



WATER ASSETS MANAGEMENT PLAN

The Town of Mahone Bay operates and maintains many assets for the delivery of public services and the benefit of residents. The Town's Asset Management Policy classifies these assets into nine categories and the Council's Strategic Plan prescribes the development of an Asset Management Plan for each.

This is the Town's Asset Management Plan for Water Assets and as such will provide a high-level introduction to the Town's water treatment and distribution system. The water distribution system serves most of the community, unserved areas rely on private wells for water supply.

ASSET MANAGEMENT GOALS

- Continue to meet treatment regulations
- Renew existing transmission and distribution assets (leak/loss reduction reducing operating costs)
- Improve capacity for fire suppression
- Extend and upgrade services to support new development, enable densification, and improve community wildfire resilience
- Protect source water through regulation and land acquisitions
- Mitigate swings in utility rates

RISKS:

- Coastal erosion and erosion from increased precipitation events threatening infrastructure
- Wildfire risks to water supply as well as treatment and distribution infrastructure

The Water / Wastewater Department is responsible for the reliable supply of drinking water to residents and businesses as well as the collection and treatment of wastewater. The Department operates in accordance with all federal and provincial regulations to ensure the safety of staff, the public and our natural environment. Department staff include:

Scott Hoyt – Water/Wastewater System Manager
Blake Tibert – Water/Wastewater System Operator
Hiring Underway – Water/Wastewater System Operator

The following map depicts the Town's Water Assets:

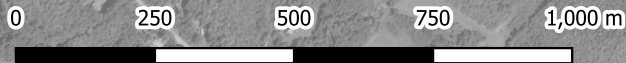
Mahone Bay: Water Overview

Oakland Lake



Water Network

-  Water Hydrant
-  Transmission Main
-  Distribution Main
-  Water Treatment Plant and Reservoir



Quantity			
Asset Group (System)	Number of Features	Length (m)	Area (SqM)
Water Treatment and Distribution	869	15,161	2,180
Structures	8		2,180
Building	8		2,180
Water Supply	861	15,161	
Hydrant	60		
Meter	494		
Pipe	141	15,161	
Distribution Force Main	129	11,859	
Transmission Force Main	12	3,301	
Pump	2		
Reservoir	1		
Treatment	1		
Valve	162		
Curb Stop	28		
Hydrant Gate	60		
Main Gate	73		
Other	1		
Grand Total	869	15,161	2,180

Renewal Cost		
Asset Group (System)	Renewal Cost (Current CAD)	Sustainable Annual Investment
Water Treatment and Distribution	\$40,400,378	\$760,841
Structures	\$1,897,689	\$52,263
Water Supply	\$38,502,689	\$708,578
Hydrant	\$651,000	\$8,680
Meter	\$247,000	\$12,350
Pipe	\$33,564,559	\$516,378
Distribution Force Main	\$15,279,950	\$235,076
Transmission Force Main	\$18,284,609	\$281,302
Pump	\$30,000	\$2,000
Reservoir	\$181,600	\$1,816
Treatment	\$2,869,305	\$143,465
Valve	\$959,225	\$23,888
Curb Stop	\$108,500	\$2,170
Hydrant Gate	\$651,000	\$16,275
Main Gate	\$169,725	\$4,243
Other	\$30,000	\$1,200
Grand Total	\$40,400,378	\$760,841

Making smart investments in our Water Assets to ensure they provide reliable service into the future requires understanding where investments are needed most. Our investment decisions are guided by the concept of Risk. In asset management planning Risk is a function of probability, the likelihood that an asset will fail to perform its expected role, and consequence, the impact such a failure would have on the delivery of services.

The following is an illustration of the Risk associated with the Town's current Water Assets:



In practice the Town Council must make smart investments to reduce Risk in the water system while considering residents' ability to pay. This Asset Management Plan links the identified need for investment with Council's planned capital spending.

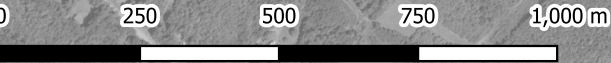
The following map depicts the Town's water system, showing associated Risk:

Mahone Bay: Risk Heat Map



Risk Level

- Extreme — Red solid line
- High — Orange solid line
- Medium — Yellow solid line
- Low — Green solid line
- Minimal — Blue solid line
- Planned — Black dashed line

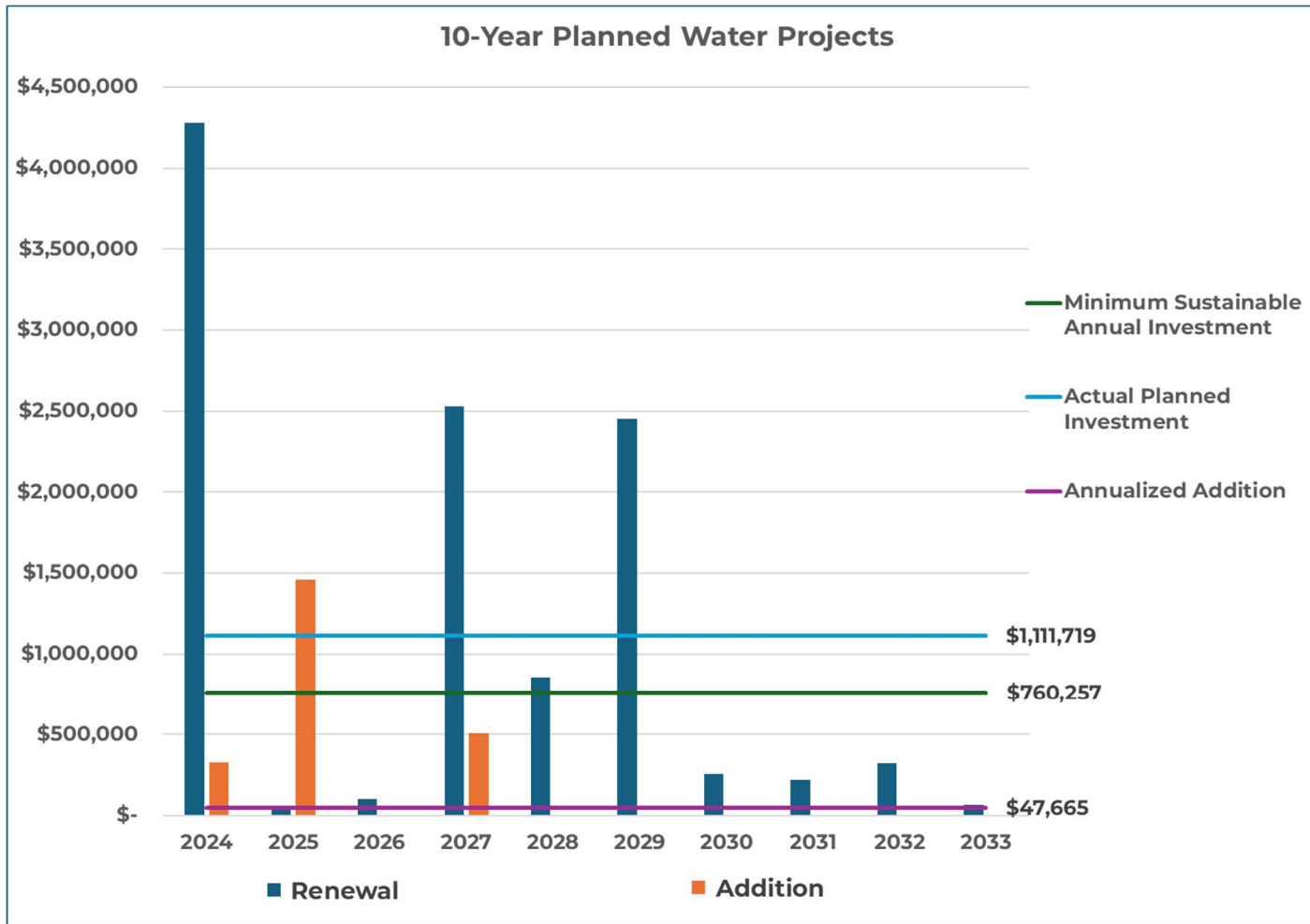


When Risk is used to inform asset management decision making it is possible to develop a picture of the investment decisions which will be necessary to keep our water assets working as intended.

Risk					
Asset Group (System)	Extreme	High	Medium	Low	Grand Total
Water Treatment and Distribution	\$23,209,062	\$3,483,656	\$657,517	\$13,050,143	\$40,400,378
Structures	\$100	\$477,089	\$6,000	\$1,414,500	\$1,897,689
Water Supply	\$23,208,962	\$3,006,567	\$651,517	\$11,635,643	\$38,502,689
Hydrant				\$651,000	\$651,000
Meter				\$247,000	\$247,000
Pipe	\$20,339,657	\$2,974,242	\$469,917	\$9,780,743	\$33,564,559
Distribution Force Main	\$4,194,038	\$2,974,242	\$469,917	\$7,641,753	\$15,279,950
Transmission Force Main	\$16,145,618			\$2,138,991	\$18,284,609
Pump				\$30,000	\$30,000
Reservoir			\$181,600		\$181,600
Treatment	\$2,869,305				\$2,869,305
Valve		\$32,325		\$926,900	\$959,225
Curb Stop				\$108,500	\$108,500
Hydrant Gate				\$651,000	\$651,000
Main Gate		\$2,325		\$167,400	\$169,725
Other		\$30,000			\$30,000
Grand Total	\$23,209,062	\$3,483,656	\$657,517	\$13,050,143	\$40,400,378

The Sustainable Annual Investment level is the minimum investment needed to mitigate risks and continue with the provision of services. The cost estimates used to determine the Sustainable Annual Investment level are updated periodically but may understate the effects of inflation.

By incorporating Risk, along with the Sustainable Annual Investment level the Town is able to develop a sustainable 10-year Capital Investment Plan (CIP) for water assets:



KEY 10-YEAR CAPITAL PROJECTS:

- Edgewater Street Project (2025-2026) - \$1,685,519
- Main Street East Project (2026-2027) - \$3,000,000
- Main Street West Project (2025-2026) - \$4,231,126
- Transmission Main Replacement (2029-2030) - \$2,000,000

With Average Planned Spending exceeding Sustainable Annual Investment, the Town's planned 10-year capital expenditures are adequate to ensure our Water Assets continue to provide expected levels of service. Upgrades and improvements are not reflected in the minimum Sustainable Annual Investment and additions / extensions are shown as Annualized Addition.

The following map depicts Planned Water projects over the next 10 years, according to the CIP (not all projects may be shown, projects without a location will not be shown):

Mahone Bay: Planned Infrastructure



Water Features

Water Pipe Planned Type

- Mahone Bay: Planned Addition
- Mahone Bay: Planned Renewal

Water Pipe Planned Date

- 2026-12-31
- 2027-12-31
- 2029-12-31
- 2030-12-31
- 2031-12-31
- 2033-12-31
- 2034-12-31

WTP Reservoir

Main Street West W/WW Project

Clearway Street Transmission Main

Edgewater Street Project

Fairmont Line Replacement

0 250 500 750 1,000 m



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Finally, to carry out this 10-year Capital Investment Plan funding strategies must be considered.

Funding Strategies

The Town is significantly reliant on external funding support from higher levels of government to carry out the planned capital program. Town funding for Water Assets comes through water rates, which include contributions to a reserve used for capital investments; this reserve may be further supplemented by other own source funds as required. Water utility funds cannot be used to pay for extension of water services.

Improvement Plan

The Town continues to improve this document and our practice of asset management. The following improvements are planned:

- Conducting a Water Rate Study in 2024-2025 to inform rates for fiscal 2025-26 and beyond.
- Conducting a Fire Suppression Capacity Analysis in 2027-28 to inform capital investment.
- Operationalization of asset management practice with new work order system.
- Development of standards for the collection and maintenance of asset management data.

Engagement

Staff respond to and track service complaints. The Town has a responsibility to maintain existing infrastructure. Council will consider strategic extension of services to support development.