TETRA TECH, INC.

INTEROFFICE MEMORANDUM

TO: Marlene Chockley. Steve Aynes

FROM: Brian Rubel

DATE: August 4, 2017

SUBJECT: Connection Fee/Rate Update

At the July 29 board of trustees meeting, additional information on the proposed connection fee update was requested. This memo provides that information.

BACKGROUND

A connection fee and rate study was last completed in April 2014. A critical component of that study was an evaluation of connection fees for new development. The study confirmed that the Township was justified to have a connection fee of $5,939. However, the Township elected to keep the connection fee at $3,550.

While there has not been significant growth the last few years, several developers have approached the Township about new developments in the land areas planned for MDR in the Township's Master Plan. Since 2014, the Township has studied the WWTP and sewer system and prepared cost opinions for improvements to those systems needed to accommodate growth in the MDR areas. There is also the potential for new development in Green Oak Township to contractually connect to the sewer system and a low connection fee may not equitably compensate Northfield Township for the cost of improvements needed to accommodate that development.

Additionally, the Township has recently refunded reserve funds to the Horseshoe Lake SAD. In 2014, the Township's cash reserves in the utility were low. With this refund, it is unknown if the reserve is adequate to finance an emergency repair to any part of the system.

STUDY UPDATE

Key items to be achieved in the fee/rate update include:

Connection Fees
What might the connection fee look like to generate revenue to pay for potential improvements at the WWTP and sewer system? The study would generate several alternative fees based on different projects the Township may wish to implement.

User Rates
What changes to the Township's rates should be considered to both generate revenue to pay for costs but also reserve enough money to pay for emergency needs? The rate study in 2014 projected Township revenue and costs for future years. However, actual revenues and costs may be higher or lower. A rate update will evaluate how those projections are tracking and what changes, if any, may be needed. It is much less costly to look at user rates concurrent with connection fees than it would be to evaluate connection fees now and user rates in two year.

JAMES E. COX
NORTHFIELD TOWNSHIP
WATER POLLUTION CONTROL FACILITY
11500 LEMEN ROAD WHITMORE LAKE MICHIGAN
PHONE 734-449-4159

To:	**Northfield Township Board of Trustees**
From:	**Dan Willis Wastewater Treatment Plant Superintendent**
Date:	**August 10, 2017**
Subject:	**Rate Study**

Northfield Township Board,

The township has been in talks with various developers about different projects that could increase the flow in in sewer system and plant. It is my view that we should set sewer rates and connection fees that allows the township to accept projects without placing a burden on the existing customers. Some of the sewers and plant equipment are approaching 50 years of use and are requiring more maintenance every year. A sewer rate and tap fee study would show what has to be done to meet the townships needs.
In conclusion I propose the board approves this study so we can meet any projects with the funds in place to pursue them.

Thank You,

Dan Willis

Wastewater Treatment Plant Supervisor

SEWER RATE COMPARISON OF SURROUNDING COMMUNITIES

Assumption: 2 people per household averaging 100gallons per person per day.

Hamburg Twp:		$151.50 per quarter
Brighton Twp:		$170.50 per quarter
Village of Pinckney:	unmetered customers	$86.00 per quarter for 1 to 3 bedroom $20.00 for each additional bedroom
	Metered customers $3.875 per 1000 gallons used or $69.75 per quarter + Service readiness charge: 3/4" meter $23.00 per quarter; 1" meter $115.00: 1.5" meter $57.50; 2" meter $184.00; 3" $402.50	
City of Brighton: Service charge:	$3.38 per 1000 gallons used bi-monthly or $40.56 which equals to $60.84 + ¾"meter $40.42; 1"meter $68.73; 1.5" $137.44; 2"$218.28	
City of Chelsea:	$7.44 per 1000 gallons used or $134 per quarter + Service charge; ¾"meter $17.10; 1" meter $20.83; 1.5" $64.49; 2" $101.48	
City of Saline:	$3.73 per 1000 gallons used or $67.14 per quarter + Service charge; ¾" meter $16.42; 1" meter $41.05; 1.5" $82.10; 2" $131.36	
Village of Dexter:	$8.02 bi-monthly per 1000 gallons used or $96.24 bi- monthly or $144.36 per quarter plus a $6.52 fee per user.	
Hartland Township:	$6.70 per 1000 gallons used or $ 120.15 per quarter + $22.16 readiness to serve charge, + $14.94 capital charge, + $31.71 grinder pump surcharge (for those that have a grinder pump).	

*assuming most homes have a ¾" water line to house:

Municipality	Rate	Service Charge	Avg. cost/quarter
Hamburg Twp	$151.50/qtr	na	$151.50
Brighton Twp	$170.50/qtr	na	$171.50
Village of Pinckney	$3.875/1000 gals	$23.00	$104.00
City of Brighton	$3.38/1000gals	$40.42	$101.26
City of Chelsea	$7.44/1000gals	$17.10	$151.10
City of Saline	$3.73/1000gals	$16.42	$83.56
Village of Dexter	$8.02/1000gals	$6.52	$150.88
Hartland Township	$120.15/ qtr	$37.10	$157.25

Memo

To: Northfield Township Board of Trustees

From: Marlene Chockley, Supervisor

RE: Wastewater Treatment "SmartRate" Study

Date: August 9, 2017

Trustees,

Enclosed with this packet is the 2014 rate study that was produced by TetraTech. With each rate study, a great deal of data is compiled and recommendations are made for appropriate fees to be charged to ensure that monies are available to operate, repair, and expand the system as necessary. The quarterly fees that a user pays is primarily for operations and repairs. The connection fee allows the township to recover the prorated share of the parcel's use of the treatment plant and downstream sewers passing along the bulk of those costs to new users.

By now you have all read numerous reports on the township's wastewater treatment capacity, but it basically boils down to the fact that the township has no significant remaining capacity at the plant under average conditions if it reserves the 873 REUs (residential equivalency units) owed to Green Oak Township to honor the contract with them (see page 7 of the Wastewater Capacity Evaluation). If it does not honor the contract, there are approximately 800 REUs available.

In addition, the plant is currently unable on occasion to fully treat the effluent during springtime wet weather. We have been cautioned to not allow more than approximately 100 REUs into the system without building an equalization basin to moderate the flow and increase our treatment capacity.

Keeping in mind that 100 REUs recommendation, consider the current state of system commitments:

- There are over 100 lots equaling **100 REUs** in the mobile home park that are committed but not currently in use.
- The township has a contract with Green Oak Township to provide **104** more connections around Whitmore Lake. While all of those are unlikely to be used because that area is substantially built out, the commitment exists.
- The township has an additional contract with Green Oak to provide another **769 REUs** northwest of the US 23 – 8 Mile Rd intersection. This contract has a greater potential to be called upon as Green Oak is experiencing significant growth. However, I am not aware of any inquiries as of yet.
- Land owners who are already paying for the 7 Mile Road, North Territorial Road, and Whitmore Lake Road SADs are expecting to be able to tap in to the system for potentially **1865 REUs**.

If any of the above occur, we would need to initiate the equalization basin construction. The basin alone would only allow us an additional 1500 REUs above current levels, but would give the township time, perhaps decades, to plan and save for the actual expansion of the plant.

That argument for the equalization basin only takes into account what has already been committed by contract.

However, we have a Master Plan that is widely accepted by the community as the growth plan for the township. Development is targeted toward the US 23 corridor and most will require wastewater treatment. We are actively planning for downtown revitalization that may require additional wastewater treatment. The North Village site has a housing component suggested of over 150 units each requiring an REU. We have mixed use zoning at the 8 Mile – US 23 interchange where we could potentially have a hotel and shopping in addition to residential. The Kelley Farm is a possible development site as is a large area south of Wildwood Lake. They would all need wastewater treatment.

Several of us on the board made growth in accordance with the Master Plan a key goal if we were elected, but we will have very limited growth potential if we don't address the township's wastewater treatment capacity and address it in a way that puts the burden on new development. This rate study will ensure that we set connection fees appropriately to build the system that is needed and charge a quarterly rate that covers its operation and maintenance that is fact-based and fair. It will help us develop a fee structure that surcharges new developments to build an additional transmission line when it is needed.

We also have transmission line repairs and improvements that are needed. According to the flow studies and design calculations, there are two sections that are at or near capacity. They will need to be expanded.

This rate study will be reimbursed by a state grant that we expect to receive this fall. I am asking that we approve it.

Thank you for your consideration.

Marlene Chockley

TETRA TECH

2014 Rate Study

April 22, 2014

Mr. Howard Fink
Township Manager
Northfield Township
8350 Main Street
Whitmore Lake, MI 48189

Re: Northfield Township, Michigan
Wastewater Cost of Service Study

Dear Mr. Fink:

Tetra Tech is pleased to deliver this Wastewater Cost of Service Study for Northfield Township. This study:

1. Calculates wastewater rates, extra strength wastewater surcharges and new-customer system development charges (SDCs), commonly known as "connection fees" or "tap fees" to comply with the intent of the proportionality test guidance given in the December 1998 Michigan Supreme Court decision *Bolt v. City of Lansing ("Bolt")*.
2. Develops a method to calculate an annual contribution to a dedicated equipment replacement fund to comply with Michigan Department of Environmental Quality (MDEQ) requirements.
3. Projects rates and SDCs fees for a five-year study period from fiscal year 2014-15 to 2018-19.

"SMARTRATE" TABLES

Attached to this report are linked financial Excel spreadsheets, which we refer to as "SmartRate" tables that calculate the projected rates, extra strength wastewater surcharges and SDCs for each year of the five-year study period. These tables are as follows:

Assumptions

Table 1: Current and Projected Wastewater Rates and System Development Charges

Table 2: Equipment Replacement Fund Contribution

Table 3: Wastewater System Expenditures, Other Revenue and Required Usage Fee Revenue

Table 4: Billed REUs Estimate

Table 5: Billable Flow Estimate

Table 6: Wastewater Rate Calculations

Table 7: Allocation of Wastewater Operation, Maintenance and Equipment Replacement Expenses to Wastewater Treatment Processes

Table 8: Allocation of Wastewater Treatment Process Operation, Maintenance and Equipment Replacement Expenses to BOD, SS, P and Ammonia

Table 9: Extra Strength Wastewater Surcharge Calculations

Table 10: Gross Replacement Value of Current Wastewater Facilities

Tetra Tech
710 Avis Drive, Ann Arbor, MI 48108
Tel 734.665.6000 Fax 734.665.2570 www.tetratech.com

Table 11: Gross System Development Charge per REU

Table 12: Outstanding Principal Credit per REU

Table 13: Projected SDC per REU

Table 14: Adequacy of Revenue Generated by Projected Metered and REU Rates

ASSUMPTIONS TABLE

The Assumptions table presents the annual cost escalation percentages applied to certain expense line items given in Table 3. Township staff can adjust these percentages as necessary if conditions warrant. It also presents the new customer REU projections over the five-year study period. Projected beginning and end of year unrestricted wastewater fund balances are shown for the study period.

RATES

Projected wastewater rates are calculated in Tables 2 through 6 with the metered rate, flat rate per REU and SDC charge results summarized in Table 1. Key results are shown in the following table:

Effective Date:	**Aug 1, 2009**	**July 1, 2014**	**July 1, 2015**	**July 1, 2016**	**July 1, 2017**	**July 1, 2018**
Effective Date:	Aug 1, 2009	July 1, 2014	July 1, 2015	July 1, 2016	July 1, 2017	July 1, 2018
Metered Rates (per 1,000 gallons):	$4.97	$5.60	$5.60	$5.60	$5.60	$5.60
Flat Rates (per REU):	$71.55	$84.00	$84.00	$84.00	$84.00	$84.00
UNRESTRICTED FUND BALANCE - END OF YEAR		$499,157	$444,393	$383,629	$530,666	$719,702

Table 14 shows that the revenues from the projected rates will meet the Township's projected needs through fiscal year 2018-19.

Table 2 calculates the annual contribution to a dedicated equipment replacement fund. This fund should be established and used to pay for replacing wastewater system equipment items when they have reached their useful life and can no longer be repaired at reasonable cost.

Table 3 calculates wastewater system expenditures and offsetting revenues resulting in the net amount of revenue required to be raised by rates each year of the study period. It also presents the annual projected changes to the unrestricted fund balance based on annual equipment replacement fund contributions less capital outlays assignable to this fund.

Table 4 presents the number of historical, current and projected flat-rate customer REUs.

Table 5 presents the current metered billable flows. Based on more accurate metered billing information for the State Correctional Facility the billable flow was reduced in comparison to the 2009 wastewater rate study. The estimated billable flow for the total of metered and unmetered users is approximately 14 percent less than in 2009.

Table 6 calculates the metered customer wastewater rates and flat-rate customer rate per REU. The operation, maintenance and replacement (OM&R) and debt service portions of the rates are shown.

The current rates are projected to generate $1,166,000. However, the net revenue required in FY 2014-15 is approximately $1,351,332. Therefore the current rates result in a shortfall of approximately $185,332.

The rates need to be adjusted because of the following factors:

- The flat rate per REU was not adjusted to the amount recommended in the 2009 rate study
- Rates have been unchanged since August 2009
- The State Correctional Facility billable flow is significantly lower than estimated in 2009
- The annual contribution to the equipment replacement fund is increased to $87,336 (from $47,150 in the 2009 rate study) in order to have the funds on hand to replace aging equipment
- Many sewers are approaching the end of their useful lives. As each year passes more repairs and replacements will likely occur. $95,000 per year is budgeted for miscellaneous sewer repairs and replacement

EXTRA STRENGTH WASTEWATER SURCHARGES

Projected surcharges to customers discharging extra strength wastewater are calculated in Tables 7 to 9. Surcharges for BOD, SS, P and Ammonia are calculated and these are expressed in dollars per pound above normal domestic strength.

SYSTEM DEVELOPMENT CHARGES (SDCs)

An SDC is a one-time charge to new users of the wastewater system. The goal of this charge is to achieve an equity position between new and existing customers. Existing customers have provided equity in the system through the payment of their SDCs as well as their ongoing rates which recover bond repayment expenses. An SDC does not recover the cost of making the necessary physical connection from the user to the wastewater system. Projected new customer SDCs are based on calculations shown in Tables 10 to 13.

Table 10 calculates the gross replacement value of the wastewater system by escalating the costs of wastewater system assets from the year they were put into service to a more current value based on the annual increase in the Engineering News Record (ENR) construction cost indices. Table 11 calculates the gross SDC (based solely on replacement costs) per REU.

However, because there are outstanding bonds that new customers will be repaying from their ongoing quarterly bills, Table 12 is prepared which shows how much credit each new customer should receive from the gross SDC for future bond principal expenses.

Table 13 subtracts the credit from the gross SDC per REU to arrive at a net SDC per REU. This prevents the SDC from "double-dipping" to recover outstanding principal payments. The analysis suggests that a charge of up to $5,752 per REU for FY 2014-15 and increasing to $5,939 per REU for FY 2018-19 could be justified. Should the Township choose to keep the current charge of $3,550 it would likely be defendable. The current $3,550 SDC is maintained each year of the five year study period.

TETRA TECH

UPDATES

The estimates, projections, assumptions, and conclusions generated by these tables reflect expectations as to future activities and events. Some of these assumptions inevitably will not materialize and unanticipated events related to expenses and usage could occur which might significantly change the results shown herein. The linked spreadsheets can be updated by Township staff to re-set the wastewater rates, extra strength wastewater surcharges and SDCs based on updated data in order to address such changes as quickly as possible.

We look forward to presenting the results to the Township Board. We appreciate the time and effort that you and your staff have taken to provide us with the data needed to complete this project.

Sincerely,

Vic Cooperwasser, P.E.
Senior Project Manager

Copy: Mr. Tim Hardesty, Wastewater Treatment Plant Superintendent (1 copy)
Mr. Rick Yaeger, Controller (1 copy)
Mr. Brian Rubel, P.E., Tetra Tech, Unit Vice President (1 copy)

Budget Year:	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19
Annual Percent Increase (Except for Hospitalization)			3%	3%	3%	3%	3%
Annual Percent Increase for Hospitalization			10%	10%	10%	10%	10%
Projected Taps (Additional REUs per Year)			0	0	0	0	0
Recommended New Customer System Development Charge, per REU:	$ 3,550	$ 3,550	$ 3,550	$ 3,550	$ 3,550	$ 3,550	$ 3,550
Tap-In Fees (Zero taps assumed during study period)	$ 7,100	$ -	$ -	$ -	$ -	$ -	$ -
UNRESTRICTED FUND BALANCE - BEGINNING OF YEAR		$ 722,221	$ 572,821	$ 499,157	$ 444,393	$ 383,629	$ 530,666
UNRESTRICTED FUND BALANCE - END OF YEAR	$ 722,221	$ 572,821	$ 499,157	$ 444,393	$ 383,629	$ 530,666	$ 719,702

Table 1
Current and Projected Wastewater Rates and System Development Charges

	Current (Rates Effective August 1, 2009; SDC Effective July 1, 2009)	Projected (Effective July 1, 2014)	Projected (Effective July 1, 2015)	Projected (Effective July 1, 2016)	Projected (Effective July 1, 2017)	Projected (Effective July 1, 2018)
Budget Year:		**FY 2014-15**	**FY 2015-16**	**FY 2016-17**	**FY 2017-18**	**FY 2018-19**
Metered Rates (per 1,000 gallons):						
All flow per quarterly period, OM&R		$3.88	$3.87	$4.33	$5.37	$5.37
All flow per quarterly period, Debt Service		$1.72	$1.73	$1.27	$0.23	$0.23
All flow per quarterly period, Total	$4.97	**$5.60**	**$5.60**	**$5.60**	**$5.60**	**$5.60**
Flat Rates (per Billed Residential Equivalent Unit):						
OM&R per quarterly period		$58.14	$58.02	$64.89	$80.50	$80.62
Debt Service per quarterly period		$25.86	$25.98	$19.11	$3.50	$3.38
Total per quarterly period	$71.55	**$84.00**	**$84.00**	**$84.00**	**$84.00**	**$84.00**
Recommended New Customer System Development Charge, per REU:						
One Time Charge	$3,550	**$3,550**	**$3,550**	**$3,550**	**$3,550**	**$3,550**
Extra Strength Wastewater Surcharges						
Per Pound of Biochemical Oxygen Demand Above Normal Domestic Strength		$1.58	$1.63	$1.69	$1.74	$1.80
Per Pound of Suspended Solids Above Normal Domestic Strength		$2.25	$2.33	$2.41	$2.49	$2.58
Per Pound of Phosphorus Above Normal Domestic Strength		$31.72	$32.71	$33.75	$34.84	$35.99
Per Pound of Ammonia Above Normal Domestic Strength		$1.48	$1.53	$1.58	$1.63	$1.68

Table 2
Equipment Replacement Fund Contribution

Source	Item	Year Acquired	Original Cost, $	Life (Years)	Annual Equipment Replacement Fund Contribution, $
Hardesty	Tertiary traveling bridge filters	1997	108,000	20	5,400
Hardesty/Tt	Aeration Hoffman centrifigal blowers (3)	1976	150,000	30	5,000
Hardesty	Hycor solids separator	1998	70,000	20	3,500
Hardesty	Cyclone solids separator	1998	70,000	20	3,500
Hardesty	Grit Conveyor	1998	60,000	20	3,000
Hardesty/Tt	Final Clarifier: Mechanisms (2)	1976	20,000	30	667
Hardesty/Tt	Gravity Thickener Tank: Mechanism	1976	20,000	30	667
Hardesty/Tt	Intermediate Settling Tank: Mechanism	1962	20,000	30	667
Hardesty/Tt	104-ft Diameter Trickling Filter: Mechanism	1962	20,000	30	667
Hardesty	Gas compressors (2)	1976	5,000	30	167
Hardesty	F350 Pick-up Truck	2013	32,000	10	3,200
Hardesty	F250 Snow Plow Truck	2006	25,338	10	2,534
Hardesty	Eight Mile Pump Station: 2,000 GPM pumps (4)	2001	120,000	20	6,000
Hardesty	North Territorial Pump Station: Pumps (2)	2002	25,000	20	1,250
Hardesty/Tt	Horseshoe Lake #1 Pump Station: Pumps (2)	1978	15,000	20	750
Hardesty/Tt	Horseshoe Lake #2 Pump Station: Pumps (2)	1978	15,000	20	750
Hardesty/Tt	Horseshoe Lake #3 Pump Station: Pumps (2)	1978	15,000	20	750
Hardesty/Tt	Shadowoods Pump Station: Pumps (2)	1996	15,000	20	750
Hardesty/Tt	Nine Mile Rd. Pump Station: Pumps (2)	1978	15,000	20	750
Hardesty	East Shore #1 Pump Station: Pumps (2)	2007	15,000	20	750
Hardesty/Tt	East Shore #2 Pump Station: Pumps (2)	1969	15,000	20	750
Hardesty	Lake Point Dr Grinder Pump Station: Pumps (2)	2004	8,880	20	444
Hardesty	Eagle Gardens Pump Station: Pumps (2)	2001	10,000	20	500
Hardesty/Tt	Main Street Pump Station: Pumps (2)	1969	15,000	20	750
Hardesty/Tt	Northshore #1 Pump Station: Pumps (2)	1969	10,000	20	500
Hardesty	Northshore #2 Pump Station: Pumps (2)	1985	10,000	20	500
Hardesty/Tt	Elmcrest Pump Station: Pumps (2)	1978	10,000	20	500
Hardesty	WWTP: Diesel Generator	2008	72,730	30	2,424
Hardesty	Eight Mile Pump Station: Generator	1999	49,000	30	1,633
Hardesty	North Territorial Pump Station: Generator	2004	18,000	30	600
Hardesty	East Shore #1 Pump Station: Generator	2007	55,000	30	1,833
Hardesty	East Shore #2 Pump Station: Generator	2011	36,962	30	1,232
Hardesty	Horseshoe Lake #1 Pump Station: Generator	2007	18,000	30	600
Hardesty	Horseshoe Lake #2 Pump Station: Generator	2007	18,000	30	600
Hardesty	Horseshoe Lake #3 Pump Station: Generator	2007	18,000	30	600
Hardesty/Tt	Katolite Portable generator	2001	5,000	20	250
Hardesty/Tt	Onan Portable generator	1985	5,000	20	250
Hardesty	Sewer TV Inspection Equipment (Doheny - Aries)	2006	82,628	30	2,754
Hardesty	JCB Backhoe	2000	50,000	20	2,500
Hardesty	Sewer cleaning equipment	2002	32,615	30	1,087
Hardesty	Komatsu forklift	2003	12,089	20	604
Hardesty	Primary effluent pumps (3)	1991	27,000	20	1,350
Hardesty/Tt	Carter 11" piston sludge pump	1991	25,000	20	1,250
Hardesty/Tt	Carter piston sludge pumps (4)	1969	60,000	20	3,000
Hardesty/Tt	Filter influent pumps (2)	1978	30,000	20	1,500
Hardesty/Tt	Marlow return sludge pumps (3)	1978	45,000	20	2,250
Hardesty/Tt	Centrifugal return sludge pumps (2)	2008	30,000	20	1,500
Hardesty	Grit Building unit heater	2012	18,000	20	900
Hardesty	John Deere lawn mower	2006	14,424	10	1,442
Hardesty	John Deere walk-behind lawn mower	2002	2,330	10	233
Hardesty	Stuart boiler	1987	11,613	20	581
Hardesty/Tt	Kewanee Boiler	1979	15,000	20	750
Hardesty	Primary Tank #3 and #4: Equipment	2007	118,000	20	5,900
Hardesty	Primary Tank #1 and #2: Equipment	2010	75,000	20	3,750
Hardesty/Tt	Boiler: Bryan 200,000 BTU	1978	12,000	30	400
Tetra Tech	New Grinder Pump Stations: Pump cores (9)	2014	18,000	20	900
	TOTAL				87,336

Table 3
Wastewater System Expenditures, Other Revenue Sources and Required Usage Fee Revenue

Source		571: Wastewater Treatment Fund Account Name	Audited FY 2012-13, $	Requested FY 2013-14, $	Projected FY 2014-15, $	Projected FY 2015-16, $	Projected FY 2016-17, $	Projected FY 2017-18, $	Projected FY 2018-19, $	FY 2019-20	FY 2020-21	FY 2021-22
		EXPENDITURES										
		Dept: 226 PERSONNEL										
Yaeger	701	Salaries - Superintendent (Includes 3.5% increase for Requested FY 2013-14)	58,500	60,548	62,304	64,235	66,162	68,147	70,192			
Yaeger	702	Salaries - Full Time (Includes 2.4% increase for all employees for Requested FY 2013-14)	190,778	179,160	184,536	190,071	195,773	201,646	207,696			
Yaeger	711	Salaries - Overtime	16,718	20,000	20,600	21,218	21,855	22,510	23,185			
Yaeger	715	Social Security ($258,708 X 7.65% for Requested FY 2013-14)	20,349	19,668	20,464	21,078	21,710	22,362	23,032			
Yaeger	716	Hospitalization (Medical CAPS plus Dental & Vision)	64,621	73,212	80,533	88,587	97,445	107,190	117,909			
Yaeger	717	Life/Disability Insurance	3,352	3,487	3,592	3,699	3,810	3,925	4,042			
Yaeger	718	Pension (10% of Base Salaries)	22,447	22,876	23,562	24,269	24,997	25,747	26,520			
Yaeger	720	Banked PTO	-4,422	0	0	0	0	0	0			
Yaeger	731	Workers Comp Insurance	3,542	2,800	2,884	2,971	3,060	3,151	3,246			
Yaeger	957	Training & Development	520	2,000	2,000	2,122	2,185	2,251	2,319			
		PERSONNEL	376,403	383,951	400,594	418,290	436,998	456,079	478,140			
		Dept: 270 LEGAL/PROFESSIONAL										
Yaeger	722	Controller (25% of Total Cost for Requested FY 2013-14)	13,000	13,312	13,711	14,123	14,548	14,985	15,432			
Yaeger	802	Audit Fees (Allocation of Audit Fixed per Contract)	6,480	6,480	6,480	6,480	6,480	6,480	6,480			
Yaeger	803	Legal ($400 Bendinskli Annual Fee; Other $100 - for Requested FY 2013-14)	0	500	515	530	546	563	580			
Yaeger/Th	806	Engineer (Assumes $995,385 SAW grant requested occurs equally in FY 17, FY 18 and FY 19)	4,500	10,000	0	0	198,456	198,455	198,455			
		LEGAL/PROFESSIONAL	23,980	30,292	20,706	21,133	220,028	220,481	220,947			
		Dept: 301 OPERATING COSTS										
Yaeger	727	Supplies	866	1,200	1,236	1,273	1,311	1,351	1,391			
Yaeger	740	Operating Supplies	54,848	52,000	53,560	55,167	56,822	58,526	60,282			
Yaeger	741	Uniforms/Gear Supplies	442	1,500	1,545	1,591	1,639	1,688	1,739			
Yaeger	807	Membership Dues (Assn Dig $1,000; MRWA $600; Stormwater Ind. Cert $100; AWWA $165; Price Incr $135; used for Requested FY 2013-14)	144	2,000	2,060	2,122	2,186	2,251	2,319			
Yaeger	817	Lab & Testing	2,825	4,000	4,120	4,244	4,371	4,502	4,637			
Yaeger	819	Collection System Annual Maintenance ($35,000 Sludge Hauling, $20,000 Collection System; used for Requested FY 2013-14)	52,673	55,000	56,650	58,350	60,100	61,903	63,760			
Yaeger	825	Sewer Administration Fees (Paid to General Fund for Processing Utility Bills)	35,000	35,000	35,000	35,000	35,000	35,000	35,000			
Yaeger	850	Communication	5,031	5,000	5,150	5,305	5,464	5,628	5,796			
Yaeger	851	Postage (Utility Bill Postage)	2,999	5,000	5,150	5,305	5,464	5,628	5,796			
Yaeger	900	Printing & Publications	70	500	515	530	546	563	580			
Yaeger	910	Insurance & Bonds	18,839	20,300	20,909	21,536	22,182	22,848	23,533			
Yaeger	920	Utilities	112,140	113,000	116,390	119,882	123,478	127,182	130,998			
Yaeger	930	Repairs & Maintenance	79,677	120,000	123,600	127,308	131,127	135,061	139,113			
Yaeger	940	Rental Equipment	828	1,000	1,030	1,061	1,093	1,126	1,159			
Yaeger	941	Uniforms - Rentals	3,393	3,700	3,811	3,925	4,043	4,164	4,289			
Yaeger	960	Land Leasing (MDOT; 12 foot sewer line in ROW; 8 of Hamburg (in Requested FY 2013-14)	250	258	264	258	258	258	258			
		OPERATING COSTS	370,639	419,458	430,984	442,856	455,084	467,676	480,651			
		Dept: 333 TRANSPORTATION										
Yaeger	860	Fuel & Mileage	5,854	6,000	6,100	6,305	6,566	6,753	6,956			
Yaeger	930	Repairs & Maintenance	1,057	2,600	2,678	2,652	2,732	2,814	2,898			
		TRANSPORTATION	6,911	8,600	8,756	9,018	9,298	9,567	9,854			
		Dept: 528 O & M - BOND & INTEREST + DEPT 000 Bond Principal Payments										
Yaeger	954	Paying Agent Fees	638	700	721	743	765	788	811			
Yaeger	982	1992 Junior Lien Bond Principal/2004 $660,000 Refunding Bond Interest (Final Payment in 2022)	18,139	16,739	16,339	15,939	12,239	10,519	8,550	6,525	4,388	2,250
Yaeger	995	61% of 2007 1997 Expansion & 8 Mile PS Refunding $4,960,000 Bond Interest (Final Payment in 2017)	65,461	52,826	38,628	24,758	10,370					
Yaeger	571-000-302	1992 Junior Lien Bond Principal/2004 $660,000 Refunding Bond Principal (Final Payment in 2022)	35,000	35,000	35,000	40,000	40,000	45,000	45,000	45,000	45,000	45,000
Yaeger	571-000-305	61% of 2007 1997 Expansion & 8 Mile PS Refunding $4,960,000 Bond Principal (Final Payment in 2017)	301,900	329,400	326,350	338,550	244,000					
		O & M - BOND & INTEREST + DEPT 000 Bond Principal Payments	421,187	434,467	416,038	417,990	307,374	56,307	54,361	51,525	49,388	47,250
		Dept: 900 CAPITAL OUTLAY										
Table 2	970	Equipment Replacement Fund Contribution (from Table 2 Amount for FY 2014-15 to FY 2018-19)	50,000		87,336	87,336	87,336	87,336	87,336			
Hardesty	971	Renovations ($25,000 for Grit & Screen (building Heat in FY 2014-15) (from unrestricted fund balance capital reserves)			25,000							
Yaeger	973	Sewer Improvements ($176,000 current used in Requested FY 2013-14) (from unrestricted fund balance capital reserves)		118,000								
Yaeger	974	Vehicle ($31,400 new truck used in Requested FY 2013-14) (from unrestricted fund balance capital reserves)		31,400								
Hardesty	6-Mar-14	Repairs to 8 areas in Horseshoe Lake collection system (FY 2013-14) (from restricted other funds - Horseshoe Lake capital reserves)		40,000								
Hardesty	6-Mar-14	Eight Mile Road Pump Station: New non-clog pump (FY 2014-15) (from unrestricted capital reserves)			35,000							
Hardesty	6-Mar-14	Replace Superintendent's computer (FY 2014-15) (from unrestricted capital reserves)			1,000							
Hardesty	6-Mar-14	Replace collection system computer and software (FY 2015-16) (from unrestricted capital reserves)				10,000						
Hardesty	6-Mar-14	Replace tertiary filter porous plates (FY 2016-17) (from unrestricted capital reserves) $10,000 estimate to be confirmed					10,000					
Hardesty	6-Mar-14	New trailer vac (FY 2016-17) (from unrestricted fund balance capital reserves)					65,000					
Hardesty	6-Mar-14	Replace aeration drop (FY 2017-18) (from unrestricted fund balance capital reserves)						25,000				
Hardesty	6-Mar-14	Replace grit conveyor with stainless steel unit (FY 2017-18) (from unrestricted fund balance capital reserves)						60,000				
Hardesty	6-Mar-14	Replace oil seals on intermediate and final clarifiers (FY 2018-19) (from unrestricted fund balance capital reserves) $10,000 estimate to be confirmed							10,000			
Hardesty	27-Mar-14	Miscellaneous Sewer Repairs and Replacement			95,000	95,000	95,000	95,000	95,000			
		CAPITAL OUTLAY	50,000	189,400	243,336	192,336	257,336	267,336	192,336			
		TOTAL EXPENDITURES	1,249,119	1,466,068	1,520,414	1,501,562	1,686,108	1,478,298	1,436,290			
		OFFSETTING REVENUES										
		Dept 000 - ESTIMATED REVENUES (Net of Usage Fees and Bond Principal Payments)										
Yaeger	503	Tap In Fees (Zero taps assumed during study period)	7,100	0	0	0	0	0	0			
Yaeger	665	Interest Income	11,767	8,000	8,000	8,000	8,000	8,000	8,000			
Yaeger	671	Reimbursement/Other Income (DTE Refund from Whitmore Lake Condos used in Req FY 2013-14)	4,620	2,000	0	0	0	0	0			
Yaeger	672	SAD Interest	91	82	82	82	82	82	82			
Th		SAW Grant 90% MDEQ Reimbursement					178,610	178,610	178,610			
		ESTIMATED REVENUES (Net of Usage Fees and Bond Principal Payments)	23,578	10,082	8,082	8,082	186,692	186,692	186,692			
		Dept 336 - CONTRIBUTIONS										
	568	Contributions from Other Funds (Contribution from restricted 3 Horseshoe Lake fund)		40,000								
		CONTRIBUTIONS	0	40,000	0	0	0	0	0			
		Dept 000 CAPITAL OUTLAY										
Yaeger	699	Transfers In from Unrestricted Fund Balance	0	149,400	61,000	10,000	25,000	85,000	10,000			
Th	699	Additional Transfers In from Unrestricted Fund Balance to Adjust REU Increases			100,000	132,100	73,100	-144,700	-111,700			
		CAPITAL OUTLAY	0	149,400	161,000	142,100	148,100	-59,700	-101,700			
		TOTAL OFFSETTING REVENUES	23,578	199,482	169,082	150,182	334,792	126,992	84,992			
		REQUIRED USAGE FEE REVENUES (TOTAL EXPENDITURES LESS OFFSETTING REVENUES)	1,225,541	1,266,586	1,351,332	1,351,380	1,351,316	1,351,306	1,351,298			
		UNRESTRICTED FUND BALANCE - BEGINNING OF YEAR		722,221	672,821	400,157	444,393	381,829	530,666			
		ADDITIONS TO UNRESTRICTED FUND BALANCE			87,336	87,336	87,336	87,336	87,336			
		WITHDRAWALS FROM UNRESTRICTED FUND BALANCE		149,400	161,000	142,100	148,100	-59,700	-101,700			
Yaeger		UNRESTRICTED FUND BALANCE - END OF YEAR	722,221	672,821	400,157	444,393	381,829	530,666	719,702			
Township assumed		Annual Percent Increase (Except for Hospitalization)			3%	3%	3%	3%	3%			
Township assumed		Annual Percent Increase for Hospitalization			10%	10%	10%	10%	10%			
Township assumed		Projected Taps (Additional REUs per Year)		0	0	0	0	0	0			

Table 4
Billed REUs Estimate

Source	Fiscal Year	Billed REUs (Unmetered Customers)
Wilson	1992	2,613
Yaeger	2009	3,409
Yaeger	2010	3,384
Yaeger	2011	3,358
Yaeger	2012	3,334
Yaeger	2013	3,320
Assumed by Tt	2014	3,320
Assumed by Tt	2015	3,320
Assumed by Tt	2016	3,320
Assumed by Tt	2017	3,320
Assumed by Tt	2018	3,320
Assumed by Tt	2019	3,320
Assumed by Tt	2020	3,320
Assumed by Tt	2021	3,320
Assumed by Tt	2022	3,320
Assumed by Tt	2023	3,320
Assumed by Tt	2024	3,320
Assumed by Tt	2025	3,320
Assumed by Tt	2026	3,320
Assumed by Tt	2027	3,320
Assumed by Tt	2028	3,320
Assumed by Tt	2029	3,320
Assumed by Tt	2030	3,320
Assumed by Tt	2031	3,320
Assumed by Tt	2032	3,320
Assumed by Tt	2033	3,320
		0 REU growth per year assumed from 2014 to 2033

Table 5
Billable Flow Estimate

Account Number	Metered Customer Name	Total Annual Metered Billable Flow FY 2012-13 (Source - Yaeger) (Gallons)
67-000M	Stellar Materials	4,000
67-000F	Stellar Material	4,000
67-000C	Whitmore Lake Elementary School	617,000
67-000B	Whitmore Lake Coin Laundry	229,000
67-000P	Whitmore Lake High School	775,000
67-000C2	Whitmore Lake Middle School	503,000
67-000E	Regency	4,876,000
67-000L	MDOT Rest Area US 23 Freeway	686,000
67-000J	Whitmore Lanes	291,000
67-000N	Dirt Squirt Car Wash	625,000
68-000I	Cap't Joes	959,100
68-000H	Best Western	2,516,500
68-000G	McDonalds	979,000
68-0000A	State Correctional Facility	29,080,000
	Total Metered Customer Metered Flow	**42,144,600**

	Estimated Annual Metered Customer Billable Flow (1,000 Gallon Units)	42,145
	REUs (from Table 4)	3,320
	Estimated Annual Billable Flow from Unmetered Customers per REU (1,000 Gallon Units)	60
	Estimated Annual Billable Flow from Unmetered Customers (1,000 Gallon Units)	199,208
	Total Estimated Annual Billable Flow (1,000 Gallon Units)	**241,353**
Hardesty	Annual Wastewater Flow @ WWTP (1000 Gallons)	279,043
	Ratio of Billable Flow to WWTP Flow	86%
	Estimated Percentage I/I	14%

Table 6
Wastewater Rate Calculations

Item	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19
Annual Metered Customer Billable Flow (1,000 Gallon Units) (Assumes Zero Growth)	42,145	42,145	42,145	42,145	42,145
Estimated Annual Billable Flow from Unmetered Customers (1,000 Gallon Units) (Assumes Zero Growth)	199,208	199,208	199,208	199,208	199,208
Total Estimated Annual Billable Flow (1,000 Gallon Units)	241,353	241,353	241,353	241,353	241,353
Total Usage Fees Required	$1,351,332	$1,351,400	$1,351,316	$1,351,306	$1,351,298
Total OM&R and Debt Service Rate per 1,000 Gallons	$5.60	$5.60	$5.60	$5.60	$5.60
Total revenue from metered customers under new rates	$236,010	$236,010	$236,010	$236,010	$236,010
Total revenue from unmetered customers under new rates	$1,115,322	$1,115,390	$1,115,306	$1,115,296	$1,115,289
Total Revenue Received	$1,351,332	$1,351,400	$1,351,316	$1,351,306	$1,351,298
Number of Billed REUs	3,320	3,320	3,320	3,320	3,320
Total OM&R and Debt Service Rate per Billed REU per Quarter	$84.00	$84.00	$84.00	$84.00	$84.00
Metered Customer Rates:					
OM&R Rate per 1,000 Gal	$3.88	$3.87	$4.33	$5.37	$5.37
Debt Service Rate per 1,000 Gal	$1.72	$1.73	$1.27	$0.23	$0.23
Total OM&R Rate per 1,000 Gal	**$5.60**	**$5.60**	**$5.60**	**$5.60**	**$5.60**
REU Rates (Unmetered Customers):					
OM&R Rate per Billed REU per Quarter	$58.14	$58.02	$64.89	$80.50	$80.62
Debt Service Rate per Billed REU per Quarter	$25.86	$25.98	$19.11	$3.50	$3.38
Total OM&R and Debt Service Rate per Billed REU per Quarter	**$84.00**	**$84.00**	**$84.00**	**$84.00**	**$84.00**

Table 7
Allocation of Wastewater Operation, Maintenance and Equipment Replacement Expenses to Wastewater Treatment Processes

Item	FY 2014-15 O, M & R Cost, $	Pumping	Pumping, $	Grit and Primary Settling	Grit and Primary Settling, $	Trickling Filter and Aeration	Trickling Filter and Aeration, $	Final Settling	Final Settling, $	Sand Filter	Sand Filter, $	Disinfection	Disinfection, $	Sludge Handling	Sludge Handling, $
Personnel	400,594	20%	80,119	5%	20,030	15%	60,090	5%	20,030	5%	20,030	10%	40,060	40%	160,238
Operating Costs	430,984	10%	43,099	15%	64,648	10%	43,099	15%	64,648	5%	21,550	25%	107,746	20%	86,197
Transportation	8,755	100%	8,755	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0
Equipment Replacement	87,336	30%	26,201	10%	8,734	20%	17,468	7%	6,114	10%	8,734	3%	2,621	20%	17,468
Total O, M & R Cost	927,670		158,174		93,412		120,657		90,792		50,314		150,427		263,903
Item	FY 2015-16 O, M & R Cost, $	Pumping	Pumping, $	Grit and Primary Settling	Grit and Primary Settling, $	Trickling Filter and Aeration	Trickling Filter and Aeration, $	Final Settling	Final Settling, $	Sand Filter	Sand Filter, $	Disinfection	Disinfection, $	Sludge Handling	Sludge Handling, $
Personnel	418,250	20%	83,650	5%	20,913	15%	62,738	5%	20,913	5%	20,913	10%	41,825	40%	167,300
Operating Costs	442,856	10%	44,286	15%	66,429	10%	44,286	15%	66,429	5%	22,143	25%	110,714	20%	88,572
Transportation	9,018	100%	9,018	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0
Equipment Replacement	87,336	30%	26,201	10%	8,734	20%	17,468	7%	6,114	10%	8,734	3%	2,621	20%	17,468
Total O, M & R Cost	957,459		163,155		96,076		124,492		93,456		51,790		155,160		273,340
Item	FY 2016-17 O, M & R Cost, $	Pumping	Pumping, $	Grit and Primary Settling	Grit and Primary Settling, $	Trickling Filter and Aeration	Trickling Filter and Aeration, $	Final Settling	Final Settling, $	Sand Filter	Sand Filter, $	Disinfection	Disinfection, $	Sludge Handling	Sludge Handling, $
Personnel	436,998	20%	87,400	5%	21,850	15%	65,550	5%	21,850	5%	21,850	10%	43,700	40%	174,800
Operating Costs	455,084	10%	45,509	15%	68,263	10%	45,509	15%	68,263	5%	22,755	25%	113,771	20%	91,017
Transportation	9,288	100%	9,289	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0
Equipment Replacement	87,336	30%	26,201	10%	8,734	20%	17,468	7%	6,114	10%	8,734	3%	2,621	20%	17,468
Total O, M & R Cost	988,706		168,399		98,847		128,527		96,227		53,339		160,092		283,285
Item	FY 2017-18 O, M & R Cost, $	Pumping	Pumping, $	Grit and Primary Settling	Grit and Primary Settling, $	Trickling Filter and Aeration	Trickling Filter and Aeration, $	Final Settling	Final Settling, $	Sand Filter	Sand Filter, $	Disinfection	Disinfection, $	Sludge Handling	Sludge Handling, $
Personnel	456,929	20%	91,386	5%	22,847	15%	68,540	5%	22,847	5%	22,847	10%	45,693	40%	182,772
Operating Costs	467,678	10%	46,768	15%	70,152	10%	46,768	15%	70,152	5%	23,384	25%	116,920	20%	93,536
Transportation	9,567	100%	9,567	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0
Equipment Replacement	87,336	30%	26,201	10%	8,734	20%	17,468	7%	6,114	10%	8,734	3%	2,621	20%	17,468
Total O, M & R Cost	1,021,511		173,922		101,733		132,776		99,113		54,965		165,234		293,776
Item	FY 2018-19 O, M & R Cost, $	Pumping	Pumping, $	Grit and Primary Settling	Grit and Primary Settling, $	Trickling Filter and Aeration	Trickling Filter and Aeration, $	Final Settling	Final Settling, $	Sand Filter	Sand Filter, $	Disinfection	Disinfection, $	Sludge Handling	Sludge Handling, $
Personnel	478,140	20%	95,629	5%	23,908	15%	71,722	5%	23,908	5%	23,908	10%	47,815	40%	191,257
Operating Costs	480,651	10%	48,066	15%	72,098	10%	48,066	15%	72,098	5%	24,033	25%	120,163	20%	96,131
Transportation	9,854	100%	9,854	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0
Equipment Replacement	87,336	30%	26,201	10%	8,734	20%	17,468	7%	6,114	10%	8,734	3%	2,621	20%	17,468
Total O, M & R Cost	1,055,981		179,750		104,740		137,256		102,120		56,675		170,599		304,856

Table 8

Allocation of Wastewater Treatment Process Operation, Maintenance and Equipment Replacement Expenses to BOD, SS, P and Ammonia

Process	FY 2014-15 Cost, $	Flow	Flow, $	BOD	BOD, $	SS	SS, $	P	P, $	Ammonia	Ammonia, $
Pumping	158,174	100%	158,174	0%	0	0%	0	0%	0	0%	0
Grit and Primary Settling	93,412	20%	18,683	30%	28,024	30%	28,024	20%	18,683	0%	0
Trickling Filter and Aeration	120,657	20%	24,132	35%	42,230	30%	36,198	5%	6,033	10%	12,066
Final Settling	90,792	20%	18,159	30%	27,238	30%	27,238	0%	0	20%	18,159
Sand Filter	50,314	20%	10,063	0%	0	0%	0	80%	40,252	0%	0
Disinfection	150,427	40%	60,171	50%	75,214	10%	15,043	0%	0	0%	0
Sludge Handling	263,903	0%	0	20%	52,781	70%	184,733	10%	26,391	0%	0
Total O, M & R Cost	**927,679**		**289,382**		**225,487**		**291,236**		**91,359**		**30,225**
Process	**FY 2015-16 Cost, $**	**Flow**	**Flow, $**	**BOD**	**BOD, $**	**SS**	**SS, $**	**P**	**P, $**	**Ammonia**	**Ammonia, $**
Pumping	163,155	100%	163,155	0%	0	0%	0	0%	0	0%	0
Grit and Primary Settling	96,076	20%	19,216	30%	28,823	30%	28,823	20%	19,216	0%	0
Trickling Filter and Aeration	124,492	20%	24,899	35%	43,573	30%	37,348	5%	6,225	10%	12,450
Final Settling	93,456	20%	18,692	30%	28,037	30%	28,037	0%	0	20%	18,692
Sand Filter	51,790	20%	10,358	0%	0	0%	0	80%	41,432	0%	0
Disinfection	155,160	40%	62,064	50%	77,580	10%	15,516	0%	0	0%	0
Sludge Handling	273,340	0%	0	20%	54,668	70%	191,338	10%	27,334	0%	0
Total O, M & R Cost	**957,469**		**298,384**		**232,681**		**301,062**		**94,207**		**31,142**
Process	**FY 2016-17 Cost, $**	**Flow**	**Flow, $**	**BOD**	**BOD, $**	**SS**	**SS, $**	**P**	**P, $**	**Ammonia**	**Ammonia, $**
Pumping	168,399	100%	168,399	0%	0	0%	0	0%	0	0%	0
Grit and Primary Settling	98,847	20%	19,770	30%	29,655	30%	29,655	20%	19,770	0%	0
Trickling Filter and Aeration	128,527	20%	25,706	35%	44,985	30%	38,559	5%	6,427	10%	12,853
Final Settling	96,227	20%	19,246	30%	28,869	30%	28,869	0%	0	20%	19,246
Sand Filter	53,339	20%	10,668	0%	0	0%	0	80%	42,672	0%	0
Disinfection	160,092	40%	64,037	50%	80,046	10%	16,010	0%	0	0%	0
Sludge Handling	283,285	0%	0	20%	56,657	70%	198,300	10%	28,329	0%	0
Total O, M & R Cost	**988,716**		**307,826**		**240,212**		**311,393**		**97,198**		**32,099**
Process	**FY 2017-18 Cost, $**	**Flow**	**Flow, $**	**BOD**	**BOD, $**	**SS**	**SS, $**	**P**	**P, $**	**Ammonia**	**Ammonia, $**
Pumping	173,922	100%	173,922	0%	0	0%	0	0%	0	0%	0
Grit and Primary Settling	101,733	20%	20,347	30%	30,520	30%	30,520	20%	20,347	0%	0
Trickling Filter and Aeration	132,776	20%	26,556	35%	46,472	30%	39,833	5%	6,639	10%	13,278
Final Settling	99,113	20%	19,823	30%	29,734	30%	29,734	0%	0	20%	19,823
Sand Filter	54,965	20%	10,993	0%	0	0%	0	80%	43,972	0%	0
Disinfection	165,234	40%	66,094	50%	82,617	10%	16,524	0%	0	0%	0
Sludge Handling	293,776	0%	0	20%	58,756	70%	205,644	10%	29,378	0%	0
Total O, M & R Cost	**1,021,519**		**317,735**		**248,099**		**322,255**		**100,336**		**33,101**
Process	**FY 2018-19 Cost, $**	**Flow**	**Flow, $**	**BOD**	**BOD, $**	**SS**	**SS, $**	**P**	**P, $**	**Ammonia**	**Ammonia, $**
Pumping	179,750	100%	179,750	0%	0	0%	0	0%	0	0%	0
Grit and Primary Settling	104,740	20%	20,948	30%	31,422	30%	31,422	20%	20,948	0%	0
Trickling Filter and Aeration	137,256	20%	27,452	35%	48,040	30%	41,177	5%	6,863	10%	13,726
Final Settling	102,120	20%	20,424	30%	30,636	30%	30,636	0%	0	20%	20,424
Sand Filter	56,675	20%	11,335	0%	0	0%	0	80%	45,340	0%	0
Disinfection	170,599	40%	68,240	50%	85,300	10%	17,060	0%	0	0%	0
Sludge Handling	304,856	0%	0	20%	60,972	70%	213,400	10%	30,486	0%	0
Total O, M & R Cost	**1,055,996**		**328,149**		**256,370**		**333,695**		**103,637**		**34,150**

Table 9
Extra Strength Wastewater Surcharge Calculations

FY 2014-15	BOD	SS	P	Ammonia
Annual O, M & R Cost	$225,487	$291,236	$91,359	$30,225
Annual Loadings, Pounds	142,500	129,468	2,880	20,364
Surcharge, per Pound above NDS *	**$1.58**	**$2.25**	**$31.72**	**$1.48**
FY 2015-16	**BOD**	**SS**	**P**	**Ammonia**
Annual O, M & R Cost	$232,681	$301,062	$94,207	$31,142
Annual Loadings, Pounds	142,500	129,468	2,880	20,364
Surcharge, per Pound above NDS *	**$1.63**	**$2.33**	**$32.71**	**$1.53**
FY 2016-17	**BOD**	**SS**	**P**	**Ammonia**
Annual O, M & R Cost	$240,212	$311,393	$97,198	$32,099
Annual Loadings, Pounds	142,500	129,468	2,880	20,364
Surcharge, per Pound above NDS *	**$1.69**	**$2.41**	**$33.75**	**$1.58**
FY 2017-18	**BOD**	**SS**	**P**	**Ammonia**
Annual O, M & R Cost	$248,099	$322,255	$100,336	$33,101
Annual Loadings, Pounds	142,500	129,468	2,880	20,364
Surcharge, per Pound above NDS *	**$1.74**	**$2.49**	**$34.84**	**$1.63**
FY 2018-19	**BOD**	**SS**	**P**	**Ammonia**
Annual O, M & R Cost	$256,370	$333,695	$103,637	$34,150
Annual Loadings, Pounds	142,500	129,468	2,880	20,364
Surcharge, per Pound above NDS *	**$1.80**	**$2.58**	**$35.99**	**$1.68**
* Normal Domestic Strength				
Total WWTP Influent Pounds Loadings, FY 2013 (Hardesty)	**142,500**	**129,468**	**2,880**	**20,364**

Table 10
Gross Replacement Value of Current Wastewater Facilities

Asset	Date in Service	ENR Index at Date in Service	Original Cost ($)	ENR Index to February 2014	Replacement Value, February 2014 ($)
ENR, February 2014:				9,681	
Wastewater Treatment Plant Expansion Bid Jan 9, 1976	1976	2,305	2,918,750	4.2000	12,258,750
Phase 1A Wastewater Treatment Plant Filter Rehabilitation Bid Oct 16, 1991	1992	4,985	695,000	1.9420	1,349,708
Contract 91-S-1 Phase 1B Wastewater Treatment Plant Filter Rehabilitation Bid Oct 16, 1991	1992	4,985	555,000	1.9420	1,077,824
Wastewater Treatment Plant Project No 196.39-S-2 Bid June 23 1992	1992	4,985	633,750	1.9420	1,230,759
Wastewater Treatment Plant Expansion to 1.3 MGD	1997	5,826	3,683,750	1.6617	6,121,247
8 Mile Road Pump Station	2001	6,334	1,300,000	1.5284	1,986,943
Total			**9,786,250**		**24,025,232**

Table 11
Gross System Development Charge per REU

Annual Billable Flow, 1,000 Gallon Units		241,353
Annual Billable Flow, per Residential Equivalent Unit (REU), per Year, 1,000 Gallon Units Based on 5,000 Gallons per Month per REU Usage		60
Current REUs (Including Metered Customers converted to REUs)		4,023
Additional REUs by 2033		0
Projected 2033 REUs (Including Metered Customers Converted to REUs)		4,023
February 2014 Wastewater System Gross Value	$	24,025,232
Gross System Development Charge (SDC) per REU	$	5,973

Table 12
Outstanding Principal Credit per REU

Debt Instrument (Date and Amount)	Current	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 19-20	FY 19-21	FY 19-22
1992 Junior Lien Bond Principal/2004 $660,000 Refunding Bond Principal (Final Payment in 2022)	$ 340,000	$ 305,000	$ 265,000	$ 225,000	$ 180,000	$ 135,000	$ 90,000	$ 45,000	0
61% of 2007 1997 Expansion & 8 Mile PS Refunding $4,965,000 Bond Principal (Final Payment in 2017)	$ 908,900	$ 582,550	$ 244,000	0					
Total Outstanding Bond Principal	$ 1,248,900	$ 887,550	$ 509,000	$ 225,000	$ 180,000	$ 135,000	$ 90,000	$ 45,000	
Projected 2033 REUs (Including Metered Customers Converted to REUs)	4,023	4,023	4,023	4,023	4,023	4,023			
Outstanding Bond Principal Credit per REU	**$ 310**	**$ 221**	**$ 127**	**$ 56**	**$ 45**	**$ 34**			

Table 13
Projected SDC per REU

	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19
Gross SDC per REU	$ 5,973	$ 5,973	$ 5,973	$ 5,973	$ 5,973
Outstanding Principal Credit per REU	$ 221	$ 127	$ 56	$ 45	$ 34
Potential Net SDC per REU	$ 5,752	$ 5,846	$ 5,917	$ 5,928	$ 5,939
Recommended SDC per REU Based on Current $3,550 SDC per REU	**$ 3,550**	**$ 3,550**	**$ 3,550**	**$ 3,550**	**$ 3,550**

Table 14
Adequacy of Revenue Generated by Projected Metered and REU Rates

FY 2014-15				
Projected Revenue Required From Rates	**Customer Type**	**Projected Rate**	**Projected Units**	**Projected Revenue**
	Metered Customers	$ 5.60	42,145	$ 236,010
	REU (Flat Rate) Customers	$ 84.00	13,281	$ 1,115,567
$ 1,351,332	**TOTAL**			**$ 1,351,577**
			CLOSURE:	$ 245

FY 2015-16				
Projected Revenue Required From Rates	**Customer Type**	**Projected Rate**	**Projected Units**	**Projected Revenue**
	Metered Customers	$ 5.60	42,145	$ 236,010
	REU (Flat Rate) Customers	$ 84.00	13,281	$ 1,115,567
$ 1,351,400	**TOTAL**			**$ 1,351,577**
			CLOSURE:	$ 177

FY 2016-17				
Projected Revenue Required From Rates	**Customer Type**	**Projected Rate**	**Projected Units**	**Projected Revenue**
	Metered Customers	$ 5.60	42,145	$ 236,010
	REU (Flat Rate) Customers	$ 84.00	13,281	$ 1,115,567
$ 1,351,316	**TOTAL**			**$ 1,351,577**
			CLOSURE:	$ 261

FY 2017-18				
Projected Revenue Required From Rates	**Customer Type**	**Projected Rate**	**Projected Units**	**Projected Revenue**
	Metered Customers	$ 5.60	42,145	$ 236,010
	REU (Flat Rate) Customers	$ 84.00	13,281	$ 1,115,567
$ 1,351,306	**TOTAL**			**$ 1,351,577**
			CLOSURE:	$ 271

FY 2018-19				
Projected Revenue Required From Rates	**Customer Type**	**Projected Rate**	**Projected Units**	**Projected Revenue**
	Metered Customers	$ 5.60	42,145	$ 236,010
	REU (Flat Rate) Customers	$ 84.00	13,281	$ 1,115,567
$ 1,351,298	**TOTAL**			**$ 1,351,577**
			CLOSURE:	$ 279

FY 2014-15 to FY 2018-19				
Projected Revenue Required From Rates	**Customer Type**			**Projected Revenue**
	Metered Customers			**$ 1,180,049**
	REU (Flat Rate) Customers			**$ 5,577,835**
$ 6,756,652	**TOTAL**			**$ 6,757,884**
			CLOSURE:	$ 1,232

TETRA TECH

July 13, 2017

Ms. Marlene Chockley
Northfield Township Supervisor
8350 Main Street
Whitmore Lake, MI 48189

Re: Northfield Township, Michigan
Update of Wastewater Cost of Service "SmartRate" Study

Dear Ms. Chockley:

Tetra Tech has appreciated the opportunity to serve Northfield Township since the 1960s. One of the many services we have completed is cost of service (i.e. rate studies) for the wastewater utility. A rate study was last completed in April 2014.

To Tetra Tech's understanding, the Township last raised sewer rates in 2014. It is prudent to periodically complete a rate study to confirm the utility's revenues are keeping pace with the utility's costs and adjust rates accordingly.

There are also growth requests occurring from areas within the Township planned for growth. These requests may necessitate capital improvements to the system. The rate study can be completed with alternative budgets to better understand the impact of potential capital improvements upon connection fees and rates.

Tetra Tech has prepared this proposal to update the 2014 rate study to account for current costs and to better understand the impact of potential improvements upon rates and fees.

INTRODUCTION

The Wastewater Cost of Service Study will address the following items:

1. Calculate wastewater rates and new-customer connection fees to comply with the intent of the proportionality test guidance given in the December 1998 Michigan Supreme Court decision *Bolt v. City of Lansing ("Bolt").*
2. Develop a method to calculate an annual contribution to a dedicated equipment replacement fund to comply with Michigan Department of Environmental Quality (MDEQ) requirements.
3. Project rates and connection fees for a five-year period.

SCOPE OF SERVICES

We propose to perform the following tasks for the Township:

Task 1: Data Collection

We request that Township staff provide us with the following data. In some cases we will request that Township staff review tables of data we prepared previously for ease of update.

Tetra Tech
710 Avis Drive, Ann Arbor, MI 48108
Tel 734.665.6000 Fax 734.213.3003 www.tetratech.com

- Audited end of year unrestricted and restricted wastewater fund balances for the last two fiscal years.
- Audited wastewater operation and maintenance (O&M) and capital budgets for the last two fiscal years.
- Audited wastewater system revenues for the last two fiscal years.
- Wastewater O&M and capital budgets for the upcoming fiscal year.
- Wastewater capital improvement plan (CIP) for the next five years.
- List of major equipment items in the wastewater collection, treatment and disposal systems. The list should include the year the item was installed and the cost of the item. The Township's estimate of the remaining useful life of the equipment will also be needed. Major equipment items include such things as:
  - Pumps
  - Chemical Feed Equipment
  - Emergency Generators
  - Vehicles
- Current wastewater bond principal and interest repayment schedules.
- Proposed wastewater bond principal and interest repayment schedules.
- Asset value tabulation (wastewater asset description, year of construction and useful life).
- Contributions to the wastewater fund from sources other than wastewater rates and charges.
- Number of REUs billed per year for the last two fiscal years.
- Projected REU growth rate.
- Billable wastewater flow of each metered customer for the last two fiscal years, by bill.
- Number and type (residential, commercial, institutional, or industrial) of non-metered wastewater customers.
- Wastewater treatment plant influent loadings, in pounds per month, for the last fiscal year for Biochemical Oxygen Demand, Suspended Solids, Phosphorus and Ammonia.

Task 2: Data Review and Clarification

We will review the data collected under Task 1 and request additional data and clarification from Township staff as needed.

Task 3: Prepare Draft Wastewater Cost of Service Study

Once all of the necessary data has been supplied as given in Tasks 1 and 2, Tetra Tech will prepare the Wastewater Cost of Service and System Development Charge (connection fee) Study. The study will include a hardcopy of the "SmartRate" linked financial spreadsheets.

We will include a maximum of four alternative rate and connection fee schedules based on four alternative capital improvement implementation scenarios that the Township may be considering.

Our report will summarize sewer rates and connection fees in use by 5 to 10 peer communities in southeastern Michigan.

Task 4: Review Draft Wastewater Cost of Service Study with Township Staff

We meet with Township staff to present our draft of the Wastewater Cost of Service Study. Comments will be discussed in order to address them in the final Wastewater Cost of Service Study.

Task 5: Revise Draft Study and Prepare Final Wastewater Cost of Service Study

The draft study will be revised to incorporate the comments obtained in Task 4. We will then prepare the final Wastewater Cost of Service Study.

Task 6: Presentation to the Township Board

Tetra Tech will present the results of the study in a PowerPoint and Excel presentation to the Township Board.

SCHEDULE

We will deliver the draft Wastewater Cost of Service study within one month of our receipt of all required data.

TASKS NOT INCLUDED IN THIS PROPOSAL

The following tasks are specifically not included in this proposal:

- Wastewater Ordinance Review.
- Preparation of a User Charge System for submittal to the MDEQ.
- Any meetings or presentations sessions beyond the number included in this proposal.
- Training in the use of the Excel spreadsheets.
- Additional rate and connection fee scenarios beyond the maximum of four such scenarios included in this proposal.

COMPENSATION

Compensation for our personnel for the scope of work included in this proposal will be a lump sum of $10,500.

It is Tetra Tech's opinion that this study can be reimbursed from the Stormwater – Asset Management-Wastewater (SAW) grant that is expected in November 2017 and was procured by Tetra Tech's efforts.

If you concur with our proposal, please sign in the space provided and return one original signed copy to indicate your authorization to proceed. Our Standard Terms and Conditions are attached and are considered an integral part of this proposal.

TETRA TECH

We appreciate this opportunity to be of continued service to Northfield Township, and look forward to helping you achieve your goals. Please contact me at (734) 213-4063 if you have any questions regarding this proposal.

Sincerely,

Brian Rubel, P.E.
Vice President

Vic Cooperwasser, P.E.
Senior Project Manager

PROPOSAL ACCEPTED BY: _____

TITLE: _____ **DATE:** _____

Tetra Tech of Michigan, PC
Engineering Services Standard Terms & Conditions

Services Consultant will perform services for the Project as set forth in Attachment A and in accordance with these Terms & Conditions. Consultant has developed the Project scope of service, schedule, and compensation based on available information and various assumptions. The Client acknowledges that adjustments to the schedule and compensation may be necessary based on the actual circumstances encountered by Consultant in performing their services. Consultant is authorized to proceed with services upon receipt of an executed Agreement.

Compensation In consideration of the services performed by Consultant, the Client shall pay Consultant in the manner set forth above. The parties acknowledge that terms of compensation are based on an orderly and continuous progress of the Project. Compensation shall be equitably adjusted for delays or extensions of time beyond the control of Consultant. Where total project compensation has been separately identified for various tasks, Consultant may adjust the amounts allocated between tasks as the work progresses so long as the total compensation amount for the project is not exceeded.

Fee Definitions The following fee types shall apply to methods of payment:

- **Salary Cost** is defined as the individual's base salary plus customary and statutory benefits. Statutory benefits shall be as prescribed by law and customary benefits shall be as established by Consultant employment policy.
- **Cost Plus** is defined as the individual's base salary plus actual overhead plus professional fee. Overhead shall include customary and statutory benefits, administrative expense, and non-project operating costs.
- **Lump Sum** is defined as a fixed price amount for the scope of services described.
- **Standard Rates** is defined as individual time multiplied by standard billing rates for that individual.
- **Subcontracted Services** are defined as Project-related services provided by other parties to Consultant.
- **Reimbursable Expenses** are defined as actual expenses incurred in connection with the Project.

Payment Terms Consultant shall submit invoices at least once per month for services performed and Client shall pay the full invoice amount within 30 days of the invoice date. Invoices will be considered correct if not questioned in writing within 10 days of the invoice date. Client payment to Consultant is not contingent on arrangement of project financing or receipt of funds from a third party. In the event the Client disputes the invoice or any portion thereof, the undisputed portion shall be paid to Consultant based on terms of this Agreement. Invoices not in dispute and unpaid after 30 days shall accrue interest at the rate of one and one-half percent per month (or the maximum percentage allowed by law, whichever is the lesser). Invoice payment delayed beyond 60 days shall give Consultant the right to stop work until payments are current. Non-payment beyond 70 days shall be just cause for termination by Consultant.

Additional Services The Client and Consultant acknowledge that additional services may be necessary for the Project to address issues that may not be known at Project initiation or that may be required to address circumstances that were not foreseen. In that event, Consultant shall notify the Client of the need for additional services and the Client shall pay for such additional services in an amount and manner as the parties may subsequently agree.

Site Access The Client shall obtain all necessary approvals for Consultant to access the Project site(s).

Underground Facilities Consultant and/or its authorized subcontractor will conduct research and perform site reconnaissance in an effort to discover the location of existing underground facilities prior to developing boring plans, conducting borings, or undertaking invasive subsurface investigations. Client recognizes that accurate drawings or knowledge of the location of such facilities may not exist, or that research may reveal as-built drawings or other documents that may inaccurately show, or not show, the location of existing underground facilities. In such events, except for the sole negligence, willful misconduct, or practice not conforming to the Standard of Care cited in this Agreement, Client agrees to indemnify and hold Consultant and/or its Subcontractor harmless from any and all property damage, injury, or economic loss arising or allegedly arising from borings or other subsurface penetrations.

Regulated Wastes Client is responsible for the disposal of all regulated wastes generated as a result of services provided under this Agreement. Consultant and Client mutually agree that Consultant assumes no responsibility for the waste or disposal thereof.

Contractor Selection Consultant may make recommendations concerning award of construction contracts and products. The Client acknowledges that the final selection of construction contractors and products is the Client's sole responsibility.

Ownership of Documents Drawings, specifications, reports, programs, manuals, or other documents, including all documents on electronic media, prepared under this Agreement are instruments of service and are, and shall remain, the property of Consultant. Record documents of service shall be based on the printed copy. Consultant will retain all common law, statutory, and other reserved rights, including the copyright thereto. Consultant will furnish documents electronically; however, the Client releases Consultant from any liability that may result from documents used in this form. Consultant shall not be held liable for reuse of documents or modifications thereof by the Client or its representatives for any purpose other than the original intent of this Agreement, without written authorization of and appropriate compensation to Consultant.

Standard of Care Services provided by Consultant under this Agreement will be performed in a manner consistent with that degree of care and skill ordinarily exercised by members of the same profession currently practicing under similar circumstances. Consultant makes no warranty or guaranty, either express or implied. Consultant will not be liable for the cost of any omission that adds value to the Project.

Period of Service This Agreement shall remain in force until completion and acceptance of the services or until terminated by mutual agreement. Consultant shall perform the services for the Project in a timely manner consistent with sound professional practice. Consultant will strive to perform its services according to the Project schedule set forth in the provisions for Scope of Work/Fee/Schedule in Attachment A. The services of each task shall be considered complete when deliverables for the task have been presented to the Client. Consultant shall be entitled to an extension of time and compensation adjustment for any delay beyond Consultant control.

Insurance and Liability Consultant shall maintain the following insurance and coverage limits during the period of service. The Client will be named as an additional insured on the Commercial General Liability and Automobile Liability insurance policies.

Worker's Compensation – as required by applicable state statute
Commercial General Liability - $1,000,000 per occurrence for bodily injury, including death and property damage, and $2,000,000 in the aggregate
Automobile Liability –$1,000,000 combined single limit for bodily injury and property damage
Professional Liability (E&O) - $1,000,000 each claim and in the aggregate

The Client shall make arrangements for Builder's Risk, Protective Liability, Pollution Prevention, and other specific insurance coverage warranted for the Project in amounts appropriate to the Project value and risks. Consultant shall be a named insured on those policies where Consultant may be at risk. The Client shall obtain the counsel of others in setting insurance limits for construction contracts.

Indemnification Consultant shall indemnify and hold harmless the Client and its employees from any liability, settlements, loss, or costs (including reasonable attorneys' fees and costs of defense) to the extent caused solely by the negligent act, error, or omission of Consultant in the performance of services under this Agreement. If such damage results in part by the negligence of another party, Consultant shall be liable only to the extent of Consultant's proportional negligence.

Dispute Resolution The Client and Consultant agree that they shall diligently pursue resolution of all disagreements within 45 days of either party's written notice using a mutually acceptable form of mediated dispute resolution prior to exercising their rights under law. Consultant shall continue to perform services for the Project and the Client shall pay for such services during the dispute resolution process unless the Client issues a written notice to suspend work. Causes of action between the parties to this Agreement shall be deemed to have accrued and the applicable statutes of repose and/or limitation shall commence not later than the date of substantial completion.

Suspension of Work The Client may suspend services performed by Consultant with cause upon fourteen (14) days written notice. Consultant shall submit an invoice for services performed up to the effective date of the work suspension and the Client shall pay Consultant all outstanding invoices within fourteen (14) days. If the work suspension exceeds thirty (30) days from the effective work suspension date, Consultant shall be entitled to renegotiate the Project schedule and the compensation terms for the Project.

Termination The Client or Consultant may terminate services on the Project upon seven (7) days written notice without cause or in the event of substantial failure by the other party to fulfill its obligations of the terms hereunder. Consultant shall submit an invoice for services performed up to the effective date of termination and the Client shall pay Consultant all outstanding invoices, together with all costs arising out of such termination, within fourteen (14) days. The Client may withhold an amount for services that may be in dispute provided that the Client furnishes a written notice of the basis for their dispute and that the amount withheld represents a reasonable value.

Authorized Representative The Project Manager assigned to the Project by Consultant is authorized to make decisions or commitments related to the project on behalf of Consultant. Only authorized representatives of Consultant are authorized to execute contracts and/or work orders on behalf of Consultant. The Client shall designate a representative with similar authority. Email messages between Client and members of the project team shall not be construed as an actual or proposed contractual amendment of the services, compensation or payment terms of the Agreement.

Project Requirements The Client shall confirm the objectives, requirements, constraints, and criteria for the Project at its inception. If the Client has established design standards, they shall be furnished to Consultant at Project inception. Consultant will review the Client design standards and may recommend alternate standards considering the standard of care provision.

Independent Consultant Consultant is and shall be at all times during the term of this Agreement an independent consultant and not an employee or agent of the Client. Consultant shall retain control over the means and methods used in performing Consultant's services and may retain subconsultants to perform certain services as determined by Consultant.

Compliance with Laws Consultant shall perform its services consistent with sound professional practice and endeavor to incorporate laws, regulations, codes, and standards applicable at the time the work is performed. In the event that standards of practice change during the Project, Consultant shall be entitled to additional compensation where additional services are needed to conform to the standard of practice.

Permits and Approvals Consultant will assist the Client in preparing applications and supporting documents for the Client to secure permits and approvals from agencies having jurisdiction over the Project. The Client agrees to pay all application and review fees.

Limitation of Liability In recognition of the relative risks and benefits of the project to both the Client and Consultant, the risks have been allocated such that the Client agrees, to the fullest extent permitted by law, to limit the liability of Consultant and its subconsultants to the Client and to all construction contractors and subcontractors on the project for any and all claims, losses, costs, damages of any nature whatsoever or claims expenses from any cause or causes, so that the total aggregate liability of Consultant and its subconsultants to all those named shall not exceed $50,000 or the amount of Consultant's total fee paid by the Client for services under this Agreement, whichever is the greater. Such claims and causes include, but are not limited to negligence, professional errors or omissions, strict liability, breach of contract or warranty.

Consequential Damages Notwithstanding any other provision of this Agreement, and to the fullest extent permitted by law, neither the Client nor Consultant, their respective officers, directors, partners, employees, contractors or subconsultants shall be liable to the other or shall make any claim for any incidental, indirect or consequential damages arising out of or connected in any way to the project or to this Agreement. This mutual waiver of consequential damages shall include, but is not limited to, loss of use, loss of profit, loss of business, loss of income, loss of reputation or any other consequential damages that either party may have incurred from any cause of action including negligence, strict liability, breach of contract and breach of strict or implied warranty. Both the Client and Consultant shall require similar waivers of consequential damages protecting all the entities or persons named herein in all contracts and subcontracts with others involved in this project or with this Agreement.

Waiver of Subrogation Consultant shall endeavor to obtain a waiver of subrogation against the Client, if requested in writing by the Client, provided that Consultant will not increase its exposure to risk and Client will pay the cost associated with any premium increase or special fees.

Environmental Matters The Client warrants that they have disclosed all potential hazardous materials that may be encountered on the Project. In the event unknown hazardous materials are encountered, Consultant shall be entitled to additional compensation for appropriate actions to protect the health and safety of its personnel, and for additional services required to comply with applicable laws. The Client shall indemnify Consultant from any claim related to hazardous materials encountered on the Project except for those events caused by negligent acts of Consultant.

Cost Opinions Consultant shall prepare cost opinions for the Project based on historical information that represents the judgment of a qualified professional. The Client and Consultant acknowledge that actual costs may vary from the cost opinions prepared and that Consultant offers no guarantee related to the Project cost.

Contingency Fund The Client acknowledges the potential for changes in the work during construction and the Client agrees to include a contingency fund in the Project budget appropriate to the potential risks and uncertainties associated with the Project. Consultant may offer advice concerning the value of the contingency fund; however, Consultant shall not be liable for additional costs that the Client may incur beyond the contingency fund they select unless such additional cost results from a negligent act, error, or omission related to services performed by Consultant.

Safety Consultant shall be responsible solely for the safety precautions or programs of its employees and no other party.

Information from Other Parties The Client and Consultant acknowledge that Consultant will rely on information furnished by other parties in performing its services under the Project. Consultant shall not be liable for any damages that may be incurred by the Client in the use of third party information.

Force Majeure Consultant shall not be liable for any damages caused by any delay that is beyond Consultant's reasonable control, including but not limited to unavoidable delays that may result from any acts of God, strikes, lockouts, wars, acts of terrorism, riots, acts of governmental authorities, extraordinary weather conditions or other natural catastrophes, or any other cause beyond the reasonable control or contemplation of either party.

Waiver of Rights The failure of either party to enforce any provision of these terms and conditions shall not constitute a waiver of such provision nor diminish the right of either party to the remedies of such provision.

Warranty Consultant warrants that it will deliver services under the Agreement within the standard of care. No other expressed or implied warranty is provided by Consultant.

Severability Any provision of these terms later held to be unenforceable shall be deemed void and all remaining provisions shall continue in full force and effect. In such event, the Client and Consultant will work in good faith to replace an invalid provision with one that is valid with as close to the original meaning as possible.

Survival All obligations arising prior to the termination of this Agreement and all provisions of these terms that allocate responsibility or liability between the Client and Consultant shall survive the completion or termination of services for the Project.

Assignments Neither party shall assign its rights, interests, or obligations under the Agreement without the express written consent of the other party.

Governing Law The terms of Agreement shall be governed by the laws of the state where the services are performed provided that nothing contained herein shall be interpreted in such a manner as to render it unenforceable under the laws of the state in which the Project resides.

Collection Costs In the event that legal action is necessary to enforce the payment provisions of this Agreement if Client fails to make payment within sixty (60) days of the invoice date, Consultant shall be entitled to collect from the Client any judgment or settlement sums due, reasonable attorneys' fees, court costs, and expenses incurred by Consultant in connection therewith and, in addition, the reasonable value of Consultant's time and expenses spent in connection with such collection action, computed at Consultant's prevailing fee schedule and expense policies.

Equal Employment Opportunity Consultant will comply with federal regulations pertaining to Equal Employment Opportunity. Consultant is in compliance with applicable local, state, and federal regulations concerning minority hiring. It is Consultant's policy to ensure that applicants and employees are treated equally without regard to race, creed, sex, color, religion, veteran status, ancestry, citizenship status, national origin, marital status, sexual orientation, or disability. Consultant expressly assures all employees, applicants for employment, and the community of its continuous commitment to equal opportunity and fair employment practices.

Attorney Fees Should there be any suit or action instituted to enforce any right granted in this contract, the substantially prevailing party shall be entitled to recover its costs, disbursements, and reasonable attorney fees from the other party. The party that is awarded a net recovery against the other party shall be deemed the substantially prevailing party unless such other party has previously made a bona fide offer of payment in settlement and the amount of recovery is the same or less than the amount offered in settlement. Reasonable attorney fees may be recovered regardless of the forum in which the dispute is heard, including an appeal.

Third Party Beneficiaries Nothing in this Agreement shall create a contractual relationship with or a cause of action in favor of a third party against either the Client or the Consultant. The Consultant's services under this Agreement are being performed solely for the Client's benefit, and no other entity shall have any claim against the Consultant because of this Agreement or the performance or nonperformance of services hereunder. The Client agrees to include a provision in all contracts with contractors and other entities involved in this project to carry out the intent of this paragraph.

Lien Rights Consultant may file a lien against the Client's property in the event that the Client does not make payment within the time prescribed in this Agreement. The Client agrees that services by Consultant are considered property improvements and the Client waives the right to any legal defense to the contrary.

Captions The captions herein are for convenience only and are not to be construed as part of this Agreement, nor shall the same be construed as defining or limiting in any way the scope or intent of the provisions hereof.