ONTARIO CLEAN WATER AGENCY
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Town of Amherstburg Asset Management Plan for Water and Wastewater Systems

SUBMITTED BY

Ontario Clean Water Agency
2085 Hurontario Street, 5th Floor
Mississauga, ON L5A 4G1

Date: November 1, 2023

Rev: 2

Revision History

REV. NO.	DATE	PREPARED BY:	APPROVED BY:	DESCRIPTION
1	May 26, 2023	Anna Duong, Nick Larson	Nick Larson	Draft
2	November 1, 2023	Anna Duong, Nick Larson	Nick Larson	Final

Executive Summary

Water and Wastewater Facility Asset Portfolio

The scope of this Asset Management Plan (AMP) includes all water and wastewater assets. The infrastructure portfolio has an estimated replacement value of approximately $661 million.

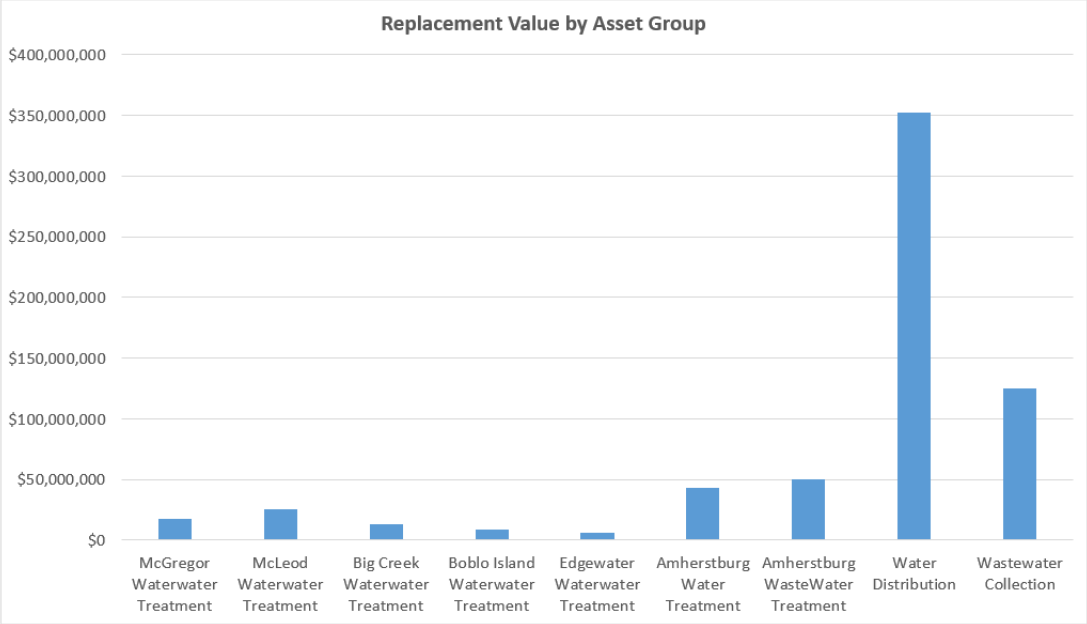

Figure ES1: Asset Portfolio Summary

Note: Actual costing values are subject to market forces at the time of infrastructure construction/improvement activity, the above values are based on historical averages and industry standards.

Current Asset Performance

The best available asset information combines with the judgement of subject matter experts to establish the current performance of each of the individual asset records represented in the asset portfolio. The performance of individual assets aggregates to present the performance distribution of each asset group. Table ES1 and Figure ES2 presents the current asset performance results.

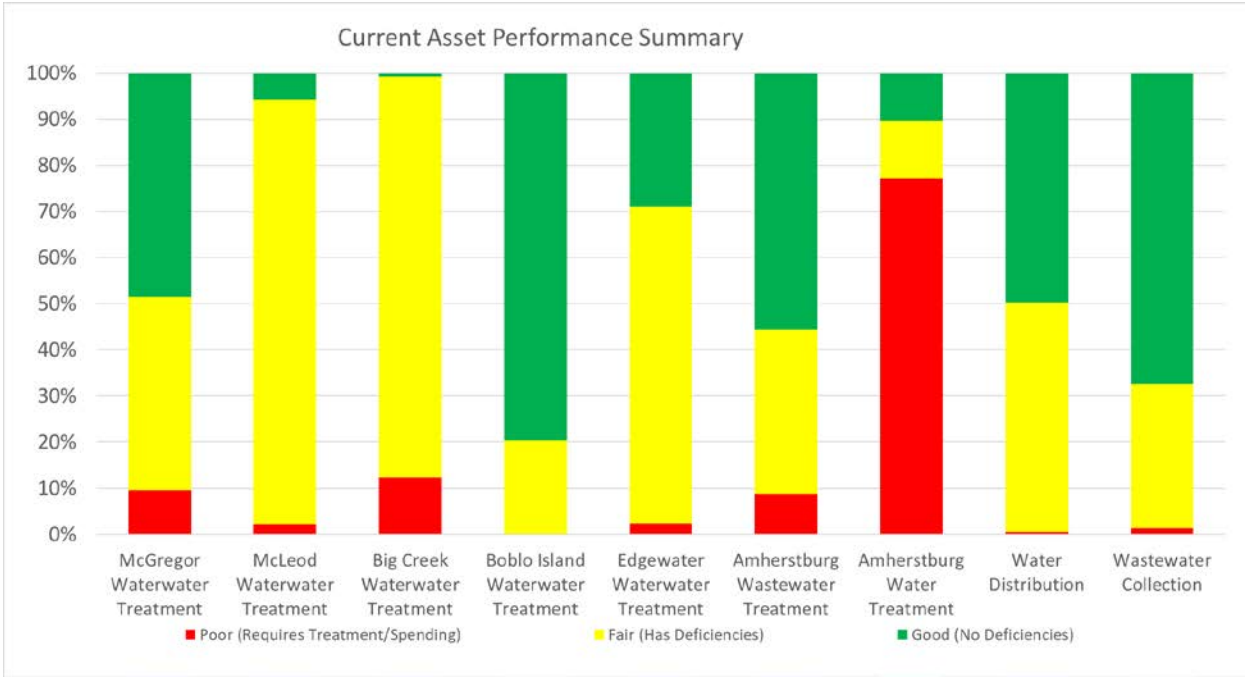

Figure ES2 – Current Performance Summary

The total replacement cost of the assets in the poor performance category is of approximately $45 million, which represents approximately 7% of the total asset portfolio. The spending required to restore these assets to the good performance category is not necessarily equal to the replacement costs, since some assets only require rehabilitation while others require replacement with a more expensive asset.

Table ES1: Current Performance by Replacement Value

		McGregor Waterwater Treatment	McLeod Waterwater Treatment	Big Creek Waterwater Treatment	Boblo Island Waterwater Treatment	Edgewater Waterwater Treatment	Amherstburg Wastewater Treatment	Amherstburg Water Treatment	Water Distribution	Wastewater Collection	**Total**
Performance Category	Good (No Deficiencies)	$8,412,050	$1,474,700	$108,300	$6,787,748	$1,769,700	$27,667,808	$4,477,672	$174,998,698	$98,141,148	**$323,837,824**
	Fair (Has Deficiencies)	$7,247,696	$23,613,300	$11,067,000	$1,726,300	$4,201,300	$17,759,520	$5,442,513	$175,673,722	$45,363,836	**$292,095,187**
	Poor (Requires Treatment/Spending)	$1,660,000	$550,500	$1,567,000	$0	$140,000	$4,350,000	$33,328,500	$1,499,412	$2,094,992	**$45,190,405**
	Total	**$17,319,746**	**$25,638,500**	**$12,742,300**	**$8,514,048**	**$6,111,000**	**$49,777,328**	**$43,248,685**	**$352,171,832**	**$145,599,977**	**$661,123,416**

Spending Forecast

Figure ES3 summarizes the spending forecast results. An average of $4.0 million per year over the long term is required to achieve asset performance requirements.

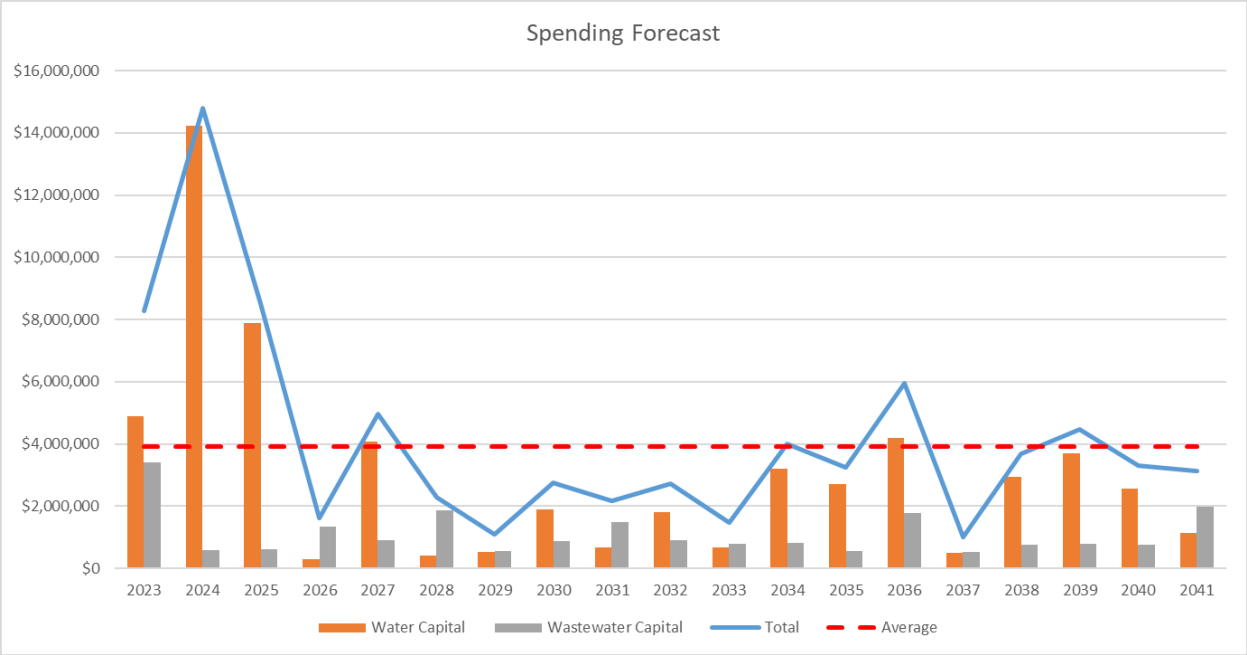

Figure ES3: Spending Forecast Summary

Funding Gap

The long-term funding needs are generally consistent with recent capital and maintenance spending levels. The Town is in the process of completing a rate study, which will provide better understanding of the Town's strategy to fund future infrastructure related expenditures.

Financial Strategy

The objective of the Town's financing strategy should be to maximize new assessment growth at the lowest real cost impact to ratepayers (i.e. maximize real revenue growth through expanded customer base and minimize rate increases). This would prioritize the following options:

1. Provincial/Federal Government Grants
2. Internal Financing using Reserves
3. Debt
4. Rate Increases

Future budgets will present the optimal balance of the available financing options to fund the Town's infrastructure program.

Table of Contents

1 INTRODUCTION

1.1 Overview

This Asset Management Plan (AMP) builds a structured relationship between infrastructure spending and asset performance. Periodic (annual) updates ensure it reflects changing circumstances and actively supports infrastructure decision-making processes.

1.2 Defining Asset Performance

The definition of Asset Performance is "the ability of an asset to fulfill the organization's objectives or requirements".

The performance of an asset directly relates to the level of service it provides:

- An asset in the good performance category is one which is meeting the expectations of the community (i.e. providing an appropriate level of service); and
- An asset in the poor performance category is one which is not meeting expectations (i.e. not providing an appropriate level of service), and requires spending to have it meet expectations.

The community's asset performance expectations balance costs and affordability and are therefore unique to each community based on its infrastructure inventory, financial status and community/corporate priorities.

1.3 Provincial Asset Management Planning Requirements

The Province of Ontario developed Regulation 588/17 under the Infrastructure for Jobs and Prosperity Act (2015). The following points summarize the requirements of O.Reg. 588/17:

- An AM policy is required to articulate specific principles and commitments that will guide decisions around when, why and how to spend money on the Town's infrastructure assets. The Policy is required by July 1, 2019. The Town successfully adopted their AM Policy in 2019.
- By July 1, 2022 the AMP will be required to establish the spending that is required ***to maintain current*** asset performance expectations for water, wastewater, stormwater, roads and bridges.
- By July 1, 2024 the AMP will be required to establish the spending that is required to ***maintain*** current asset performance expectations for all asset groups.
- By July 1, 2025 the AMP will be required to establish the spending that is required to achieve desired asset performance expectations, and the financial strategy to fund the required spending.

1.4 AMP Development Approach

OCWA's Asset Stewardship Quality Management System (ASQMS), depicted in Figure 1, guides the approach to develop this AMP. The ASQMS Framework shows how technical asset lifecycle strategies

connect to community priorities to develop optimized spending plans that balance service levels and costs. An AMP is a tactical output of the ASQMS.

The ASQMS aligns with Ontario Regulation 588/17 Asset Management Planning for Municipal Infrastructure and the international standard for infrastructure asset management (ISO 55000).

Figure 1-1: ASQMS Framework

The development of this AMP leverages the Town's best available asset and financial information, staff input, subject matter expert professional judgement, and AM best practices, to complete the following steps:

1. Develop a complete listing of infrastructure assets to be included in the AMP.
2. Assess current performance (level of service) of the assets based on existing information.
3. Prepare an asset lifecycle management strategy (i.e. spending plan) that maintains the current performance of the Town's infrastructure assets.
4. Determine the gap between required spending levels to achieve asset performance objectives versus historic spending.

1.5 Updating the Asset Management Plan

A periodic update to the AMP ensures it reflects the latest information and responds to evolving asset performance expectations in the community. Ideally, this update occurs annually in conjunction with the Town's budget processes, or more frequently if required to support funding applications.

1.6 Asset Management Plan Scope

This AMP includes all water and wastewater assets owned by the Town. Section 2 summarizes the infrastructure portfolio.

1.7 Growth Planning

As seen in Table 1-1, the population of Amherstburg was relatively stables over the past decade. However, recent trends are showing an increase in population growth. The Town is about to start a growth-planning exercise that will provide the best current estimates for future growth. This information will inform updates to the Water and Wastewater Master Plans, Development Charges Background Study, and this AMP. The spending identified in this AMP includes growth-related projects that are identified on the current 5 year capital plan.

Table 1-1: Amherstburg Population History

YEAR	POPULATION
2006	22,440
2011	22,250
2016	22,640

Population data from 2019 DC Report.

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2 OVERVIEW OF ASSET PORTFOLIO

The infrastructure portfolio has an estimated replacement value of approximately $661 million (Figure 2-1). A detailed asset inventory is available in Appendix C.

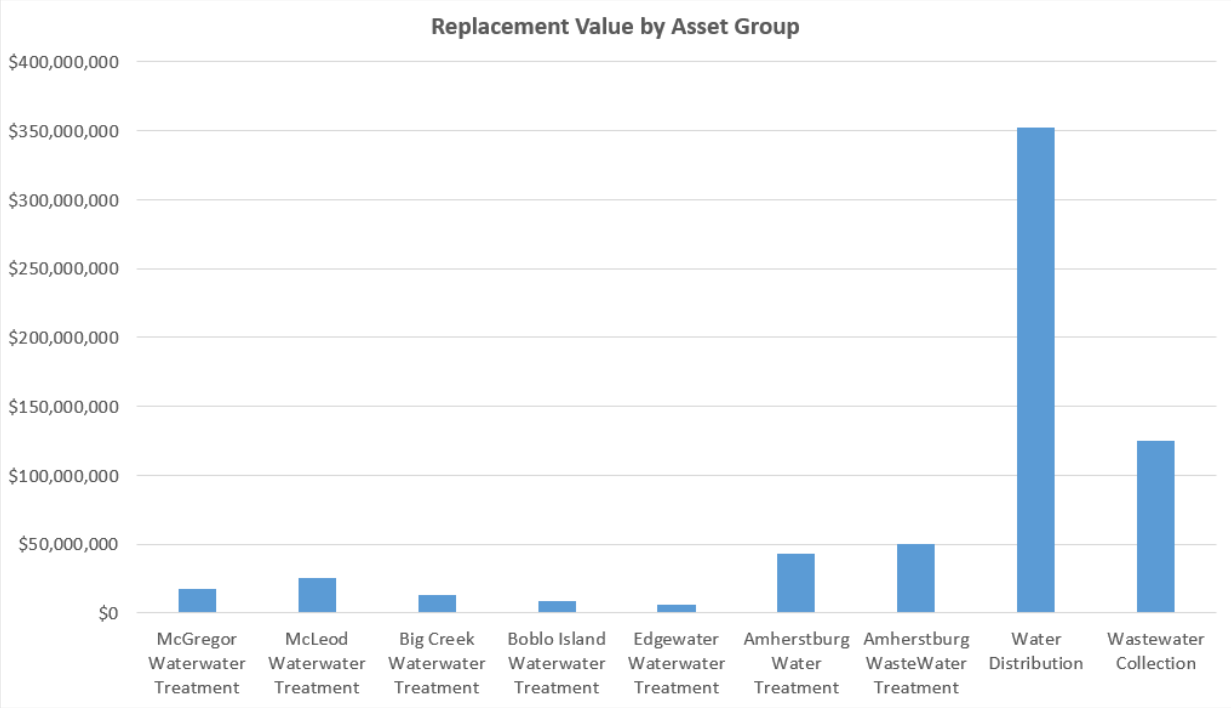


Figure 2-1: Amherstburg's Water and Wastewater Infrastructure Portfolio

Note: Actual costing values are subject to market forces at the time of infrastructure construction/improvement activity, the above values are based on historical averages and industry standards.

3 ASSET PERFORMANCE ASSESSMENT

As described in Section 1, the new landscape of AM that aligns with ISO 55000 defines asset performance as the ability for an asset to fulfill its objectives or requirements. This means that the performance of an asset is directly proportional to the level of service it provides. Levels of service are also at the core of O.Reg. 588/17, which requires municipalities to understand the cost to achieve higher or lower levels of service.

3.1 Measuring Asset Performance

The Town's asset inventory contains performance information for all infrastructure assets. This includes information related to both asset condition and asset function. The performance information is collected from a variety of sources, ranging from sophisticated technologies to investigate the assets to visual observations from qualified professionals.

All asset performance data combines with the professional judgment of subject matter experts to establish the current performance of each asset as defined in Table 3-1 below.

Table 3-1: Asset Performance Rating Descriptions

PERFORMANCE CATEGORY	DESCRIPTION	STATE OF ASSET
Good	Asset performance meets or exceeds its objectives/requirements.	No Deficiencies
Fair	Asset performance is nearing the point where it will not meet its objectives/requirements.	Has Deficiencies
Poor	Asset performance is not meeting its objectives/requirements.	Requires Treatment (Spending)

3.2 Current Asset Performance

Figure 3-1 and Table 3-2 provide the current performance distribution of each asset group. The total replacement cost of the assets in the poor performance category is of approximately $45 million, which represents approximately 7% of the total asset portfolio. Note that the spending required to restore these assets to the good performance category is not equal to the replacement costs, since some assets only require rehabilitation while others require replacement with a more expensive asset.

The performance category of each asset updates on a continual basis to reflect actual spending on assets, new asset data, and changing asset performance objectives or requirements.

Detailed performance metrics are provided in Appendix A.

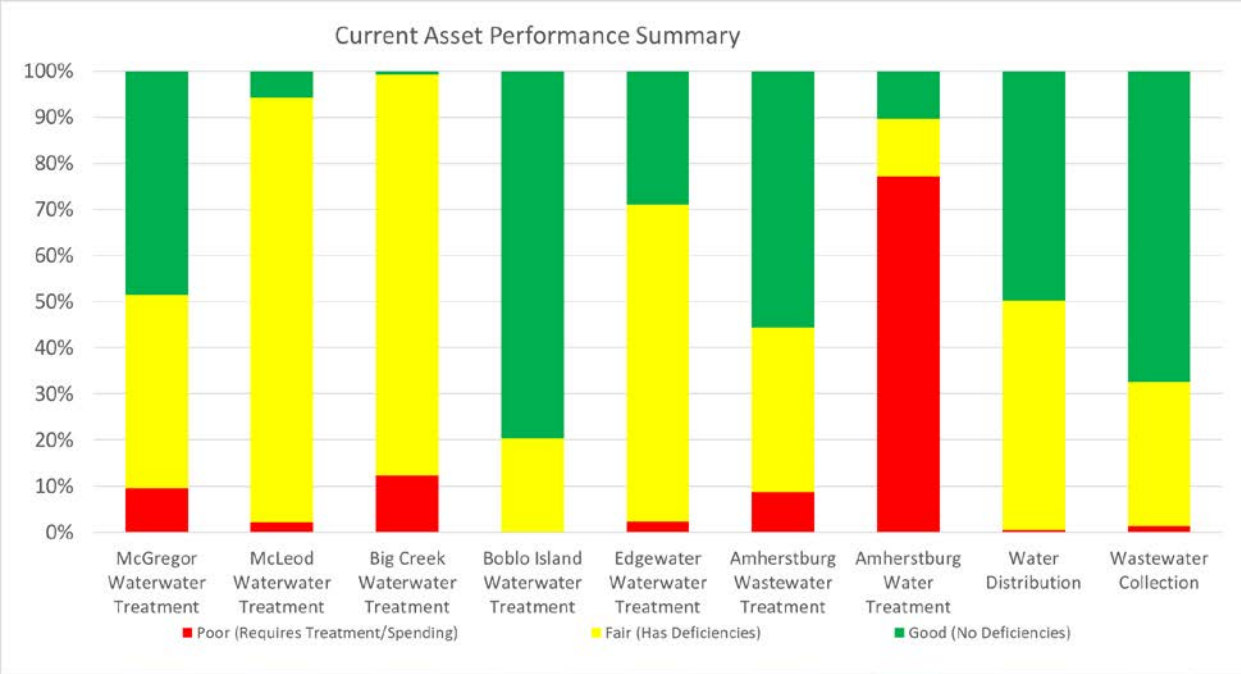


Figure 3-1: Current Performance Distribution

Table 3-2: Current Performance by Replacement Value

Performance Category		McGregor Waterwater Treatment	McLeod Waterwater Treatment	Big Creek Waterwater Treatment	Boblo Island Waterwater Treatment	Edgewater Waterwater Treatment	Amherstburg Wastewater Treatment	Amherstburg Water Treatment	Water Distribution	Wastewater Collection	**Total**
	Good (No Deficiencies)	$8,412,050	$1,474,700	$108,300	$6,787,748	$1,769,700	$27,667,808	$4,477,672	$174,998,698	$98,141,148	**$323,837,824**
	Fair (Has Deficiencies)	$7,247,696	$23,613,300	$11,067,000	$1,726,300	$4,201,300	$17,759,520	$5,442,513	$175,673,722	$45,363,836	**$292,095,187**
	Poor (Requires Treatment/Spending)	$1,660,000	$550,500	$1,567,000	$0	$140,000	$4,350,000	$33,328,500	$1,499,412	$2,094,992	**$45,190,405**
	Total	**$17,319,746**	**$25,638,500**	**$12,742,300**	**$8,514,048**	**$6,111,000**	**$49,777,328**	**$43,248,685**	**$352,171,832**	**$145,599,977**	$661,123,416

4 ASSET LIFECYCLE MANAGEMENT

4.1 Asset Lifecycle Activities Overview

Table 4-1 provides an overview of typical asset lifecycle activities applied to public infrastructure. The spending forecasts in this section represent a combination of major maintenance, rehabilitation and replacement treatments. Appendix C contains the detailed spending plan.

Table 4-1: Typical Asset Lifecycle Activities

LIFECYCLE ACTIVITY	DESCRIPTION
Operational	Operational activities, routine preventative maintenance, studies on asset performance
(Major) Maintenance	Repairs and component replacement to maintain asset performance, typically costing between 5-10% of asset replacement value.
Rehabilitation	Project to extend asset service life, typically costing between 15% - 40% of asset replacement value.
Replacement	A project resulting in a replacement of an asset with one asset that meets top industry and community expectations.
New Asset	Construction or purchase of new assets that results in net growth of the asset inventory and an enhancement in service levels provided to the community.

4.2 Spending Forecast

4.2.1 Approach

The analysis approach involves connecting real planned projects against specific assets where feasible and iteratively adjusting annual spending levels until the forecasted performance distribution will be relatively stable (i.e. the proportion of the asset network in the poor performance category is consistent).

For example, Figure 4-1 shows a scenario where there is not sufficient spending, resulting in the proportion of assets in the poor performance category increase from 5% in 2021 to 90% in 2040, and a declining trend in the Network Average performance index. This indicates that additional spending is required. Analysis updates continue to achieve a suitable performance forecast.

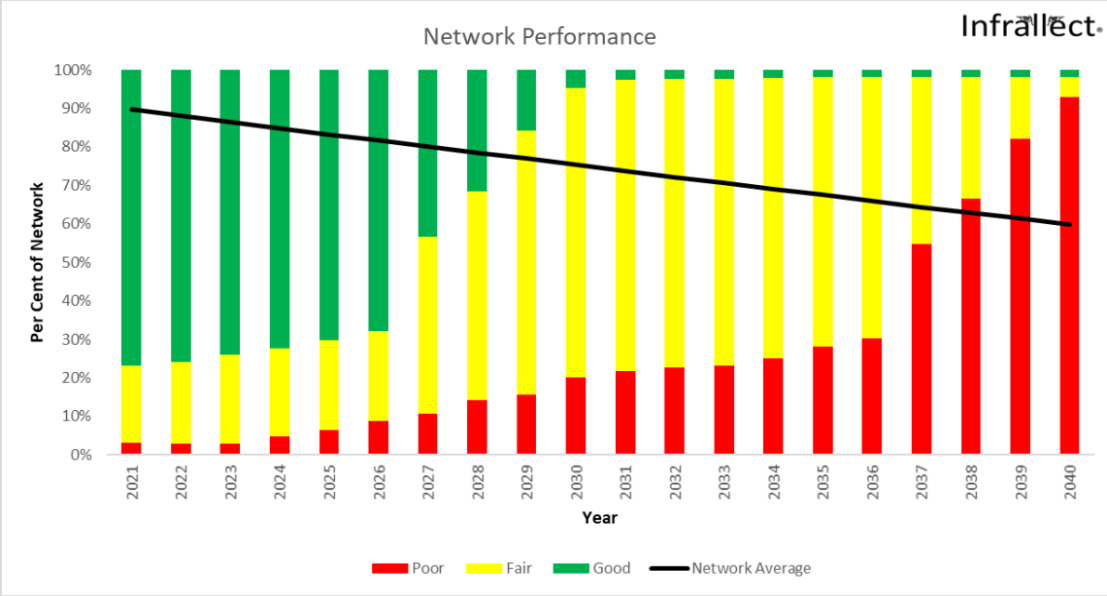


Figure 4-1: Sample Performance Forecast

4.2.2 Results

Figure 4-2 to Figure 4-10 provide the performance and spending forecasts for each asset group. Figure 4-11 provides the summary of spending needs. Appendix D provides the detailed planned program.

Figure 4-2: Amherstburg Water Treatment Performance Forecast

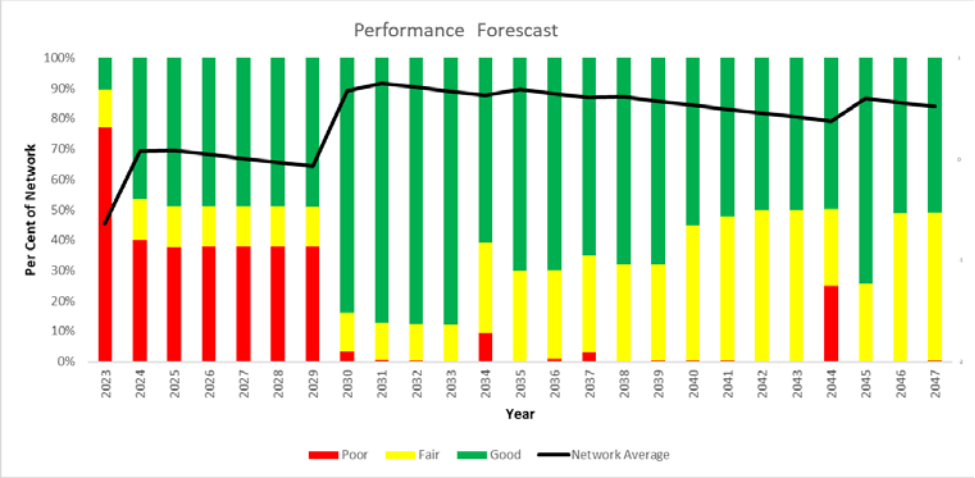
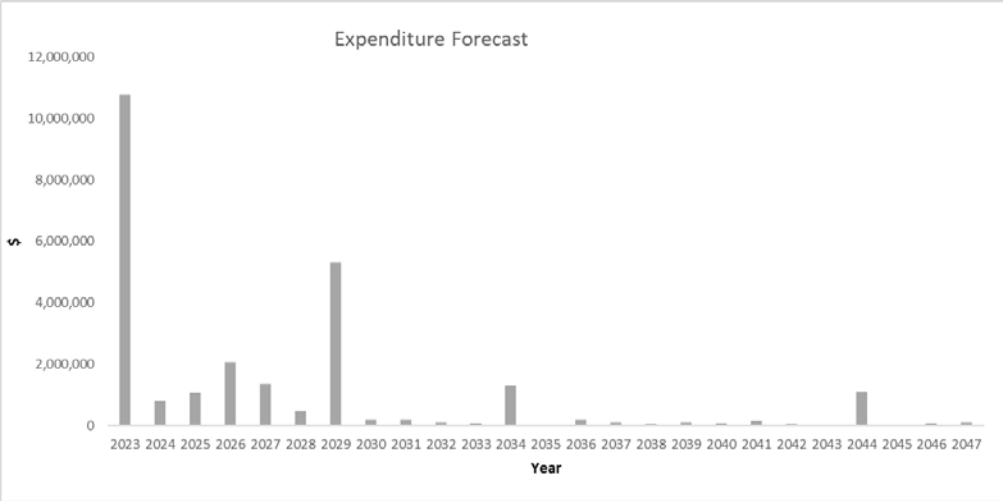
Desired Performance Forecast	
Spending Plan to Achieve Desired Performance Forecast	 • Capital forecast = $1,500,000 per year long-term average spending • 2 large projects (residual management and clarifier) required in the next 5 years, resulting short term spending needs being higher than long term average spending needs

Figure 4-3: Watermains Performance Forecast

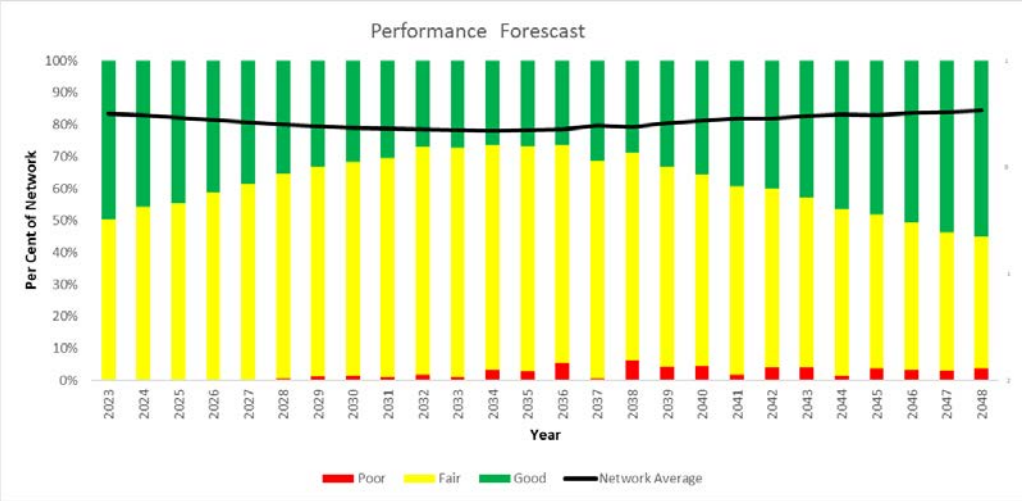
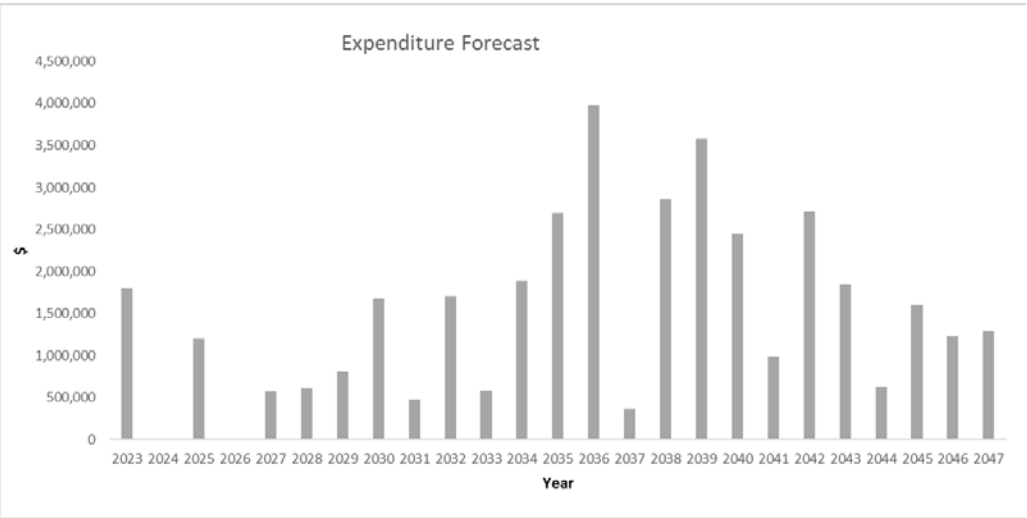
Desired Performance Forecast	
Spending Plan to Achieve Desired Performance Forecast	 • Capital Forecast = $1,500,000 per year long-term average spending • Additional $350,000 per year required for water meter replacement program

Figure 4-4: Amherstburg Wastewater Treatment and Pumping Performance Forecast

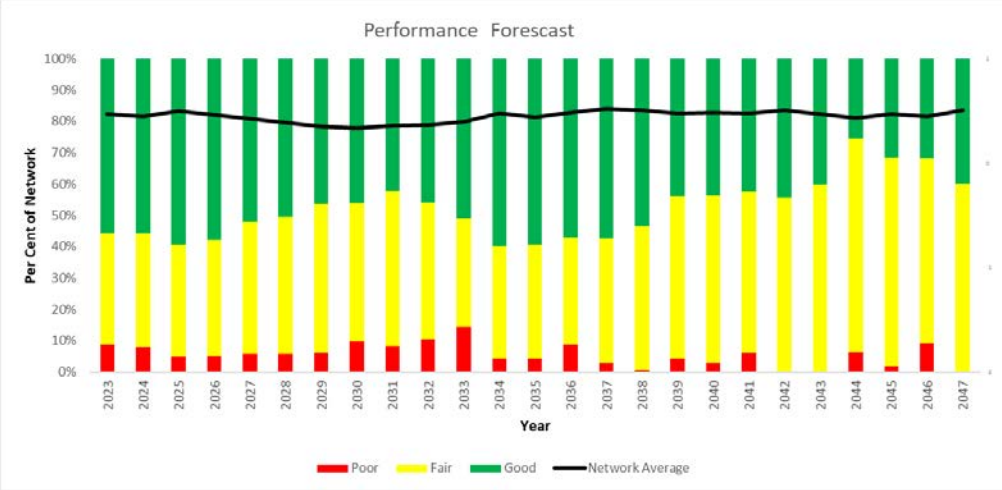
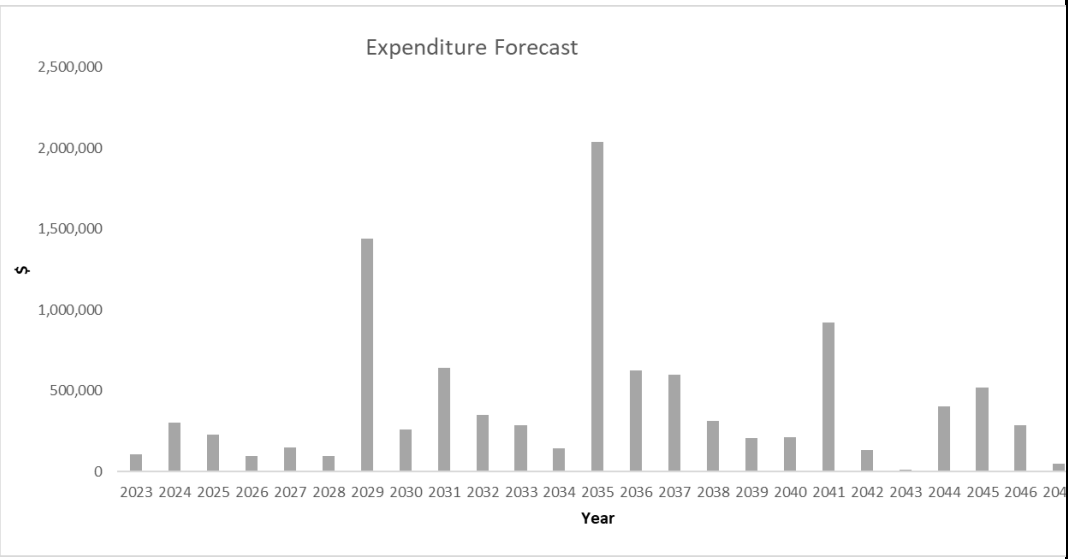
Desired Performance Forecast	
Spending Plan to Achieve Desired Performance Forecast	 • Capital/Maintenance forecast = $370,000 per year long-term average spending

Figure 4-5: McGregor Wastewater Treatment and Pumping Performance Forecast

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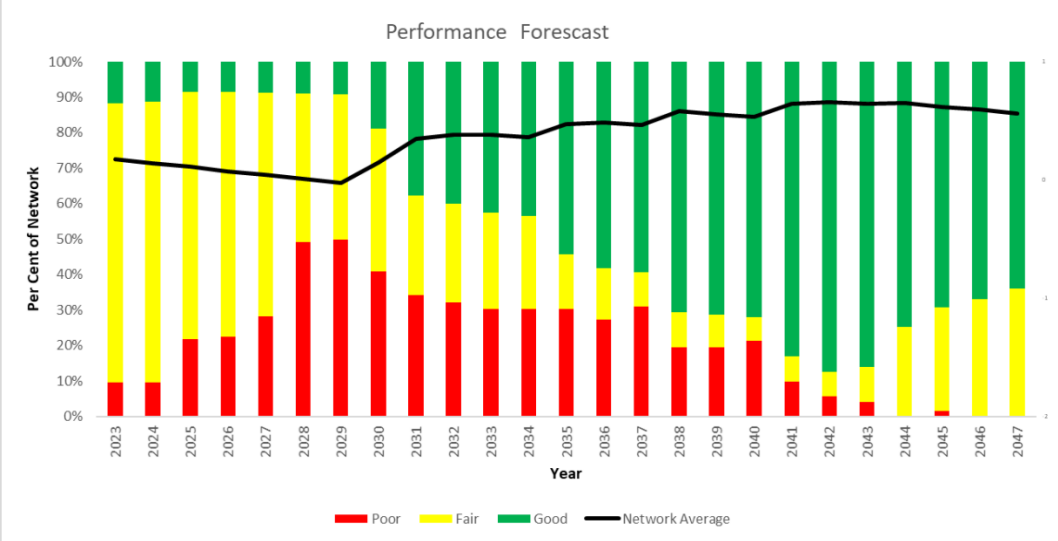
<td> 
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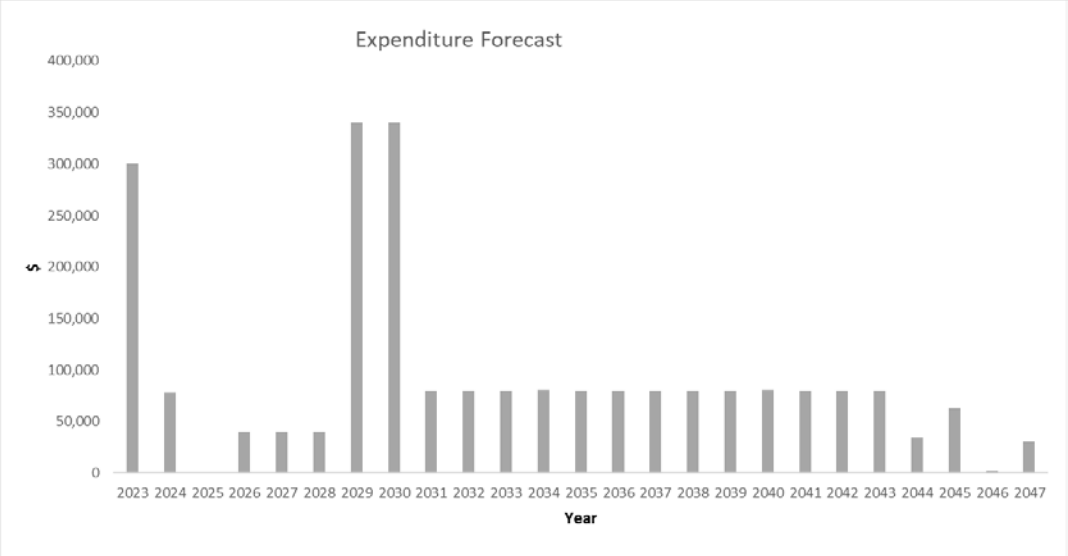
<td> 

Capital/Maintenance forecast = $70,000 per year long-term average spending
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Figure 4-6: McLeod Wastewater Treatment and Pumping Performance Forecast

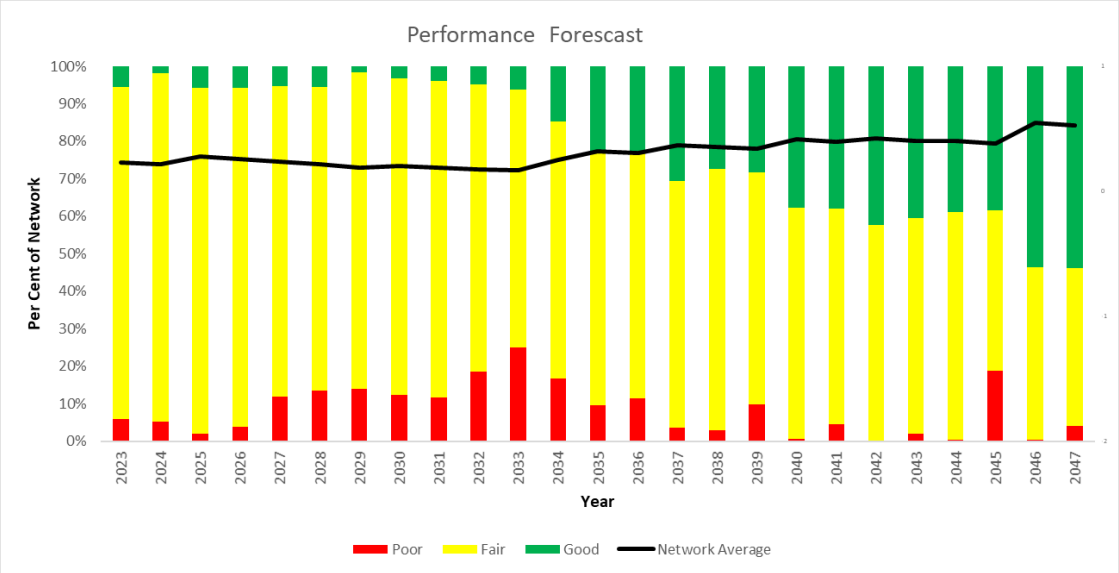
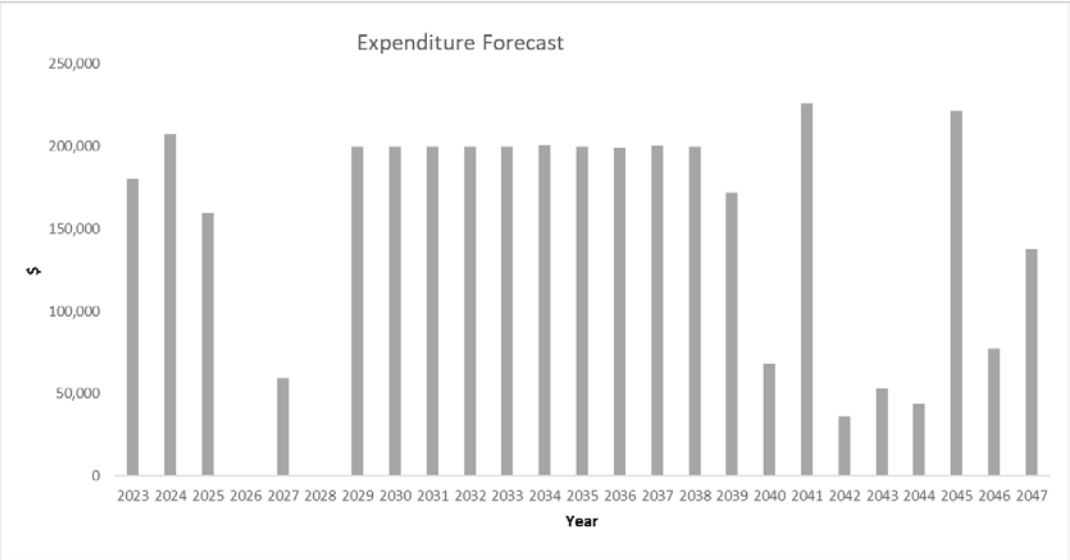
Desired Performance Forecast	
Spending Plan to Achieve Desired Performance Forecast	 • Capital/Maintenance forecast = $150,000 per year long-term average spending • Some large projects identified in the next 4 years resulting in higher than average spending needs

Figure 4-7: Big Creek Wastewater Treatment and Pumping Performance Forecast

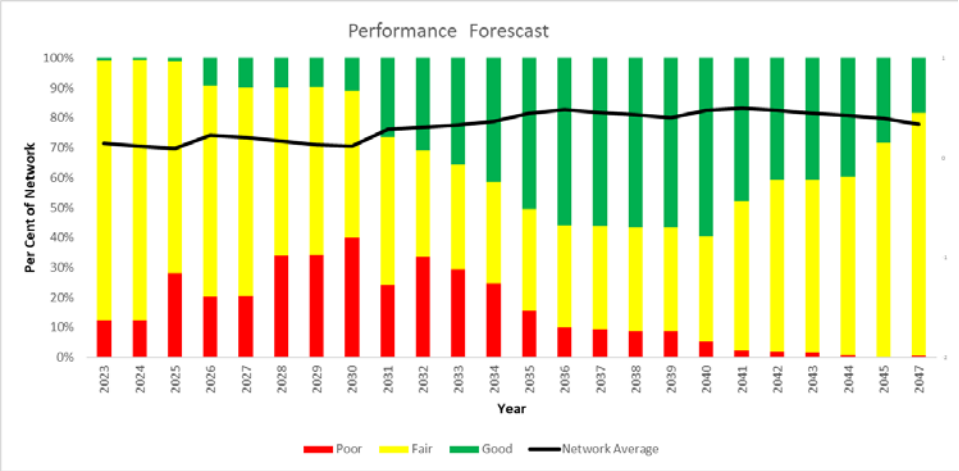
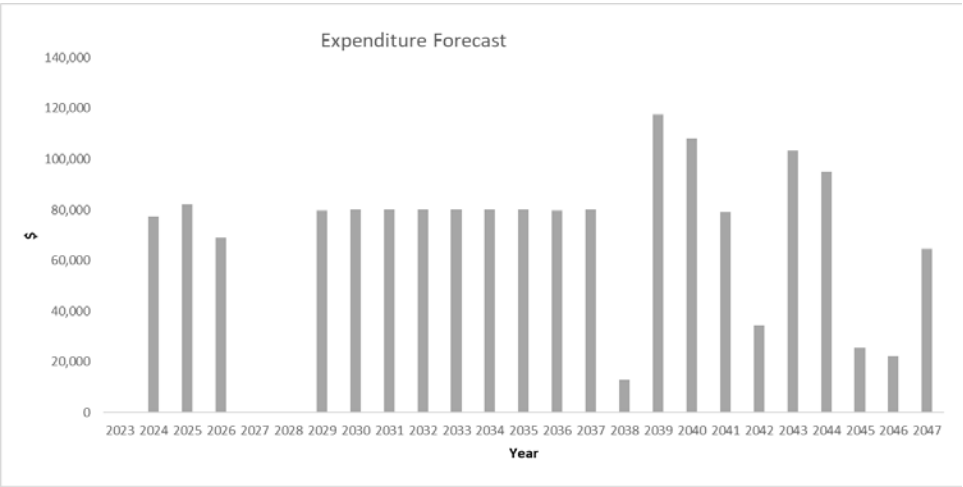
Desired Performance Forecast	
Spending Plan to Achieve Desired Performance Forecast	 • Capital/Maintenance forecast = $70,000 per year long-term average spending

Figure 4-8: Boblo Island Pumping Performance Forecast

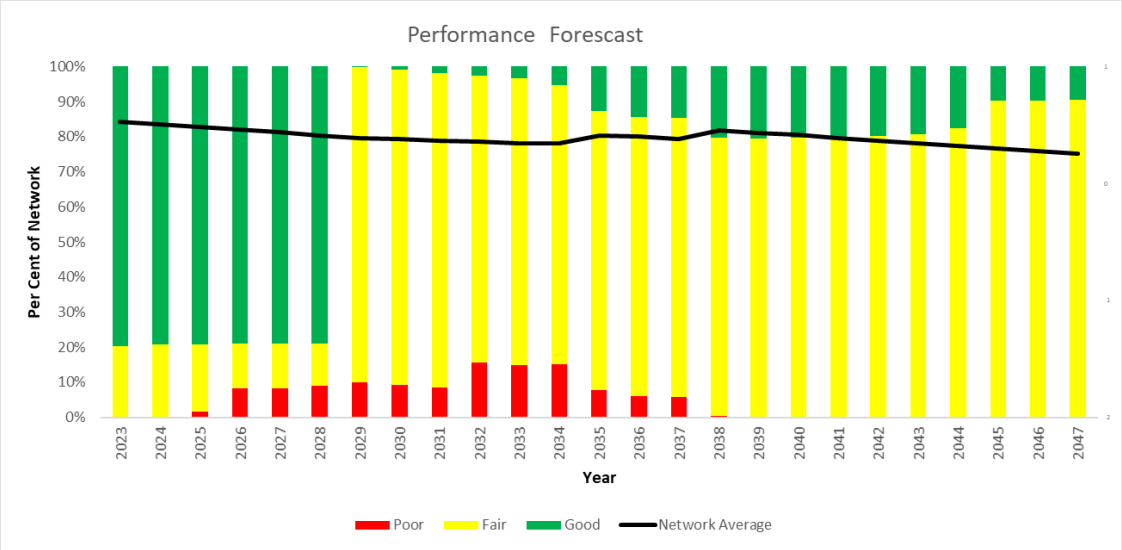
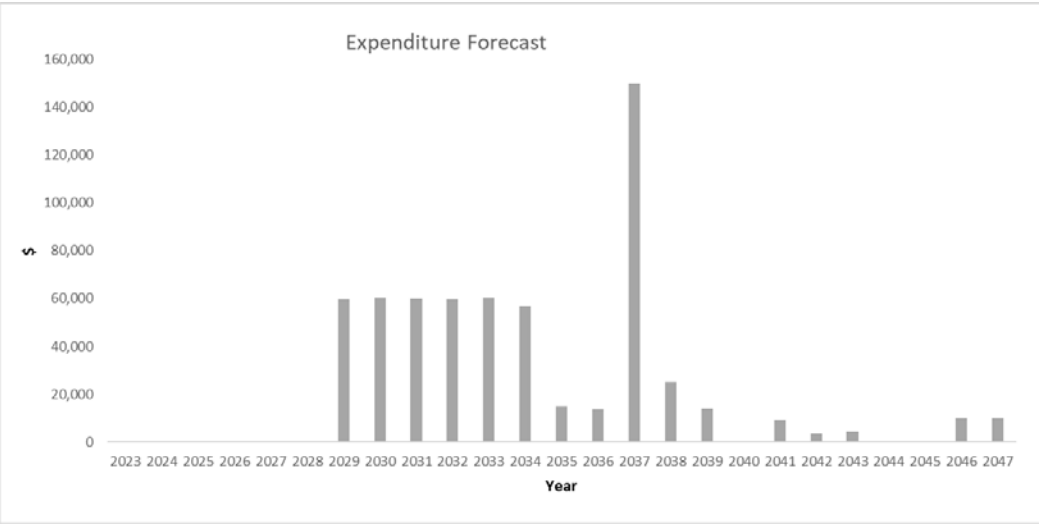
Desired Performance Forecast	
Spending Plan to Achieve Desired Performance Forecast	 • New infrastructure commissioned in 2023, program will develop now that PS is operating • Current forecast based on estimates from similar facilities

Figure 4-9: Edgewater Wastewater Treatment and Pumping Performance Forecast

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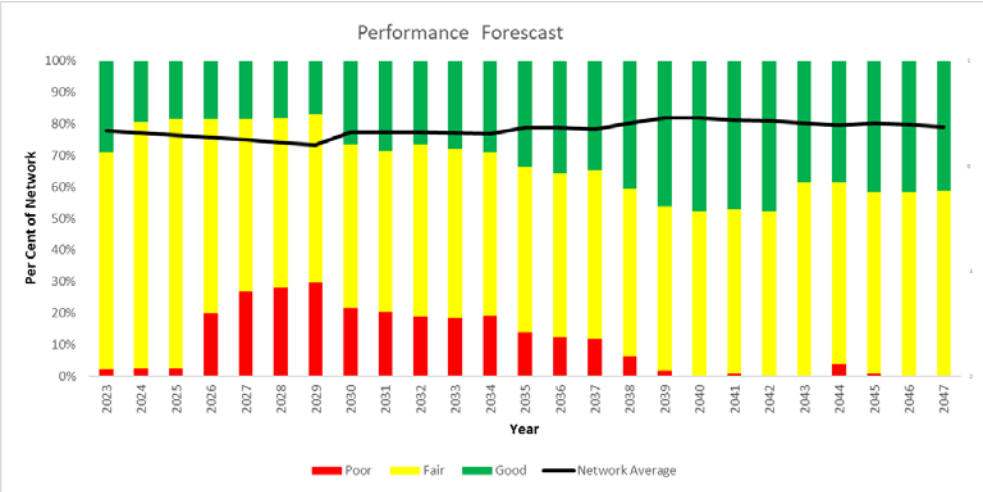
<td> 
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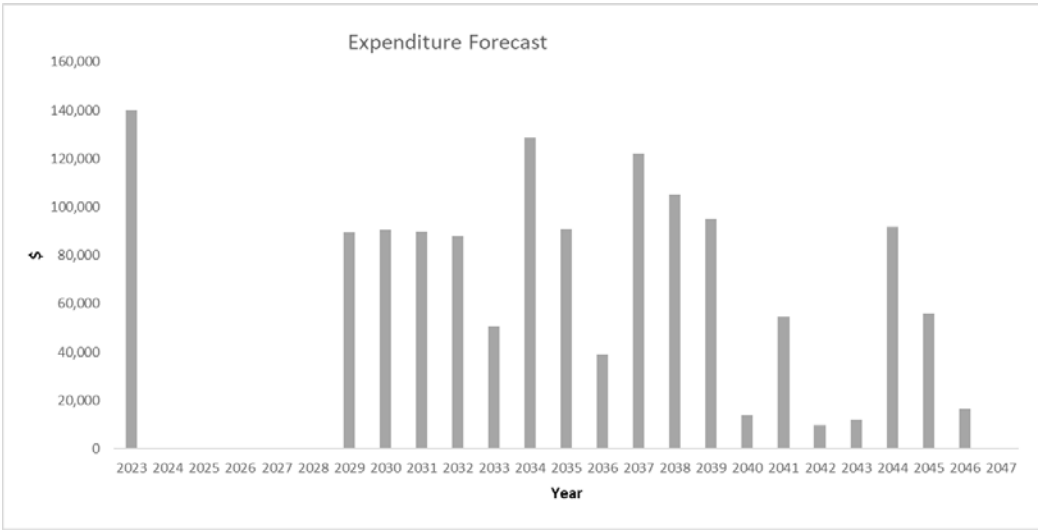
<td> 

Capital/Maintenance forecast= $60,000 per year long-term average spending
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Figure 4-10: Wastewater Collection Performance Forecast

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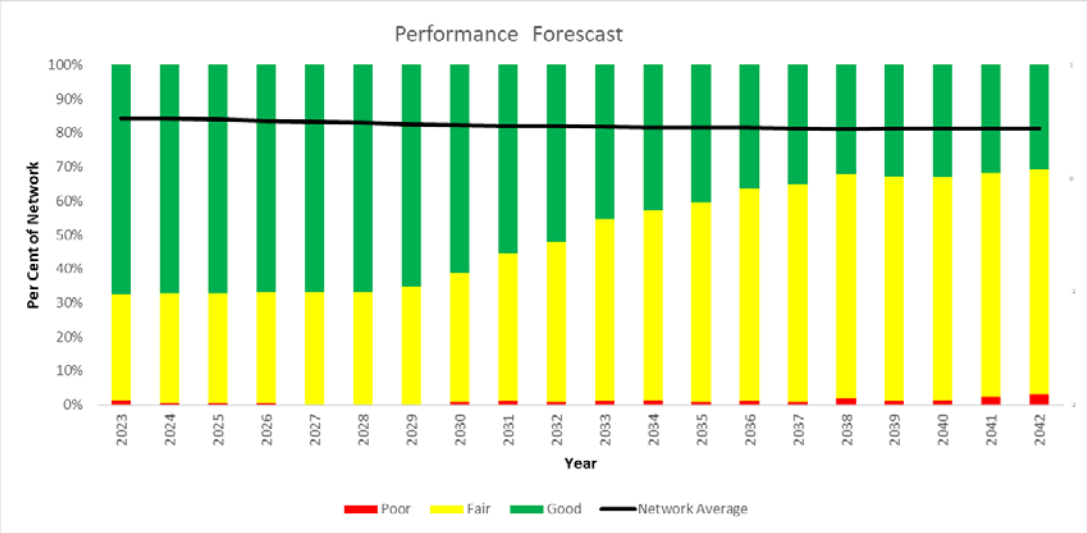
<td> 
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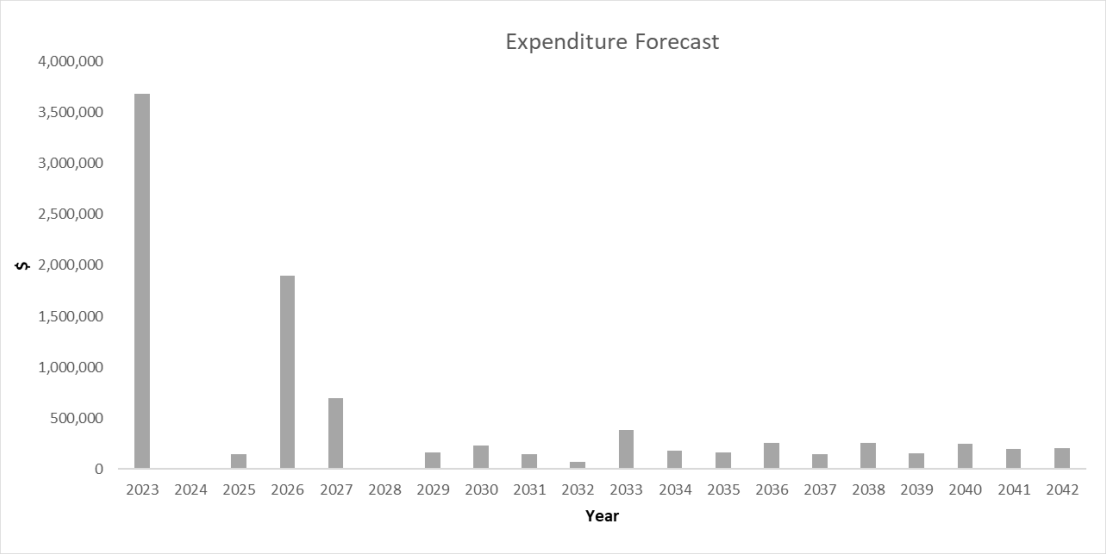
<td> 

Capital/Maintenance forecast = $400,000 per year long-term average spending
Continued application of robotic sewer inspections will identify areas that require spot repairs, full-length sewer rehabilitation, or open-trench sewer reconstruction.
Master Plan may also identify additional upsizing needs to accommodate growth.
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Figure 4-11 summarizes the combined spending forecast. An average of $4.0 million per year over the long term is required to achieve the Town's desired asset performance expectations. The detailed planned program is provided in Appendix D.

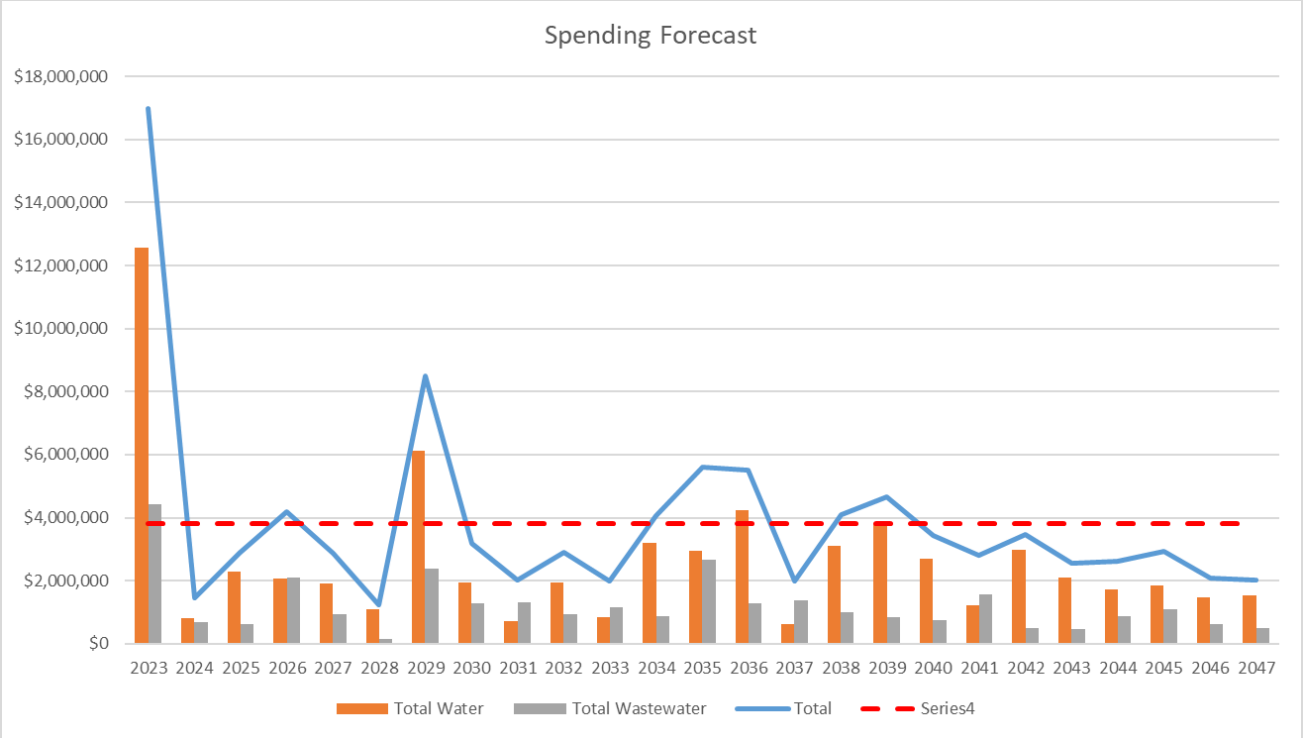

Figure 4-11: Spending Forecast Summary

4.3 Funding Gap Summary

The long-term funding needs are generally consistent with recent capital spending levels. The Town is in the process of completing a rate study, which will provide better understanding of the Town's strategy to fund future infrastructure related expenditures.

4.4 Risk Management

The approach to managing risk in this AMP is to consider the overall criticality of each asset related to the role it plays in providing services to the community (by understanding the required performance of each asset based on its location, function, size, etc.). This understanding establishes when an asset is not meeting its objectives or requirements based on the available technical performance indicators and subject matter expert judgement. Assets that are more critical have higher performance expectations, while less critical assets have lower performance expectations.

4.5 Managing Climate Change

The expected impacts of climate change have been considered and included throughout the analysis used to inform this AMP. This includes consideration of climate change when establishing the current performance category of an asset, forecasting the deterioration rate of an asset, or establishing the lifecycle activities completed on an asset.

The most prominent climate factors affecting the Town's water and wastewater infrastructure are severe wet weather events, prolonged periods of cold weather, and prolonged periods of heat or drought. The climate factors discussed are referenced to the Climate Atlas of Canada [1], an online tool to learn about the impacts of climate change in the area for different scenarios.

- *Climate Factor 1 - Severe Wet Weather Events*

  Severe wet weather events put added strain on the wastewater collection and treatment systems. This strain can lead to additional overflows or a reduction in treatment effectiveness. At this point, this climate factor is not causing any specific performance deficiencies as the heavy rain days are projected to decrease one day from 147.9 to 147.3 days in the next 20 years. The Town should continue to monitor the impacts of severe wet weather events on the wastewater collection and treatment system.

- *Climate Factor 2 – Mild Winters*

  This climate factor can lead to high lagoon inflows following winter rain or interim snowmelt scenarios. This can lead to a need to complete the spring lagoon discharge earlier than typical. At this point, this climate factor is not causing any specific performance deficiencies, as there is no increase in mild winter days forecasted in the next 20 years. The Town should continue to monitor the impacts of mild winters on the lagoons.

- *Climate Factor 3 – Periods of Prolonged Heat or Drought*

  This climate factor can lead to more days of high peak water demand and reductions to the quantity and/or quality of source water. Based on the climate model of Climate Atlas of Canada, the number of heat waves increases from 2.6 days to 5.6 days in the next 20 years. However, due to the stable supply of fresh water, this climate factor is not causing any specific performance deficiencies. The Town should continue to monitor the impacts of periods of prolonged heat or drought on the water supply and storage system.

[1] Climate Atlas of Canada

5 FINANCING STRATEGY

A number of financing strategies are available to fund infrastructure expenditures. The objective of the Town's financing strategy should be to maximize new assessment growth at the lowest real cost impact to ratepayers (i.e. maximize real revenue growth through expanded customer base and minimize rate increases). This would prioritize the following options:

1. Provincial/Federal Government Grants
2. Internal Financing using Reserves
3. Debt
4. Rate Increases

Future budgets will present the optimal balance of the available financing options to fund the Town's infrastructure program.

6 DISCUSSION AND NEXT STEPS

This AMP represents the tactical output of a corporate management system. The corporate management system is the series of interconnected processes that work together to realize value from assets. This AMP uses the best available asset and financial information. The AMP is a living document that requires periodic updates to reflect new information and changing community priorities.

6.1 Monitoring Asset Performance

Moving forward, Provincial Regulation requires the Town to provide an annual update on the progress of the AMP. The practical steps to complete these activities are as follows:

1. Each year, update the asset inventory with the best available asset data. This adds/removes assets as appropriate.
2. Each year, update current asset performance based on the best available information.
3. Each year, update the spending analysis to record completed spending, and to connect planned spending to assets or asset networks.

These three steps enable updates the forecast performance versus spending analysis. Over time, the Town will be able to see connections between the changing performance distribution and annual spending levels. This will increase the confidence of the Town's AMPs each year.

6.2 Roadmap for Enhancing Asset Management Processes

The following points provide a roadmap to enhance asset management planning processes in the Town:

1. Continue to maintain the inventory of all assets owned. Asset inventories should be comprehensive of all assets in an asset network.
2. Continue to strengthen the connection between actual or planned spending and specific assets (or asset networks). This will provide greater line of sight from the current or planned spending and the resulting performance improvement in an asset or asset network.
3. Continue to strengthen the quality of asset-centric performance indicator data that is available to measure the current performance of assets and asset networks.
4. Engage the community to understand their current perspective on the performance of assets and asset networks. This understanding calibrates the current performance of the asset networks and prioritizes the allocation of funding to improve the performance of asset networks relative to community expectations.

Appendix A – Performance Indicator Tracking

System	Indicator	2019	2020	2021	2022
Water Treatment and Distribution	Boil Water Advisory	0	0	1 (due to Total coliform)	0
	Adverse Water Quality Incident (AWQI)	0	0	1 (Total Coliforms)	0
	Watermain Breaks	2	4	3	5
Wastewater Treatment, Pumping and Collection	Effluent Non-Compliance*	4 (Nitrogen exceeded limit at Boblo; TSS, CBOD5, pH exceeded	1 (Nitrogen exceeded limit at Boblo)	3 (TSS exceeded at Boblo; CBOD, TSS exceeded at McGregor)	3 (Nitrogen exceeded at Big Creek; TSS exceeded at Boblo;
	Bypass event	1 (equipment failure at AWT)	0	0	0
	Community Complaint	0	1 (AWT)	3 (three complaints at AWT)	0

**Note:The recorded number represents the annual count of monthly instances where the effluent quality limit is exceeded in all wastewate treatmetn plants*

O. Reg. 588/17 Mandatory Metrics

Asset Group	Metric	Result	Comment
Water	User groups or areas that are connected to the municipal water system	Most properties within the settlement of Amherstburg are connected to the municipal water system.	
Water	User groups or areas that have fire flow	All properties connected to the municipal water system have some fire flow coverage.	
Water	Percentage of properties connected to the municipal water system	88%	
Water	Percentage of properties where fire flow is available	100%	Assume all properties connected to municipal system hav fire flow.
Water	Description of boil water advisories and service interruptions	The samples were identified as adverse due to Total Coliforms present in the distribution system, a boil water advisory put into effect.The station was re-sampled. On August 5th the re-sample results showed that all stations tested and re sampled had 0 Total Coliforms. The boil water advisory was in effect from August 4th, 5th. The Town of Amherstburg,Ministry of Health, and Spills Actions Centre, MECP) were all notified and involved.	1 Boil Water Advisory in 2021
Water	Number of connection-days per year where a boil water advisory notice is in place compared to the total number of properties connected to the municipal water system	0 Boil Water Advisoryand 9,960 accounts	
Water	Number of connection-days per year due to water main breaks compared to the total number of properties connected to the municipal water system	5 Watermain breaks (33 connection-days of impacted service) and 9,960 accounts	Customer-hours interruption based on assumption of 8 hours to repair break and 20 properties impacted.
Water	Average Age of Water Treatment Assets	43 Years	
Water	Average Age of Water Distribution Assets	33 Years	
Wastewater	User groups or areas that are connected to the municipal wastewater system	Most properties within the settlement of Amherstburg are connected to the municipal wastewater system.	
Wastewater	Percentage of properties connected to the municipal wastewater system	71%	
Wastewater	Description of how combined sewers in the municipal wastewater system are designed with overflow structures in place (to prevent backups into homes by allowing overflow during storm events)	N/A - no combined sewers	
Wastewater	Description of the frequency and volume of overflows in combined sewers in the municipal wastewater system that occur in habitable areas or beaches	N/A - no combined sewers	
Wastewater	Description of how stormwater can get into sanitary sewers in the municipal wastewater system, causing sewage to overflow into streets or backup into homes	Infiltration inflow into sanitary sewers in both groundwater and stormwater which are not intended to be in sanitary system. Infiltration can enter through a variety of sources (cracks in pipes, weeping tile connections, cross connection, catch basins, etc.).	
Wastewater	Description of how sanitary sewers in the municipal wastewater system are designed to be resilient to avoid sewage overflow into streets or backup into homes	A By-Law is in place in the Town which forces residents to disconnect.	
Wastewater	Description of the effluent that is discharged from sewage treatment plants in the municipal wastewater system	Effluent can be defined as water pollution, such as the outflow from a sewage treatment facility. The effluent from the treatment facilities have documented compliance limits, objectives, and actual performance. The effluent criteria include effluent flow rates, and parameters for suspended solids, Biochemical Oxygen Demand (BOD), phosphorous, ammonia, and E. coli.	
Wastewater	The number of connection-days per year due to wastewater backups compared to the total number of properties connected to the municipal wastewater system.	No wastewater backups	
Wastewater	Annual number of events where combined sewer flow in the municipal wastewater system exceeds system capacity compared to the total number of properties connected to the municipal wastewater system.	N/A - no combined sewers	
Wastewater	The number of effluent violations per year due to wastewater discharge compared to the total number of properties connected to the municipal wastewater system.	3 Effluent Non-Compliance, 7,606 Connections	
Wastewater	Average Age of Wastewater Treatment and Pumping Assets	22 Years	
Wastewater	Average Age of Wastewater Collection Assets	31 Years	

Appendix B – 5 Year Capital Plan

CAPITAL BUDGET

APPROVED 2024 5-YEAR CAPITAL BUDGET

Questica ID	ENV-001-23	**Department**	Infrastructure Services
Budget Year	2024	**Division**	Environment
Asset Category	Water Network	**Project Lead**	Todd Hewitt
Title	Watermain Upgrade and Replacement Program		
Budget Status	Senior Management Team		
Vadim Account Reference	40-7-4010000-2301 40-7-3010000-2309 80-7-0000000-2306		

Project Description

Work required to replace watermains due to lifecycle or capacity concerns.

Annual Budget Request - Scenario Description

2025 - $1,125,000

McCurdy Avenue / Linden Court / Oak Court:

Replacement of ductile Iron watermain with PVC. - $575,000
Road rehabilitation is being coordinated with this project. - $500,000
Sanitary sewer cleanouts are also being installed - $50,000

2027 - $600,000

McCurdy Avenue / Lilac Court / Poplar Court:

Road rehabilitation is being coordinated with this project. - $550,000
Sanitary sewer cleanouts are also being installed - $50,000
NOTE: funding in 2027 and 2028 is required prior to work commencing on this project as all of the work must be done at the same time.

2028 - $575,000
McCurdy Avenue / Lilac Court / Poplar Court –
Replacement of ductile Iron watermain with PVC. $575,000

Annual Budget Request & Funding Sources

	2024	2025	2026	2027	2028
Expenses					
8907 - Water Mains	-	575,000	-	-	575,000
1902 - Asphalt Road Surface (Urban)	-	500,000	-	550,000	-
9907 - Wastewater Mains	-	50,000	-	50,000	-
Total	-	1,125,000	-	600,000	575,000
Revenues					
0200 - RESERVE - CAPITAL WATER	-	575,000	-	-	575,000
0210 - RESERVE - CAPITAL WASTEWATER	-	50,000	-	50,000	-
0410 - GAS TAX RESERVE/Canada Community Benefit-CCBF	-	500,000	-	550,000	-
Total	-	1,125,000	-	600,000	575,000

Questica ID	ENV-001-24	**Department**	Infrastructure Services
Budget Year	2024	**Division**	Environment
Asset Category	Water Network	**Project Lead**	Dwayne Grondin
Title	Water Meter Exchange Program		
Budget Status	Senior Management Team		

Vadim Account Reference

Project Description

The Town last completed a water meter exchange program between 2003-2017 which converted the various meters and reading types to one standard Sensus water meter and a Sensus drive by reading system. The expected battery life on a water meter is approximately 20 years. During and after COVID the Sensus meters had an approx. wait time of 50 weeks when placing an order for either a meter or reader. The decision was made to move to a readily available Badger meter with the Itron reading system both being supplied from our local distributer. Currently both the Sensus and Itron systems are being used to read meters. The goal is to systematically change the Sensus meters and readers to the Badger meter and Itron reader over the next 16 -17 years.

Annual Budget Request - Scenario Description

Annually - $350,000

This price includes approx. 500 meter and reader purchases as well as a yearly tendered program for the labour and incidentals to complete the exchanges.

Annual Budget Request & Funding Sources

	2024	2025	2026	2027	2028
Expenses					
8902 - Water Machinery & Equipment	350,000	350,000	350,000	350,000	350,000
Total	350,000	350,000	350,000	350,000	350,000
Revenues					
0200 - RESERVE - CAPITAL WATER	350,000	350,000	350,000	350,000	350,000
Total	350,000	350,000	350,000	350,000	350,000

Questica ID	ENV-002-23	**Department**	Infrastructure Services
Budget Year	2024	**Division**	Environment
Asset Category	Wastewater Network	**Project Lead**	Antonietta Giofu
Title	McGregor Lagoon Expansion - Environmental Assessment		
Budget Status	Senior Management Team		
Vadim Account Reference	40-7-4010000-2302 40-7-4010000-2302		

Project Description

The McGregor Lagoon has reached its capacity. An environmental assessment is required to review options with respect to capacity expansion. This project will be completely jointly with the Town of Essex with the exception of the additional cost for the Howard Industrial Lands.

Annual Budget Request - Scenario Description

2024 - $50,000

Additional cost for EA to expand scope to include the Howard Industrial Lands area. This area has completed a Secondary Plan review which provides a long term vision for the area including potential industrial use. As the area is currently on septic options to attract industry are limited so the inclusion and clarity around options to transition from septic will provide additional information needed to inform and plan for the future of these lands.

Annual Budget Request & Funding Sources

	2024	2025	2026	2027	2028
Expenses					
9900 - Wastewater Network - Studies/Common Designs General	50,000	-	-	-	-
Total	50,000	-	-	-	-
Revenues					
0210 - RESERVE - CAPITAL WASTEWATER	50,000	-	-	-	-
Total	50,000	-	-	-	-

Questica ID	ENV-002-24	**Department**	Infrastructure Services
Budget Year	2024	**Division**	Environment
Asset Category	Wastewater Network	**Project Lead**	Dwayne Grondin
Title	McGregor Lagoon Upgrades		
Budget Status	Senior Management Team		

Vadim Account Reference

Project Description

This project includes reinstalling granular lanes around the top of the lagoons as well as the installation of boat ramps for in water maintenance

Annual Budget Request - Scenario Description

The driveable lanes around the top of the lagoons are in disrepair and required new granular material for heavily rutted areas. This budget request will also allow for a boat ramp to be installed at each lagoon so OCWA may launch their boat for in water inspections and chemical applications.

Annual Budget Request & Funding Sources

	2024	2025	2026	2027	2028
Expenses					
9904 - Lagoons	150,000	-	-	-	-
Total	150,000	-	-	-	-
Revenues					
0210 - RESERVE - CAPITAL WASTEWATER	150,000	-	-	-	-
Total	150,000	-	-	-	-

Questica ID	ENV-003-23	**Department**	Infrastructure Services
Budget Year	2024	**Division**	Environment
Asset Category	Wastewater Network	**Project Lead**	Todd Hewitt
Title	Sanitary Sewer Upgrades and Replacements		
Budget Status	Senior Management Team		
Vadim Account Reference	80-7-0000000-2302 40-7-4010000-2203 40-7-4010000-2303 40-7-4012021-0005 40-7-3010000-2209		

Project Description

This program is to provide for clarity on all of the planned sanitary sewer upgrades and replacements Town wide. It is comprehensive listing of all aspects of the project, including any work required for water, storm, road and or other infrastructure costs included as part of the whole project.

Annual Budget Request - Scenario Description

2024 - River Canard Pump Station - $60,000

The current generator is located in a small building that was constructed in the early 1980's. This request will eliminate the building and replace the generator with an outdoor unit & outdoor control panel similar to what has been installed within the Amherst/Bar Point sewer systems. - $140,000 was approved during the 2023 budget deliberations. Additional review has identified that additional funding is required for this project to relocate the hydro service from overhead to underground. If funding is approved the work will commence in 2024.

2025 - $150,000

Richmond Street sewer replacement – Fryer to States: $150,000

Engineering study to address the recommended sanitary sewer analysis for Civica. This section of sewer was identified for increased capacity to assist in relieving sanitary sewer surcharging. The engineering study for the project will include watermain replacement and road rehabilitation requirements.

2026 - $1,875,000

Richmond Street sewer replacement – Fryer to States: $1,700,000

Estimated construction costs for this project will be revisited as the work in the engineering study is completed to provide more clarity on actual scope of work. Costs estimates included in 2026 are to ensure there is some funding identified so that the construction stage can commence soon after completion of the study. This project will include watermain replacement and road rehabilitation
Sewer Component - $600,000
Water Component - $600,000
Roads Component - $500,000

Brock Street Sewer Replacement – Richmond to Kempt - $175,000

Engineering design to replace the vitrified clay sewer on Brock Street. This section of sewer is identified in the now category in the Towns asset management database. The engineering study for the project will include watermain replacement and road rehabilitation requirements.

2027

Brock Street Sewer Replacement – Richmond to Kempt - $675,000

Estimated construction costs for this project will be revisited as the work in the engineering study is completed to provide more clarity on actual scope of work. Costs estimates included in 2026 are to ensure there is some funding identified so that the construction stage can commence soon after completion of the study. This project will include watermain replacement and road rehabilitation
Sewer Component - $300,000

Roads Component - $375,000

Annual Budget Request & Funding Sources					
	2024	**2025**	**2026**	**2027**	**2028**
Expenses					
9907 - Wastewater Mains	60,000	150,000	600,000	300,000	-
8907 - Water Mains	-	-	600,000	-	-
1902 - Asphalt Road Surface (Urban)	-	-	500,000	375,000	-
9900 - Wastewater Network - Studies/Common Designs General	-	-	175,000	-	-
Total	60,000	150,000	1,875,000	675,000	-
Revenues					
0200 - RESERVE - CAPITAL WATER	-	-	600,000	375,000	-
0210 - RESERVE - CAPITAL WASTEWATER	-	150,000	775,000	300,000	-
0125 - DC-SANITARY SEWER RESERVE	60,000	-	-	-	-
0625 - ONTARIO GRANTS RESERVE (OCIF)	-	-	500,000	-	-
Total	60,000	150,000	1,875,000	675,000	-

Questica ID	ENV-003-24	**Department**	Infrastructure Services
Budget Year	2024	**Division**	Environment
Asset Category	Wastewater Network	**Project Lead**	Dwayne Grondin
Title	AWWTP – Amherstburg Wastewater Treatment Plant		
Budget Status	Senior Management Team		
Vadim Account Reference			

Project Description

Forklift Purchase

Annual Budget Request - Scenario Description

The Wastewater Treatment Plant needs to arrange with PWD to off-load heavy deliveries with the Town's backhoe. This practice is problematic as the Town's backhoe is usually out on service work. The purchase of a used forklift will alleviate this issue.

Annual Budget Request & Funding Sources

	2024	2025	2026	2027	2028
Expenses					
9906 - Wastewater Machinery & Equipment	50,000	-	-	-	-
Total	50,000	-	-	-	-
Revenues					
0210 - RESERVE - CAPITAL WASTEWATER	50,000	-	-	-	-
Total	50,000	-	-	-	-

Questica ID	ENV-004-23	**Department**	Infrastructure Services
Budget Year	2024	**Division**	Environment
Asset Category	Stormwater Network	**Project Lead**	Sam Paglia
Title	Lakewood Drive Pumping System		
Budget Status	Senior Management Team		

Vadim Account Reference

Project Description

This project is related to a new pumping system to address flooding and high water issues along Lakewood Drive. A new engineering report is currently being completed in accordance with the provisions of the Drainage Act. Council has appointed Dillon Consulting to complete this report. As of the October 2022, the report has not yet been finalized or submitted to the municipality. Based on this, and the legislated steps and timelines required under the Drainage Act, it is anticipated that this project will not be finalized until 2024.

Annual Budget Request - Scenario Description

2024 - Pumping Station 1,006,600
$683,000 (Town Share)
$323,600 (Landowner Share)

Annual Budget Request & Funding Sources

	2024	2025	2026	2027	2028
Expenses					
3905 - Drains	1,006,600	-	-	-	-
Total	1,006,600	-	-	-	-
Revenues					
3010 - RECOVERY OF EXPENSES	323,600	-	-	-	-
0109 - RESERVE - MUNICIPAL DRAINS	683,000	-	-	-	-
Total	1,006,600	-	-	-	-

Questica ID	ENV-004-24	**Department**	Infrastructure Services
Budget Year	2024	**Division**	Environment
Asset Category	Water Network	**Project Lead**	Dwayne Grondin
Title	AWTP Installation of Safety Equipment		
Budget Status	Senior Management Team		

Vadim Account Reference

Project Description

Auto Isolation Valve Installation

Annual Budget Request - Scenario Description

The handling of Chlorine Gas is one of the most dangerous duties at the Water Treatment Plant. The installation of automatic isolation valves on the Chlorine Gas Tanks will close the tanks immediately and alarm the operator in the event of a chlorine leak.

Annual Budget Request & Funding Sources

	2024	2025	2026	2027	2028
Expenses					
8902 - Water Machinery & Equipment	75,000	-	-	-	-
Total	75,000	-	-	-	-
Revenues					
0200 - RESERVE - CAPITAL WATER	75,000	-	-	-	-
Total	75,000	-	-	-	-

Questica ID	ENV-005-23	**Department**	Infrastructure Services
Budget Year	2024	**Division**	Environment
Asset Category	Wastewater Network	**Project Lead**	Dwayne Grondin
Title	McLeod Sewage Treatment Plant Upgrades and Replacements		
Budget Status	Senior Management Team		
Vadim Account Reference	40-7-4010000-2304		

Project Description

This project includes all upgrades and/or replacements required at the McLeod Sewage Treatment Plant

Annual Budget Request - Scenario Description

2024 - $30,000

McLeod Sewage Plant – Ultraviolet light is the disinfection method for inactivating disease-causing organisms in wastewater effluent at the McLeod Sewage Treatment Facility. The UV Modules for this plant are approximately 21 years old, located outside and have reached their useful lifespan. After securing pricing an additional $30,000 is required to complete the project in 2024

Annual Budget Request & Funding Sources

	2024	2025	2026	2027	2028
Expenses					
9905 - Mcleod Wastewater Treatment Plant	30,000	-	-	-	-
Total	30,000	-	-	-	-
Revenues					
0125 - DC-SANITARY SEWER RESERVE	30,000	-	-	-	-
Total	30,000	-	-	-	-

Questica ID	ENV-005-24	**Department**	Infrastructure Services
Budget Year	2024	**Division**	Environment
Asset Category	Wastewater Network	**Project Lead**	Dwayne Grondin
Title	Waste Water Facilities – Annual General Maintenance		
Budget Status	Senior Management Team		

Vadim Account Reference

Project Description

This budget entry allows for the replacement of smaller unforeseen infrastructure asset failures in the Wastewater Treatment Facilities such as pumps, controls, etc. In 2017, Lifecycle Renewal funding was approved in the operational budget. In 2020 this was moved to the Capital Budget and has been an approved source of funding since. With the rise in equipment replacement costs and labour a $25,000 increase has been included increasing the total annual amount to $275,000.

Annual Budget Request - Scenario Description

Annually - $275,000

Annual Budget Request & Funding Sources

	2024	2025	2026	2027	2028
Expenses					
9901 - Amherstburg Wastewater Treatment Plant	275,000	275,000	275,000	275,000	275,000
Total	275,000	275,000	275,000	275,000	275,000
Revenues					
0210 - RESERVE - CAPITAL WASTEWATER	275,000	275,000	275,000	275,000	275,000
Total	275,000	275,000	275,000	275,000	275,000

Questica ID	ENV-006-24	**Department**	Infrastructure Services
Budget Year	2024	**Division**	Environment
Asset Category	Water Network	**Project Lead**	Dwayne Grondin
Title	ATWP – Annual General Maintenance		
Budget Status	Senior Management Team		

Vadim Account Reference

Project Description

This budget entry allows for the replacement of smaller unforeseen infrastructure asset failures in the Water Treatment Plant such as pumps, controls, etc. In 2017, Lifecycle Renewal funding was approved in the operational budget. In 2020 this was moved to the Capital Budget and has been an approved source of funding since. With the rise in equipment replacement costs and labour a $50,000 increase has been included increasing the total annual amount to $250,000.

Annual Budget Request - Scenario Description

Annually - $250,000

Annual Budget Request & Funding Sources

	2024	2025	2026	2027	2028
Expenses					
8904 - Water Treatment Plant	250,000	250,000	250,000	250,000	250,000
Total	250,000	250,000	250,000	250,000	250,000
Revenues					
0200 - RESERVE - CAPITAL WATER	250,000	250,000	250,000	250,000	250,000
Total	250,000	250,000	250,000	250,000	250,000

Questica ID	ENV-007-24	**Department**	Infrastructure Services
Budget Year	2024	**Division**	Environment
Asset Category	Wastewater Network	**Project Lead**	
Title	Sanitary Masterplan		
Budget Status	Senior Management Team		

Vadim Account Reference

Project Description

The recently issued Consolidated Linear Infrastructure - Environmental Compliance Approval (CLI-ECA) that was issued to the Town by the Ministry of Environment, Conservation and Parks (MECP) includes a requirement to complete an assessment of Wet weather flows compared to Dry weather flows as well as a requirement to complete an updated sewer model. The most recent flow monitoring was completed in 2016 and modelling in 2019. This work is not applicable to the requirements of the CLI-ECA and was only completed for the Amherstburg Wastewater Treatment Plant sewer system. The requirement of the CLI-ECA applies to all sewer systems.
Infrastructure services is proposing to complete a Sanitary Masterplan that will address the requirements of the CLI-ECA and will also review all sewers in the systems to identify areas that have surcharging and require upsizing to address. Once complete the plan of Infrastructure services is to maintain the sewer model internally to provide immediate access for assessing sewer capacity for future developments.

Annual Budget Request - Scenario Description

2024 Professional Fees: 300000

Annual Budget Request & Funding Sources

	2024	2025	2026	2027	2028
Revenues					
0210 - RESERVE - CAPITAL WASTEWATER	300,000	-	-	-	-
Total	300,000	-	-	-	-
Expenses					
9900 - Wastewater Network - Studies/Common Designs General	300,000	-	-	-	-
Total	300,000	-	-	-	-

Questica ID	ENV-008-23	**Department**	Infrastructure Services
Budget Year	2024	**Division**	Environment
Asset Category	Water Network	**Project Lead**	Todd Hewitt
Title	ATWP - Upgrades and Replacements		
Budget Status	Senior Management Team		
Vadim Account Reference	80-7-0000000-2208		

Project Description

This project includes upgrades and replacements that are required at the Amherstburg Water Treatment Plant due to lifecycle timing, redundancies and Ministry of Environment, Conservation and Parks requirements

Annual Budget Request - Scenario Description

2024 - $500,000

Process Waste System / Engineering Component:
This would allow for the collection, thickening, and dewatering of backwash and filter waste for plant rated flow of 22,400 cubic metres per day. The waste is not currently being treated and is being directly discharged back to the Detroit River. The Fisheries Act manages and protects Canada's fisheries resources and the discharge of chlorinated water can potentially cause harm and/or damage to fish. The requirement to meet discharge parameters for total chlorine and suspended solids has been included in the Town's Drinking Water Licence by the MECP with a requirement to be completed by September 30th . 2026. This project is DC eligible and as such $454,648 is funded from DC's the balance of $45,352 from Water Reserve to allow for the engineering and design to proceed at an estimated cost of - $500,000

2025 - $1,000,000

Process Waste System / Construction Component:
Due to the date set out by the MECP, the construction of the Process Waste system must be completed by September 30th, 2026. The total construction cost of the Process Waste System project is estimated at $3,000,000. The project is DC eligible however the maximum DC funding has been allocated in 2024.to allow the engineering and design to be completed. The construction will commence in 2025 and will continue into 2026.

2026 - $2,000,000

Process Waste System / Construction Component - $2,000,000
Completion of the Process Waste System construction started in 2025.

2028 - $350,000

New Clarifier / Engineering Component - $350,000
Construction of a new clarifier at the water treatment plant to provide 100% redundancy of the existing clarifier. This work has been recommended by the Ministry of Environment, Conservation and Parks. It is a DC eligible project so $80,413 has been allocated out of DC's and $269,588 from water reserves for the project to be able to proceed

Funding estimates for the process waste system may be able to be lower, however Administration needs to investigate emerging technologies to confirm and will amend the 2025 to 2028 amounts if and as required.

Annual Budget Request & Funding Sources					
	2024	**2025**	**2026**	**2027**	**2028**
Expenses					
8904 - Water Treatment Plant	500,000	1,000,000	2,000,000	-	350,000
Total	500,000	1,000,000	2,000,000	-	350,000
Revenues					
0200 - RESERVE - CAPITAL WATER	45,352	910,000	1,820,000	-	269,500
0126 - DC-WATER RESERVE-WATER	454,648	90,000	180,000	-	80,500
Total	500,000	1,000,000	2,000,000	-	350,000

Questica ID	ENV-009-23	**Department**	Infrastructure Services
Budget Year	2024	**Division**	Environment
Asset Category	Water Network	**Project Lead**	Antonietta Giofu
Title	Work Order Module		
Budget Status	Senior Management Team		
Vadim Account Reference	80-7-0000000-2304 40-7-4010000-2305		

Project Description

A pilot project to transition from a paper based work order system to electronic.

Annual Budget Request - Scenario Description

2024 - $20,000

The Water/ Wastewater area will be the pilot department for transitioning from a paper based work order system to electronic. The electronic system will provide efficiencies in tracking work orders and will also provide efficiencies is reporting and trending.

The quote received from ESRI for this project was $70,000, $50,000 was approved in 2023 and an additional $21,211.65 is being requested in the 2024 budget. Funding approved by Council October 23, 2023 for immediate use, as such this project is approved and not able to be altered.

Annual Budget Request & Funding Sources

	2024	2025	2026	2027	2028
Expenses					
8902 - Water Machinery & Equipment	15,909	-	-	-	-
9906 - Wastewater Machinery & Equipment	5,303	-	-	-	-
Total	21,212	-	-	-	-
Revenues					
0200 - RESERVE - CAPITAL WATER	15,909	-	-	-	-
0210 - RESERVE - CAPITAL WASTEWATER	5,303	-	-	-	-
Total	21,212	-	-	-	-

Questica ID	FAC-001-23	**Department**	Parks, Facilities, Recreation & Culture
Budget Year	2024	**Division**	Facilities
Asset Category	Machinery Equipment	**Project Lead**	Ryan Wismer
Title	LIBRO - Arena and Ice Infrastructure		
Budget Status	Senior Management Team		
Vadim Account Reference	40-7-7017300-2301		

Project Description

The Libro Centre has two ice pads and one mini pad that operate under a specialized geothermal system. The capital infrastructure required to make and maintain the ice is paramount to providing users with recreational access to ice-based service. There are a number of capital infrastructure items that are covered under this program including but not limited to, equipment to operate the facility, dasher boards, ice surfacing equipment (Zamboni), panel replacements, safety gear and apparatus that can be costly.

Annual Budget Request - Scenario Description

2024- $25,000

There are two locations in each of the rinks with clear Lexon panels that are in need of replacement due to scratching and poor visibility. These clear panels permit individuals with accessible needs to view the action on the rink.
1. the lobby end of the two rinks
2. in front of the player benches on Rink “B”

Lexon Panel replacment was submitted in the 2022 budget however, the pannels were not replaced because project funds were re-allocated to cover the cost of the Kube and piping replacements that were needed.. It is recommended the sections be replaced in 2024, when the ice comes out for the summer.

2025 - $100,000

Re-lamping arena with LED lights for energy efficiency and dasher board replacements.

2028 - $260,000

This is a place holder for a new electric Zamboni in the 2028 budget year. This project is being identified to replace the Town’s last propane powered Zamboni. In 2028 the Towns second Zamboni will be 10 years old and will be due for replacement. Price for a current Zamboni purchase is approximately $210,000. At 5% inflation, the cost is estimated to be $260,000 in 2028.

Annual Budget Request & Funding Sources

	2024	2025	2026	2027	2028
Expenses					
6905 - Recreation	-	-	-	-	260,000
4904 - Libro Credit Union Buildings	25,000	100,000	-	-	-
Total	25,000	100,000	-	-	260,000
Revenues					
0400 - RESERVE - GENERAL FUND	25,000	100,000	-	-	160,000
0410 - GAS TAX RESERVE/Canada Community Benefit-CCBF	-	-	-	-	100,000
Total	25,000	100,000	-	-	260,000