northland Drive to the University Park Suites  10 \$200,000 Redundant raw watermain from wellfield to treatment plant Phase I Redundant raw watermain from wellfield to treatment plant Phase II Redundant raw watermain from wellfield to treatment plant Phase II Redundant raw watermain from wellfield to treatment plant Phase IV Redundant raw watermain from wellfield to treatment plant Phase IV Install 2,650 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase I Install 2,650 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase II Install 2,300 feet of 12 inch watermain on Waldron Way from Woodward south to 16 inch main west of Meijer Install 2,400 feet of 6-inch and 8-inch watermain with 12-inch watermain Novodward from Freemont to north Install 2,400 feet of 6 linch watermain on Woodward from Woodward to south	Replace HS pump No. 3 with adequately sized pump	9		225,000
Loop 1,300 feet of 8-inch watermain on Harding Drive from Bjornson Street to 190 <sup>th</sup> Avenue.  Replace 500 feet of 6-inch watermain with 8-inch watermain on Escott Street from Rust Avenue to Sanborn Avenue.  Recoat the exterior, wet interior, and part of the dry interior of the Ferris water tower along with other miscellaneous improvements  10 \$ 199,000 install 1,300 feet of 12-inch watermain on 14 Mile Road from Northland Drive to the University Park Suites  10 \$ 200,000 Redundant raw watermain from wellfield to treatment plant Phase I  Redundant raw watermain from wellfield to treatment plant Phase II  Redundant raw watermain from wellfield to treatment plant Phase III  Redundant raw watermain from wellfield to treatment plant Phase III  Redundant raw watermain from wellfield to treatment plant Phase IV  Install 2,650 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase II  Install 2,300 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase II  Replace 1,800 feet of 6-inch and 8-inch watermain with 12-inch watermain Northland Drive from Freemont to north  17 \$ 300,000 Install 2,400 feet of 61 inch and watermain on Woodward from Waldron Way to 220th Install 2,400 feet of 68 inch watermain on 220th from Woodward to south	Replace 1,200 feet of 4-inch watermain with 8-inch watermain on Stewart Avenue from Elm Street to Spruce Street, then west on Spruce to the alley.	9		144,000
Loop 1,300 feet of 8-inch watermain on Harding Drive from Bjornson Street to 190 <sup>th</sup> Avenue.  Replace 500 feet of 6-inch watermain with 8-inch watermain on Escott Street from Rust Avenue to Sanborn Avenue.  Recoat the exterior, wet interior, and part of the dry interior of the Ferris water tower along with other miscellaneous improvements  10 \$ 199,000 install 1,300 feet of 12-inch watermain on 14 Mile Road from Northland Drive to the University Park Suites  10 \$ 200,000 Redundant raw watermain from wellfield to treatment plant Phase I  Redundant raw watermain from wellfield to treatment plant Phase II  Redundant raw watermain from wellfield to treatment plant Phase III  Redundant raw watermain from wellfield to treatment plant Phase III  Redundant raw watermain from wellfield to treatment plant Phase IV  Install 2,650 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase II  Install 2,300 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase II  Replace 1,800 feet of 6-inch and 8-inch watermain with 12-inch watermain Northland Drive from Freemont to north  17 \$ 300,000 Install 2,400 feet of 61 inch and watermain on Woodward from Waldron Way to 220th Install 2,400 feet of 68 inch watermain on 220th from Woodward to south	Replace 1,000 feet of 6-inch watermain with 12-inch watermain on Dekraft Avenue from Milton Avenue N, then install another 1,700 feet to Harding Drive.	9	\$	351,000
Replace 500 feet of 6-inch watermain with 8-inch watermain on Escott Street from Rust Avenue to Sanborn Avenue.  Recoat the exterior, wet interior, and part of the dry interior of the Ferris water tower along with other miscellaneous improvements  10 \$199,000 install 1,300 feet of 12-inch watermain on 14 Mile Road from Northland Drive to the University Park Suites  10 \$200,000 Redundant raw watermain from wellfield to treatment plant Phase I  Redundant raw watermain from wellfield to treatment plant Phase II  Redundant raw watermain from wellfield to treatment plant Phase III  Redundant raw watermain from wellfield to treatment plant Phase III  Redundant raw watermain from wellfield to treatment plant Phase IV  Install 2,650 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase II  Install 2,300 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase II  Install 2,300 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase II  Replace 1,800 feet of 6-inch and 8-inch watermain with 12-inch watermain Northland Drive from Freemont to north  17 \$250,000 Install 2,400 feet of 12 inch watermain on Woodward from Waldron Way to 220th  18 \$462,000 Install 7,100 feet of 6 8 inch watermain on 220th from Woodward to south		10		156,000
Recoat the exterior, wet interior, and part of the dry interior of the Ferris water tower along with other miscellaneous improvements  10 \$ 199,000 Install 1,300 feet of 12-inch watermain on 14 Mile Road from Northland Drive to the University Park Suites  10 \$ 200,000 Redundant raw watermain from wellfield to treatment plant Phase I Redundant raw watermain from wellfield to treatment plant Phase III Redundant raw watermain from wellfield to treatment plant Phase III Redundant raw watermain from wellfield to treatment plant Phase III Redundant raw watermain from wellfield to treatment plant Phase IV Install 2,650 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase I Install 2,650 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase II Install 2,300 feet of 12 inch watermain on Waldron Way from Woodward south to 16 inch main west of Meijer  Replace 1,800 feet of 6-inch and 8-inch watermain with 12-inch watermain Northland Drive from Freemont to north  17 \$ 250,000 Install 2,400 feet of 12 inch watermain on Woodward from Waldron Way to 220th Install 7,100 feet of 6 inch watermain on 220th from Woodward to south				60,000
Install 1,300 feet of 12-inch watermain on 14 Mile Road from Northland Drive to the University Park Suites  Redundant raw watermain from wellfield to treatment plant Phase I  Redundant raw watermain from wellfield to treatment plant Phase II  Redundant raw watermain from wellfield to treatment plant Phase III  Redundant raw watermain from wellfield to treatment plant Phase III  Redundant raw watermain from wellfield to treatment plant Phase III  Redundant raw watermain from wellfield to treatment plant Phase IV  Install 2,650 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase II  Install 2,650 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase II  Install 2,300 feet of 12 inch watermain on Waldron Way from Woodward south to 16 inch main west of Meijer  Replace 1,800 feet of 6-inch and 8-inch watermain with 12-inch watermain Northland Drive from Freemont to north  Redundant raw watermain on Woodward from Waldron Way to 220th  Install 2,400 feet of 6 inch watermain on Woodward from Waldron Way to 220th  Redundant raw watermain on 220th from Woodward to south  10  \$200,000				
Redundant raw watermain from wellfield to treatment plant Phase I  Redundant raw watermain from wellfield to treatment plant Phase II  Redundant raw watermain from wellfield to treatment plant Phase III  Redundant raw watermain from wellfield to treatment plant Phase III  Redundant raw watermain from wellfield to treatment plant Phase IV  Install 2,650 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase I  Install 2,650 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase II  Install 2,300 feet of 12 inch watermain on Waldron Way from Woodward south to 16 inch main west of Meijer  Replace 1,800 feet of 6-inch and 8-inch watermain with 12-inch watermain Northland Drive from Freemont to north  Install 2,400 feet of 12 inch watermain on Woodward from Waldron Way to 220th  Install 7,100 feet of 6 inch watermain on 220th from Woodward to south				200.000
Redundant raw watermain from wellfield to treatment plant Phase II  Redundant raw watermain from wellfield to treatment plant Phase III  13 \$600,000 Redundant raw watermain from wellfield to treatment plant Phase IV  Install 2,650 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase I  Install 2,650 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase II  Install 2,300 feet of 12 inch watermain on Waldron Way from Woodward south to 16 inch main west of Meijer  Replace 1,800 feet of 6-inch and 8-inch watermain with 12-inch watermain Northland Drive from Freemont to north  Install 2,400 feet of 12 inch watermain on Woodward from Waldron Way to 220th  Install 7,100 feet of 6 inch watermain on 220th from Woodward to south				600,000
Redundant raw watermain from wellfield to treatment plant Phase III  Redundant raw watermain from wellfield to treatment plant Phase IV  Install 2,650 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase I  Install 2,650 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase II  Install 2,300 feet of 12 inch watermain on Waldron Way from Woodward south to 16 inch main west of Meijer  Replace 1,800 feet of 6-inch and 8-inch watermain with 12-inch watermain Northland Drive from Freemont to north  Replace 1,800 feet of 12 inch watermain on Woodward from Waldron Way to 220th  Install 2,400 feet of 6 inch watermain on Woodward from Waldron Way to 220th  Replace 1,700 feet of 6 inch watermain on 220th from Woodward to south				,
Redundant raw watermain from wellfield to treatment plant Phase IV  Install 2,650 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase I  Install 2,650 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase II  Install 2,300 feet of 12 inch watermain on Waldron Way from Woodward south to 16 inch main west of Meijer  Install 2,300 feet of 6-inch and 8-inch watermain with 12-inch watermain Northland Drive from Freemont to north  Install 2,400 feet of 12 inch watermain on Woodward from Waldron Way to 220th  Install 7,100 feet of 6 inch watermain on 220th from Woodward to south  Install 7,100 feet of 6 inch watermain on 220th from Woodward to south  Install 7,100 feet of 8 inch watermain on 220th from Woodward to south	l e e e e e e e e e e e e e e e e e e e	<u> </u>		600,000
Install 2,650 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase I Install 2,650 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase II Install 2,300 feet of 12 inch watermain on Waldron Way from Woodward south to 16 inch main west of Meijer Install 2,300 feet of 12 inch watermain on Waldron Way from Woodward south to 16 inch main west of Meijer Install 2,400 feet of 6-inch and 8-inch watermain with 12-inch watermain Northland Drive from Freemont to north Install 2,400 feet of 12 inch watermain on Woodward from Waldron Way to 220th Install 7,100 feet of 6 inch watermain on 220th from Woodward to south Install 7,100 feet of 6 inch watermain on 220th from Woodward to south Install 7,100 feet of 8 inch watermain on 220th from Woodward to south				600,000
Install 2,650 feet of 12 inch watermain on Woodward from Bailey Dr. to Waldren Way Phase II16\$ 350,000Install 2,300 feet of 12 inch watermain on Waldron Way from Woodward south to 16 inch main west of Meijer17\$ 300,000Replace 1,800 feet of 6-inch and 8-inch watermain with 12-inch watermain Northland Drive from Freemont to north17\$ 250,000Install 2,400 feet of 12 inch watermain on Woodward from Waldron Way to 220th18\$ 462,000Install 7,100 feet of 6 inch watermain on 220th from Woodward to south19\$ 850,000	l I		_	350,000
Install 2,300 feet of 12 inch watermain on Waldron Way from Woodward south to 16 inch main west of Meijer17\$ 300,000Replace 1,800 feet of 6-inch and 8-inch watermain with 12-inch watermain Northland Drive from Freemont to north17\$ 250,000Install 2,400 feet of 12 inch watermain on Woodward from Waldron Way to 220th18\$ 462,000Install 7,100 feet of 6 8 inch watermain on 220th from Woodward to south19\$ 850,000				350.000
Replace 1,800 feet of 6-inch and 8-inch watermain with 12-inch watermain Northland Drive from Freemont to north  17 \$ 250,000 Install 2,400 feet of 12 inch watermain on Woodward from Waldron Way to 220th Install 7,100 feet of 6 inch watermain on 220th from Woodward to south  18 \$ 462,000 Install 7,100 feet of 6 inch watermain on 220th from Woodward to south				300,000
Install 2,400 feet of 12 inch watermain on Woodward from Waldron Way to 220th18\$ 462,000Install 7,100 feet of 6 8 inch watermain on 220th from Woodward to south19\$ 850,000	,			250,000
Install 7,100 feet of of 8 inch watermain on 220th from Woodward to south 19 \$ 850,000				462.000
	,			- ,
	Install 4,100 feet of 8 inch watermain from south end of 220th east to 215th and north to complete loop	20	\$	500,000

INFLATION FACTOR (%) - 2.0

EXPENSES	Current Year	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
OPERATIONS & MAINTENANCE										
Salaries	\$ 334,400	\$ 341,088	\$ 347,910	\$ 354,868	\$ 361,965	\$ 369,205	\$ 376,589	\$ 384,120	\$ 391,803	\$ 399,639
Benefits	\$ 302,700	\$ 308,754		\$ 321,228	\$ 327,652			\$ 347,707		\$ 361,755
Uniform	\$ 1,200		\$ 1,248	\$ 1,273	\$ 1,299	\$ 1,325			\$ 1,406	\$ 1,434
DPW Services	\$ 144,700	\$ 147.594	\$ 150,546	\$ 153,557	\$ 156.628				\$ 169,539	\$ 172.930
Chemicals	\$ 40,000	\$ 40.800		\$ 42.448	\$ 43,297	\$ 44,163	+ - ,	*, -	\$ 46,866	\$ 47.804
Operational Supplies	\$ 68,000	\$ 69.360	, , ,	\$ 72,162	\$ 73,605			* -,-	\$ 79,673	\$ 81,266
Maintenance Materials	\$ 30,000	\$ 30,600	•	\$ 31,836	\$ 32,473				\$ 35,150	
Contract Services	\$ 90,000	\$ 91,800		\$ 95,509	\$ 97.419				\$ 105,449	\$ 107,558
Fuel	\$ 2,000	\$ 2,040		\$ 2,122	\$ 2,165				\$ 2,343	\$ 2,390
Annual Well Maintenance	\$ 20.000	\$ 20,400		\$ 21,224	\$ 21.649	\$ 22.082			\$ 23,433	\$ 23,902
Wellhead Protection Measures	\$ 2.500	\$ 2.550	\$ 2,601	\$ 2.653	\$ 2,706	\$ 2.760	, , , , ,	* /-	\$ 2,929	\$ 2,988
Tank Inspection	\$ 2,500	\$ 2,550	, , , , , ,	\$ 2,653	\$ 2,706	,	, , , , ,	,-	\$ 2,929	\$ 2,988
MDEQ Fee	\$ 14.600	\$ 14.892	\$ 15.190	\$ 15.494	\$ 15.804	\$ 16,120			\$ 17.106	\$ 17.448
Engineering Services	\$ 22,000	\$ 22,440		\$ 23,347	\$ 23,814	\$ 24,290			\$ 25,777	\$ 26,292
Independent Audit Fees	\$ 2.800	\$ 2.856	\$ 2,913	\$ 2,971	\$ 3,031	\$ 3.091	\$ 3,153		\$ 3.281	\$ 3,346
Insurance Coverages	\$ 22.100	\$ 22.542	\$ 22,993	\$ 23,453	\$ 23,922	\$ 24.400			\$ 25,894	\$ 26,412
Operator License Fees	\$ 500	\$ 510		\$ 531	\$ 541	\$ 552	, , , , , , , , , , , , , , , , , , , ,		\$ 586	\$ 598
Travel Expenses	\$ 3.000		\$ 3.121	\$ 3,184	\$ 3,247	\$ 3,312			\$ 3,515	\$ 3,585
Training	\$ 1,500	\$ 1,530	\$ 1,561	\$ 1,592	\$ 1,624	\$ 1,656			\$ 1,757	\$ 1,793
Public Utilities	\$ 175.000	\$ 178.500	\$ 182.070	\$ 185.711	\$ 189,426				\$ 205.040	\$ 209,141
Cross Connection	\$ 175,000	\$ 178,300		\$ 23,347	\$ 23,814				\$ 25,777	\$ 26,292
Operational Repairs & Maintenance	\$ 74,000	\$ 75.480	, , , , , , , , , , , , , , , , , , , ,	\$ 78.529	\$ 23,814		, , ,	* -,	\$ 86.703	\$ 88.437
·	\$ 1,000	\$ 75,460	* -,	\$ 1,061	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				*,	
Membership Fees Lunch/ Dinner Meetings	\$ 1,000	\$ 1,020		\$ 1,061	\$ 1,082 \$ 108					\$ 1,195 \$ 120
Equipment Equipment	\$ 8,000	Ť	\$ 8,323	\$ 8.490	\$ 8,659	\$ 8,833			\$ 9,373	\$ 9,561
• •	\$ 60.000			\$ 63.672		\$ 66.245				
Equipment Rental	\$ 60,000	\$ 73.440		\$ 76.407	* ',			*,-	\$ 70,300 \$ 84,359	\$ 71,706 \$ 86,047
Wireless Meter Reading		\$ 73,440	\$ 74,909	\$ 76,407	\$ 77,935 \$ -	\$ 79,494	\$ 81,084 \$ -		\$ 84,359 \$ -	\$ 86,047
Security Cameras Software	\$ 15,000 \$ 2,000	\$ 2,040	T	\$ 2,122	\$ 2,165	7	Ψ	Ψ	\$ 2,343	\$ 2,390
Software Maintenance	\$ 900	\$ 918	\$ 936	\$ 955	\$ 974	\$ 994	\$ 1,014	\$ 1,034	\$ 1,054	\$ 1,076
TOTAL OM&R EXPENSES	\$ 1,534,500	\$ 1,549,890	\$ 1,580,888	\$ 1,612,506	\$ 1,644,756	\$ 1,677,651	\$ 1,711,204	\$ 1,745,428	\$ 1,780,336	\$ 1,815,943
			·	,	, ,		, ,	, ,		
Debt Services	\$ 222,400	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Improvements	\$ 485,000	\$ 546,300	\$ 513,060	\$ 605,880	\$ 512,040	\$ 400,860	\$ 609,960	\$ 512,040	\$ 734,400	\$ 627,300
Water Replacement	\$ -	\$ 200,000	\$ 250,000	\$ 200,000	\$ 300,000	\$ 350,000	\$ 250,000	\$ 300,000	\$ 150,000	\$ 250,000
General Fund Contribution	\$ 271,500	\$ 276,930	\$ 282,469	\$ 288,118	\$ 293,880	\$ 299,758	\$ 305,753	\$ 311,868	\$ 318,106	\$ 324,468
TOTAL EXPENSES	\$ 2,513,400	\$ 2,573,120	\$ 2,626,416	\$ 2,706,504	\$ 2,750,676	\$ 2,728,269	\$ 2,876,917	\$ 2,869,336	\$ 2,982,842	\$ 3,017,711
REVENUES										
User charge Revenue***	\$ 2,568,600	\$ 2,619,972	\$ 2,672,371	\$ 2,725,819	\$ 2,780,335	\$ 2,835,942	\$ 2,892,661	\$ 2,950,514	\$ 3,009,524	\$ 3,069,715
Miscellaneous Revenue	\$ 5,000	\$ 5,100	\$ 5,202	\$ 5,306	\$ 5,412	\$ 5,520	\$ 5,631	\$ 5,743	\$ 5,858	\$ 5,975
Interest Income	\$ 5,000	\$ 5,100	\$ 5,202	\$ 5,306	\$ 5,412	\$ 5,520	\$ 5,631	\$ 5,743	\$ 5,858	\$ 5,975
TOTAL REVENUES	\$ 2,578,600	\$ 2,630,172	\$ 2,682,775	\$ 2,736,431	\$ 2,791,160	\$ 2,846,983	\$ 2,903,922	\$ 2,962,001	\$ 3,021,241	\$ 3,081,666
BUDGET SURPLUS/DEFICIT	\$ 65,200	\$ 57,052	\$ 56,359	\$ 29,927	\$ 40,484	\$ 118,714	\$ 27,006	\$ 92,665	\$ 38,399	\$ 63,955

<sup>\*</sup> The 10 Year Budget is for estimation purposes only. It is not intended for determining debt funding needs. For a more accurate debt evaluation please seek the services of a financial advisor.

<sup>\*\*</sup> The annual inflation factor can be found at the following website http://www.usinflationcalculator.com/inflation/historical-inflation-rates/

<sup>\*\*\*</sup> See detailed calculations for current year in Attachment 2 and 3

# Attachment 1 SCHEDULE OF WATER & SEWER RATES

	WAT	ER RATES EFFECTIVE JULY 1,	2017	WATER RA	TES EFFECTIVE JULY 1, 2017
4		ORDINANCE NO. 703-06-17	ORDINANCE No. 704-06-17		
METER	RESIDENTIAL	COMMERCIAL/INDUSTRIAL	INSTITUTIONAL	RESIDENTIAL	COMMERCIAL/INDUSTRIAL/INSTITUTIONAL
SIZE	MINIMUM BILLING - WATER	MINIMUM BILLING - WATER	MINIMUM BILLING - WATER	MINIMUM BILLING - SEWER	MINIMUM BILLING - SEWER
5/8	\$4.00 Base Charge	\$4.00 Base Charge	\$10.00 Base Charge	\$5.40 Base Charge	\$5.40 Base Charge
3/4	\$4.00 Base Charge	\$8.25 Base Charge	\$16.80 Base Charge	\$5.40 Base Charge	\$23.71 Base Charge
1	\$4.00 Base Charge	\$24.68 Base Charge	\$27.67 Base Charge	\$5.40 Base Charge	\$39.64 Base Charge
1 1/2		\$43.48 Base Charge	\$59.87 Base Charge		\$90.45 Base Charge
2		\$118.37 Base Charge	\$115.17 Base Charge		\$218.70 Base Charge
3		\$218.75 Base Charge	\$197.07 Base Charge		\$373.73 Base Charge
4		\$195.06 Base Charge	\$374.87 Base Charge		\$662.90 Base Charge
6		\$421.49 Base Charge	\$606.57 Base Charge		\$1,189.64 Base Charge

#### WATER

Commodity Charge of \$6.15/1,000 gallons Commodity Charge Institutional Water Rate \$7.00/1,000 gallons

#### <u>SEWER</u>

Sewer Rate \$7.00/1,000 gallons.

Sewer Flat Rate \$61.40/unit/month(\*8 Units x \$7.00 + \$5.40 Base Charge)

\*8 Units established - City Ordinance 54.10

IPP Sewer Rate \$7.82/1,000 gallons (\$7.00 Sewer + \$0.82 IPP Rate from User Charge).

IPP Flat Rate \$6.56/unit/month (\*8 Units x \$0.82 IPP Rate from User Charge)

Total Estimated User Charge Revenue

\$2,568,605.74

## 2017 Base Revenue

Meter Size	Customers	Base Rate	Annual Base Revenue
5/8	1878	\$4.00	\$90,144.00
3/4	64	\$8.25	\$6,336.00
1	151	\$24.68	\$44,720.16
1-1/2	76	\$43.48	\$39,653.76
2	62	\$118.37	\$88,067.28
3	23	\$218.75	\$60,375.00
4	5	\$195.06	\$11,703.60
6	1	\$421.49	\$5,057.88
Flat	<u>1</u>	\$53.20	<u>\$638.40</u>
	2261		\$346,696.08
2017 Revenue P	Projection		
FY 2016 Unit Co	nsumption		332,789
Projected Consu	imption Increase		0.00%
FY 2017 Estimat	ed Unit Consump	otion	332,789
New Connection	ns		<u>3800</u>
FY 2018 Adjuste	d Consumption		336,589
Unit Rate			\$6.15
Estimated Volur	metric Revenue		\$2,070,022.35
	utional Adjustme	nt	\$116,937.31
Estimated Base	•		\$346,696.08
	Administrative Inc	ome	\$34,950
			7 - 1,000

## **Water Institutional Rate**

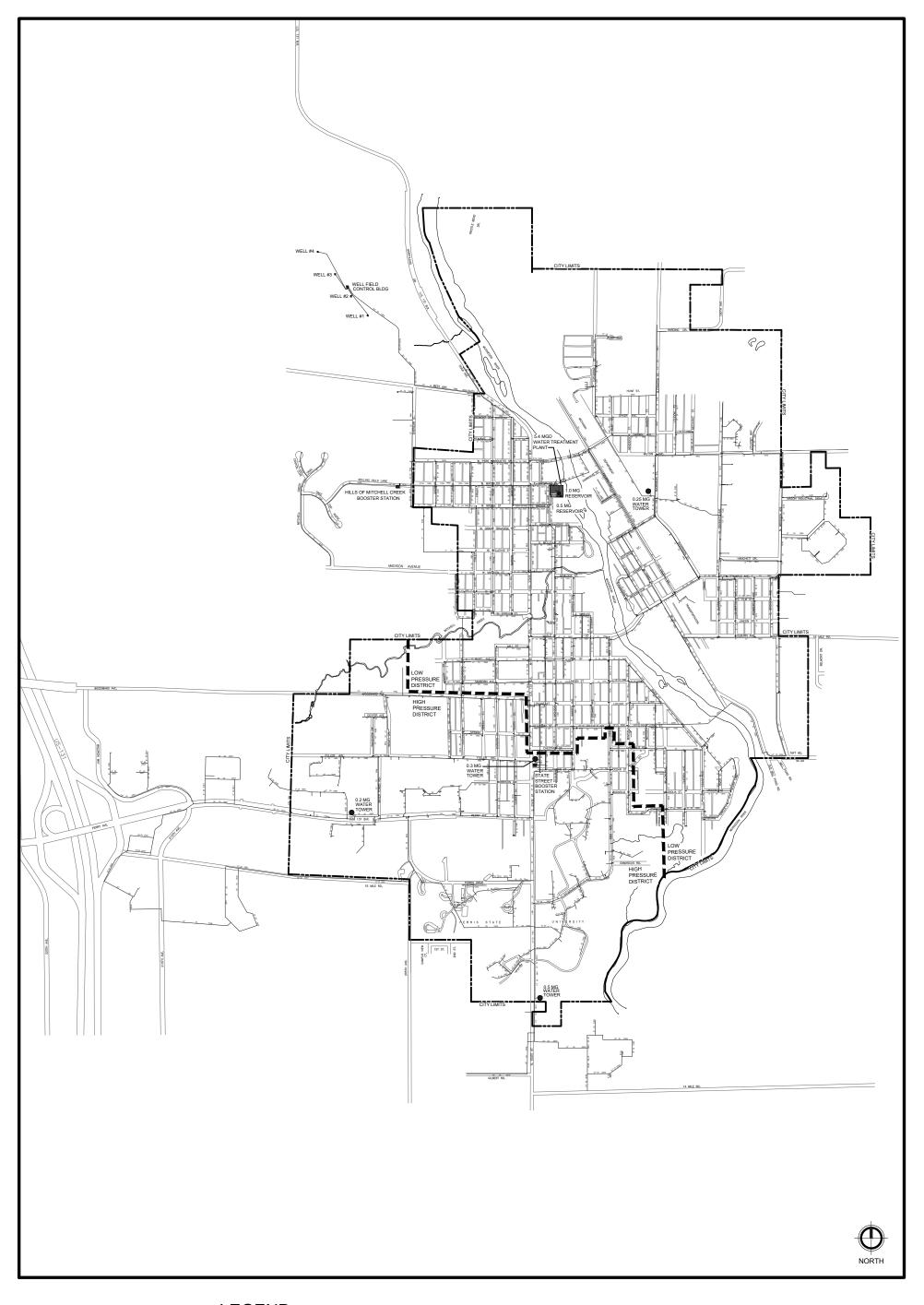
Fiscal Year 2016/2017

Attachment 3

			Annual Base	Monthly Base Rate	Annual Base Rate
Meter Size	Customers	Base Rate	Revenue	Difference	Difference
5/8"	73	\$10.00	\$8,760.00	\$6.00	\$5,256.00
3/4"	7	\$16.80	\$1,411.20	(\$2.40)	(\$201.79)
1"	81	\$27.67	\$26,895.24	\$5.18	\$5,032.61
1 -1/2"	18	\$59.87	\$12,931.92	\$21.50	\$4,644.66
2"	22	\$115.17	\$30,404.88	(\$1.19)	(\$313.79)
3"	20	\$197.07	\$47,296.80	(\$13.75)	(\$3,299.92)
4"	4	\$374.87	\$17,993.76	\$71.42	\$3,428.16
6"	0	\$606.57	\$0.00	\$275.41	\$0.00
Total	225		\$145,693.80		\$14,545.92

## **Institutional Rate Comparison**

Base Rate Difference	\$14,545.92
FY 2016 Volume	114,373
Projected Consumption Decrease	<u>2.00%</u>
FY 2017 Estimated Volume	116,660
Creek's Edge Connection	2,300
Hampton Inn	600
The Brooke Assisted Living	900
Adjusted FY 2016 Consumption	120,460
Standard Volumetric Rate	\$6.15
Standard Volume Revenue	\$740,831.83
Institutional Volumetric Rate Institutional Volume Revenue	<u>\$7.00</u> \$843,223.22
Difference in Institutional Volume	\$102,391.39
Net Difference in Institutional Rates	\$116,937.31



# LEGEND

<u>★</u> WATERMAIN WITH SIZE

† FIRE HYDRANT

