

Meredith Water Department
Meredith, New Hampshire

Asset Management Plan

September 2025

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September 1, 2025

Jason Bordeau
Superintendent
Town Of Meredith Water & Sewer
50 Waukegan Street
Meredith, NH 03253

Subject: Water Asset Management Plan

Dear Mr. Bordeau:

OSD LLC is pleased to submit this water asset management plan for the Meredith Water Department. This work was completed in accordance with our agreement and the New Hampshire Department of Environment Services (NHDES) Asset Management Grant Program.

In conjunction with you and your staff, we used CivicPlus, formerly known as Beehive Industries, asset management software to document the asset assessment portion of this project.

It has been a pleasure to work with you and your staff on this plan. We wish to express our appreciation to the Town of Meredith for their participation in this project and for their help in collecting information and data.

Please note that the Water Reserves account is currently being used to pay for expenses that cannot be paid by the income received from water user fees and charges. The water rates have not been raised since 2013 and will need to be increased to meet the current budget requirements and to fund the capital and maintenance plans recommended in this report.

It is recommended that the Select Board consider increasing the water rates by 8.25% to 8.5% annually for the next 8 years to get the water rates to a level that meets the projected revenue requirements of the department. We estimate that for a single-family home with annual residential water use of 90,000 gallons per year, this will result in an average increase of \$85 per year.

If you have any questions, please do not hesitate to contact our office.

Kind regards,

A handwritten signature in blue ink that reads "Sean D. Osborne".

Sean D. Osborne, PE
Principal

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Table of Contents

Section 1	Introduction.....	1
Section 2	Asset Analysis.....	2
Section 3	True Cost of Water.....	7
	Balancing Utility Affordability with Household Affordability	8
	Projected Revenue Requirements	9
Section 4	Community Outreach Plan.....	11
	Frequently Asked Questions.....	11
	Current Projects.....	12
	Level of Service Goals and Performance Measures.....	13

Appendix A Water System Service Area Map

Appendix B Water Asset Assessment Summary

Appendix C Water Distribution System Map

Appendix D Debt Sharing Position Paper

Appendix E Projected Revenue Requirements

Section 1 Introduction

The Meredith Water and Sewer Department operates a public water system which serves approximately 45% of the Town's population. The system serves an estimated 3750 people through approximately 1165 metered and unmetered connections.

Water System Service Area Map is in Appendix A.

Lake Waukewan is the surface water source for this system. The watershed of this 912-acre lake extends into the towns of New Hampton, Center Harbor, Ashland, and Holderness.

The Meredith Water Department received a grant to complete an asset management plan.

During the completion of this plan, we met with the public and town decision makers to develop Level of Service goals and to answer the core asset management questions:

1. What is the current state of the assets?
2. What is the required, sustained level of service?
3. Which assets are critical to sustained performance?
4. What is the best "minimum life cycle cost" capital improvement plan, and operation and maintenance strategies?
5. What is the best long-term financing strategy?

We trained water department staff to use CivicPlus, formerly known as Beehive Industries, asset management software to update and add new assets to the asset management program.

And we provided a financial spreadsheet that incorporates the revenue requirements.

Section 2 Asset Analysis

The Meredith water system is composed of a surface water source, water treatment plant, water storage tower and water distribution system. Each of the water system's assets requires routine maintenance and rehabilitation to extend its useful life.

Lake Waukegan is the surface water source for this system. The town's water treatment (WTP) plant is a modular treatment facility that is located adjacent to Lake Waukegan. The WTP was constructed in 1988 with a capacity to treat 0.5 million gallons per day (MGD). In 1992 the WTP capacity was expanded to 1.0 MGD.

The treated water is stored in a 1.5-million-gallon water tower, which pressurizes the water distribution system. The distribution system includes approximately 17 miles of water mains, 150 hydrants and 730 valves.

A summary table of the asset inventory assessment is in Appendix B.

Water Source and Potential Backup Water Supply

The Meredith WTP has one 12-inch intake pipe to transmit raw water from Lake Waukegan to the WTP. The intake pipe was installed in 1988. The intake screen is approximately 1,700 feet offshore and is located approximately 22 feet below the surface of the lake. A diver inspects the intake screen twice a year and provides maintenance as necessary. Realtime water quality monitoring, including pH, dissolved oxygen, and specific conductivity, occurs near the intake screen from spring to fall every year.

The water quality in Lake Waukegan continues to be threatened by cyanobacteria blooms and heavy recreational use. These risks have led the water department to consider alternative water supply sources including an emergency interconnection with Laconia's water system, a temporary withdrawal from Lake Winnepesaukee with a portable reverse osmosis water treatment plant, and backup groundwater sources.

An emergency interconnection with Laconia would require the installation of approximately 1.5 mile 12-in water main extension along Daniel Webster Highway. A booster pump station at the Meredith-Laconia border does not appear to be necessary to account for the system pressure differences. The water characteristics of the raw and finished water of the Meredith and Laconia water systems appear to be compatible.

Containerized reverse osmosis systems are capable of producing up to one million gallons of water per day from a single forty-foot container. Detailed plans to temporarily install a containerized treatment system on Lake Winnepesaukee may be developed as part of the utility's emergency response plan.

In 2011, a groundwater investigation to identify and develop new groundwater sources to meet existing and future water supply needs of the Town of Meredith was completed by Emery &

Garrett Groundwater, Inc., now known as GZA GeoEnvironmental, Inc. The study concluded that it is possible to develop significant groundwater resources within the Town of Meredith.

These new water sources could provide supplemental supply of water to meet peak water demands. They could also serve as emergency backup water supply if the surface water source was substantially impaired.

The next phase of the groundwater investigation would include drilling exploratory wells and performing preliminary yield and water quality testing on the highest yielding of the wells. This investigation would also include evaluating the potential utilization of the Prescott Park irrigation well as a short-term emergency backup water supply. The total production capacity of the existing well was estimated to be 250 gpm. Water quality testing to drinking water standards would need to be conducted on this irrigation well.

It is recommended that the Town of Meredith pursue financial assistance from NHDES to fund an emergency interconnection with Laconia.

Water Treatment Plant

Treatment of the lake water occurs at a filtration plant having a capacity of 1.0 MGD. The plant produces approximately 500,000 gallons per day of treated water during the summer peak season. The water is treated to eliminate turbidity, to adjust pH, and to disinfect.

The WTP operates on average 5 hours per day in the winter and 8 hours a day in the summer. The discovery and repair of a large water leak in the distribution system have greatly reduced the water system demand.

The WTP raw water pumps and finished water pumps operate on the clearwell tank level and the water storage tank level. Typical operation is for two finish water pumps to run in lead/lag operation while the third is in standby.

There are three 7.5 hp raw water vertical surface mount raw water pumps. Raw Water Pump 1 was installed in 1988 and is in fair condition. It is scheduled to be replaced by the end of 2025. Raw Water Pump 3 was replaced with a new pump in 2020. Raw Water Pump 2 was replaced with a new pump in 2021. In 2021, raw water Variable Frequency Drives (VFDs) were installed. The VFDs are in good condition.

The three original 350 gpm finished water vertical turbine pumps are still in service. Finish Water Pump (FWP) 1 and 2 were installed in 1988. FWP 3 was installed in 1992. In 2012, finished water VFDs were installed. The VFDs were installed to improve operational flexibility and to mitigate the consequence of failure of the water storage tank or the 16-inch transmission line that feeds the tank. The FWPs and their VFDs are in fair condition and have a low probability of failure.

The WTP contains four modular treatment units; each designed to treat up to 0.25 MGD. Each unit is a Microfloc Trident system model TR-105A with upflow clarification followed by gravity filtration. Trident units 1 and 2 were installed in 1988. Trident units 3 and 4 were installed in 1992. All four units are in fair condition, have a very high probability of failure and are beyond their estimated useful life of 25 years. The water department personnel have reported filter media breakthroughs. Therefore, it is recommended that all four units be rebuilt. This work would include removing all existing media from the clarifiers and filters, removal of all clarifier and filter internal components, sand blasting and recoating steel vessels, replacing all clarifier and filter internal components, and replacing clarifier and filter media.

The Motor Control Center was installed in 1988, is in fair condition and is beyond its estimated useful life of 30 years. The MCC has a high probability of failure. It is recommended that the MCC be replaced with a new 480V, 3-phase, 3-wire motor control center.

Water Storage Tank

The Meredith water system has one storage tank the 1.5-million-gallon Ladd Hill Water Storage Tank. The water pressure in the distribution system is controlled by the height of the water in the storage tank. The water pressure in the system is typically above the minimum pressure of 35 psi. The high pressure of 120 psi is found on Route 3 near Mills Falls. The low pressure of 18 psi is found on Upper Ladd near the water storage tank.

The Ladd Hill Water Storage Tank is a prestressed concrete water storage tank which was built by the Preload Company in 1987. Per NHDES administrative rules Env-Dw 504.09, the tank is inspected at least once every five years. In 2024, the water department installed a tank mixer. Tank mixers improve water age, reduce thermal stratification and the potential for ice formation and associated interior coating damage.

The Ladd Hill Water Storage Tank is in good condition and has a very low probability of failure.

To further mitigate the consequence of failure of the water storage tank, it is recommended that the water department consider adding a second storage tank for redundancy and to provide emergency water supply and storage for the Meredith central business district and schools and residences east of the center of town. One potential site is in the vicinity of Barnard Ridge Road. NHDES may have grants available to fund a feasibility study for a second tank.

Water Booster Pump Stations

The water department maintains and operates three booster pump stations which provide water to small user bases:

- Meredith Bay Colony Club Booster Pump Station
- Mile Point Booster Pump Station, and
- Ladd Hill Booster Pump Station

In 2023, the water department reprogrammed each pump station and added flow meters to assist in the identification and location of water main leaks.

The three booster pump stations are in good condition and have a very low probability of failure.

Water Mains

Information regarding the water main diameters, materials, installation years, and break history was provided by Town personnel and reviewed during meetings with the superintendent and operators.

Water Distribution System Map is in Appendix C.

Distribution piping material is approximately 5% cast iron; 25% AC pipe, which was a common choice for potable water main construction during the 1940s, 50s, and 60s; and 70% ductile iron and PVC. These proportions are based on pipe age and operator experience.

To prioritize water main replacement and extensions OSD and water department personnel reviewed the water main age, material, break history, history of low water pressure.

The Meredith Water and Sewer Department is working with a consultant to design, bid, and replace approximately 2,200 linear feet of water main on Route 25. This work includes replacing the 10-in water main on Route 25 from Route 3 to Village Drive.

The 8-in water main on Main Street provides water services to commercial and residential customers. This water main should be replaced, and potentially upsized, in conjunction with the Main Street rehabilitation project. The scope of work would include replacing approximately 2,000 linear feet of water main from Route 3 to Waukegan Street.

Hydrants and Valves

The installation dates for the water valves and hydrants were provided by the Town as collected. The estimated useful life of a hydrant is assumed to be 40 years. The estimated useful life of a valve is assumed to be 50 years.

Most of the valves and hydrants in the system are within the estimated useful life.

The water department's hydrant and valve maintenance programs need additional funds to repair and replace those assets that are identified during the inspection and maintenance process.

Water Department Staff

Water department staff are a critical asset. Per EPA, "For systems to properly implement an asset management program, it is first important for staff to be knowledgeable about the system and its operations. Systems may achieve this first step by ensuring their operators receive

proper certification or re-certification through their state's operator certification program. Certified operators may be more likely to implement a robust asset management program focusing on proper operation, proactive maintenance, and repair of assets.”

The water department is developing a robust asset maintenance program. This continuous maintenance program needs additional staff. Meredith's certified water operators provide technical and managerial capacity required to meet federal and state drinking water standards. We recommend that the budget be adjusted to fund 2 full-time technicians, 1 part-time technician, a chief operator, and a superintendent to more efficiently and effectively maintain and operate the town's water and sewer systems.

Section 3 True Cost of Service

Water rates should reflect the true cost of providing safe, reliable water service to the utility's customers. The revenues generated by the water rates should be high enough to cover the full cost of operating, maintaining, and protecting the water supply system, with a minimum of a 10-year planning horizon.

A planning horizon of ten years allows the water utility to avoid the high costs of deferred maintenance by budgeting for regular infrastructure upkeep, justify debt acquisition, to build in revenue to cover long-term capital needs and to educate customers and decision makers about the water system's financial needs.

To assess the full cost of operating the water department, this plan considered the costs associated with

1. Pumping equipment and distribution system operation, repair, and maintenance;
2. Water quality program, treatment, and treatment plant costs;
3. Electricity and energy costs;
4. Capital needs, including planning, design, and construction;
5. Debt service;
6. Administration (including management, billing, and customer service);
7. Regulatory compliance, permitting, and reporting expenses;
8. Staff salaries, pensions, benefits, training, and professional development;
9. A water conservation program that includes
 - a. Leak detection equipment and services;
 - b. Meter replacement/repair program;
 - c. Automated meter reading equipment, including installation and maintenance;

Investments in preventative maintenance provide the following benefits:

- Fewer accidents
- More efficient operation / service
- Fewer unexpected breakdowns
- Less reactive maintenance
- Better understanding of how your assets are aging
- More sustainable utility

We recommend that the Operations and Maintenance(O&M) Budget cover all normal operating costs and capital items less than \$100,000. The water rates should be set to cover the annual O&M budget, capital loan repayment (projects \$100,000 and greater), plus \$100,000 per year surplus.

The current water rates are based on quarterly billing. Customers are assessed a flat rate according to the meter size and then the metered consumption is charged a uniform rate.

Uniform rates are easy to understand and implement. Uniform rates are usually considered equitable and provide utilities with a degree of revenue stability.

The consumption rate increased annually from 2011 to 2013. The uniform water rate has not changed since 2013. The income from the water rates does not cover the current O&M budget. The shortfall has been covered for several years by the Water Reserves account.

We recommend that the Select Board continue assessing customers with the uniform water rate for the next 8 years and consider assessing customers with an increasing block rate structure in the future. Increasing or tiered block rates charge increasing volumetric rates for increasing consumption. This rate structure is water conservation oriented and may result in revenue volatility related to seasonal weather.

As noted above, the new rates should be developed to provide funds to cover the annual O&M budget, capital loan repayment plus \$100,000 per year surplus to replenish the Water Reserves account.

Balancing Utility Affordability with Household Affordability

Utilities have three primary financial goals: (1) ensure water is affordable for households (household affordability), (2) ensure their fiscal health to continue operating reliably (utility affordability), and (3) invest in infrastructure to ensure they meet regulatory requirements and provide safe water. Financially strained systems may need to make trade-offs between these three goals because they cannot afford to meet all three goals.

- Utilities can maintain affordability and spend money on infrastructure but may reduce fiscal stability.
- Utilities can maintain affordability and fiscal stability but may reduce investment in needed infrastructure repair and replacement.
- Utilities raise rates that reduce affordability to support infrastructure and maintain fiscal stability.

The financial health of utilities is tied to the number of customers and their financial health. As such, there are two types of affordability that must be considered: (1) household affordability, or the ability for households to afford water services, and (2) utility affordability, or the ability for the community to collectively afford their utility.

To protect the affordability of water for basic needs and to recognize the benefits that all taxpayers of the Town of Meredith receive from water and sewer services provided in the downtown area, long term debt costs are borne by both taxpayers and water and sewer rate payers with rate payers paying 69% of the cost and taxpayers the remaining 31%.

The Meredith Water System Committee's Debt Sharing Position Paper is in Appendix D.

It is recommended that the Select Board consider increasing the water rates by 8.25% to 8.5% annually for the next 8 years to get the water rates to a level that meets the projected revenue requirements of the department. For a single-family home with annual residential water use of 90,000 gallons per year, we estimate that this will result in an average increase of \$85 per year.

Projected Revenue Requirements

The project revenue requirements for the water department for the next 10 years are in Appendix E. The revenue requirements include costs associated with personnel, asset maintenance programs and capital expenditures.

The Meredith Water Department is developing a continuous maintenance program for all its assets. The programs include

- Hydrants Repair and Replacement Program (\$15,000/year)
- Meter Replacement Program (\$25,000/yr)
- SCADA Maintenance Program (\$10,000/yr)
- Tank Inspection and Maintenance Program (\$10,000/yr)

The goal is for the funds for these programs to be kept in reserve accounts so that unused funds can be used the following year.

These programs ensure that proper maintenance is adequately funded. Proper maintenance can extend the estimated useful life of the water department assets and ensure that they are available during an emergency. The estimated useful lives of capital assets are

<u>Capital Asset Types</u>	<u>Useful Life (years)</u>
Buildings	50
Machinery and Equipment	5-20
Pump Station/Water Storage Tanks/Wells	50
Hydrants and Valves	40-50
Meters	15-30
Water Mains	100
Vehicles	5

Capital Recovery Projects

The water department is proposing several capital recovery projects (<\$100,000) for the next ten years that we propose to be funded through the Capital Recovery line item. These projects include

- Replacing 2015 Ford F-550 for an estimated cost of \$95,000
- Replacing 2016 Ford F150 for an estimated cost of \$70,000
- Replacing Water Treatment Plant roof for an estimated cost of \$60,000

- Replacing Water Treatment Plant boiler for an estimated cost of \$50,000
- Replacing Accu-Tab Power Pro Chlorination System for an estimated cost of \$35,000

Capital Debt Projects

The water department is proposing several capital projects (\$100,000 or more) for the next ten years that will be funded through debt service with 69% paid by rate payers:

- Rebuild the four modular water treatment units for an estimated cost of \$150,000 each
- Replace the MCC at the water treatment plan for an estimated cost of \$100,000
- Replace 2,200 linear feet of 10-in water main on Route 25 for an estimated cost of \$1,500,000

On July 30, 2025, the Governor and Executive Council (G&C) authorized the approval of a DWSRF loan and grant agreement in the total amount of \$800,000 under the provisions of RSA 486:14 and N. H. Admin. Rules Env-Dw 1100 for the Lead Service Line (LSL) Inventory and Replacement Project.

The funding breakdown is as follows:

- DWSRF Lead Service Line Loan: \$740,000 (66% principal forgiveness)
- LSL Inventory Grant: \$60,000

The LSL inventory field work is scheduled to begin in October 2025 and be completed by August 2028. 100% of the inventory debt service is anticipated to be paid by rate payers.

By 2037 USEPA is requiring that all service lines identified as lead or galvanized requiring replacement (GRR) be removed and replaced with a non-lead material on both sides of the curb stop. This service line replacement work would be another capital project with 69% paid by rate payers.

Section 4 Community Outreach Plan

The Town of Meredith water system is operated in a professional manner, and the operators are very knowledgeable of the components and operation of the water systems. The system continues to meet water quality standards. The partnership with the Lake Waukegan Watershed Alliance is key to ongoing monitoring and responding to cyanobacteria in the source water. Nevertheless, the public does not understand the value of water and the investment needed to ensure that compliance with bacterial standards and action levels for lead and copper and manganese continue.

To improve the public's understanding, the Meredith Water Department is working with the town webmaster to add FAQs and Current Projects sections to the department website and the department hosts several events:

- **Water Treatment Plant Open House** includes presentations and discussions with middle school students who visit in May and June,
- **Water Treatment Plant Summer Camp Tours** include hands-on activities for elementary school students who visit the plant in July and August, and
- **Ramp Cleanup Day with the Lake Waukegan Watershed Alliance** includes aquatic invasive species spread prevention recommendations for boat owners and the general public who participate in this end of summer event in September.

Frequently Asked Questions

This section of the website will grow and change as the contaminants of interest change. Below are recommended questions and answers for the initial FAQs section.

- *What is the value of water?*
 - Essential. Reliable. Invaluable. Water is critical for daily life and public health. We rely on it to drink, to cook, to clean, and for fire protection – essentially to live. The water system plays an important role in our economy too – supporting business, industry, and health care.
 - The licensed water operators of the Meredith Water Department work diligently to ensure that our water continues to comply with all federal and state water drinking water regulations 100% of the time.
 - Your water rates help the Meredith Water Department to operate reliably and to invest in infrastructure to ensure that we continue to meet regulatory requirements and provide safe water.
- *What is a valve exercise program and why should I care?*
 - Maintenance and exercising of valves throughout the distribution system is important to avoid coming across valves that either fail to seat or operate in an emergency.
 - Fewer customers are affected by a water emergency when valves are regularly operated and maintained.

- The goal of the Meredith Water Department is to exercise at least 20 percent of the valves in the distribution system each year, with the aim of exercising all valves over a five-year period.
- *What is being done to ensure that Meredith has a reliable supply of water?*
 - The Meredith Water Department regularly monitors raw water quality in Lake Waukegan.
 - The Meredith Water Department also works with the Lake Waukegan Watershed Alliance to protect the water supply through outreach and training.
- *What is PFAS?*
 - Per- and polyfluoroalkyl substances (PFAS) are a group of synthetic chemicals that are increasingly being found in our environment. Some PFAS do not break down easily and can move through soil, get into groundwater, and be carried through air.
 - In July 2020, New Hampshire House Bill 1264 was signed into law establishing the following MCLs in nanograms/liter (parts per trillion or ppt):
 - Perfluorooctanoic acid (PFOA) – 12 ppt
 - Perfluorooctane sulfonic acid (PFOS) – 15 ppt
 - Perfluorohexane sulfonic acid (PFHxS) – 18 ppt
 - Perfluorononanoic acid (PFNA) – 11 ppt
 - In 2022, Meredith’s water system met the health standards for New Hampshire.
- *Why are the water rates increasing?*
 - Many factors affect the cost of water (e. g., rising treatment costs, infrastructure failures due to delayed maintenance and aging assets, the increasing number of regulated contaminants, energy costs, cost of supplies, etc.);
 - It is important to think of Water as a set of services, rather than a product.
 - An increase in water rates helps to fund improved reliability in service.
 - Our customers get a lot for their money and are paying for a reliable service, not just a product.

Current Projects

We propose that the Current Projects section include information about water treatment plant improvements, water main flushing schedules and the installation of water distribution system improvements.

The goal is to have each project notice include a tag line and a photo or graphic.

- ***Out with the old. In with the new.***
- ***Your water bill at work.***
- ***New infrastructure installed to improve reliability and maintain water quality.***
- ***Another system improvement completed in-house by the Meredith Water Department.***
- ***Remove. Replace. Repeat. So water is there when you need it.***

These new website sections will be used to more effectively communicate the Level of Service goals to the public.

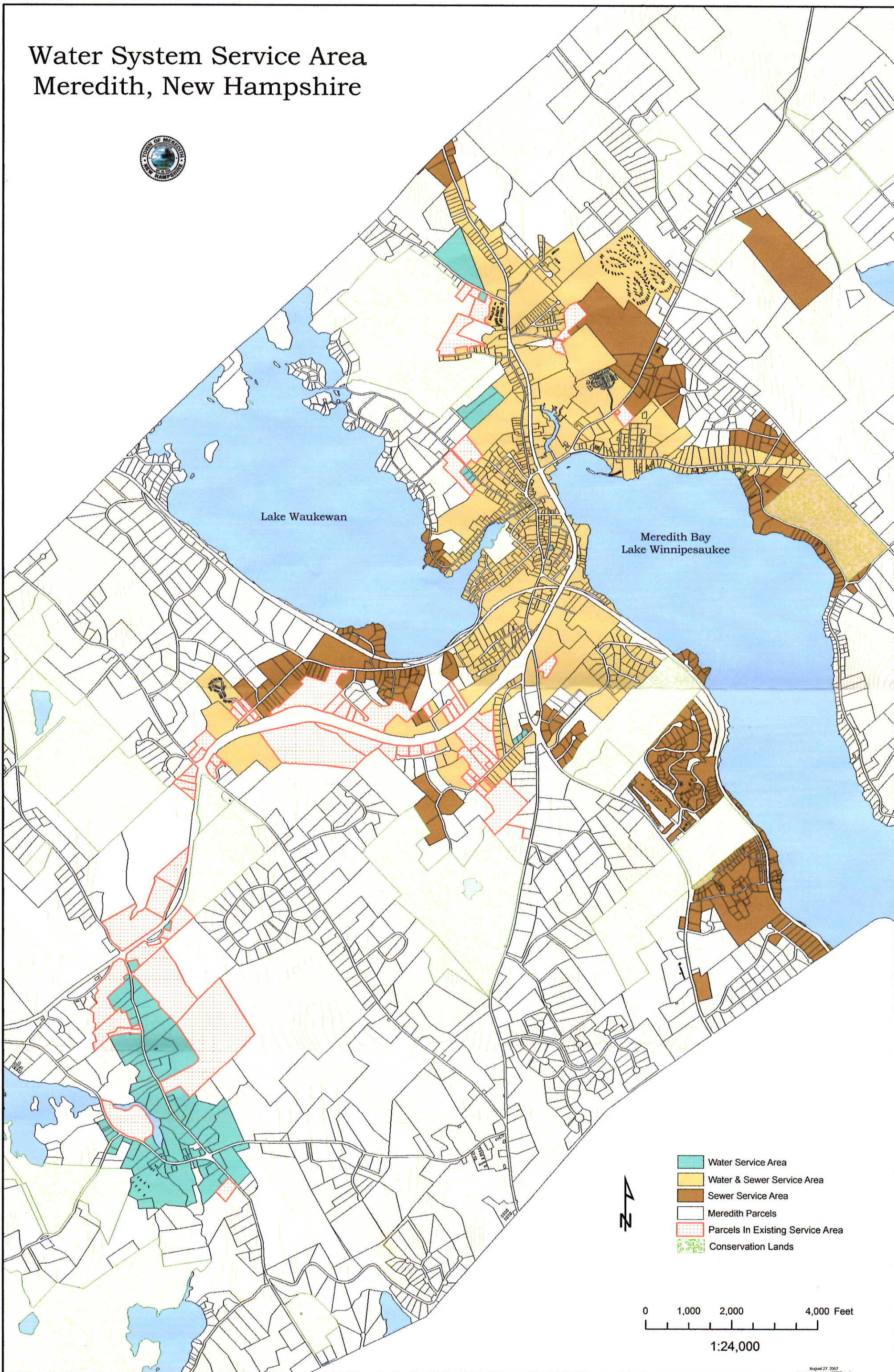
Level of Service Goals and Performance Measures

	Level of Service Goals	Performance Measures
1.	Continue to comply with all federal and state water drinking water regulations 100% of the time.	Review monthly compliance reports
2.	Meet state and federal secondary standards related to aesthetics at least 95% of the time.	Review quarterly water quality test results
3.	Provide minimum water pressures of 35 pounds per square inch throughout the system at least 90% of the time	Review complaint logs monthly
4.	Continue to respond to customer complaints within 24 hours at least 95% of the time	Review complaint logs monthly
5.	Implement hydrant maintenance program to maintain hydrants in working order and to identify hydrants that need to be replaced. Inspection and maintenance to be completed in accordance with AWWA M17 guidance.	Review inspection and maintenance data annually to ensure that each hydrant is inspected and maintained every four years.
6.	Continue to resolve water interruptions within 24 hours at least 95% of the time	Review water leak reports monthly
7.	Communicate the value of water through public engagement and outreach to all customers	Review and update website and other public interactions quarterly
8.	Develop an Operations and Maintenance Plan within 2 years to minimize the life cycle cost of assets	Review and update O&M plan every two years
9.	Within 3 years, increase staffing to 2 full-time technicians, 1 part-time technician, chief operator, and superintendent to more efficiently and effectively maintain and operate water and sewer systems.	Annually review and update the budget to support fully-staffed utility.
10.	Evaluate water rates and fees every 3 years to ensure that revenue required for capital improvements, debt service, operating expenses and other obligations is generated.	Triennially evaluate water service affordability (average annual bill/Median Household Income).
11.	Improve data quality related to service line inventory by implementing service line field investigation program to reduce service line unknowns by 95% within 4 years.	Review and update Service Line Inventory database quarterly.

Appendix A

Water System Service Area Map

Water System Service Area Meredith, New Hampshire



- Water Service Area
- Water & Sewer Service Area
- Sewer Service Area
- Meredith Parcels
- Parcels In Existing Service Area
- Conservation Lands

0 1,000 2,000 4,000 Feet
1:24,000

Appendix B

Water Asset Assessment Summary

System Name: Meredith Water Department
Current Year: 2025

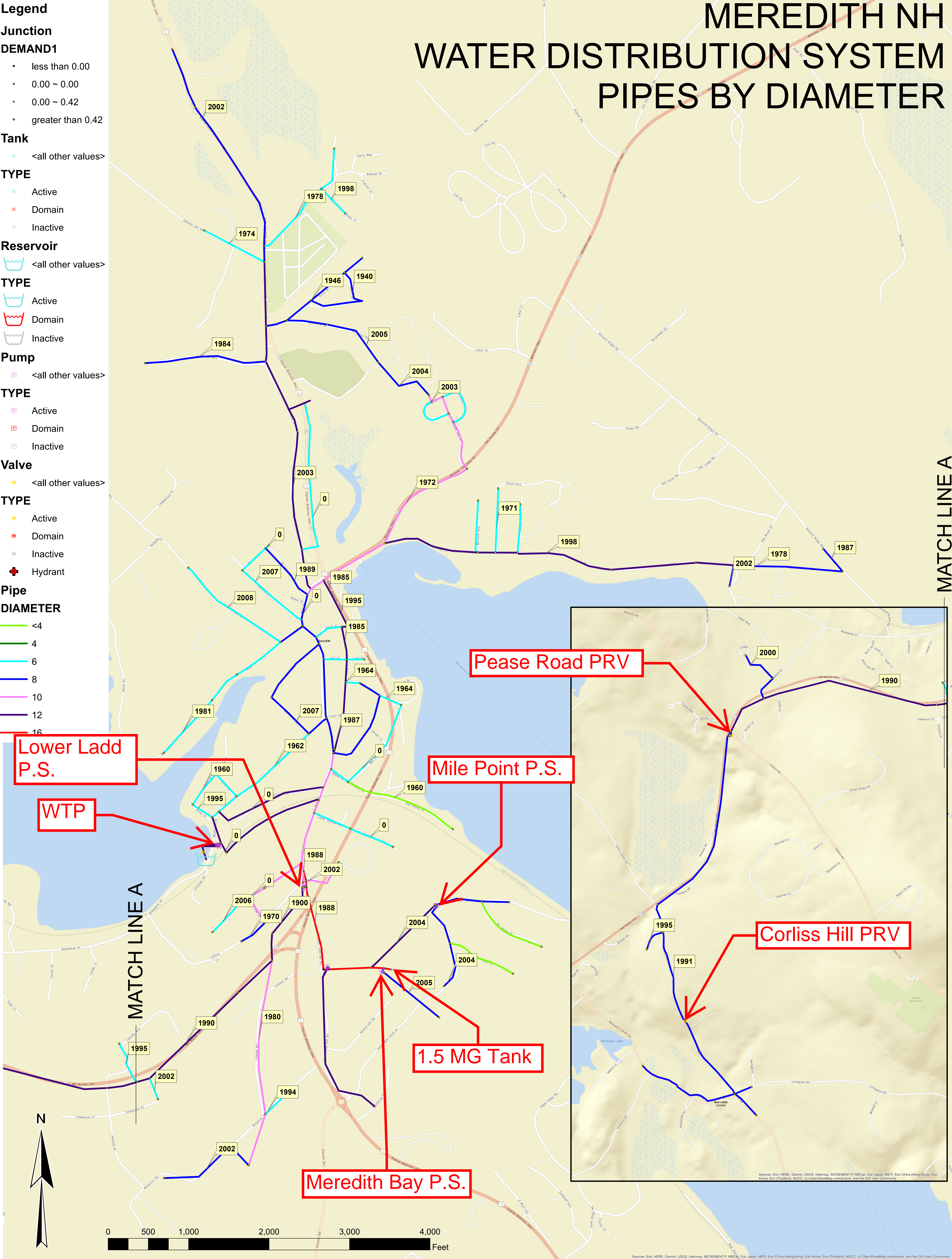
Asset Inventory Summary														
	Asset	Sub Asset Class or Sub Category	Type	Installation Date	Useful Life	Remaining Useful Life	Condition Rating	Operational Status (O=Operational, S= Standby, I= Inoperable)	Estimated Replacement Cost (in 2025 dollars)	Probability of Failure (Very Low - 1 to Very High - 5)	Consequence of Failure (Insignificant - 2, Minor - 4, Moderate - 6, Major - 8, Catastrophic - 10)	Critical Level/Priority	Maintenance Rating (5 = Regular Maintenance, 4 = Infrequent Maintenance, 3 = Rarely Maintained, 2 = Little to No Maintenance, 1 = Currently Needs Maintenance)	Comments
	1 MGD Water Treatment Facility			1988	70	33	Good	O		1	8	8	5	
	MCC	Motor Control Center	WTF equipment	1988	30	-7	Fair	O	\$100,000	4	8	32	5	Potential 2031 Construction
	RWP 1	Raw water pump (7.5 hp)	WTF equipment	1988	40	3	Fair	O	\$75,000	5	8	40	5	To be replaced in 2025
	RWP 2	Raw water pump (7.5 hp)	WTF equipment	2021	40	36	Good	O		1	8	8	5	
	RWP 3	Raw water pump (7.5 hp)	WTF equipment	2020	40	35	Fair	O		2	8	16	5	
	RWP VFDs	VFDs	WTF equipment	2021	15	11	Good	O		1	8	8	5	
	FWP 1	Finish water pump (40 hp)	WTF equipment	1988	40	3	Fair	O		2	8	16	5	
	FWP 2	Finish water pump (40 hp)	WTF equipment	1988	40	3	Fair	O		2	8	16	5	
	FWP 3	Finish water pump (40 hp)	WTF equipment	1992	40	7	Fair	O		2	8	16	5	
	FWP VFDs	VFDs		2012	15	2	Fair	O	\$75,000	1	8	8	5	
	#1	Trident Microfloc water filtration system	WTF equipment	1988	25	-12	Fair	O	\$150,000	5	4	20	5	Potential 2027 Construction
	#2	Trident Microfloc water filtration system	WTF equipment	1988	25	-12	Fair	O	\$150,000	5	4	20	5	Potential 2027 Construction
	#3	Trident Microfloc water filtration system	WTF equipment	1992	25	-8	Fair	O	\$150,000	5	4	20	5	Potential 2028 Construction
	#4	Trident Microfloc water filtration system	WTF equipment	1992	25	-8	Fair	O	\$150,000	5	4	20	5	Potential 2028 Construction
		LMI B121-91S chemical feed pump	WTF equipment					O		2	2	4	5	
		LMI B121-91S chemical feed pump	WTF equipment					O		2	2	4	5	
		LMI B721-490SI chemical feed pump	WTF equipment					O		2	2	4	5	
		Accu-Tab Power Pro chlorination system	WTF equipment	2004	25	4	Fair	O	\$35,000	3	10	30	5	
	Hach CL17SC	HACH CL17chlorine analyzer + reagents	WTF equipment	2024	15	14	Good	O		1	2	2	5	
	Hach CL17SC	HACH CL17sc chlorine analyzer + reagents	WTF equipment	2024	15	14	Good	O		1	2	2	5	
	Hach 1720E	PS1201 Turbidimeter	Raw Water Turbidimeter	2024	15	14	Good	O		1	2	2	5	
	Hach 1720E	PS1201 Turbidimeter	Filtered Water Turbidimeter	2024	15	14	Good	O		1	2	2	5	
	Hach 1720E	PS1201 Turbidimeter	Finished Water Turbidimeter	2024	15	14	Good	O		1	2	2	5	
	Hach TU5300	PS1201 Turbidimeter	WTF equipment	2024	15	14	Good	O		1	2	2	5	
	Hach TU5300	PS1201 Turbidimeter	WTF equipment	2024	15	14	Good	O		1	2	2	5	
		Clearwell level sensor	WTF equipment					O		1	2	2	5	
		Storage tank level sensor	WTF equipment					O		2	2	4	5	
		Caustic Bulk Storage Tank	WTF equipment	2024	40	39	Good	O		1	2	2	5	
		Alum Bulk Chemical Tank	WTF equipment	2024	40	39	Good	O		1	2	2	5	
		Backwash Pump	Filters	2023	40	38	Good	O		1	2	2	5	
		Surface Wash Pump	Filters	2023	40	38	Good	O		1	2	2	5	
		Air Scour Pump	WTF equipment	1988	20	-17	Fair	O		4	6	24	5	
		Ingersoll Rand T30 Pneumatic Valve	WTF equipment	1988	20	-17	Fair	O		1	2	2	5	
		Ingersoll Rand Pneumatic Valve	WTF equipment	2022	20	17	Good	O		1	2	2	5	
		Mile Point Booster Pump Station	Booster Pump Station				Good	O		1	4	4	4	
		Booster Pump	PS Equipment	2022	40	37	Good	O		1	4	4	4	
		Booster Pump	PS Equipment	2022	40	37	Good	O		1	4	4	4	
		High Capacity Fire Flow Pump	PS Equipment	2006	40	21	Fair	O		2	4	8	4	
		Lower Ladd Booster Station	Booster Pump Station				Good	O		1	4	4	4	
		Booster Pump	PS Equipment				Good	O		1	4	4	4	
		Booster Pump	PS Equipment				Good	O		1	4	4	4	
		Booster Pump	PS Equipment				Good	O		1	4	4	4	
		Booster Pump	PS Equipment				Good	O		1	4	4	4	
		High Capacity Fire Flow Pump	PS Equipment				Fair	O	\$35,000	2	4	8	4	
		Meredith Bay Colony Club Booster Station	Booster Pump Station				Good	O		1	4	4	4	
		Booster Pump	PS Equipment				Good	O		1	4	4	4	
		Booster Pump	PS Equipment				Good	O		1	4	4	4	
		High Capacity Fire Flow Pump	PS Equipment				Fair	O	\$35,000	2	4	8	4	
		Distribution System												
		Hydrants	Hydrants	Varies	50		Fair	O		2	2	4	4	
		Distribution Valves	Valves	Varies	50		Fair	O		2	2	4	4	
		Air Release Valves	Valves	2025	40	40	Good	O		1	2	2	5	
		Pease Road Pressure Reducing Valve	Valves	2004	40	19	Fair	O		3	4	12	5	
		Corliss Hill Pressure Reducing Valve	Valves	2004	40	19	Fair	O		3	4	12	5	
		NH Rte 25	Water Main	1972	100	47	Fair	O	\$1,200,000	4	6	24	4	Under Design, 2028 Constructio Start
		Main Street	Water Main	1940	100	15	Fair	O		2	6	12	4	install date assumed to be 1940
		1.5 MGD PRELOAD Pre-stressed Concrete Water Tank	Storage Tank	1989	50	14	Good	O		1	10	10	5	

Appendix C

Water Distribution System Map

- Legend**
- Junction**
- DEMAND1**
 - less than 0.00
 - 0.00 ~ 0.00
 - 0.00 ~ 0.42
 - greater than 0.42
- Tank**
 - <all other values>
- TYPE**
 - Active
 - Domain
 - Inactive
- Reservoir**
 - <all other values>
- TYPE**
 - Active
 - Domain
 - Inactive
- Pump**
 - <all other values>
- TYPE**
 - Active
 - Domain
 - Inactive
- Valve**
 - <all other values>
- TYPE**
 - Active
 - Domain
 - Inactive
 - Hydrant

- Pipe**
- DIAMETER**
 - <4
 - 4
 - 6
 - 8
 - 10
 - 12
 - 16



Appendix D

Debt Sharing Position Paper

Meredith Water System Committee
POSITION PAPER
on
General Taxpayer Support of Water and Sewer Utility Enterprises

It is the position of the Water System Committee that all taxpayers of the Town of Meredith benefit to some degree from water and sewer services provided in the downtown area. Therefore it is our position that all taxpayers should bear some portion of the cost for both maintaining and expansion/refurbishment of the infrastructure.

Downtown Meredith businesses and municipal offices require town water and sewer systems due to building density making wells and septic systems impractical if not impossible. In turn, this density requires effective fire response capability in the form of the availability of a high quantity of water distributed through a system of hydrants and connections to sprinkler systems.

Among the benefits resulting from these systems are lower insurance rates and buildings, such as hotels and restaurants, which are much larger than would otherwise be possible. Therefore businesses operate at lower costs improving their competitiveness and attractiveness to their customers. The Town of Meredith also benefits from similar lower operating costs of their buildings reducing the burden on tax payers.

The Meredith economy is tourist-driven with most of its business sector being users of water and sewer services. It is our position that our economy would suffer considerably without the availability of municipal water and sewer. Further this business sector is contributing significantly to both the overall tax base and the economic viability of the Town.

Currently long term debt costs are borne by both taxpayers and water and sewer rate payers with rate payers paying 69% of the cost and tax payers the remaining 31%. We believe these apportionments are appropriate and recommend they continue. In addition changes will be recommended to have the Town charge the water and sewer enterprises for a proportionate share of administrative expenses and correspondingly have the Town pay a maintenance fee for upkeep of the fire hydrant system.

Respectively submitted,
Charles Palm, Selectman Representative to the Water System Committee
David Thorpe, Chairman, Water System Committee

Appendix E

Projected Revenue Requirements

