City of Traverse City
2017 *Water System*
Asset Management Program

Prepared by

CITY of TRAVERSE CITY MICHIGAN

December 2017

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City of Traverse City, Water Asset Management Program

Mission Statement

One important element to an asset management program is a mission statement, which identifies the overarching purpose of the City's Water Asset Management Program. The purpose of the City's Water Asset Management Program is summarized by the following mission statement:

Preserve and enhance the safety, health, and quality of life for the people of Traverse City through the effective management and maintenance of its drinking water infrastructure.

Water Asset Management Team Members

The team member's listed below are committed to the asset management mission statement and were instrumental in the progress made and findings outlined in this report. Further questions on the City's Water Asset Management Program can be directed to these team members.

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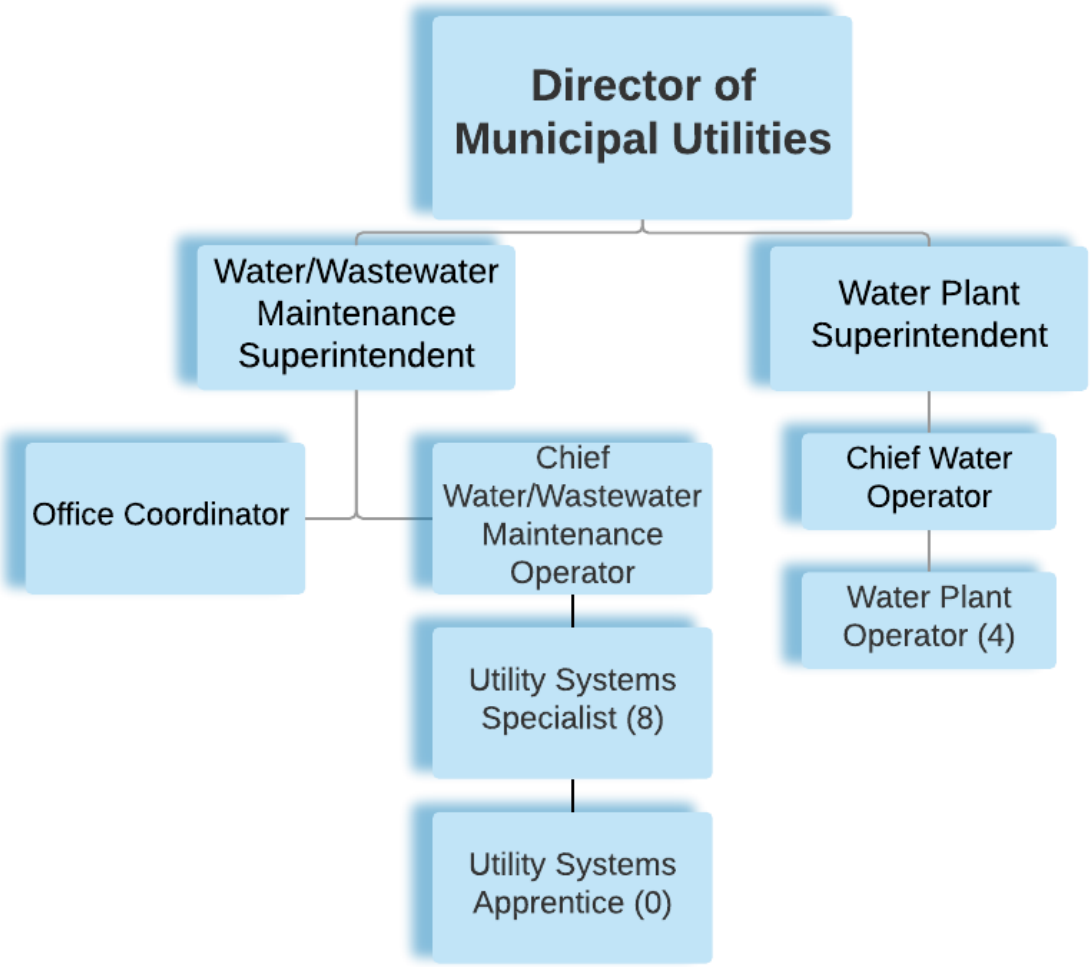
Staffing

The Director of Municipal Utilities feels current staffing is adequate to meet previously identified maintenance objectives and goals. However, staffing needs may change as maintenance objectives and goals are modified.

Current Staffing Structure



Water System Description

The City of Traverse City is located in Grand Traverse County in the northwestern lower peninsula of Michigan, approximately 130 miles north of Grand Rapids. The City supplies water to all City residents and businesses as well as to three neighboring townships including Garfield, Elmwood and Peninsula Townships through bulk water agreements. Source water is purified via direct filtration at the Water Treatment Plant which has a rated treatment capacity of 20 million gallons per day (MGD). Water is then pumped to a City-wide distribution system of more than 118 miles of water main. The City operates and maintains 5.3 million gallons of storage within the City distribution system.

The City is currently constructing an additional 2 million gallon storage tank adjacent to one of the existing tanks in 2018 for redundancy and to allow for rehabilitation of the existing tank which is scheduled to immediately follow. To improve water quality, tank mixers will also be installed in the new tank and the rehabilitated tank.

The City currently has agreements for provision of bulk water with Garfield Township (5 mgd maximum and 3 mgd minimum), Peninsula Township (1 mgd maximum) and Elmwood Township (0.75 mgd maximum). A fourth Township maintains an emergency water connection to the City's system.

The Water System is maintained by two city divisions, the Water Treatment Plant and the Water/Wastewater Maintenance Division. A brief summary of the responsibilities of each division is listed below.

Water Treatment Plant:

- Provide adequate water supply and system pressure
- Ensure proper chemical dosages for optimal treatment
- Maintain adequate staffing levels/certification/licensing
- Perform bacteriological testing to protect public health
- Maintain State Certified microbiology laboratory
- Perform laboratory chemical analyses to monitor water quality
- Perform maintenance and repairs on treatment plant equipment
- Meet or exceed all regulatory requirements of water quality as established by ACT 399.

Water/Wastewater Maintenance:

- Maintain, repair and flush 118 miles of water main
- Maintain, repair and exercise 1,788 main line water valves
- Install and maintain 7,461 water services/meters
- Flush, repair and drain 988 fire hydrants
- Tap water mains for new service leads as required
- Administer the Cross Connection Inspection Program
- Locate all water, sanitary and storm lines for MISS DIG
- Assist all DPS Divisions with confined space entries
- Meet or exceed all regulatory requirements and industry standards.

Water Asset Management Core Components

The City of Traverse City used the Asset Management Guidance for Water Systems from the MDEQ, July 2013 as a guideline to manage assets. The City is in the process implementing a fully functional asset management program for both the Water Distribution System and the Water Treatment Plant. The core components from the guide consist of:

- Asset Inventory
- Critical Assets
- Level of Service
- Capital Improvement Project Plans
- Revenue Structure

Water Asset Inventory

The City has incorporated different pieces of technology to assist in compiling these core components. The asset inventory for the distribution system is kept in the City's Geographic Information System (GIS) Spatial Database Engine (SDE). This software is an Environmental Systems Research Institute (ESRI) software that is a tool used to geographically locate all the City's distribution systems assets and collect attributes associated with each individual asset. This information was created by digitizing asset information and using as-built plans from City construction projects.

In the above referenced MDEQ guidance, the inventory component needs to answer questions about an asset.

- What do I own?
- Where is it?
- What condition is it in?
- What is its remaining useful life?
- What is its value?

The GIS component was only answering what the City owned and where it was. The other questions were difficult to answer because it was dynamic data that changed over time. The City decided to purchase and implement Lucity in 2016, Asset Management/Work Order Management software that could help answer the final 3 questions of inventory. Lucity integrates directly to the GIS and both change *as maintenance occurs* throughout the system. Lucity stores inspection data also, which allows the City to collect condition and remaining service life data for the asset. The combination of condition assessment and the consequence of the asset failing provides a way of prioritizing and assessing risk to each asset. This along with the GIS data answers the final inventory question: What is the value of the asset?

Lucity was implemented for the Water Distribution System shortly thereafter and is in the process of being implemented for the Water Treatment Plant now. Lucity allows the City to keep inventory current, while tracking all aspects of an asset by using work orders, inspections, testing, etc. With a current inventory of all Water Distribution System assets and finishing the inventory for the Water Treatment Plant, Lucity will be utilized to keep it current by using the many features of the program.

An inventory list has been compiled which outlines baseline information on Water Treatment Plant assets. As the City continues with its implementation of Lucity, it will ensure that the asset inventory is as accurate as possible by developing procedures for updating assets in the inventory as they are added, replaced and decommissioned. Pertinent asset information includes the facility ID, location of the asset, type of equipment, manufacturer, model number, serial number, size, year installed, year rebuilt, as-built drawings and maintenance records.

A general list of assets are shown below:

Distribution System assets include:

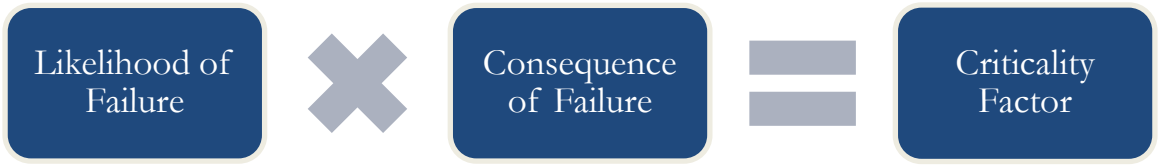
- 988 Hydrants
- 118 miles of Water Main
- 1,778 Valves
- 7461 Meters

Water Treatment Plant assets include:

- Low Service intake pipe and crib structure
- Low Service building
- 4 Low Service pumps
- Treatment Plant building
- State Certified Laboratory and equipment
- 5 High Service pumps
- 2 Lagoons and 1 Pump Discharge station
- 2 Flocculators
- 5 Filters
- 1.5 million gallon Finished Water Reservoir at plant
- Treatment Plant Valves and Process Piping
- Various Chemical Feed Pumps and Scales
- 7 Bulk Chemical Tanks
- 3 Chemical Day Tanks
- Treatment Plant Clearwell
- 2 Booster Stations
- 6 Booster Station Pumps
- 2 Storage Tanks

Criticality Assessment

Determining the assets most critical to system operation allows a community to manage risk, support Capital Improvement Plans (CIP), and efficiently allocate Operation and Maintenance (O&M) funds. The two key factors used to determine criticality are Likelihood of Failure (LoF) and Consequence of Failure (CoF). LoF and CoF are multiplied to determine the Criticality Factor (CF) as shown in the following figure.



Likelihood of Failure (LoF) Evaluation Process

The likelihood that an asset will fail is the common way to change the total risk that processes and assets pose to the City. While changing the consequence of a failure usually requires a redesign of a process or complete changes to the assets or systems in use, likelihood can be changed more easily. Likelihood can be changed by rebuilding an asset or improving maintenance procedures. The successful application of predictive technologies to certain assets can also reduce the likelihood of a failure. These are all things that can be done without the need for major asset replacements or plant redesigns.

Distribution System LoF

LoF for the Distribution System considers the age as physical condition and main break history of an asset. A standardized rating of one through five is assigned to each asset with a score of five indicating worst condition as shown in the table below.

Likelihood of Failure

Score	Description
1	Improbable
2	Remote, unlikely but possible
3	Possible
4	Probable, likely
5	Imminent, likely in near future

Water Treatment Plant LoF

The City has developed a matrix to calculate the likelihood of an asset failing at the Water Treatment Plant. The result is presented in the matrix below. Each category was assigned a weighted value based on its contribution to the probability of an asset failing to meet its intended purpose over a range of likelihood (negligible to very likely) with scores (1–10). Since the City considers the current condition of an asset the major factor in predicting the likelihood an asset will fail, a weight of 40 percent was given to the condition rating calculated during the condition assessment.

Likelihood of Failure

Likelihood of Failure (LOF)					City of Traverse City Traverse City WTP	
Category	**Weight**	**Negligible = 1**	**Unlikely = 3**	**Possible = 5**	**Likely = 7**	**Very Likely = 10**
Physical Condition	40%	Very Good Condition. New or Nearly New. Only Normal Maintenance Required.	Good Condition. Minor Wear	Fair. Condition. Major Wear Affecting Level of Service.	Poor Condition Unable to Meet Level of Service Life. Failure Imminent.	Very Poor Condition. Requires Complete Rehabilitation or Replacement. Failed.
O and M Protocols	10%	Complete accurate, Up-To-Date, Written, Easily Accessible and Is Being Used.	Complete, Written, Up-To-Date, Being Used but not easily accessible.	Partially Developed.	Written, But Out-Date and Not Used.	No Written Protocols.
Performance	25%	Sufficient capacity to meet average and peak flow requirements. Appropriate utilization and function.	Underutilized or oversized.	Sufficient capacity, but does not meet functional requirements, or over-utilized.	Able to meet current average capacity demand, but not peak demands.	Unable to meet current average capacity needs.
Reliability	25%	No Unscheduled corrective work order events within 12 months.	1 Unscheduled corrective work order events within 12 months.	2 Unscheduled corrective work order events within 12 months.	3 Unscheduled corrective work order events within 12 months.	4 or more Unscheduled corrective work order events within 12 months.

Consequence of Failure (CoF) Evaluation Process

CoF encourages a focus on social, environmental, and economic cost impacts. The economic CoF encompasses the impacts of direct and indirect economic losses to the affected organization and third parties due to asset failure. The social consequence represents the impact of society due to asset failure and the environmental consequence of failure considers the impact to ecological conditions occurring as a result of asset failure.

Distribution System CoF

The factors are rated on a one through five scale for each asset. If one factor is deemed more important, the weighting is skewed to give that factor more influence.

The following factors were combined to determine the final CoF:
· Relative Network Position – distribution or transmission line
· Diameter/Size – the relative size of the asset with respect to the rest of the system
· Restoration Type/Accessibility – refers to the cost to restore the surface above the asset and if traffic control is needed
· Environment – proximity to sensitive environmental features like Boardman River, Kid's Creek, Grand Traverse Bay, etc.
· Critical Users – important system users (Munson Hospital, Schools, etc.)

Consequence of Failure

Score	Description
1	Negligible, minor loss of function
2	Minimal or Marginal
3	Noticeable, may suspend some operations
4	Critical, temporarily suspends operations
5	Catastrophic disruption

Water Treatment Plant CoF

The consequence of asset failure focuses on the impact a failure may have on the City's ability to meet its established level of service targets. The consequences of an asset failing are usually static unless:

- There is a change to the required level of service
- Major equipment is changed, which results in lower consequence of failure
- There is a redesign of part of the plant

The static nature of the consequence of failure makes the consequence score for a process or asset a potential way of assigning criticality to the assets. The table below shows the Consequence of Failure Table for the Water Treatment Plant. This table was developed by the Water Asset Management Team and lists the level of service (LOS) categories and the range of consequences (negligible to severe) with scores (1-10).

Consequence of Failure

Consequence of Failure (COF)				City of Traverse City Traverse City WTP	
LOS Category	**Weight**	**Negligible = 1**	**Low = 4**	**Moderate = 7**	**Severe = 10**
Public Confidence	25%	No social or economic impact on the community. No reactive media coverage. Any media coverage is a result of proactive announcements by Utility. No complaints.	Minor disruption (e.g., traffic, dust, noise). No adverse media coverage.	Substantial but short-term disruption. Adverse media coverage due to public impact. Localized media coverage.	Long-term impact. Area-wide disruption. Regional media coverage.
Safety of Public and Employees	25%	No Injuries or Adverse Health Effects.	No lost-time injuries or medical attention required beyond first aid.	Lost-time injury or medical attention required.	Loss of life or widespread outbreak of illness.
Regulatory Compliance	20%	No State permit violations.	Technical violation	Probable enforcement action, but fines or surcharge unlikely	Regulator consent order with fines likely
System Delivery	20%	No impact.	Minor impact to process or out of service less than 4 hours.	Major impact to process, out of service <8 hours.	Major impact to process, out of service >24 hours.
Financial Impact	10%	Can be repaired within Utility budget (<$9,000).	Can be repaired between $9,000 and $50,000.	Can be repaired between $51,000 to $149,000.	Greater than $150,000.

Criticality Factor Tables

The following matrices show the final calculations using the previously explained equation.
(LoF x CoF = CF)

CF - Distribution System

Consequence of Failure (CoF) \ Likelihood of Failure (LoF)	1	2	3	4	5
1	1	2	3	4	5
2	2	4	6	8	10
3	3	6	9	12	15
4	4	8	12	16	20
5	5	10	15	20	25

Low Priority (1-4)
Medium Priority (5-9)
High Priority (10-25)

CF – Water Treatment Plant

Consequence of Failure (CoF) \ Likelihood of Failure (LoF)	1	3	5	7	10
1	1	3	5	7	10
3	3	9	15	21	30
5	5	15	25	35	50
7	7	21	35	49	70
10	10	30	50	70	100

Low Priority (1-9)
Medium Priority (10-35)
High Priority (36-100)

Level of Service

The Asset Management Team determined the levels of service expected by its customers in order to characterize the importance of each asset component and its "criticality" to the day-to-day operation of the utility. This is influenced by minimum performance requirements, such as regulations, permit conditions, and water quality standards, etc. Therefore the team derived the following level of service criteria as guidelines for maintaining the drinking water system.

Level of Service Goals	Performance Indicator	Target Level of Service
Asset Condition Assessment	Water Main Replacement Program, Facility Inspections	Regular scheduled maintenance programs
Meter Replacement – Advanced Metering Infrastructure (AMI)	Replace all existing meters with the new Badger meters and install AMI for higher accuracy of reads	Water loss less than 15%
Regulatory Compliance	Compliance with Michigan Department of Environmental Quality (MDEQ) and the United States Environmental Protection Agency (USEPA) Safe Drinking Water Act	Continue to comply with the MDEQ and USEPA
Service Delivery and Customer Communication	Utilize Lucity Software to aid in utility management and promote customer communication, increase effort to reduce number of water related calls and response time	Respond to customer complaints and requests within a timely manner
Operations and Maintenance Optimization	Regular flushing of water distribution system and preventative maintenance of equipment	Flush Water Distribution System annually, Valve exercising program, Maintain scheduled equipment maintenance
Qualified Employees	Certification License	All operators certified at the F4/S4 level and encourage higher levels, along with continuing education requirements

Capital Improvement Plans (CIP)

For detailed CIP information, please see Appendix A. Below is a brief summary of the 2017-18 approved CIP budget information.

Fiscal Year 2017-18 approved CIP items

2 million gallon Lafranier Road Water Reservoir	$ 2,000,000.00
Annual Water Rehab/Replace	$ 450,000.00
AMI Project	$ 750,000.00*
Barlow Reservoir Rehabilitation/Reconstruction	$ 100,000.00
Galvanized Water Service Replacement Project	$ 200,000.00
High & Low Service Pump Repair	$ 80,000.00
Lagoon Maintenance	$ 60,000.00
Replacement of Air Compressor	$ 10,000.00
Wayne Hill/Huron Hills Booster Pump Replacement Project	$ 20,000.00
Water Treatment Plant Roof Replacement Project	$ 70,000.00
Total Projected Expenditures	**$ 3,740,000.00**

*Note: An additional $750,000.00 is allocated from the Sewer fund in Fiscal Year 2017-18. In Fiscal Year 2018-19, $750,000.00 is also being allocated from both the Water and Sewer funds for a project total of $3 million over these two fiscal years.

The City has invested over $4.5 million to complete the following capital improvement projects over the past 5 years including:

· 2017 – Water Treatment Plant (WTP) Coagulant Bulk Tanks replacement
· 2017 – Construction of 204’ of 8” main loop between Vine St. and Cedar St. near Second St.
· 2017 – Construction of 73’ of 16” main in Spruce St. and W. Front St. intersection (future transmission)
· 2017 – Construction of 300’ of 12” main in East Bay Plaza near Avenue B - Phase II
· 2017 – Construction of 1412’ of 8” main on W. Front St. - Elmwood Ave to Division St.

· 2016-17 – Repaired Booster Pumps at Wayne Hill Booster Station (2 of 3 pumps)
· 2016-17 – Removed 74 lead goosenecks on water service lines & replaced with copper
· 2016 - Raw Water Intake Crib cleaning and inspection
· 2016 – WTP Lagoon Discharge Sump Pump (2 of 2 units) replacement
· 2016 – WTP Flocculation Tank Mixer Motors (2 units with VFD) replacement
· 2016 – Construction of 1500’ of 8” main on State St. - Boardman Ave to Railroad Ave
· 2016 – Construction of 570’ 8” main on Ninth St - Pine to Union St.

· 2015-16 – WTP Monitoring and Controls Improvements (SCADA)
· 2015 – Construction of 4992’ of 8” main at The Moorings development at M-72 West
· 2015 – Construction of 1920’ of 8” main on Union St. and Lake Ave.
· 2015 – Construction of 750’ 20” main & 347’ 8” main on LaFranier Rd - S. Airport Rd. to Ridge View Ct.
· 2015 – Construction of 1576’ of 8” main on W. Front St. - Division St. to Wadsworth St.

· 2014 – Construction of 415’ of 12” main in East Bay Plaza near Avenue B - Phase I
· 2014 – Construction of 655’ of 12” main on Madison and Beaumont near 6th Street
· 2014 – Construction of 1,311’ of 8” main on W. Front St. - West City Limits to Elmwood Ave.
· 2014 - Raw Water Intake Crib cleaning and inspection
· 2014 – WTP Filters #4 and #5 repair
· 2014 – WTP Lagoon Discharge Sump Pump (1 of 2 units) replacement
· 2014 – WTP Coagulant Rapid Mixers (2 of 2 units) replacement
· 2014 – WTP Alum System upgrades

· 2013 - WTP Fluoride System upgrades
· 2013 – WTP Compressed Air Tank / Air Dryer Unit replacement
· 2013 – Construction of 1,530’ of 12” main to Wayne Hill
· 2013 – Construction of 1,800’ of 8” main on Manor and Eastwood
· 2013 – Sheridan/Orchard Street Improvements

· 2012 – WTP Huron Hills Pump Station Upgrade
· 2012 - WTP Chlorine Feed System replacement
· 2012 - WTP Air Compressor (1 of 2 units) replacement
· 2012 - Construction of 536’ of 12” main on State Street, Pine to Union
· 2012 – Construction of 1,535’ of 8” main – East Bay Boulevard

Recommended Projects per the 2014 Water System Reliability Study yet to be completed (Project numbers pertain to priority assigned in study):

These projects will improve the level of service to City customers by improving system transmission and increasing fire protection in areas that have less than suggested available fire flow.

Short-Term (0-5 Years)

Project 1 (Completed): Plant Monitoring and Controls Improvements. This includes Supervisory Control and Data Acquisition (SCADA) System Improvements, Flow Meter Replacement for raw water and finished water lines, and Filter 1, 2 & 3 Rate of Flow System Upgrades.

Project 2: Filter 1, 2 & 3 Media Replacement & Surface Wash Upgrades.

Project 3: Replace 11,000 feet of distribution main on Garfield Avenue, Webster Street, 8th Street, Lake Street, 7th Street and Franklin Street with 24” main.

Project 4: Rehabilitate Barlow Reservoir.

Project 5: Electrical Gear Upgrades. The proposed electrical upgrades will include both the WTP and the Low Service Lift Station. Reduced voltage starters are currently used on the four low service pumps and five high service pumps. Besides the benefit of replacing old electrical equipment that is beyond its service life, there are definite energy savings and utility cost reductions to be gained. The merit of upgrading pump control to variable frequency drives (VFD) with compatible motors will be evaluated for each of the nine pumps. Motor replacement on two low service pumps and two high service pumps to accommodate VFD speed adjustment is anticipated.

Project 6: Replace 1,900 feet of aging 6" main on Hannah Avenue with 12" main from Bates Street to South Garfield Avenue.

Project 7: Chemical System Upgrades (Alum, Chlorine, and Fluoride). These projects address maintaining satisfactory storage and chemical application capabilities. Recent projects at the WTP have included replacing the Chlorine feed system in 2012, the Fluoride storage and feed system in 2013 and the 2017 Coagulant Bulk Tanks replacement. Therefore, the only remaining Chemical System Upgrade needed in the near future would be the Chlorine bulk storage tanks which were installed in 1994 and are nearing the end of their useful life.

Project 8: Filter 1, 2 & 3 Valve Replacement.

Project 9: Replace 5,800 feet of 12" and 6" main on 7th Street and Spruce Street with 24" main and 16" main.

Project 10: Replace 2,600 feet of 6" and 8" main on Veterans Drive from Georgetown Place to north of 14th Street with 12" main.

Long-Term (5-20 years)

Project 11: WTP Standby Generator Replacement. The generator is over 20 years old and is anticipated to reach the end of is useful life within this planning window.

Project 12: Redundant Transmission Main from Low Service Pumps to WTP

Project 13: Replace 10,000 feet of aging 16" cast main on Washington Street, Franklin Street, Front Street, Union Street, W. Grandview Parkway, and Wayne Street with 24" and 16" transmission main.

Project 14: Low Service Pump & High Service Pump Upgrades

Project 15: Construct Second Raw Water Intake

General Recommendations from 2014 Water System Reliability Study

1. Water Accountability Plan (Year 2014-15): The City should expand the water accountability program, reviewing all potential sources of unbilled (and billed) water use. Tracking the unbilled water will enable the City to confirm whether a significant source of lost revenue exists and must ultimately be identified (potentially with additional action). More specifically, it is recommended that the City check finished water meters periodically, and consider using only one of these during winter months (low flow periods) due to potential low flow accuracy concerns. The accountability plan includes estimating all water system usage including water used during emergencies, system flushing and street sweeping, among others. Once these have been estimated and documented over several years, the City should investigate potential sources of water loss as long as the annual loss is greater than approximately 10 percent. This plan should be part of a system-wide water management strategy.

City Actions to Date: The City has replaced the original master water meters at the Water Treatment Plant (from 1965) including the raw intake and the east and west high service output meters as part of the 2015-16 – WTP Monitoring and Controls Improvements (SCADA). This has provided a more accurate baseline for water output to the water distribution system and has lowered unaccounted water from 33 percent in fiscal year 2014-15 to 20 percent to date in 2017. The City is also investing over $2.9 million on an Advanced Metering Infrastructure (AMI) project which will replace all of the existing water meters

with new meters over the next two years. This will greatly increase the accuracy for billing, capture lost revenue and reduce the overall unaccounted water percentage. While replacing the individual water meters, the City may also be able to pinpoint suspect plumbing connections for unmetered irrigation use so these can be addressed quickly. The City has also working toward implementing a flushing record to better estimate water used for this purpose which typically occurs in June of each year. If the above actions do not lower the unaccounted water to near 10 percent, the City plans to actively pursue leak detection / repairs to reduce other water loss in the distribution system.

2. Water Use/Evaluate Alternatives to Increase Capacity (Year 2016-17): The water supplied is approaching 80 percent of the overall supply capacity. Once the maximum day exceeds 80 percent, the City should investigate alternatives to increase the supply capacity. Three actions will likely delay the need for the investigation:

- Construction of the short-term proposed transmission main will increase the water plant capacity
- At present, a significant fraction of the output is unaccounted for water. A determination of the water loss and reduction will provide a reduction in water output
- System demands may hold steady or be reduced

It was recommended that the City address bullets 1 and 2 in lieu of the investigation until necessary.

City Actions to Date: The City has incorporated an east-west proposed transmission main into the Capital Improvement Plan (CIP) and is currently reviewing the best route to accomplish this. Unaccounted water is being addressed as noted previously above in **City Actions to Date** under Recommendation 1.

3. Replace Older, Deteriorating Mains (Year 2014-2034): Some older, deteriorating mains were addressed with specific recommended Project #12. At present, the remaining older 4 and 6-inch mains are either still able to pass the minimum desired flow for fire protection or can be sufficiently served by nearby hydrants. These small diameter mains are therefore not considered deficient under Traverse City Water System Reliability Study current conditions. However, the City should continue its effort to replace all old distribution mains, as well as any other deteriorating mains, with 8-inch mains. Replacement of other old, small-diameter main should be done in conjunction with other street and utility projects. Significant tuberculation may have occurred on some of these distribution mains; therefore, these should be replaced when other construction is completed in these areas.

City Actions to Date: The City continues to replace undersized 4 and 6-inch mains where possible during annual street reconstruction projects.

4. Meter Testing/Change-out Program (2014-2034): Given the unaccounted water volume in the system, the City should consider bolstering the meter testing/change-out program. While the City identifies non-billed usage for better water accountability, we recommend determining an appropriate period for meter change-out. For many systems, the testing/change-out period is 3 years for commercial and industrial meters and is 10 years for residential meters. This will help maintain accurate customer billing and could provide a significant increase in system revenue.

City Actions to Date: The City has implemented the AMI project for all city meters to be changed out over the next two years.

5. Valve Exercising Program (2014-2034): The City currently exercises valves in advance of operations as time permits. We recommend the City formalize the current program to ensure all valves are operated every other year.

City Actions to Date: The City purchased a valve turning machine in 2016 and implemented a valve exercising program in which all Critical Valves are turned each year along with the main line valves in one of the three geographical areas created for the program.

6. Flushing Program (2014-2034): The City currently inspects and flushes all hydrants once per year in the fall. We recommend the City continue to flush annually and consider flushing bi-annually in areas of potential need.

City Actions to Date: The City continues to perform annual hydrant flushing in June of the distribution system and other critical areas as needed more frequently. Hydrants are also drained annually in the fall.

7. Acquire Additional Assistance for Maintenance Activities (2014-2019): The City currently is not meeting the MDEQ requirements for some maintenance activities. Specifically, the cross-connections inspections have not been completed annually as required, valve turning has not been performed throughout the system on a frequent basis, and meter replacements are needed which could potentially increase the City income substantially. Therefore, we recommend additional manpower be acquired to adequately perform all maintenance activities.

City Actions to Date: The City has not been able to increase staffing but has contracted services for cross-connection program and is currently doing about 200 Residential and 300 Commercial customers per year. A valve turning program has been implemented and although the first year's progress is less than anticipated, the City is tracking the progress using the work order process in Lucity.

8. Dead End Mains (2014-2034): Dead end mains should be looped whenever possible. Water tends to become stagnant in dead end mains; this affects the quality of water provided to customers served by the main. Therefore, whenever feasible, dead end mains should be removed by closing loops to improve the circulation of water and increase fire protection capability. Some locations of dead end mains include Centre Place, Fairlane Drive, Medical Campus Drive, Randolph Street and Red Drive.

City Actions to Date: Looping of Dead end mains is included in future CIP projects.

9. Emergency Response Plan (2014-2034): The City emergency response plan was updated in 2013 to better ensure proper response in an emergency. The plan allows for a response to emergencies but should be expanded to include systematic approach to an outbreak or other emergency.

City Actions to Date: The Emergency Response Plan was updated in 2015 and is currently under review for the next update.

10. Reliability Study (2019): This report represents the 5-year update of the Water System Reliability Study. Given the uncertainty of growth, demand projections should be reviewed periodically. In Traverse City, infrastructure and system operation should be evaluated as needed to ensure efficient and cost effective operation.

City Actions to Date: The City continues to evaluate its infrastructure to improve efficiency and cost effective operation. Cost for this Reliability Study will be included in the budget for Fiscal Year 2018-19.

11. Other Maintenance Programs (2014-2034): The City should continue current maintenance programs including hydrant flushing, valve exercising and tank maintenance.

City Actions to Date: The City is constructing a new 2 million gallon (MG) steel reservoir adjacent to the existing 4 MG water reservoir on LaFranier Road to provide redundancy and to allow overdue maintenance on the 4 MG reservoir. The 2 MG reservoir is scheduled for completion October 2018. The Wayne Hill tank is planned to be cleaned and inspected in 2018.

12. Obtain Some Level Of Control of Township Systems (Year 2014-2019): The Traverse City water system is very complex with numerous pressure districts and customer communities. As a result, it is critical that future changes to the customer community systems are reviewed by the City to ensure the supply remains adequate.

City Actions to Date: This has been implemented as of April, 2017 when the City recreated and filled an important job position, Director of Municipal Utilities, which previously had been eliminated and merged with the Director of Public Services job position. Currently the City is enforcing plan reviews for all major water infrastructure projects (transmission mains, booster pump stations and reservoirs) per the current bulk water agreements with Garfield, Elmwood and Peninsula Townships. The City is also enforcing (along with the MDEQ) that Box 20 in the Act 399 Permit Application For Water Supply Systems be properly executed by including a review approval letter from the City for major water infrastructure projects in the townships being served by the City Water Treatment Plant.

Funding Structure/Rate Methodology

2017-18 Annual Operating Budget comparing costs vs. revenue is attached in Appendix B.

Appendix C shows the current Rate Recommendations and Resolution Establishing Water Rates, Water Service Charges and Sewer Rates along with documentation of the legal authority for rate setting.

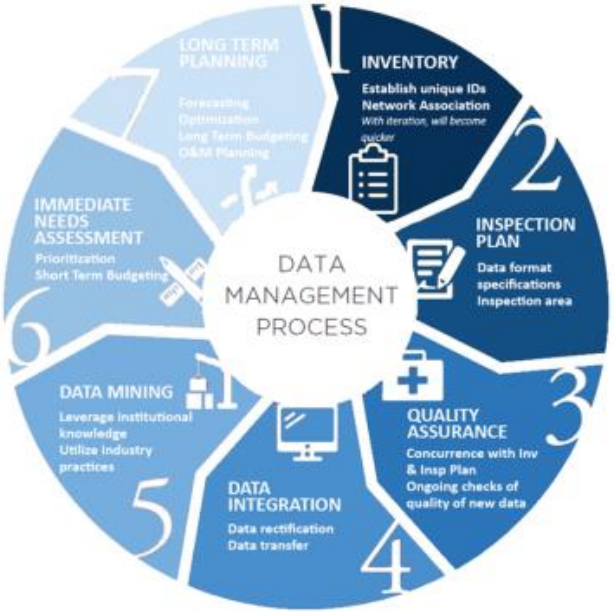
The Treasurer's Department annually conducts an analysis of water rate projections. At this time there is not a recommendation to increase water rates; however there are significant projects within the Capital Improvements Plan over the next six years that would infer that the city will need to raise rates and/or bond in the future.

Conclusion

A fully utilized AMP will improve the City's water system for future generations. The figure below shows that a healthy data management process is an ongoing cycle. This asset management program has essentially completed one cycle of the data management process for the distribution system and will continue to implement this process at the water treatment plant. It is essential that the City continue to collect data for all water system assets. This data management process will aid in the tracking and use of data to cost-effectively manage the City's water system.

1. ***Inventory:*** The City will continue to populate and procure missing or incorrect data in each asset's attributes. When assets are repaired or replaced and new assets are added, the Criticality Factor can be updated. The City will assign new unique Facility IDs to new assets in accordance with their current naming convention.
2. ***Inspection Plan:*** It will be important to perform ongoing condition assessments of the system. Whether the City performs the inspections internally or utilizes the help of a contractor, the City will specify a data format that will integrate with their existing GIS and Lucity software.
3. ***Quality Assurance:*** Data from the condition assessments will need to be checked for quality once complete. The Quality Assurance process will occur throughout the Inventory and Inspection Plan steps, especially while condition assessment is taking place to ensure that the data is of satisfactory quality and in the correct format.
4. ***Data Integration:*** After data is checked for quality, it will be integrated into the City's existing systems (e.g. GIS and Lucity). Significant data rectification and preparation work may need to be performed so that the collected information will transfer into the City's systems seamlessly. The amount of effort required will depend on the accuracy and format of the inspection data, as well as the status of the existing system database.
5. ***Data Mining:*** Once the data is in the City's systems, data mining can perform this action which analyzes the data to draw valuable insight from the incoming data. Examples of these insights include trends in pipes of certain material, size, age, and location.
6. ***Immediate Needs Assessment:*** Use the inspection results to repair/replace assets that are failing and are in need of immediate attention, such as collapsing pipes or other imminent concerns.
7. ***Long Term Planning:*** When a new batch of data is added, the City will check to see if the long term plan still aligns with the results of the updated system deterioration forecasting and O&M and budget optimizations. Long term budgeting and O&M planning will be updated as needed.

Following these steps for managing data and continuously improving the data management process, the City will leverage its asset management program into a truly sustainable and cost-effective infrastructure management program.



APPENDIX A

CIP Fund Information, Narratives & Approval

Six Year Capital Improvement Plan

Budget Year 2017-2018 by Fund

All Projects Submitted for 2017-2018

Bold - Indicates projects occurring in the first FY of the plan.
+ - Indicates projects with multiple funding sources.

	Project ID		Cat	Fiscal Year 2017-2018	Fiscal Year 2018-2019	Fiscal Year 2019-2020	Fiscal Year 2020-2021	Fiscal Year 2021-2022	Fiscal Year 2022-2023	Project Cost	City Funds	Non-City Funds
Water Fund												
Wastewater												
+	764-17-CIP	Window Replacement 503 Hannah Ave.	V	$0	$30,000	$0	$0	$0	$0	$60,000	$60,000	$0
Water												
	1012-17-CIP	**2 Million Gallon LaFrainer Road Water Reservoir**	C	$2,000,000	$0	$0	$0	$0	$0	$2,000,000	$2,000,000	$0
	367-17-CIP	**Annual Water Rehab/Replace**	V	$450,000	$450,000	$450,000	$450,000	$450,000	$450,000	$2,700,000	$2,700,000	$0
	986-17-CIP	**Automated Metering Infrastructure (+Wastewater)**	V	$750,000	$0	$0	$0	$0	$0	$750,000	$750,000	$0
	113-17-CIP	**Barlow Reservoir Rehabilitation / Reconstruction**	V	$100,000	$900,000	$0	$0	$0	$0	$1,000,000	$1,000,000	$0
	933-17-CIP	Chemical System Upgrades (Alum, Chlorine & Fluori	V	$0	$0	$175,000	$0	$0	$0	$175,000	$175,000	$0
	935-17-CIP	East - West Transmission Main Upgrade	V	$0	$0	$0	$1,900,000	$0	$0	$1,900,000	$1,900,000	$0
	930-17-CIP	Electrical Gear Upgrades at WTP & Low Service	V	$0	$0	$850,000	$0	$0	$0	$850,000	$850,000	$0
	114-17-CIP	Filters 1, 2 & 3 Media Replacement & Surface Wash	V	$0	$350,000	$0	$0	$0	$0	$350,000	$350,000	$0
	934-17-CIP	Filters 1, 2 & 3 Valve Replacement	V	$0	$0	$400,000	$0	$0	$0	$400,000	$400,000	$0
	973-17-CIP	**Galvanized Water Service Replacement Project**	V	$200,000	$0	$0	$0	$0	$0	$200,000	$200,000	$0
	731-17-CIP	Generator Plug Receptacle for Low Service Pump St	V	$0	$20,000	$0	$0	$0	$0	$20,000	$20,000	$0
	932-17-CIP	Hannah Ave Water Main Upgrade	V	$0	$0	$310,000	$0	$0	$0	$310,000	$310,000	$0
	770-17-CIP	**High & Low Service Pump Repairs**	V	$80,000	$80,000	$80,000	$80,000	$80,000	$0	$400,000	$400,000	$0
	1028-17-CIP	**Lagoon Maintenance**	M	$60,000	$0	$60,000	$0	$60,000	$0	$180,000	$180,000	$0
	1015-17-CIP	Low Service Check Valve Replacement Project	M	$0	$0	$40,000	$0	$0	$0	$40,000	$40,000	$0
	115-17-CIP	Midtown Water Transmission Line	V	$0	$1,500,000	$0	$0	$0	$0	$1,500,000	$1,500,000	$0
+	1027-17-CIP	Park Place Area Infrastructure Improvements	C	$0	$975,000	$0	$0	$0	$0	$1,225,000	$1,225,000	$0
	507-17-CIP	**Replacement of Air Compressors**	V	$10,000	$0	$0	$0	$0	$0	$10,000	$10,000	$0
	1016-17-CIP	Veterans Drive Water Main Replacement Project.	C	$0	$0	$0	$0	$400,000	$0	$400,000	$400,000	$0
	1014-17-CIP	**Wayne Hill/Huron Hills Booster Pump Replacement Pr**	M	$20,000	$20,000	$20,000	$0	$0	$0	$60,000	$60,000	$0
	1013-17-CIP	**WTP Roof Replacement Project**	M	$70,000	$0	$0	$0	$0	$0	$70,000	$70,000	$0
	1017-17-CIP	WTP Standby Generator Replacement Project	M	$0	$0	$0	$0	$0	$250,000	$250,000	$250,000	$0
Total Water Fund				**$3,740,000**	**$4,325,000**	**$2,385,000**	**$2,430,000**	**$990,000**	**$700,000**	**$14,570,000**	**$14,570,000**	**$0**

City of TRAVERSE CITY

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Six Year Capital Improvement Plan

All Projects Submitted for 2017-2018

Budget Year 2017-2018 by Fund

Bold - Indicates projects occurring in the first FY of the plan.

+ - Indicates projects with multiple funding sources.

Project ID	Cat	Fiscal Year 2017-2018	Fiscal Year 2018-2019	Fiscal Year 2019-2020	Fiscal Year 2020-2021	Fiscal Year 2021-2022	Fiscal Year 2022-2023	Project Cost	City Funds	Non-City Funds
GRAND TOTAL:		**$28,516,611**	**$49,278,968**	**$24,229,493**	**$26,461,439**	**$26,090,815**	**$28,452,233**	**$183,029,559**	**$183,029,559**	**$0**

WATER-17-CIP **Water**

1012-17-CIP **2 Million Gallon LaFrainer Road Water Reservoir**

Project Information

Submitted By:	Dave Green	**Department:**	Water
Category:	Capital	**Department Head:**	Dave Green
Fund Group:	Water	**Staff Priority:**	Imperitive (Must Do)
Fund Detail:	Water System Reliability Projec	**Council Priority:**	

Project Description:
Design/Build 2 million gallon reservoir next to the existing 4 million gallon Barlow Reservoir to increase redundancy and allow for preventative maintenance on both tanks. It is likely that this project will be financed via Bond.

1012-17-CIP-C 2 Million Gallon LaFrainer Road Water Reservoir

Funding Sources:

		2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	Total
WAT	Water Fund	$2,000,000	$0	$0	$0	$0	$0	$2,000,000
							Project Total:	**$2,000,000**

COST DETAIL:			
Study:	$0		
Land Acquisition / ROW:	$0		
Engineering / Design:	$100,000		
Construction:	$1,900,000	**Cost Total:**	**$2,000,000**
Annual Maint. Cost:		**Project Difference:**	**$0**
Maint. Year Start:			

Service Impact:

Project Justification:

Location Description:

WATER-17-CIP **Water**

367-17-CIP **Annual Water Rehab/Replace**

Project Information

Submitted By: Justin Roy
Category: Visionary
Fund Group: Water
Fund Detail: Water Distribution System

Department:
Department Head: Dave Green
Staff Priority: Imperitive (Must Do)
Council Priority:

Project Description:
Provide $450,000 annually in both the water and wastewater funds to continue systematic improvements (repair and replacement) of the underground infrastructure. The Public Improvement Plan will also contain more detailed descriptions of proposed nea

367-17-CIP-C Annual Water Rehab/Replace - Cost

Funding Sources:

		2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	Total
WAT	Water Fund	$450,000	$450,000	$450,000	$450,000	$450,000	$450,000	$2,700,000
							Project Total:	**$2,700,000**

COST DETAIL:

Study:	$0
Land Acquisition / ROW:	$0
Engineering / Design:	$0
Construction:	$0
Annual Maint. Cost:	
Maint. Year Start:	

Cost Total: **$0**
Project Difference: **$2,700,000**

Service Impact:

Project Justification:

Location Description:

WATER-17-CIP **Water**

986-17-CIP **Automated Metering Infrastructure (+Wastewater)**

Project Information

Submitted By: Dave Green
Category: Visionary
Fund Group: Water
Fund Detail: Water Distribution System
Department:
Department Head: Dave Green
Staff Priority: Essential (Should Do)
Council Priority:

Project Description:
Install water meters and software to accommodate smart metering capabilities that will provide for the migration to electronic advanced meters that will assist utility customers on energy use, reliability and provide reads to utility billing. Will a

986-17-CIP-C Automated Metering Infrastructure (+Wastew - Cost

Funding Sources:

		2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	Total
WAT	Water Fund	$750,000	$0	$0	$0	$0	$0	$750,000

Project Total: **$750,000**

COST DETAIL:

Study:	$0
Land Acquisition / ROW:	$0
Engineering / Design:	$0
Construction:	$0
Annual Maint. Cost:	
Maint. Year Start:	

Cost Total: **$0**
Project Difference: **$750,000**

Service Impact:

Project Justification:

Location Description:

WATER-17-CIP **Water**

113-17-CIP **Barlow Reservoir Rehabilitation / Reconstruction**

Project Information

Submitted By: Art Krueger
Category: Visionary
Fund Group: Water
Fund Detail: Water Distribution System
Department:
Department Head: Dave Green
Staff Priority: Imperitive (Must Do)
Council Priority:

Project Description:
Project recommended in the 2014 Water System Reliability Study Table 23, Project P-4.
Repair structural members in roofing system, remove interior and exterior coatings and apply new coatings.

113-17-CIP-C Barlow Reservoir Rehabilitation / Reconstr - Cost

Funding Sources:

		2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	Total
WAT	Water Fund	$100,000	$900,000	$0	$0	$0	$0	$1,000,000
							Project Total:	**$1,000,000**

COST DETAIL:

Study:	$0
Land Acquisition / ROW:	$0
Engineering / Design:	$100,000
Construction:	$900,000
Annual Maint. Cost:	
Maint. Year Start:	

Cost Total: **$1,000,000**
Project Difference: **$0**

Service Impact:

Project Justification:

Location Description:

WATER-17-CIP **Water**

933-17-CIP **Chemical System Upgrades (Alum, Chlorine & Fluori**

Project Information

Submitted By:	Art Krueger	**Department:**	
Category:	Visionary	**Department Head:**	Dave Green
Fund Group:	Water	**Staff Priority:**	Essential (Should Do)
Fund Detail:	Water Treatment	**Council Priority:**	

Project Description:
Project recommended in the 2014 Water System Reliability Study Table 23, Project P-7.
Chemical system upgrades for bulk storage and chemical feed systems for Alum , Chlorine and Fluoride.

933-17-CIP-C Chemical System Upgrades (Alum, Chlorine & - Cost

Funding Sources:

		2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	Total
WAT	Water Fund	$0	$0	$175,000	$0	$0	$0	$175,000
							Project Total:	**$175,000**

COST DETAIL:			
Study:	$0		
Land Acquisition / ROW:	$0		
Engineering / Design:	$10,000		
Construction:	$165,000	**Cost Total:**	**$175,000**
Annual Maint. Cost:		**Project Difference:**	**$0**
Maint. Year Start:			

Service Impact:

Project Justification:

Location Description:

WATER-17-CIP **Water**

935-17-CIP **East - West Transmission Main Upgrade**

Project Information

Submitted By:	Art Krueger	**Department:**	
Category:	Visionary	**Department Head:**	Dave Green
Fund Group:	Water	**Staff Priority:**	Essential (Should Do)
Fund Detail:	Water System Reliability Projec	**Council Priority:**	

Project Description:
Project recommended in the 2014 Water System Reliability Study Table 23, Project P-9.
Replace 5,800 lineal feet of the aged existing pit cast 16-inch main from early 1900's with new 24-inch ductile iron main. Reference Water System Reliability Study

935-17-CIP-C East - West Transmission Main Upgrade - Cost

Funding Sources:

		2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	Total
WAT	Water Fund	$0	$0	$0	$1,900,000	$0	$0	$1,900,000
							Project Total:	**$1,900,000**

COST DETAIL:

Study:	$0
Land Acquisition / ROW:	$0
Engineering / Design:	$0
Construction:	$1,900,000
Annual Maint. Cost:	
Maint. Year Start:	

Cost Total: **$1,900,000**

Project Difference: **$0**

Service Impact:

Project Justification:

Location Description:

WATER-17-CIP **Water**

930-17-CIP **Electrical Gear Upgrades at WTP & Low Service**

Project Information

Submitted By:	Art Krueger	**Department:**	
Category:	Visionary	**Department Head:**	Dave Green
Fund Group:	Water	**Staff Priority:**	Essential (Should Do)
Fund Detail:	Water System Reliability Projec	**Council Priority:**	

Project Description:

Project recommended in the 2014 Water System Reliability Study Table 23, Project P-5.

Update original (1965 and 1972) electrical equipment for both High Service and Low Service pumps. Project will also increase electric efficiency.

930-17-CIP-C Electrical Gear Upgrades at WTP & Low Serv - Cost

Funding Sources:

		2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	Total
WAT	Water Fund	$0	$0	$850,000	$0	$0	$0	$850,000
							Project Total:	**$850,000**

COST DETAIL:			
Study:	$0		
Land Acquisition / ROW:	$0		
Engineering / Design:	$0		
Construction:	$850,000	**Cost Total:**	**$850,000**
Annual Maint. Cost:		**Project Difference:**	**$0**
Maint. Year Start:			

Service Impact:

Project Justification:

Location Description:

WATER-17-CIP **Water**

114-17-CIP **Filters 1, 2 & 3 Media Replacement & Surface Wash**

Project Information

Submitted By: Art Krueger
Category: Visionary
Fund Group: Water
Fund Detail: Water Treatment
Department:
Department Head: Dave Green
Staff Priority: Essential (Should Do)
Council Priority:

Project Description:
Project recommended in the 2014 Water System Reliability Study Table 23, Project P-2.
Remove and replace all filter media in filters #1,#2 and #3. The media in filters #1 and #2 is almost 50 years old (original from 1965) filter #3 media is over 4

114-17-CIP-C Filters 1, 2 & 3 Media Replacement & Surfa - Cost

Funding Sources:

		2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	Total
WAT	Water Fund	$0	$350,000	$0	$0	$0	$0	$350,000
							Project Total:	**$350,000**

COST DETAIL:

Study:	$0
Land Acquisition / ROW:	$0
Engineering / Design:	$0
Construction:	$350,000
Annual Maint. Cost:	
Maint. Year Start:	

Cost Total: **$350,000**
Project Difference: **$0**

Service Impact:

Project Justification:

Location Description:

WATER-17-CIP **Water**

934-17-CIP **Filters 1, 2 & 3 Valve Replacement**

Project Information

Submitted By: Art Krueger
Category: Visionary
Fund Group: Water
Fund Detail: Water Treatment
Department:
Department Head: Dave Green
Staff Priority: Essential (Should Do)
Council Priority:

Project Description:
Project recommended in the 2014 Water System Reliability Study Table 23, Project P-8.
Replace 8 of 9 valves per filter; 24 valves total in the three oldest filters that were originally built in 1965 (filters 1 & 2) and 1972 (filter 3). These valves

934-17-CIP-C Filters 1, 2 & 3 Valve Replacement - Cost

Funding Sources:

		2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	Total
WAT	Water Fund	$0	$0	$400,000	$0	$0	$0	$400,000
							Project Total:	**$400,000**

COST DETAIL:

Study:	$0
Land Acquisition / ROW:	$0
Engineering / Design:	$25,000
Construction:	$375,000
Annual Maint. Cost:	
Maint. Year Start:	

Cost Total: **$400,000**
Project Difference: **$0**

Service Impact:

Project Justification:

Location Description:

WATER-17-CIP **Water**

973-17-CIP **Galvanized Water Service Replacement Project**

Project Information

Submitted By: Larry LaCross
Category: Visionary
Fund Group: Water
Fund Detail: Water Distribution System
Department:
Department Head: Dave Green
Staff Priority: Essential (Should Do)
Council Priority:

Project Description:
Change out remaining 30-35 galvanized services in conjunction with City Crew replacements to rid entire system of known lead goose neck connections.

973-17-CIP-C Galvanized Water Service Replacement Proje - Cost

Funding Sources:

		2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	Total
WAT	Water Fund	$200,000	$0	$0	$0	$0	$0	$200,000
							Project Total:	**$200,000**

COST DETAIL:

Study:	$0
Land Acquisition / ROW:	$0
Engineering / Design:	$0
Construction:	$200,000
Annual Maint. Cost:	
Maint. Year Start:	

Cost Total: **$200,000**
Project Difference: **$0**

Service Impact:

Project Justification:

Location Description:

WATER-17-CIP **Water**

731-17-CIP **Generator Plug Receptacle for Low Service Pump St**

Project Information

Submitted By: Art Krueger
Category: Visionary
Fund Group: Water
Fund Detail: Water Treatment

Department:
Department Head: Dave Green
Staff Priority: Essential (Should Do)
Council Priority:

Project Description:
Install complete auxiliary electrical system from pumps to exterior portable generator plug at each Low Service Pump Station.

731-17-CIP-C Generator Plug Receptacle for Low Service - Cost

Funding Sources:

		2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	Total
WAT	Water Fund	$0	$20,000	$0	$0	$0	$0	$20,000

Project Total: **$20,000**

COST DETAIL:

Study:	$0
Land Acquisition / ROW:	$0
Engineering / Design:	$0
Construction:	$20,000
Annual Maint. Cost:	
Maint. Year Start:	

Cost Total: **$20,000**
Project Difference: **$0**

Service Impact:

Project Justification:

Location Description:

WATER-17-CIP **Water**

932-17-CIP **Hannah Ave Water Main Upgrade**

Project Information

Submitted By: Art Krueger
Category: Visionary
Fund Group: Water
Fund Detail: Water Distribution System
Department:
Department Head: Dave Green
Staff Priority: Essential (Should Do)
Council Priority:

Project Description:
Project recommended in the 2014 Water System Reliability Study Table 23, Project P-6.
Replace 1,900 lineal feet of aging 6-inch main on Hannah Ave. with 12-inch main from Bates Street to S. Garfield Ave. Project is recommended in the Water System Re

932-17-CIP-C Hannah Ave Water Main Upgrade - Cost

Funding Sources:

		2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	Total
WAT	Water Fund	$0	$0	$310,000	$0	$0	$0	$310,000
							Project Total:	**$310,000**

COST DETAIL:

Study:	$0
Land Acquisition / ROW:	$0
Engineering / Design:	$0
Construction:	$310,000
Annual Maint. Cost:	
Maint. Year Start:	

Cost Total: **$310,000**
Project Difference: **$0**

Service Impact:

Project Justification:

Location Description:

WATER-17-CIP **Water**

770-17-CIP **High & Low Service Pump Repairs**

Project Information

Submitted By:	Art Krueger	**Department:**	
Category:	Visionary	**Department Head:**	Dave Green
Fund Group:	Water	**Staff Priority:**	Imperitive (Must Do)
Fund Detail:	Water System Reliability Projec	**Council Priority:**	

Project Description:
4 High Service and 3 Low Service pumps and motors need to be pulled and rebuilt by a pump service company. The motor windings need to be replaced so that a variable frequency drive (VFD) can be installed on the pumps. VFD's allow significant energy s

770-17-CIP-C High & Low Service Pump Repairs - Cost

Funding Sources:

		2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	Total
WAT	Water Fund	$80,000	$80,000	$80,000	$80,000	$80,000	$0	$400,000
							Project Total:	**$400,000**

COST DETAIL:			
Study:	$0		
Land Acquisition / ROW:	$0		
Engineering / Design:	$0		
Construction:	$480,000	**Cost Total:**	**$480,000**
Annual Maint. Cost:		**Project Difference:**	**$-80,000**
Maint. Year Start:			

Service Impact:

Project Justification:

Location Description:

WATER-17-CIP **Water**

1028-17-CIP **Lagoon Maintenance**

Project Information

Submitted By: Art Krueger
Category: Maintenance
Fund Group: Water
Fund Detail: Water Treatment

Department: Department of Public Services
Department Head: Dave Green
Staff Priority: Imperitive (Must Do)
Council Priority:

Project Description:
There are 2 washwater lagoons behind the water treatment plant facility and the sludge from the filter backwashing process must be removed and hauled to the landfill.

1028-17-CIP-C Lagoon Maintenance- Cost

Funding Sources:

		2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	Total
WAT	Water Fund	$60,000	$0	$60,000	$0	$60,000	$0	$180,000
							Project Total:	**$180,000**

COST DETAIL:

Study:	$0
Land Acquisition / ROW:	$0
Engineering / Design:	$0
Construction:	$180,000
Annual Maint. Cost:	
Maint. Year Start:	

Cost Total: **$180,000**
Project Difference: **$0**

Service Impact:

Project Justification:

Location Description:

WATER-17-CIP **Water**

1015-17-CIP **Low Service Check Valve Replacement Project**

Project Information

Submitted By:	Art Krueger	**Department:**	Water Treatment
Category:	Maintenance	**Department Head:**	Dave Green
Fund Group:	Water	**Staff Priority:**	Essential (Should Do)
Fund Detail:	Water Treatment	**Council Priority:**	

Project Description:
Replace old, existing check valves in the Low Service Building piping system.

1015-17-CIP-C Low Service Check Valve Replacement Project

Funding Sources:

		2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	Total
WAT	Water Fund	$0	$0	$40,000	$0	$0	$0	$40,000
							Project Total:	**$40,000**

COST DETAIL:			
Study:	$0		
Land Acquisition / ROW:	$0		
Engineering / Design:	$0		
Construction:	$40,000	**Cost Total:**	**$40,000**
Annual Maint. Cost:		**Project Difference:**	**$0**
Maint. Year Start:			

Service Impact:

Project Justification:

Location Description:

WATER-17-CIP **Water**

115-17-CIP **Midtown Water Transmission Line**

Project Information

Submitted By:	Tim Lodge	**Department:**	Engineering
Category:	Visionary	**Department Head:**	Tim Lodge
Fund Group:	Water	**Staff Priority:**	Imperitive (Must Do)
Fund Detail:	Water System Reliability Projec	**Council Priority:**	

Project Description:

Install approximately 7,000' of 20" water main and 200' of directionally drilled water main starting at Garfield/Webster, west down Eighth, west down Lake, ending at 7th/Wadsworth. Project needs to be combined with Eighth Street Reconstruction project.

This project needs to be coordinated with the Eighth Street- Lake Street to Woodmere #882 project as well as Cass & Lake: Streetscape Improvements #61 and Eighth Street Bridge Repair #58 project.

115-17-CIP-C Midtown Water Transmission Line - Cost

Funding Sources:

		2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	Total
WAT	Water Fund	$0	$1,500,000	$0	$0	$0	$0	$1,500,000
							Project Total:	**$1,500,000**

COST DETAIL:

Study:	$0
Land Acquisition / ROW:	$0
Engineering / Design:	$0
Construction:	$0
Annual Maint. Cost:	
Maint. Year Start:	

Cost Total: **$0**

Project Difference: **$1,500,000**

Service Impact:

Project Justification:

Location Description:

WATER-17-CIP **Water**

1027-17-CIP **Park Place Area Infrastructure Improvements**

Project Information

Submitted By:	Missy Luick	**Department:**	Engineering
Category:	Capital	**Department Head:**	Tim Lodge
Fund Group:	Water	**Staff Priority:**	
Fund Detail:	Water System Reliability Projec	**Council Priority:**	

Project Description:

The Park Place Brownfield Plan identifies water main and storm sewer water quality improvements. Watermain- An upgraded 12" watermain will be installed from Boardman to Cass and will go down a portion of State Street and Washington Streets . Storm Sewer Water Quality- This improvement will include a combination of infiltration and filtration to improve water quality for a significant portion of the downtown area. Both projects will be reimbursed using Brownfield funds.

1027-17-CIP-C Park Place Area Infrastructure Improvements- Cost

Funding Sources:

		2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	Total
S	Sewer Fund	$0	$250,000	$0	$0	$0	$0	$250,000
WAT	Water Fund	$0	$975,000	$0	$0	$0	$0	$975,000
							Project Total:	**$1,225,000**

COST DETAIL:			
Study:	$0		
Land Acquisition / ROW:	$0		
Engineering / Design:	$0		
Construction:	$0	**Cost Total:**	**$0**
Annual Maint. Cost:		**Project Difference:**	**$1,225,000**
Maint. Year Start:			

Service Impact:

Project Justification:

Location Description:

WATER-17-CIP **Water**

507-17-CIP **Replacement of Air Compressors**

Project Information

Submitted By: Art Krueger
Category: Visionary
Fund Group: Water
Fund Detail: Water Treatment
Department:
Department Head: Dave Green
Staff Priority: Imperitive (Must Do)
Council Priority:

Project Description:
Replace air compressor (One of two was replaced in 2012)

507-17-CIP-C Replacement of Air Compressors - Cost

Funding Sources:

		2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	Total
WAT	Water Fund	$10,000	$0	$0	$0	$0	$0	$10,000

Project Total: **$10,000**

COST DETAIL:

Study:	$0
Land Acquisition / ROW:	$0
Engineering / Design:	$0
Construction:	$10,000
Annual Maint. Cost:	$0
Maint. Year Start:	

Cost Total: **$10,000**
Project Difference: **$0**

Service Impact:

Project Justification:

Location Description:

WATER-17-CIP **Water**

1016-17-CIP **Veterans Drive Water Main Replacement Project.**

Project Information

Submitted By:	Justin Roy	**Department:**	Water
Category:	Capital	**Department Head:**	Dave Green
Fund Group:	Water	**Staff Priority:**	Essential (Should Do)
Fund Detail:	Water Distribution System	**Council Priority:**	

Project Description:
Replace 6" and 8" diameter water main with 12" between 14th Street and Georgetown Place.

1016-17-CIP-C Veterans Drive Water Main Replacement Project.

Funding Sources:

		2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	Total
WAT	Water Fund	$0	$0	$0	$0	$400,000	$0	$400,000
							Project Total:	**$400,000**

COST DETAIL:

Study:	$0		
Land Acquisition / ROW:	$0		
Engineering / Design:	$0		
Construction:	$400,000	**Cost Total:**	**$400,000**
Annual Maint. Cost:		**Project Difference:**	**$0**
Maint. Year Start:			

Service Impact:

Project Justification:

Location Description:

WATER-17-CIP **Water**

1014-17-CIP **Wayne Hill/Huron Hills Booster Pump Replacement Pr**

Project Information

Submitted By:	Art Krueger	**Department:**	Water
Category:	Maintenance	**Department Head:**	Dave Green
Fund Group:	Water	**Staff Priority:**	Essential (Should Do)
Fund Detail:	Water Distribution System	**Council Priority:**	

Project Description:
Rebuild and/or replace booster pumps in the Wayne Hill Booster Station and the Huron Hills Booster Station

1014-17-CIP-C Wayne Hill/Huron Hills Booster Pump Replacement Pr

Funding Sources:

		2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	Total
WAT	Water Fund	$20,000	$20,000	$20,000	$0	$0	$0	$60,000
							Project Total:	**$60,000**

COST DETAIL:			
Study:	$0		
Land Acquisition / ROW:	$0		
Engineering / Design:	$0		
Construction:	$60,000	**Cost Total:**	**$60,000**
Annual Maint. Cost:		**Project Difference:**	**$0**
Maint. Year Start:			

Service Impact:

Project Justification:

Location Description:

WATER-17-CIP **Water**

1013-17-CIP **WTP Roof Replacement Project**

Project Information

Submitted By:	Art Krueger	**Department:**	Water Treatment
Category:	Maintenance	**Department Head:**	Dave Green
Fund Group:	Water	**Staff Priority:**	Essential (Should Do)
Fund Detail:	Water Treatment	**Council Priority:**	

Project Description:
Replace the Membrane roofing on the High Service Pump and Generator rooms, entryway and loading dock and the Low Service Building.

1013-17-CIP-C WTP Roof Replacement Project

Funding Sources:

		2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	Total
WAT	Water Fund	$70,000	$0	$0	$0	$0	$0	$70,000

Project Total: **$70,000**

COST DETAIL:

Study:	$0
Land Acquisition / ROW:	$0
Engineering / Design:	$0
Construction:	$70,000
Annual Maint. Cost:	
Maint. Year Start:	

Cost Total: **$70,000**

Project Difference: **$0**

Service Impact:

Project Justification:

Location Description:

WATER-17-CIP **Water**

1017-17-CIP **WTP Standby Generator Replacement Project**

Project Information

Submitted By:	Art Krueger	**Department:**	Water Treatment
Category:	Maintenance	**Department Head:**	Dave Green
Fund Group:	Water	**Staff Priority:**	Essential (Should Do)
Fund Detail:	Water System Reliability Projec	**Council Priority:**	

Project Description:
Existing generator is over 20 years old and is nearing the end of its useful life. This project will replace it with a new, more efficient model. This is project # P-11 in the 2014 Water System Reliability Study.

1017-17-CIP-C WTP Standby Generator Replacement Project

Funding Sources:

		2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	Total
WAT	Water Fund	$0	$0	$0	$0	$0	$250,000	$250,000
							Project Total:	**$250,000**

COST DETAIL:			
Study:	$0		
Land Acquisition / ROW:	$0		
Engineering / Design:	$0		
Construction:	$250,000	**Cost Total:**	**$250,000**
Annual Maint. Cost:		**Project Difference:**	**$0**
Maint. Year Start:			

Service Impact:

Project Justification:

Location Description:

Minutes of the

City Commission for the City of Traverse City

Regular Meeting

June 5, 2017

A regular meeting of the City Commission of the City of Traverse City was called to order at the Commission Chambers, Governmental Center, 400 Boardman Avenue, Traverse City, Michigan, at 7 p.m.

The following Commissioners were in attendance: Mayor Jim Carruthers, Mayor Pro Tem Gary Howe, Brian Haas, Michele Howard, Richard I. Lewis, Amy Shamroe, and Tim Werner.

The following Commissioners were absent: None.

The Pledge of Allegiance was recited.

Mayor Carruthers presided at the meeting.

As requested by City Manager Marty Colburn, Agenda Items 4(a), 4(b), 4(c), and 4(d) were removed from the Agenda.

2. Consent Calendar

Moved by Haas, seconded by Shamroe, that the following actions as recommended on the amended Consent Calendar portion of the Agenda be approved:

a. the minutes of the May 8, 2017 Study Session, the May 8, 2017 Joint Special Meeting, the May 15, 2017 Regular Meeting, the May 22, 2017 Study Session, and the May 22, 2017 Special Meeting, be approved.

b. the City Manager be authorized to issue a confirming purchase order in the amount of $15,525.00 to Brenner Oil for 10,000 gallons of dyed #2 diesel fuel without additives priced at $1.5525 per gallon with funds available in the Garage Fund.

c. the resolution recommending approval of the request for the transfer of a Redevelopment Liquor License with Class C Liquor License privileges from Roaming Harvest, LLC, be adopted, and that the City Clerk be authorized to issue a Liquor License Registration to Roaming Harvest, LLC, to operate such license at 127 South Union Street, Traverse City, MI 49684.

d. the resolution recommending approval of the request for the transfer of a Class C Liquor License and a new SDM License from The Market Bar, LLC, be adopted, and that the City Clerk be authorized to issue a Liquor License Registration to The Market Bar, LLC, to operate such license at 329 East State Street, Traverse City, MI 49684.

e. an amendment to the Traverse City Code of Ordinances Zoning Map to rezone 1146 Boon Street from I (Industrial) District to T (Transportation) District, and 1331 and 1615 South Garfield Avenue from C-3 (Community Commercial) District to T (Transportation) District, as recommended by the Planning Commission, which was introduced on May 15, 2017, be enacted with an effective date of June 15, 2017.

f. an amendment to the Traverse City Code of Ordinances Zoning Map to rezone a Boon Street parcel (Tax ID 28-51-113-07-01), an Aero Park Drive Parcel (Tax ID 28-51-850-014-10) and a portion of 727 Fly Don't Drive (between 2670 and 2750 Aero Park Drive) from I (Industrial) District to T (Transportation) District, as recommended by the Planning Commission, which was introduced on May 15, 2017, be enacted with an effective date of June 15, 2017.

g. an amendment to the Traverse City Code of Ordinances, *Outdoor Lighting Ordinance*, Section 1375, which provides for a framework to unify the night sky provisions of the Traverse City Code for nearly all City properties, as recommended by the City Planning Commission, which was introduced on May 15, 2017, be enacted with an effective date of June 15, 2017.

h. an amendment to the Traverse City Code of Ordinances, Section 1332.07, and Section 1334.07, *Regulations Allowing Accessory Buildings to be Connected to the Principal Dwelling in Single Family and Two-Family Dwelling Districts,* which would provide more flexibility for development on corner lots, which was recommended by the City Planning Commission,

which was introduced on May 15, 2017, be enacted with an effective date of June 15, 2017.

i. the annual resolution designating bank depositories for City funds and authorizing the City Treasurer/Finance Director to make deposits and invest funds with such depositories, be adopted.

j. the Proposed Fiscal Year 2017 /2018 Budget for the City of Traverse City and Charter Township of Garfield Recreational Authority, be approved as required by Recreational Authority Bylaws.

k. the May 15, 2017 related action be rescinded and that the City Manager be authorized to issue a purchase order to Hydrodynamics in the amount of $39,555.00 for the purchase of the replacement pump for the Front Street Lift Station, and a purchase order in the amount of $13,400.00 to ABI Mechanical for removal of the old pump and installation of the new pump with funds available in the Sewer Fund.

l. the Mayor and City Clerk execute a change order to the contract with Terra Contract Services, now known as Taplin Group, LLC (originally authorized March 16, 2015 and amended on March 7, 2016), in the amount of $45,770.34, more or less, for work relating to two inverted siphons with funds available in the Wastewater Fund with partial reimbursement from the Brownfield Redevelopment Authority in the amount of $18,589.73, such change order subject to approval as to its substance by the City Manager and its form by the City Attorney.

m. a public hearing regarding year-end budget amendments for Fiscal Year 2016-2017 be scheduled for June 19, 2017.

n. the City Manager be authorized to issue a confirming service order to Spence Brothers in the amount of $26,346.40 to retrofit the showers within the City Opera House to make them barrier-free, with funds available in the Opera House Fund.

o. Removed from the Consent Calendar.

CARRIED unanimously

Items removed from the Consent Calendar

a.

Consideration of a request from Loud and Proud for use of a City street and alley for the Up North Pride Event to be held on June 24 and 25, 2017; and consideration of authorizing the City Clerk to issue the related permits.

The following addressed the Commission:

Rick Buckhalter, 932 Kelley Street
Bill Wiesner, 7998 East Fouch Street, Elmwood Township

Moved by Haas, seconded by Shamroe that the City Clerk be authorized to issue the Major Street Closure Event permit to Loud and Proud for the Up North Pride Event as generally described in the City Clerk's memo dated June 1, 2017.

CARRIED unanimously.

3. Old Business

3(a).

Update from Preserve Hickory Regarding fundraising status for Hickory Hills and acknowledging that Preserve Hickory has met their match requirements in order to access the $1.5 million in Brown Bridge Trust Parks Improvement Fund dollars.

The following addressed the Commission:

Laura Ness, President and Co-Founder of Preserve Hickory
Maureen Madion, Co-Founder of Preserve Hickory

Moved by Lewis, seconded by Howard, that the City Commission acknowledges that Preserve Hickory has provided matching funds in order to secure the $1.5 million pledge in Brown Bridge Trust Parks Improvement Fund dollars for implementation of the Hickory Hills Master Plan in connection with the June 1, 2015, City Commission action and Memorandum of Understanding with Preserve Hickory as authorized August 17, 2015.

Rick Bukchalter, 932 Kelley Street
Deni Scrudato, 422 State Street
Pam Darling, 307 West 9th Street

CARRIED unanimously.

3(b).

Consideration of various actions in connection with the Fiscal Year 2017-2018 Budgets, including the City of Traverse City, Traverse City Light and Power, and Downtown Development Authority.

Moved by Lewis, seconded by Haas, that the Resolution to Waive the Traverse City Property Tax Administration Fee for Fiscal Year 2017-2018, be adopted.

CARRIED unanimously.

Moved by Werner, seconded by Shamroe, that the Resolution Certifying the Tax Levy for the Downtown Development Authority for Fiscal Year 2017-2018, be adopted.

CARRIED unanimously.

Moved by Lewis, seconded by Haas, that the Resolution Adopting the Downtown Development Authority Budget for Fiscal Year 2017-2018 be adopted, with the exception of the Downtown Development Authority's Administration fee being limited to 5% of the Tax revenue and that the City of Traverse City's administration fee be limited to the increment of the taxable values in both the Old Town TIF and TIF 97.

The following addressed the Commission:

Marty Colburn, City Manager
Rob Bacigalupi, Downtown Development Authority Executive Director
Rick Buckhalter, 932 Kelley Street

Roll Call:

Yes: Lewis, Carruthers.

No: Haas, Howard, Shamroe, Werner, Howe.

FAILED.

Moved by Howe, seconded by Shamroe, that the Resolution Adopting the Downtown Development Authority Budget for Fiscal Year 2017-2018, be adopted.

CARRIED unanimously.

Moved by Haas, seconded by Howard, that the Resolution Certifying the Tax Levy for the City of Traverse City for Fiscal Year 2017-2018, be adopted.

CARRIED unanimously.

Moved by Shamroe, seconded by Howard, that the Resolution Certifying the Tax Levy for Act 345 Police and Fire Pension System for Fiscal Year 2017-2018, be adopted.

CARRIED unanimously.

Moved by Haas, seconded by Howard, that the Resolution Approving the Traverse City Light and Power Budget and Capital Improvement Plan for Fiscal Year 2017-2018, be adopted.

CARRIED unanimously.

Moved by Shamroe, Second by Howard that an additional $5,000 be dedicated to the Public Art Trust Fund.

The following addressed the Commission:

Marty Colburn, City manager
Rob Bacigalupi, Downtown Development Authority's Executive Director
Rick Buckhalter, 932 Kelley Street

Roll Call:

Yes: Howard, Shamroe, Werner, Haas, Howe.

No: Lewis, Carruthers.

CARRIED.

Moved by Lewis, seconded by Howard, that the Resolution Approving the Traverse City Comprehensive Budget for Fiscal Year 2017-2018, be adopted.

The following addressed the Commission:

Rob Bacigalupi, Downtown Development Authority Executive Director

CARRIED unanimously.

Moved by Lewis, seconded by Haas, that the Resolution Adopting the Traverse City Capital Improvements Plan and Capital Projects Fund for Fiscal Year 2017-2018, be adopted.

CARRIED Unanimously.

The following addressed the Commission:

Marty Colburn, City Manager

Moved by Lewis, seconded by Howe, that the Economic Development Director position as outlined in the City of Traverse City Fiscal Year 2017/2018 Comprehensive Annual Budget Report has been funded, but has not been authorized will have further discussion by the City Commission.

CARRIED unanimously.

Moved by Haas, seconded by Shamroe, that the Resolution Establishing Water Rates, Water Service Charges and Sewer Rates, be adopted.

CARRIED unanimously.

3(c).

Consideration of entering into closed session regarding an attorney-client communication in connection with 326 Land Development Company v. City of Traverse City.

Moved by Werner, seconded by Haas, that the City Commission enter into closed session immediately following the public comment portion of the agenda to discuss an attorney-client privileged communication in connection with *326 Land Development Company* v *City of Traverse City*, as authorized by MCL 15.268(h).

The following addressed the Commission:

Rick Buckhalter, 932 Kelley Street

CARRIED unanimously.

3(d).

Consideration of authorizing a letter of understanding regarding the property located at 519 Franklin Street, regarding future development of supportive and affordable housing at 519 Franklin Street, as provided for in the purchase and sale agreement with Safe Harbor.

The following addressed the Commission:

Marty Colburn, City Manager
Lauren Trible-Laucht, City Attorney
George Thompson, Attorney for Safe Harbor

Moved by Lewis, seconded by Werner, that the Mayor and City Clerk execute Letter of Understanding with Safe Harbor giving the City opportunity to review proposed development at 519 Franklin Street in advance of development starting, such letter subject to approval as to its substance by the City Manager and its form by the City Attorney.

CARRIED unanimously.

3(e).

Consideration of a request from Commissioner Tim Werner for clarification regarding the requirement for sidewalks to be constructed in connection with the Special Land Use Permit for 517 Wellington Street and how the sidewalks will be funded.

The following addressed the Commission:

Marty Colburn, City Manager

Moved by Werner, seconded by Howe, that whereas the City of Traverse City strives to be a more pedestrian friendly City, the City will rightfully use the public right-of-way along the east side of Wellington Street between Eighth Street and 517 Wellington Street, further, all sidewalks on the 517 Wellington Street parcel will be paid for by the property prior to the issuance of an occupancy permit and no funding from the 517 Wellington Street property owners will be required for sidewalks not on said parcel.

Tim Lodge, City Engineer
George Thompson, Attorney for Safe Harbor
Lauren Trible-Laucht, City Attorney
Rick Buckhalter, 932 Kelley Street

Roll Call:

Yes: Werner, Howe.

No: Haas, Howard, Lewis, Shamroe, Carruthers.

FAILED.

4. New Business

4(a).

Removed from Agenda.

4(b).

Removed from Agenda.

4(c).

Removed from Agenda.

4(d).

Removed from Agenda.

5. Appointments

5(a).

None

6. Reports and Communications

The following were received and filed:

a. Reports, announcements and correspondence from the City Manager.

b. Announcements from the Deputy City Clerk.

c. Reports, announcements and correspondence from the Mayor and City Commissioners.

d. Reports and correspondence from other City officials, boards and committees.

1. Reports from members of the Commission serving on boards.

2. Minutes of the Act 345 Retirement System meetings of February 28, 2017 and March 28, 2017.

3. Minutes of the Coast Guard City Committee meetings of May 2, 2017 and April 6, 2017.

4. Minutes of the Planning Commission meetings of February 7, 2017, February 22, 2017, March 7, 2017, April 4, 2017, and April 18, 2017.

5. Minutes of the Arts Commission meetings of March 17, 2017 and April 19, 2017.

6. Minutes of the Art Selection Panel meeting of September 19, 2016.

7. Certification of the City's contribution to the ACT 345 Retirement System from the City Treasurer/Finance Director dated May 24, 2017.

8. Quarterly Financial Report from the City Treasurer/Finance Director for the third fiscal quarter ending March 30, 2017.

9. Memo from the City Treasurer/Finance Director regarding delinquent water and sewer charges that will be added to the summer 2017 tax bills for the properties which are delinquent.

e. Reports and correspondence from non-City officials.

1. Minutes of the Traverse Area District Area Library Board meeting of April 20, 2017.

2. Monthly Operations Report from the Wastewater Treatment Plant from CH2M for April, 2017

7. Public Comment

The following addressed the Commission:

1. Reserved.

None

2. General.

Rick Buckhalter, 932 Kelley Street
Elliot Sixking, No address given.
Morgan Schictal, No address given.
Chloe Edenburn, No address given.

Hannah Wilcox, No address given.
Theresa Woods, No address given.

3. Mayor and City Commissioners.

Mayor Jim Carruthers

The City Commission entered into closed session at 9:15 pm.

The City Commission returned to open session at 9:44 pm.

8. Adjournment

There being no objection, Mayor Jim Carruthers declared the meeting adjourned at 9:44 pm.

_____
Katelyn Zeits, CMC, CMMC
Deputy City Clerk

Approved: _____, _____
(Date) (Initials)

APPENDIX B

2017-18 Annual Operating Budget

Appendix B

City of Traverse City, Michigan
ENTERPRISE FUND
WATER FUND
For the Budget Year 2017-18

	FY 14/15 Actual	FY 15/16 Actual	FY 16/17 Budget	FY 16/17 Projected	FY 17/18 Requested
OPERATING REVENUES					
Water Sales	$ 2,926,929	$ 3,205,029	$ 3,086,000	$ 3,156,000	$ 3,206,000
Water Hydrant Fees	12,000	12,000	12,000	12,000	12,000
Public Authority	650,975	1,033,432	769,000	842,000	902,000
Merchandise and Jobbing	36,813	24,922	20,000	24,000	32,000
Taps, Meters and Pits	13,026	11,376	12,000	18,000	12,000
Contributions	14,528	7,000	1,000	-	1,000
Miscellaneous	52,841	61,683	58,000	57,000	57,000
TOTAL OPERATING REVENUES	3,707,112	4,355,442	3,958,000	4,109,000	4,222,000
OPERATING EXPENSES					
PLANT, STORAGE TANKS AND BOOSTER STATIONS					
Salaries and Wages	382,059	401,733	390,000	400,000	414,000
Fringe Benefits	192,264	344,135	161,000	181,500	216,300
Office/Operation Supplies	89,590	93,278	123,000	107,000	123,000
Professional Services	292,763	242,571	72,000	64,000	142,000
Communications	12,477	12,409	15,000	12,000	15,000
Transportation	700	495	3,000	2,000	3,000
Professional Development	2,681	3,526	5,000	4,000	5,000
Insurance and Bonds	33,324	33,000	38,000	37,000	38,000
Utilities	278,171	256,376	280,000	240,000	280,000
Repairs and Maintenance	337,115	699,778	360,000	270,000	230,000
Rentals	7,190	3,153	10,000	8,000	10,000
Total Plant, Storage Tanks and Booster Stations	1,628,334	2,090,454	1,457,000	1,325,500	1,476,300
DISTRIBUTION					
Salaries and Wages	291,208	286,041	367,000	300,000	326,000
Fringe Benefits	150,321	162,379	197,000	174,000	198,000
Office/Operation Supplies	249,793	89,962	190,000	100,000	100,000
Communications	123	1,470	1,200	1,200	1,600
Professional Services	199,262	164,859	146,000	120,000	160,000
Transportation	11,434	6,419	9,000	9,000	8,000
Professional Development	3,270	5,881	6,000	6,000	6,000
Insurance and Bonds	1,176	1,228	1,200	1,200	1,300
Utilities	15,083	13,117	15,000	15,000	15,000
Repairs and Maintenance	273,898	(16,882)	147,000	50,000	20,000
Rentals	88,546	55,830	92,000	92,000	112,000
Total Distribution	1,284,114	770,304	1,171,400	868,400	947,900

City of Traverse City, Michigan
ENTERPRISE FUND
WATER FUND
For the Budget Year 2017-18

	FY 14/15 Actual	FY 15/16 Actual	FY 16/17 Budget	FY 16/17 Projected	FY 17/18 Requested
ADMINISTRATIVE AND GENERAL					
Salaries and Wages	146,497	141,336	150,000	130,000	150,000
Fringe Benefits	72,376	65,304	74,000	74,000	74,000
Office Supplies	14,956	15,898	17,000	17,000	17,000
Communications	74	49	200	200	200
Professional Services	22,599	17,143	17,000	17,000	17,000
Professional Development	1,527	439	2,800	2,800	2,800
Printing and Publishing	2,173	342	3,000	3,000	3,000
Rentals	4,531	8,586	5,000	5,000	5,000
Collection Costs	(1,055)	2,532	2,000	2,000	2,000
Transportation	1,330	1,172	2,500	2,500	2,500
Miscellaneous	2,242	1,395	3,300	3,300	3,300
Inventory Adjustments	-	-	5,000	5,000	5,000
Depreciation Expense	270,864	270,002	274,000	274,000	281,000
Total Administrative and General	538,114	524,198	555,800	535,800	562,800
TOTAL OPERATING EXPENSES	3,450,562	3,384,956	3,184,200	2,729,700	2,987,000
OPERATING INCOME	256,550	970,486	773,800	1,379,300	1,235,000
NON OPERATING REVENUES (EXPENSES)					
State sources	-	-	-	-	-
Reimbursements	88,469	17,221	1,000	1,000	1,000
Interest Revenue	1,856	1,987	2,000	2,000	2,000
Interest/Finance Charges	-	-	-	-	-
Total Non-Operating Revenues (Expenses)	90,325	19,208	3,000	3,000	3,000
Income Before Transfers	346,875	989,694	776,800	1,382,300	1,238,000
Transfers out - City Fee	(192,224)	(218,732)	(197,900)	(205,600)	(211,000)
CHANGE IN NET POSITION	154,651	770,962	578,900	1,176,700	1,027,000
Net position, beginning of year	9,105,663	9,260,314	10,031,276	10,031,276	11,207,976
Net position, end of year **	$ 9,260,314	$ 10,031,276	$ 10,610,176	$ 11,207,976	$ 12,234,976
Plant Personnel Services % F.T.E. Employees = 6.52	35.27%	35.68%	37.82%	43.87%	42.69%
Distribution Personnel Services % F.T.E. Employees = 5.52	34.38%	58.21%	48.15%	54.58%	55.28%
Adminstrative Personnel Services % F.T.E. Employees = 2.61	40.67%	39.42%	40.30%	38.07%	39.80%

The cost of providing water services is accounted for in this fund. Revenues are primarily from charges to customers for water usage. Revenues from water sales are used to pay for some improvements with direct contributions to capital required from customers in the form of hookup fees. The water revenues are also used to pay principal and interest on the revenue bonds used to finance improvements when debt is issued. Currently, the water fund has no outstanding debt.

APPENDIX C

Rate Recommendations & Resolution Establishing Water Rates, Water Service Charges and Sewer Rates

Appendix C

WATER AND SEWER RATE RECOMMENDATIONS

CITY OF TRAVERSE CITY

MEMORANDUM

To: Martin A. Colburn, City Manager
From: William E. Twietmeyer, City Treasurer/Finance Director W. E. T.
Subject: Water Rate Analysis
Date: April 28, 2017

My annual review of the Water Fund is concluded. My communication last year recommended no rate increase in the Water Fund for the 2016-2017 fiscal year. I am again recommending **no** rate increase for the Water Fund for the 2017-2018 fiscal year.

Previous rate increases were necessary to pay for the various repairs and replacements at the Water Treatment Plant and to the Water Distribution system. In particular, the replacement of water distribution mains in conjunction with the street resurfacing or reconstruction projects were a large factor in driving these rate increases, along with replacement of equipment at the water treatment plant.

Although I am recommending that the rates remain **unchanged** at this time, it should be specifically noted that the six year capital plan for the water treatment plant and water distribution system remain very ambitious and will eventually necessitate a rate increase within the next year. Although the Raw Water Intake and Regional Water Storage projects have been moved beyond the six year capital plan, they have been replaced with the East-West Transmission Main upgrade, the Chemical System Upgrade, the Filters 1, 2, & 3 Valve Replacement projects the Midtown Transmission Main, and the Automated Metering Infrastructure. In addition, the Barlow Reservoir Rehabilitation will need to start in the next fiscal year. Furthermore, a new project has been added to the capital improvement plan which is the 2 million gallon Lafranier Road Water Reservoir. At present, the Water Fund does not carry any debt. It may be prudent to issue debt in the future if several of the larger projects need to occur around the same time. At that time, the water rates would need to be reviewed for their sufficiency to pay for these major projects.

Attached for your review is a copy of a spreadsheet showing nine years of historical financial data for the Water Fund, along with current year projections, the budgeted figures for next year, and three future years of projections. Also included is a copy of the current rate structure. Please let me know if you desire any additional information.

Encl.

WATER FUND

PROJECTED MULTI - YEAR OPERATING REVENUES, EXPENSES AND DEBT SERVICE

For Year Ended June 30

	2008	2009	2010	2011	2012	2013	2014	2015	2016	Projected 2017	Budgeted 2018	2019	2020	2021
Operating Revenue														
Water Sales	$1,702,359	$1,652,289	$1,810,338	$2,107,580	$2,745,413	$3,075,190	$2,989,936	$2,919,377	$3,198,126	$3,156,000	$3,206,000	$3,222,030	$3,238,140	$3,254,331
Twp. Bulk Sales	$587,907	$553,896	$572,576	$621,125	$602,662	$570,820	$490,210	$639,225	$1,033,433	$842,000	$902,000	$911,020	$920,130	$929,332
Other Revenue	$174,675	$97,212	$85,534	$145,263	$120,425	$98,794	$157,646	$238,832	$143,091	$114,000	$117,000	$115,000	$115,000	$115,000
Total Revenue	$2,464,941	$2,303,397	$2,468,448	$2,873,968	$3,468,500	$3,744,804	$3,637,792	$3,797,434	$4,374,650	$4,112,000	$4,225,000	$4,248,050	$4,273,270	$4,298,662
Operating Expenses														
Expenses (Net of Deprec.)	$1,724,520	$1,911,809	$1,916,227	$2,099,927	$2,157,831	$1,935,185	$2,307,838	$2,611,463	$2,925,920	$2,455,700	$2,706,000	$2,787,180	$2,870,795	$2,956,919
Payment in Lieu of Taxes	$123,330	$115,189	$123,153	$143,001	$173,561	$183,465	$177,854	$192,224	$218,732	$205,600	$211,250	$212,403	$213,664	$214,933
Total Operating Expenses	$1,847,850	$2,026,998	$2,039,380	$2,242,928	$2,331,392	$2,118,650	$2,485,692	$2,803,687	$3,144,652	$2,661,300	$2,917,250	$2,999,583	$3,084,459	$3,171,852
Operating Income	$617,091	$276,399	$429,068	$631,040	$1,137,108	$1,626,154	$1,152,100	$993,747	$1,229,998	$1,450,700	$1,307,750	$1,248,468	$1,188,811	$1,126,810
Debt Service														
Bond Debt Service	$279,500	$267,500	$280,500	$267,000	$253,500	$265,000	$0	$0	$0	$0	$0	$0	$0	$0
Close out Bond Reserve	$0	$0	$0	$0	$0	($288,762)	$0	$0	$0	$0	$0	$0	$0	$0
Bond Debt Service	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Debt Service	$279,500	$267,500	$280,500	$267,000	$253,500	($23,762)	$0	$0	$0	$0	$0	$0	$0	$0
Capital Projects Improvements	$112,777	$305,914	$245,954	$280,415	$497,183	$205,599	$490,960	$236,839	$1,147,061	$585,000	$3,740,000	$4,325,000	$2,385,000	$2,430,000
Net Income/(Loss)	$224,814	($297,015)	($97,386)	$83,625	$386,425	$1,444,317	$661,140	$756,908	$82,937	$865,700	($2,432,250)	($3,076,533)	($1,196,189)	($1,303,190)
Cash Balance	$1,117,171	$820,156	$722,770	$806,395	$1,192,820	$2,637,137	$3,298,277	$4,055,185	$4,138,122	$5,003,822	$2,571,572	($504,961)	($1,701,149)	($3,004,339)

Assumptions:

This projection contains no recommended increase in the water rates for 2017-18. The last increase was a $3.00 increase in tiered rates other than base rates effective July 1, 2012.

Water Sales are anticipated to increase .5% per year in the future.
Township Bulk Sales are anticipated to increase 1.0% per year after 2017-2018.
Expenses net of depreciation are expected to increase 3.0% per year.
Debt Service amounts represent the recently ended 1992 Water Revenue bond issue and the projected future debt service.
Capital Projects Improvement costs are taken from the recently submitted Capital Projects Plan.

Run 4-28-17

WATER RATES

Current Rates

First 600 Cu. Ft or less	Inside City Limits	Outside City Limits
5/8 Inch or 3/4 inch (Avg Residence)	$12.00	$18.00
1 Inch	$24.00	$36.00
1 1/4 Inch	$36.00	$54.00
1 1/2 Inch	$48.00	$72.00
2 Inch	$72.00	$108.00
3 Inch	$96.00	$144.00
4 Inch	$144.00	$216.00
6-12 Inch	$240.00	$360.00
Next 3,400 Cu. ft./1,000 Cu. ft.	$15.00	$22.50
Next 16,000 Cu. ft./1,000 Cu. ft.	$15.00	$30.00
All over 20,000 Cu. ft.	$15.00	$30.00

Run 4-28-17

The City of Traverse City

Office of the City Clerk

GOVERNMENTAL CENTER
400 Boardman Avenue
Traverse City, MI 49684
(231) 922-4480
tcclerk@traversecitymi.gov

RESOLUTION ESTABLISHING WATER RATES, WATER SERVICE CHARGES AND SEWER RATES

Because, the City Commission shall from time to time determine the water service charges for City users of water from the City water distribution system; and

Because, the City Commission desires to provide enough funds for the operational expenses and the debt service of the water system; and

Because, the City Commission desires to provide enough funds for the capital improvement to the water system; therefore, be it

Resolved, that the City Commission of the City of Traverse City does hereby establish the following rate schedule for users of the city sewer collection system in accordance with the Traverse City Code of Ordinances, effective July 1, 2017:

Inside City Limits

$37.00 per first 600 cubic feet
$43.00 per thousand for each additional thousand cubic feet

Customers outside City limits are charged 1 ½ times the City rate; and further, be it

Resolved, that the City Commission of the City of Traverse City does hereby establish the following water rates and charges schedule for users of water from the city water distribution system in accordance with the Traverse City Code of Ordinances, effective July 1, 2016:

First 600 Cu. Ft or less	Inside City Limits	Outside City Limits
5/8 Inch or 3/4 Inch(Avg, Residence)	$ 12.00	$ 18.00
1 Inch	$ 24.00	$ 36.00
1 ¼ Inch	$ 36.00	$ 54.00
1 ½ Inch	$ 48.00	$ 72.00
2 Inch	$ 72.00	$ 108.00
3 Inch	$ 96.00	$ 144.00
4 Inch	$ 144.00	$ 216.00
6 – 12 Inch	$ 240.00	$ 360.00
Next 3,400 Cu. ft./1,000 Cu. ft.	$ 15.00	$ 22.50
Next 16,000 Cu. ft./1,000 Cu. ft.	$ 15.00	$ 30.00
All over 20,000 Cu. ft.	$ 15.00	$ 30.00

The following are rates for the various services provided by the Water and Sewer Maintenance Division:

Service Lines:

City Resident cost 1 inch service lead = $1,000
Township Resident cost for 1 inch service lead = $1,500

Exceptions: (A) All service connections installed on State Highways or through reinforced concrete pavements will be charged on a time and material basis; and (B) All service connections installed during the period of November 15 to May 15 will be charged on a time and material basis

Any necessary road restoration costs will be added to the listed charge for water taps or service connections.

Tap Only:

1”	$200.00
1 ½”	$225.00
2”	$250.00
4”	$550.00
6”	$750.00
8”	$950.00
10”	$1,150.00
12”	$1,350.00

Meter Changes:

New meter installations or changes in meter size requested by customer.

Size	Cost to Install
3/4"	$400.00
1”	$500.00

Greater than 1 inch diameter = time and material cost basis.

Service Turn-Ons and Turn-Offs:

During scheduled work hours	$20.00
During non-scheduled working hours	$70.00

Initial and Final Readings

Initial reading (without turn off or turn on)	$ 10.00

Final reading (without turn off or turn on)	$ 10.00

Fire Suppression Connection Fee:

4 inch and smaller	$20.00 per year
6 inch	$50.00 per year
8 inch	$100.00 per year
10 inch	$200.00 per year
12 inch	$300.00 per year

Inspection Fee:

Sewer/water cut & caps	$50.00

Repeat Calls for Services:

No show, not ready, re-freeze	$50.00

Bulk Water Sales:

Fill tankers at our shop – 1st 600 cu ft	$50.00
Next 1,000 cu ft	$10.00
Est. cost $45/$54	

Dewatering:

Cost to dewater	$300.00

Bacteriological Testing:

Cost for labor, materials and equipment	$15.00

I hereby certify that the above Resolution was adopted by the City Commission on June 5, 2017, at a regular meeting of the City Commission held in the Commission Chambers, Governmental Center, 400 Boardman Avenue, Traverse City, Michigan.

Katelyn Zeits

Katelyn Zeits, CMC, Deputy City Clerk