Asset Management Planning – Levels of Service Setting and Financial Plan

Final Report

City of Niagara Falls
Project Number: 24003
Date: June 19, 2025

ENDORSEMENT PAGE

Endorsement

This document entitled City of Niagara Falls Asset Management Planning – Levels of Service Setting and Financial Plan Final Report has been developed to meet the requirements set forth in Ontario Legislation O.Reg 588/17: Asset Management Planning for Municipal Infrastructure.

I, Jason Burgess endorse the City of Niagara Falls Asset Management Planning – Levels of Service Setting and Financial Plan Final Report prepared by City Staff and Aspire Consulting Group Ltd. As Chief Administrative Officer of the City of Niagara Falls, I acknowledge the accuracy and significance of the findings presented in this document.

Signature: Jason Burgess

Jason Burgess, CAO City of Niagara Falls

Date: 26/6/2025

Statement of Qualifications and Limitations

The attached Report (the "Report") has been prepared by Aspire Consulting Group Ltd. ("Consultant") for the benefit of the client ("Client") in accordance with the agreement between Consultant and Client, including the scope of work detailed therein (the "Agreement").

The information, data, recommendations and conclusions contained in the Report (collectively, the "Information"):

- is subject to the scope, schedule, and other constraints and limitations in the Agreement and the qualifications contained in the Report (the "Limitations");
- represents Consultant's professional judgement in light of the Limitations and industry standards for the preparation of similar reports;
- may be based on information provided to Consultant which has not been independently verified;
- has not been updated since the date of issuance of the Report and its accuracy is limited to the time period and circumstances in which it was collected, processed, made or issued;
- must be read as a whole and sections thereof should not be read out of such context;
- was prepared for the specific purposes described in the Report and the Agreement; and
- in the case of subsurface, environmental or geotechnical conditions, may be based on limited testing and on the assumption that such conditions are uniform and not variable either geographically or over time.

Consultant shall be entitled to rely upon the accuracy and completeness of information that was provided to it and has no obligation to update such information. Consultant accepts no responsibility for any events or circumstances that may have occurred since the date on which the Report was prepared and, in the case of subsurface, environmental or geotechnical conditions, is not responsible for any variability in such conditions, geographically or over time.

Consultant agrees that the Report represents its professional judgement as described above and that the Information has been prepared for the specific purpose and use described in the Report and the Agreement, but Consultant makes no other representations, or any guarantees or warranties whatsoever, whether express or implied, with respect to the Report, the Information or any part thereof.

Without in any way limiting the generality of the foregoing, any estimates or opinions regarding probable construction costs or construction schedule provided by Consultant represent Consultant's professional judgement in light of its experience and the knowledge and information available to it at the time of preparation. Since Consultant has no control over market or economic conditions, prices for construction labour, equipment or materials or bidding procedures, Consultant, its directors, officers and employees are not able to, nor do they, make any representations, warranties or guarantees whatsoever, whether express or implied, with respect to such estimates or opinions, or their variance from actual construction costs or schedules, and accept no responsibility for any loss or damage arising therefrom or in any way related thereto. Persons relying on such estimates or opinions do so at their own risk.

Except (1) as agreed to in writing by Consultant and Client; (2) as required by-law; or (3) to the extent used by governmental reviewing agencies for the purpose of obtaining permits or approvals, the Report and the Information may be used and relied upon only by Client.

Consultant accepts no responsibility, and denies any liability whatsoever, to parties other than Client who may obtain access to the Report or the Information for any injury, loss or damage suffered by such parties arising from their use of, reliance upon, or decisions or actions based on the Report or any of the Information ("improper use of the Report"), except to the extent those parties have obtained the prior written consent of Consultant to use and rely upon the Report and the Information. Any injury, loss or damages arising from improper use of the Report shall be borne by the party making such use.

This Statement of Qualifications and Limitations is attached to and forms part of the Report and any use of the Report is subject to the terms hereof.

June 19, 2025
File No.: 24003

Attention: Tara Gudgeon
Senior Manager Asset Management Municipal Works
City of Niagara Falls

RE: Asset Management Planning – Levels of Service Setting and Financial Plan: Project Final Report

Dear Tara:

Aspire Consulting Group Ltd. is pleased to submit this final report for the City's 2025 Asset Management Planning – Levels of Service Setting and Financial Plan in compliance with Section 6 of O.Reg 588/17.

Should you have any questions regarding the information provided; we would be happy to discuss the memorandum with you at your convenience.

Aspire Consulting Group Ltd.

Amanda Beattie, P.Eng., P.Geo., CRL, CMRP, AMP, PMP
Amanda.Beattie@aspireconsulting.ca

Daryush Esmaili, MBA, P.Eng, AMP, CRL, CAMA, PMP
Daryush.Esmaili@aspireconsulting.ca

Revision Log

Revision #	Revised By	Date	Issue / Revision Description
0	Tara Gudgeon	June 19, 2025	Document edits.

Signatures

Report Prepared By:

Name: Amanda Beattie
Title: President

Name: Daryush Esmaili
Title: Vice-President

Report Reviewed By:

Name: Simon Lau
Title: Vice-President

Table of Contents

Statement of Qualifications and Limitations
Letter of Transmittal

Executive Summary....1
ES.1 Overview....1
ES.2 Report Objectives....11
ES.3 Levels of Service....11
ES.4 Lifecycle Management Strategy....13
ES.5 Financial Strategy....14
ES.6 Recommendations....17
1 Introduction....18
1.1 Objectives....18
1.2 Purpose....18
1.3 Scope....19
2 Levels of Service....20
2.1 Community Engagement....20
2.1.1 Key Findings Resulting from Community Engagement....22
2.1.2 Community Preferences and Willingness to Pay....22
2.1.3 Service Specific Insights....24
2.1.4 Interpretation into Levels of Service Setting....28
2.1.5 Community Engagement on Proposed Levels of Service Scenarios....29
2.2 Defining Levels of Service....31
2.3 Current Levels of Service....32
2.4 Proposed Levels of Service....37
2.4.1 Financial Strategy Alignment....38
2.5 Evaluation of Service Area Performance....43
2.5.1 Asset Performance Methodology....43
3 Lifecycle Management Strategy....44
3.1 Lifecycle Activities....44
4 Financial Strategy....47

4.1 Overview of Full Lifecycle Cost Model 47
4.2 Expenditure Forecast 48
4.3 Lifecycle Costs to Meet Current and Proposed LOS for Tax and Rate Funded Services 49
4.4 Considerations for Service Level Enhancement and Strategic Investments 51
4.5 Funding Forecast 52
4.5.1 Funding Sources 52
4.5.2 Funding Projections for Tax Supported Services 55
4.5.3 Funding Projections for Rate Supported Services 57
4.6 Projected Infrastructure Gap 59
4.6.1 Infrastructure Gap for Tax Supported Services 59
4.6.2 Infrastructure Gap for Rate Supported Services 61
4.7 Approaches to Closing the Funding Gap 62
5 Implementation Plan and Continuous Improvement 65

List of Figures

Figure 2-1: Public Engagement Survey Posterboard 21
Figure 2-2: Preferred Service Level (Restaurant Analogy) 23
Figure 2-3: Willingness to Pay for Service Improvements 24
Figure 2-4: Satisfaction with Current Services 25
Figure 2-5: Identified Need for Service Improvements 25
Figure 2-6: Preferences to Maintain, Improve, or Decrease Services 26
Figure 4-1: Cumulative 10-Year Lifecycle Needs to Meet Proposed Levels of Service plus Service Enhancements and Strategic Investments for Tax Funded Services 2025-2034 (millions $) 52
Figure 4-2: Cumulative 10-Year Projected Revenues 2025-2034 (millions $) 55
Figure 4-3: Annual 10-Year Projected Total Revenues including Transfers to Reserves from Operating 2025-2034 (millions $) 57
Figure 4-4: Cumulative 10-Year Projected Revenues (2025-2034 in millions) 58
Figure 4-5: Projected Infrastructure Gap to Meet Proposed Levels of Service for Tax Supported Services (10-Year Total) 60
Figure 4-6: Summary of Capital Revenues Needed to Fund the Program. 61
Figure 4-7: Projected Infrastructure Gap to Meet Proposed Levels of Service for Rate Supported Services (10-Year Total) 62

List of Tables

Table 2-1: Current levels of service measures and performance ... 34
Table 2-2: Proposed levels of service and the annual cost to meet that PLOS ... 39
Table 3-1: Lifecycle Management Activities, Risks and Observations for All Service Areas ... 45
Table 4-1: Overview of the Full Lifecycle Activities ... 48
Table 4-2: Cumulative 10-Year Lifecycle Needs to Meet Current and Proposed Levels of Service for Tax Funded Services 2025-2034 (millions $)(1) ... 51
Table 4-3: Approaches to Closing the Funding Gap ... 63

Appendices

Appendix A	Community Engagement Survey Questions
Appendix B1	City-wide Survey Results
Appendix B2	Niagara District Airport Survey Results
Appendix C	Public Information Centre Boards
Appendix D	2025 Levels of Service Framework (Digital File)
Appendix E	Detailed Lifecycle Management Activities
Appendix F	Revenue Forecast

Executive Summary

ES.1 Overview

The City of Niagara Falls has prepared this report as an amendment to the City's existing 2022 Core and 2024 Non-Core Asset Management Plans to meet Ontario Regulation 588/17, Section 6 requirements while advancing its commitment to sustainable infrastructure stewardship. Building on the foundation of the 2022 Core and 2024 Non-Core Asset Management Plans—which identified a combined $414 million infrastructure funding gap over 10 years—this report establishes Proposed Levels of Service (PLOS), comprehensive lifecycle management strategies, and updated financial plans to support reliable, community-focused municipal services.

Through extensive community engagement involving 240 city-wide survey responses and multiple public consultation events, the City identified transportation infrastructure as the top priority for residents, with 89% indicating paved roads need improvement (*Figure ES-1: Identified Need for Service Improvements*). The engagement revealed strong community support for measured investment, with 82% preferring a balanced "family diner" approach to service delivery (*Figure ES-2: Preferred Service Level (Restaurant Analogy)*) and 63% willing to support increased funding for core infrastructure services (*Figure ES-3: Willingness to Pay for Service Improvements*).

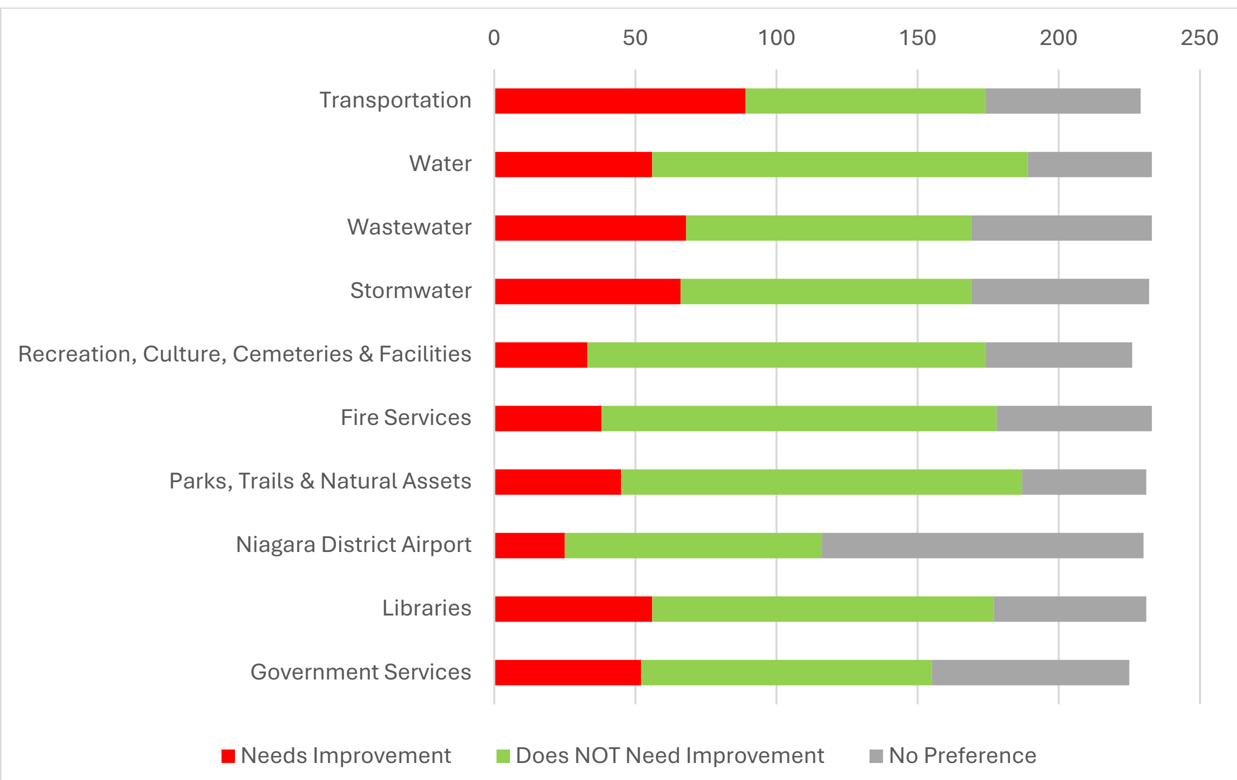


Figure ES-1: Identified Need for Service Improvements

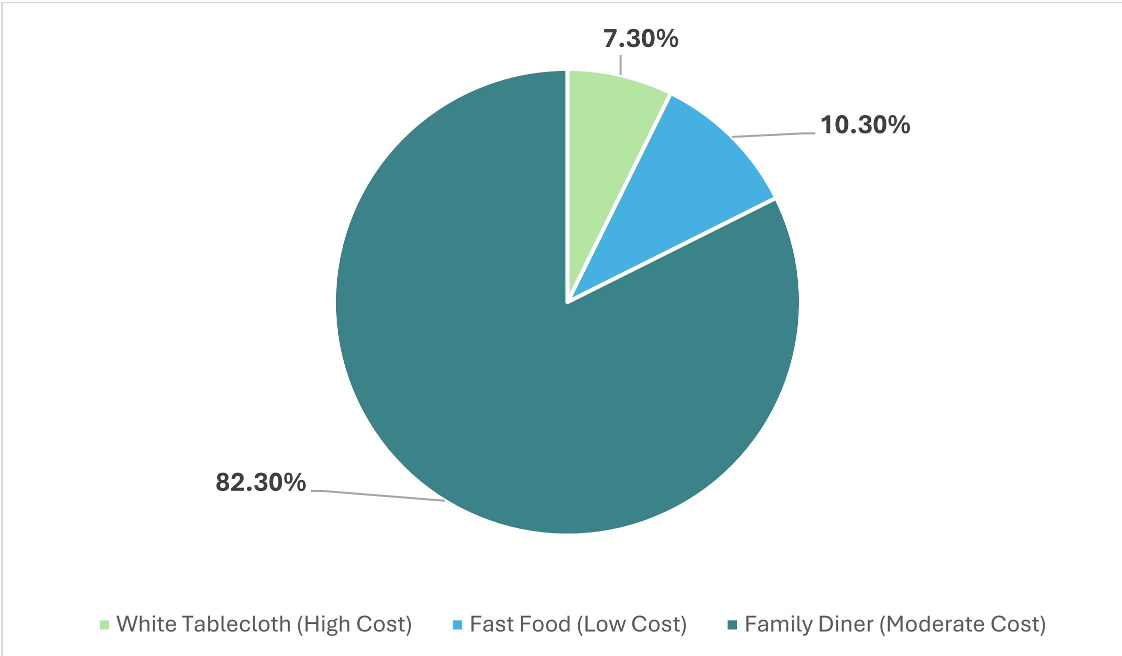


Figure ES-2: Preferred Service Level (Restaurant Analogy)

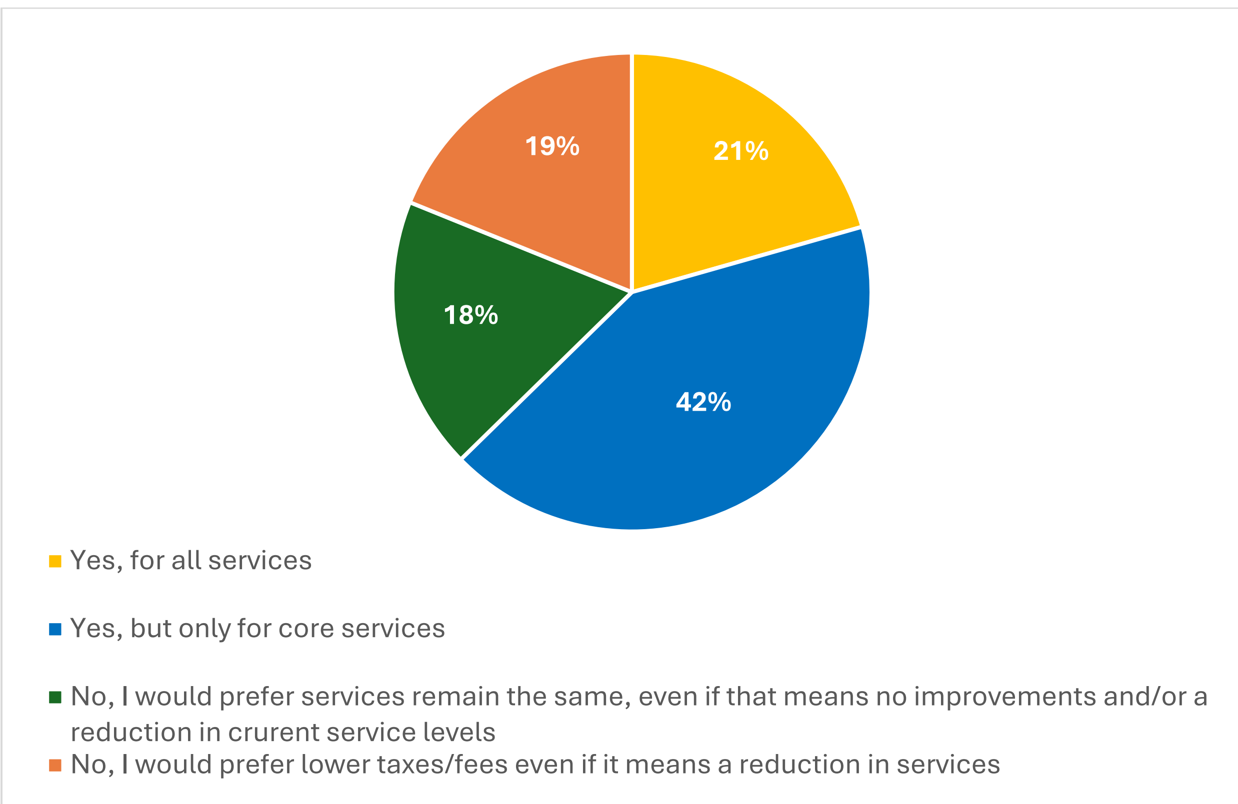


Figure ES-3: Willingness to Pay for Service Improvements

The financial analysis demonstrates that achieving the proposed levels of service will require $750.0 million over 10 years for tax-supported services and $329.4 million for rate-supported services (*Table ES-1: Cumulative 10-Year Lifecycle Needs to Meet Current and Proposed Levels of Service*). This creates a $164.2 million funding gap for tax-supported infrastructure (*Figure ES-4: Projected Infrastructure Gap to Meet Proposed Levels of Service for Tax Supported Services*), requiring a dedicated capital levy increase of 2.75% annually to meet proposed service levels. Rate-supported services, (*Figure ES-5: Projected Infrastructure Gap to Meet Proposed Levels of Service for Rate Supported Services*), face a $58.0 million funding gap, requiring approximately a 9% one-time increase in utility rate revenues to maintain cost recovery and meet service level targets. Alternatively, this gap could be closed if rate revenues were increased at 2% per year starting in 2026 over the planning period. Importantly, the calculated increase relates only to the revenue requirements for capital asset management activities (in $2025) and the true rate impacts will need to consider other factors, at minimum: operating cost changes, regional charges, inflation and consumption patterns.

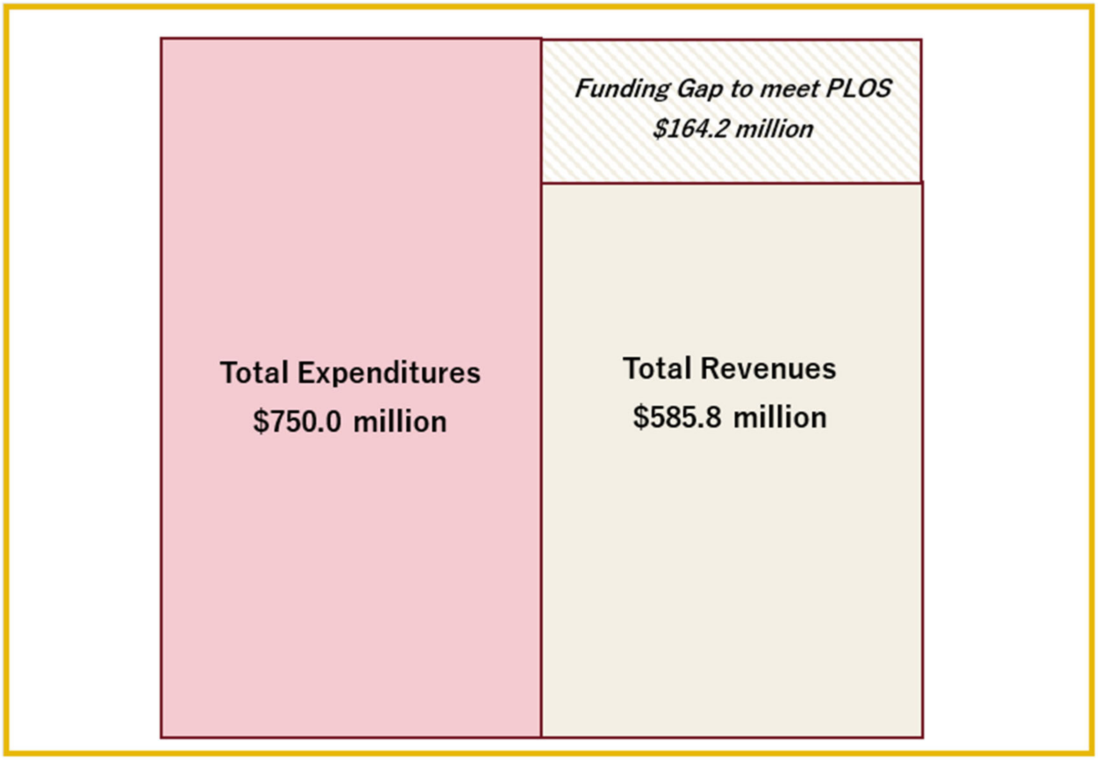
Of note, the City should be cognizant of the additional $138.0 million in costs associated with service level enhancements and strategic investments capital. These expenses if added to the state of good repair works would bring the total lifecycle costs to $880.0 million relative to available funding of $585.8 million (a difference of $302.2 million). To close the funding gap of $302.2 million, the City would need to increase the capital levy by 4.5% per annum over the planning period to meet the proposed level of service. This would represent a net increase of 2.75% in the dedicated levy to address these additional costs.

Table ES-1: Cumulative 10-Year Lifecycle Needs to Meet Current and Proposed Levels of Service[1]

Lifecycle Activity Category	Tax Supported Assets	Rate Supported Assets
Operations and Maintenance	$302.1	$112.4
Capital Repair and Replacement – CLOS	$348.0	$145.2
Non-Infrastructure Solutions	$4.3	$0.1
Expansion [2]	$75.0	$71.2
Total to Maintain CLOS	**$729.4**	**$328.9**
Add: Capital Repair and Replacement – PLOS	*$20.6*	*$0.5*
Grand Total Cost to Meet PLOS	**$750.0**	**$329.4**

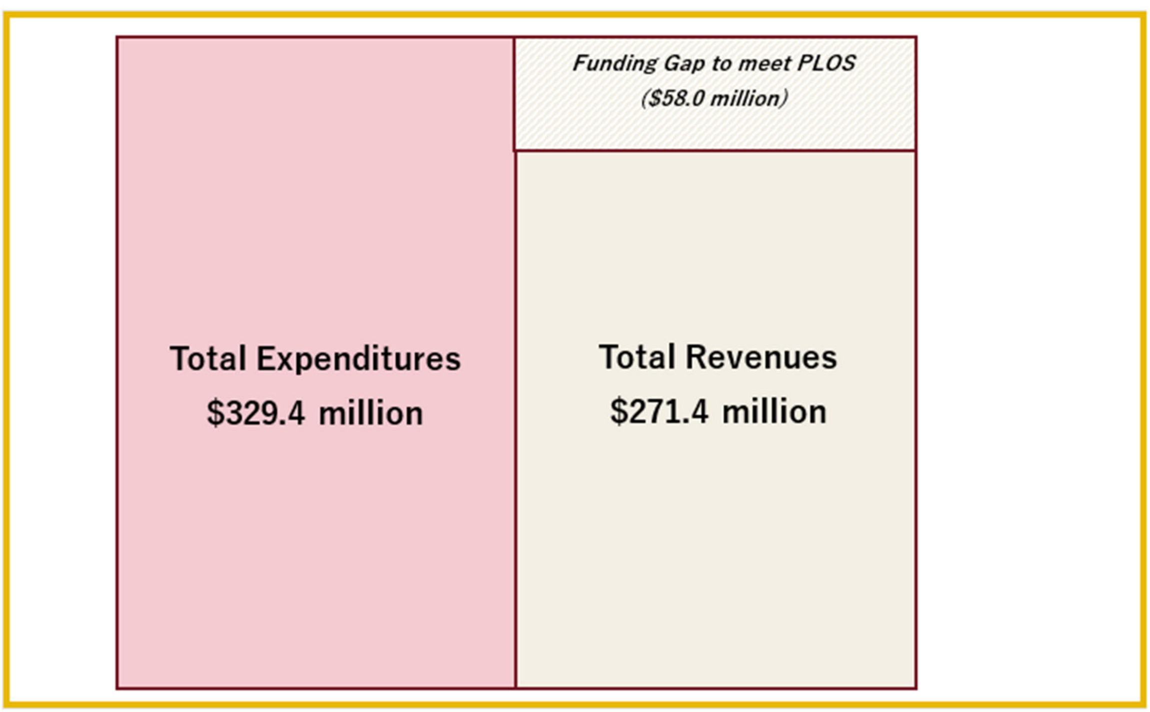
Note 1: All values in constant 2025 dollars.

Note 2: The total lifecycle costs also account for the benefit to existing share of stormwater ($15.4 M), Water ($34.2 M) and wastewater assets ($31.7M) over the 10-years.



Note: Values expressed in constant 2025 dollars. Values have been rounded. Graphic not to scale.

Figure ES-4: Projected Infrastructure Gap to Meet PLOS for Tax Supported Services



Note: Values expressed in constant 2025 dollars. Values have been rounded. Graphic not to scale.

Figure ES-5: Projected Infrastructure Gap to Meet PLOS for Rate Supported Services

Key achievements include the development of 79 measurable levels of service indicators across 11 service areas for ongoing monitoring and review (*Table ES-2: Proposed levels of service and the annual cost to meet that PLOS*), comprehensive lifecycle management strategies addressing six activity categories, and evidence-based financial planning that balances community expectations with fiscal responsibility. The plan positions Niagara Falls to deliver enhanced infrastructure performance while maintaining long-term financial sustainability.

Table ES-2: Proposed levels of service and the annual cost to meet that PLOS

Service Area	Asset Type	Technical Levels of Service (TLOS) Measure	Current Performance	Increase, Maintain, or Decrease	Proposed LOS
Airport	Airport	% of airport assets in fair or better condition	78.1%	Decrease LOS	68%
Airport	Airport	% of annual audits that meet regulatory requirements	100.0%	Maintain LOS	100%
Fire Services	Fire	Average time from dispatch to time on scene (standard calls) for full time stations	0:05:40	Maintain LOS	0:05:40
Fire Services	Fire	Average time from dispatch to time on scene (standard calls) for volunteer stations	0:11:28	Maintain LOS	0:11:28
Fire Services	Fire	% of vehicles and equipment in fair or better condition	68.4%	Increase LOS	70%
Fire Services	Fire	% of stations in fair or better condition	100.0%	Maintain LOS	100%
Fleet	Fleet	% of equipment that is in fair or better condition	38.3%	Increase LOS	60%
Fleet	Fleet	% of fleet that is in fair or better condition	42.9%	Increase LOS	50%
Fleet	Fleet	% Commercial vehicle operator's registration (CVOR) inspections completed on time	100.0%	Maintain LOS	100%
Fleet	Fleet	# of snowplows per centreline-km	1 snowplow per 37 centreline-km	Maintain LOS	1 snowplow per 37 centreline-km
Fleet	Fleet	# of sidewalk clearing plows by km of sidewalk	1 snowplow per 54 km	Maintain LOS	1 snowplow per 54 km
Fleet	Fleet	Ratio of fleet vehicles to population served	1 vehicle per 565 population	Maintain LOS	1 vehicle per 565 population
Fleet	Fleet	Ratio of electric vehicle charging stations to population served	1 vehicle per 13,488 population	Maintain LOS	1 vehicle per 13,488 population
Government Services	Information Systems	% of IT assets that are within the service life	30.3%	Increase LOS	60%
Libraries	Libraries	% of library assets in fair or better condition	61.5%	Maintain LOS	61.5%
Libraries	Libraries	Ratio of libraries to population served	1 library per 31,472 population	Increase LOS	1 library per 30,842 population

Service Area	Asset Type	Technical Levels of Service (TLOS) Measure	Current Performance	Increase, Maintain, or Decrease	Proposed LOS
Parks, Trails and Natural Assets	Natural Assets	# of trees planted annually	316	Increase LOS	348
Parks, Trails and Natural Assets	Parks	% of playgrounds that are AODA compliant	66.0%	Increase LOS	76%
Parks, Trails and Natural Assets	Parks	% of parks in fair or better condition	92%	Maintain LOS	92%
Parks, Trails and Natural Assets	Parks	# of hectares of park land available to the public	279.23	Maintain LOS	279.23
Parks, Trails and Natural Assets	Trails	# of kms of walking and cycling trail	44.55	Increase LOS	45.89
Recreation, Culture, Cemeteries and Facilities	Cemeteries	% of available lots	9.8%	Increase LOS	25%
Recreation, Culture, Cemeteries and Facilities	Cemeteries	% of niches available	51.9%	Maintain LOS	52%
Recreation, Culture, Cemeteries and Facilities	Culture	# of memorial trees	13	Maintain LOS	13
Recreation, Culture, Cemeteries and Facilities	Facilities	% of facilities in fair or better condition	85.2%	Maintain LOS	85%

Service Area	Asset Type	Technical Levels of Service (TLOS) Measure	Current Performance	Increase, Maintain, or Decrease	Proposed LOS
Recreation, Culture, Cemeteries and Facilities	Facilities	% of facility structures within the inspection program that are inspected within the City's 5-year program	100%	Maintain LOS	100%
Recreation, Culture, Cemeteries and Facilities	Facilities	Ratio of recreation centres to population served	1 recreation centre per 31,472 population	Maintain LOS	1 recreation centre per 31,472 population
Stormwater	Stormwater Facilities	% of stormwater management facilities inspected within the City's 5-year program	100.0%	Maintain LOS	100%
Stormwater[1]	Stormwater Network	% of properties resilient to a 100-year storm	60.0%	Maintain LOS	60%
Stormwater	Stormwater Network	% of stormwater management facilities in fair or better condition	63.1%	Maintain LOS	63%
Stormwater[1]	Stormwater Network	% of stormwater management trunk system resilient to a 5-year storm	90.0%	Maintain LOS	90%
Stormwater	Stormwater Network	% of storm sewers and appurtenances in fair or better condition	94.7%	Maintain LOS	95%
Transportation[1]	Bridges & Culverts	% of bridges and culverts in the City with loading or dimensional restrictions.	0.0%	Maintain LOS	0%
Transportation[1]	Bridges & Culverts	% of bridges in fair or better condition	84.5%	Maintain LOS	84%
Transportation	Bridges & Culverts	% of bridges and culverts inspected as per OSIM requirements	88.0%	Increase LOS	100%
Transportation[1]	Bridges & Culverts	% of culverts in fair or better condition	51.8%	Maintain LOS	52%
Transportation[1]	Roads & Related	% of collector roadway in good or better condition	47.7%	Increase LOS	50%
Transportation[1]	Roads & Related	% of arterial roadway in good or better condition	59.1%	Increase LOS	61%
Transportation[1]	Roads & Related	% of local roadway in good or better condition	58.9%	Increase LOS	61%

Service Area	Asset Type	Technical Levels of Service (TLOS) Measure	Current Performance	Increase, Maintain, or Decrease	Proposed LOS
Transportation[1]	Roads & Related	% of unpaved surface condition in fair or better condition	9.8%	Increase LOS	10%
Transportation[1]	Roads & Related	# of lane-kms of paved arterial roads as a proportion of km2 of City land area	1.02	Maintain LOS	1.00
Transportation[1]	Roads & Related	# of lane-kms of paved collector roads as a proportion of km2 of City land area	1.73	Maintain LOS	1.70
Transportation[1]	Roads & Related	# of lane-kms of paved local roads as a proportion of km2 of City land area	1.73	Maintain LOS	1.70
Transportation	Roads Ops (Transportation)	% of traffic signals in fair or better condition	40.0%	Increase LOS	60%
Transportation	Roads Ops (Transportation)	% of streetlights converted to LED -Standard -Decorative	82.5%	Increase LOS	100%
Transportation	Sidewalk	% of arterial and collector roads with sidewalk on both sides	53.9%	Maintain LOS	54%
Transportation	Sidewalk	% of local roads with sidewalk on at least one side	86.5%	Maintain LOS	87%
Transportation	Sidewalk	# of sidewalk trip and fall claims per year	12	Increase LOS	10
Transportation	Traffic & Parking	% of parking lots in fair or better condition	64.8%	Increase LOS	68%
Transportation	Traffic & Parking	% of annual inspections for regulatory and warning signs with retro reflectivity requirements	100.0%	Maintain LOS	100%
Wastewater	Sewer Network	% of linear sanitary assets inspected annually	6.8%	Maintain LOS	7%
Wastewater	Sewer Network	% network with combined sewer	26.0%	Maintain LOS	26%
Wastewater	Sewer Network	% of sanitary sewers and appurtenances in fair or better condition	83.1%	Maintain LOS	83%
Wastewater[1]	Sewer Network	% of properties connected to the City wastewater system within the Urban Boundary.	99.9%	Maintain LOS	100%
Water[1]	Water Network	# of connection-days per year where a boil water advisory notice is in place.	0	Maintain LOS	0
Water	Water Network	% water network that meets Peak Hour Demand Minimum Operating Pressure of 40 PSI	1.0%	Maintain LOS	1%
Water	Water Network	% of local watermain greater than 4" (100mm)	98.0%	Maintain LOS	98%

Service Area	Asset Type	Technical Levels of Service (TLOS) Measure	Current Performance	Increase, Maintain, or Decrease	Proposed LOS
Water	Water Network	% water network that meets Normal (Average Day / Maximum Day / Minimum Hour) Operating Pressure of 40-100 PSI	26.0%	Maintain LOS	26%
Water	Water Network	% of watermains and appurtenances in fair or better condition	71.2%	Maintain LOS	71%
Water[1]	Water Network	% of properties within the urban boundary where fire flow is available.	98.0%	Maintain LOS	98%
Water[1]	Water Network	% of properties within the urban boundary that are connected to the City's water system.	98.0%	Maintain LOS	98%
Water	Water Network	% of sampling results that meet Drinking Water License and legislated limits	100.0%	Maintain LOS	100%
Water	Water Network	# of water quality complaints due to discoloured water	25	Increase LOS	19
Water	Water Network	# of watermain breaks per year.	57	Increase LOS	43

1 - Technical Level of Service Measure required by Ontario Region 588/17

ES.2 Report Objectives

This report represents a significant milestone in the City of Niagara Falls' asset management journey, serving as a comprehensive amendment to the previously approved Core Asset Management Plan (June 2021) and Non-Core Asset Management Plan (July 2023). Prepared to meet the July 1, 2025 requirements of Ontario Regulation 588/17, Section 6, this amendment advances the City's integrated approach to infrastructure stewardship across all asset categories.

The City manages a diverse portfolio of infrastructure assets including transportation networks (roads, sidewalks, bridges), water and wastewater systems, stormwater infrastructure, parks and recreation facilities, fire services assets, fleet, libraries, and municipal facilities. The combined value of these assets represents hundreds of millions of dollars in public investment, requiring strategic long-term planning to ensure continued service delivery.

Building from the $414 million infrastructure funding gap identified in previous City plans, this amendment presents a holistic strategy that encompasses:

- **Proposed Levels of Service**: Community-informed performance targets developed through extensive public engagement, establishing measurable standards for service delivery across all asset categories.
- **Lifecycle Management Strategy**: Comprehensive approach to asset stewardship covering non-infrastructure solutions, operations and maintenance, renewal and replacement, disposal, and expansion activities, with integrated risk management and mitigation measures.
- **Financial Strategy**: Updated funding analysis identifying sustainable pathways to achieve proposed service levels, including detailed cost-benefit analysis and revenue optimization strategies.

This amendment reflects the City's commitment to evidence-based decision-making, fiscal responsibility, and transparent community engagement. By fulfilling Ontario Regulation 588/17 requirements while advancing integrated asset management practices, Niagara Falls continues to demonstrate leadership in municipal infrastructure planning—ensuring the right investments are made at the right time to support resilient, reliable services that meet evolving community needs.

ES.3 Levels of Service

The City of Niagara Falls has established a comprehensive Levels of Service (LOS) framework encompassing 79 distinct performance measures across eleven (11) service areas, developed through an extensive community engagement process and technical analysis with subject matter experts. This framework provides the foundation for measuring, monitoring, and improving service delivery while ensuring alignment with community expectations and regulatory requirements.

Community Engagement Results

The City's first asset management-specific community engagement campaign yielded valuable insights from 240 citywide survey responses and 485 responses specific to the Niagara District Airport across the City of Niagara Falls, City of St. Catharines and the Town of Niagara-on-the-lake. Conducted between December 2024 and April 2025, the engagement included online surveys, six community pop-up events, and a Public Information Centre (PIC), providing multiple opportunities for resident input.

Key findings demonstrate strong community preference for balanced service delivery:

- **82%** of respondents preferred a "family diner" level of service (moderate quality and cost)
- **62%** expressed willingness to accept increased taxes or fees for improved services
- **69%** identified paved road condition as needing improvement
- **61%** highlighted road and sidewalk maintenance concerns
- **50%** noted the need for better snow removal services

Transportation infrastructure emerged as the clear priority, with residents expressing both the lowest satisfaction (30.9%) and highest demand for improvement across all service areas.

Proposed Levels of Service Framework

The City has developed proposed LOS targets that strategically balance community priorities with financial sustainability (*Table ES-2: Proposed levels of service and the annual cost to meet PLOS*). Of the 79 measures established:

- **52 measures** maintain current service levels, ensuring stable performance
- **24 measures** increase service levels, primarily in high-priority areas identified through community feedback
- **3 measures** strategically decrease service levels where fiscally prudent

Transportation receives the most significant enhancements, with proposed improvements including:

- Increasing collector roadway condition from 47.7% to 50% in good or better condition
- Improving arterial roadway condition from 59.1% to 61%
- Enhancing local roadway condition from 58.9% to 61%
- Reducing sidewalk trip and fall claims from 12 to 10 annually

Current performance baselines across all service areas provide the foundation for these strategic improvements and the costs necessary to achieve the proposed levels of service.

Service Area Performance Analysis

The LOS framework enables systematic evaluation of current performance against proposed targets across all service areas. Transportation, water, wastewater, and stormwater services represent the highest-value asset categories requiring the most significant investment to achieve proposed performance levels. Recreation, culture, parks, and municipal facilities generally maintain current service levels with targeted improvements in accessibility and condition.

The framework incorporates both technical measures (asset condition, regulatory compliance, operational efficiency) and customer-focused indicators (service availability, response times, quality metrics), ensuring comprehensive performance monitoring that supports both operational excellence and community satisfaction.

ES.4 Lifecycle Management Strategy

The City has developed a comprehensive lifecycle management strategy that encompasses six distinct activity categories, ensuring systematic and cost-effective approaches to achieving and sustaining proposed levels of service across all infrastructure assets. This strategy builds upon established asset management best practices while incorporating lessons learned from the 2022 and 2024 Asset Management Plans. The strategy addresses all phases of asset lifecycle through six integrated categories:

- **Non-Infrastructure Solutions** focus on policies, planning, and process optimization that extend asset life and reduce costs without direct physical intervention. Key activities include integrated master planning, climate change adaptation studies, condition assessment programs, and cross-departmental coordination protocols.
- **Operations and Maintenance** activities ensure assets achieve their intended service potential through regular servicing, preventive maintenance, and responsive repairs. The strategy emphasizes proactive maintenance planning aligned with condition assessment data to maximize asset life and minimize emergency interventions.
- **Renewal and Rehabilitation** activities involve significant repairs designed to extend useful asset life at key lifecycle points. These strategic interventions, timed based on condition assessments and performance data, help assets reach their designed useful life while avoiding premature replacement.
- **Replacement Activities** address end-of-life assets where renewal is no longer viable. The strategy prioritizes replacement based on criticality, condition, and service impact, ensuring seamless service continuity during asset transitions.
- **Disposal and Divesting Activities** manage the systematic retirement of assets, including proper documentation, environmental compliance, and coordination with replacement projects to optimize resource utilization.
- **Expansion Activities** support planned service growth and improvements, incorporating long-term lifecycle needs for new infrastructure while aligning with development and strategic planning initiatives.

Each lifecycle activity category includes comprehensive risk assessment and mitigation strategies (**Appendix E**). Key risks addressed include:

- Service level decline due to deferred maintenance or inadequate renewal timing
- Regulatory non-compliance and associated penalties
- Public safety impacts from asset failure
- Inefficient resource allocation due to poor coordination

- Climate change impacts on asset performance and longevity

Mitigation strategies emphasize proactive planning, integrated project coordination, data-driven decision making, and continuous improvement in asset management practices. The lifecycle management strategy prioritizes alignment between planning activities, condition assessment programs, and capital project delivery. Integration across service areas ensures coordinated project delivery, optimized resource utilization, and minimized service disruptions during major infrastructure interventions.

ES.5 Financial Strategy

The City of Niagara Falls' financial strategy addresses a comprehensive 10-year investment program totaling $750.0 million for tax-supported services and $329.4 million for rate-supported services, requiring strategic funding approaches to achieve proposed levels of service while maintaining fiscal sustainability.

The financial strategy incorporates complete lifecycle costs across all activity categories:

- **Operations and Maintenance:** $302.1 million for tax-supported services and $112.4 million for rate-supported services over 10 years
- **Capital Repair and Replacement (Current LOS):** $348.0 million for tax-supported infrastructure and $145.2 million for rate-supported services
- **Capital Enhancement (Proposed LOS):** Additional $20.6 million (tax-supported) and $0.5 million (rate-supported) to achieve service improvements
- **Expansion Activities:** $75.0 million for tax-supported and $71.2 million for rate-supported services
- **Non-Infrastructure Solutions**: $4.3 million (tax-supported) and $0.1 million (rate-supported) for planning, studies, and process improvements

Revenue Diversification

The base financial strategy leverages multiple funding sources totaling $585.8 million over 10 years for tax supported assets. The base model assumes no further increases to the existing dedicated infrastructure levy. (*Figure ES-6: Summary of Capital Revenues Needed to Fund the Program*):

- **$99.9 million** from capital special purpose reserves (via tax levy)
- **$60.8 million** from reserve funds including a portion of OLG revenues
- **$31.9 million** from Canada Community Building Fund (CCBF)
- **$66.3 million** from debt capacity as existing obligations mature
- **$302.1 million** from operating budget allocations for O&M (tax supported)
- **$24.8 million** from existing capital reserve funds for asset management and OCIF allocations.

For rate supported assets, over the 10-year period, the baseline projection of revenues amounts to about $271.4 million. The baseline revenue projections is made up of the following revenues:

- **$131.0 million** from reserves (via rate charges)
- **$11.1 million** from debt capacity as existing obligations mature

- **$112.4 million** from operating budget allocations for O&M (rate supported)
- **$16.9 million** from existing capital reserve funds for asset management.

Funding Gap for Tax and Rate Supported Services

- For tax supported services, the 10-year projected lifecycle cost is $750.0 million, while projected revenues are $585.8 million, resulting in a funding gap of $164.2 million to meet the proposed levels of service.
- For rate supported services. the 10-year projected lifecycle cost is $329.4 million, while projected revenues are $271.4 million, resulting in a funding gap of $58.0 million. While it is acknowledged that utility rates would need to increase to fund the shortfall, the systems are maintained to provide safe and clean drinking water, and the systems are operated on a cost recovery basis. It will be important that the City continue to undertake regular reviews of its water and wastewater rates to ensure the proposed level of service is met and the funding gap is closed over the planning horizon.

In order to increase tax revenues and fund the required expenditures, the Transfer to Capital Special Purpose Reserve and Reserve Funds will need to grow through annual tax supported increases, with base contributions totalling $15.6 million in 2025 and raising incrementally in order to close the gap over the period.

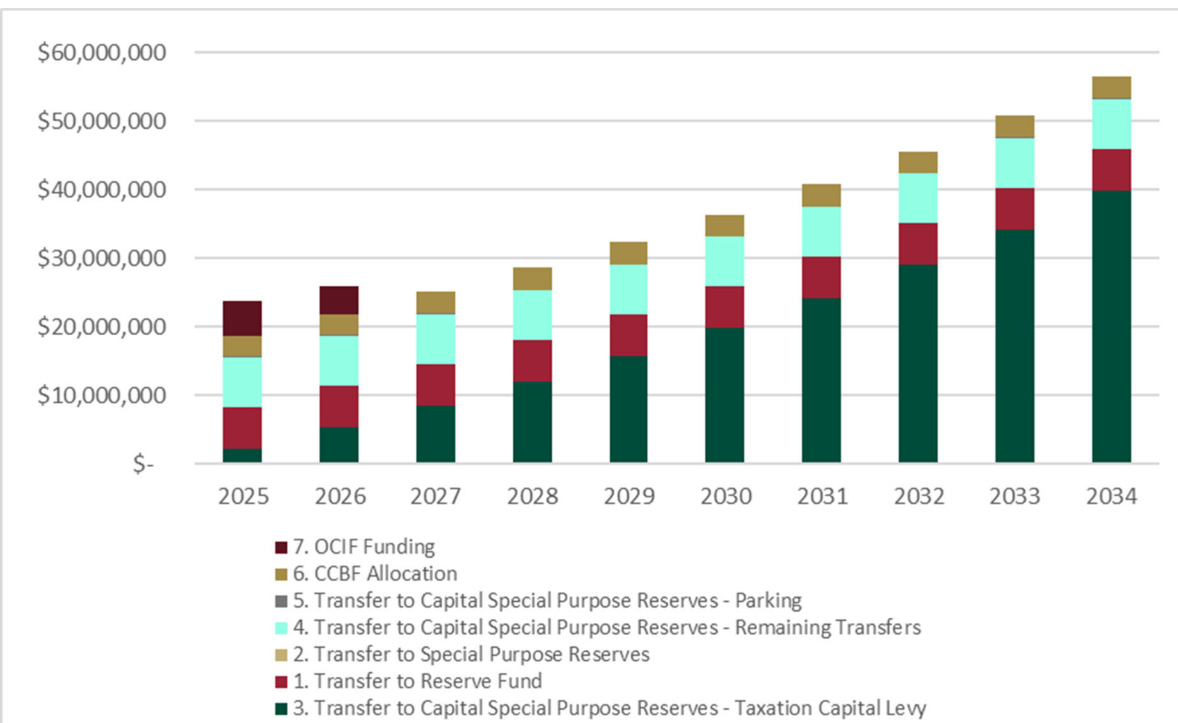


Figure ES-6: Summary of Capital Revenues Needed to Fund the Program

To enhance long-term financial sustainability, the strategy recommends:

- City increase investments in capital assets to address the calculated infrastructure gap to achieve community-prioritized service improvements, particularly in road infrastructure condition and maintenance
- Continued pursuit of federal and provincial grant opportunities
- Increased user fess
- Enhanced data quality to optimize investment prioritization
- Risk-based asset management to focus resources on highest-impact interventions
- Potential public-private partnerships for major infrastructure initiatives
- Coordinated project delivery with Niagara Region to achieve economies of scale.
- Extend service life through additional rehabilitation technologies
- Divest select City assets

This comprehensive financial strategy positions the City to deliver enhanced infrastructure performance, ensuring sustainable service delivery for current and future residents. Of note, the City should be cognizant of the additional $138.0 million in costs associated with service level enhancements and strategic investments capital. These expenses, if added to the state of good repair works, would bring the total lifecycle costs to $880.0 million relative to available funding of $585.8 million (a difference of $302.2 million).

ES.6 Recommendations

In alignment with O.Reg. 588/17 and the City's ongoing commitment to transparent, data-driven, and fiscally responsible asset management, it is recommended that Council adopt the following actions to support the implementation of the 2025 Levels of Service Setting and Financial Plan. These actions will ensure regulatory compliance, enhance financial sustainability, and position the City to deliver consistent and resilient service outcomes for the community.

1. **That the City endorses the Levels of Service Asset Management Plan** prepared in accordance with the requirements of Ontario Regulation 588/17.
2. **That the City makes the Plan publicly available** on the City's website in advance of the July 1, 2025, regulatory deadline.
3. **That the City submit the Plan to the Ministry of Municipal Affairs and Housing** prior to the July 1, 2025, deadline to demonstrate compliance with provincial reporting requirements.
4. **That City staff incorporate key recommendations from the LOS AMP** into ongoing capital and financial planning, including the development of a 10-year capital budget, alignment with preferred levels of service, application of risk-based prioritization methodologies, and increased integration of asset condition data starting with the 2026 budget cycle.
5. **That the City implement the LOS AMP Financial Strategy**, including the introduction of a dedicated 2.75% annual levy on tax-supported services to begin closing the identified infrastructure funding gap.
6. **That the City implement a one-time 9% utility rate increase or 2% per year over the planning period** to address the funding gap for rate-supported services and align future investments with identified lifecycle and service delivery needs.

1 Introduction

Effective asset management is fundamental to the City of Niagara Falls' commitment to providing sustainable, reliable, and high-quality services. The City has demonstrated this commitment through the approval of its Core Asset Management Plan (June 2021) and Non-Core Asset Management Plan (July 2023), both endorsed by Council. These foundational documents identified a combined infrastructure funding gap of approximately $414 million over the next 10 years, highlighting the urgent need for strategic investment to maintain service levels and manage long-term risk.

The City delivers services across a diverse portfolio of asset categories, including transportation (roads and sidewalks), water, wastewater, stormwater, parks and recreation, facilities, and fleet. Building on the Core and Non-Core AMPs, the City continues to adopt a holistic approach to asset management—one that encompasses all asset types—to better establish, understand, and meet evolving service delivery expectations.

This report provides a comprehensive update on the overall outcomes of the City's Asset Management Planning: Setting Levels of Service and Financial Strategies project. It includes:

- Details on both the current and proposed levels of service.
- Documents the lifecycle management strategy to support the proposed levels of service.
- Outlines the financial strategy to ensure the necessary resources are available to support the lifecycle management strategy.

1.1 Objectives

In January 2018, Ontario Regulation (O. Reg.) 588/17: Asset Management Planning for Municipal Infrastructure came into effect, introducing a phased approach to establishing comprehensive municipal asset management systems. The City has met all earlier milestones under the regulation and is now reaching the next key stage of compliance, the July 1, 2025 requirements. This report serves as an extension to the City's existing Asset Management Plans. It outlines a strategic approach to asset interventions that align with the proposed levels of service (PLOS), emphasizing the importance of implementing the right actions, on the right assets, at the right time. This approach is aimed at maximizing asset performance, managing risk, and ensuring fiscal responsibility.

1.2 Purpose

The intent of this report is twofold. First, the City aims to achieve compliance with the July 1, 2025, deadline identified in Ontario Regulation 588/17: Asset Management Planning for Municipal Infrastructure. This deadline requires the identification of proposed levels of service, and an associated, comprehensive lifecycle management approach to achieving those levels of service, the details of which are outlined in this report.

The second goal is to develop a holistic approach to asset management that encompasses both core and non-core assets at the City. This includes establishing proposed levels of service that reflect the needs of the community, and are built on a foundation of achievable, fiscally responsible asset management strategies. This approach was developed using a collaborative approach to community engagement. This work solicited input from the community to guide the proposed levels of service and helped to establish an approach that can be enhanced in future refinements to the City's asset management program.

1.3 Scope

The development of this report involved the following key tasks:

- A review of the current levels of service.
- Development of a proposed levels of service framework including stakeholder and community engagement processes to better understand service delivery expectations and refine the PLOS framework.
  - Public engagement survey to define perceived service levels and gauge proposed levels of service and the public's willingness to pay.
  - Public information centre (PIC) to present financial implications of various scenarios to implement the proposed levels of service.
  - Public engagement survey following the PIC to gather broader commentary on the preferred solution.
- An updated lifecycle management strategy with detailed lifecycle activities identified to support achievement of the proposed levels of service.
- Identification of risks associated with those lifecycle activities, as well as any risks associated with the final recommended lifecycle management strategy.
- Updates to the financial strategy to identify the lowest-cost approach to achieving the proposed levels of service and evaluate funding options and strategies.

2 Levels of Service

The Levels of Service (LOS) Framework provides a structured approach to defining the quality, scope, and performance of municipal services across asset categories. It ensures that services are delivered efficiently while meeting regulatory requirements, public expectations, and financial constraints.

The LOS framework included in this report utilizes the City of Niagara Falls' 2024 LOS framework as the foundation for the proposed LOS and aligns with the City's strategic and financial goals. Since the City's 2023-2027 Strategic Plan was updated in 2023, efforts were made to ensure levels of service remained aligned with the updated vision and mission.

2.1 Community Engagement

In accordance with Ontario Regulation 588/17, Section 6, which mandates community engagement in setting levels of service, the City of Niagara Falls undertook a comprehensive and multi-faceted public consultation initiative to inform its 2025 Asset Management Plan. This process was designed to align proposed service levels with community expectations, financial realities, and regulatory requirements.

The engagement initiative began with a public survey launched on December 28, 2024, and open through January 31, 2025, designed to assess satisfaction with current service performance across the City's primary service areas. It also provided an opportunity to identify areas for improvement and evaluate the community's willingness to pay for changes to service levels. To increase participation and capture a wide range of perspectives, the City hosted six community pop-up events between January 5 and January 18, 2025, allowing residents to speak directly with City and project staff about their experiences and priorities. To further attract attention and encourage participation, the project team developed the posterboard illustrated in **Figure 2-1** below, which prominently featured a QR code directing residents to the survey.

Figure 2-1: Public Engagement Survey Posterboard

Recognizing the importance of capturing input from all communities impacted by shared infrastructure, a separate survey was developed for the Niagara District Airport, which also serves residents and businesses in the City of St. Catharines and the Town of Niagara-on-the-Lake. This expanded outreach ensured the voices of regional stakeholders were included in evaluating service levels and shaping future planning for the airport. Survey responses from those municipalities were analyzed separately to identify shared priorities or distinct needs and are summarized in **Appendix B2**.

Building on these initial findings, the City hosted a Public Information Centre (PIC) on April 16th, 2025, at the MacBain Community Centre. The event presented the proposed levels of service and financial strategies, offering attendees an opportunity to discuss trade-offs between service quality, cost, and risk.

A follow-up survey was made available from April 16 to April 30, 2025, to collect further input from those unable to attend in person.

The insights gathered from all engagement activities—detailed in **Appendix A** (survey questions), **Appendix B1** (City-wide survey results), and **Appendix B2** (Niagara District Airport survey results)—were instrumental in shaping the proposed levels of service. While the survey represents only a portion of the City's population, the feedback provided valuable guidance on community priorities, expectations, and funding acceptability.

The City considers this engagement process a critical input to its asset management planning and is committed to continuing meaningful engagement in the years ahead. Future initiatives will aim to broaden participation, explore specific service areas in greater depth, and ensure infrastructure services evolve in alignment with resident needs, financial capacity, and long-term strategic goals.

2.1.1 Key Findings Resulting from Community Engagement

The results of the City's first-ever asset management–specific community engagement campaign provided valuable insight into resident satisfaction with existing services, perceived areas for improvement, and their willingness to pay for potential enhancements. Conducted over a 34-day period between December 28, 2024, and January 31, 2025, the survey received 240 responses for the City-wide engagement and 485 responses specific to the Niagara District Airport.

A variety of engagement tactics were used to reach residents, including online promotion through the City's "Let's Talk Niagara Falls" platform, targeted social media posts, and six in-person pop-up events held across community centres and libraries in January 2025. A posterboard (see **Figure 2-1**) featuring a QR code helped direct participants to the online survey. Survey respondents were broadly representative of the community, with 90% indicating they live or own a business in Niagara Falls.

The engagement sought to understand public satisfaction with current services, priority areas for improvement, and acceptable funding strategies to support proposed levels of service. The results informed both the technical direction and public-facing recommendations of this report.

2.1.2 Community Preferences and Willingness to Pay

As shown in **Figure 2-2** when asked how they would prefer to "receive" City services if they were presented like restaurant options, 82% of respondents selected a "family diner" level of service (moderate quality and cost), compared to just 7% preferring high-cost premium service and 10% preferring minimal service levels at the lowest cost.

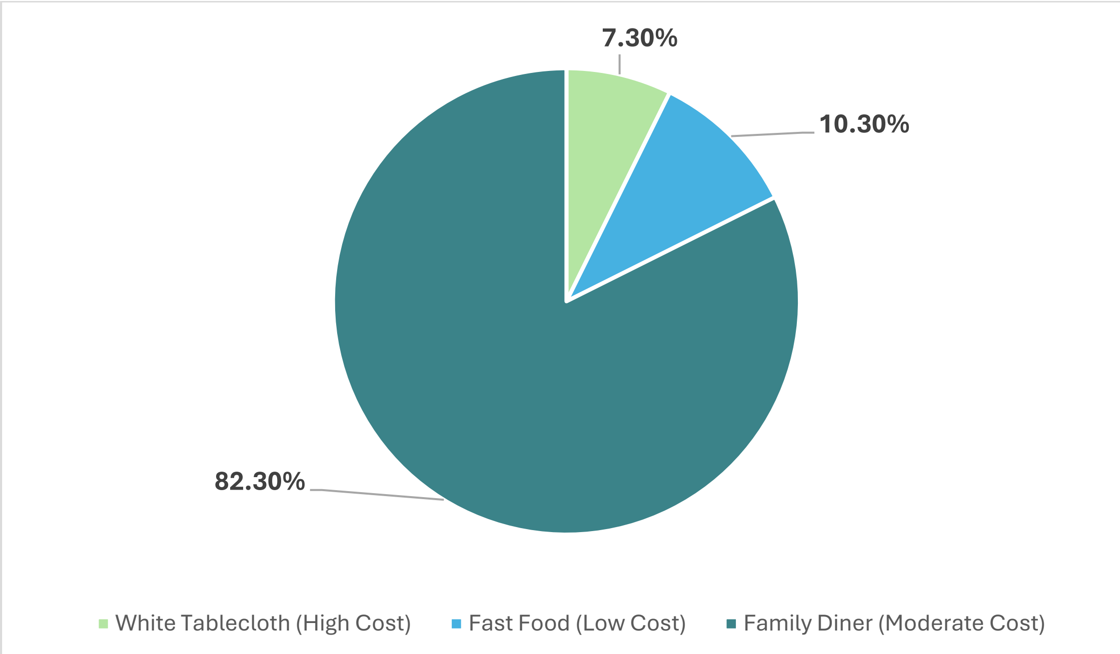


Figure 2-2: Preferred Service Level (Restaurant Analogy)

When asked about funding preferences, the responses were similarly balanced. As seen in **Figure 2-3**, 62% of respondents were willing to accept increased taxes or fees to support improved services, 42% supported this only for *core services* such as roads, water, and wastewater, and 20% supported it across *all services*. Only 18% preferred to maintain service levels without additional investment, and another 18% prioritized cost savings, even if it meant reduced service.

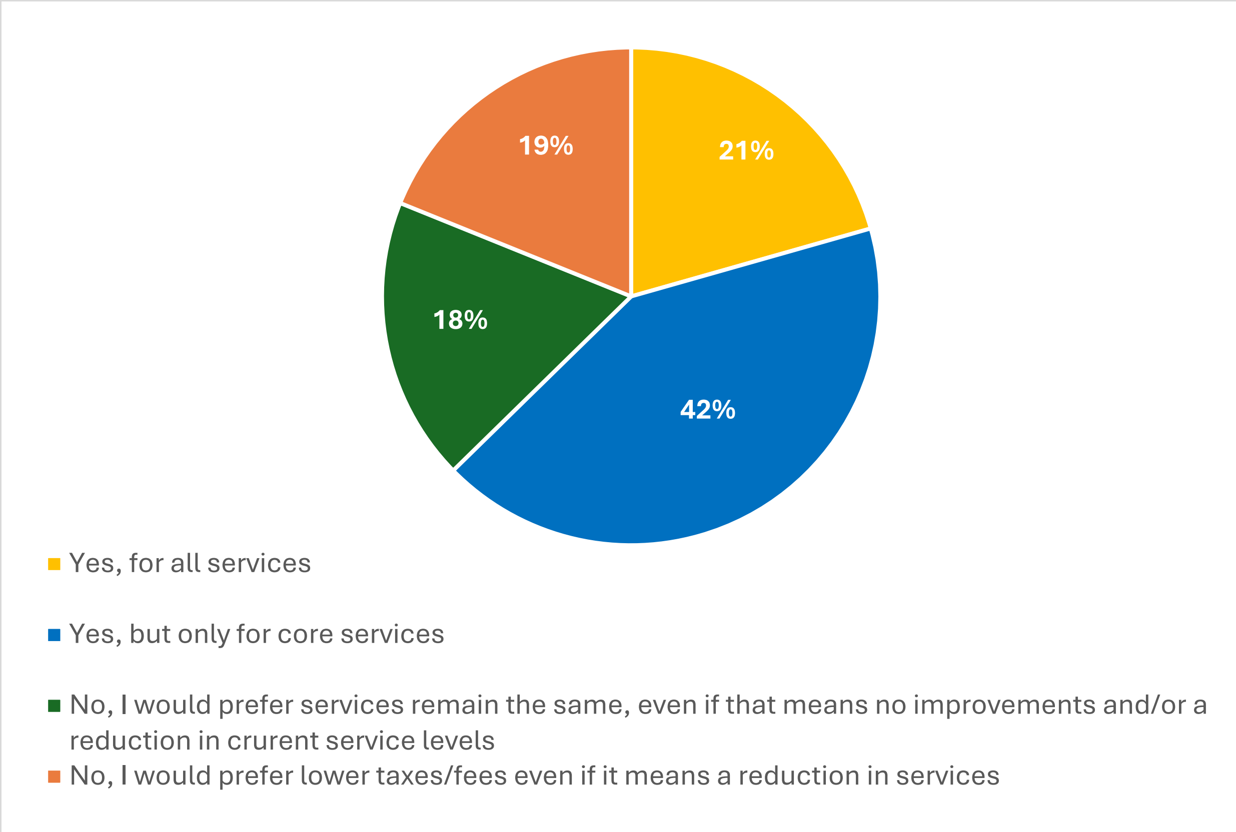


Figure 2-3: Willingness to Pay for Service Improvements

These findings demonstrate that the majority of respondents are open to reasonable financial contributions if it means sustaining or improving the City's infrastructure.

2.1.3 Service Specific Insights

To support the level of detail required for asset management planning, the survey asked respondents to rate their satisfaction with each major service, identify areas needing improvement, and indicate whether they would prefer to decrease, maintain, or improve service levels. These results are summarized in the following three visualizations:

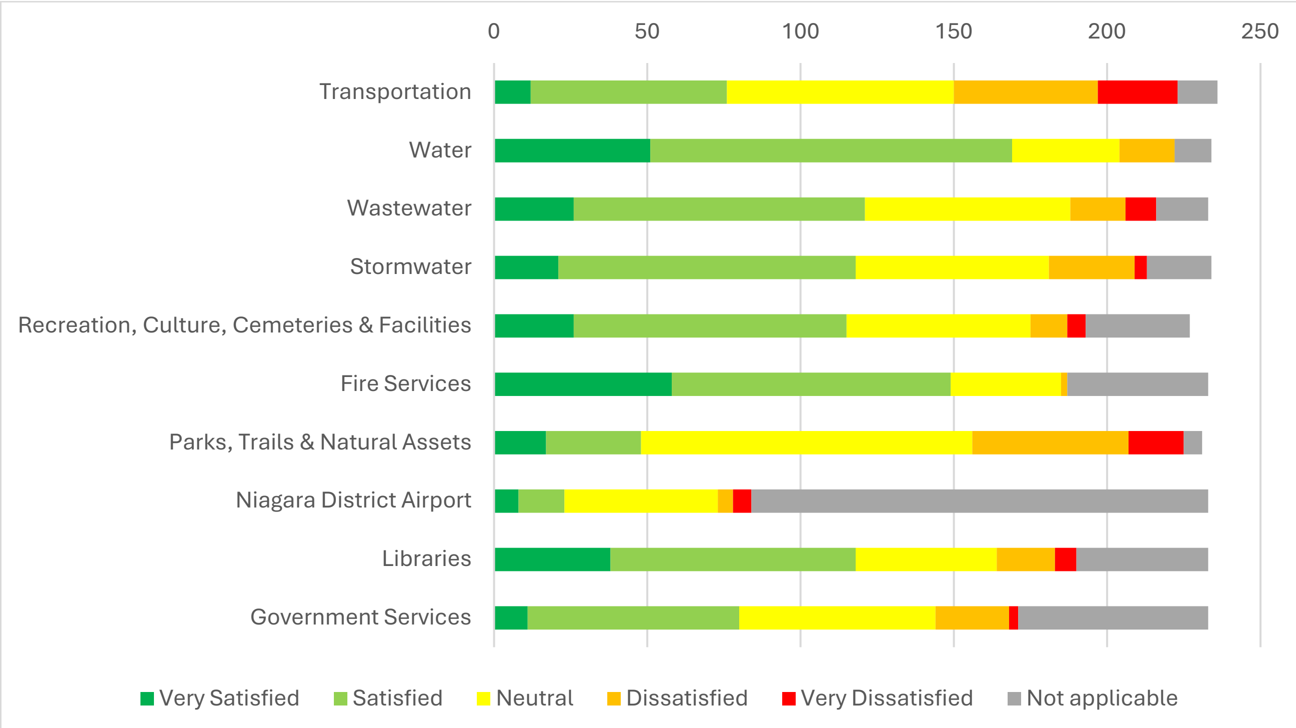


Figure 2-4: Satisfaction with Current Services

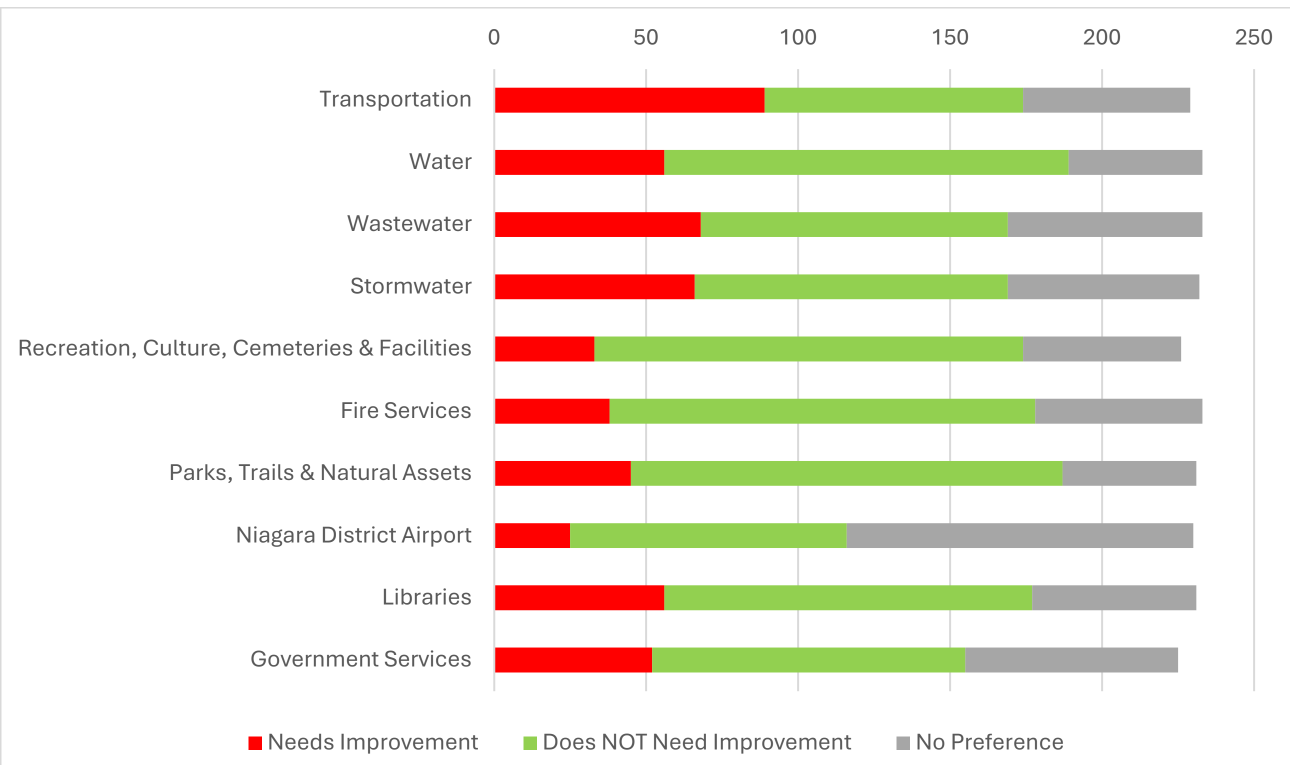


Figure 2-5: Identified Need for Service Improvements

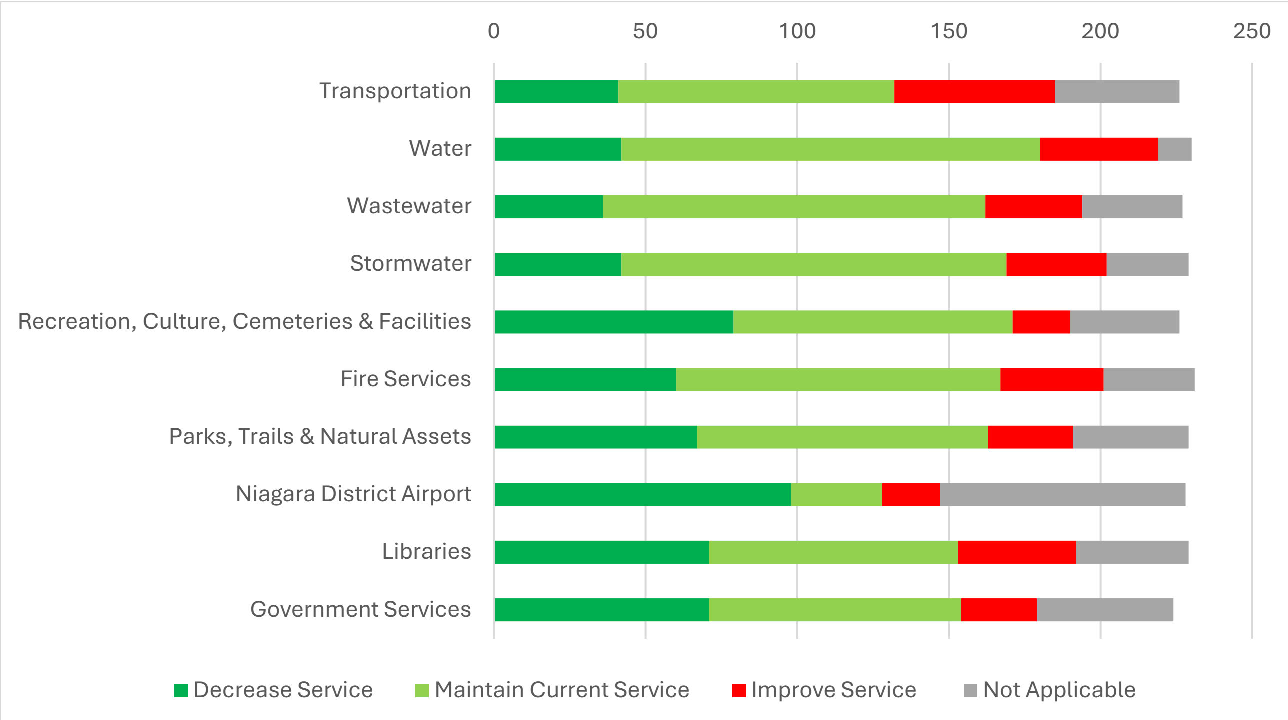


Figure 2-6: Preferences to Maintain, Improve, or Decrease Services

These figures provide an at-a-glance view of public sentiment, with transportation infrastructure—particularly paved roads, sidewalks, and snow removal—emerging as the most critical area for attention across all three graphs.

Niagara District Airport

A separate survey focused on the Niagara District Airport, which services residents and businesses in Niagara Falls, St. Catharines, and Niagara-on-the-Lake. While only 14% of respondents had used the airport in the past three years, 59% believed improvements were needed, and 62% supported increased funding to enhance services. This indicates regional recognition of the airport's importance, despite limited direct engagement.

Fire Services

Fire protection services were generally rated positively, with over 65% of respondents indicating satisfaction with current response times. Despite this, about 25% expressed support for decreasing fire service levels—potentially reflecting a desire to shift funding toward more visible or regularly used services.

Fleet

Although fleet services were not addressed as a standalone category in the community survey, they are essential to delivering core services such as road maintenance, water distribution, and emergency response. The City has incorporated operational data and staff input to define appropriate levels of service for fleet assets, ensuring they remain reliable and cost-effective. Future engagement may explore fleet as a distinct service area to capture resident perspectives more directly.

Government Services

General government services were viewed as meeting expectations, with most respondents preferring to maintain current service levels. As with libraries, about 30% of respondents supported reductions in this area—indicating a potential opportunity for cost containment or service optimization.

Libraries

Libraries received relatively strong satisfaction scores, with respondents indicating high levels of availability for services such as public computers, meeting spaces, and book rentals. However, approximately 31% of respondents supported decreasing library services, suggesting this area may be perceived as more flexible in terms of future resource allocation.

Parks, Trails, and Natural Assets

Satisfaction with parks, trails, and natural assets was high, with most respondents indicating these assets are in acceptable condition. However, some comments and results pointed to parks as the area in this group most in need of modest improvement. Similar to other non-core areas, the preference was largely to maintain existing service levels.

Recreation, Culture, Cemeteries and Facilities

Within the broader category of community amenities, recreation facilities were most frequently flagged as needing improvement. Still, most residents preferred to *maintain* service levels in this area, recognizing that these assets play a key role in quality of life. Cemeteries and municipal facilities were viewed more favourably overall.

As depicted in **Figure 2-6**, willingness to fund increased levels of service for recreation-related infrastructure was moderate, and many respondents indicated that maintaining the status quo was acceptable.

Stormwater

Stormwater services were more moderately received, with 20% of respondents indicating they had experienced road flooding at least once per year. While most residents were satisfied or neutral regarding current stormwater performance, 28% identified it as an area requiring improvement.

As with wastewater, a majority of respondents (69%) preferred to maintain or enhance stormwater services. This reflects growing awareness of the impacts of severe weather and urban drainage, particularly in light of climate-related risk.

Transportation

Transportation assets, including roads, sidewalks, and snow removal were identified as the top priority for investment and improvement. As illustrated in **Figure 2-6**, paved roads, sidewalks, and maintenance activities received the highest number of responses indicating they "need improvement." Specifically:

- 69% of respondents indicated the *condition of paved roads* needs improvement.
- 61% highlighted concerns with *road and sidewalk maintenance*.
- 50% noted the need for better *snow removal services*.

When asked to rank service priorities, transportation consistently appeared near the top. In terms of funding, 63% of respondents indicated a preference to *maintain or improve* transportation services, even if that would result in higher costs.

Wastewater

Satisfaction with wastewater services was also high, with over 50% of respondents rating service positively and 81% reporting no sewer backup experiences in the past five years. Although 29% believed improvements are still needed, there was strong support (approximately 70%) for maintaining or improving service levels.

Wastewater was consistently ranked as a mid-to-high priority in comparison with other services, reflecting its importance as a foundational municipal service, albeit less visible day-to-day than roads or water.

Water

Respondents expressed high satisfaction with water services (**Figure 2-4**), with 72% indicating they were satisfied or very satisfied. However, 24% still felt improvements were needed (**Figure 2-5)**. While residents preferred to maintain current service levels, only 38% supported a temporary water bill surcharge to fund upgrades, indicating cost sensitivity despite overall satisfaction.

2.1.4 Interpretation into Levels of Service Setting

Engagement findings have been directly integrated into the development of the City's proposed levels of service, lifecycle strategies, and financial plans presented throughout this report. Public feedback helped validate the City's preliminary technical assessments while drawing attention to specific service areas where residents expect improved performance—particularly for paved roads, sidewalk maintenance, and snow removal. This community-informed lens allowed the City to adjust its proposed levels of service to better reflect resident expectations, while ensuring strategies remain realistic, financially feasible, and technically defensible.

Importantly, the survey also revealed a readiness among a portion of the community to financially support improvements, provided these investments align with their stated priorities. Approximately 62% of respondents indicated they would support increases in taxes or fees—especially for core infrastructure services such as roads, water, and wastewater—demonstrating a willingness to maintain or enhance service levels when the value and impact are clear. This insight helped shape the development of lifecycle strategies and funding scenarios that emphasize affordability, sustainability, and transparency in capital planning.

The results of the engagement survey illustrate that transportation is the most polarized service area in terms of community sentiment. As shown in the chart in **Figure 2-4**, transportation received both the lowest satisfaction score (30.9%) among all service areas. These results strongly support the community's expressed desire to increase service levels for transportation, particularly in the condition of paved roads, sidewalk maintenance, and snow clearing. The data reinforces transportation as a top priority for lifecycle and capital investment planning in setting the City's proposed levels of service.

These findings also mirror results from the City's 2024 Budget Engagement Survey, where residents similarly emphasized the need to invest in foundational infrastructure and essential municipal services. The alignment between both surveys reinforces the reliability of this input and provides confidence that the City's asset management direction remains consistent with the broader priorities of the community. It also reflects the increasing value residents place on engaging in decisions that directly impact their daily lives and long-term quality of life.

That said, it is important to recognize the limitations of this survey. While informative and insightful, the feedback represents a relatively small sample size and may not reflect the full diversity of voices across the City. As such, the results should be viewed as an important initial step—providing clear direction and validation of technical work to date—but not as a substitute for broader or more targeted consultation. Prior to implementing any major adjustments to levels of service, the City will pursue further outreach to engage more residents, explore service-specific trade-offs, and ensure that future decisions are supported by a representative cross-section of the community.

Through this iterative and inclusive approach, the City remains committed to aligning its infrastructure investments with resident needs, fiscal responsibility, and long-term sustainability. Community feedback will continue to serve as a foundational input in how the City defines, monitors, and funds the delivery of municipal services now and into the future.

2.1.5 Community Engagement on Proposed Levels of Service Scenarios

To further involve the community in establishing meaningful and achievable levels of service, the City hosted a PIC on April 16, 2025, at the MacBain Community Centre. The event aimed to present the City's proposed LOS and financial strategy, explain the trade-offs between cost and service quality, and solicit community input on preferred service levels—particularly for the transportation asset class, which had been identified in earlier survey phases as a top priority for improvement.

The PIC featured a series of interactive poster boards (see **Appendix C**) that walked residents through:

- The current performance of the City's road and sidewalk infrastructure,
- The proposed levels of service and associated targets,
- A detailed financial analysis of various LOS adjustment scenarios,

- The projected tax or fee impacts per household (framed as equivalent "coffees per month" for accessibility).

This transparent presentation approach allowed residents to better understand the relationship between service quality, lifecycle investment, and financial sustainability. The PIC was followed by an online survey (April 16–25, 2025) through the City's Let's Talk Niagara Falls platform, enabling broader participation.

To facilitate informed decision-making, eleven (11) potential LOS scenarios were presented, ranging from a 1% decrease in service levels (Option #10) to an aggressive 20% increase across all road classes (Option #3). Each scenario included:

- Target condition ratings for collector, arterial, and local roads (e.g., percentage in "good or better" condition),
- Annual investment requirements,
- Cost per household per month,
- Equivalent "coffee per month" comparison.

For example:

- **Option #1** proposed a 5% improvement in road condition across all roadway classes, at an additional annual cost of $3.6 million, equating to approximately $38.10 per household per year, or about 1.5 coffees per month.
- **Option #3,** the most aggressive scenario, involved a 20% improvement across all road types. This option carried a significantly higher cost of $14.4 million annually, or $152.66 per household, which is roughly 7 coffees per month.
- **Option #10** represented a reduction in service levels and would result in an annual savings of approximately $729,100. However, due to the increased long-term risk and service impacts, this was presented as a last-resort mitigation strategy.
- **Option #11** introduced a modest 2.2% increase in road conditions across all paved classes. This scenario would require an additional $1.58 million per year, or about $47.60 per household annually, equivalent to just under 3 coffees per month.

The follow-up online survey received 42 complete responses, with the most preferred option being:

- **Option #2:** A 10% increase in spending across all road types, supported by 23.81% of respondents (10 people).
  This was followed by:
- **Option #7:** Bring all road classes to 65% in "good or better" condition, with 16.67% support.
- **Option #8:** A modest 1% increase across all road types, supported by 14.29% of participants.

Only 9.52% of respondents (4 people) supported Option #10, which proposed a reduction in LOS, confirming that the majority of residents were not in favour of deferring road maintenance, even at a cost savings.

These results indicated a clear community preference to invest in improving the City's road infrastructure, rather than maintaining the status quo or reducing service. The feedback also highlighted public support for measured, incremental investment strategies that align with both infrastructure needs and household affordability.

This second round of community feedback played a direct role in finalizing the City's proposed LOS and financial strategy for road assets. The City selected a blended investment approach that aligns with the preferred scenarios (Options #1 and #8), targeting moderate improvements in road condition while maintaining financial feasibility.

By incorporating these public insights, the City ensured its LOS targets for transportation are:

- Grounded in public priorities and expectations,
- Technically and financially achievable,
- Compliant with Ontario Regulation 588/17, which mandates public engagement in setting service levels.

This approach strengthens transparency, supports long-term sustainability, and aligns with Niagara Falls' broader infrastructure planning goals.

2.2 Defining Levels of Service

Through a series of targeted workshops with various service areas—including transportation, water, wastewater, stormwater, recreation, culture, cemeteries and facilities, fire services, parks, trails and natural assets, the Niagara District Airport, libraries, and general government services—we engaged City staff and subject matter experts with in-depth knowledge of these assets and their associated data. These interactive sessions served as a platform to review the existing levels of service (LOS) framework and evaluate its effectiveness in guiding asset management and service delivery.

Our discussions focused on assessing the applicability and achievability of existing LOS metrics, identifying gaps, and exploring potential new or revised measures that better reflected asset condition, service demand, and operational realities. By leveraging the expertise of City staff who work directly with these assets, we ensured that all proposed changes were both technically feasible and aligned with the City's long-term strategic objectives.

This process not only refined the LOS framework but also reinforced an asset-driven approach to decision-making—ensuring service levels were informed by real-world data, operational constraints, and community expectations.

Following the workshops, we conducted a thorough analysis of both the existing and proposed LOS measures. This evaluation was essential in confirming that any suggested modifications were practical, meaningful, and supported by the City's current ability to collect, analyze, and apply the data effectively.

Each LOS measure was evaluated against several key criteria: the City's ability to collect the necessary data; the effort required to do so at the needed level of detail; the accuracy, traceability, and consistency of data collection; and the frequency with which updates would be required based on asset type and service demand. In addition to technical feasibility, we assessed the local relevance of each measure, its alignment with strategic goals, and the balance between reporting effort and decision-making value.

We also considered the City's available resources—tools, personnel, and systems—to consistently support each measure. Where appropriate, we identified future-oriented metrics that, while not currently feasible, would offer value as the City's data collection and management capabilities evolve.

This comprehensive review enabled further refinement of the LOS framework, ensuring the selected measures are actionable, relevant, and realistic—supporting the City's efforts to optimize asset management practices and service delivery. A summary of the resulting LOS measures is provided in **Appendix D**.

Ultimately, these discussions led to the development of a practical and forward-looking set of LOS measures that support evidence-based planning and investment decisions—enhancing the City's ability to sustain and improve the services delivered to residents and stakeholders.

2.3 Current Levels of Service

To quantify the current performance for each defined LOS, the City of Niagara Falls team conducted a structured assessment of available data sources across all asset categories. This process involved reviewing and validating historical and real-time asset data to establish baseline performance values for each LOS measure. The team referenced a variety of data sources, depending on the specific asset type and service area, ensuring that each performance metric was grounded in accurate, reliable, and repeatable data collection methodologies.

For example, in assessing the LOS for facilities, the team utilized existing Building Condition Assessments (BCAs) to determine the Facility Condition Index (FCI). This provided a quantifiable measure of the percentage of facilities categorized as being in fair or better condition, aligning with industry standards for asset condition reporting. Similarly, for transportation infrastructure, road and bridge condition ratings were derived from the City's pavement condition index (PCI) and Ontario Structure Inspection Manual (OSIM) bridge condition data, ensuring that the performance metrics accurately reflected the state of the assets.

For water, wastewater, and stormwater infrastructure, the team analyzed asset inspection records, CCTV sewer condition assessments, and failure history data to determine key service levels such as water main break rates, sewer backup occurrences, and stormwater system capacity assessments. In the parks and recreation sector, service levels were evaluated based on factors such as the percentage of parks meeting accessibility standards and the frequency of maintenance activities recorded in the City's asset management system. Additionally, in fire services, station response times and coverage areas were assessed against regulatory standards to establish the LOS baseline.

This detailed approach was applied systematically across all asset types based on the LOS measures, ensuring that each LOS measure was backed by verifiable data, properly sourced from operational records, condition assessments, maintenance logs, and strategic planning documents. By standardizing data collection and validation, the team ensured that the current performance values established for each LOS metric provided an accurate and defensible representation of the City's existing service levels.

Table 2-1 below details the measures, current experienced performance and annual cost of achieving the current level of service, grouped by service area. It is assumed the current performance is being met through the existing programs in place. The values in this table are a snapshot in time and each measure will be monitored, measured and updated on a regular schedule. This information can be used to understand how each service area is currently performing and then compared to the proposed levels of service identified in **Table 2-2.**

Table 2-1: Current levels of service measures and performance

Service Area	Asset Type	Technical Levels of Service (TLOS) Measure	Current Performance
Airport	Airport	% of airport assets in fair or better condition	78.1%
Airport	Airport	% of annual audits that meet regulatory requirements	100.0%
Fire Services	Fire	Average time from dispatch to time on scene (standard calls) for full time stations	0:05:40
Fire Services	Fire	Average time from dispatch to time on scene (standard calls) for volunteer stations	0:11:28
Fire Services	Fire	% of vehicles and equipment in fair or better condition	68.4%
Fire Services	Fire	% of stations in fair or better condition	100.0%
Fleet	Fleet	% of equipment that is in fair or better condition	38.3%
Fleet	Fleet	% of fleet that is in fair or better condition	42.9%
Fleet	Fleet	% Commercial vehicle operator's registration (CVOR) inspections completed on time	100.0%
Fleet	Fleet	# of snowplows per centreline-km	1 snowplow per 37 centreline-km
Fleet	Fleet	# of sidewalk clearing plows by km of sidewalk	1 snowplow per 54 km
Fleet	Fleet	Ratio of fleet vehicles to population served	1 vehicle per 565 population
Fleet	Fleet	Ratio of electric vehicle charging stations to population served	1/13,488
Government Services	Information Systems	% of IT assets that are within the service life	30.3%
Libraries	Libraries	% of library assets in fair or better condition	61.5%
Libraries	Libraries	Ratio of libraries to population served	1 library per 31,472 population
Parks, Trails and Natural Assets	Natural Assets	# of trees planted annually	316
Parks, Trails and Natural Assets	Parks	% of playgrounds that are AODA compliant	66.0%
Parks, Trails and Natural Assets	Parks	% of parks in fair or better condition	92%
Parks, Trails and Natural Assets	Parks	# of hectares of park land available to the public	279.23
Parks, Trails and Natural Assets	Trails	# of kms of walking and cycling trail	44.55

Service Area	Asset Type	Technical Levels of Service (TLOS) Measure	Current Performance
Recreation, Culture, Cemeteries and Facilities	Cemeteries	% of available lots	9.8%
Recreation, Culture, Cemeteries and Facilities	Cemeteries	% of niches available	51.9%
Recreation, Culture, Cemeteries and Facilities	Culture	# of memorial trees	13
Recreation, Culture, Cemeteries and Facilities	Facilities	% of facilities in fair or better condition	85.2%
Recreation, Culture, Cemeteries and Facilities	Facilities	% of facility structures within the inspection program that are inspected within the City's 5-year program	100%
Recreation, Culture, Cemeteries and Facilities	Facilities	Ratio of recreation centres to population served	1 recreation centre per 31,472 population
Stormwater	Stormwater Facilities	% of stormwater management facilities inspected within the City's 5-year program	100.0%
Stormwater	Stormwater Network	% of properties resilient to a 100-year storm	60.0%
Stormwater	Stormwater Network	% of stormwater management facilities in fair or better condition	63.1%
Stormwater	Stormwater Network	% of stormwater management trunk system resilient to a 5-year storm	90.0%
Stormwater	Stormwater Network	% of storm sewers and appurtenances in fair or better condition	94.7%
Transportation	Bridges & Culverts	% of bridges and culverts in the City with loading or dimensional restrictions.	0.0%
Transportation	Bridges & Culverts	% of bridges in fair or better condition	84.5%
Transportation	Bridges & Culverts	% of bridges and culverts inspected as per OSIM requirements	88.0%
Transportation	Bridges & Culverts	% of culverts in fair or better condition	51.8%
Transportation	Roads & Related	% of collector roadway in good or better condition	47.7%
Transportation	Roads & Related	% of arterial roadway in good or better condition	59.1%
Transportation	Roads & Related	% of local roadway in good or better condition	58.9%
Transportation	Roads & Related	% of unpaved surface condition in fair or better condition	9.8%
Transportation	Roads & Related	# of lane-kms of paved arterial roads as a proportion of km2 of City land area	1.02
Transportation	Roads & Related	# of lane-kms of paved collector roads as a proportion of km2 of City land area	1.73
Transportation	Roads & Related	# of lane-kms of paved local roads as a proportion of km2 of City land area	1.73

Service Area	Asset Type	Technical Levels of Service (TLOS) Measure	Current Performance
Transportation	Roads Ops (Transportation)	% of traffic signals in fair or better condition	40.0%
Transportation	Roads Ops (Transportation)	% of streetlights converted to LED -Standard -Decorative	82.5%
Transportation	Sidewalk	% of arterial and collector roads with sidewalk on both sides	53.9%
Transportation	Sidewalk	% of local roads with sidewalk on at least one side	86.5%
Transportation	Sidewalk	# of sidewalk trip and fall claims per year	12
Transportation	Traffic & Parking	% of parking lots in fair or better condition	64.8%
Transportation	Traffic & Parking	% of annual inspections for regulatory and warning signs with retro reflectivity requirements	100.0%
Wastewater	Sewer Network	% of linear sanitary assets inspected annually	6.8%
Wastewater	Sewer Network	% network with combined sewer	26.0%
Wastewater	Sewer Network	% of sanitary sewers and appurtenances in fair or better condition	83.1%
Wastewater	Sewer Network	% of properties connected to the City wastewater system within the Urban Boundary.	99.9%
Water	Water Network	# of connection-days per year where a boil water advisory notice is in place.	0
Water	Water Network	% water network that meets Peak Hour Demand Minimum Operating Pressure of 40 PSI	1.0%
Water	Water Network	% of local watermain greater than 4" (100mm)	98.0%
Water	Water Network	% water network that meets Normal (Average Day / Maximum Day / Minimum Hour) Operating Pressure of 40-100 PSI	26.0%
Water	Water Network	% of watermains and appurtenances in fair or better condition	71.2%
Water	Water Network	% of properties within the urban boundary where fire flow is available.	98.0%
Water	Water Network	% of properties within the urban boundary that are connected to the City's water system.	98.0%
Water	Water Network	% of sampling results that meet Drinking Water License and legislated limits	100.0%
Water	Water Network	# of water quality complaints due to discoloured water	25
Water	Water Network	# of watermain breaks per year.	57

2.4 Proposed Levels of Service

As required under Ontario Regulation 588/17, Section 6, municipalities must establish Proposed Levels of Service (PLOS) that are measurable, financially sustainable, and aligned with community expectations. While Current Levels of Service (CLOS) provide a snapshot of service performance at a given point in time, the PLOS set forward-looking performance targets that reflect what the City aims to achieve over the planning horizon. Together, these components of the LOS framework help the City assess how well current service delivery aligns with public expectations and determine where adjustments may be needed to maintain, improve, or strategically reduce service levels.

To define the PLOS, the City combined community engagement insights with input from subject matter experts across all key service areas. Levels of service cannot be defined in isolation—they must reflect both community needs and the technical and financial realities of managing municipal infrastructure. The engagement process, as detailed earlier, provided critical context on public satisfaction, willingness to pay, and service priorities, forming a foundational layer for PLOS development.

Building on this foundation, a series of PLOS-focused workshops were held with internal stakeholders representing each service area, including transportation, water, wastewater, stormwater, parks and recreation, facilities, and more. These sessions were designed to collaboratively evaluate the feasibility of achieving new targets and to ensure that each proposed measure was achievable, repeatable, financially responsible, and aligned with the City's strategic objectives.

To support informed decision-making, the project team conducted a financial impact analysis for each LOS measure. This involved modeling the estimated cost of meeting various performance targets. For example, increasing the LOS target for the City's bridges by 10% was projected to cost an additional $8.9 million annually, over and above current maintenance spending. Similar analyses were completed across all asset classes to understand the trade-offs between service level enhancements and financial capacity.

During the workshops, these cost projections were reviewed alongside the community engagement results and the City's long-term infrastructure goals. By weighing strategic priorities, affordability, asset condition, and public input, the City identified PLOS targets that are both meaningful and sustainable. The final PLOS framework (see Table 3) represents a balanced, data-informed approach to service delivery that reflects operational realities and community-driven priorities.

To further validate the alignment with public expectations, the City modeled survey responses against the proposed LOS measures. This analysis identified which service areas residents preferred to maintain, increase, or decrease, and assessed their willingness to pay for potential enhancements. The results—summarized in Table 4—provided an additional layer of evidence to support the selected service level targets and ensure public perspectives were directly integrated into the final recommendations.

2.4.1 Financial Strategy Alignment

Following the establishment of the proposed LOS, the project team developed a financial strategy to determine the long-term affordability of these targets. This involved modeling lifecycle costs associated with maintaining or improving asset performance under the proposed LOS, and identifying potential funding gaps or constraints.

This approach ensured that the final LOS commitments were not only aspirational but grounded in financial realism, satisfying the regulatory requirement to demonstrate how LOS targets will be supported over time. The resulting recommendations strike a careful balance between service excellence and fiscal responsibility, ensuring the City remains compliant with O. Reg. 588/17, Section 6 while continuing to meet the needs of residents and stakeholders.

The final proposed LOS measures, their performance targets, and associated lifecycle costs are outlined in **Table 2-2**. This table groups each technical measure by service area and identifies whether the proposed LOS reflects a decision to increase, maintain, or decrease the current service level. It also presents the anticipated annual cost of achieving and sustaining each measure over the long term.

Table 2-2: Proposed levels of service and the annual cost to meet that PLOS

Service Area	Asset Type	Technical Levels of Service (TLOS) Measure	Current Performance	Increase, Maintain, or Decrease	Proposed LOS	PLOS Justification
Airport	Airport	% of airport assets in fair or better condition	78.1%	Decrease LOS	68%	Balancing operational safety requirements with fiscal constraints. Acceptable condition level for low-traffic municipal airport operations.
Airport	Airport	% of annual audits that meet regulatory requirements	100.0%	Maintain LOS	100%	Regulatory compliance is mandatory for airport operations. Non-compliance would result in operational restrictions or closure.
Fire Services	Fire	Average time from dispatch to time on scene (standard calls) for full time stations	0:05:40	Maintain LOS	0:05:40	Current response time meets NFPA standards for urban areas. Maintaining this level ensures adequate emergency response for public safety.
Fire Services	Fire	Average time from dispatch to time on scene (standard calls) for volunteer stations	0:11:28	Maintain LOS	0:11:28	Response time reflects volunteer station operational model. Current performance is acceptable for rural/suburban coverage areas.
Fire Services	Fire	% of vehicles and equipment in fair or better condition	68.4%	Increase LOS	70%	Small improvement needed to ensure reliable emergency response capability. Enhanced equipment condition reduces service interruptions during critical incidents.
Fire Services	Fire	% of stations in fair or better condition	100.0%	Maintain LOS	100%	Fire stations must remain fully operational for emergency response. Any facility deterioration could compromise public safety and response capability.
Fleet	Fleet	% of equipment that is in fair or better condition	38.3%	Increase LOS	60%	Significant improvement required to reduce operational downtime and maintenance costs. Higher equipment reliability supports all municipal service delivery.
Fleet	Fleet	% of fleet that is in fair or better condition	42.9%	Increase LOS	50%	Improved vehicle condition reduces service disruptions and repair costs. Target represents reasonable balance between capital investment and operational efficiency.
Fleet	Fleet	% Commercial vehicle operator's registration (CVOR) inspections completed on time	100.0%	Maintain LOS	100%	Regulatory requirement for commercial vehicle operations. Non-compliance results in penalties and operational restrictions.
Fleet	Fleet	# of snowplows per centreline-km	1 snowplow per 37 centreline-km	Maintain LOS	1 snowplow per 37 centreline-km	Current ratio provides adequate winter road maintenance coverage. Maintaining this level ensures reasonable response times for snow clearing operations.
Fleet	Fleet	# of sidewalk clearing plows by km of sidewalk	1 snowplow per 54 km	Maintain LOS	1 snowplow per 54 km	Existing equipment allocation supports accessibility requirements for winter sidewalk maintenance. Current ratio balances service delivery with equipment investment.
Fleet	Fleet	Ratio of fleet vehicles to population served	1 vehicle per 565 population	Maintain LOS	1 vehicle per 565 population	Current vehicle allocation supports municipal service delivery requirements. Ratio reflects appropriate fleet sizing for community needs and service levels.
Fleet	Fleet	Ratio of electric vehicle charging stations to population served	1 vehicle per 13,488 population	Maintain LOS	1 vehicle per 13,488 population	Current charging infrastructure supports existing fleet electrification level. Maintaining ratio pending broader EV adoption strategy development.
Government Services	Information Systems	% of IT assets that are within the service life	30.3%	Increase LOS	60%	Significant improvement required to reduce system failures and security vulnerabilities. Newer IT infrastructure supports efficient municipal operations and service delivery.
Libraries	Libraries	% of library assets in fair or better condition	61.5%	Maintain LOS	61.5%	Current condition supports core library services and programming. Maintaining this level provides stable community access to library resources and facilities.
Libraries	Libraries	Ratio of libraries to population served	1 library per 31,472 population	Increase LOS	1 library per 30,842 population	Minor improvement supports growing community needs for library services. Enhanced access ratio improves service equity across the municipality.
Parks, Trails and Natural Assets	Natural Assets	# of trees planted annually	316	Increase LOS	348	Increased tree planting supports urban forest canopy goals and environmental sustainability. Higher planting rate helps offset tree loss and climate adaptation needs.

Service Area	Asset Type	Technical Levels of Service (TLOS) Measure	Current Performance	Increase, Maintain, or Decrease	Proposed LOS	PLOS Justification
Parks, Trails and Natural Assets	Parks	% of playgrounds that are AODA compliant	66.0%	Increase LOS	76%	Improved accessibility compliance ensures inclusive recreation opportunities. Target reflects phased approach to meeting full accessibility requirements.
Parks, Trails and Natural Assets	Parks	% of parks in fair or better condition	92%	Maintain LOS	92%	High condition level supports community recreation and property values. Maintaining this standard ensures continued quality of parks and open spaces.
Parks, Trails and Natural Assets	Parks	# of hectares of park land available to the public	279.23	Maintain LOS	279.23	Current parkland allocation meets community recreation needs. Maintaining existing inventory while focusing on facility improvements and programming.
Parks, Trails and Natural Assets	Trails	# of kms of walking and cycling trail	44.55	Increase LOS	45.89	Modest expansion supports active transportation and recreation goals. Additional trail connections improve network connectivity and accessibility.
Recreation, Culture, Cemeteries and Facilities	Cemeteries	% of available lots	9.8%	Increase LOS	25%	Increased lot availability ensures adequate burial capacity for community needs. Higher inventory level provides operational flexibility and service security.
Recreation, Culture, Cemeteries and Facilities	Cemeteries	% of niches available	51.9%	Maintain LOS	52%	Current niche availability meets demand for cremation interment options. Maintaining adequate inventory supports diverse community preferences.
Recreation, Culture, Cemeteries and Facilities	Culture	# of memorial trees	13	Maintain LOS	13	Current memorial tree program meets community demand for commemorative options. Maintaining existing level supports cultural and remembrance services.
Recreation, Culture, Cemeteries and Facilities	Facilities	% of facilities in fair or better condition	85.2%	Maintain LOS	85%	High facility condition supports quality recreation programming and user safety. Maintaining this level ensures continued community access to recreation services.
Recreation, Culture, Cemeteries and Facilities	Facilities	% of facility structures within the inspection program that are inspected within the City's 5-year program	100%	Maintain LOS	100%	Regular inspection program ensures facility safety and regulatory compliance. Complete inspection coverage is essential for public safety and liability management.
Recreation, Culture, Cemeteries and Facilities	Facilities	Ratio of recreation centres to population served	1 recreation centre per 31,472 population	Maintain LOS	1 recreation centre per 31,472 population	Current ratio provides adequate recreation facility access for community size. Maintaining this level supports diverse programming and community health initiatives.
Stormwater	Stormwater Facilities	% of stormwater management facilities inspected within the City's 5-year program	100.0%	Maintain LOS	100%	Complete inspection program ensures regulatory compliance and system reliability. Full inspection coverage prevents system failures and environmental impacts.
Stormwater	Stormwater Network	% of properties resilient to a 100-year storm	60.0%	Maintain LOS	60%	Current resilience level balances flood protection with infrastructure investment costs. Maintaining this level provides reasonable storm event protection for most properties.
Stormwater	Stormwater Network	% of stormwater management facilities in fair or better condition	63.1%	Maintain LOS	63%	Current condition level supports system functionality during storm events. Maintaining this standard ensures adequate stormwater management capacity and environmental protection.
Stormwater	Stormwater Network	% of stormwater management trunk system resilient to a 5-year storm	90.0%	Maintain LOS	90%	High resilience level for trunk system protects against frequent storm events. Maintaining this standard prevents widespread flooding and infrastructure damage.
Stormwater	Stormwater Network	% of storm sewers and appurtenances in fair or better condition	94.7%	Maintain LOS	95%	High condition level ensures reliable stormwater conveyance and flood prevention. Minor improvement target reflects ongoing asset renewal and system optimization.
Transportation	Bridges & Culverts	% of bridges and culverts in the City with loading or dimensional restrictions.	0.0%	Maintain LOS	0%	No weight restrictions ensure full transportation network accessibility. Maintaining unrestricted access supports economic activity and emergency vehicle operations.
Transportation	Bridges & Culverts	% of bridges in fair or better condition	84.5%	Maintain LOS	84%	Current bridge condition supports safe vehicle and pedestrian crossing. Maintaining this level ensures continued transportation network connectivity and public safety.

Service Area	Asset Type	Technical Levels of Service (TLOS) Measure	Current Performance	Increase, Maintain, or Decrease	Proposed LOS	PLOS Justification
Transportation	Bridges & Culverts	% of bridges and culverts inspected as per OSIM requirements	88.0%	Increase LOS	100%	Full compliance with provincial inspection requirements ensures structural safety. Complete inspection coverage is mandatory for transportation infrastructure management.
Transportation	Bridges & Culverts	% of culverts in fair or better condition	51.8%	Maintain LOS	52%	Current culvert condition supports drainage and road integrity functions. Maintaining this level provides adequate infrastructure performance while managing replacement costs.
Transportation	Roads & Related	% of collector roadway in good or better condition	47.7%	Increase LOS	50%	Improved collector road condition supports traffic flow and reduces maintenance costs. Better road surface condition enhances driver safety and vehicle operating efficiency.
Transportation	Roads & Related	% of arterial roadway in good or better condition	59.1%	Increase LOS	61%	Enhanced arterial condition supports major traffic corridors and economic activity. Higher road quality reduces user costs and supports regional connectivity.
Transportation	Roads & Related	% of local roadway in good or better condition	58.9%	Increase LOS	61%	Improved local road condition enhances neighborhood accessibility and property values. Better surface quality reduces vehicle operating costs and resident complaints.
Transportation	Roads & Related	% of unpaved surface condition in fair or better condition	9.8%	Increase LOS	10%	Minor improvement in unpaved road condition supports rural area accessibility. Higher maintenance standard reduces dust and improves all-weather access.
Transportation	Roads & Related	# of lane-kms of paved arterial roads as a proportion of km2 of City land area	1.02	Maintain LOS	1.00	Current arterial road density supports regional connectivity and traffic distribution. Maintaining this ratio provides adequate major route coverage for community size.
Transportation	Roads & Related	# of lane-kms of paved collector roads as a proportion of km2 of City land area	1.73	Maintain LOS	1.70	Existing collector road network supports local traffic distribution and connectivity. Current density provides appropriate balance between access and infrastructure costs.
Transportation	Roads & Related	# of lane-kms of paved local roads as a proportion of km2 of City land area	1.73	Maintain LOS	1.70	Local road network density supports neighborhood access and service delivery. Maintaining current level provides adequate connectivity for residential and commercial areas.
Transportation	Roads Ops (Transportation)	% of traffic signals in fair or better condition	40.0%	Increase LOS	60%	Improved signal condition reduces intersection delays and enhances traffic safety. Higher reliability level decreases maintenance calls and improves traffic flow efficiency.
Transportation	Roads Ops (Transportation)	% of streetlights converted to LED -Standard -Decorative	82.5%	Increase LOS	100%	Complete LED conversion reduces energy costs and maintenance requirements. Full conversion achieves maximum operational efficiency and environmental benefits.
Transportation	Sidewalk	% of arterial and collector roads with sidewalk on both sides	53.9%	Maintain LOS	54%	Current sidewalk coverage supports pedestrian safety on major routes. Maintaining this level balances pedestrian accessibility with infrastructure investment priorities.
Transportation	Sidewalk	% of local roads with sidewalk on at least one side	86.5%	Maintain LOS	87%	High sidewalk coverage ensures pedestrian connectivity throughout neighborhoods. Maintaining this level supports walkability and accessibility for all residents.
Transportation	Sidewalk	# of sidewalk trip and fall claims per year	12	Increase LOS	10	Reduced claims target reflects improved sidewalk maintenance and risk management. Lower incident rate enhances pedestrian safety and reduces municipal liability exposure.
Transportation	Traffic & Parking	% of parking lots in fair or better condition	64.8%	Increase LOS	68%	Improved parking lot condition supports downtown vitality and user experience. Higher maintenance standard reduces vehicle damage and enhances area attractiveness.
Transportation	Traffic & Parking	% of annual inspections for regulatory and warning signs with retro reflectivity requirements	100.0%	Maintain LOS	100%	Complete sign inspection ensures traffic safety and regulatory compliance. Full inspection coverage is essential for driver safety and legal requirements.

Service Area	Asset Type	Technical Levels of Service (TLOS) Measure	Current Performance	Increase, Maintain, or Decrease	Proposed LOS	PLOS Justification
Wastewater	Sewer Network	% of linear sanitary assets inspected annually	6.8%	Maintain LOS	7%	Current inspection rate supports proactive system maintenance and regulatory compliance. Annual inspection level identifies issues before system failures occur.
Wastewater	Sewer Network	% network with combined sewer	26.0%	Maintain LOS	26%	Existing combined sewer proportion reflects historical infrastructure development. Maintaining current level while managing system performance during wet weather events.
Wastewater	Sewer Network	% of sanitary sewers and appurtenances in fair or better condition	83.1%	Maintain LOS	83%	High system condition ensures reliable wastewater conveyance and environmental protection. Maintaining this level prevents service disruptions and regulatory violations.
Wastewater	Sewer Network	% of properties connected to the City wastewater system within the Urban Boundary.	99.9%	Maintain LOS	100%	Near-universal connection supports public health and environmental protection goals. Complete urban area coverage ensures proper wastewater treatment and disposal.
Water	Water Network	# of connection-days per year where a boil water advisory notice is in place.	0	Maintain LOS	0	Zero boil water advisories ensures safe drinking water supply at all times. Maintaining this standard protects public health and regulatory compliance.
Water	Water Network	% water network that meets Peak Hour Demand Minimum Operating Pressure of 40 PSI	99%	Maintain LOS	99%	Limited areas with minimum pressure reflect system capacity constraints during peak demand. Current level balances service delivery with infrastructure investment requirements.
Water	Water Network	% of local watermain greater than 4" (100mm)	98%	Maintain LOS	98%	High percentage of adequate-sized mains supports fire protection and service reliability. Maintaining this level ensures sufficient system capacity for community needs.
Water	Water Network	% water network that meets Normal (Average Day / Maximum Day / Minimum Hour) Operating Pressure of 40-100 PSI	74%	Maintain LOS	74%	Current pressure performance reflects system design and topographic constraints. Maintaining existing level while managing system pressure through operational practices.
Water	Water Network	% of watermains and appurtenances in fair or better condition	71.2%	Maintain LOS	71%	Current system condition supports reliable water delivery and service continuity. Maintaining this level balances asset renewal with service reliability requirements.
Water	Water Network	% of properties within the urban boundary where fire flow is available.	98.0%	Maintain LOS	98%	High fire flow coverage supports fire protection and insurance requirements. Maintaining this level ensures adequate emergency response capability for most properties.
Water	Water Network	% of properties within the urban boundary that are connected to the City's water system.	98.0%	Maintain LOS	98%	Near-universal connection supports public health and development objectives. High connection rate ensures safe water access and supports community growth.
Water	Water Network	% of sampling results that meet Drinking Water License and legislated limits	100.0%	Maintain LOS	100%	Full regulatory compliance is mandatory for public health protection. Complete compliance ensures safe drinking water and prevents regulatory enforcement actions.
Water	Water Network	# of water quality complaints due to discoloured water	25	Increase LOS	19	Reduced complaints target reflects improved system flushing and maintenance practices. Lower complaint level enhances customer satisfaction and indicates better water quality management.
Water	Water Network	# of watermain breaks per year.	57	Increase LOS	43	Reduced break frequency target reflects improved asset management and replacement strategies. Lower break rate reduces service disruptions and emergency repair costs.

2.5 Evaluation of Service Area Performance

The PLOS framework was established to better understand community expectations, enabling the City of Niagara Falls to identify existing service performance gaps relative to those expectations. This understanding is essential for prioritizing asset improvements to align infrastructure performance with community priorities and regulatory requirements.

This section outlines the City's current service performance relative to proposed targets for each service area. Additionally, it provides insights derived from maturity assessments conducted as part of this assignment, offering a comprehensive view of each service area's broader operational context and performance.

2.5.1 Asset Performance Methodology

Asset modeling is a critical process that supports the City in forecasting infrastructure performance and evaluating the impacts of various funding scenarios on service outcomes. This analytical approach informs decision-making by connecting asset condition and risk assessments with funding strategies, enabling the City to determine if current or proposed investment levels are sufficient to sustain desired service levels.

As part of this assignment, asset performance analysis was completed using comprehensive condition data available for each asset class. Condition assessments utilized asset-specific rating scales aligned with industry best practices, enabling targeted lifecycle management strategies.

When reviewing infrastructure performance, it is important to consider the impacts of relatively aged vs. young assets and recent growth in the City's asset portfolio. This has resulted in generally stable or improving average performance ratings across the asset base, potentially masking underlying deterioration issues in older assets. For example, recent road performance evaluations indicate consistent service levels despite ongoing network expansion. Ideally, new infrastructure would elevate overall performance metrics. However, stable performance suggests older segments may be deteriorating, offsetting gains from new construction. This underscores the necessity of detailed condition assessments beyond age-based estimates to accurately identify funding gaps and lifecycle management needs.

Under this assignment, the following are the two forecasting scenarios that were analyzed:

Scenario 1: Estimated Current Available Funding – This scenario projects asset performance based on the estimated available funding if current funding levels are maintained over the forecast period. The available funding for each service was estimated by analyzing the projects within the City's 2025 10-year Capital Plan, associating them to the asset hierarchy and relevant asset categories. This method provides an average representation of funding allocation by source (e.g., Canada Community Building Fund, Infrastructure Reserve Fund). Funding from non-obligatory reserve funds may vary annually based on asset needs and Council decisions; however, this scenario assumes consistent annual funding throughout the forecast period, aligning with the 10-year Financial Strategy.

Scenario 2: Proposed LOS Funding – This scenario utilizes the average annual costs required to achieve the proposed level of service targets. The cost of achieving these proposed service levels was averaged over a 75-year period to reflect the full lifecycle costs of the assets.

Asset performance modeling typically relies on available condition data; however, where condition data is unavailable, age-based deterioration models using estimated useful life have been applied. It is recommended that the City's asset register, asset management frameworks, and lifecycle strategies be continuously reviewed and updated to maintain accuracy and relevance. The performance modeling assumptions include: all recommended renewal activities are completed on time, excludes inflation considerations over the forecast period, and focusing solely on capital needs, using data and assumptions from the current available assessments.

3 Lifecycle Management Strategy

For the City to provide the wide range of community services and achieve the proposed levels of service, various lifecycle activities are performed on the assets. These include non-infrastructure solutions such as developing plans and performing condition assessments; preventative and reactive maintenance activities to repair assets; refurbishing assets; replacing assets; asset and material disposal; and expanding and upgrading assets to support growth.

An outcome of this work includes refining the lifecycle management strategies to account for the PLOS and the necessary activities to achieve and sustain that level of service. This section identifies activities in alignment with achieving the PLOS implementation goals, determines the most cost-effective approach to achieving the PLOS targets, and reviews the risks associated with this combination of activities, and mitigating measures.

3.1 Lifecycle Activities

Table 3-1 below presents an overview of the lifecycle activities and common risks, observations and mitigation actions across all service areas, building on the content developed within the 2022 and 2024 AMPs. It identifies the industry best-practice activities required to maintain the current level of service; including how each activity is classified, a brief description, and the recommended frequency.

This table has been refined to align with the PLOS developed in this AMP amendment. Notably, the risks of not performing each activity have been revised, while maintaining the assumption that these activities continue to represent the core requirements for achieving the City's desired level of service. Detailed Lifecycle Management activities tables by service area are found in **Appendix E**.

Table 3-1: Lifecycle Management Activities, Risks and Observations for All Service Areas

Lifecycle Activity	Risks Associated with Not Completing the Activities	Observations & Mitigating Actions
Non-Infrastructure	• Reduced understanding of local climate change impacts and associated risks. • Limited visibility of current asset conditions and overall infrastructure performance. • Incomplete studies, plans, and reports resulting in inadequate forecasting of future community growth and infrastructure needs, hindering effective project coordination across city service areas.	• Alignment of asset management documents and processes to integrate recommendations from all master plans, service studies, and community engagement activities to maximize planning efficiency, reduce duplication, increase alignment, and support proactive planning and analysis. This will streamline forecasting, business plan development, and understanding of asset priorities and needs. • Proactive analysis of climate change impacts to support risk planning. • Integration of climate change risks and other studies with on-going condition assessment programs to support coordinated planning within and across interconnected services.
	• Inaccurate GIS data, and poor data management between systems. • Integration of Condition Assessment data outputs into asset management hierarchy/asset information to streamline data uploads.	• Support staff in receiving software training to keep them up to date with software and technology advances, and data management best practices. • Develop an asset information/data management standard to ensure that data sets are maintained in a consistent manner, allowing for ease of access and data transfer.
	• Inequitable stakeholder engagement around service delivery expectations resulting in unbalanced levels of service. • Insufficient engagement to support asset design and selection of desired programming resulting in unsustainable service demand. • Unsustainable funding levels to support service delivery expectations.	• Develop a community engagement strategy to support a consistent outreach and education approach with stakeholders. • Integrate condition assessment data outputs into the asset management hierarchy/asset information to streamline data uploads. • Integrate all asset recommendations from planning and studies into service-specific LOS, risk and lifecycle management strategies to ensure alignment of all project and O&M planning. • Align asset register with financial register to streamline tracking of asset expenditures against funding to compare with levels of service.
	• Failure to comply with regulatory requirement & increased risk of creating safety hazards.	• Ensure continuation of programs to monitor regulatory compliance. • Identify overlap between user safety, levels of service, risk management plans and lifecycle management strategies. Coordinate with other studies, plans and strategies to minimize duplication of effort and maximize resource usage.
Operations and Maintenance (O&M)	• Decline in service level due to unexpected asset failure and resulting service outages and disruptions (e.g. less maintenance means increased risk of pipe blockages, worsening road surface, increased risk of mechanical failure in HVAC and electrical systems, etc.) • Inadequate O&M programs resulting in reduced asset service life and earlier timing of renewal, rehabilitation and replacement activities leading to greater costs. Strategy with the best return on investment is not realized.	• Leverage and align condition programs to support proactive repairs and maintenance programs to maximize service life of assets and quality of asset performance. • Track work orders in computerized maintenance management system or equivalent to support KPI reporting, refinement of asset selection analysis, etc.
	• Increasing operational and capital costs due to decline in asset condition, and increased rate of asset failures.	• Support proactive maintenance planning for all service areas. This can include developing a preventative maintenance plan that identifies maintenance programs for service areas, aligned with non-infrastructure solutions to support prioritized planning and forecasting within and across interconnected services.
	• Increasing public safety issues due to underperforming or failed assets (e.g. worsening impacts from climate-related weather events, such as increased likelihood of localized flooding due to limitations in pipe capacity, increased rates of erosion, etc.)	
	• Increasing risk of regulatory non-compliance, and associated fines. Increased risk of negative reputational impacts (both because of regulatory non-compliance and decreased service performance).	

Lifecycle Activity	Risks Associated with Not Completing the Activities	Observations & Mitigating Actions
Renewal (Rehabilitation and Replacement)	• Inefficient project prioritization both within service areas and across interconnected services and asset networks. This can result in duplication of planning efforts, inefficient resource usage and decline in service delivery.	• Use condition assessment outputs to support identification of candidate assets and use data to reinforce professional judgement. • Maintain up to date datasets to support prioritization of asset needs and understand the interdependencies between asset networks.
	• Overall decline in service performance level (e.g. service outages, asset failures and blockages, etc.) due to declining asset condition and capacity. • Increasing scope of renewal/rehabilitation/replacement projects because of delays in project initiation leading to decline of asset condition of interconnected asset networks (e.g. delay in resurfacing a road segment resulting in increased likelihood of road base failure; delay in relining pipe segment resulting in washout of road or sidewalk base, or increased erosion rates, etc.). • Increased impacts from climate change related events.	• Ensure renewal, rehabilitation and replacement programs are aligned with non-infrastructure activities, such as master plans, studies and assessments. • Develop a project prioritization strategy reflecting service priorities, and non-infrastructure activity recommendations.
	• Other service area disruptions due to unplanned closures and repairs (e.g. road closures, pedestrian walkways, etc.).	• Adopt an integrated project planning approach to coordinate renewal projects with other near-by assets (e.g. in shared right of way, or close proximity) where feasible between service areas.
Disposal	• Inaccurate asset retirement information.	• Track information in the asset register, use work order management software if available, and/or request contractor to submit editable digital documentation at the end of project to record disposed assets. • Align disposal documentation processes with asset hierarchy data structures to streamline TCA reporting.
	• Increased costs associated with disposing of assets outside of primary project.	• Review assets prior to beginning of project to develop strategy for disposal timing and process (e.g. identify candidates to be kept as spares, assets to be disposed of during project, assets to be renewed). Dispose of appropriate assets during project.
Expansion and Service Improvements	• System unable to support demand/growth needs of neighbourhoods and communities, thus unable to achieve PLOS.	• Align projects with recommendations from non-infrastructure solutions. • Coordinate expansion projects with other near-by assets (e.g. in shared right of way, or close proximity) to maximize efficient use of resources and timing. • Establish process for regular reviews with stakeholders across service areas to proactively identify changes in needs that drive asset design or expansion requirements.
	• Unsustainable funding level resulting in decline in overall level of service. • Inequitable stakeholder engagement around service delivery expectations resulting in unbalanced LOS.	
	• Reduced service delivery due to staff not having sufficient resources (e.g. inadequate/insufficient fleet and equipment assets).	• Adopt integrated planning process to facilitate cross-service planning to ensure coordinate sharing of existing assets, resources and knowledge, and plan for expansion needs or modified design and selection criteria to support changes in needs and prioritization. • Consider developing of design and selection criteria/standards to facilitate reviews.
	• Failure to comply with internal policies and strategies (e.g. climate change, etc.). • Reduced coordination and prioritization of related needs between different services.	• Use PLOS in coordination with other non-infrastructure solutions (e.g. policies around fleet electrification) to monitor for compliance with targets.

4 Financial Strategy

In line with the asset management best practices, the financing strategies presented in this report offer the City potential solutions to work towards proposed levels of service. Similar to other municipalities within the province, the analysis reveals a gap between current financial funding allocations and the projected capital investment needs to meet proposed levels of service over the next 10 years. This section outlines the forecasted funding requirements for asset management for the period 2025 to 2034. Additionally, it underscores key strategies aimed at bridging this funding gap in a sustainable way.

All financial values are shown in 2025 dollars, with no inflationary adjustments applied to future projections. The analysis outlines the annual costs of achieving the PLOS over a 10-year period. Projected funding availability is compared against anticipated financial needs, and a proposed strategy is selected to work towards the proposed service targets. In addition, the City has considered the impacts of growth and economic activity on funding, along with the associated risks of implementing the recommended financial strategy.

4.1 Overview of Full Lifecycle Cost Model

This AMP amendment identifies the total full lifecycle costs that corresponds to the requirements of the regulation. This would entail a cost estimation throughout the asset's life including planning, design, construction, acquisition, operation, maintenance, renewal and disposal. In addition, the analysis also takes into consideration the inclusion of expansion related infrastructure into the lifecycle management strategy. This approach ensures that the additional lifecycle costs associated with newly constructed/acquired assets are accounted for in the long-term forecast.

A "lifecycle management approach" in asset management planning includes estimating future lifecycle costs based on a set of lifecycle activities. These lifecycle activities can be segmented into six (6) categories: non-infrastructure solutions, operations/maintenance, renewal/rehabilitation, replacement, disposal, and expansion activities. **Table 4-1** provides a description of each lifecycle category. The City undertakes all the activities described in **Table 3-1** in Section 3, summarized in **Table 4-1** below; however, the City's budget generally accounts for these expenditures in different categories.

Table 4-1: Overview of the Full Lifecycle Activities

Category	Description
Non-Infrastructure Solutions	Actions or policies that can lower costs or extend asset life (e.g., better integrated infrastructure planning and land use planning, demand management, insurance, process optimization, etc.). Associated to work needed to manage assets but not necessarily direct work on those assets.
Operations and Maintenance Activities	Servicing assets on a regular basis to fully realize the original service potential. Maintenance will not extend the life of an asset or add to its value. Not performing regular maintenance may reduce an asset's useful life.
Renewal/ Rehabilitation Activities	Mostly associated to significant repairs designed to extend the useful life of an asset. These types of activities are typically done at key points in the lifecycle of an asset to ensure the asset reaches its designed useful life.
Replacement Activities	Activities that are expected to occur once an asset has reached the end of its useful life and renewal/rehabilitation is no longer an option.
Disposal and Divesting Activities	The activities associated with disposing or divesting of an asset once it has reached the end of its useful life or is otherwise no longer needed.
Expansion Activities	Planned activities required to extend or expand municipal services to accommodate the demands of growth. Includes the long-term lifecycle needs for growth-related infrastructure (operating, maintenance, renewal/rehabilitation, replacement, disposal).

4.2 Expenditure Forecast

This section provides details into the expenditure forecast. The forecast illustrates the in-depth analysis of the financial requirements essential for maintaining current levels of service and meeting proposed levels of service. This analysis not only underscores the financial commitments needed to achieve the best value from the City's assets but also highlights the strategic financial planning necessary to support the community's evolving needs.

The assessment of current levels of service is intrinsically linked to the condition and functionality of existing assets within the City. As the City aims to maintain current levels of service, it's imperative to understand the associated investment requirements. A consultation program was undertaken with City staff to gain a better understanding of the lifecycle activities required to maintain current levels of service. The focus of the consultations was largely related on the capital related lifecycle activities that would be required so that the City can meet the LOS objectives presented in Section 2. However, to understand the full lifecycle cost model, consideration for the other lifecycle activities are needed, including operation and maintenance needs, non-infrastructure solutions and expansion activities. This section outlines the full cost lifecycle analysis for tax and rate funded services.

4.3 Lifecycle Costs to Meet Current and Proposed LOS for Tax and Rate Funded Services

Table 4-2 summarizes the full lifecycle cost needs to maintain current levels of service and the additional needs to meet proposed levels of service for tax funded services. The methodology used to calculate the lifecycle costs in each category are also outlined below. In summary, a total need of about $750.0 million over the next 10-year period is identified for tax supported services with an additional $329.4 million for rate supported assets over the same period.

- **Operations and Maintenance** the 2025 operating budget was reviewed in detail and is used as basis for the O&M costs. Wherever possible only the costs associated to asset management related operations and maintenance activities were included based on a review of each of the account categories across departments in the 2025 budget.
    - In 2025, a total of about $30.2 million was identified for tax supported services, this level of spending is maintained over the 10-year period as no operating deficiencies to meet level of service needs are identified. The cumulative 10-year total is $302.1 million.
    - In 2025[1], a total of about $11.2 million was identified for rate supported services (both water and wastewater combined), this level of spending is maintained over the 10-year period as no operating deficiencies to meet level of service needs are identified. The cumulative 10-year total is $112.4 million.
- **Non-Infrastructure** solutions is based on an assessment of the City's 10-year capital plan to identify non-infrastructure related costs. These primarily include engineering studies identified in the capital program that would otherwise not be captured in the capital repair and replacement portion of costs.
    - For tax supported services, a total of about $4.3 million has been identified over the 10-year period.
    - For rate supported services a total of about $0.1 million has been identified over the 10-year period.
- **Capital Repair and Replacement – CLOS** represents the capital related state of good repair activities needed to maintain current levels of service. The costs are based on the level of service 10-year needs identified in Section 2.
    - This represents the majority of lifecycle costs, adding to about $348.0 million (46%) of the total needs for tax supported services.

[1] Due to timing of the data, for rate supported assets, the 2024 budget was used as the basis but adjusted for inflation (2%)

- For rate supported services this represents about $145.2 million (44%) of the total needs across all lifecycle activities.

- **Expansion** refers to the long-term lifecycle needs for growth-related infrastructure not funded from development charges. This includes shares of growth-related projects not eligible for development charge funding (i.e. benefit to existing) and the long-term operating and repair/replacement needs beyond the initial construction or acquisition of new infrastructure. The needs have been informed based on the City's development charges background study.
  - Expansion activities represent about $75.0 million of the total needs for tax supported services[2].
  - For rate supported services this represents about $71.2million[3].

- **Capital Repair and Replacement – PLOS** represents the capital related state of good repair activities needed to meet proposed levels of service. These costs are needed to meet level of service objectives that are above and beyond the current level of service. The costs are based on the level of service 10-year needs identified in Section 2.
  - An additional $20.6 million is needed to meet proposed levels of service for tax supported assets.
  - For rate supported assets, an additional $0.5 million is needed to meet proposed levels of service.

---

[2] *This figure includes the non-growth share of applicable stormwater projects outlined in the DC Study which amount to $15.4 million*

[3] *This figure includes a portion of the non-growth share of costs outlined in the DC Study for Water ($34.2 M) and wastewater assets ($31.7M) over the 10-years. Importantly, the Master Servicing Plan has not been finalized but it is expected that the true rate requirements will be revisited once the MSP has been finalized, and the City is aware of the financial contributions necessary*

Table 4-2: Cumulative 10-Year Lifecycle Needs to Meet Current and Proposed Levels of Service for Tax Funded Services 2025-2034 (millions $)[(1)]

Lifecycle Activity Category	Tax Supported Assets	Rate Supported Assets
Operations and Maintenance	$302.1	$112.4
Capital Repair and Replacement – CLOS	$348.0	$145.2
Non-Infrastructure Solutions	$4.3	$0.1
Expansion [(2)]	$75.0	$71.2
Total to Maintain CLOS	**$729.4**	**$328.9**
Add: Capital Repair and Replacement – PLOS	*$20.6*	*$0.5*
Grand Total Cost to Meet PLOS	**$750.0**	**$329.4**

Note 1: All values in constant 2025 dollars.

Note 2: The total lifecycle costs also account for the benefit to existing share of stormwater ($15.4 M), Water ($34.2 M) and wastewater assets ($31.7M) over the 10-years.

4.4 Considerations for Service Level Enhancement and Strategic Investments

In addition to the lifecycle costs outlined, which largely reflect state of good repair activities, the City's capital budget also includes Growth-Related projects, Service Level Enhancement projects and Strategic Investments. Of relevance, capital projects related to service level enhancements and strategic investments would require tax or rate supported funding, like the state of good repair works. Growth-related activities are funded from development charges and would not solely rely on taxes or utility rates to fund these initiatives. As a result, the total 10-year tax supported lifecycle needs of $750.0 million have been supplemented with a further $138.0 million to represent the additional service level enhancement projects and strategic investments projects in the City's long-term budget[4]. The total 10-year expense is thereby increased to $888.0 million once these additional projects are considered (see **Figure 4-1** below).

Note, for this purpose of this AMP report and financial strategy, the $750.0 million cost to meet proposed level of service is still used as the base expenditure profile.

[4] The figure was provided by City staff and intended to represent the projects outlined in the 10-year capital plan within the program areas of Strategic Investments and Service Level Enhancement Projects. Some sample projects include a new parking garage ($45 million), palmer park sports field redevelopment ($1.23 Million), Thorold stone road expansion ($3 Million), installation of new columbaria and associated landscaping ($850k), etc. While it is recognized that the service level enhancement projects could have some overlap with the needs analysis in the AMP, the Service level enhancements and Strategic Investments are high level estimates and subject to change.

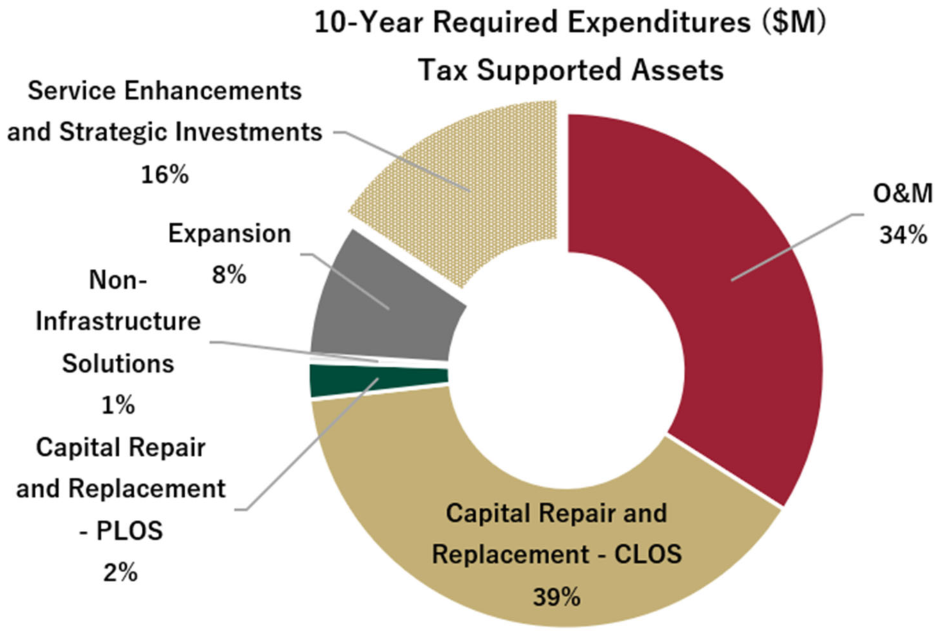


Figure 4-1: Cumulative 10-Year Lifecycle Needs to Meet Proposed Levels of Service plus Service Enhancements and Strategic Investments for Tax Funded Services 2025-2034 (millions $)

[4] The figure was provided by City staff and intended to represent the projects outlined in the 10-year capital plan within the program areas of Strategic Investments and Service Level Enhancement Projects. Some sample projects include a new parking garage ($45 million), palmer park sports field redevelopment ($1.23 Million), Thorold stone road expansion ($3 Million), installation of new columbaria and associated landscaping ($850k), etc. While it is recognized that the service level enhancement projects could have some overlap with the needs analysis in the AMP, the Service level enhancements and Strategic Investments are high level estimates and subject to change.

4.5 Funding Forecast

The City uses a wide range of funding and financing tools to address the identified capital requirements. Generally, the type of capital project aligns to its funding source. In this regard, growth related projects receive most of their funding through development charges; state of good repair projects are predominantly funded through tax or rate-based contributions (primarily through reserves) and other grant funding such as the CCBF and OCIF. Furthermore, specific to the City of Niagara Falls, a portion of OLG monies are directed to capital asset repair and replacement activities.

4.5.1 Funding Sources

4.5.1.1 Development Charges

Development charges represent a significant funding source for growth-related projects. These charges are levied on developers to offset the costs associated with increased infrastructure demands stemming from new developments. For this analysis, the costs funded from development charges have been excluded to recognize that they do not have an impact to taxation or utility rates. This assumes that eligible growth shares of projects in the City's Development Charges Background Study will be funded from development charges over the long-term.

4.5.1.2 Tax Levy and Investment Support

The City of Niagara Falls has an infrastructure levy in place, a dedicated source of funding to address the infrastructure deficit and support ongoing infrastructure projects in the municipality. The levy was introduced several years ago and has been increased by 1.0% in the most recent budget to represent 2.5% of the tax levy as of the 2025 budget. The special levy is in addition to regular contributions to reserves the City already makes to capital state of good repair through the operating budget. For rate, funded services these transfers are funded from water and wastewater rates.

The total 2025 transfers to Special Purpose Capital Reserve and to Reserve Funds are estimated at $19.2 million. Of this total, only a portion of that can be attributed to capital asset repair and replacement activities, and after adjustments, the total asset management supported contribution is $15.6 million. This figure includes $6.1 million in transfers to Reserve Funds and $9.5 million in transfer to Capital Special Purpose Reserves[5]. Of note, much of the transfer to Capital Special Purpose Reserves is the money from OLG used as capital spending support; see **Appendix F** for details.

4.5.1.3 Debt Payments

Tax and rate supported external debt can be used to fund growth, replacement, and enhancement projects. For equity purposes, debt is best used for projects that provide benefits over a longer timeframe so that the burden of capital cost is distributed between the current and future taxpayers.

The City's non-growth-related debt payments funded from taxation amounts to about $5.9 million per year while rate funded debt payments amount to about $404,000 per year. Notably, the 2025 budget also includes for new/anticipated debt which adds a further $739,000 per annum for tax supported services. This new debt is captured in the analysis as these assumed payments are embedded within the City funded budget.

4.5.1.4 Water and Wastewater Rates

The primary funding source for water and wastewater services are the City's utility rates. The City collects revenue through rates based on a volumetric charge and a fixed monthly charge. The

---

[5] Included within this contribution from operating: 2.5% capital levy to capital ($2.22 M), transfer to capital for City-wide projects ($3.50M), transfer to fleet replacement reserve ($3.51M), Transfer to MAT infrastructure projects ($0.25M) and transfer to capital from Wonderfalls sales ($0.02M).

charges are applied to both water and wastewater services with the volumetric charge based on the amount of water consumed. Revenue generated is utilized for operations of the system and the maintenance and replacement of watermain and sewer infrastructure in the City. The water and wastewater service is operated based on a full cost recovery model, to ensure that sufficient funds are available to meet both operational and capital needs over the long-term.

4.5.1.5 Grants

The City continues to rely on upper level government grants to undertake major capital works. The most reliable source of grant funding for the City continues to be the Canada Community Building Fund (CCBF). In 2025, the City received about $3.1 million in federal funds with the expectation of continued funding in the future.

The City has also relied on the Ontario Community Infrastructure Fund (OCIF) for many years to fund capital asset repair and replacement activities, however, as the City approaches a population of 100,000 residents, it will no longer be eligible for this funding once the population threshold is met. For the purposes of this plan, OCIF funding has not been assumed beyond 2026.

While only confirmed funding sources are included in the asset management plan, there a recognition by City that ongoing grant funding is critical to drive capital initiatives in future, the City aims to maximize available grant funding opportunities and continue to use upper levels of government as key partners to maintain assets in the most sustainable way.

4.5.1.6 OLG Revenue

In 2013, the City of Niagara Falls approved the new Municipality Contribution Agreement with the Ontario Lottery and Gaming Corporation (OLG). This agreement significantly increased the City's hosting fees from the previous agreement. The City has relied on OLG revenue to help fund services in the City. Only a share of OLG revenues have been historically used for capital state of good repair projects while remaining funds are utilized for other initiatives as approved by Council. While OLG revenues are an important source of revenue for the City, risk remains on the certainty of how much money can be allocated to the City annually. For example, the Covid-19 pandemic resulted in significantly decreased revenue due to casino closures.

For the purposes of this plan and based on the 2025 budget, of the $9.0 million in OLG money transferred to Reserve Funds, only $5.4 million is assumed to be related to capital asset management activities[6]. This reduced share is assumed in the forecast annually as a funding source for capital asset management activities. Importantly, this $5.6 million forms part of the total $15.6 million capital asset management contribution to reserve mentioned in the previous section.

---

[6] Based on the 2025 budget, the remaining OLG money which has not been considered for asset management activities relates to: Policing ($2.5 million), Economic Development ($0.7 million) and Social Services ($0.35 million)

4.5.2 Funding Projections for Tax Supported Services

Over the past number of years, the City's tax base capital contributions have consistently represented the largest share of capital funding sources for asset repair and replacement activities. **Figure 4-2** summarizes the breakdown of assumed revenues. For the purposes of the base case scenario in this AMP, the planning period assumes no additional increases to the dedicated levy (from the current 2.5%), however, the existing contributions to reserve derived from this levy would be assumed in the forecast. For a detailed overview of the key revenue assumptions used to support the AMP, please refer to **Appendix F.**

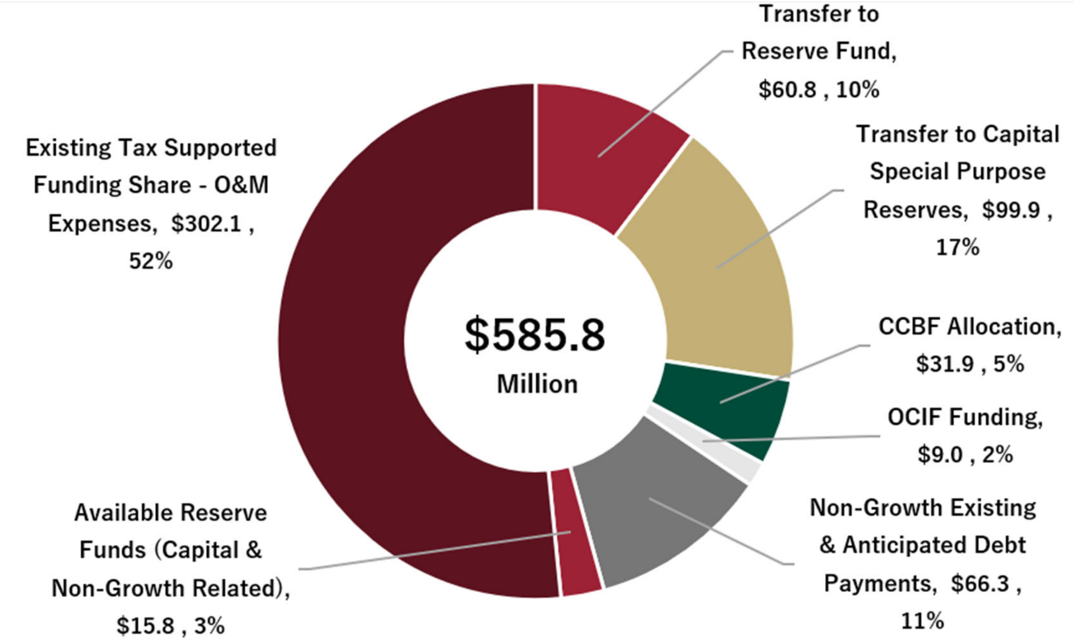


Figure 4-2: Cumulative 10-Year Projected Revenues 2025-2034 (millions $)

Over the 10-year period, the baseline projection of revenues amounts to about $585.8 million. The baseline revenue projections are made up of the following revenues:

- $99.9 million in transfers to Capital Special Purpose Reserves funded from the City's tax levy[7]. The base revenue model assumes no further increases in the dedicated levy per year while all other transfers to capital special purpose reserves remain constant over the period, and similar to 2025 levels.

[7] This figure includes the contribution to reserve for parking at a modest $50,000 per annum.

- About $60.8 million in Transfers to Reserve Fund which can be attributed to asset management - these transfers are funded from taxation and a share of OLG revenues which can be directed to capital asset management.[8]

- CCBF is assumed to be a reliable source of funding for the city and is included throughout the 10-year period - totals $31.9 million.

- As the City is expected to reach a population of 100,000 residents by 2026, the City will no longer be eligible for OCIF funding and therefore only $9.0 million in cumulative OCIF funding is assumed over the period. Therefore, the plan assumes OCIF funding in 2025 and 2026 but no further funding in 2027 and beyond.

- Recognizing that assets that have been debt financed in past years are included in the capital related lifecycle needs existing tax funded debt payments are included as a funding source. This ensures that the fiscal capacity already included in the operating budget to service this debt is included as a funding source once the debt is fully paid. The cumulative 10-year total is about $66.3 million – this figure also includes the new/anticipated debt embedded within the City budget.

- Available reserve funds for tax supported assets of $15.8 million are also used against the lifecycle costs. The amount included is before commitments which assumes the existing money committed is being applied to the needs outlined in the analysis[9].

- About $302.1 million relates to existing taxation and user fee support for asset management related O&M costs (set equal to costs for existing assets).

[8] As indicated in the previous section, not all funds from OLG have been assumed to be directed to asset management activities going forward.

[9] The existing reserve funds have been allocated evenly over the period in the annualized graph, the in-year use of reserves would be at the discretion of the City to carry-out the capital program. The City may also need to hold back the use of these funds to manage cash flows or mitigate debt.

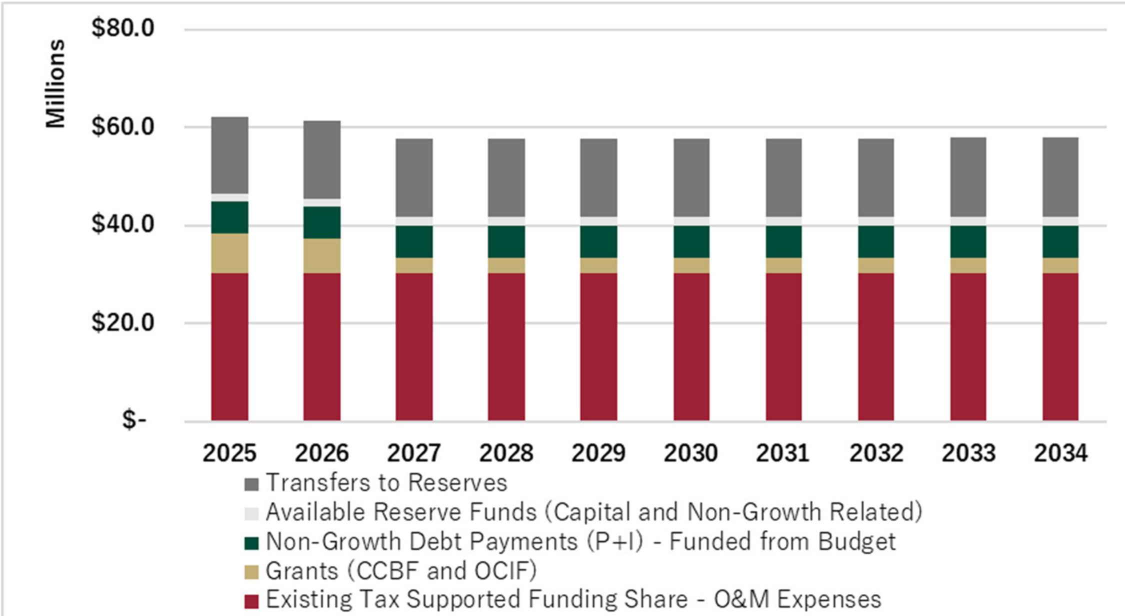


Figure 4-3: Annual 10-Year Projected Total Revenues including Transfers to Reserves from Operating 2025-2034 (millions $)

4.5.3 Funding Projections for Rate Supported Services

The City funds water and wastewater services through its utility rates. **Figure 4-4** summarizes the breakdown of assumed revenues over the planning period focusing on a baseline projection of funding levels for rate supported services. For a detailed overview of the key revenue assumptions used to support the AMP, please refer to **Appendix F**.

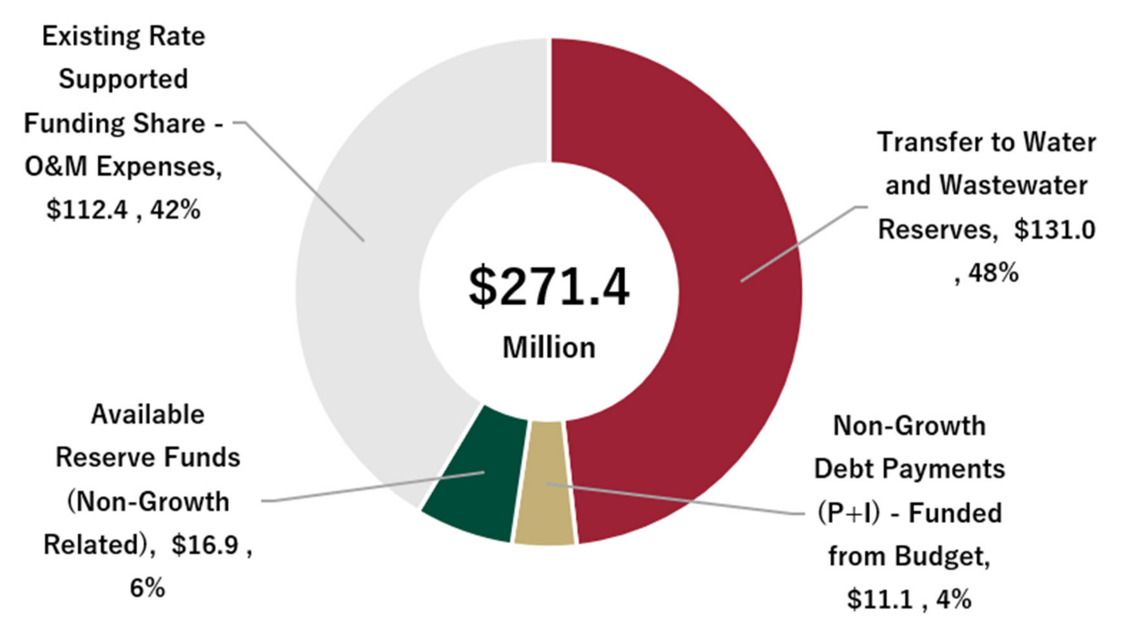


Figure 4-4: Cumulative 10-Year Projected Revenues (2025-2034 in millions)

Over the 10-year period, the baseline projection of revenues amounts to about $271.4 million. The baseline revenue projections is made up of the following revenues:

- $131.0 million in transfers to water and wastewater reserves funded from the City's water and wastewater charges.

- Recognizing that water and wastewater works that have been debt financed in past years are included in the capital related lifecycle needs, existing rate funded debt payments are included as a funding source. This ensures that the fiscal capacity already included in the water and wastewater operating budget to service this debt is included as a funding source once the debt is fully paid. The cumulative 10-year total is about $11.1 million.

- Available reserve funds for rate supported services of $16.9 million are also used against the lifecycle costs.

- About $112.4 million relates to existing rate support for asset management related O&M costs (set equal to costs for existing assets).

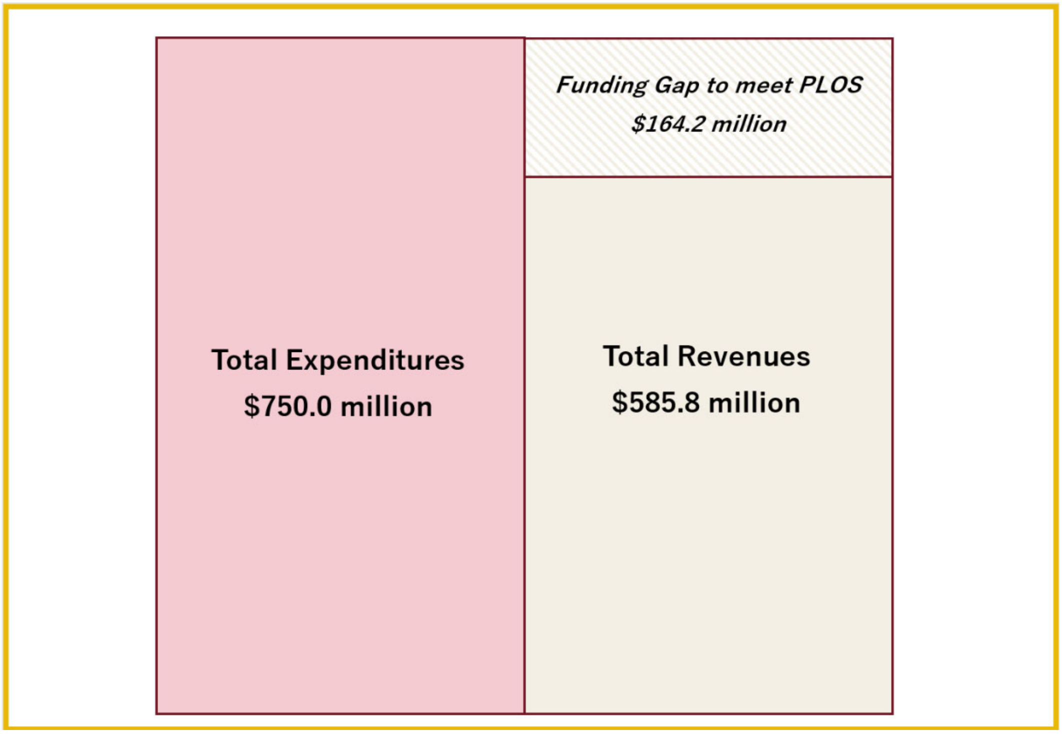
4.6 Projected Infrastructure Gap

Based on the preceding an analysis, the infrastructure gap has been calculated to meet proposed levels of service. This includes the needs for all lifecycle activities and accounts for the needs to maintain the current level of service plus the incremental capital needs to meet proposed levels of service. For the purposes of this analysis, the infrastructure gap is defined as the difference between the total full-life cycle costs and the projected revenues over the 10-year period.

4.6.1 Infrastructure Gap for Tax Supported Services

Based on **Figure 4-5** below an infrastructure gap of $164.2 million is identified to meet the proposed levels of service. The figure outlines the following information:

- **Total Expenditures (Full-Lifecycle Costs):** Represents the total full-lifecycle costs required to maintain current levels of service of $729.4 million plus the incremental expense to meet the proposed levels of service of $20.6 million (see **Table 4-2**). The total needs therefore amount to a total of $750.0 million over the 10-year period.
- **Total Revenues:** Represents the total projected revenues from the baseline funding commitments over the 10-year period. This amounts to $585.8 million over the 10-year period.



Note: Values expressed in constant 2025 dollars. Values have been rounded. Graphic not to scale.

Figure 4-5: Projected Infrastructure Gap to Meet Proposed Levels of Service for Tax Supported Services (10-Year Total)

The City would need to increase investments in capital assets in order to close the funding gap to achieve the level of service objectives outlined in Section 2:

- The total lifecycle costs to achieve the proposed level of service amounts to $750.0 million relative to available funding of $585.8 million (a difference of $164.2 million). To close the funding gap of $164.2 million, the City would need to increase the dedicated capital levy by 2.75% per annum over the next 10-year period.
  - The dedicated levy requirements to close the funding gap can be further delineated: a 2.45% dedicated levy increase is required to maintain the current level of service. A further 0.3% increase would be needed to address the additional $20.6 million need to meet the Proposed Levels of Service, for a total 2.75% capital levy increase.

The required dedicated levy calculated would amount in a year-over-year increase in revenues which can be directed to capital. All other existing capital contributions to reserve and reserve funds would remain but adjusted for inflation each year. The total contribution requirements are outlined below and demonstrates the significant increase in transfer to the Capital Special

Purpose Reserve via the capital levy as its increased year-over-year to meet the Proposed Levels of Service and close the $164.2 million funding gap identified.

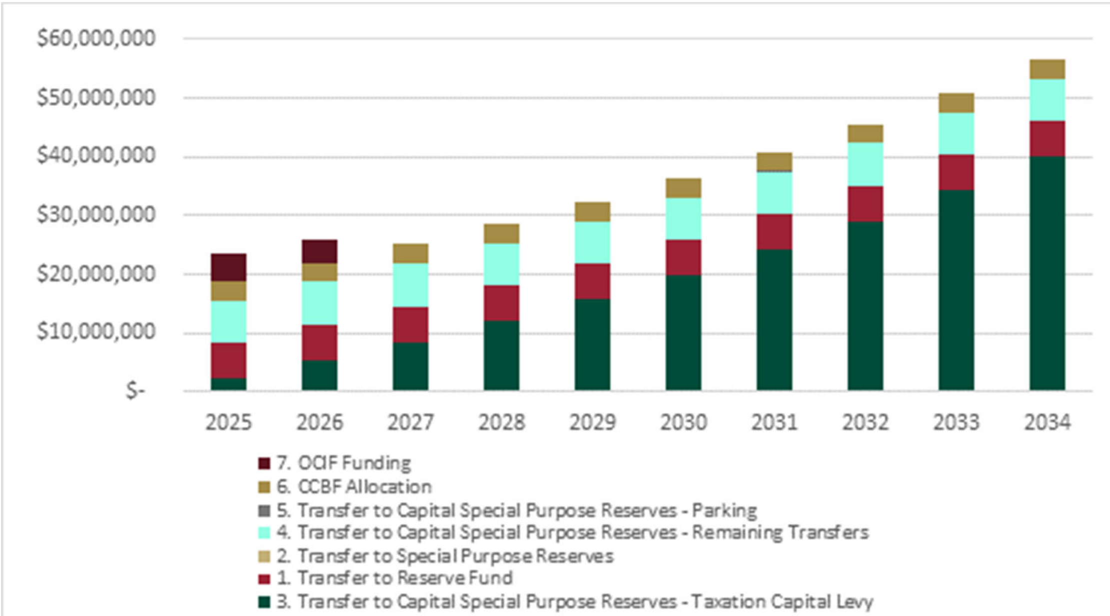


Figure 4-6: Summary of Capital Revenues Needed to Fund the Program.

Of note, the City should be cognizant of the additional $138.0 million in costs associated with service level enhancements and strategic investments capital. These expenses if added to the state of good repair works would bring the total lifecycle costs to $880.0 million relative to available funding of $585.8 million (a difference of $302.2 million). To close the funding gap of $302.2 million, the City would need to increase the capital levy by 4.5% per annum over the planning period to meet the proposed level of service. This would represent a net increase of 1.8% in the dedicated levy to address these additional costs.

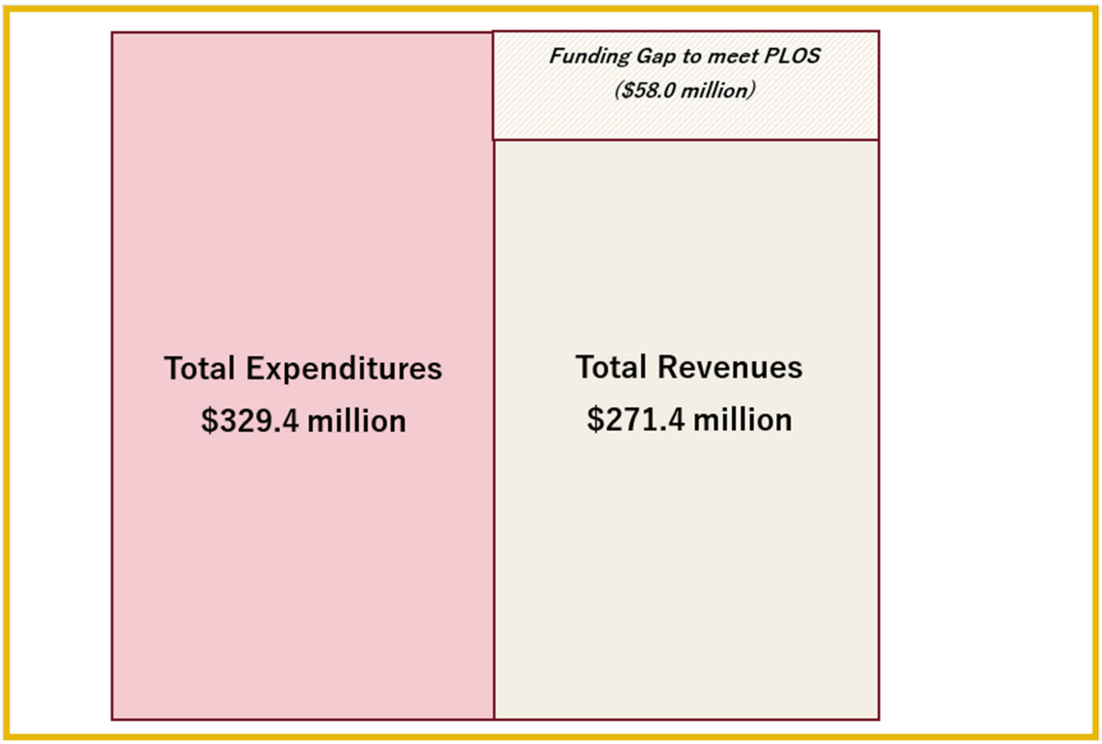
4.6.2 Infrastructure Gap for Rate Supported Services

For water and wastewater rate funded services, a total 10-year lifecycle cost need of $329.4 million has been identified to meet the proposed levels of service. Over the same period, projected revenues amount to $271.4 million which leaves a funding gap of about $58.0 million (**Figure 4-7**)[10]. For context, closing the funding gap would equate to an immediate one-time increase in utility rate revenues of about 9% in 2025 (combined for water and wastewater). Alternatively, this gap could be closed if rate revenues were increased at 2% per year starting in

[10] For the purposes of this report, only the net gap is illustrated for water and wastewater combined. The gap is related to water services which is calculated at $70.8 million but is offset with a calculated surplus in wastewater of $12.8 million (for a net calculated gap of $58.0 million). Note, the $58.0 million is the forecasts gap over the 10-year period but it will be important to undertake regular rate reviews to ensure the proposed level of service is met.

2026 over the planning period. Importantly, the calculated increase relates only to the revenue requirements for capital asset management activities (in $2025) and the true rate impacts will need to consider other factors, at minimum: operating cost changes, regional charges, inflation and consumption patterns.

While it is acknowledged that utility rates would need to increase to fund the shortfall, the systems are maintained to provide safe and clean drinking water and the systems are operated on a cost recovery basis. Further to this, the City purchases water from the Region of Niagara and sewage is also treated by Region. It will be important that the City continue to undertake regular reviews of its water and wastewater rates to ensure the proposed level of service is met and the funding gap is closed over the planning horizon.



Note: Values expressed in constant 2025 dollars. Values have been rounded. Graphic not to scale.

Figure 4-7: Projected Infrastructure Gap to Meet Proposed Levels of Service for Rate Supported Services (10-Year Total)

4.7 Approaches to Closing the Funding Gap

This information illustrated previously emphasizes the need for the City to continue the utilization of these funding programs to maintain existing service levels over the long-term. However, as the City's asset management program further advances, it can be expected that the cost analysis be improved to better reflect asset risks, levels of service and a more fulsome understanding of the condition of the City's infrastructure. **Table 4-3** outlines various strategies available to the City to close the gap. The strategies combine both qualitative data improvements and other financial solutions.

Table 4-3: Approaches to Closing the Funding Gap

Strategy	Approach
Maintain an Infrastructure Levy	To continue bridging the funding gap and improve financial sustainability, the existing infrastructure levy dedicated towards asset management should be maintained and increased moving forward.
Improved Data Quality	As the City matures its asset management practices, improving data quality across service areas will help to achieve a proper assessment of the condition of assets. Furthermore, some assets may be assessed on an age-based approach that does not necessarily reflect the actual condition of the asset. Improved lifecycle cost data will facilitate evidence-based decision making and support in achieving lowest lifecycle costing through prioritization of repair and replacement activities.
Levels of Service Measures	As part of the AMP, levels of services measures by service area have been established. Tracking LOS measures, may identify areas where funding needs could be recalibrated based on performance.
Divesting of Assets	The City can consider divesting of assets no longer necessary in an effort to reduce future renewal and rehabilitation requirements balancing the lost opportunity the asset may provide.
Assessing Risk Tolerance Level	The City can consider a standardized risk framework for different asset classes. Further detailed risk analysis including defining risk tolerance level for individual asset classes will help to further refine prioritization of the investment needs and levels of service. Although not always desirable, it may be possible to accept a higher degree of asset risk at the City to help lower ongoing asset costs. An example may less frequent inspection of assets with lower criticality.
Seek Funding Support from Upper Levels of Government	The City of Niagara Falls is demonstrating a significant commitment to asset management and developing a set of renewal practices to ensure that services are delivered in the most cost-efficient manner. Despite the efforts, upper level of government support is required to supplement the City's practices to balance affordability. For long-term financial planning and accurately assessing the infrastructure gap, it is equally important that upper-level government funding is stable and predictable.
Explore Public Private Partnership opportunities (P3)	Through P3s, the City can access additional funding, share project risks, and introduce innovative financing structures. Private sector involvement also brings efficiency, innovation, and lifecycle management to infrastructure projects, while facilitating the transfer of expertise to the City.

Strategy	Approach
Continued Project Co-ordination with Niagara Region	In exploring opportunities with the Region, overall cost efficiencies may be achieved during linear asset rehabilitation and replacement (e.g. storm sewers, roads, bridges, culverts, water, wastewater) by better aligning capital ventures.

5 Implementation Plan and Continuous Improvement

The City of Niagara Falls remains committed to advancing and refining its asset management practices through a structured and forward-thinking continuous improvement approach. Building on the foundation established in the 2022 and 2024 Asset Management Plans, the City continues to strengthen its capacity to deliver sustainable services, optimize infrastructure investments, and meet regulatory obligations under Ontario Regulation 588/17.

Key Initiatives for Ongoing Enhancement:

1. **Data Quality, Integration, and Accessibility**
   Improving asset data remains a central priority. The City will continue enhancing its asset inventories, condition assessment programs, and data governance protocols to ensure consistent and accurate information is available across departments. Integration of GIS, financial, and work order systems will further support real-time decision-making and cross-functional planning.

2. **Risk-Based Decision-Making**
   The City is committed to embedding formalized risk evaluation methods into capital and maintenance planning. Prioritizing assets based on the likelihood and consequence of failure will help ensure investments are directed where they have the greatest impact on service continuity and public safety.

3. **Lifecycle Costing and Optimization**
   Building upon lifecycle strategies developed in previous plans, the City will continue evaluating the total cost of ownership for key asset classes. This includes optimizing maintenance, renewal, and replacement strategies to maximize value for money and improve long-term asset performance.

4. **Adaptation to Climate Risk and Sustainability**
   The City recognizes the importance of building resilience to climate change and extreme weather events. Future efforts will focus on integrating environmental risk assessments into asset planning and identifying opportunities to support sustainable infrastructure design and operation.

5. **Performance Management and LOS Metrics**
   As part of this Asset Management Plan, the City has identified a number of proposed future level of service metrics that require new or improved data sources. Over time, the City will work toward collecting and validating this data, with the goal of progressively reporting on these enhanced performance measures. This will be an ongoing initiative involving annual reviews of LOS indicators, data quality, and alignment with community expectations and operational realities.

6. **Public and Stakeholder Engagement**
   Building on the City's strong track record of public consultation—including two rounds of engagement for the 2025 AMP—the City will continue to engage residents and stakeholders in shaping service levels and investment priorities. Transparency and communication will remain key pillars of Niagara Falls' asset management approach.

7. **Regulatory Alignment and Best Practices**
   The City will continue to ensure full compliance with O. Reg. 588/17 while remaining responsive to updates from the Province and emerging industry best practices. Updates to internal policies, templates, and workflows will be informed by evolving standards, lessons learned, and organizational feedback.

8. **Recommendation: Pavement Management System Procurement**
   To support improved lifecycle management and decision-making for one of the City's most extensive and critical infrastructure networks—its roadways—it is recommended that the City investigate and procure a dedicated Pavement Management System (PMS). A PMS will enhance the City's ability to assess road condition trends, forecast rehabilitation and resurfacing needs, and prioritize investments based on performance, risk, and cost-efficiency. Implementing such a system will support consistent data collection, standardized condition ratings, and evidence-based capital planning aligned with asset management best practices.

By embedding continuous improvement into its asset management framework, the City of Niagara Falls is strengthening its ability to deliver reliable, affordable, and sustainable services now and into the future. Through a combination of data-driven planning, responsive strategy development, and consistent public engagement, the City is ensuring that infrastructure decisions remain transparent, resilient, and community-focused.

Appendix A

Community Engagement Survey Questions

CITY OF NIAGARA FALLS

ASSET MANAGEMENT SURVEY

INTRODUCTION

1. Do you live in or own a business in Niagara Falls?

☐ Yes

☐ No

2. Please select all options which apply to you.

☐ I live in Niagara Falls

☐ I work in Niagara Falls

☐ I own a business in the Niagara Falls

ASSET MANAGEMENT

3. Thinking about the services of the City's assets like a restaurant, which of the following best describes how you would prefer to receive these?

☐ **COST [$$$]** White tablecloth *(fine dining)* restaurant style of service

☐ **COST [$$]** Family diner service

☐ **COST [$]** Fast food/drive-through restaurant service

4. If it becomes necessary to improve certain services, would you support an increase in taxes or fees to fund these improvements?

☐ Yes, for all services

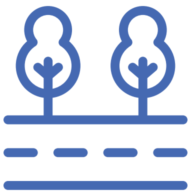
☐ Yes, but only for core services (roads, water, wastewater)

☐ No, I would prefer services remain the same, even if that means no improvements and/or a reduction in current service levels

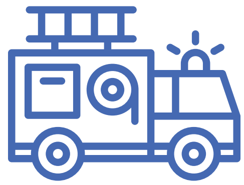
☐ No, I would prefer lower taxes/fees even if it means a reduction in services

5. There may be circumstances where the City needs to make decisions on where to allocate funding with limited resources.

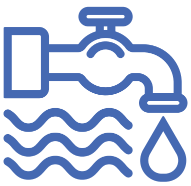
Please rank the following services from 1 to 10, with 1 being the highest priority and 10 being the lowest.



☐ **TRANSPORTATION**

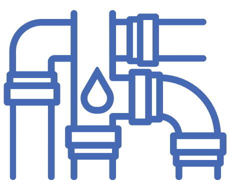


☐ **FIRE SERVICES**



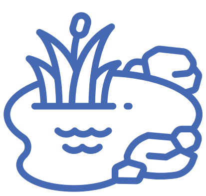
☐ **WATER**

☐ **PARKS, TRAILS & NATURAL ASSETS**



☐ **WASTEWATER**

☐ **NIAGARA DISTRICT AIRPORT**



☐ **STORMWATER**

☐ **LIBRARIES**

☐ **RECREATION, CULTURE, CEMETERIES & FACILITIES**

☐ **GENERAL GOVERNMENT SERVICES**

6. Due to factors such as inflation and aging infrastructure, it is often not possible to maintain the status quo for services without increased revenue from sources such as tax and user fees.

For each service below, would you choose to improve the services if doing so means a tax and/or fee increase, or would you prefer to reduce services to limit tax and/or fee increases?

Asset	Strongly Support a Service Reduction	Somewhat Support a Service Reduction	Maintain Current Service Levels and Tax Rates	Somewhat Support a Service Increase for Improved Services	Strongly Support a Service Increase for Improved Services
Transportation					
Water					
Wastewater					
Stormwater					
Recreation, Culture Cemeteries & Facilities					
Fire Services					
Parks, Trails & Natural Assets					
Niagara District Airport					
Libraries					
Government Services					

7. What general feedback or suggestions do you have about how the City manages our assets?

TRANSPORTATION

The City of Niagara Falls is dedicated to ensuring a safe, reliable, and accessible transportation network. Key assets include roads, streetlights, traffic signals, parking lots, and traffic control equipment, which are managed to help people get around the city safely and efficiently.

How satisfied are you with the current condition and maintenance of the following services related to the City's transportation network?

If you do not use the service, please select "Not Applicable."

8. Condition of paved roads

☐ Very Satisfied ☐ Satisfied ☐ Neutral ☐ Dissatisfied ☐ Very Dissatisfied ☐ Not applicable

9. Condition of gravel roads

☐ Very Satisfied ☐ Satisfied ☐ Neutral ☐ Dissatisfied ☐ Very Dissatisfied ☐ Not applicable

10. Condition of sidewalks

☐ Very Satisfied ☐ Satisfied ☐ Neutral ☐ Dissatisfied ☐ Very Dissatisfied ☐ Not applicable

11. Condition of bridges & culverts

☐ Very Satisfied ☐ Satisfied ☐ Neutral ☐ Dissatisfied ☐ Very Dissatisfied ☐ Not applicable

12. Condition of parking lots and on-street spaces

☐ Very Satisfied ☐ Satisfied ☐ Neutral ☐ Dissatisfied ☐ Very Dissatisfied ☐ Not applicable

13. Condition of traffic control & calming (including signalized intersections, cross walks, traffic control devices, etc.)

☐ Very Satisfied ☐ Satisfied ☐ Neutral ☐ Dissatisfied ☐ Very Dissatisfied ☐ Not applicable

14. Road and sidewalk maintenance

☐ Very Satisfied ☐ Satisfied ☐ Neutral ☐ Dissatisfied ☐ Very Dissatisfied ☐ Not applicable

15. Which of the following transportation service areas in our transportation network needs improvement?

Transportation Service Areas	Needs Improvement	Does NOT Need Improvement	No Preference
Condition of Paved Roads			
Condition of Gravel Roads			
Condition of Sidewalks			
Condition of Bridges & Culverts			
Condition of Parking			
Condition of Traffic Control & Calming *(including signalized intersections, cross walks, traffic control devices, etc.)*			
Snow Removal Services			
Road & Sidewalk Maintenance			

16. Please indicate your preference for maintaining, increasing or decreasing the service levels for each of the service areas.

Transportation Service Areas	[$] Decrease Service (pay same or less)	[$$] Maintain Current Service (pay a little more)	[$$$] Improve Service (pay more)	No Preference
Condition of Paved Roads				
Condition of Gravel Roads				
Condition of Sidewalks				
Condition of Bridges & Culverts				
Condition of Parking				
Condition of Traffic Control & Calming *(including signalized intersections, cross walks, traffic control devices, etc.)*				
Snow Removal Services				
Road & Sidewalk Maintenance				

17. Do you have any additional comments on maintaining, increasing, or decreasing the service levels of transportation? *Leave blank of not applicable.*

WATER

Niagara Region treats our local water. The City of Niagara Falls maintains the system of pipes, pumps and other infrastructure that delivers that water so our community and fire services have reliable access to the water they need when they need it.

18. How satisfied are you with the current condition and performance of the City's drinking water service? *If you do not use the service, please select "Not Applicable."*

☐ Very Satisfied ☐ Satisfied ☐ Neutral ☐ Dissatisfied ☐ Very Dissatisfied ☐ Not applicable

19. How would you assess the need for improvement of the City's current drinking water services?

☐ Very Satisfied ☐ Satisfied ☐ Neutral ☐ Dissatisfied ☐ Very Dissatisfied ☐ Not applicable

20. In the last five years, has your household or business experienced a disruption to your water service?

☐ Yes ☐ No ☐ Unsure

21. Due to aging infrastructure the City may consider adding a temporary charge to your water bill to allow for necessary watermain upgrades. Would you be open to this temporary measure?

☐ Yes ☐ No

22. Please indicate your preference for maintaining, increasing or decreasing the service levels.

☐ **COST [$]**
Decrease Service (likely pay same or less)

☐ **COST [$$]**
Maintain Current Service (likely pay more)

☐ **COST [$$$]**
Improve Service (likely pay more)

☐ Not Applicable

23. Do you have any additional comments on maintaining, increasing, or decreasing the service levels of water management? *Leave blank of not applicable.*

WASTEWATER

The City collects wastewater through a network of pipes and local pumping stations, which then conveys it Niagara Region's facilities for treatment. This system ensures wastewater is transported effectively and efficiently to protect public health and the environment.

24. How satisfied are you with the current condition and performance of the City's wastewater systems, including the prevention of overflows and basement flooding? *If you do not use the service, please select "Not Applicable."*

☐	☐	☐	☐	☐	☐
Very satisfied	Satisfied	Neutral	Dissatisfied	Very dissatisfied	Not applicable

25. How would you assess the need for improvement of the City's current wastewater services?

☐ Needs improvement ☐ Does NOT need improvement ☐ No preference

26. In the last five years, has your household or business experienced a sewer backup?

☐ Yes ☐ No

27. Do you feel the City responded in a timely manner?

☐ Yes ☐ No

28. Indicate your preference for maintaining, increasing or decreasing the service levels.

☐ **COST [$]**
Decrease Service (likely pay same or less)

☐ **COST [$$]**
Maintain Current Service (likely pay more)

☐ **COST [$$$]**
Improve Service (likely pay more)

☐ Not Applicable

29. Do you have any additional comments on maintaining, increasing, or decreasing the service levels of wastewater management? *Leave blank of not applicable.*

STORMWATER

Stormwater management in Niagara Falls protects the community and environment by controlling the quality and quantity of stormwater runoff from rain and melting snow. The City's infrastructure, including catch basins, pipes, and retention ponds, is designed to reduce the impact of flooding and ensure efficient drainage to protect local areas and natural waterways.

30. How satisfied are you with the current condition and performance of the City's stormwater management system in preventing flooding and ensuring proper drainage during heavy rainfall. *If you do not use the service, please select "Not Applicable."*

☐ Very satisfied ☐ Satisfied ☐ Neutral ☐ Dissatisfied ☐ Very dissatisfied ☐ Not applicable

31. How would you assess the need for improvement of the City's current stormwater management services?

☐ Needs improvement ☐ Does NOT need improvement ☐ No preference

32. In the last five years how often have you experienced an impact due to roads being flooded?

☐ Never

☐ Once a year

☐ Less than five times

☐ More than five times

33. Please indicate your preference for maintaining, increasing or decreasing the service levels.

☐ **COST [$]** Decrease Service (likely pay same or less)

☐ **COST [$$]** Maintain Current Service (likely pay more)

☐ **COST [$$$]** Improve Service (likely pay more)

☐ Not Applicable

34. Do you have any additional comments on maintaining, increasing, or decreasing the service levels of stormwater management? *Leave blank of not applicable.*

RECREATION, CULTURE, CEMETERIES & FACILITIES

This service area supports recreational, cultural, and community activities by maintaining a range of facilities, from community centres to sports arenas and museums. Niagara Falls is committed to providing safe, accessible, and well-maintained facilities that foster active lifestyles, cultural engagement, and community well-being.

35. How satisfied are you with the current condition and maintenance provided by each of the following services and public assets in the City? *If you do not use the service, please select "Not Applicable."*

Cemeteries

☐ Very Satisfied ☐ Satisfied ☐ Neutral ☐ Dissatisfied ☐ Very Dissatisfied ☐ Not applicable

Recreation facilities *(e.g. MacBain Community Centre, Gale Centre, Willoughby Arena)*

☐ Very Satisfied ☐ Satisfied ☐ Neutral ☐ Dissatisfied ☐ Very Dissatisfied ☐ Not applicable

Parks facilities *(e.g. Picnic Shelters, change rooms, public washrooms, grandstands, aquatics)*

☐ Very Satisfied ☐ Satisfied ☐ Neutral ☐ Dissatisfied ☐ Very Dissatisfied ☐ Not applicable

Municipal Administrative Facilities *(e.g. City Hall, Wayne Thompson, Service Centre)*

☐ Very Satisfied ☐ Satisfied ☐ Neutral ☐ Dissatisfied ☐ Very Dissatisfied ☐ Not applicable

Niagara Falls Convention Centre

☐ Very Satisfied ☐ Satisfied ☐ Neutral ☐ Dissatisfied ☐ Very Dissatisfied ☐ Not applicable

36. How would you assess the need for improvement of the City's current recreation, culture, cemeteries & facility services?

Recreation, Culture, Cemeteries & Facility Services	Needs Improvement	Does NOT Need Improvement	No Preference
Cemeteries			
Recreation Facilities (e.g. MacBain Community Centre, Gale Centre, Willoughby Arena)			
Parks Facilities (e.g. Picnic Shelters, change rooms, public washrooms, grandstands, aquatics)			
Municipal Administrative Facilities (e.g. City Hall, Wayne Thompson, Service Centre)			
Niagara Falls Convention Centre			

37. Based on the possible funding and service level outcomes, please indicate your preference for maintaining, increasing or decreasing the service levels for each of the service areas.

Recreation, Culture, Cemeteries & Facility Services	[$] **Decrease Service** (pay same or less)	[$$] **Maintain Current Service** (pay a little more)	[$$$] **Improve Service** (pay more)	No Preference
Cemeteries				
Recreation Facilities (e.g. MacBain Community Centre, Gale Centre, Willoughby Arena)				
Parks Facilities (e.g. Picnic Shelters, change rooms, public washrooms, grandstands, aquatics)				
Municipal Administrative Facilities (e.g. City Hall, Wayne Thompson, Service Centre)				
Niagara Falls Convention Centre				

38. Do you have any additional comments on maintaining, increasing, or decreasing the service levels of Recreation, Culture, Cemeteries & Facilities? *Leave blank of not applicable.*

FIRE SERVICES

Fire Services in Niagara Falls focuses on public safety through fire prevention, education, and emergency response. The City's fire department, including fire stations, vehicles, and equipment, is maintained to ensure rapid, effective responses to fires and other emergencies, enhancing community safety and resilience.

39. How satisfied are you with the response time of fire services in the City? *If you do not use the service, please select "Not Applicable."*

- ☐ Very satisfied
- ☐ Satisfied
- ☐ Neutral
- ☐ Dissatisfied
- ☐ Very dissatisfied
- ☐ Not applicable

40. How would you assess the need for improvement of the City's current fire protection services?

- ☐ Needs improvement
- ☐ Does NOT need improvement
- ☐ No preference

41. Please indicate your preference for maintaining, increasing or decreasing the service levels.

- ☐ **COST [$]**
  Decrease Service (likely pay same or less)
- ☐ **COST [$$]**
  Maintain Current Service (likely pay more)
- ☐ **COST [$$$]**
  Improve Service (likely pay more)
- ☐ Not Applicable

42. Do you have any additional comments on maintaining, increasing, or decreasing the service levels of fire services? *Leave blank of not applicable.*

PARKS, TRAILS AND NATURAL ASSETS

The City's parks, trails and natural assets, including trees and wetlands, provide recreational spaces, environmental protection, and historical preservation. These assets are managed to enhance quality of life, protect ecosystems, and provide access to open greenspace.

43. How satisfied are you with the current condition and cleanliness provided by each of the following services and public assets in the City? *If you do not use the service, please select "Not Applicable."*

Natural assets

☐	☐	☐	☐	☐	☐
Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied	Not applicable

Parks

☐	☐	☐	☐	☐	☐
Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied	Not applicable

Trails

☐	☐	☐	☐	☐	☐
Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied	Not applicable

Playgrounds/splash pads

☐	☐	☐	☐	☐	☐
Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied	Not applicable

Recreational areas/sports fields

☐	☐	☐	☐	☐	☐
Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied	Not applicable

44. How would you assess the need for improvement of the City's current parks, trails and natural assets?

Parks, Trails & Natural Assets	Needs Improvement	Does NOT Need Improvement	No Preference
Natural assets			
Parks			
Trails			
Playgrounds/splash pads			
Recreation areas/sports fields			

45. Please indicate your preference for maintaining, increasing or decreasing the service levels for each of the service areas.

Parks, Trails & Natural Assets	[$] Decrease Service (pay same or less)	[$$] Maintain Current Service (pay a little more)	[$$$] Improve Service (pay more)	No Preference
Natural assets				
Parks				
Trails				
Playgrounds/splash pads				
Recreation areas/sports fields				

46. Do you have any additional comments on maintaining, increasing, or decreasing the service levels of parks, trails and natural assets? *Leave blank of not applicable.*

NIAGARA DISTRICT AIRPORT

The Niagara District Airport supports essential transportation and includes runways, terminal facilities, navigation equipment, and security systems. These assets ensure safe, efficient, and accessible air travel, fostering connectivity, economic growth, and tourism.

47. How satisfied are you with the current condition and performance of the Niagara District Airport. *If you do not use the service, please select "Not Applicable."*

- ☐ Very satisfied
- ☐ Satisfied
- ☐ Neutral
- ☐ Dissatisfied
- ☐ Very dissatisfied
- ☐ Not applicable

48. How would you assess the need for improvement of the Niagara District Airport at this time?

- ☐ Needs improvement
- ☐ Does NOT need improvement
- ☐ No preference

49. Based on the possible funding and service level outcomes, please indicate your preference for maintaining, increasing or decreasing the service levels.

- ☐ **COST [$]** Decrease Service (likely pay same or less)
- ☐ **COST [$$]** Maintain Current Service (likely pay more)
- ☐ **COST [$$$]** Improve Service (likely pay more)
- ☐ Not Applicable

50. Do you have any additional comments on maintaining, increasing, or decreasing the service levels of the Niagara District Airport? *Leave blank of not applicable.*

LIBRARIES

Library assets support essential educational, cultural, and community services. They include collections, technology, facilities, and specialized equipment. These resources ensure that residents have access to knowledge, digital services, and welcoming spaces for learning, collaboration, and community engagement. Maintaining and developing library assets is crucial for supporting a vibrant, informed, and inclusive community.

50. How satisfied are you with the current condition and performance of the City's libraries. *If you do not use the service, please select "Not Applicable."*

- ☐ Very satisfied
- ☐ Satisfied
- ☐ Neutral
- ☐ Dissatisfied
- ☐ Very dissatisfied
- ☐ Not applicable

51. How would you assess the need for improvement of the City's libraries at this time?

- ☐ Needs improvement
- ☐ Does NOT need improvement
- ☐ No preference

52. Based on the possible funding and service level outcomes, please indicate your preference for maintaining, increasing or decreasing the service levels.

- ☐ **COST [$]** Decrease Service (likely pay same or less)
- ☐ **COST [$$]** Maintain Current Service (likely pay more)
- ☐ **COST [$$$]** Improve Service (likely pay more)
- ☐ Not Applicable

53. When attending the City's libraries do you feel the following services are available?

	Yes	No
Computers are available?		
Spaces to rent or use		
Books and other rentals you're looking for are available?		

54. What type of service offerings would you like to have available at the City's libraries (i.e. Musical Instrument Rentals)?

55. Do you have any additional comments on maintaining, increasing, or decreasing the service levels of libraries? *Leave blank of not applicable.*

GOVERNMENT (FLEET & IT EQUIPMENT)

Government assets support essential administrative and operational functions, including vehicle fleet, equipment and devices and IT systems. These assets ensure efficient governance, service delivery, and the maintenance of critical City services and infrastructure.

56. How satisfied are you with the current condition and performance of the City's government services. *If you do not use the service, please select "Not Applicable."*

- ☐ Very satisfied
- ☐ Satisfied
- ☐ Neutral
- ☐ Dissatisfied
- ☐ Very dissatisfied
- ☐ Not applicable

57. How would you assess the need for improvement of the current government services provided in the City at this time?

- ☐ Needs improvement
- ☐ Does NOT need improvement
- ☐ No preference

58. Based on the possible funding and service level outcomes, please indicate your preference for maintaining, increasing or decreasing the service levels.

- ☐ **COST [$]** Decrease Service (likely pay same or less)
- ☐ **COST [$$]** Maintain Current Service (likely pay more)
- ☐ **COST [$$$]** Improve Service (likely pay more)
- ☐ Not Applicable

59. Do you have any additional comments on maintaining, increasing, or decreasing the service levels of general government? *Leave blank of not applicable.*

THANK YOU!

Participants will have a chance to win one of five $50.00 gift certificates. Participation is voluntary. Please enter your information below to join the draw.

60. Name:

61. Email:

62. Phone number:

Thank you for your time and input. Your feedback will help inform our Asset Management Plan Update.

Appendix B1

City-wide Survey Results

Let’s Talk Niagara Falls

Report Type: Form Results Summary
Date Range: 10-12-2024 - 31-01-2025
Exported: 04-02-2025 10:42:14

Closed

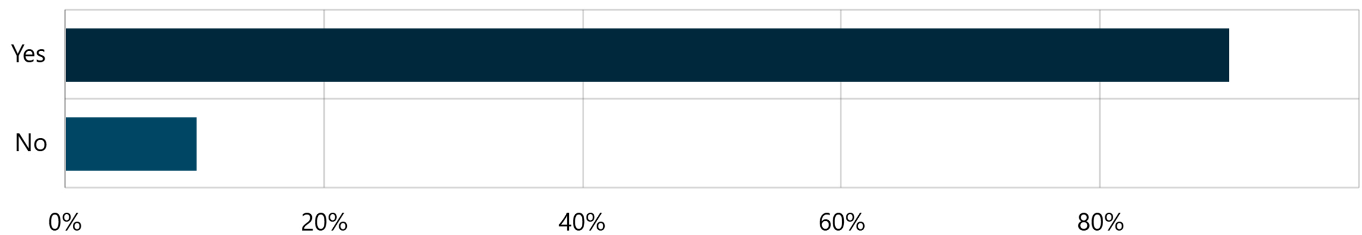
Survey
2025 Asset Management Plan

251 Contributors | **289** Contributions

Contribution Summary

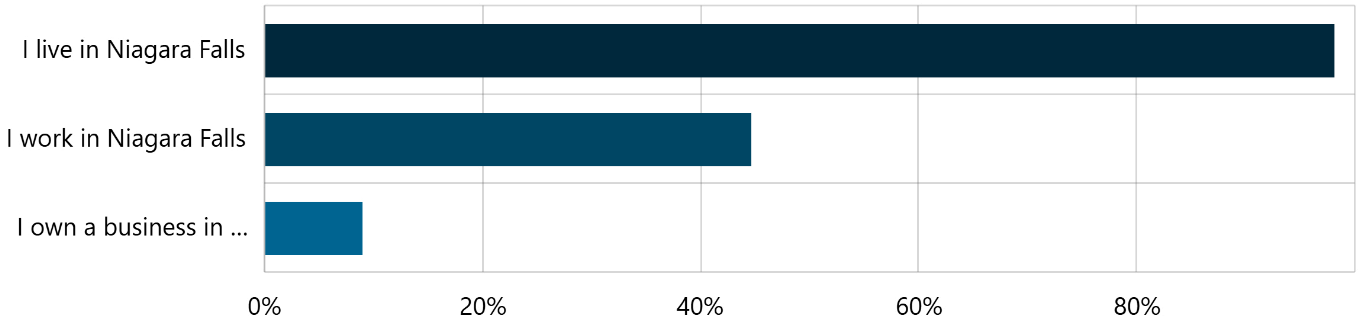
1. Do you live in or own a business in Niagara Falls?

Multi Choice | Skipped: 2 | Answered: 287 (99.3%)



Answer choices	Percent	Count
Yes	89.90%	258
No	10.10%	29
Total	**100.00%**	**287**

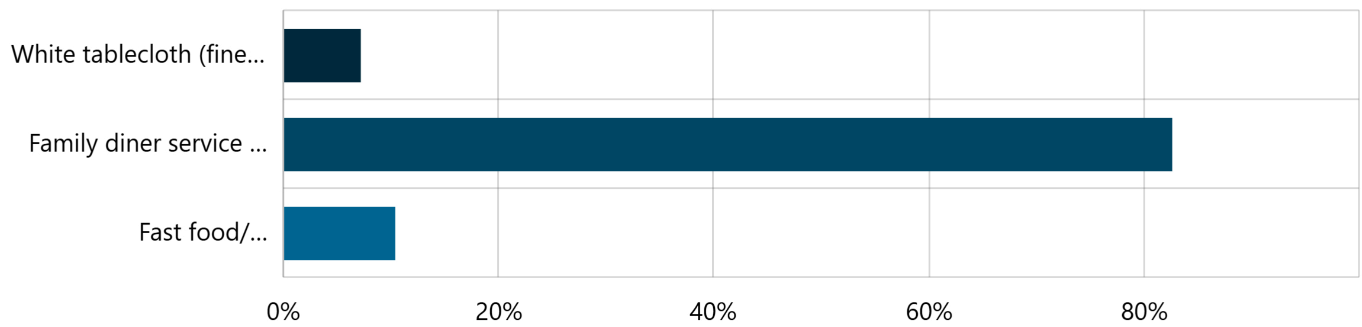
2. Please select all options which apply to you.
Multi Choice | Skipped: 31 | Answered: 258 (89.3%)



Answer choices	Percent	Count
I live in Niagara Falls	98.06%	253
I work in Niagara Falls	44.57%	115
I own a business in the Niagara Falls	8.91%	23

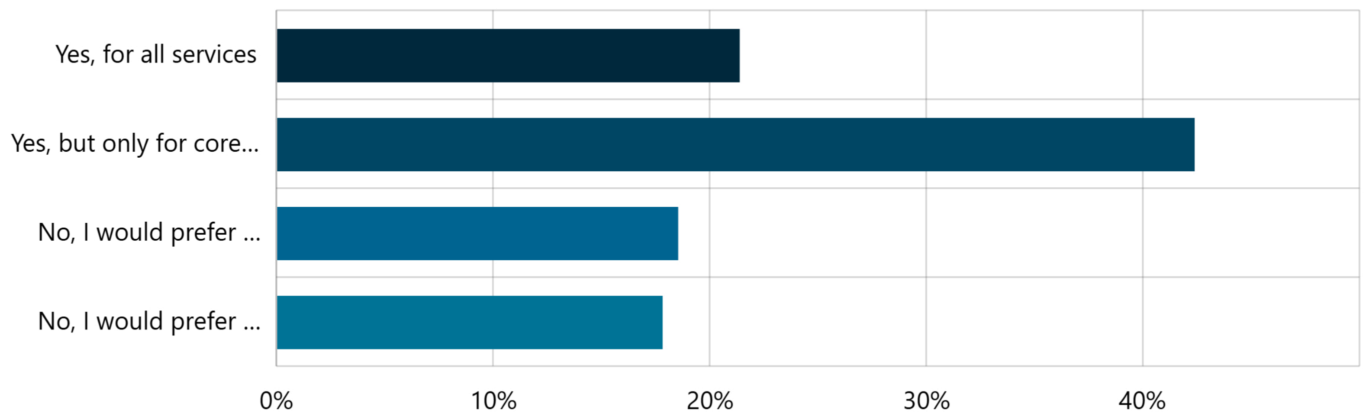
3. Thinking about the services of the City's assets like a restaurant, which of the following best describes how you would prefer to receive these?

Multi Choice | Skipped: 8 | Answered: 281 (97.2%)



Answer choices	Percent	Count
White tablecloth (fine dining) restaurant style of service (Cost $$$)	7.12%	20
Family diner service (Cost $$)	82.56%	232
Fast food/drive-through restaurant service (Cost $)	10.32%	29
Total	**100.00%**	**281**

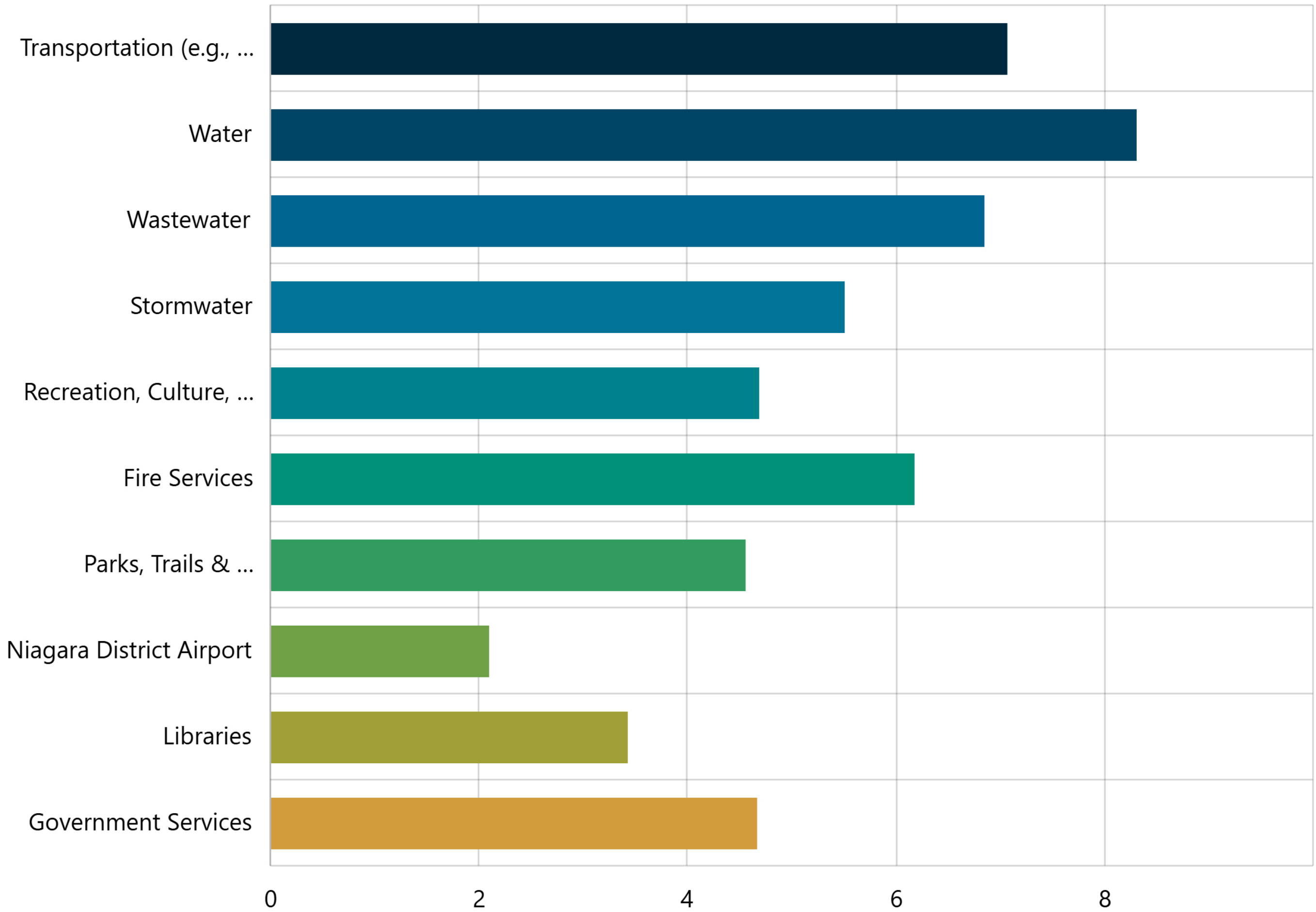
4. If it becomes necessary to improve certain services, would you support an increase in taxes or fees to fund these improvements?
Multi Choice | Skipped: 8 | Answered: 281 (97.2%)



Answer choices	Percent	Count
Yes, for all services	21.35%	60
Yes, but only for core services (roads, water, wastewater)	42.35%	119
No, I would prefer services remain the same, even if that means no improvements and/or a reduction in current service levels	18.51%	52
No, I would prefer lower taxes/fees even if it means a reduction in services	17.79%	50
Total	**100.00%**	**281**

5. There may be circumstances where the City needs to make decisions on where to allocate funding with limited resources.

Ranking | Skipped: 24 | Answered: 265 (91.7%)



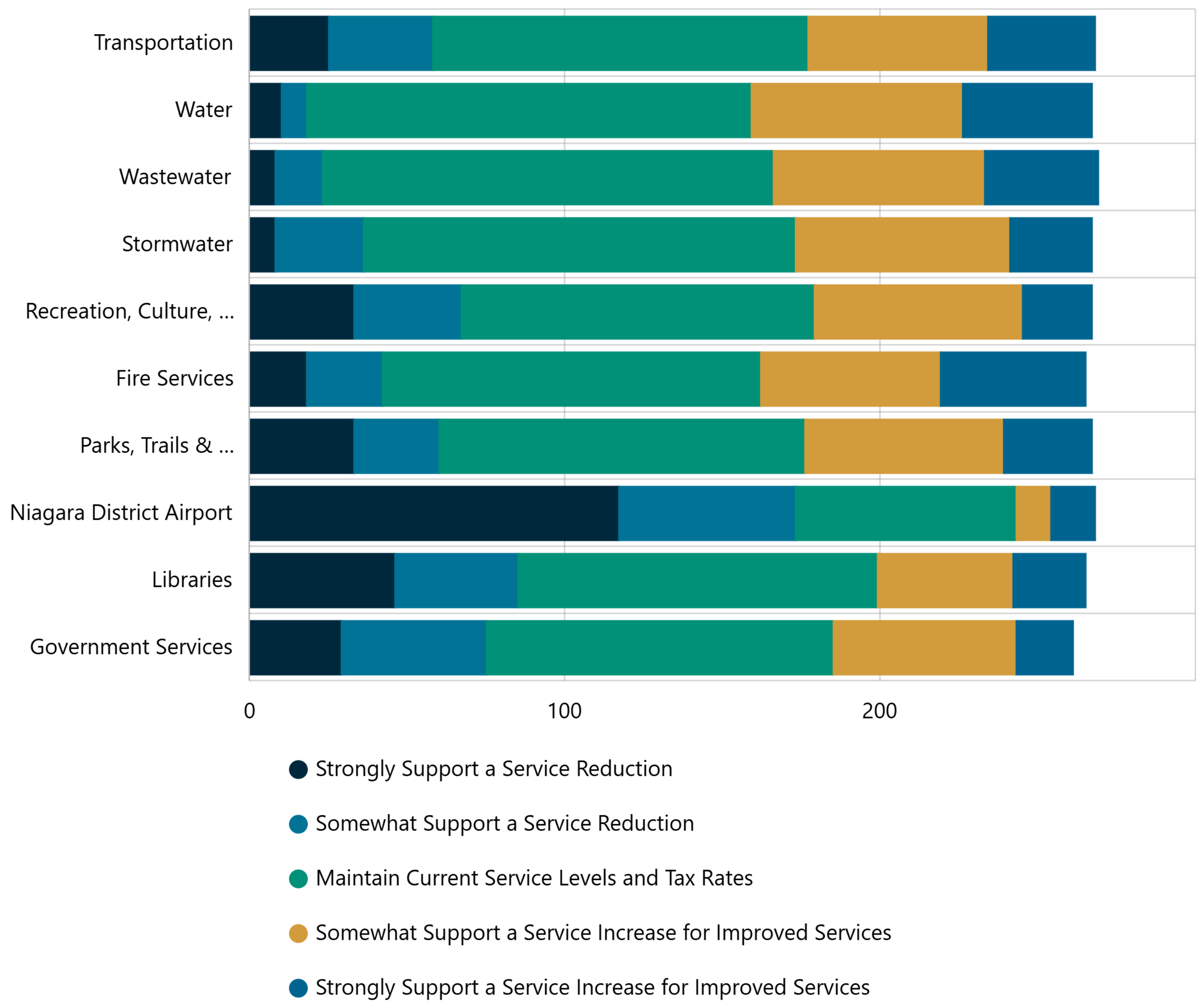
	1	2	3	4	5	6	7	8	9	10	Count	Score	Avg Rank
Transportation (e.g., roads, traffic cameras)	28.02% 72	15.95% 41	10.12% 26	14.01% 36	7.39% 19	5.84% 15	6.61% 17	5.06% 13	3.50% 9	3.50% 9	257	7.06	3.72
Water	37.11% 95	29.30% 75	12.50% 32	10.94% 28	3.13% 8	2.73% 7	3.52% 9	0.39% 1	0% 0	0.39% 1	256	8.30	2.41
Wastewater	4.31% 11	24.71% 63	26.27% 67	13.33% 34	8.24% 21	10.59% 27	6.67% 17	2.75% 7	1.57% 4	1.57% 4	255	6.84	3.89
Stormwater	1.59% 4	3.98% 10	17.53% 44	18.33% 46	19.12% 48	13.15% 33	8.37% 21	11.55% 29	5.58% 14	0.80% 2	251	5.50	5.19

Recreation, Culture, Cemeteries & Facilities	4.82 % 12	6.43 % 16	5.62 % 14	8.03 % 20	12.45 % 31	14.46 % 36	18.07 % 45	17.67 % 44	6.43 % 16	6.02 % 15	249	4.68	6.02
Fire Services	16.02 % 41	8.98 % 23	11.33 % 29	16.02 % 41	11.33 % 29	11.72 % 30	8.59 % 22	6.25 % 16	5.08 % 13	4.69 % 12	256	6.17	4.62
Parks, Trails & Natural Assets	5.28 % 13	3.66 % 9	7.32 % 18	6.50 % 16	12.60 % 31	14.23 % 35	19.92 % 49	14.63 % 36	14.23 % 35	1.63 % 4	246	4.55	6.10
Niagara District Airport	0.42 % 1	1.25 % 3	3.75 % 9	1.67 % 4	3.33 % 8	4.17 % 10	5.83 % 14	6.67 % 16	16.67 % 40	56.25 % 135	240	2.09	8.69
Libraries	1.20 % 3	2.39 % 6	2.39 % 6	6.37 % 16	8.37 % 21	6.37 % 16	13.55 % 34	19.92 % 50	28.29 % 71	11.16 % 28	251	3.42	7.39
Government Services	5.22 % 13	6.43 % 16	5.62 % 14	6.83 % 17	16.06 % 40	17.27 % 43	9.24 % 23	12.85 % 32	14.46 % 36	6.02 % 15	249	4.66	6.04

Score - Sum of the weight of each ranked position, multiplied by the response count for the position choice, divided by the total contributions. Weights are inverse to ranked positions.
Avg Rank - Sum of the ranked position of the choice, multiplied by the response count for the position choice, divided by the total 'Count' of the choice.

6. Due to factors such as inflation and aging infrastructure, it is often not possible to maintain the status quo for services without increased revenue from sources such as tax and user fees.

Matrix | Skipped: 20 | Answered: 269 (93.1%)



	Strongly Support a Service Reduction	Somewhat Support a Service Reduction	Maintain Current Service Levels and Tax Rates	Somewhat Support a Service Increase for Improved Services	Strongly Support a Service Increase for Improved Services	Count	Score
Transportation	9.33% 25	12.31% 33	44.40% 119	21.27% 57	12.69% 34	268	3.16
Water	3.75% 10	3.00% 8	52.81% 141	25.09% 67	15.36% 41	267	3.45

Wastewater	2.97% 8	5.58% 15	53.16% 143	24.91% 67	13.38% 36	269	3.40
Stormwater	3.00% 8	10.49% 28	51.31% 137	25.47% 68	9.74% 26	267	3.28
Recreation, Culture, Cemeteries & Facilities	12.36% 33	12.73% 34	41.95% 112	24.72% 66	8.24% 22	267	3.04
Fire Services	6.79% 18	9.06% 24	45.28% 120	21.51% 57	17.36% 46	265	3.34
Parks, Trails & Natural Assets	12.36% 33	10.11% 27	43.45% 116	23.60% 63	10.49% 28	267	3.10
Niagara District Airport	43.66% 117	20.90% 56	26.12% 70	4.10% 11	5.22% 14	268	2.06
Libraries	17.36% 46	14.72% 39	43.02% 114	16.23% 43	8.68% 23	265	2.84
Government Services	11.11% 29	17.62% 46	42.15% 110	22.22% 58	6.90% 18	261	2.96

7. What general feedback or suggestions do you have about how the City manages our assets?

Long Text | Skipped: 139 | Answered: 150 (51.9%)

Sentiment

No sentiment data

Tags

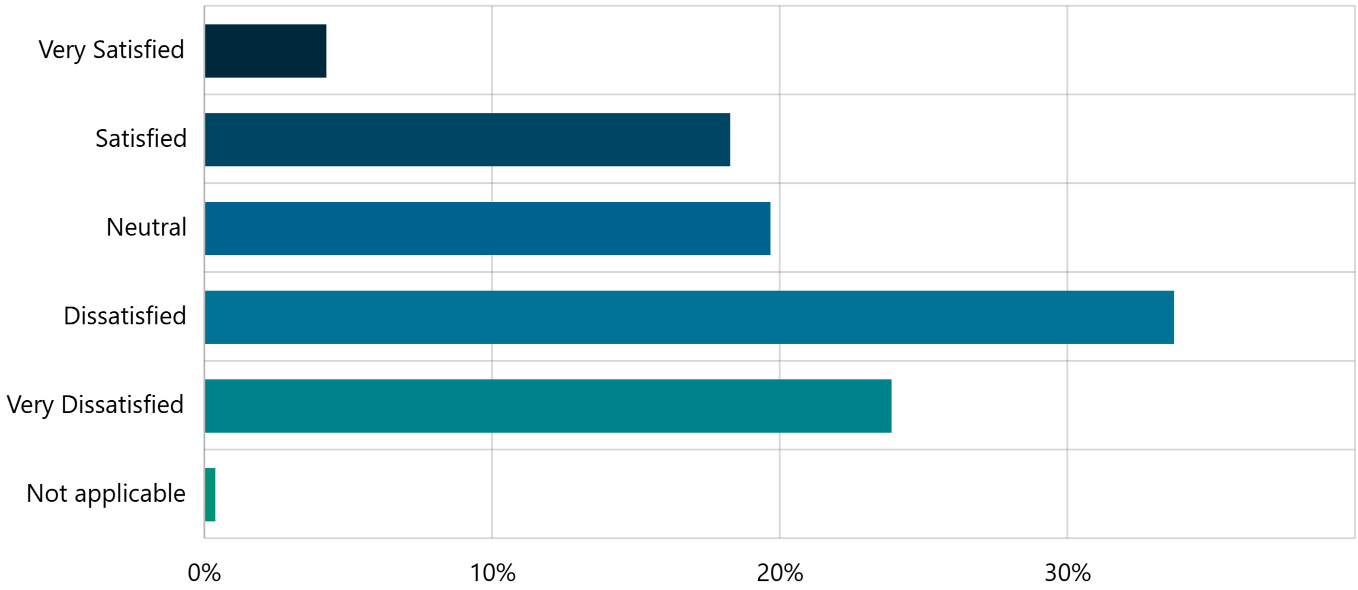
No tag data

Featured Contributions

No featured contributions

8. Condition of Paved Roads

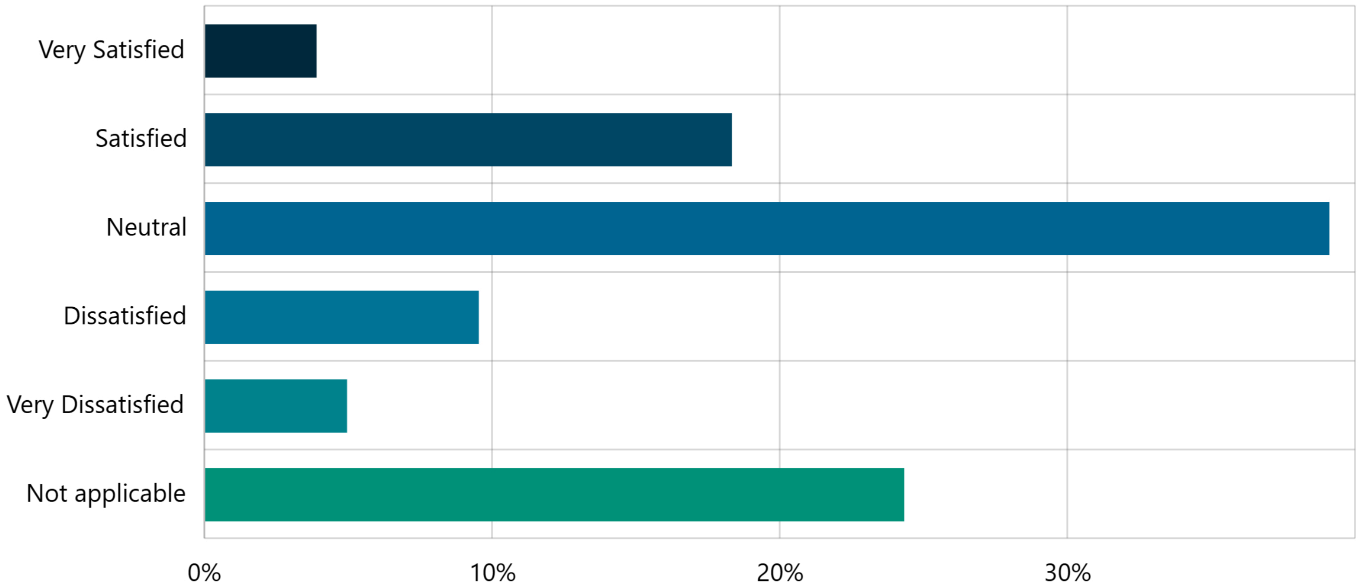
Multi Choice | Skipped: 4 | Answered: 285 (98.6%)



Answer choices	Percent	Count
Very Satisfied	4.21%	12
Satisfied	18.25%	52
Neutral	19.65%	56
Dissatisfied	33.68%	96
Very Dissatisfied	23.86%	68
Not applicable	0.35%	1
Total	**100.00%**	**285**

9. Condition of Gravel Roads

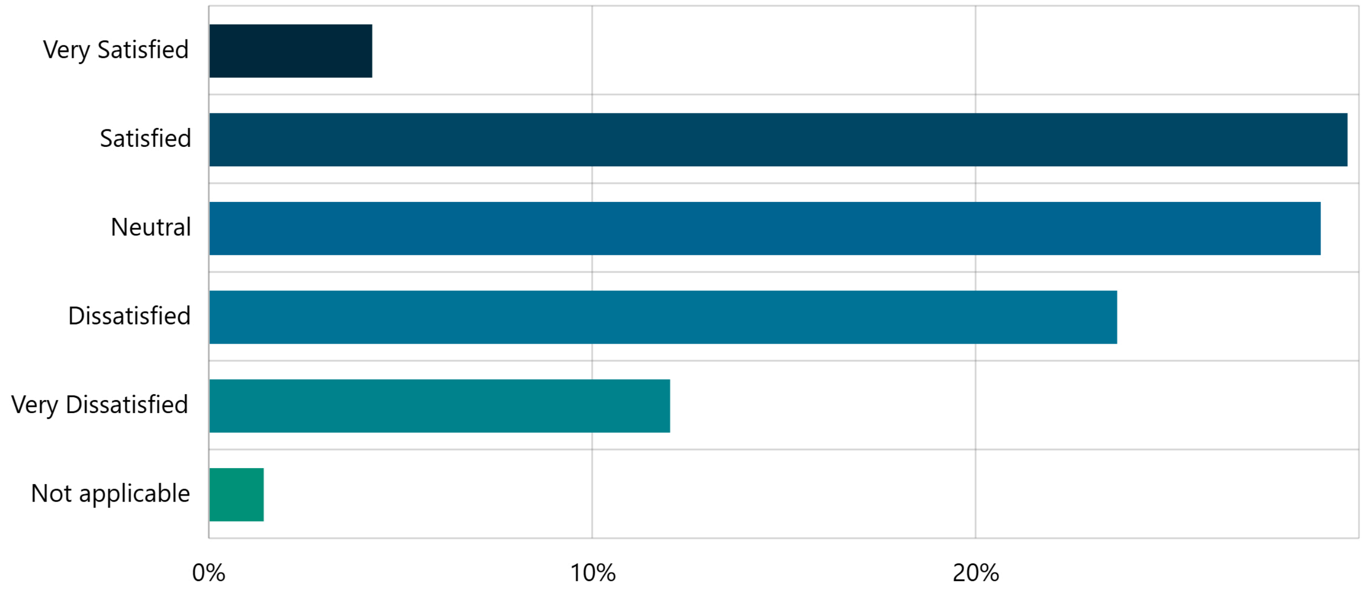
Multi Choice | Skipped: 5 | Answered: 284 (98.3%)



Answer choices	Percent	Count
Very Satisfied	3.87%	11
Satisfied	18.31%	52
Neutral	39.08%	111
Dissatisfied	9.51%	27
Very Dissatisfied	4.93%	14
Not applicable	24.30%	69
Total	**100.00%**	**284**

10. Condition of Sidewalks

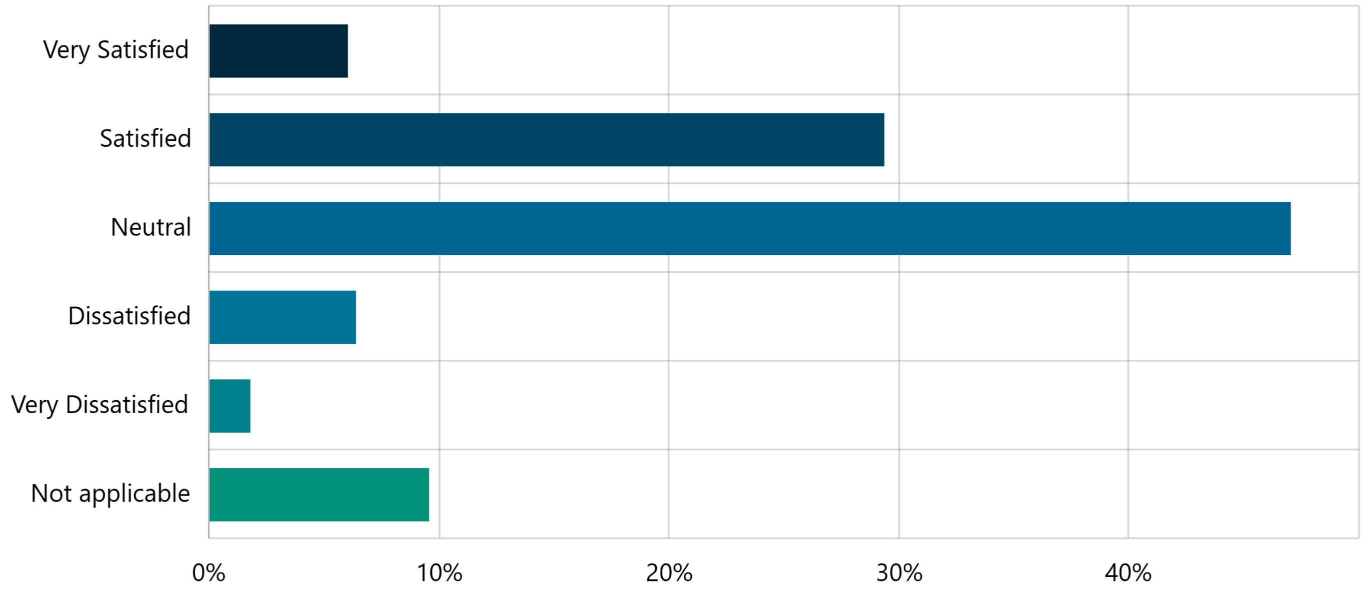
Multi Choice | Skipped: 6 | Answered: 283 (97.9%)



Answer choices	Percent	Count
Very Satisfied	4.24%	12
Satisfied	29.68%	84
Neutral	28.98%	82
Dissatisfied	23.67%	67
Very Dissatisfied	12.01%	34
Not applicable	1.41%	4
Total	**100.00%**	**283**

11. Condition of Bridges & Culverts

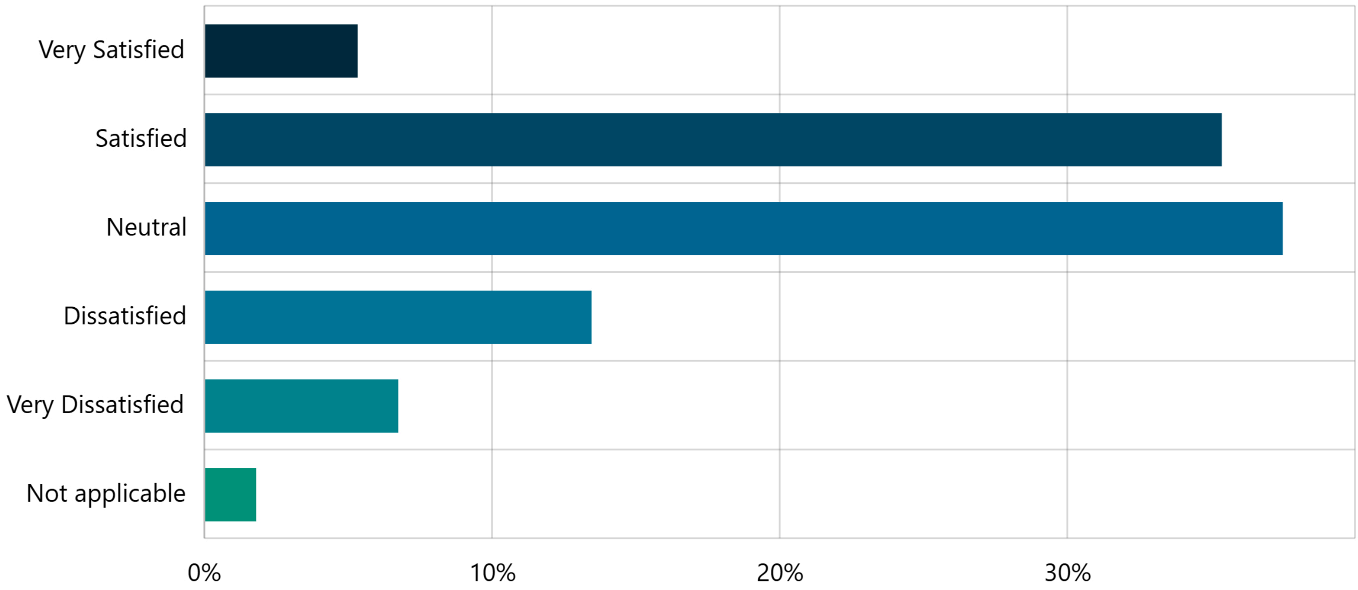
Multi Choice | Skipped: 6 | Answered: 283 (97.9%)



Answer choices	Percent	Count
Very Satisfied	6.01%	17
Satisfied	29.33%	83
Neutral	47.00%	133
Dissatisfied	6.36%	18
Very Dissatisfied	1.77%	5
Not applicable	9.54%	27
Total	**100.00%**	**283**

12. Condition of Parking Lots and On-Street Spaces

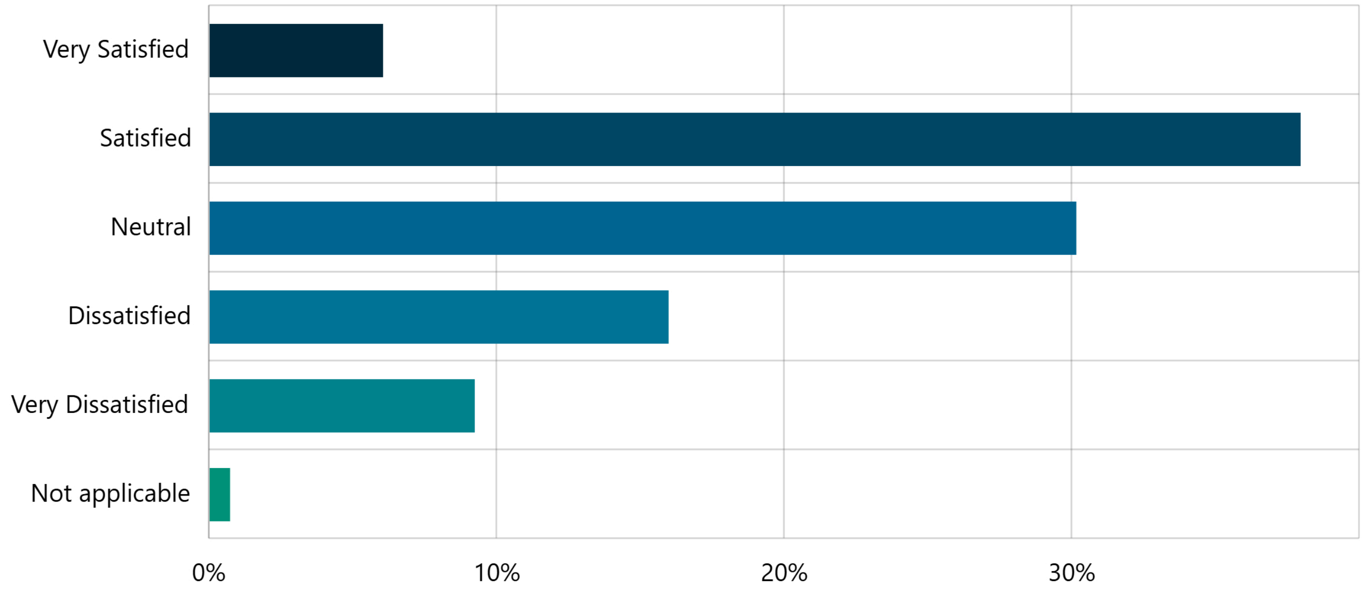
Multi Choice | Skipped: 6 | Answered: 283 (97.9%)



Answer choices	Percent	Count
Very Satisfied	5.30%	15
Satisfied	35.34%	100
Neutral	37.46%	106
Dissatisfied	13.43%	38
Very Dissatisfied	6.71%	19
Not applicable	1.77%	5
Total	**100.00%**	**283**

13. Condition of Traffic Control & Calming (incl. signalized intersections, cross walks, traffic control devices, etc.)

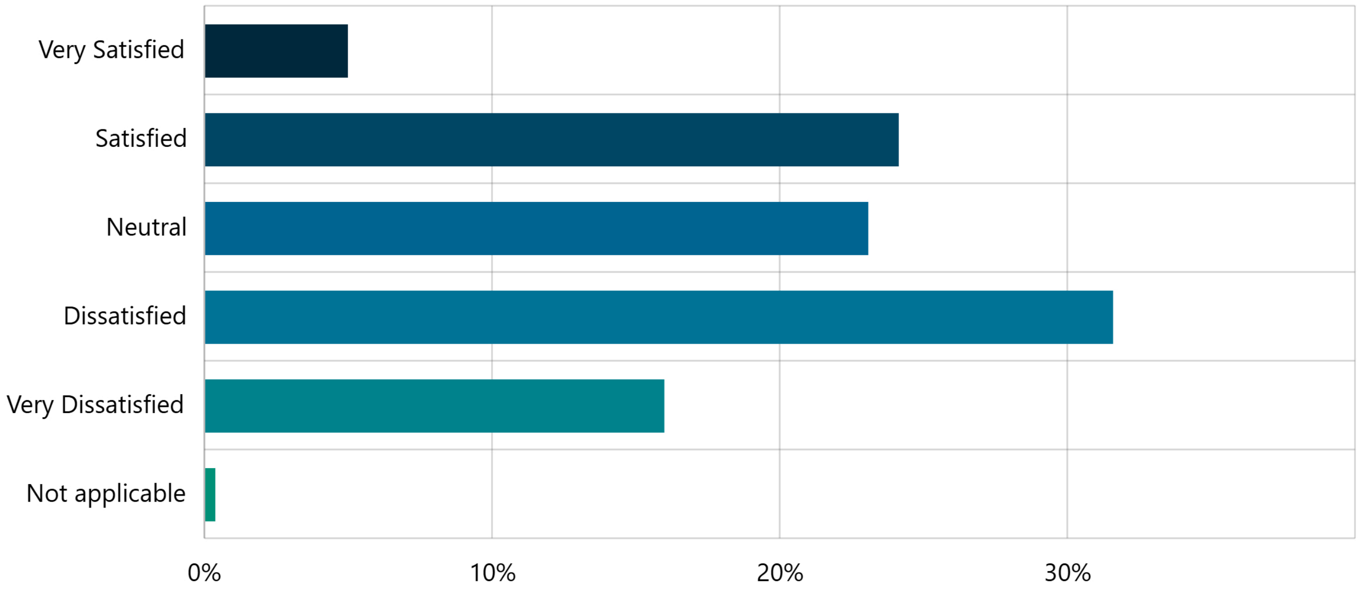
Multi Choice | Skipped: 7 | Answered: 282 (97.6%)



Answer choices	**Percent**	**Count**
Very Satisfied	6.03%	17
Satisfied	37.94%	107
Neutral	30.14%	85
Dissatisfied	15.96%	45
Very Dissatisfied	9.22%	26
Not applicable	0.71%	2
Total	**100.00%**	**282**

14. Road & Sidewalk Maintenance

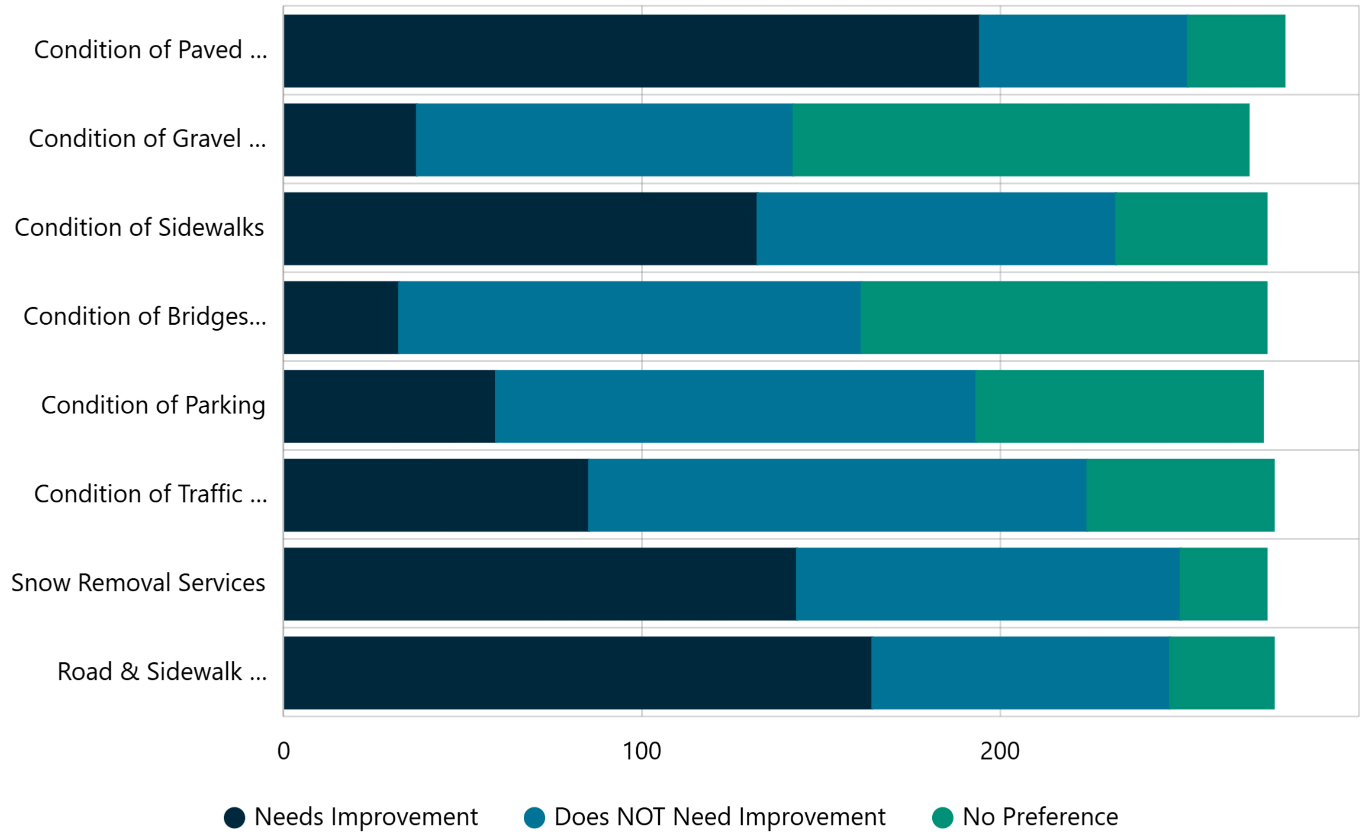
Multi Choice | Skipped: 7 | Answered: 282 (97.6%)



Answer choices	Percent	Count
Very Satisfied	4.96%	14
Satisfied	24.11%	68
Neutral	23.05%	65
Dissatisfied	31.56%	89
Very Dissatisfied	15.96%	45
Not applicable	0.35%	1
Total	**100.00%**	**282**

15. Which of the following transportation service areas in our transportation network needs improvement?

Matrix | Skipped: 8 | Answered: 281 (97.2%)

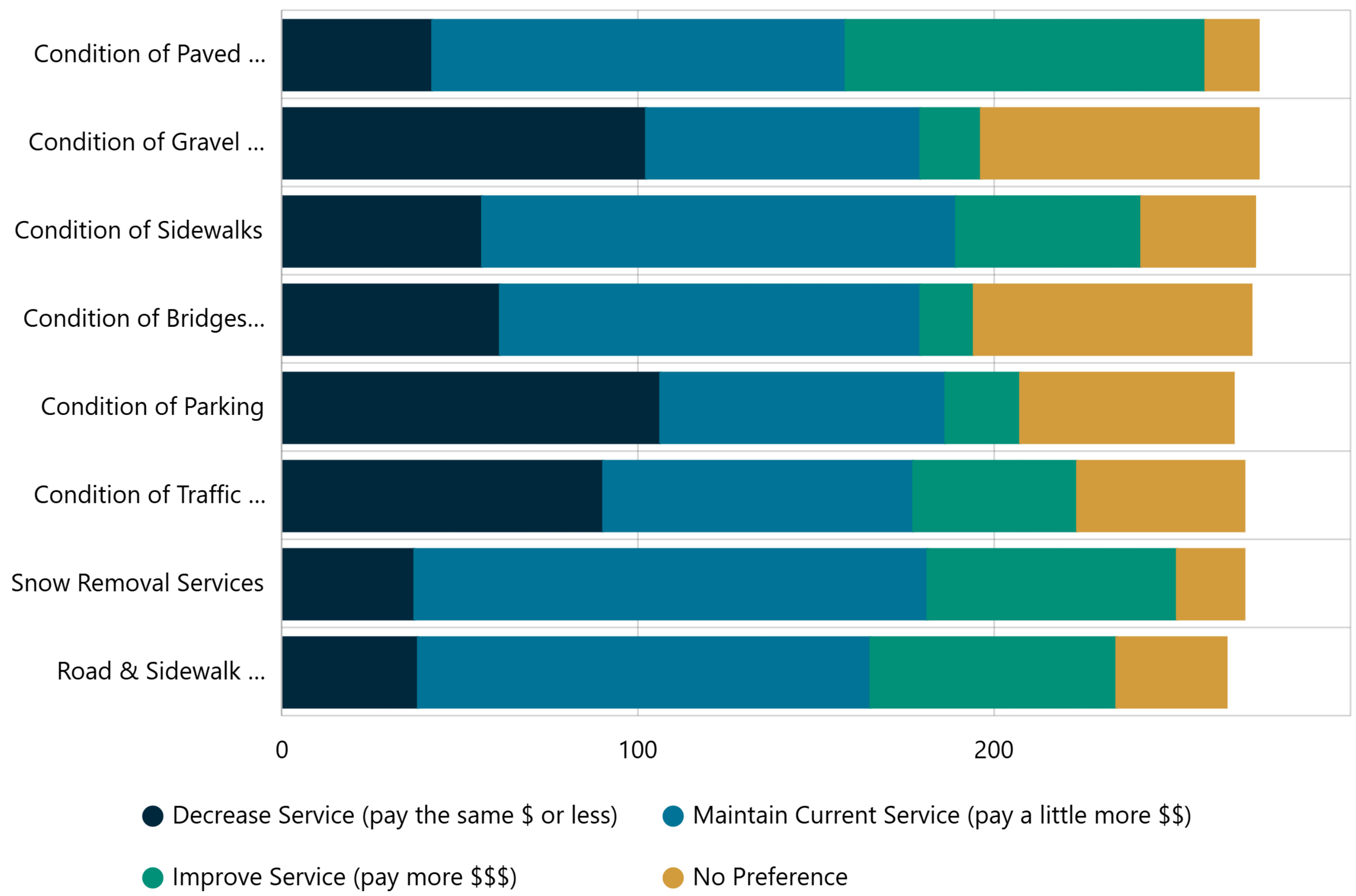


	Needs Improvement	Does NOT Need Improvement	No Preference	Count	Score
Condition of Paved Roads	69.53% 194	20.79% 58	9.68% 27	279	1.40
Condition of Gravel Roads	13.75% 37	39.03% 105	47.21% 127	269	2.33
Condition of Sidewalks	48.18% 132	36.50% 100	15.33% 42	274	1.67
Condition of Bridges & Culverts	11.68% 32	47.08% 129	41.24% 113	274	2.30
Condition of Parking	21.61% 59	49.08% 134	29.30% 80	273	2.08
Condition of Traffic Control & Calming (incl. signalized intersections, cross walks, traffic control devices, etc.)	30.80% 85	50.36% 139	18.84% 52	276	1.88
Snow Removal Services	52.19% 143	39.05% 107	8.76% 24	274	1.57

Road & Sidewalk Maintenance	59.42% 164	30.07% 83	10.51% 29	276	1.51

16. Please indicate your preference for maintaining, increasing or decreasing the service levels for each of the service areas.

Matrix | Skipped: 12 | Answered: 277 (95.8%)



	Decrease Service (pay the same $ or less)	Maintain Current Service (pay a little more $$)	Improve Service (pay more $$$)	No Preference	Count	Score
Condition of Paved Roads	15.33% 42	42.34% 116	36.86% 101	5.47% 15	274	2.32
Condition of Gravel Roads	37.23% 102	28.10% 77	6.20% 17	28.47% 78	274	2.26
Condition of Sidewalks	20.51% 56	48.72% 133	19.05% 52	11.72% 32	273	2.22
Condition of Bridges & Culverts	22.43% 61	43.38% 118	5.51% 15	28.68% 78	272	2.40
Condition of Parking	39.70% 106	29.96% 80	7.87% 21	22.47% 60	267	2.13
Condition of Traffic Control & Calming (incl. signalized	33.33% 90	32.22% 87	17.04% 46	17.41% 47	270	2.19

intersections, cross walks, traffic control devices, etc.)						
Snow Removal Services	13.70% 37	53.33% 144	25.93% 70	7.04% 19	270	2.26
Road & Sidewalk Maintenance	14.34% 38	47.92% 127	26.04% 69	11.70% 31	265	2.35

17. Do you have any additional comments on maintaining, increasing, or decreasing the service levels of transportation? (Leave blank of not applicable).

Long Text | Skipped: 195 | Answered: 94 (32.5%)

Sentiment

No sentiment data

Tags

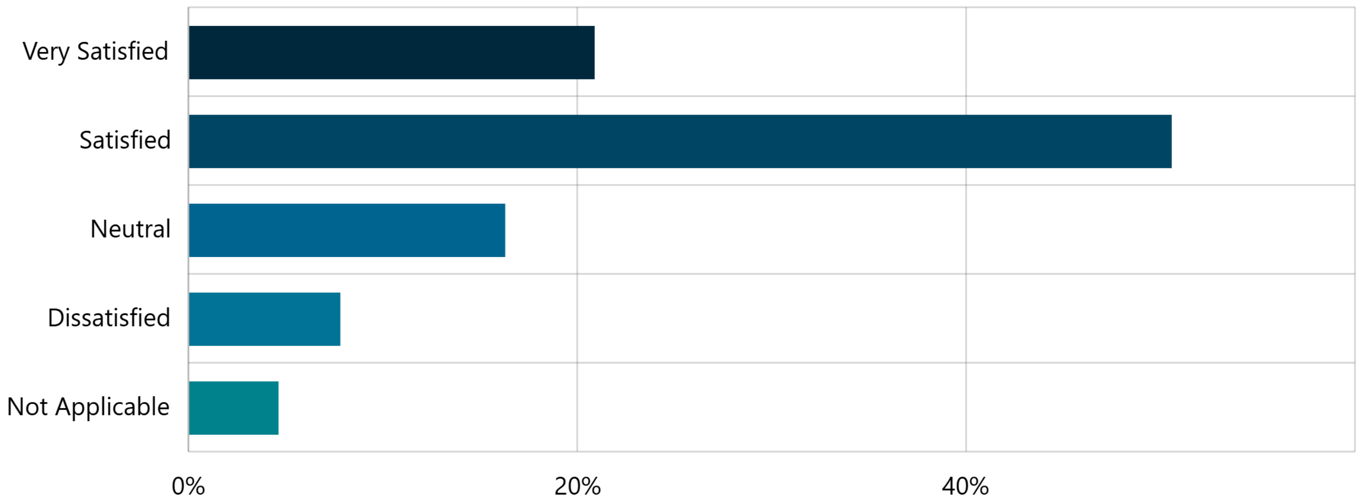
No tag data

Featured Contributions

No featured contributions

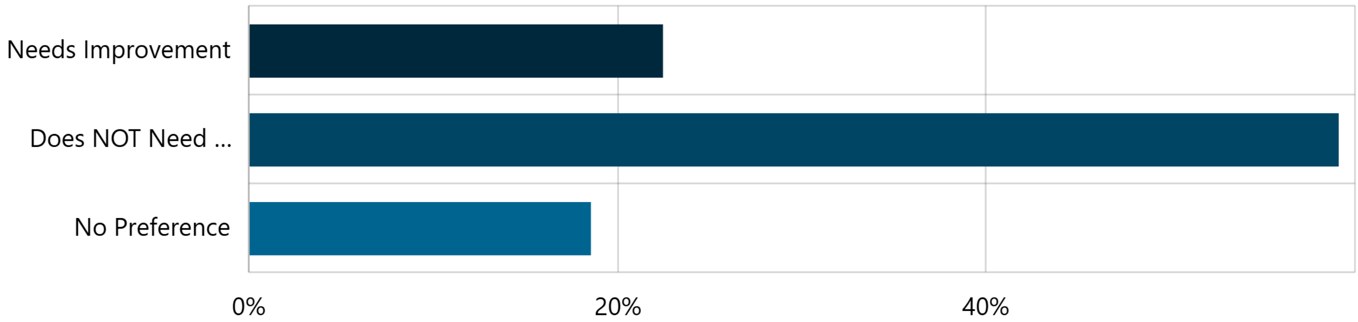
18. How satisfied are you with the current condition and performance of the City's drinking water service? If you do not use the service, please select "Not Applicable".

Multi Choice | Skipped: 6 | Answered: 283 (97.9%)



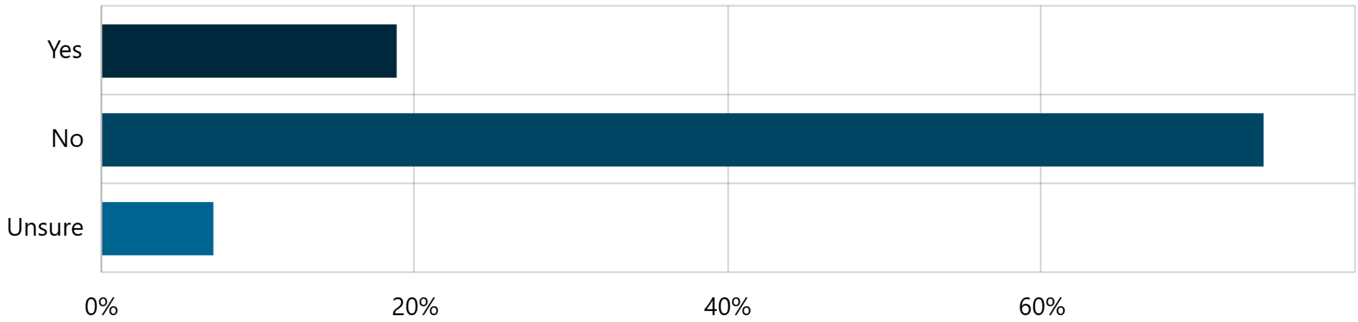
Answer choices	Percent	Count
Very Satisfied	20.85%	59
Satisfied	50.53%	143
Neutral	16.25%	46
Dissatisfied	7.77%	22
Not Applicable	4.59%	13
Total	**100.00%**	**283**

19. How would you assess the need for improvement of the City's current drinking water services?
Multi Choice | Skipped: 8 | Answered: 281 (97.2%)



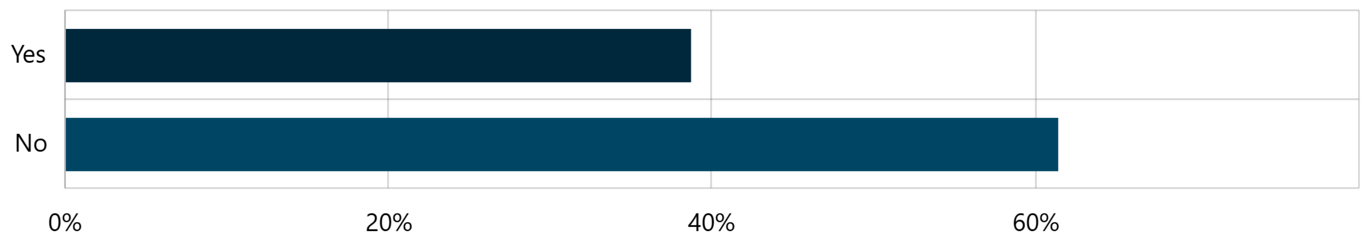
Answer choices	Percent	Count
Needs Improvement	22.42%	63
Does NOT Need Improvement	59.07%	166
No Preference	18.51%	52
Total	**100.00%**	**281**

20. In the last five years, has your household or business experienced a disruption to your water service?
Multi Choice | Skipped: 7 | Answered: 282 (97.6%)



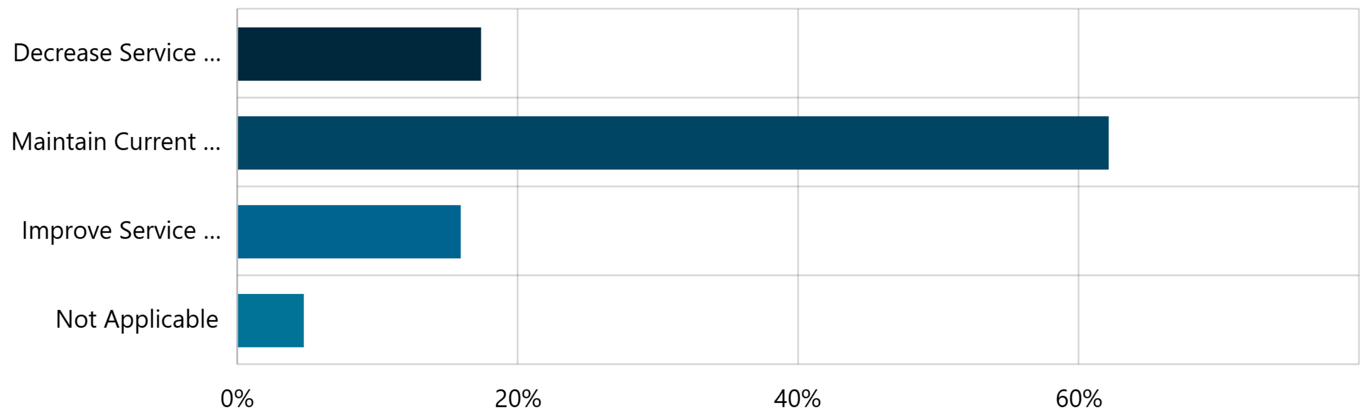
Answer choices	**Percent**	**Count**
Yes	18.79%	53
No	74.11%	209
Unsure	7.09%	20
Total	**100.00%**	**282**

21. Due to aging infrastructure the City may consider adding a temporary charge to your water bill to allow for necessary watermain upgrades. Would you be open to this temporary measure?
Multi Choice | Skipped: 7 | Answered: 282 (97.6%)



Answer choices	Percent	Count
Yes	38.65%	109
No	61.35%	173
Total	**100.00%**	**282**

22. Please indicate your preference for maintaining, increasing or decreasing the service levels.
Multi Choice | Skipped: 12 | Answered: 277 (95.8%)



Answer choices	Percent	Count
Decrease Service (likely pay same $ or less)	17.33%	48
Maintain Current Service (likely pay more $$)	62.09%	172
Improve Service (likely pay more $$$)	15.88%	44
Not Applicable	4.69%	13
Total	**100.00%**	**277**

23. Do you have any additional comments on maintaining, increasing, or decreasing the service levels of water management? (Leave blank of not applicable).

Long Text | Skipped: 212 | Answered: 77 (26.6%)

Sentiment

No sentiment data

Tags

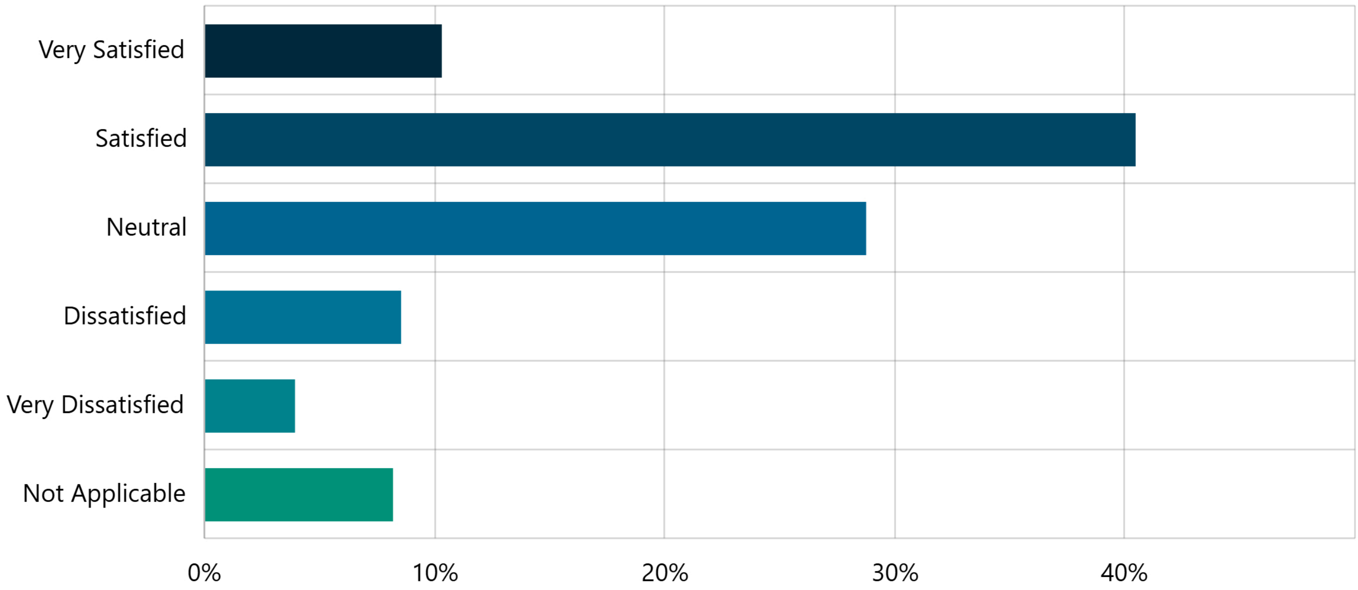
No tag data

Featured Contributions

No featured contributions

24. How satisfied are you with the current condition and performance of the City's wastewater systems, including the prevention of overflows and basement flooding? If you do not use the service, please select "Not Applicable."

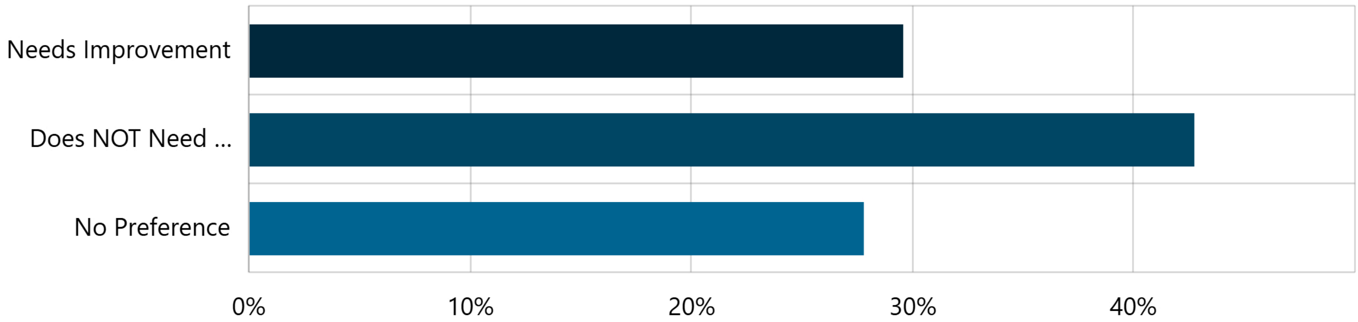
Multi Choice | Skipped: 7 | Answered: 282 (97.6%)



Answer choices	Percent	Count
Very Satisfied	10.28%	29
Satisfied	40.43%	114
Neutral	28.72%	81
Dissatisfied	8.51%	24
Very Dissatisfied	3.90%	11
Not Applicable	8.16%	23
Total	**100.00%**	**282**

25. How would you assess the need for improvement of the City's current wastewater services?

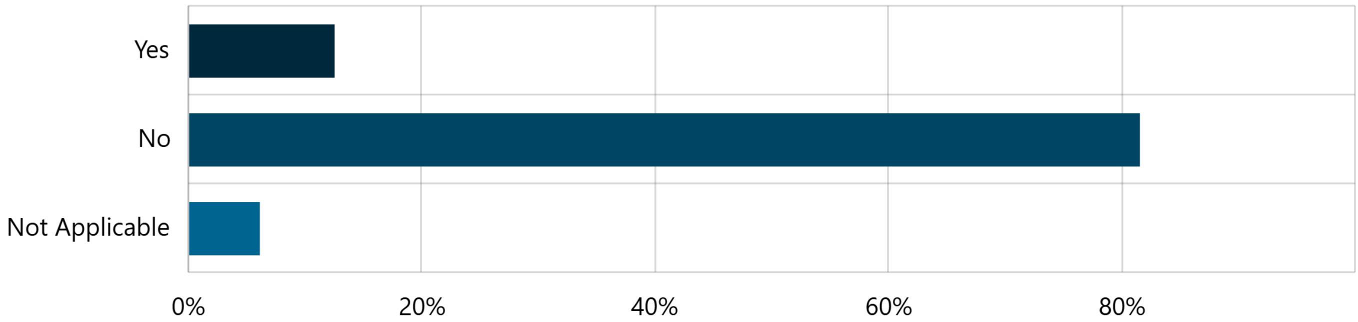
Multi Choice | Skipped: 8 | Answered: 281 (97.2%)



Answer choices	Percent	Count
Needs Improvement	29.54%	83
Does NOT Need Improvement	42.70%	120
No Preference	27.76%	78
Total	**100.00%**	**281**

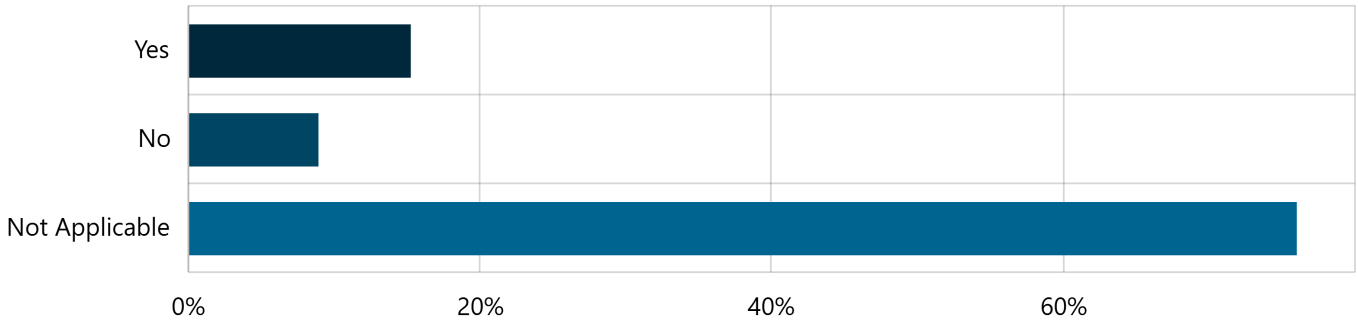
26. In the last five years, has your household or business experienced a sewer backup?

Multi Choice | Skipped: 8 | Answered: 281 (97.2%)



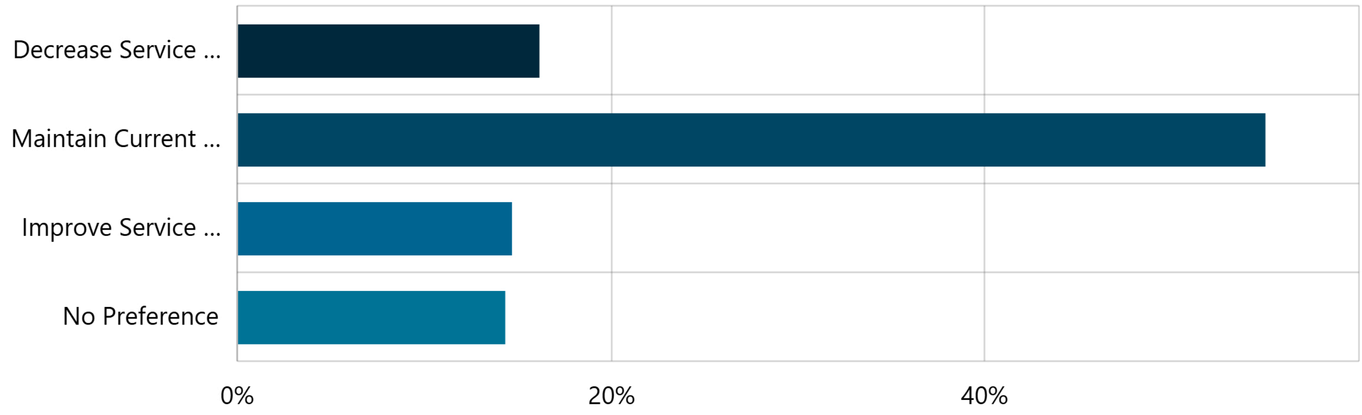
Answer choices	Percent	Count
Yes	12.46%	35
No	81.49%	229
Not Applicable	6.05%	17
Total	**100.00%**	**281**

27. If so, do you feel the City responded in a timely manner?
Multi Choice | Skipped: 52 | Answered: 237 (82%)



Answer choices	Percent	Count
Yes	15.19%	36
No	8.86%	21
Not Applicable	75.95%	180
Total	**100.00%**	**237**

28. Indicate your preference for maintaining, increasing or decreasing the service levels.
Multi Choice | Skipped: 16 | Answered: 273 (94.5%)



Answer choices	Percent	Count
Decrease Service (likely pay same $ or less)	16.12%	44
Maintain Current Service (likely pay more $$)	54.95%	150
Improve Service (likely pay more $$$)	14.65%	40
No Preference	14.29%	39
Total	**100.00%**	**273**

29. Do you have any additional comments on maintaining, increasing, or decreasing the service levels of wastewater management? (Leave blank of not applicable).

Long Text | Skipped: 233 | Answered: 56 (19.4%)

Sentiment

No sentiment data

Tags

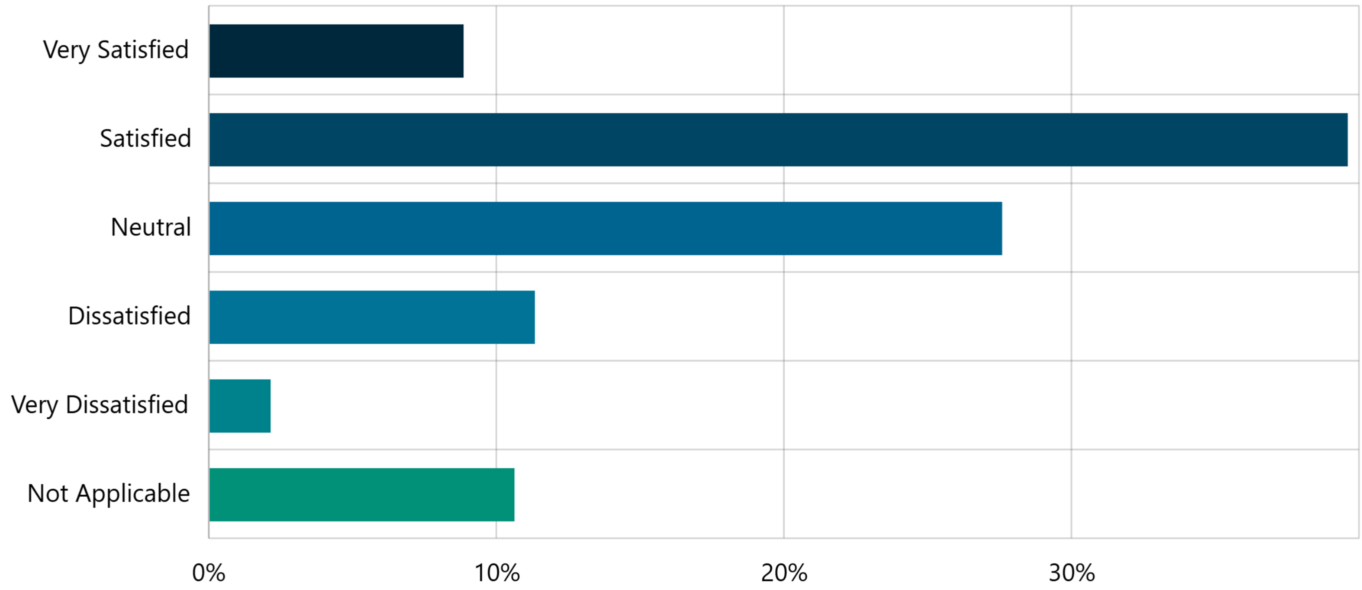
No tag data

Featured Contributions

No featured contributions

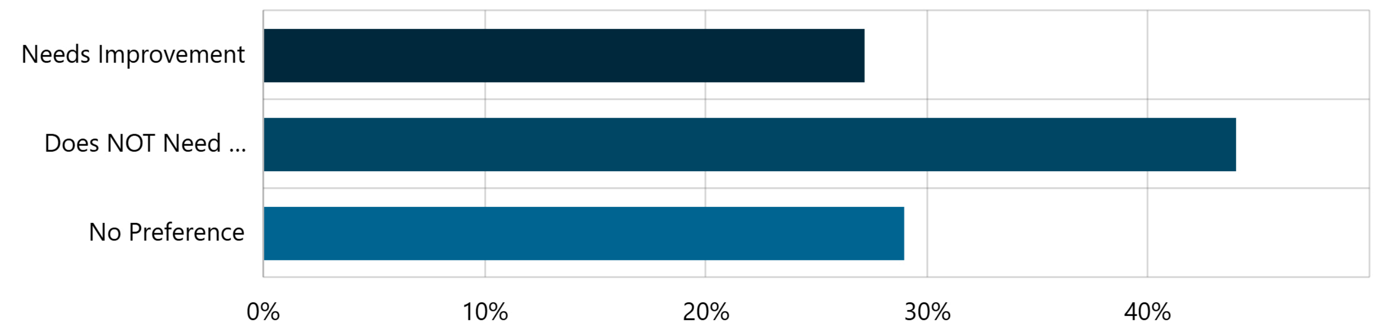
30. How satisfied are you with the current condition and performance of the City's stormwater management system in preventing flooding and ensuring proper drainage during heavy rainfall? If you do not use the service, please select "Not Applicable".

Multi Choice | Skipped: 6 | Answered: 283 (97.9%)



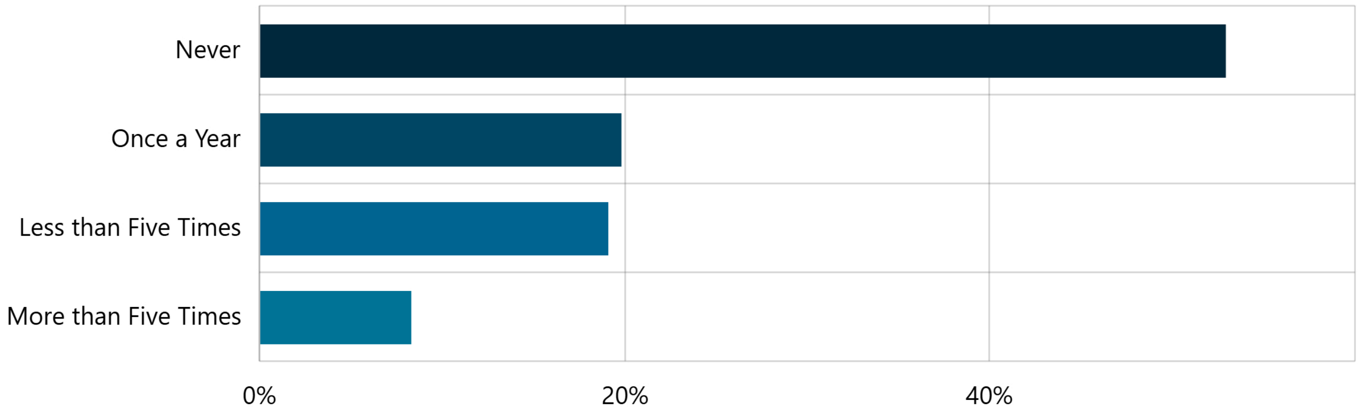
Answer choices	Percent	Count
Very Satisfied	8.83%	25
Satisfied	39.58%	112
Neutral	27.56%	78
Dissatisfied	11.31%	32
Very Dissatisfied	2.12%	6
Not Applicable	10.60%	30
Total	**100.00%**	**283**

31. How would you assess the need for improvement of the City's current stormwater management services?
Multi Choice | Skipped: 9 | Answered: 280 (96.9%)



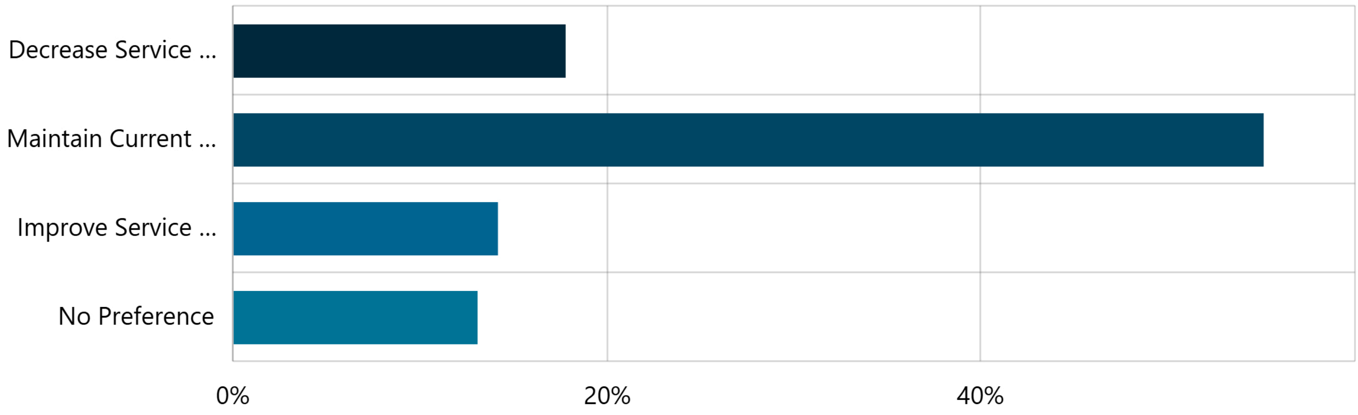
Answer choices	Percent	Count
Needs Improvement	27.14%	76
Does NOT Need Improvement	43.93%	123
No Preference	28.93%	81
Total	**100.00%**	**280**

32. In the last five years how often have you experienced an impact due to roads being flooded?
Multi Choice | Skipped: 11 | Answered: 278 (96.2%)



Answer choices	**Percent**	**Count**
Never	52.88%	147
Once a Year	19.78%	55
Less than Five Times	19.06%	53
More than Five Times	8.27%	23
Total	**100.00%**	**278**

33. Please indicate your preference for maintaining, increasing or decreasing the service levels.
Multi Choice | Skipped: 13 | Answered: 276 (95.5%)



Answer choices	Percent	Count
Decrease Service (likely pay same $ or less)	17.75%	49
Maintain Current Service (likely pay more $$)	55.07%	152
Improve Service (likely pay more $$$)	14.13%	39
No Preference	13.04%	36
Total	**100.00%**	**276**

34. Do you have any additional comments on maintaining, increasing, or decreasing the service levels of stormwater management? (Leave blank of not applicable).

Long Text | Skipped: 234 | Answered: 55 (19%)

Sentiment

No sentiment data

Tags

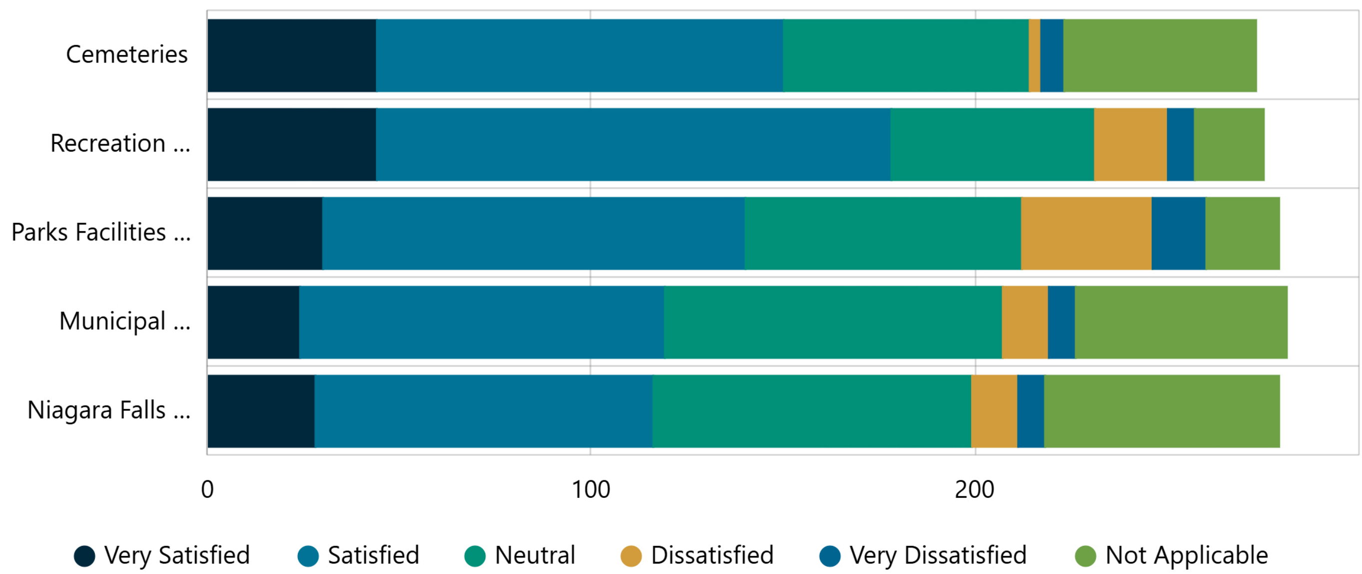
No tag data

Featured Contributions

No featured contributions

35. How satisfied are you with the current condition and maintenance provided by each of the following services and public assets in the City? If you do not use the service, please select "Not Applicable".

Matrix | Skipped: 7 | Answered: 282 (97.6%)

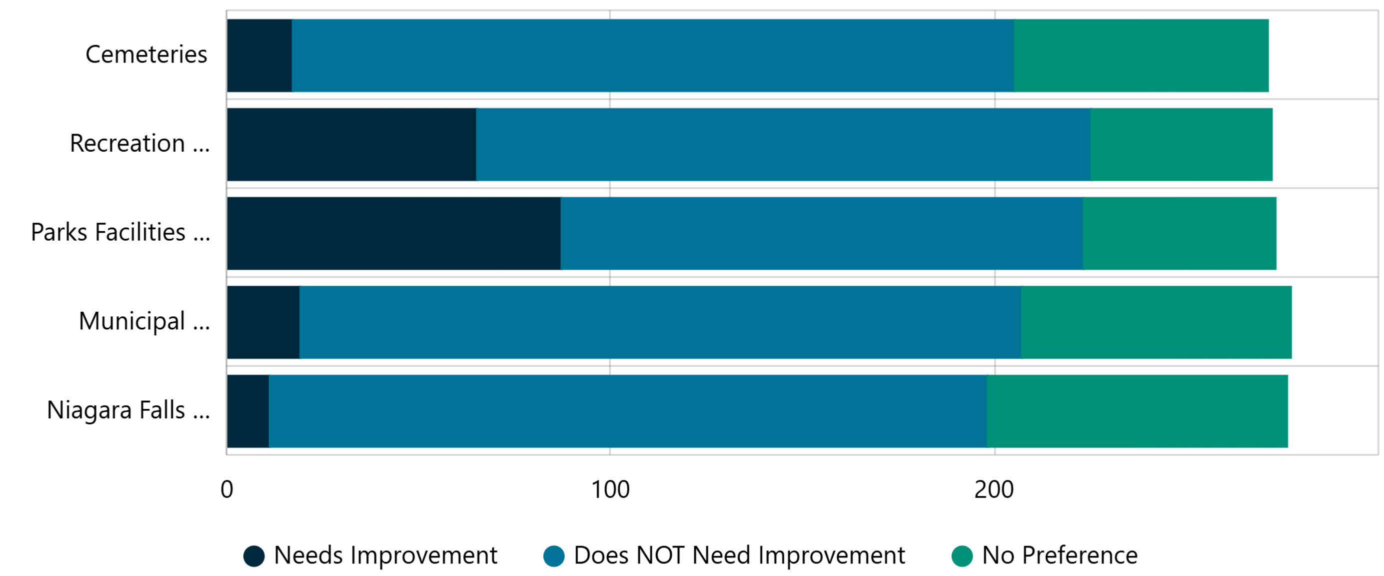


	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied	Not Applicable	Count	Score
Cemeteries	16.12% 44	38.83% 106	23.44% 64	1.10% 3	2.20% 6	18.32% 50	273	2.89
Recreation Facilities (E.g. MacBain Community Centre, Gale Centre, Willoughby Arena)	16.00% 44	48.73% 134	19.27% 53	6.91% 19	2.55% 7	6.55% 18	275	2.51
Parks Facilities (E.g. Picnic Shelters, change rooms, public washrooms, grandstands, aquatics)	10.75% 30	39.43% 110	25.81% 72	12.19% 34	5.02% 14	6.81% 19	279	2.82
Municipal Administrative Facilities (E.g. City Hall, Wayne	8.54% 24	33.81% 95	31.32% 88	4.27% 12	2.49% 7	19.57% 55	281	3.17

Thompson, Service Centre)								
Niagara Falls Convention Centre	10.04% 28	31.54% 88	29.75% 83	4.30% 12	2.51% 7	21.86% 61	279	3.23

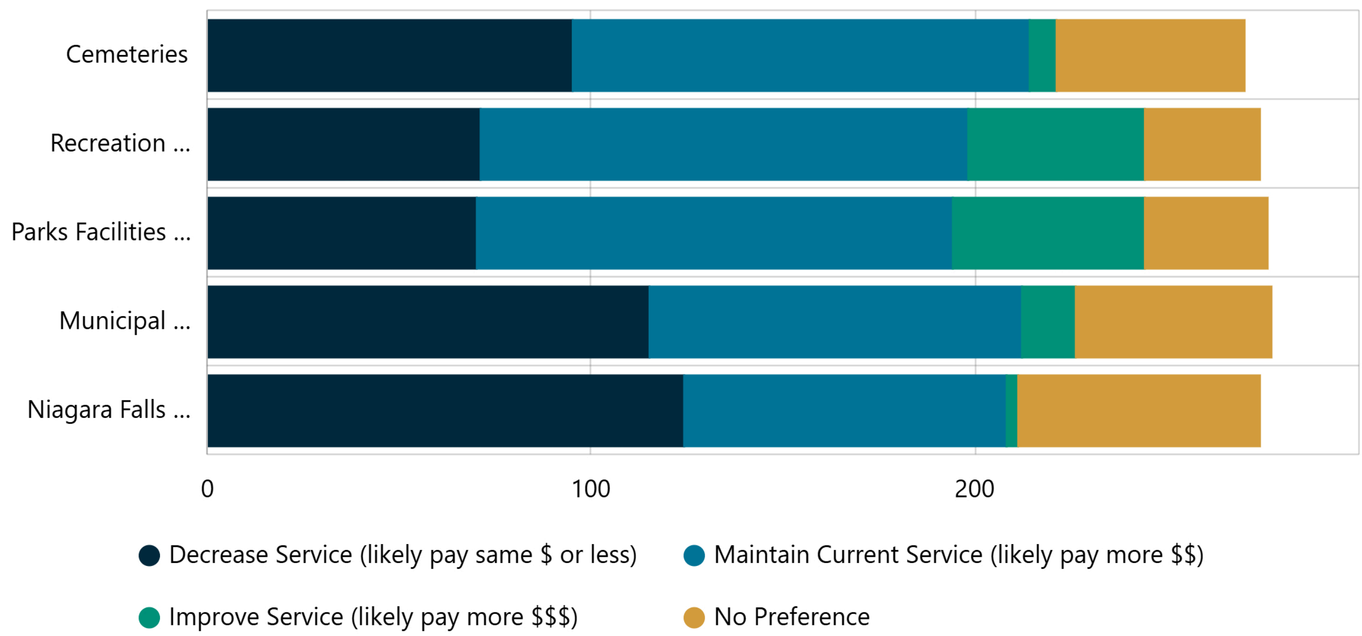
36. How would you assess the need for improvement of the City's current recreation, culture, cemeteries & facility services?

Matrix | Skipped: 10 | Answered: 279 (96.5%)



	Needs Improvement	Does NOT Need Improvement	No Preference	Count	Score
Cemeteries	6.27% 17	69.37% 188	24.35% 66	271	2.18
Recreation Facilities (E.g. MacBain Community Centre, Gale Centre, Willoughby Arena)	23.90% 65	58.82% 160	17.28% 47	272	1.93
Parks Facilities (E.g. Picnic Shelters, change rooms, public washrooms, grandstands, aquatics)	31.87% 87	49.82% 136	18.32% 50	273	1.86
Municipal Administrative Facilities (E.g. City Hall, Wayne Thompson, Service Centre)	6.86% 19	67.87% 188	25.27% 70	277	2.18
Niagara Falls Convention Centre	3.99% 11	67.75% 187	28.26% 78	276	2.24

37. Based on the possible funding and service level outcomes, please indicate your preference for maintaining, increasing or decreasing the service levels for each of the service areas.
Matrix | Skipped: 12 | Answered: 277 (95.8%)



	Decrease Service (likely pay same $ or less)	Maintain Current Service (likely pay more $$)	Improve Service (likely pay more $$$)	No Preference	Count	Score
Cemeteries	35.19% 95	44.07% 119	2.59% 7	18.15% 49	270	2.04
Recreation Facilities (E.g. MacBain Community Centre, Gale Centre, Willoughby Arena)	25.91% 71	46.35% 127	16.79% 46	10.95% 30	274	2.13
Parks Facilities (E.g. Picnic Shelters, change rooms, public washrooms, grandstands, aquatics)	25.36% 70	44.93% 124	18.12% 50	11.59% 32	276	2.16
Municipal Administrative Facilities (E.g. City Hall, Wayne Thompson, Service Centre)	41.52% 115	35.02% 97	5.05% 14	18.41% 51	277	2.00
Niagara Falls	45.26%	30.66%	1.09%	22.99%	274	2.02

Convention Centre	124	84	3	63

38. Do you have any additional comments on maintaining, increasing, or decreasing the service levels of Recreation, Culture, Cemeteries & Facilities? (Leave blank of not applicable).

Long Text | Skipped: 220 | Answered: 69 (23.9%)

Sentiment

No sentiment data

Tags

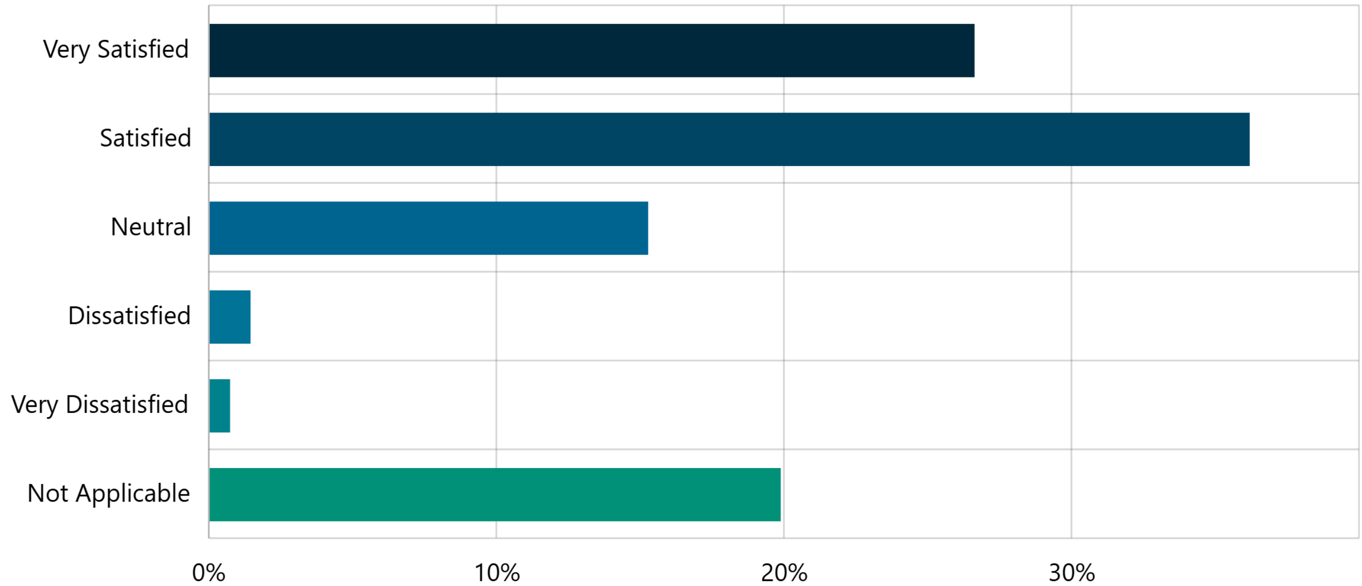
No tag data

Featured Contributions

No featured contributions

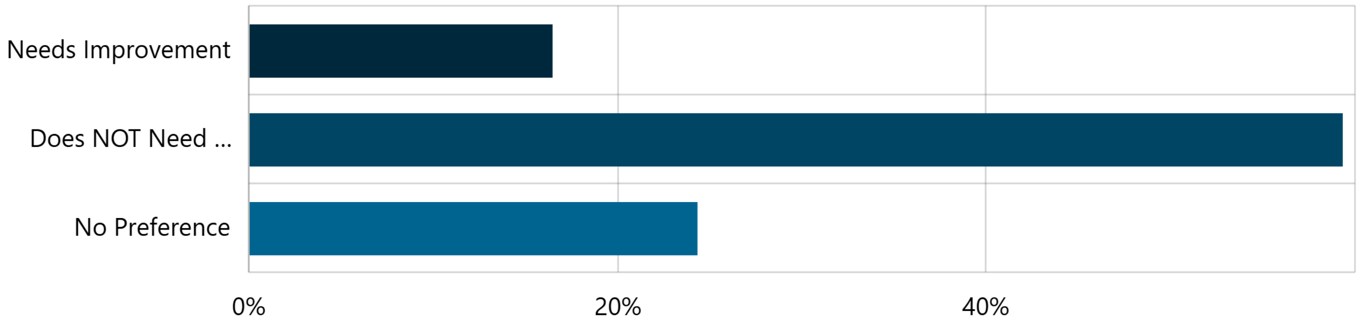
39. How satisfied are you with the response time of fire services in the City? If you do not use the service, please select “Not Applicable”.

Multi Choice | Skipped: 7 | Answered: 282 (97.6%)



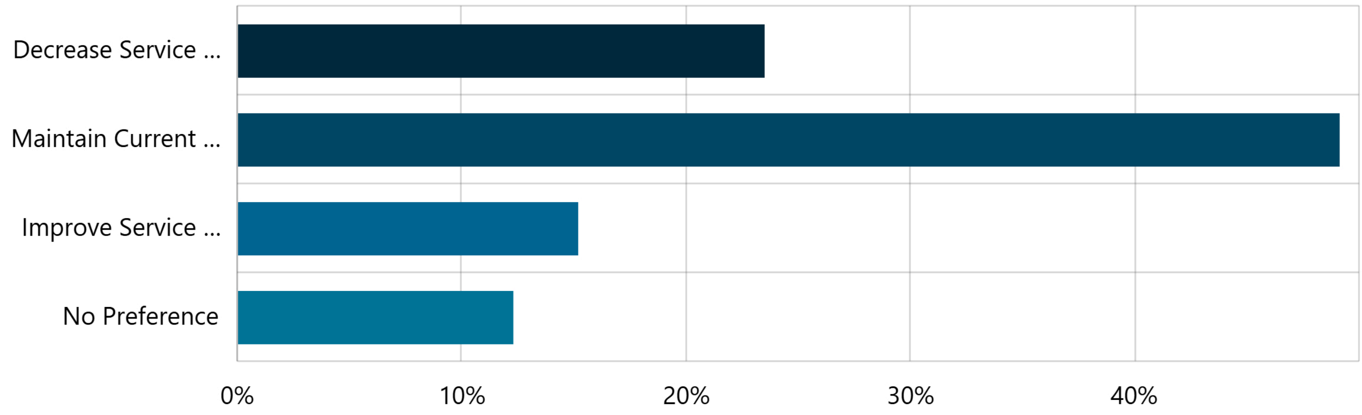
Answer choices	**Percent**	**Count**
Very Satisfied	26.60%	75
Satisfied	36.17%	102
Neutral	15.25%	43
Dissatisfied	1.42%	4
Very Dissatisfied	0.71%	2
Not Applicable	19.86%	56
Total	**100.00%**	**282**

40. How would you assess the need for improvement of the City’s current fire protection services?
Multi Choice | Skipped: 9 | Answered: 280 (96.9%)



Answer choices	Percent	Count
Needs Improvement	16.43%	46
Does NOT Need Improvement	59.29%	166
No Preference	24.29%	68
Total	**100.00%**	**280**

41. Please indicate your preference for maintaining, increasing or decreasing the service levels.
Multi Choice | Skipped: 12 | Answered: 277 (95.8%)



Answer choices	Percent	Count
Decrease Service (likely pay same $ or less)	23.47%	65
Maintain Current Service (likely pay more $$)	49.10%	136
Improve Service (likely pay more $$$)	15.16%	42
No Preference	12.27%	34
Total	**100.00%**	**277**

42. Do you have any additional comments on maintaining, increasing, or decreasing the service levels of fire services? (Leave blank of not applicable).
Long Text | Skipped: 231 | Answered: 58 (20.1%)

Sentiment

No sentiment data

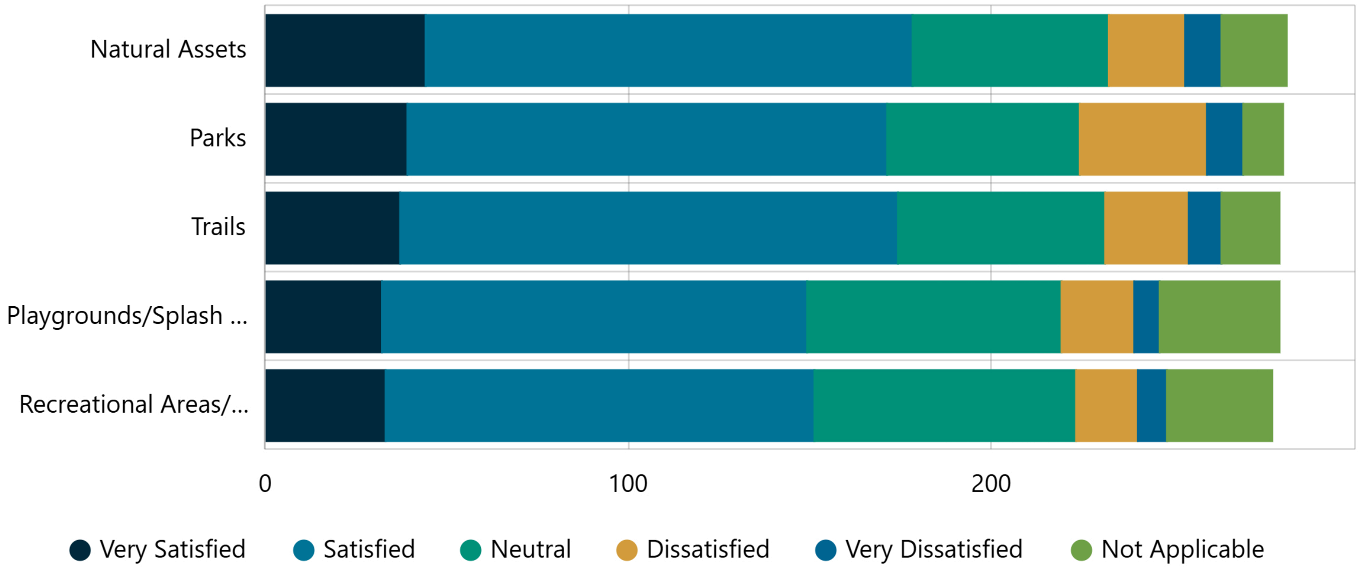
Tags

No tag data

Featured Contributions

No featured contributions

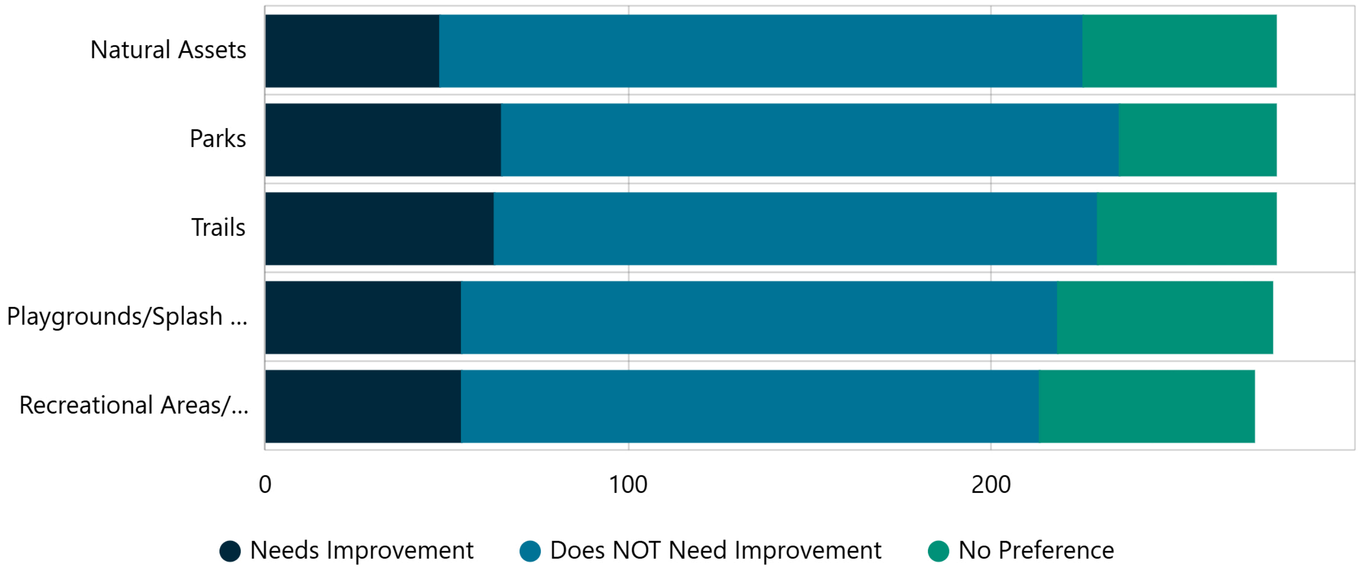
43. How satisfied are you with the current condition and cleanliness provided by each of the following services and public assets in the City? If you do not use the service, please select "Not Applicable".
Matrix | Skipped: 8 | Answered: 281 (97.2%)



	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied	Not Applicable	Count	Score
Natural Assets	15.66% 44	47.69% 134	19.22% 54	7.47% 21	3.56% 10	6.41% 18	281	2.55
Parks	13.93% 39	47.14% 132	18.93% 53	12.50% 35	3.57% 10	3.93% 11	280	2.56
Trails	13.26% 37	49.10% 137	20.43% 57	8.24% 23	3.23% 9	5.73% 16	279	2.56
Playgrounds/Splash Pads	11.47% 32	41.94% 117	25.09% 70	7.17% 20	2.51% 7	11.83% 33	279	2.83
Recreational Areas/Sports Fields	11.91% 33	42.60% 118	25.99% 72	6.14% 17	2.89% 8	10.47% 29	277	2.77

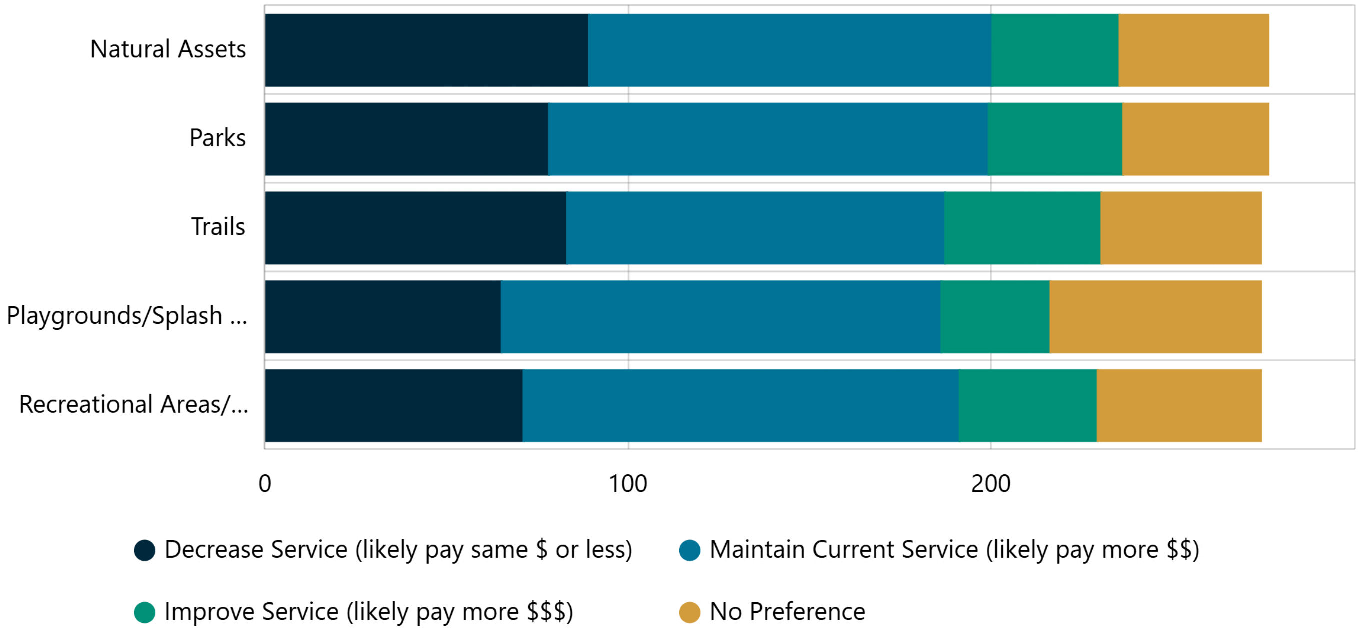
44. How would you assess the need for improvement of the City's current parks, trails and natural assets?

Matrix | Skipped: 10 | Answered: 279 (96.5%)



	Needs Improvement	Does NOT Need Improvement	No Preference	Count	Score
Natural Assets	17.27% 48	63.67% 177	19.06% 53	278	2.02
Parks	23.38% 65	61.15% 170	15.47% 43	278	1.92
Trails	22.66% 63	59.71% 166	17.63% 49	278	1.95
Playgrounds/Splash Pads	19.49% 54	59.21% 164	21.30% 59	277	2.02
Recreational Areas/Sports Fields	19.85% 54	58.46% 159	21.69% 59	272	2.02

45. Please indicate your preference for maintaining, increasing or decreasing the service levels for each of the service areas.
Matrix | Skipped: 12 | Answered: 277 (95.8%)



	Decrease Service (likely pay same $ or less)	Maintain Current Service (likely pay more $$)	Improve Service (likely pay more $$$)	No Preference	Count	Score
Natural Assets	32.25% 89	40.22% 111	12.68% 35	14.86% 41	276	2.10
Parks	28.26% 78	43.84% 121	13.41% 37	14.49% 40	276	2.14
Trails	30.29% 83	37.96% 104	15.69% 43	16.06% 44	274	2.18
Playgrounds/Splash Pads	23.72% 65	44.16% 121	10.95% 30	21.17% 58	274	2.30
Recreational Areas/Sports Fields	25.91% 71	43.80% 120	13.87% 38	16.42% 45	274	2.21

46. Do you have any additional comments on maintaining, increasing, or decreasing the service levels of parks, trails and natural assets? (Leave blank of not applicable).

Long Text | Skipped: 218 | Answered: 71 (24.6%)

Sentiment

No sentiment data

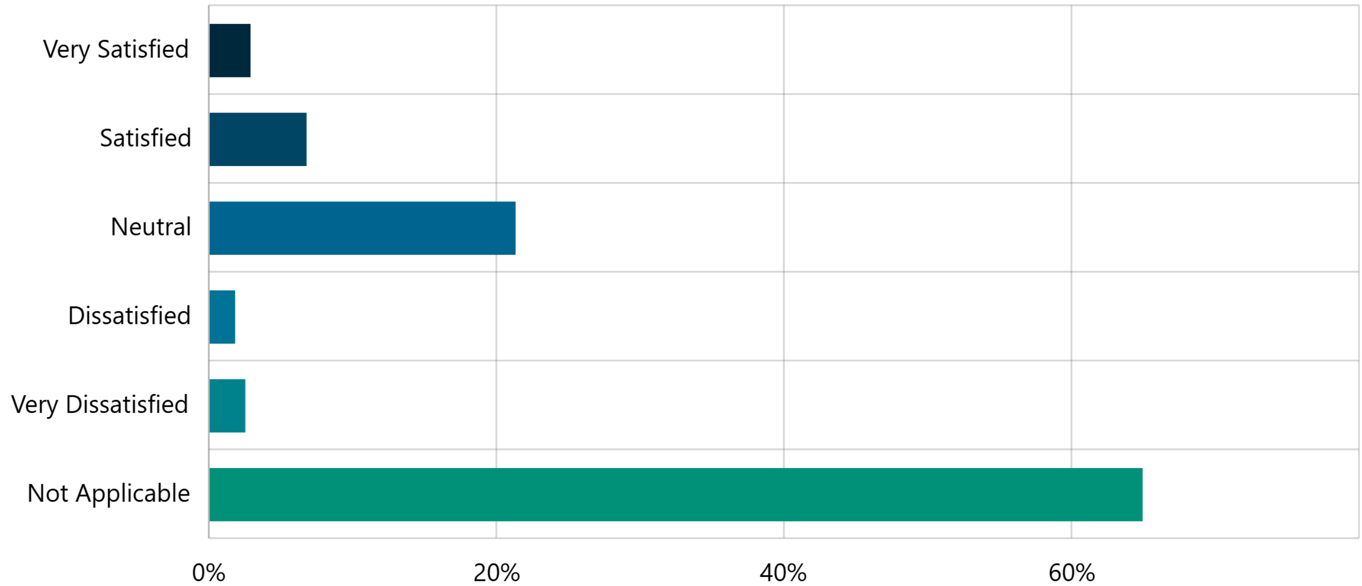
Tags

No tag data

Featured Contributions

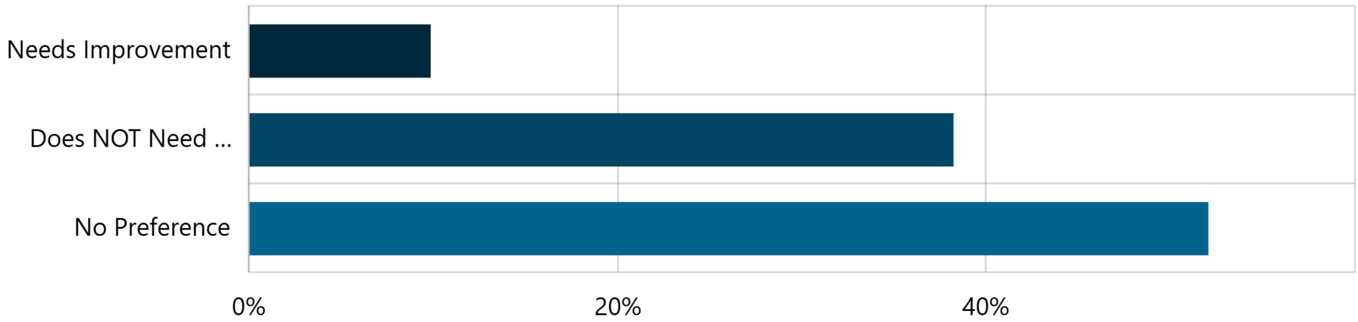
No featured contributions

47. How satisfied are you with the current condition and performance of the Niagara District Airport? If you do not use the service, please select “Not Applicable.”
Multi Choice | Skipped: 7 | Answered: 282 (97.6%)



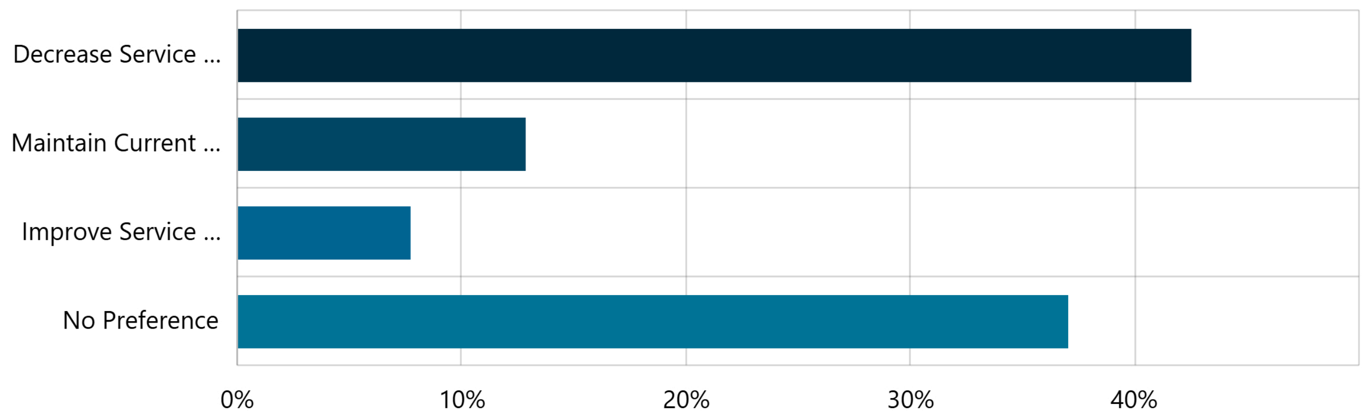
Answer choices	Percent	Count
Very Satisfied	2.84%	8
Satisfied	6.74%	19
Neutral	21.28%	60
Dissatisfied	1.77%	5
Very Dissatisfied	2.48%	7
Not Applicable	64.89%	183
Total	**100.00%**	**282**

48. How would you assess the need for improvement of the Niagara District Airport at this time?
Multi Choice | Skipped: 14 | Answered: 275 (95.2%)



Answer choices	Percent	Count
Needs Improvement	9.82%	27
Does NOT Need Improvement	38.18%	105
No Preference	52.00%	143
Total	**100.00%**	**275**

49. Based on the possible funding and service level outcomes, please indicate your preference for maintaining, increasing or decreasing the service levels.
Multi Choice | Skipped: 16 | Answered: 273 (94.5%)



Answer choices	Percent	Count
Decrease Service (likely pay same $ or less)	42.49%	116
Maintain Current Service (likely pay more $$)	12.82%	35
Improve Service (likely pay more $$$)	7.69%	21
No Preference	37.00%	101
Total	**100.00%**	**273**

50. Do you have any additional comments on maintaining, increasing, or decreasing the service levels of the Niagara District Airport? (Leave blank of not applicable).

Long Text | Skipped: 218 | Answered: 71 (24.6%)

Sentiment

No sentiment data

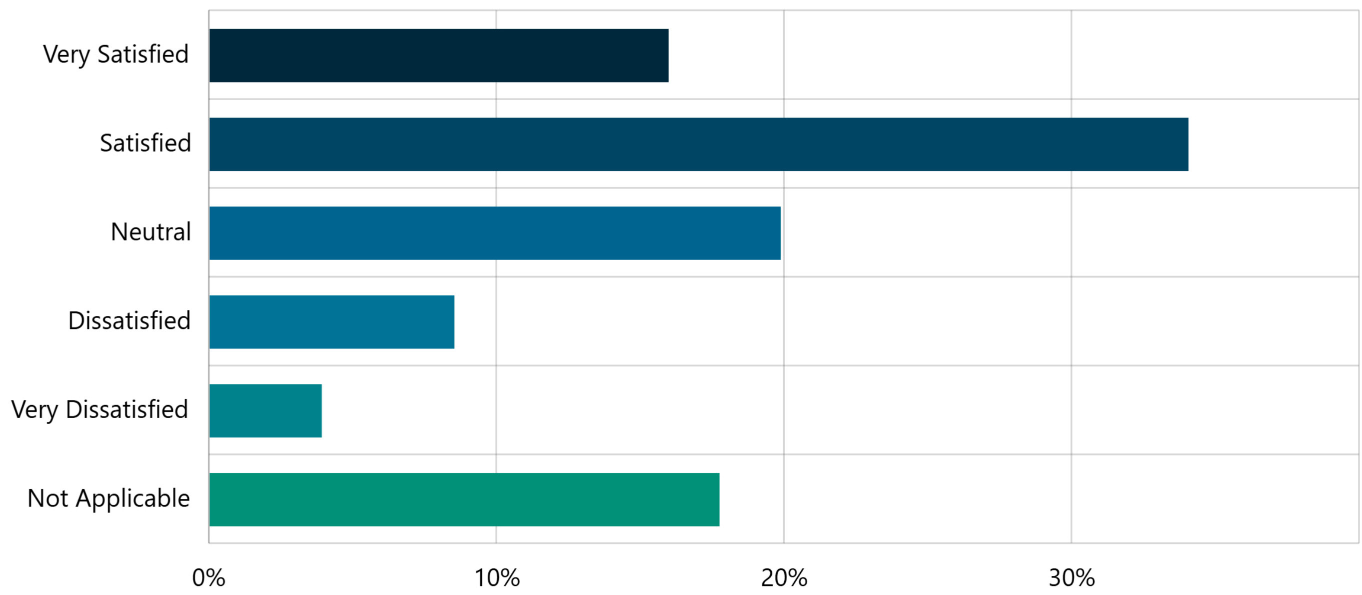
Tags

No tag data

Featured Contributions

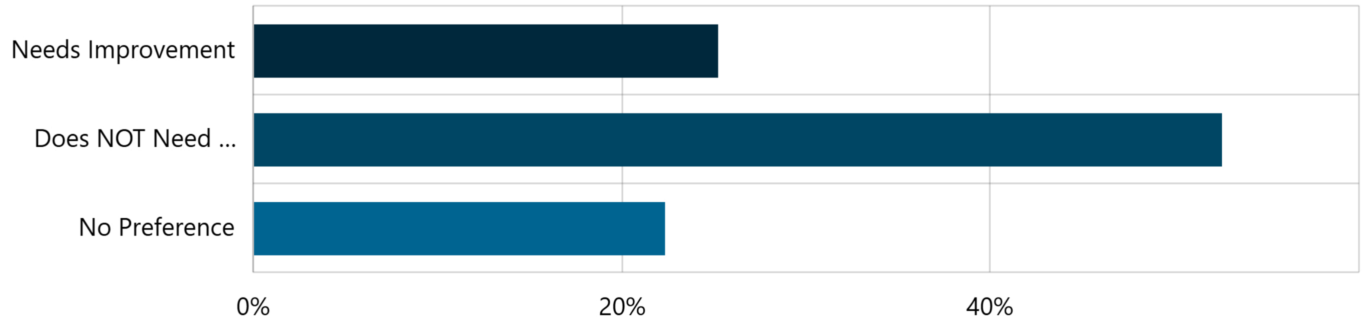
No featured contributions

51. How satisfied are you with the current condition and performance of the City's libraries? If you do not use the service, please select "Not Applicable."
Multi Choice | Skipped: 7 | Answered: 282 (97.6%)



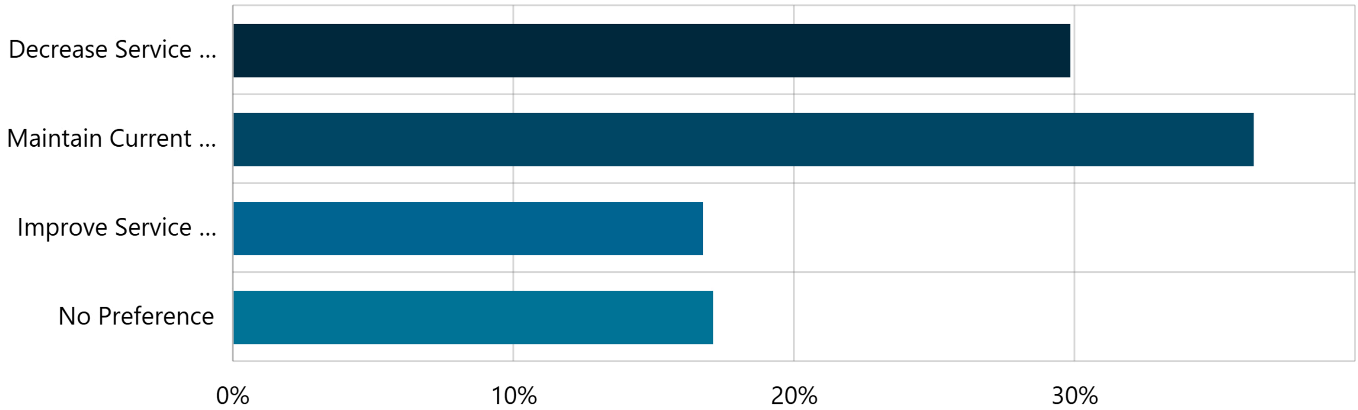
Answer choices	Percent	Count
Very Satisfied	15.96%	45
Satisfied	34.04%	96
Neutral	19.86%	56
Dissatisfied	8.51%	24
Very Dissatisfied	3.90%	11
Not Applicable	17.73%	50
Total	**100.00%**	**282**

52. How would you assess the need for improvement of the City's libraries at this time?
Multi Choice | Skipped: 11 | Answered: 278 (96.2%)



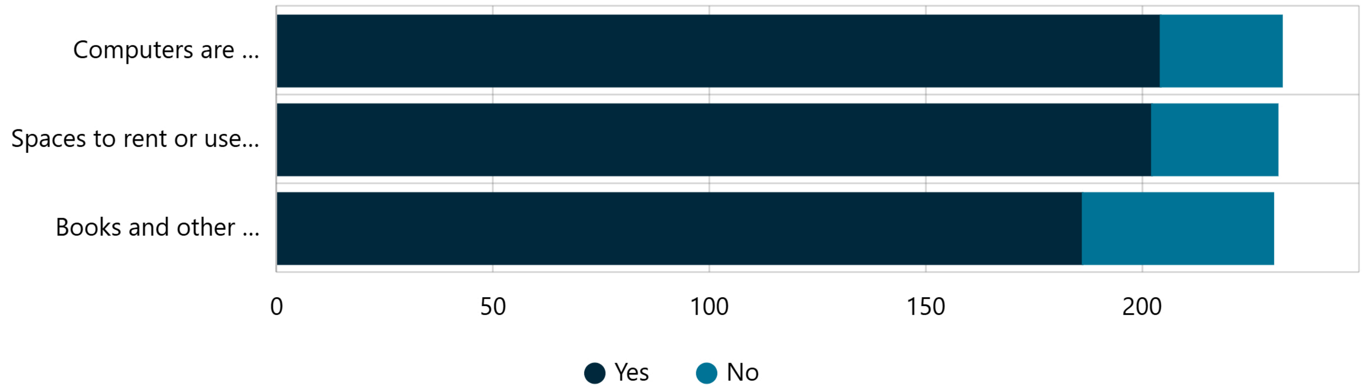
Answer choices	Percent	Count
Needs Improvement	25.18%	70
Does NOT Need Improvement	52.52%	146
No Preference	22.30%	62
Total	**100.00%**	**278**

53. Based on the possible funding and service level outcomes, please indicate your preference for maintaining, increasing or decreasing the service levels.
Multi Choice | Skipped: 14 | Answered: 275 (95.2%)



Answer choices	Percent	Count
Decrease Service (likely pay same $ or less)	29.82%	82
Maintain Current Service (likely pay more $$)	36.36%	100
Improve Service (likely pay more $$$)	16.73%	46
No Preference	17.09%	47
Total	**100.00%**	**275**

54. When attending the City's libraries do you feel the following services are available?
Matrix | Skipped: 53 | Answered: 236 (81.7%)



	Yes	No	Count	Score
Computers are available?	87.93% 204	12.07% 28	232	1.12
Spaces to rent or use are available?	87.45% 202	12.55% 29	231	1.13
Books and other rentals you're looking for are available?	80.87% 186	19.13% 44	230	1.19

55. What type of service offerings would you like to have available at the City's libraries (i.e. Musical Instrument Rentals)?

Long Text | Skipped: 206 | Answered: 83 (28.7%)

Sentiment

No sentiment data

Tags

No tag data

Featured Contributions

No featured contributions

56. Do you have any additional comments on maintaining, increasing, or decreasing the service levels of libraries? (Leave blank of not applicable).

Long Text | Skipped: 210 | Answered: 79 (27.3%)

Sentiment

No sentiment data

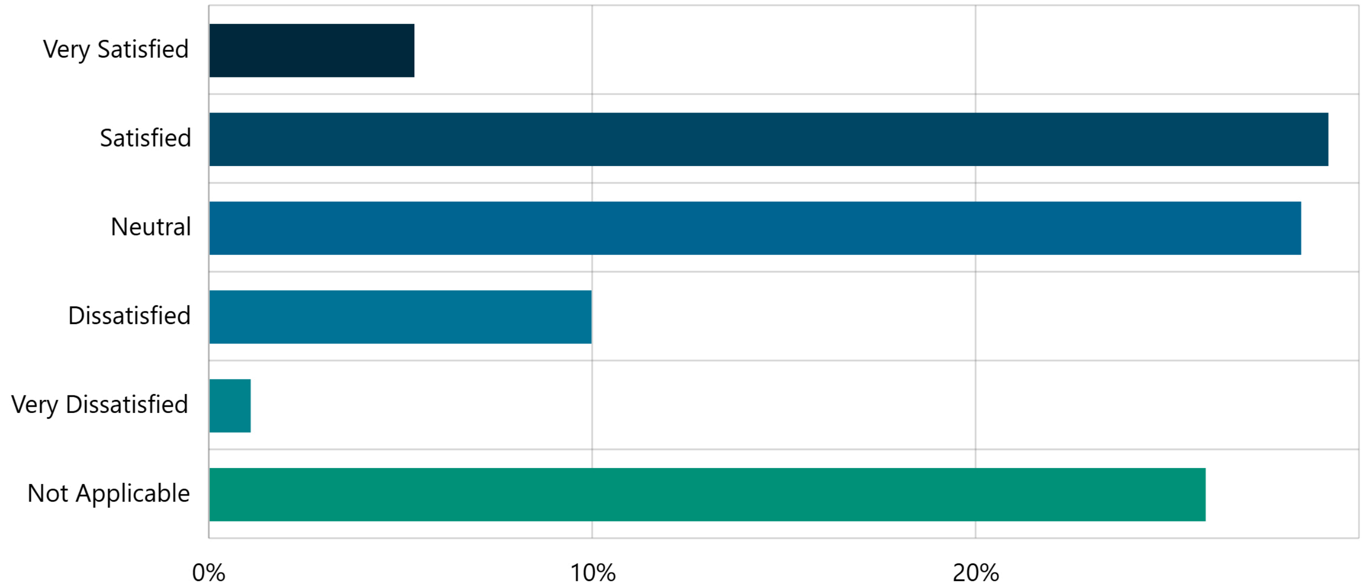
Tags

No tag data

Featured Contributions

No featured contributions

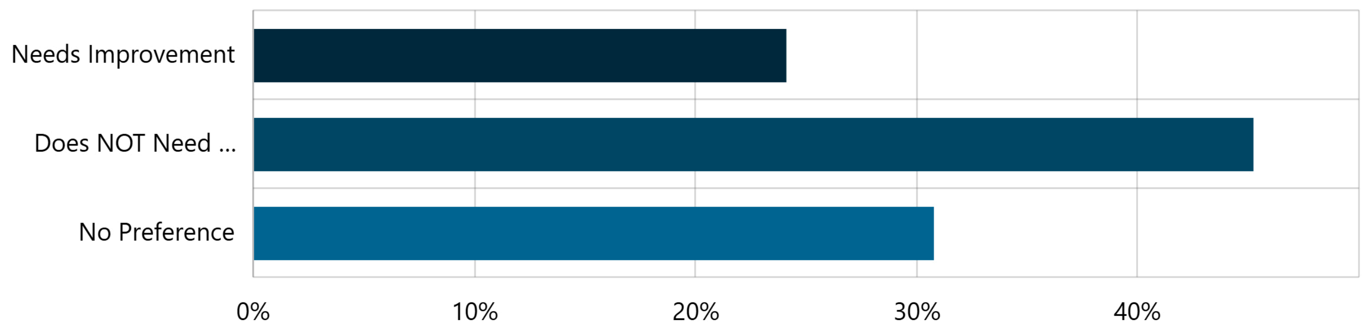
57. How satisfied are you with the current condition and performance of the City's government services? If you do not use the service, please select "Not Applicable."
Multi Choice | Skipped: 8 | Answered: 281 (97.2%)



Answer choices	Percent	Count
Very Satisfied	5.34%	15
Satisfied	29.18%	82
Neutral	28.47%	80
Dissatisfied	9.96%	28
Very Dissatisfied	1.07%	3
Not Applicable	25.98%	73
Total	**100.00%**	**281**

58. How would you assess the need for improvement of the current government services provided in the City at this time?

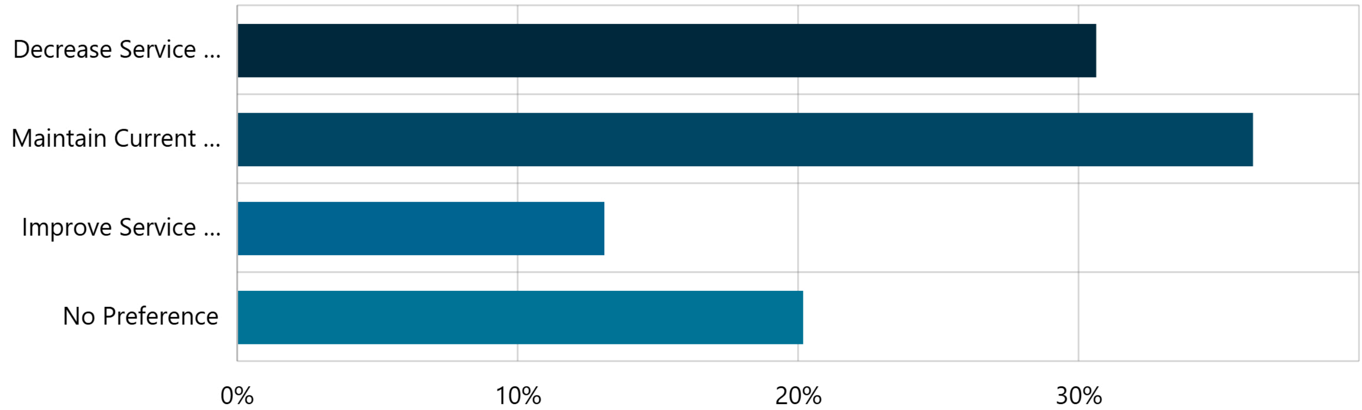
Multi Choice | Skipped: 19 | Answered: 270 (93.4%)



Answer choices	Percent	Count
Needs Improvement	24.07%	65
Does NOT Need Improvement	45.19%	122
No Preference	30.74%	83
Total	**100.00%**	**270**

59. Based on the possible funding and service level outcomes, please indicate your preference for maintaining, increasing or decreasing the service levels.

Multi Choice | Skipped: 21 | Answered: 268 (92.7%)



Answer choices	Percent	Count
Decrease Service (likely pay same $ or less)	30.60%	82
Maintain Current Service (likely pay more $$)	36.19%	97
Improve Service (likely pay more $$$)	13.06%	35
No Preference	20.15%	54
Total	**100.00%**	**268**

60. Do you have any additional comments on maintaining, increasing, or decreasing the service levels of general government? (Leave blank of not applicable).

Long Text | Skipped: 222 | Answered: 67 (23.2%)

Sentiment

No sentiment data

Tags

No tag data

Featured Contributions

No featured contributions

61. Name:
Short Text | Skipped: 99 | Answered: 190 (65.7%)

Sentiment

No sentiment data

Tags

No tag data

Featured Contributions

No featured contributions

Appendix B2

Niagara District Airport Survey Results

Let's Talk Niagara Falls

Report Type: Form Results Summary
Date Range: 31-12-2024 - 31-01-2025
Exported: 04-02-2025 10:47:04

Closed

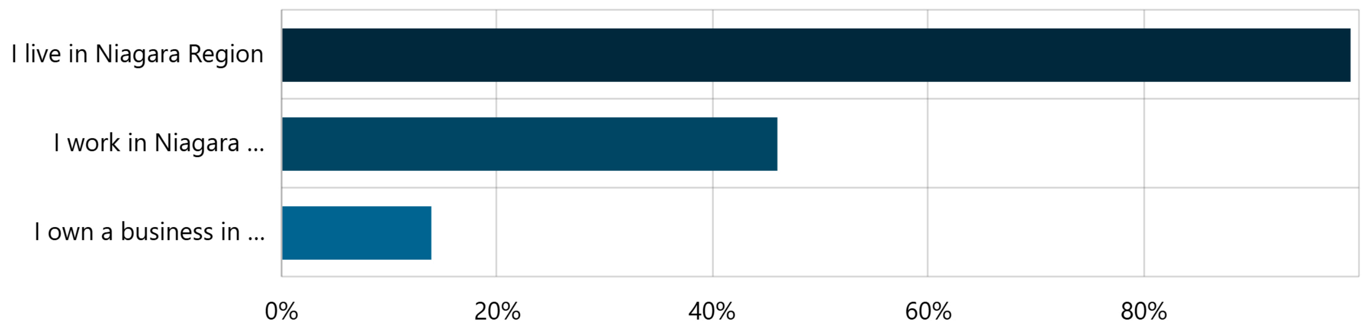
Niagara District Airport Survey
Asset Management Plan - Niagara District Airport

556 Contributors | **580** Contributions

Contribution Summary

1. Tell us a little about yourself [select all that apply]:

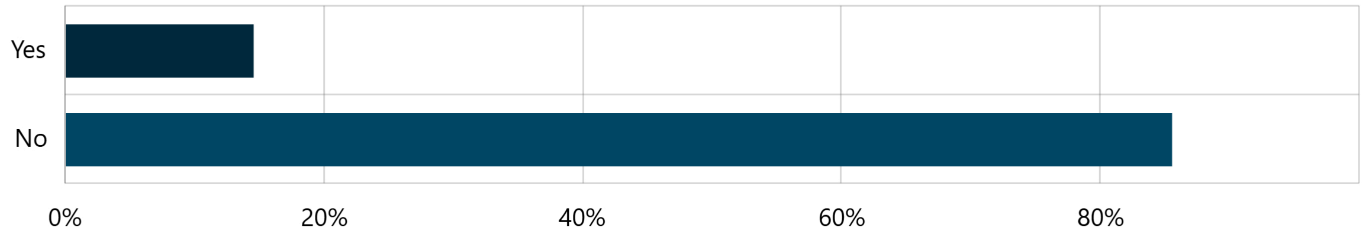
Multi Choice | Skipped: 1 | Answered: 579 (99.8%)



Answer choices	Percent	Count
I live in Niagara Region	99.14%	574
I work in Niagara Region	45.94%	266
I own a business in Niagara Region	13.82%	80

2. Have you used the Airport in the last three years?

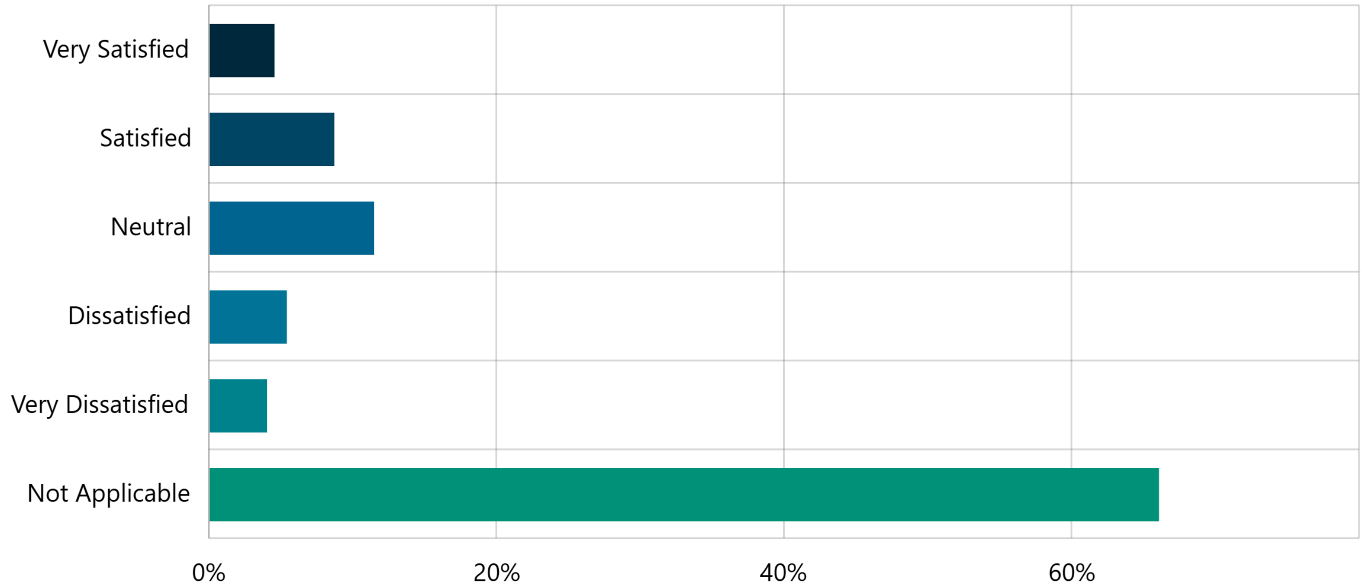
Multi Choice | Skipped: 1 | Answered: 579 (99.8%)



Answer choices	Percent	Count
Yes	14.51%	84
No	85.49%	495
Total	**100.00%**	**579**

3. How satisfied are you with the current condition and performance of the Niagara District Airport? If you do not use the service, please select "Not Applicable."

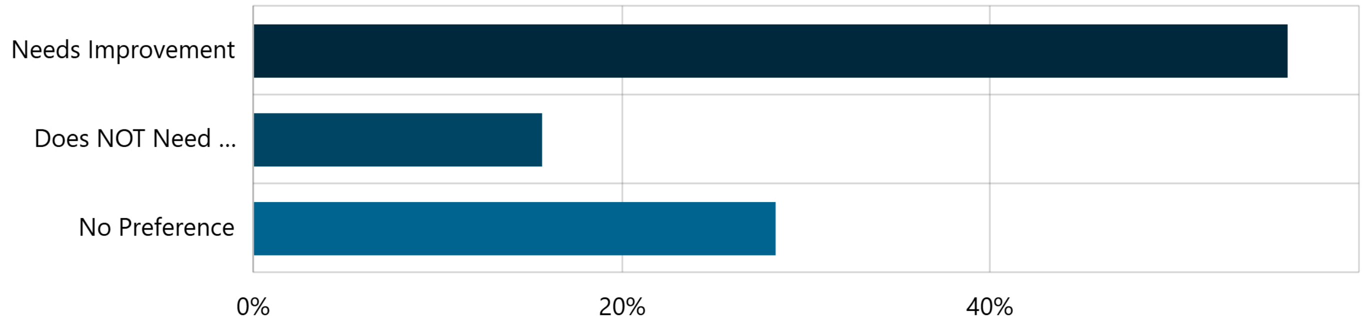
Multi Choice | Skipped: 3 | Answered: 577 (99.5%)



Answer choices	Percent	Count
Very Satisfied	4.51%	26
Satisfied	8.67%	50
Neutral	11.44%	66
Dissatisfied	5.37%	31
Very Dissatisfied	3.99%	23
Not Applicable	66.03%	381
Total	**100.00%**	**577**

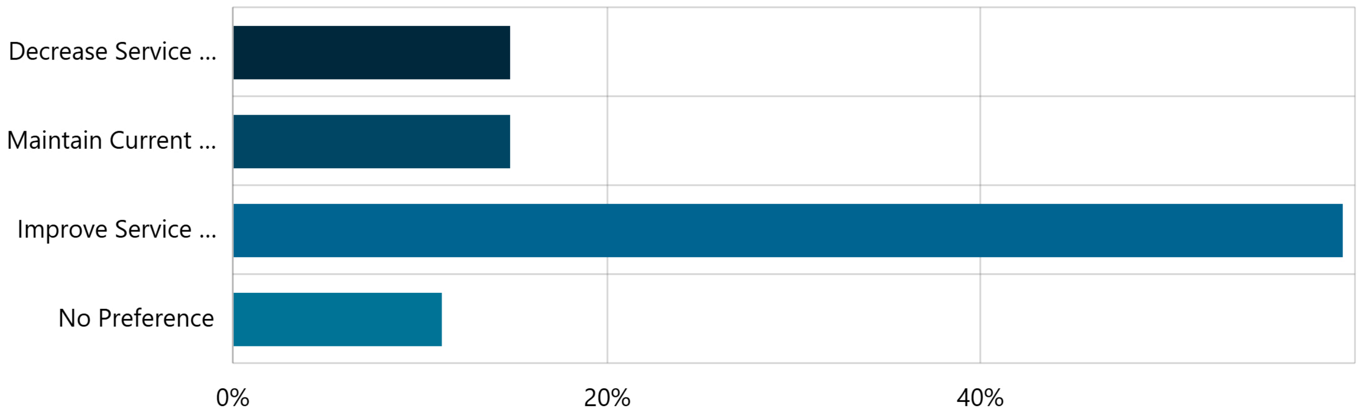
4. How would you assess the need for improvement of the Niagara District Airport at this time?

Multi Choice | Skipped: 4 | Answered: 576 (99.3%)



Answer choices	Percent	Count
Needs Improvement	56.08%	323
Does NOT Need Improvement	15.63%	90
No Preference	28.30%	163
Total	**100.00%**	**576**

5. Based on the possible funding and service level outcomes, please indicate your preference for maintaining, increasing or decreasing the service levels.
Multi Choice | Skipped: 5 | Answered: 575 (99.1%)



Answer choices	Percent	Count
Decrease Service (likely pay same $ or less)	14.78%	85
Maintain Current Service (likely pay more $$)	14.78%	85
Improve Service (likely pay more $$$)	59.30%	341
No Preference	11.13%	64
Total	**100.00%**	**575**

6. Do you have any additional comments on maintaining, increasing, or decreasing the service levels of the Niagara District Airport? (Leave blank of not applicable).

Long Text | Skipped: 222 | Answered: 358 (61.7%)

Sentiment

No sentiment data

Tags

No tag data

Featured Contributions

No featured contributions

Appendix C

Public Information Centre Boards

aspire CONSULTING

Niagara Falls CANADA

Welcome

Public Information Centre for Proposed Levels of Service and Financial Strategy

April 16th 2025: 4:00 PM – 7:00 PM

MacBain Community Centre

7150 Montrose Road, Niagara Falls, ON, Canada

Project Timeline

Public Survey & Draft Proposed Levels of Service and Financial Strategy

January - March 2025

Public Information Centre

April 2025

Finalize Proposed Levels of Service and Financial Strategy

May 2025

Council Endorsement

June 2025

Proposed Levels of Service

To find the right balance between costs, risk and service.

- **Balancing:**
  - Affordability
  - Achievability
  - Risk
  - City Strategic Direction
- **Options for LOS**
  - Decrease the LOS
  - Maintain the current LOS
  - Increase LOS
- **Financial Scenarios**
  - Forecasting the total required annual expenditures to:
    - Maintain Current Performance
    - Meet Proposed Performance
    - Meet Infrastructure Needs per Lifecycle Strategy

Financial Plan

Objective

Aligning long-term financial sustainability with the City's LOS goals while meeting O.Reg 588/17 requirements and ensuring fiscal responsibility in maintaining infrastructure standards.

Feasible 10-Year Plan

- A 10-Year Plan that is financially achievable.
- A plan where the City knows where finances to maintain appropriate LOS targets will be drawn from (capital vs operating).

O. Reg 588/17 Funding

- Ultimately the updated AMP will lead to government funding given that it is presented, accepted and submitted by July 1, 2025.

Niagara Falls CANADA

aspire CONSULTING

Investment Priorities & Willingness to Pay

Willingness to Pay – Survey respondents, when asked if it becomes necessary to improve certain services, *would respondents support an increase in taxes or fees to fund improvements*?

20% agreed for all services.
42% agreed for core services only.
18% said maintain even if this reduces current performance.
The remaining 18% would prefer lower taxes/fees.

Priorities - Highest priority identified as water, followed closely by transportation and wastewater. Then fire services and stormwater.

Maintain - Majority of respondents agreed with maintaining services, understanding this means a likely increase in tax/fees.

Key Takeaways

- The survey aimed to gauge satisfaction with municipal services.
- Understanding public perception of cost-effectiveness and service quality was a central goal.
- ~60% of respondents would accept an increase in taxes and/or fees to support necessary improvements.
- Preference is to prioritize core infrastructure services.

Service Area	Observation
TRANSPORTATON	**Increase condition of paved roads & sidewalks**
WATER	Maintain service levels, satisfied with current service
WASTEWATER	Maintain service levels, satisfied with current service
STORMWATER	Maintain service levels, satisfied with current service
PARKS, TRAILS, NATURAL ASSETS	Maintain service levels, satisfied with current service

City Roads and Sidewalk Condition

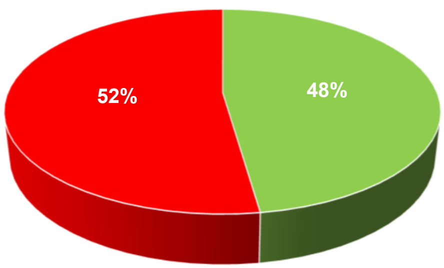
Asset Class	LOS Performance Indicator	Current Performance
Collector Roads	% of collector roadway in GOOD or better condition	53%
Arterial Roads	% of arterial roadway in GOOD or better condition	62%
Local Roads	% of local roadway in GOOD or better condition	62%
Sidewalks	% of arterial and collector roads with sidewalk on both sides % of local roads with sidewalk on at least one side	53.9% 86.5%

Condition	Grade Score	PCI Score
Very Good	1	>85 - 100
Good	2	70 - 84
Fair	3	55 - 69
Poor	4	40 - 54
Very Poor	5	Less than 40

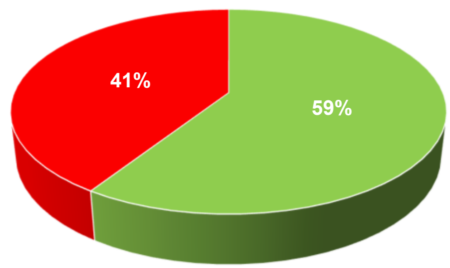
aspire CONSULTING

City Roads and Sidewalk Condition

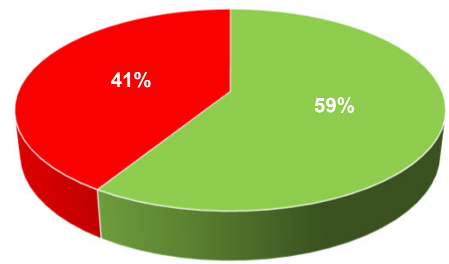
% of collector roadway in good or better condition



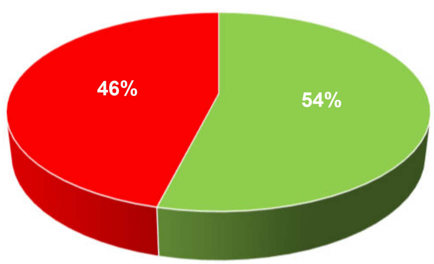
% of arterial roadway in good or better condition



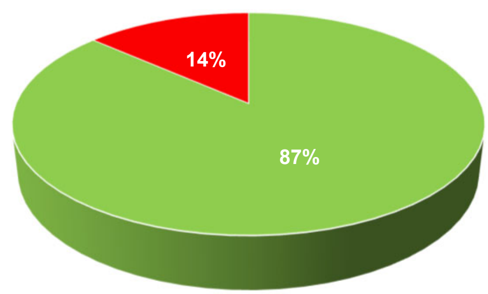
% of local roadway in good or better condition



% of arterial and collector roads with sidewalk on both sides



% of local roads with sidewalk on at least one side



Niagara Falls CANADA

City Roads Condition Samples

Condition Grade 1 - (Very Good)

Collector Roads
Woodbine St, 2025

Arterial Roads
Kalar Road, 2024

Local Roads
Biamonte Parkway, 2024

City Roads Condition Samples

Condition Grade 2 - (Good)

Collector Roads
Beaverdams Road, 2024

Arterial Roads
Dorchester Road, 2024

Local Roads
Carolyn Ave, 2024

City Roads Condition Samples

Condition Grade 3 - (Fair)

Collector Roads
Watson St, 2024

Arterial Roads
St.Paul Ave., 2024

Local Roads
Stamford Green, 2024

City Roads Condition Samples

Condition Grade 4 - (Poor)

Collector Roads
Ellen Ave

Arterial Roads
McLeod Rd

Local Roads
Yale Cres.

City Roads Condition Samples

Condition Grade 5 - (Very Poor)

Collector Roads
Allendale Ave

Arterial Road
Legion St.

Local Roads
Stuart Ave.

Financial Strategy

Required to predict the cost of DECREASING, MAINTAINING OR INCREASING service levels

Residents demonstrated a desire to increase service levels for:

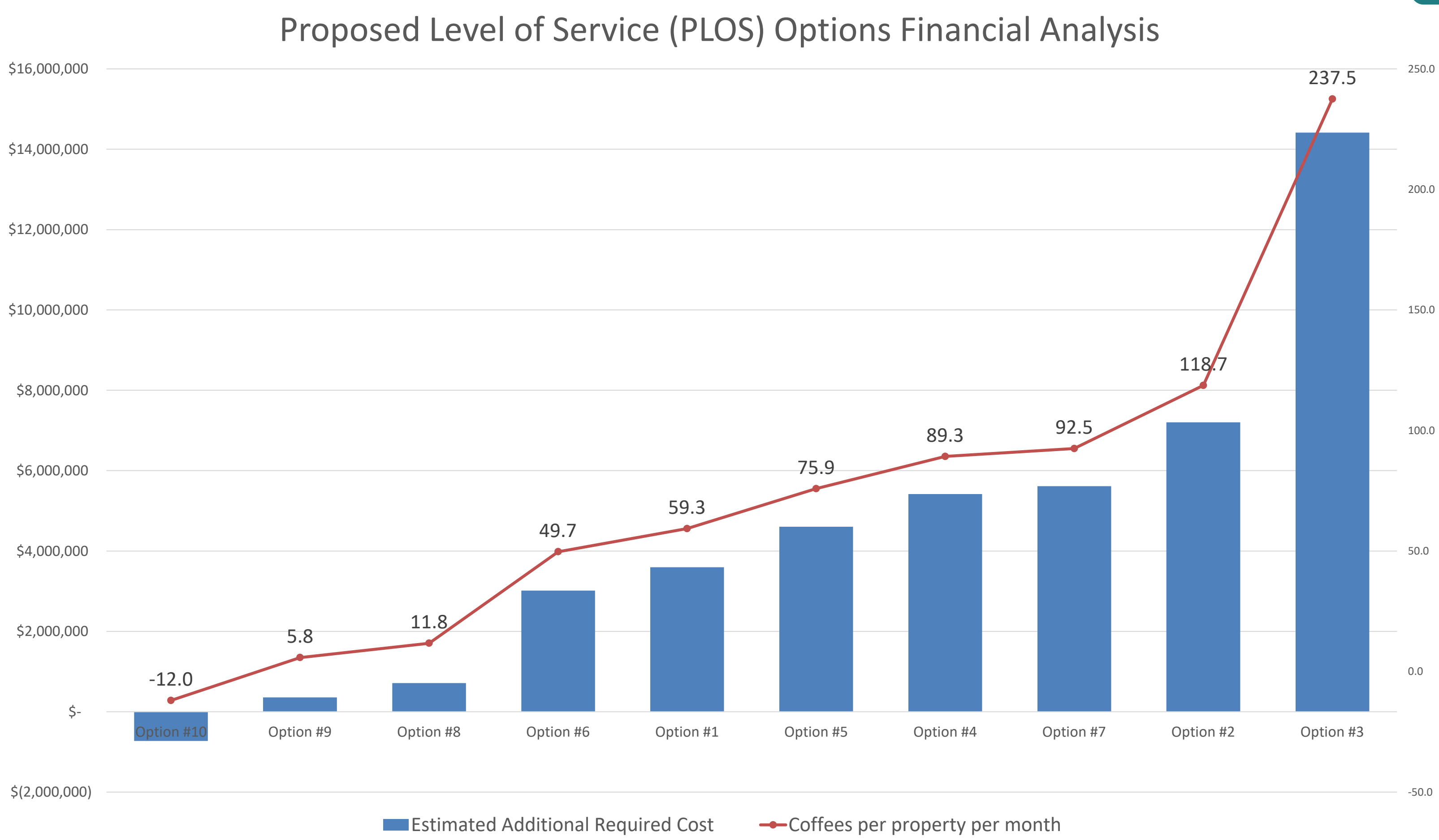
- ✓ City Roads & Sidewalks

CONSULTING

FINANCIAL SCENERIOS – COSTING

Option	Scenario Description	Estimated Additional Required Cost	Cost per population per year	Cost per property per month	Coffees per population per month	Coffees per property per month
Option #10	DECREASE LOS Collectors, arterials & locals - Risk Mitigation Required	$ (729,100)	$ (7.72)	$ (21.99)	-4.2	-12.0
Option #9	0.5% increase across Collector, Arterial & Local	$ 352,500	$ 3.73	$ 10.63	2.0	5.8
Option #8	1% increase	$ 713,100	$ 7.55	$ 21.50	4.1	11.8
Option #6	15% increase for collectors, no change to arterial & local	$ 3,016,800	$ 31.95	$ 90.98	17.5	49.7
Option #1	5% Increase	$ 3,597,400	$ 38.10	$ 108.49	20.8	59.3
Option #5	10% increase for collectors, 5% for arterials, 5% local	$ 4,605,600	$ 48.78	$ 138.89	26.7	75.9
Option #4	10% increase collectors & arterials - 5% increase for local roads	$ 5,416,200	$ 57.37	$ 163.33	31.3	89.3
Option #7	65% across all road classes	$ 5,613,900	$ 59.46	$ 169.30	32.5	92.5
Option #2	10% increase	$ 7,202,700	$ 76.29	$ 217.21	41.7	118.7
Option #3	Aggressive - 20% Increase	$ 14,413,400	$ 152.66	$ 434.66	83.4	237.5

Financial Scenarios - Costing



TG0

FINANCIAL SCENERIOS – PLOS TARGETS

Asset Class	Current Performance (Good or Better Condition)	Proposed Performance Target				
		Option #1	Option #6	Option #8	Option #9	Option #10
Collector Roads	47.7%	52.7%	62.7%	48.7%	48.2%	46.7%
Arterial Roads	59.1%	64.1%	59.1%	60.1%	59.6%	58.1%
Local Roads	58.9%	63.9%	58.9%	59.9%	59.4%	57.9%
Sidewalks – Arterial & Collector	53.9%	53.9%	53.9%	53.9%	53.9%	53.9%
Sidewalks – Local Roads	86.5%	86.5%	86.5%	86.5%	86.5%	86.5%

THANK YOU

Contact Us

Tgudgeon@niagarafalls.ca
Amanda.Beattie@aspireconsulting.ca
Daryush.Esmaili@aspireconsulting.ca
LaurieBoyce@L3ESP.ca

Website

https://letstalk.niagarafalls.ca/2025-amp

Let’s Talk Niagara Falls

Report Type: Form Results Summary
Date Range: 16-04-2025 - 25-04-2025
Exported: 28-04-2025 09:52:23

Open

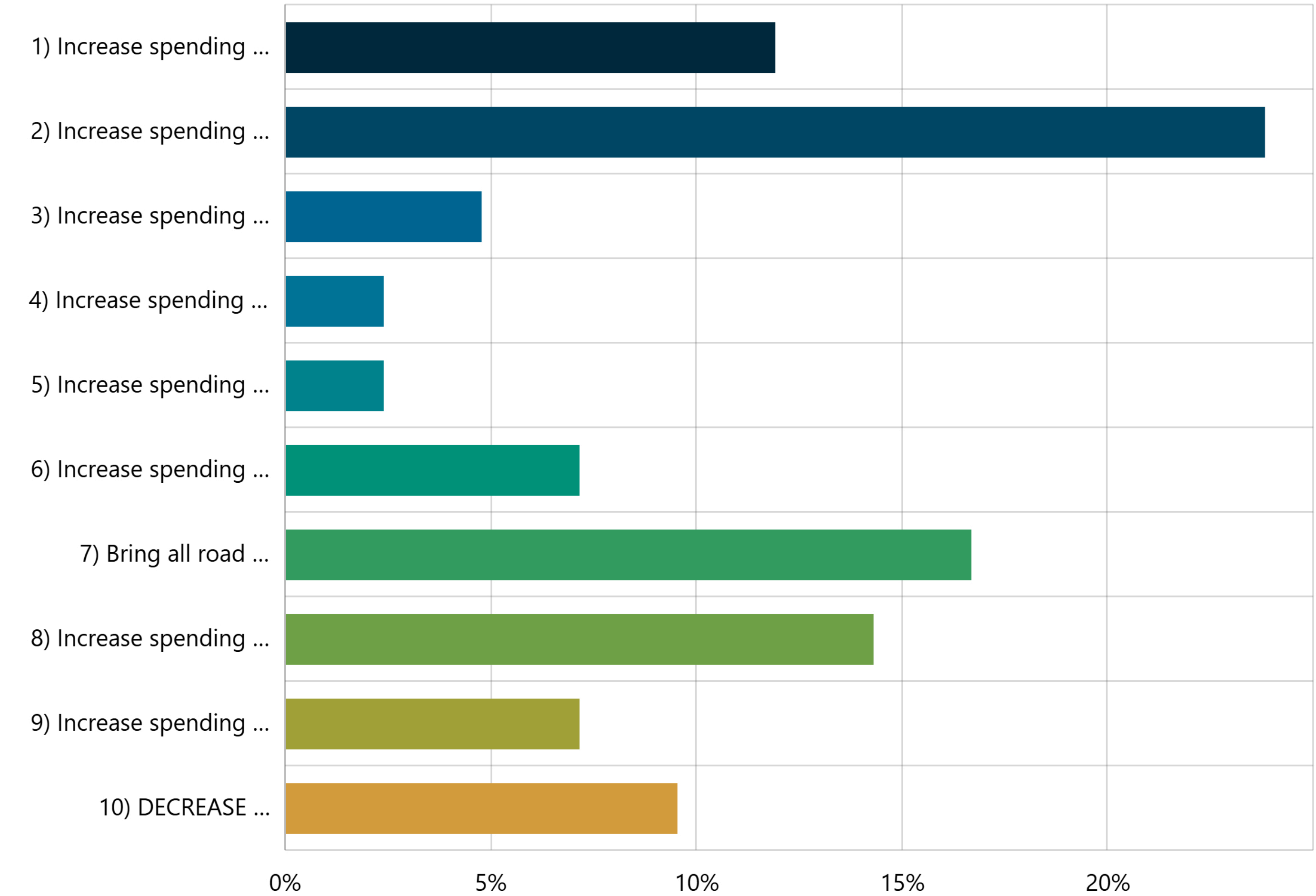
Levels of Service Survey
2025 Asset Management Plan

41 Contributors | **42** Contributions

Contribution Summary

1. Please review the chart above. Which option is right for the City of Niagara Falls?

Multi Choice | Skipped: 0 | Answered: 42 (100%)



Answer choices	Percent	Count
1) Increase spending by 5% for all road types	11.90%	5
2) Increase spending by 10% for all road types	23.81%	10
3) Increase spending by 20% for all road types	4.76%	2
4) Increase spending by 10% for collectors & arterials Increase spending by 5% for local roads	2.38%	1
5) Increase spending by 10% for collectors, 5% for arterials & 5% for local roads	2.38%	1

6) Increase spending by 15% for collectors, no change to arterial & local road spending	7.14%	3
7) Bring all road classes to 65% to target Proposed Level of Service for all road types	16.67%	7
8) Increase spending by 1% for all road types	14.29%	6
9) Increase spending by 0.5% for all road types	7.14%	3
10) DECREASE Levels of Service for collectors, arterials & locals: Risk Mitigation required.	9.52%	4
Total	**100.00%**	**42**

Niagara Falls CANADA

aspire CONSULTING

Appendix D

2025 Levels of Service Framework

Legend
Data input cell:

Inflation % 4%
Number of years 10

LOS_ID	Service Area	Asset Type	CLOS Category	CLOS Measure	TLOS Category	Technical Levels of Service (TLOS) Measure	Current Performance	Proposed Performance Change (%)	Target Performance	Incremental Cost of Target Performance	Inflated Incremental Cost	Survey LOS Result	Proposed LOS	Include in Funding Rollup
LOS_085	Airport	Airport	Quality	Niagara District Airport provides reliable services to the community.	Renewal	% of airport assets in fair or better condition	78.1%	-10%	68%	$ (2,482,000)	$ (3,673,966)	Decrease LOS	Decrease LOS	Y
LOS_086	Airport	Airport	Quality	Niagara District Airport provides reliable services to the community.	Renewal	% of annual audits that meet regulatory requirements	100.0%	0%	100%	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_091	Fire Services	Fire	Reliability	Fire services are available to service the community.	Growth	Average time from dispatch to time on scene (standard calls) for full time stations	0:05:40	0%	0:05:40	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_094	Fire Services	Fire	Reliability	Fire services are available to service the community.	Growth	Average time from dispatch to time on scene (standard calls) for volunteer stations	0:11:28	0%	0:11:28	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_095	Fire Services	Fire	Quality	Fire services are fit for service.	Growth	% of vehicles and equipment in fair or better condition	68.4%	2%	70%	$ 301,000	$ 445,554	Maintain LOS	Increase LOS	Y
LOS_087	Fire Services	Fire	Quality	Fire services are fit for service.	Renewal	% of stations in fair or better condition	100.0%	0%	100%	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_102	Fleet	Fleet	Quality	Equipment Assets are available to service the community.	Renewal	% of equipment that is in fair or better condition	38.3%	22%	60%	$ 38,000	$ 56,249	Maintain LOS	Increase LOS	Y
LOS_100	Fleet	Fleet	Quality	Fleet Assets are available to service the community.	Renewal	% of fleet that is in fair or better condition	42.9%	7%	50%	$ 2,398,000	$ 3,549,626	Maintain LOS	Increase LOS	Y
LOS_096	Fleet	Fleet	Quality	Fleet Assets are available to service the community.	Renewal	% Commercial vehicle operator's registration (CVOR) inspections completed on time	100.0%	0%	100%	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_108	Fleet	Fleet	Quality	Fleet Assets are available to service the community.	Growth	# of snowplows per centreline-km -Regular -Narrow	1 snowplow per 37 centreline-km	0%	1 snowplow per 37 centreline-km	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_114	Fleet	Fleet	Reliability	Fleet Assets are available to service the community.	Growth	# of sidewalk clearing plows by km of sidewalk	1 snowplow per 54 km	0%	1 snowplow per 54 km	$ -	$ -	Maintain LOS	Increase LOS	Y
LOS_109	Fleet	Fleet	Reliability	Fleet Assets are available to service the community.	Renewal	Ratio of fleet vehicles to population served	1 vehicle per 565 population	0%	1 vehicle per 565 population	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_110	Fleet	Fleet	Reliability	Fleet Assets are available to service the community.	Growth	Ratio of electic vehicle charging stations to population served	1/13,488	0%	1 vehicle per 13,488 population	$ -	$ -	Maintain LOS	Increase LOS	Y
LOS_115	Government Services	Information Systems	Reliability	IT assets are fit for service.	Renewal	% of IT assets that are within the service life	30.3%	30%	60%	$ 892,000	$ 1,320,378	Maintain LOS	Increase LOS	Y
LOS_119	Libraries	Libraries	Quality	Libraries provide reliable services to the community.	Renewal	% of library assets in fair or better condition	61.5%	0%	61.5%	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_122	Libraries	Libraries	Reliability	Libraries are accessible to the community.	Growth	Ratio of libraries to population served	1 library per 31,472 population	2%	1 library per 30,842 population	$ 490,000	$ 725,320	Increase LOS	Increase LOS	Y
LOS_150	Parks, Trails and Natural Assets	Natural Assets	Reliability	Natural Assets are accessible to the public.	Growth	# of trees planted annually	316	10%	348	$ 24,000	$ 35,526	Increase LOS	Increase LOS	Y
LOS_159	Parks, Trails and Natural Assets	Parks	Quality	Parks are available to the public.	Renewal	% of playgrounds that are AODA compliant	66.0%	10%	76%	$ 293,000	$ 433,712	Maintain LOS	Increase LOS	Y
LOS_157	Parks, Trails and Natural Assets	Parks	Quality	Parks are available to the public.	Renewal	% of parks in fair or better condition	92%	0%	92%	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_166	Parks, Trails and Natural Assets	Parks	Reliability	Parks are available to the public.	Growth	# of hectres of park land available to the public	279.23	0%	279.23	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_285	Parks, Trails and Natural Assets	Trails	Reliability	Trails are accessible to the public.	Renewal	# of kms of walking and cycling trail	44.55	3%	45.89	$ 683,000	$ 1,011,007	Increase LOS	Increase LOS	Y
LOS_012	Recreation, Culture, Cemeteries and Facilities	Cemeteries	Reliability	Cemetery accommodates community's needs.	Growth	% of available lots	9.8%	15%	25%	$ 152,000	$ 224,997	Maintain LOS	Increase LOS	Y
LOS_024	Recreation, Culture, Cemeteries and Facilities	Cemeteries	Reliability	Cemetery accommodates community's needs.	Growth	% of niches available	51.9%	0%	52%	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_025	Recreation, Culture, Cemeteries and Facilities	Culture	Reliability	Cultural assets are accessible and inclusive.	Reliability	# of memorial trees	13	0%	13	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_058	Recreation, Culture, Cemeteries and Facilities	Facilities	Quality	Facilities provide reliable services to the community.	Renewal	% of facilties in fair or better condition	85.2%	0%	85%	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_079	Recreation, Culture, Cemeteries and Facilities	Facilities	Quality	Facilities provide reliable services to the community.	Renewal	% of facility structures within the inspection program that are inspected within the City's 5-year program	100%	0%	100%	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_081	Recreation, Culture, Cemeteries and Facilities	Facilities	Reliability	Facilities are accessible to the community.	Growth	Ratio of recreation centres to population served	1 recreation centre per 31,472 population	0%	1 recreation centre per 31,472 population	$ -	$ -	Maintain LOS	Increase LOS	Y
LOS_259	Stormwater	Stormwater Facilities	Quality	Storm Sewer network is available when needed.	Renewal	% of stormwater management facilities inspected within the City's 5-year program	100.0%	0%	100%	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_265	Stormwater	Stormwater Network	Scope	Description, which may include maps, of the user groups or areas of the municipality that are protected from flooding, including the extent of the protection provided by the municipal stormwater management system.	Renewal	% of properties resilient to a 100-year storm	60.0%	0%	60%	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_267	Stormwater	Stormwater Network	Quality	Storm Sewer network is available when needed.	Renewal	% of stormwater management facilities in fair or better condition	63.1%	0%	63%	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_264	Stormwater	Stormwater Network	Scope	Description, which may include maps, of the user groups or areas of the municipality that are protected from flooding, including the extent of the protection provided by the municipal stormwater management system.	Renewal	% of stormwater management trunk system resilient to a 5-year storm	90.0%	0%	90%	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_261	Stormwater	Stormwater Network	Quality	Storm Sewer network is available when needed.	Renewal	% of storm sewers and appurtenances in fair or better condition	94.7%	0%	95%	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_001	Transportation	Bridges & Culverts	Scope	Description of the traffic that is supported by municipal bridges (e.g., heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, cyclists).	Renewal	% of bridges and culverts in the City with loading or dimensional restrictions.	0.0%	0%	0%	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_007	Transportation	Bridges & Culverts	Scope	Description or images of the condition of bridges and how this would affect use of the bridges.	Renewal	% of bridges in fair or better condition	84.5%	0%	84%	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_010	Transportation	Bridges & Culverts	Quality	Bridges and culverts adequately connect the community.	Renewal	% of bridges and culverts inspected as per OSIM requirements	88.0%	12%	100%	$ 31,000	$ 45,888	Increase LOS	Increase LOS	Y
LOS_011	Transportation	Bridges & Culverts	Scope	Description or images of the condition of culverts and how this would affect use of the culverts.	Renewal	% of culverts in fair or better condition	51.8%	0%	52%	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_300	Transportation	Roads & Related	Quality	Road network assets are accessible for community use.	Renewal	% of collector roadway in good or better condition	47.7%	2%	50%	$ 4,436,000	$ 6,566,364	Increase LOS	Increase LOS	Y
LOS_301	Transportation	Roads & Related	Quality	Road network assets are accessible for community use.	Renewal	% of arterial roadway in good or better condition	59.1%	2%	61%	$ 3,567,000	$ 5,280,031	Increase LOS	Increase LOS	Y
LOS_302	Transportation	Roads & Related	Quality	Road network assets are accessible for community use.	Renewal	% of local roadway in good or better condition	58.9%	2%	61%	$ 7,861,000	$ 11,636,200	Increase LOS	Maintain LOS	Y
LOS_230	Transportation	Roads & Related	Quality	Road network assets are accessible for community use.	Renewal	% of unpaved surface condition in fair or better condition	9.8%	0%	10%	$ (3,000)	$ (4,441)	Increase LOS	Increase LOS	Y
LOS_231	Transportation	Roads & Related	Scope	Road network adequately connects the community.	Renewal	# of lane-kms of paved arterial roads as a proportion of km2 of City land area	1.02	0%	1.00	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_232	Transportation	Roads & Related	Scope	Road network adequately connects the community.	Renewal	# of lane-kms of paved collector roads as a proportion of km2 of City land area	1.73	0%	1.00	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_233	Transportation	Roads & Related	Scope	Road network adequately connects the community.	Renewal	# of lane-kms of paved local roads as a proportion of km2 of City land area	1.73	0%	1.00	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_243	Transportation	Roads Ops (Transportation)	Quality	Road network assets are accessible for community use.	Renewal	% of traffic signals in fair or better condition	40.0%	20%	60%	$ -	$ -	Maintain LOS	Maintain LOS	Y

LOS_242	Transportation	Roads Ops (Transportation)	Quality	Road network assets are accessible for community use.	Renewal	% of streetlights converted to LED -Standard -Decorative	82.5%	18%	100%	$ 1,000,000	$ 1,480,244	Maintain LOS	Increase LOS	Y
LOS_255	Transportation	Sidewalk	Reliability	Sidewalks are accessible for community use.	Growth	% of arterial and collector roads with sidewalk on both sides	53.9%	0%	54%	$ -	$ -	Increase LOS	Maintain LOS	Y
LOS_258	Transportation	Sidewalk	Reliability	Sidewalks are accessible for community use.	Growth	% of local roads with sidewalk on at least one side	86.5%	0%	87%	$ -	$ -	Increase LOS	Maintain LOS	Y
LOS_254	Transportation	Sidewalk	Reliability	Sidewalks are accessible for community use.	Renewal	# of sidewalk trip and fall claims per year	12	-17%	10	$ 97,000	$ 143,584	Increase LOS	Maintain LOS	Y
LOS_284	Transportation	Traffic & Parking	Quality	Parking lots are available for community use.	Renewal	% of parking lots in fair or better condition	64.8%	3%	68%	$ 263,000	$ 389,304	Maintain LOS	Maintain LOS	Y
LOS_283	Transportation	Traffic & Parking	Quality	Traffic and parking assets are available for community use.	Renewal	% of annual inspections for regulatory and warning signs with retroreflectivity requirements	100.0%	0%	100%	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_246	Wastewater	Sewer Network	Quality	Sewer Network is available when needed.	Renewal	% of linear sanitary assets inspected annually	6.8%	0%	7%	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_252	Wastewater	Sewer Network	Reliability	Sewer network meets safety requirements.	Renewal	% network with combined sewer	26.0%	0%	26%	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_245	Wastewater	Sewer Network	Quality	Sewer network is available when needed.	Renewal	% of sanitary sewers and appurtenances in fair or better condition	83.1%	0%	83%	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_247	Wastewater	Sewer Network	Scope	Description, which may include maps, of the user groups or areas of the City that are connected to the wastewater system.	Growth	% of properties connected to the City wastewater system within the Urban Boundary.	99.9%	0%	100%	$ 497,000	$ 735,681	Maintain LOS	Increase LOS	Y
LOS_294	Water	Water Network	Scope	Description of boil water advisories and service interruptions.	Renewal	# of connection-days per year where a boil water advisory notice is in place.	0	0%	0	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_286	Water	Water Network	Quality	Water is available when needed.	Growth	% water network that meets Peak Hour Demand Minimum Operating Pressure of 40 PSI	1.0%	0%	1%	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_288	Water	Water Network	Quality	Water is available when needed.	Growth	% of local watermain greater than 4" (100mm)	98.0%	0%	98%	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_287	Water	Water Network	Quality	Water is available when needed.	Growth	% water network that meets Normal (Average Day / Maximum Day / Minimum Hour) Operating Pressure of 40-100 PSI	26.0%	0%	26%	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_289	Water	Water Network	Quality	Water is available when needed.	Renewal	% of watermains and appurtenances in fair or better condition	71.2%	0%	71%	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_292	Water	Water Network	Scope	Description, which may include maps, of the user groups or areas of the City that have fire flow.	Growth	% of properties within the urban boundary where fire flow is available.	98.0%	0%	98%	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_293	Water	Water Network	Scope	Description, which may include maps, of the user groups or areas of the City that are connected to the water system.	Growth	% of properties within the urban boundary that are connected to the City's water system.	98.0%	0%	98%	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_296	Water	Water Network	Reliability	Water meets safety requirements.	Renewal	% of sampling results that meet Drinking Water License and legislated limits	100.0%	0%	100%	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_297	Water	Water Network	Reliability	Water meets safety requirements.	Renewal	# of water quality complaints due to discoloured water	25	-25%	19	$ 20,531,000	$ 30,390,895	Maintain LOS	Maintain LOS	N
LOS_290	Water	Water Network	Quality	Water is available when needed.	Renewal	# of watermin breaks per year.	57	-25%	43	$ 20,531,000	$ 30,390,895	Maintain LOS	Maintain LOS	Y
LOS_097	Fleet	Fleet	Quality	Fleet Assets are sustainable for future community needs.	Growth	% of fleet that is electric or hybrid	Future metric	Future metric	Future metric	$ -	$ -	Maintain LOS	Increase LOS	Y
LOS_098	Fleet	Fleet	Quality	Equipment Assets are sustainable for future community needs.	Growth	% of equipment that is electric or hybrid	Future metric	Future metric	Future metric	$ -	$ -	Maintain LOS	Increase LOS	Y
LOS_101	Fleet	Fleet	Quality	Fleet Assets are available to service the community.	Renewal	% of fleet where 50% of its renewal cost has been spent in maintenance	Future metric	Future metric	*Future metric*	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_106	Fleet	Fleet	Quality	Fleet Assets are available to service the community.	Renewal	# of vehicles beyond targeted run time hours	Future metric	Future metric	*Future metric*	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_107	Fleet	Fleet	Quality	Fleet Assets are available to service the community.	Renewal	# of vehicles beyond policy service life (age and/or odometer).	Future metric	Future metric	Future metric	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_120	Libraries	Libraries	Quality	Libraries provide reliable services to the community.	Renewal	% of library facilities inspected annually	Future metric	Future metric	Future metric	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_121	Libraries	Libraries	Reliability	Libraries are accessible to the community.	Growth	# of instances when on hold items have triggered a purchase	Future metric	Future metric	Future metric	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_080	Recreation, Culture, Cemeteries and Facilities	Facilities	Quality	Facilities provide reliable services to the community.	Renewal	% of facilities meeting the City's annual energy audit requirements	Future metric	Future metric	Future metric	$ -	$ -	Maintain LOS	Increase LOS	Y
LOS_298	Recreation, Culture, Cemeteries and Facilities	Facilities	Quality	Facilities provide reliable services to the community.	Renewal	% of fully AODA compliant recreation centres	Future metric	Future metric	Future metric	$ -	$ -	Maintain LOS	Increase LOS	Y
LOS_299	Recreation, Culture, Cemeteries and Facilities	Facilities	Reliability	Facilities are accessible to the community.	Growth	Ratio of outdoor recreation facilities to population served	Future metric	Future metric	Future metric	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_082	Recreation, Culture, Cemeteries and Facilities	Facilities	Reliability	Facilities are accessible to the community.	Renewal	# of days of unplanned facility closures.	Future metric	Future metric	Future metric	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_278	Stormwater	Stormwater Network	Quality	Storm Sewer network is available when needed.	Renewal	% of storm sewers and appurtenances cleaned annually	Future metric	Future metric	Future metric	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_009	Transportation	Bridges & Culverts	Quality	Bridges and culverts adequately connect the community.	Renewal	# of days of unplanned closures.	Future metric	Future metric	Future metric	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_239	Transportation	Roads & Related	Reliability	Road network adequately connects the community.	Growth	% road network exceeding expected AADT counts	Future metric	Future metric	Future metric	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_240	Transportation	Roads & Related	Reliability	Road network adequately connects the community.	Growth	% of lane-kms of dedicated/shared bicycle lanes as a proportion of roadway lane-kms (Collector & Arterial Only)	Future metric	Future metric	Future metric	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_241	Transportation	Roads Ops (Transportation)	Quality	Road network assets are accessible for community use.	Growth	% of intersections meeting the City's accessibility standards	Future metric	Future metric	Future metric	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_279	Transportation	Traffic & Parking	Quality	Road network assets are accessible for community use.	Growth	% of electric vehicle spaces	Future metric	Future metric	Future metric	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_248	Wastewater	Sewer Network	Scope	Description of how combined sewers in the municipal wastewater system are designed with overflow structures in place which allow overflow during storm events to prevent backups into homes.	Growth	# of events per year where combined sewer flow in the City's wastewater system exceeds system capacity compared to the total number of properties connected to the wastewater system.	Future metric	Future metric	Future metric	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_249	Wastewater	Sewer Network	Scope	Description of how stormwater can get into sanitary sewers in the municipal wastewater system, causing sewage to overflow into streets or backup into homes.	Growth	# of effluent violations per year due to wastewater discharge compared to the total number of properties connected to the City's wastewater system.	Future metric	Future metric	Future metric	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_251	Wastewater	Sewer Network	Scope	Description of the frequency and volume of overflows in combined sewers in the municipal wastewater system that occur in habitable areas or beaches.	Growth	# of connection-days per year due to wastewater backups compared to the total number of properties connected to the City's wastewater system.	Future metric	Future metric	Future metric	$ -	$ -	Maintain LOS	Maintain LOS	Y
LOS_237	~~Transportation~~	~~Roads & Related~~	Scope	Road network assets are accessible for community use.	Renewal	~~% of unpaved roads in fair or better condition~~						~~Increase LOS~~	~~Increase LOS~~	N
LOS_234	~~Transportation - Duplicate~~	~~Roads & Related~~	Scope	Road network assets are accessible for community use.	Renewal	~~% of paved arterial roads in good or better condition~~						~~Increase LOS~~	~~Increase LOS~~	N
LOS_235	~~Transportation~~	~~Roads & Related~~	Scope	Road network assets are accessible for community use.	Renewal	~~% of paved collector roads in fair or better condition~~						~~Increase LOS~~	~~Increase LOS~~	N
LOS_236	~~Transportation~~	~~Roads & Related~~	Scope	Road network assets are accessible for community use.	Renewal	~~% of paved local roads in the City in fair or better condition~~						~~Increase LOS~~	~~Increase LOS~~	N
LOS_238	~~Transportation~~	~~Roads & Related~~	Reliability	Road network adequately connects the community.	Renewal	~~# of lane-kms of unpaved roads as a proportion of km2 of City land area~~						~~Maintain LOS~~	~~Maintain LOS~~	N
LOS_172	~~Transportation~~	~~Roads & Related~~	Quality	Road network assets are accessible for community use.	Renewal	~~% of collector roadway in fair or better condition~~						~~Increase LOS~~	~~Increase LOS~~	N
LOS_171	~~Transportation~~	~~Roads & Related~~	Quality	Road network assets are accessible for community use.	Renewal	~~% of arterial roadway in fair or better condition~~						~~Increase LOS~~	~~Increase LOS~~	N

Niagara Falls CANADA

aspire CONSULTING

Appendix E

Detailed Lifecycle Management Activities

Table E- 1: Lifecycle Management Activities for Niagara District Airport

Lifecycle Activity	Description	Frequency	Risks Associated with Not Completing the Activities	Observations
Non-Infrastructure	Planning and studies (Master Plans, financial plans, capacity studies, AMPs)	As required	• Diminished understanding of future needs & growth impacts due to incomplete studies/plans/reports/analysis. • Reduce ability to coordinate project planning within and between service areas. • Reduced understanding of climate change impacts. • Reduced coordination between various planning, studies and performance assessment activities resulting in poor future project planning, coordination, and prioritization.	• Support staff in receiving software training to keep them up-to-date on data management best practices, and other essential software systems. • Use an asset information/data management standard to ensure that data sets relevant to asset management track information in a consistent manner, allowing for ease of access and data transfer. • Develop a continuous improvement plan for regular community engagement, aligned with corporate community engagement cycle for efficient resource uses. • Review previously completed community engagement activities, if available, to establish a baseline for the current community engagement activity, where applicable.
	Conduct community engagement to define priorities and standards to establish budgeting and service levels	Future Initiative and ongoing	• Inequitable identification and coordination of stakeholder service delivery priorities. • Negative impacts on reputation due to low levels of engagement. • Insufficient engagement to support asset design and selection to best support desired programming.	• Use condition to support evaluation of current LOS against proposed LOS achievement to assess asset performance and support reporting and communication. • Use outputs of condition assessments and inspections to help establish business cases for programs and help identify asset candidates for programs
	Grounds & Site Works Condition Assessments	Annually		

	Building condition assessment program	Every 2 years	• Limited understanding of the condition of building assets resulting in:
			  o Reduced coordination of asset needs and priorities.
			  o Reduced ability to coordinate between various programs, studies and other assessments.	

Operations and Maintenance	Performing regular preventive maintenance to extend service lives (facility repairs, maintenance paving for parking lots and roadways, pothole repairs, flushing pipes, cleaning catchbasins and OGS, vegetation management, etc.)	As per maintenance programs	• Increased reactive maintenance, and associated increase in costs. • Reduced asset service life. • Decreased asset performance due to worsening condition. • Increased capital investments due to shortened service life.	• Align projects and programs with recommendations from other non-infrastructure solutions (e.g. condition assessments, internal policies, master plans, etc.) to ensure compliance with organizational objectives and efficient use of resources. • Integrate findings of building condition assessment work (both road scans as well as internal inspections) to support short term, immediate proactive maintenance activities to minimize reactive maintenance. • Use relevant asset management analysis (e.g. lifecycle forecasting tools, LOS and Risk assessments, and other planning and strategic documents) to support identification of long-term preventative maintenance programs (e.g. coil cleaning, fire safety systems tests, filter replacement, etc.) and help build business cases to secure funding for these programs. Preventative maintenance programs will also extend asset service life and minimize risk of regulatory non-compliance. • Consider establishing an internal building condition assessment program to monitor for changes over time, particularly in older or higher risk/priority facilities.
	Reactive maintenance to address issues found through inspections, preventive maintenance, or complaints	As required	• Reduced asset service life. • Increasing capital costs due to earlier asset failure.	• Track work orders in computerized maintenance management system or equivalent to support KPI reporting, look for trends in asset failures by make, model, manufacturer, material, and facilitate understanding of maintenance staffing needs.

Lifecycle Activity	Description	Frequency	Risks Associated with Not Completing the Activities	Observations
Renewal, Rehabilitation and Replacement	Building rehabilitation needs	Based on inspections and condition assessments	• Reduced service life of connected/dependent assets. • Increased operating and maintenance costs. • Potential safety risks to users and/or occupants. • Unplanned service disruptions and facility closures.	• Align renewal, and replacement rehabilitation activities with recommendations from other non-infrastructure activities (e.g. master plans) to ensure efficient use of resources. • Use relevant asset management analysis (e.g. lifecycle forecasting tools, LOS and Risk assessments, and other planning and strategic documents) to support identification of long-term rehabilitation and renewal programs (e.g. larger scale replacement for particular building systems, such as windows, rooftop units, roofs and other exterior finishes etc.) and help build business cases to secure funding for these programs. • Use LOS framework to support prioritization of rehabilitation activities. • Track work orders in computerized maintenance management system or equivalent to support KPI reporting, look for trends in asset failures by make, model, manufacturer, material, and support monitoring of project management hours to facilitate understanding of staffing needs.
	Equipment or building component replacement	As required	• Reduced service life of connected/dependent assets. • Increased operating and maintenance costs. • Potential safety risks to users and/or occupants. • Unplanned service disruptions and facility closures.	• Maintain up to date datasets to support prioritization of asset needs and understand the interdependencies between building asset systems. Where relevant, request updated datasets provided by contractor in an editable format at the end of the project.
	Asset replacement/reconstruction	At optimal point in lifecycle analysis/end of life	• Reduced service life of connected/dependent assets. • Increased operating and maintenance costs. • Potential safety risks to users and/or occupants. • Unplanned service disruptions and facility closures.	
Disposal	Asset disposal coordinated with asset replacement	Coordinated with replacement/end of life	• Increased costs associated with disposing of assets outside of primary project.	• Align disposal documentation processes with asset hierarchy data structures to streamline TCA reporting.
Expansion and Service Improvements	Conduct community engagement to define priorities and standards to establish budgeting and service levels.	Future Initiative and ongoing	• Inequitable stakeholder engagement around service delivery expectations resulting in inequitable LOS. • Negative impacts to reputation due to limited engagement.	• Develop a continuous improvement plan for regular community engagement, aligned with corporate community engagement cycle for efficient resource uses. • Incorporate recommendations from non-infrastructure planning activities into lifecycle and financial strategy to ensure capacity (both resources, and system design) to support expansion.
	Construction of new facilities in new subdivisions to accommodate for population growth or expansion of existing facilities to accommodate for population intensification	Through growth and development and based on Master Plan	• Unable to support increasing demand due to population growth. • Service outages due to unsustainable demand on existing network of assets.	• Align asset procurement with anticipated changes in service demand identified in non-infrastructure solutions, like master plans, DC studies, and internal stakeholder engagement as part of updates to asset lifecycle strategies and budget cycle. • Use PLOS in coordination with other non-infrastructure solutions (e.g. program plans, master plans, etc.) to monitor for compliance with targets.
	Purchase/procure additional indoor recreation assets to support population growth or service expansion.	As required and based on Master Plan	• Reduced service delivery due to not having the correct equipment and spaces to support programming.	

Table E- 2: Lifecycle Management Activities for Fire Services

Lifecycle Activity	Description	Frequency	Risks Associated with Not Completing the Activities	Observations
Non-Infrastructure	Planning and studies (Master Plans, financial plans, capacity studies, AMPs) Policies and procedures/standards	As required	• Diminished understanding of future needs & growth impacts. • Reduce ability to coordinate project planning within and between service areas. • Reduced understanding of climate change impacts. • Reduced understanding and coordination between various planning, studies and performance assessment activities resulting in poor future project planning, coordination, and prioritization.	• Support staff in receiving software training to keep them up to date with software and technology advances, and data management best practices. • Develop an asset information/data management standard to ensure that data sets are maintained in a consistent manner, allowing for ease of access and data transfer. • Integrate all asset recommendations from planning and studies into the lifecycle management strategy to ensure alignment of all project and O&M planning. Integrate all asset recommendations from planning and studies into the lifecycle management strategy to ensure alignment of all project and O&M planning.
Operations and Maintenance	Performing regular preventive maintenance & inspections	As per vehicle/equipment's manufacturer manual	• Increased reactive maintenance due to decrease in condition. • Increasing cost, including vehicle rental costs. • Reduced asset service life. • Reduced response time due to lack of access to suitable vehicles and equipment.	• Align projects and programs with recommendations from non-infrastructure solutions (e.g. condition assessments, internal policies, master plans, etc.) to ensure compliance with organizational • Regularly assess maintenance costs against value of fleet or equipment to identify optimal time to replace assets • Track work orders in computerized maintenance management system or equivalent to support KPI reporting, look for trends in asset failures by make/model/manufacturer of fleet or equipment, and so on. Use preventative maintenance information to provide understanding of current asset condition. • Retain fleet or equipment that has served its useful life, but is in acceptable condition, as spares for unexpected asset outages.
	Reactive maintenance	As required	• Reduced asset service life. • Increasing capital costs to replace vehicle due to shorter service lives.	
Renewal, Rehabilitation and Replacement	Performing renewals/rehabilitations proactively that were predicted/scheduled via regular preventive maintenance and inspections	As required	• Unplanned service disruption due to unexpected asset failure, impacting surrounding/dependent services. • Poor budget coordination and unpredictable service delivery. • Reduced response time due to lack of access to suitable vehicles and equipment.	• Align projects and programs with recommendations from other non-infrastructure solutions (e.g. condition assessments during regular maintenance, internal policies, program and service growth, etc.) to ensure compliance with organizational objectives and efficient use of resources. • Ensure that asset data is updated regularly to reflect fleet and equipment condition and availability. • Track work orders in computerized maintenance management system or equivalent to support KPI reporting, look for trends in asset failures by pipe material or manufacturer, and so on. Establish a process for review of assets prior to end of life/disposal to determine candidacy for spares inventory (e.g. a target organized by vehicle type relative to expenditures on maintenance and repairs against purchase value relative to current condition)
	Refurbish fleet and equipment to maintain in inventory as spares	At optimal point in lifecycle analysis	• Unplanned service disruption due to inadequate spares impacting dependent services. • Reduced response time due to lack of access to suitable vehicles and equipment.	• Establish a process to identify end of life of asset and monitor at regular intervals (e.g. a target organized by vehicle type, for the amount of money spent on maintenance and repairs against purchase value). • Incorporate results into lifecycle strategy.
	Determine optimal point in asset lifecycle for asset replacement that minimizes maintenance and renewal/rehabilitation costs	At optimal point in lifecycle analysis/end of life	• Inefficient usage of budget resources. • Unplanned asset failure leading to vehicle and equipment shortages, impacting dependent services.	• Use PLOS in coordination with other non-infrastructure solutions (e.g. policies around fleet electrification) to monitor for compliance with targets.

Lifecycle Activity	Description	Frequency	Risks Associated with Not Completing the Activities	Observations
Disposal	Purchase/procure electric vehicles when possible to support environmental stewardship and reduce fuel consumption/greenhouse gas emissions	As required	• Failure to comply with internal policies and strategies around greenhouse gas emissions and fuel consumption.	
	Sold as part of vehicle/equipment decommissioning	At optimal point in lifecycle analysis/end of life	• Inefficient usage of available resources (i.e. failure to secure salvage value).	• Establish process for identifying candidates for resale at end of life relative to disposal costs.
	Vehicle/equipment disposal if cannot be sold due to current state/condition	At end of life	• Failure to comply with internal policies and strategies around best-practices for vehicle disposal.	• Align asset register with TCA or End of Life processes where appropriate to streamline documentation of asset disposal, and associated data updates.
Expansion and Service Improvements	Review shared assets amongst services to determine overall capacity/needs	Annually	• Inefficient use and allocation of fleet and equipment assets (e.g. not sized correctly for use, does not have adequate/necessary features, etc.) and corresponding inefficient use of financial resources.	• Establish process for regular reviews with stakeholders across service areas to coordinate fleet and equipment needs.
	Purchase/procure additional fleet and equipment assets to support population growth or service expansion	Through growth and development	• Reduced service delivery due to staff not having the correct fleet and equipment assets.	• Align asset procurement with anticipated changes in service demand identified in non-infrastructure solutions, like master plans, DC studies, and internal stakeholder engagement as part of updates to asset lifecycle strategies and budget cycle.
	Purchase/procure electric vehicles and equipment when possible (EV availability and charging infrastructure required) to support environmental stewardship and reduce fuel consumption/greenhouse gas emissions	Through growth and development	• Failure to comply with internal policies and strategies around fleet electrification.	• Use PLOS in coordination with other non-infrastructure solutions (e.g. policies around fleet electrification) to monitor for compliance with targets.

Table E- 3: Lifecycle Management Activities for Fleet

Lifecycle Activity	Description	Frequency	Risks Associated with Not Completing the Activities	Observations
Non-Infrastructure	Planning and studies (Master Plans, financial plans, capacity studies, AMPs)	As required	• Diminished understanding of future needs & growth impacts. • Reduce ability to coordinate project planning within and between service areas. • Reduced understanding of climate change impacts. • Reduced understanding and coordination between various planning, studies and performance assessment activities resulting in poor future project planning, coordination, and prioritization.	• Support staff in receiving software training to keep them up to date with software and technology advances, and data management best practices. • Develop an asset information/data management standard to ensure that data sets are maintained in a consistent manner, allowing for ease of access and data transfer. • Integrate all asset recommendations from planning and studies into the lifecycle management strategy to ensure alignment of all project and O&M planning.
Operations and Maintenance	Performing regular preventive maintenance & inspections	As per vehicle/equipment's manufacturer manual	• Increased reactive maintenance due to decrease in condition. • Increasing cost, including vehicle rental costs. • Reduced asset service life. • Reduce staff performance due to lack of access to suitable vehicle and equipment.	• Align projects and programs with recommendations from non-infrastructure solutions (e.g. condition assessments, internal policies, master plans, etc.) to ensure compliance with organizational • Regularly assess maintenance costs against value of fleet or equipment to identify optimal time to replace assets • Track work orders in computerized maintenance management system or equivalent to support KPI reporting, look for trends in asset failures by make/model/manufacturer of fleet or equipment, and so on. Use preventative maintenance information to provide understanding of current asset condition.

Lifecycle Activity	Description	Frequency	Risks Associated with Not Completing the Activities	Observations
				• Retain fleet or equipment that has served its useful life, but is in acceptable condition, as spares for unexpected asset outages.
	Reactive maintenance	As required	• Increasing capital costs to replace vehicles. • Reduced asset service life.	
Renewal, Rehabilitation and Replacement	Performing renewals/rehabilitations proactively that were predicted/scheduled via regular preventive maintenance and inspections	As required	• Unplanned service disruption due to unexpected asset failure, impacting surrounding/dependent services. • Poor budget coordination and unpredictable service delivery. • Reduce staff performance due to lack of access to suitable vehicle and equipment.	• Align projects and programs with recommendations from other non-infrastructure solutions (e.g. condition assessments during regular maintenance, internal policies, program and service growth, etc.) to ensure compliance with organizational objectives and efficient use of resources. • Ensure that asset data is updated regularly to reflect fleet and equipment condition and availability. • Track work orders in computerized maintenance management system or equivalent to support KPI reporting, look for trends in asset failures by pipe material or manufacturer, and so on. Establish a process for review of assets prior to end of life/disposal to determine candidacy for spares inventory (e.g. a target organized by vehicle type relative to expenditures on maintenance and repairs against purchase value relative to current condition)
	Refurbish fleet and equipment to maintain in inventory as spares	At optimal point in lifecycle analysis	• Unplanned service disruption due to inadequate spares impacting dependent services. • Reduce staff performance due to lack of access to suitable vehicle and equipment.	• Establish a process to identify end of life of asset and monitor at regular intervals (e.g. a target organized by vehicle type, for the amount of money spent on maintenance and repairs against purchase value). • Incorporate results into lifecycle strategy.
	Determine optimal point in asset lifecycle for asset replacement that minimizes maintenance and renewal/rehabilitation costs	At optimal point in lifecycle analysis/end of life	• Inefficient usage of budget resources. • Unplanned asset failure leading to vehicle and equipment shortages, impacting dependent services.	• Use PLOS in coordination with other non-infrastructure solutions (e.g. policies around fleet electrification) to monitor for compliance with targets.
	Purchase/procure electric vehicles when possible to support environmental stewardship and reduce fuel consumption/greenhouse gas emissions	As required	• Failure to comply with internal policies and strategies around greenhouse gas emissions and fuel consumption.	
Disposal	Sold as part of vehicle/equipment decommissioning	At optimal point in lifecycle analysis/end of life	• Inefficient usage of available resources (i.e. failure to secure salvage value).	• Establish process for identifying candidates for resale at end of life relative to disposal costs.
	Vehicle/equipment disposal if cannot be sold due to current state/condition	At end of life	• Failure to comply with internal policies and strategies around best-practices for vehicle disposal.	• Align asset register with TCA or End of Life processes where appropriate to streamline documentation of asset disposal, and associated data updates.
Expansion and Service Improvements	Review shared assets amongst services to determine overall capacity/needs	Annually	• Inefficient use and allocation of fleet and equipment assets (e.g. not sized correctly for use, does not have adequate/necessary features, etc.) and corresponding inefficient use of financial resources.	• Establish process for regular reviews with stakeholders across service areas to coordinate fleet and equipment needs.
	Purchase/procure additional fleet and equipment assets to support population growth or service expansion	Through growth and development	• Reduced service delivery due to staff not having the correct fleet and equipment assets.	• Align asset procurement with anticipated changes in service demand identified in non-infrastructure solutions, like master plans, DC studies, and internal stakeholder engagement as part of updates to asset lifecycle strategies and budget cycle. • Use PLOS in coordination with other non-infrastructure solutions (e.g. policies around fleet electrification) to monitor for compliance with targets.
	Purchase/procure electric vehicles and equipment when possible (EV availability and charging infrastructure required) to support environmental stewardship and reduce fuel consumption/greenhouse gas emissions.	Through growth and development	• Failure to comply with internal policies and strategies around fleet electrification.	

Table E- 4: Lifecycle Management Activities for Government Services

Lifecycle Activity	Description	Frequency	Risks Associated with Not Completing the Activities	Observations
Non-Infrastructure	Planning and studies (Master Plans, financial plans, capacity studies, AMPs)	As required	• Diminished understanding of future needs & growth impacts due to incomplete studies/plans/reports/analysis. • Reduce ability to coordinate project planning within and between service areas. • Reduced understanding of climate change impacts. • Reduced coordination between various planning, studies and performance assessment activities resulting in poor future project planning, coordination, and prioritization.	• Support staff in receiving software training to keep them up-to-date on data management best practices, and other essential software systems. • Use an asset information/data management standard to ensure that data sets relevant to asset management track information in a consistent manner, allowing for ease of access and data transfer. • Develop a continuous improvement plan for regular community engagement, aligned with corporate community engagement cycle for efficient resource uses. • Review previously completed community engagement activities, if available, to establish a baseline for the current community engagement activity, where applicable.
	Conduct community engagement to define priorities and standards to establish budgeting and service levels	Future Initiative and ongoing	• Inequitable identification and coordination of stakeholder service delivery priorities. • Negative impacts on reputation due to low levels of engagement. • Insufficient engagement to support asset design and selection to best support desired programming.	• Use condition to support evaluation of current LOS against proposed LOS achievement to assess asset performance and support reporting and communication. • Use outputs of condition assessments and inspections to help establish business cases for programs and help identify asset candidates for programs

	Building condition assessment program	Every 2 years	• Limited understanding of the condition of building assets resulting in:
			  ○ Reduced coordination of asset needs and priorities.
			  ○ Reduced ability to coordinate between various programs, studies and other assessments.	

Operations and Maintenance	Performing regular preventive maintenance to extend service lives	As per maintenance programs	• Increased reactive maintenance, and associated increase in costs. • Reduced asset service life. • Decreased asset performance due to worsening condition. • Increased capital investments due to shortened service life.	• Align projects and programs with recommendations from other non-infrastructure solutions (e.g. condition assessments, internal policies, master plans, etc.) to ensure compliance with organizational objectives and efficient use of resources. • Integrate findings of building condition assessment work (both road scans as well as internal inspections) to support short term, immediate proactive maintenance activities to minimize reactive maintenance. • Use relevant asset management analysis (e.g. lifecycle forecasting tools, LOS and Risk assessments, and other planning and strategic documents) to support identification of long-term preventative maintenance programs (e.g. coil cleaning, fire safety systems tests, filter replacement, etc.) and help build business cases to secure funding for these programs. Preventative maintenance programs will also extend asset service life and minimize risk of regulatory non-compliance. • Consider establishing an internal building condition assessment program to monitor for changes over time, particularly in older or higher risk/priority facilities.
	Reactive maintenance to address issues found through inspections, preventive maintenance, or complaints	As required	• Reduced asset service life. • Increasing capital costs due to earlier asset failure.	• Track work orders in computerized maintenance management system or equivalent to support KPI reporting, look for trends in asset failures by make, model, manufacturer, material, and facilitate understanding of maintenance staffing needs.

Lifecycle Activity	Description	Frequency	Risks Associated with Not Completing the Activities	Observations
Renewal, Rehabilitation and Replacement	Building rehabilitation needs	Based on inspections and condition assessments	• Reduced service life of connected/dependent assets. • Increased operating and maintenance costs. • Potential safety risks to users and/or occupants. • Unplanned service disruptions and facility closures.	• Align renewal, and replacement rehabilitation activities with recommendations from other non-infrastructure activities (e.g. master plans) to ensure efficient use of resources. • Use relevant asset management analysis (e.g. lifecycle forecasting tools, LOS and Risk assessments, and other planning and strategic documents) to support identification of long-term rehabilitation and renewal programs (e.g. larger scale replacement for particular building systems, such as windows, rooftop units, roofs and other exterior finishes etc.) and help build business cases to secure funding for these programs. • Use LOS framework to support prioritization of rehabilitation activities. • Track work orders in computerized maintenance management system or equivalent to support KPI reporting, look for trends in asset failures by make, model, manufacturer, material, and support monitoring of project management hours to facilitate understanding of staffing needs.
	Equipment or building component replacement	As required	• Reduced service life of connected/dependent assets. • Increased operating and maintenance costs. • Potential safety risks to users and/or occupants. • Unplanned service disruptions and facility closures.	• Maintain up to date datasets to support prioritization of asset needs and understand the interdependencies between building asset systems. Where relevant, request updated datasets provided by contractor in an editable format at the end of the project.
	Asset replacement/reconstruction	At optimal point in lifecycle analysis/end of life	• Reduced service life of connected/dependent assets. • Increased operating and maintenance costs. • Potential safety risks to users and/or occupants. • Unplanned service disruptions and facility closures.	
Disposal	Asset disposal coordinated with asset replacement	Coordinated with replacement/end of life	• Increased costs associated with disposing of assets outside of primary project.	• Align disposal documentation processes with asset hierarchy data structures to streamline TCA reporting.
Expansion and Service Improvements	Conduct community engagement to define priorities and standards to establish budgeting and service levels.	Future Initiative and ongoing	• Inequitable stakeholder engagement around service delivery expectations resulting in inequitable LOS. • Negative impacts to reputation due to limited engagement.	• Develop a continuous improvement plan for regular community engagement, aligned with corporate community engagement cycle for efficient resource uses. • Incorporate recommendations from non-infrastructure planning activities into lifecycle and financial strategy to ensure capacity (both resources, and system design) to support expansion.
	Construction of new facilities in new subdivisions to accommodate for population growth or expansion of existing facilities to accommodate for population intensification	Through growth and development and based on Master Plan	• Unable to support increasing demand due to population growth. • Service outages due to unsustainable demand on existing network of assets.	• Align asset procurement with anticipated changes in service demand identified in non-infrastructure solutions, like master plans, DC studies, and internal stakeholder engagement as part of updates to asset lifecycle strategies and budget cycle. • Use PLOS in coordination with other non-infrastructure solutions (e.g. program plans, master plans, etc.) to monitor for compliance with targets.
	Purchase/procure additional indoor recreation assets to support population growth or service expansion.	As required and based on Master Plan	• Reduced service delivery due to not having the correct equipment and spaces to support programming.	

Table E- 5: Lifecycle Management Activities for Libraries

Lifecycle Activity	Description	Frequency	Risks Associated with Not Completing the Activities	Observations
Non-Infrastructure	Planning and studies (Master Plans, financial plans, capacity studies, AMPs)	As required	• Diminished understanding of future needs & growth impacts due to incomplete studies/plans/reports/analysis. • Reduce ability to coordinate project planning within and between service areas. • Reduced understanding of climate change impacts. • Reduced coordination between various planning, studies and performance assessment activities resulting in poor future project planning, coordination, and prioritization.	• Support staff in receiving software training to keep them up-to-date on data management best practices, and other essential software systems. • Use an asset information/data management standard to ensure that data sets relevant to asset management track information in a consistent manner, allowing for ease of access and data transfer. • Develop a continuous improvement plan for regular community engagement, aligned with corporate community engagement cycle for efficient resource uses. • Review previously completed community engagement activities, if available, to establish a baseline for the current community engagement activity, where applicable.
	Conduct community engagement to define priorities and standards to establish budgeting and service levels	Future Initiative and ongoing	• Inequitable identification and coordination of stakeholder service delivery priorities. • Negative impacts on reputation due to low levels of engagement. • Insufficient engagement to support asset design and selection to best support desired programming.	• Use condition to support evaluation of current LOS against proposed LOS achievement to assess asset performance and support reporting and communication. • Use outputs of condition assessments and inspections to help establish business cases for programs and help identify asset candidates for programs
	Building condition assessment program	Every 2 years	• Limited understanding of the condition of building assets resulting in: o Reduced coordination of asset needs and priorities. o Reduced ability to coordinate between various programs, studies and other assessments.	
Operations and Maintenance	Performing regular preventive maintenance to extend service lives	As per maintenance programs	• Increased reactive maintenance, and associated increase in costs. • Reduced asset service life. • Decreased asset performance due to worsening condition. • Increased capital investments due to shortened service life.	• Align projects and programs with recommendations from other non-infrastructure solutions (e.g. condition assessments, internal policies, master plans, etc.) to ensure compliance with organizational objectives and efficient use of resources. • Integrate findings of building condition assessment work (both road scans as well as internal inspections) to support short term, immediate proactive maintenance activities to minimize reactive maintenance. • Use relevant asset management analysis (e.g. lifecycle forecasting tools, LOS and Risk assessments, and other planning and strategic documents) to support identification of long-term preventative maintenance programs (e.g. coil cleaning, fire safety systems tests, filter replacement, etc.) and help build business cases to secure funding for these programs. Preventative maintenance programs will also extend asset service life and minimize risk of regulatory non-compliance. • Consider establishing an internal building condition assessment program to monitor for changes over time, particularly in older or higher risk/priority facilities.
	Reactive maintenance to address issues found through inspections, preventive maintenance, or complaints	As required	• Reduced asset service life. • Increasing capital costs due to earlier asset failure.	• Track work orders in computerized maintenance management system or equivalent to support KPI reporting, look for trends in asset failures by make, model, manufacturer, material, and facilitate understanding of maintenance staffing needs.

Lifecycle Activity	Description	Frequency	Risks Associated with Not Completing the Activities	Observations
Renewal (Rehabilitation and Replacement)	Building rehabilitation needs	Based on inspections and condition assessments	• Reduced service life of connected/dependent assets. • Increased operating and maintenance costs. • Potential safety risks to users and/or occupants. • Unplanned service disruptions and facility closures.	• Align renewal, and replacement rehabilitation activities with recommendations from other non-infrastructure activities (e.g. master plans) to ensure efficient use of resources. • Use relevant asset management analysis (e.g. lifecycle forecasting tools, LOS and Risk assessments, and other planning and strategic documents) to support identification of long-term rehabilitation and renewal programs (e.g. larger scale replacement for particular building systems, such as windows, rooftop units, roofs and other exterior finishes etc.) and help build business cases to secure funding for these programs. • Use LOS framework to support prioritization of rehabilitation activities. • Track work orders in computerized maintenance management system or equivalent to support KPI reporting, look for trends in asset failures by make, model, manufacturer, material, and support monitoring of project management hours to facilitate understanding of staffing needs.
	Equipment or building component replacement	As required	• Reduced service life of connected/dependent assets. • Increased operating and maintenance costs. • Potential safety risks to users and/or occupants. • Unplanned service disruptions and facility closures.	• Maintain up to date datasets to support prioritization of asset needs and understand the interdependencies between building asset systems. Where relevant, request updated datasets provided by contractor in an editable format at the end of the project.
	Asset replacement/reconstruction	At optimal point in lifecycle analysis/end of life	• Reduced service life of connected/dependent assets. • Increased operating and maintenance costs. • Potential safety risks to users and/or occupants. • Unplanned service disruptions and facility closures.	
Disposal	Asset disposal coordinated with asset replacement	Coordinated with replacement/end of life	• Increased costs associated with disposing of assets outside of primary project.	• Align disposal documentation processes with asset hierarchy data structures to streamline TCA reporting.
Expansion and Service Improvements	Conduct community engagement to define priorities and standards to establish budgeting and service levels.	Future Initiative and ongoing	• Inequitable stakeholder engagement around service delivery expectations resulting in inequitable LOS. • Negative impacts to reputation due to limited engagement.	• Develop a continuous improvement plan for regular community engagement, aligned with corporate community engagement cycle for efficient resource uses. • Incorporate recommendations from non-infrastructure planning activities into lifecycle and financial strategy to ensure capacity (both resources, and system design) to support expansion.
	Construction of new facilities in new subdivisions to accommodate for population growth or expansion of existing facilities to accommodate for population intensification	Through growth and development and based on Master Plan	• Unable to support increasing demand due to population growth. • Service outages due to unsustainable demand on existing network of assets.	• Align asset procurement with anticipated changes in service demand identified in non-infrastructure solutions, like master plans, DC studies, and internal stakeholder engagement as part of updates to asset lifecycle strategies and budget cycle. • Use PLOS in coordination with other non-infrastructure solutions (e.g. program plans, master plans, etc.) to monitor for compliance with targets.
	Purchase/procure additional indoor recreation assets to support population growth or service expansion.	As required and based on Master Plan	• Reduced service delivery due to not having the correct equipment and spaces to support programming.	

Table E- 6: Lifecycle Management Activities for Parks, Trails, and Natural Assets

Lifecycle Activity	Description	Frequency	Risks Associated with Not Completing the Activities	Observations
Non-Infrastructure	Planning and studies (Master Plans, financial plans, capacity studies, AMPs, Recreation, Parks and Culture Plan)	As required	• Diminished understanding of future needs & growth impacts due to incomplete studies/plans/reports/analysis. • Reduce ability to coordinate project planning within and between service areas. • Reduced understanding of climate change impacts. • Reduced coordination between various planning, studies and performance assessment activities resulting in poor future project planning, coordination, and prioritization.	• Support staff in receiving software training to keep them up-to-date on data management best practices, and other essential software systems. • Use an asset information/data management standard to ensure that data sets relevant to asset management track information in a consistent manner, allowing for ease of access and data transfer. • Develop a continuous improvement plan for regular community engagement, aligned with corporate community engagement cycle for efficient resource uses. • Review previously completed community engagement activities, if available, to establish a baseline for the current community engagement activity, where applicable. • Use condition to support evaluation of current LOS against proposed LOS achievement to assess asset performance and support reporting and communication.
	Conduct community engagement to define priorities and standards to establish budgeting and service levels	Future Initiative and ongoing	• Inequitable identification and coordination of stakeholder service delivery priorities. • Negative impacts on reputation due to low levels of engagement. • Insufficient engagement to support asset design and selection to best support desired programming.	• Use outputs of condition assessments and inspections to help establish business cases for programs and help identify asset candidates for programs
Operations and Maintenance	Routine (weekly, monthly, and annual) parks inspections for all outdoor recreation assets	Annually as per inspection programs	• Limited understanding of the condition of building assets resulting in: o Reduced coordination of asset needs and priorities. o Reduced ability to coordinate between various programs, studies and other assessments.	• Align projects and programs with recommendations from other non-infrastructure solutions (e.g. condition assessments, internal policies, master plans, etc.) to ensure compliance with organizational objectives and efficient use of resources. • Integrate findings of building condition assessment work (both road scans as well as internal inspections) to support short term, immediate proactive maintenance activities to minimize reactive maintenance. • Use relevant asset management analysis (e.g. lifecycle forecasting tools, LOS and Risk assessments, and other planning and strategic documents) to support identification of long-term preventative maintenance programs (e.g. coil cleaning, fire safety systems tests, filter replacement, etc.) and help build business cases to secure funding for these programs. Preventative maintenance programs will also extend asset service life and minimize risk of regulatory non-compliance. • Consider establishing an internal building and structure condition assessment program to monitor for changes over time, particularly in older or higher risk/priority facilities
	Performing regular preventive maintenance to extend service lives	As per maintenance programs	• Increased reactive maintenance, and associated increase in costs. • Reduced asset service life. • Decreased asset performance due to worsening condition. • Increased capital investments due to shortened service life.	• Retain fleet or equipment that has served its useful life, but is in acceptable condition, as spares for unexpected asset outages. • Track work orders in computerized maintenance management system or equivalent. Historical information can be used to guide future decisions on lifecycle activities.
	Reactive maintenance to address issues found through inspections, preventive maintenance, or complaints	As required	• Reduced asset service life. • Increasing capital costs to replace vehicle due to shorter service lives.	

Lifecycle Activity	Description	Frequency	Risks Associated with Not Completing the Activities	Observations
Renewal, Rehabilitation and Replacement	Performing renewals/rehabilitations proactively that were predicted/scheduled via regular preventive maintenance and annual inspections	As required	• Reduced service life of connected/dependent assets. • Increased operating and maintenance costs. • Potential safety risks to users and/or occupants. • Unplanned service disruptions and facility closures.	• Align renewal, and replacement rehabilitation activities with recommendations from other non-infrastructure activities (e.g. master plans) to ensure efficient use of resources. • Use relevant asset management analysis (e.g. lifecycle forecasting tools, LOS and Risk assessments, and other planning and strategic documents) to support identification of long-term rehabilitation and renewal programs (e.g. larger scale replacement for particular building systems, such as windows, rooftop units, roofs and other exterior finishes etc.) and help build business cases to secure funding for these programs. • Use LOS framework to support prioritization of rehabilitation activities. • Track work orders in computerized maintenance management system or equivalent to support KPI reporting, look for trends in asset failures by make, model, manufacturer, material, and support monitoring of project management hours to facilitate understanding of staffing needs.
	Component replacement before asset requires full replacement (e.g., playgrounds)	As required	• Increased operating and maintenance costs. • Potential safety risks to users and/or occupants. • Unplanned service disruptions and asset closures.	• Maintain up to date datasets to support prioritization of asset needs and understand the interdependencies between building asset systems. Where relevant, request updated datasets provided by contractor in an editable format at the end of the project.
	Asset replacement/reconstruction	At optimal point in lifecycle analysis/end of life	• Reduced service life of assets. • Increased operating and maintenance costs. • Safety risks to users and/or occupants. • Unplanned service disruptions and facility closures.	
Disposal	Asset disposal coordinated with asset replacement	Coordinated with replacement/end of life	• Increased costs associated with disposing of assets outside of primary project.	• Align disposal documentation processes with asset hierarchy data structures to streamline TCA reporting.
Expansion and Service Improvements	Conduct community engagement to define priorities and standards to establish budgeting and service levels	Future Initiative and ongoing	• Inequitable stakeholder engagement around service delivery expectations resulting in inequitable LOS. • Negative impacts to reputation due to limited engagement.	• Develop a continuous improvement plan for regular community engagement, aligned with corporate community engagement cycle for efficient resource uses. • Incorporate recommendations from non-infrastructure planning activities into lifecycle and financial strategy to ensure capacity (both resources, and system design) to support expansion.
	Growth needs are determined based on the Parks and Recreation Master Plan service standards and target provision levels. There is opportunity for collaboration amongst services (parks and recreation, transportation, environmental services/utilities) for service expansion.	Through growth and development	• Unable to support increasing demand due to population growth. • Service outages due to unsustainable demand on existing network of assets. • Reduced coordination and prioritization of related needs between different services.	• Align asset procurement with anticipated changes in service demand identified in non-infrastructure solutions, like master plans, DC studies, and internal stakeholder engagement as part of updates to asset lifecycle strategies and budget cycle. • Use PLOS in coordination with other non-infrastructure solutions (e.g. program plans, master plans, etc.) to monitor for compliance with targets.
	Purchase/procure additional outdoor recreation assets to support population growth or service expansion.	As required and based on Master Plan	• Reduced service delivery due to outdoor recreation facilities not meeting design and service delivery expectations.	

Table E- 7: Lifecycle Management Activities for Recreation, Culture and Facilities

Lifecycle Activity	Description	Frequency	Risks Associated with Not Completing the Activities	Observations
Non-Infrastructure	Planning and studies (Master Plans, financial plans, capacity studies, AMPs, Recreation, Parks and Culture Plan Urban Forest Study, Climate Change Adaptation Implementation Plan, and design standards)	As required	• Diminished understanding of future needs & growth impacts due to incomplete studies/plans/reports/analysis. • Reduce ability to coordinate project planning within and between service areas. • Reduced understanding of climate change impacts. • Reduced coordination between various planning, studies and performance assessment activities resulting in poor future project planning, coordination, and prioritization.	• Support staff in receiving software training to keep them up-to-date on data management best practices, and other essential software systems. • Use an asset information/data management standard to ensure that data sets relevant to asset management track information in a consistent manner, allowing for ease of access and data transfer. • Develop a continuous improvement plan for regular community engagement, aligned with corporate community engagement cycle for efficient resource uses. • Review previously completed community engagement activities, if available, to establish a baseline for the current community engagement activity, where applicable. • Use condition to support evaluation of current LOS against proposed LOS achievement to assess asset performance and support reporting and communication.
	Conduct community engagement to define priorities and standards to establish budgeting and service levels Public Education & Public Stewardship	Future Initiative and ongoing	• Inequitable identification and coordination of stakeholder service delivery priorities. • Negative impacts on reputation due to low levels of engagement. • Insufficient engagement to support development of outreach and education programs, potentially resulting in poor uptake/participation in those programs.	• Use outputs of condition assessments and inspections to help establish business cases for programs and help identify asset candidates for programs.
	Condition Assessment and Monitoring	Future initiative	• Reduced understanding of condition of natural assets impacting ability to plan, time, and scope interventions to preserve and promote asset health. • Spread of invasive species, both flora and fauna, at an unknown rate, and of unknown species. • Unplanned service disruptions due to increased rate of hazardous events (such as tree death, fallen branches or trunks).	

Operations and Maintenance	Tree pruning and planting program	Annually as per inspection programs	• Decline in tree and woodlot health, resulting in:
			  ○ Increase risk of hazardous conditions (e.g. tree death leading to increased chances of storm damage)
			  ○ Unexpected service disruptions and woodlot closures.
			  ○ Increased rate of invasive species spread due to declining health of native forest species.
				• Coordinate programs with non-infrastructure solutions to optimize timing and type of intervention.
				• Ensure alignment between messaging of public engagement and education programs and internal asset management programs to preserve natural assets.
				• Connect with neighbouring municipalities to coordinate natural asset management activities and programs - natural assets are cross-jurisdictional, and events upstream can impact performance and service delivery down stream.
				• Ensure that application of asset management processes within Natural Asset planning activities is consistent with other service areas to support strategic decision making and evaluation of LOS performance.

	Invasive Species management	As per maintenance programs	• Increased spread of invasive species resulting in decline of biodiversity rates for both flora and fauna. • Increased capital expenses as programs switch from maintenance activities to large scale restoration and rehabilitation programs. • Longer service disruptions if regular maintenance is delayed as area covered by invasive species increases. • Negative reputational impacts due to inconsistent application of natural asset priorities between public education and municipal action.	

Lifecycle Activity	Description	Frequency	Risks Associated with Not Completing the Activities	Observations
	Reactive maintenance (e.g. storm damage etc.).	As required		
Renewal, Rehabilitation and Replacement	Emerald Ash borer Restoration	As required	• Increase spread of invasive species, such as Ash Borer, resulting in decline of natural asset condition. • Unexpected and longer service disruptions if regular maintenance is delayed as area covered by invasive species increases. • Increased capital expenses as programs are delayed and total area impacted expands, as well as inflation increasing costs.	• Develop design standards for planting and landscaping that can be used to support planning and plant selection in other service areas where possible. • Incorporate opportunities to expand natural asset areas and low-impact development as alternatives to traditional grey infrastructure • Connect with neighbouring municipalities and conservation authorities to coordinate natural asset management activities and programs - natural assets are cross-jurisdictional, and events upstream can impact performance and service delivery down stream. • Ensure that application of asset management processes within Natural Asset planning activities is consistent with other service areas to support strategic decision making and evaluation of LOS performance.
	Renaturalization of Existing Lands	As required and possible.	• Decline in service delivery provided by natural assets, such as stormwater management and water filtration, leading to increase in risk events, such as flooding or drought. • Increasing maintenance costs due to climate change impacts (such as heat events, drought, flooding, etc.) having an outsized impact on managed planted and landscaped areas relative to naturalized area (which are, to some extent, regenerating and more resilient).	
	Woodlot Management and Rehabilitation	As required		
Disposal	Asset disposal coordinated with asset replacement	Coordinated with replacement/end of life	• Increased costs associated with disposing of assets outside of primary project.	• Align disposal documentation processes with asset hierarchy data structures to make updating datasets easier.
Expansion and Service Improvements	Conduct community engagement to define priorities and standards to establish budgeting and service levels	Future Initiative and ongoing	• Inequitable stakeholder engagement around service delivery expectations resulting in inequitable LOS. • Negative impacts to reputation due to limited engagement.	• Develop a continuous improvement plan for regular community engagement, aligned with corporate community engagement cycle for efficient resource uses. • Incorporate recommendations from non-infrastructure planning activities into lifecycle and financial strategy to ensure capacity (both resources, and system design) to support expansion of natural areas both within development areas, and through land acquisition.
	Making connections between nearby woodlots & natural lands in other jurisdictions.	As possible	• Unable to support increasing demand due to population growth. • Over-use of existing woodlots leading to decline in asset condition and unexpected service disruptions. • Missed opportunities to coordinate interventions, programs and other asset needs between close-proximity assets in nearby jurisdictions.	• Align asset procurement with anticipated changes in service demand identified in non-infrastructure solutions, like master plans, DC studies, and internal stakeholder engagement as part of updates to asset lifecycle strategies and budget cycle. • Use PLOS in coordination with other non-infrastructure solutions (e.g. program plans, master plans, etc.) to monitor for compliance with targets. • Ensure alignment between messaging of public engagement and education programs and internal asset management programs to preserve natural assets.
	Purchase/procure additional lands to promote preservation & service expansion to match growth	As required, and in accordance with growth and development (for sustainable service delivery	• Reduced service delivery due to insufficient woodlots and other natural assets relative to City growth (such as reduced natural stormwater management, reduced passive recreation opportunities, negative impacts on biodiversity, etc.)	• Ensure that application of asset management processes within Natural Asset planning activities is consistent with other service areas to support strategic decision making and evaluation of LOS performance.

Table E- 8: Lifecycle Management Activities for Stormwater

Lifecycle Activity	Description	Frequency	Risks Associated with Not Completing the Activities	Observations
Non-Infrastructure	Planning and studies (Master Plans, financial plans, capacity studies, AMPs, Master Drainage Plan, models) • Municipal drains • Consolidated Linear Infrastructure Environmental Compliance Approvals • Geographic Information System (GIS) data analysis and mapping • Policies, procedures/standards and by-laws	As required	• Diminished understanding of future needs & growth impacts. • Reduce ability to coordinate project planning between service areas. • Reduced understanding of climate change impacts. • Inaccurate GIS data, and poor data management between systems.	• Alignment of asset management documents and processes to integrate recommendations from all master plans, service studies, and community engagement activities to maximize planning efficiency, reduce duplication, increase alignment, and support proactive planning and analysis. This will streamline forecasting, business plan development, and understanding of asset priorities and needs. In particular, integration of all asset recommendations from planning and studies into the lifecycle management strategy to ensure alignment of all project and O&M planning, LOS frameworks and Risk Management strategies. • Integration of climate change risks and other studies with on-going condition assessment and monitoring programs to support coordinated planning within the water distribution network and across interconnected services (e.g. parks, facilities, etc.), and to support proactive analysis of climate change impacts to support risk planning. • Support staff in receiving software training to keep them up to date with software and technology advances, and data management best practices. • Develop an asset information/data management standard to ensure that data sets relevant to asset management track information in a consistent manner, allowing for ease of access and data transfer. • Ensure asset management plan reflects policy, and analysis is updated to reflect implementation of a stormwater utility rate.
	Sump Pump Policy Stormwater Utility Implementation	Future Initiative	• Increased localized flooding during storm events. • Unsustainable funding levels to support service delivery performance expectations.	• Develop a continuous improvement plan for regular community engagement, aligned with corporate community engagement cycle for efficient resource uses. • Review previously completed community engagement activities, if available, to establish a baseline for the current community engagement activity, where applicable.
	Flood Implementation Plan	As required	• Reduced understanding of flooding-related risks. • Inability to proactively plan for flood risk events. • Reduced coordination between service areas with regards to flood risk mitigation, both through O&M programs and renewal/rehabilitation programs.	
	Conduct community engagement to define priorities and standards to establish budgeting and service levels for the future.	Future Initiative	• Inequitable stakeholder engagement around service delivery expectations. • Negative impacts to reputation due to limited engagement.	
Operations and Maintenance	CCTV inspections	As required	• Diminished understanding of pipe network condition. • Increasing reactive maintenance costs. • Increasing service disruptions and outages, both within Sanitary service and in neighbour services (e.g. transportation and roads network)	• Use data management standard to ensure data collected during CCTV inspection aligns with existing sanitary network register, streamlining updating and QA/QC work. • Consider inclusion of Stormwater Collection Network in annual CCTV program to align with industry best practice. • If implemented, use condition program to support development of a proactive flushing and repair programs by using data to identify candidates for lifecycle activities.
	Culvert inspections	As required	• Diminished understanding of pipe network condition. • Increasing reactive maintenance costs.	• Integrate findings of condition assessment work to support short term, immediate proactive maintenance activities to minimize reactive maintenance. • Use relevant asset management analysis (e.g. lifecycle forecasting tools, LOS and Risk assessments, and other planning and strategic documents) to support identification of

Lifecycle Activity	Description	Frequency	Risks Associated with Not Completing the Activities	Observations
			• Increasing service disruptions and outages, both within Sanitary service and in neighbour services (e.g. transportation and roads network)	long-term preventative maintenance programs and help build business cases to secure funding for these programs. Preventative maintenance programs will also extend asset service life and minimize risk of regulatory non-compliance. • Track work orders in computerized maintenance management system or equivalent to support KPI reporting, look for trends in asset failures by pipe material or manufacturer, and so on.
	Flushing (mains, culverts, cellar) to remove debris	As required	• Decreasing overall level of service due to increase rate of service disruptions and outages. • Increasing risk of localized flooding or backups due to blockages. • Increasing risk of regulatory non-compliance, and associated fines and reputational impacts. • Failure to meet internal standards and policy around stormwater management and flooding.	
	Pipe spot repairs (Appurtenances repairs)	As required	• Reduced asset service life resulting in higher capital costs due to more frequent, larger-scale pipe replacement. • Unplanned service disruptions and outages due to unexpected asset failure.	
	Catch basin, lateral and maintenance hole repairs	As per inspections	• Reduced asset service life resulting in higher capital costs due to more frequent, larger-scale pipe replacement. • Unplanned service disruptions and outages due to unexpected asset failure.	
	Groundwater management systems and catch basin cleaning to remove debris and sediment	As per inspections, Catch basing cleaning occurs biennially	• Reduced asset capacity due to sediment and debris buildup. • Downline asset failure due to debris and sediment movement into pipes. • Localized flooding, and associated service disruption.	
Renewal/ Rehabilitation	Erosion control	As per inspections	• Increased rate of erosion leading to diminished service delivery in surrounding assets. • Increased costs to address and correct erosion issues.	• Align projects with recommendations from other non-infrastructure solutions to ensure compliance with organizational objectives and efficient use of resources. • Consider implementation of annual erosion control inspection to monitor for changes. • Use relevant asset management analysis (e.g. lifecycle forecasting tools, LOS and Risk assessments, and other planning and strategic documents) to support identification of long-term preventative maintenance programs and help build business cases to secure funding for these programs. Preventative maintenance programs will also extend asset service life and minimize risk of regulatory non-compliance. • Maintain up to date datasets to support prioritization of asset needs and understand the interdependencies between asset networks. Where relevant, request updated datasets provided by contractor in an editable format at the end of the project.
	Inlet/Outlet and outfall	As per inspections	• Diminished overall level of service due to decline in asset condition. • Service disruptions and unplanned outages.	• Track work orders in computerized maintenance management system or equivalent to support KPI reporting, look for trends in asset failures by pipe material or manufacturer, and so on.
	Sewer Lining	As Required	• Reduced asset service life resulting in higher capital costs due to more frequent, larger-scale sewer replacement.	

Lifecycle Activity	Description	Frequency	Risks Associated with Not Completing the Activities	Observations
Replacement/ Disposal	Pipe replacement Service lateral replacement (open cut replacement of mainline pipe and connected assets)	End of life	• Decreasing overall level of service due to increase rate of service disruptions and outages. • Increasing risk of localized flooding or backups due to blockages. • Increasing risk of regulatory non-compliance, and associated fines and reputational impacts. • Failure to meet internal standards and policy around stormwater management and flooding.	• Align projects with recommendations from other non-infrastructure solutions to ensure compliance with organizational objectives and efficient use of resources. • Maintain up to date datasets to support prioritization of asset needs and understand the interdependencies between asset networks. Where relevant, request updated datasets provided by contractor in an editable format at the end of the project. • Align disposal documentation processes with asset hierarchy data structures to streamline TCA reporting.
	Maintenance hole replacement	Coordinated with sewer replacement	• Decreasing overall level of service due to increase rate of service disruptions and outages. • Increasing risk of localized flooding or backups due to blockages. • Failure to meet internal standards and policy around stormwater management and flooding.	
	Storm sewer structure replacement • Replace inlet/outlet structure • Stormwater outlet/headwall replace	End of life	• Decreasing overall level of service due to increase rate of service disruptions and outages. • Increasing risk of localized flooding or backups due to blockages. • Increasing risk of regulatory non-compliance, and associated fines and reputational impacts. • Failure to meet internal standards and policy around stormwater management and flooding.	
	OGS replacement	End of life	• Diminished asset capacity and service performance. • Increased risk of localized flooding.	
	SWM pond dredging/cleanouts and sediment disposal	As per inspections	• Diminished asset capacity • Increased risk of localized flooding. • Reduction of service level of surrounding services (e.g. trails, parks and recreation, etc.).	
	Asset disposal coordinated with asset replacement	Coordinated with replacement/end of life	• Increased costs of capital projects.	
Expansion and Service Improvements	Conduct community engagement to define priorities and standards to establish sustainable budgets and service levels.	Future Initiative	• Inequitable stakeholder engagement around service delivery expectations resulting in inequitable LOS. • Negative impacts to reputation due to limited engagement.	• Develop a continuous improvement plan for regular community engagement, aligned with corporate community engagement cycle for efficient resource uses. • Review previously completed community engagement activities, if available, to establish a baseline for the current community engagement activity, where applicable.
	Growth needs are known based on the Development Charges and Master Servicing and Stormwater Management Report and other Secondary Plans.	Through growth and development	• Unable to support increasing demand due to population growth. • Service outages due to unsustainable demand on existing network of assets.	• Incorporate recommendations from non-infrastructure planning activities into lifecycle and financial strategy to ensure capacity (both resources, and system design) to support expansion.
	Stormwater network expansion/upgrades to service new areas or expand capacity of existing network (pipe upsizing, new subdivisions, coordination with other services).	Through growth and development	• Reduction in LOS due to insufficient capacity. • Increased asset failure and costs due to over-used assets.	

Table E- 9: Lifecycle Management Activities for Transportation

Lifecycle Activity	Description	Frequency	Risks Associated with Not Completing the Activities	Observations
Non-Infrastructure	Planning and studies (Master Plans, financial plans, capacity studies, AMPs, Regional Transportation Master Plan, traffic counting program, Active Master Transportation Plan) • Sidewalk warrant study (matrix for implementing new sidewalks based on priority) • Policies, procedures/standards, and by-laws (e.g. Driveway/Access Guidelines, Ditch Alteration Policy) • Boundary Road Agreements • Land evaluation and purchases • Geographic Information System (GIS) data analysis and mapping	As required/ Ongoing	• Diminished understanding of future needs & growth impacts. • Reduce ability to coordinate project planning between service areas. • Reduced understanding of climate change impacts. • Reduced understanding and coordination between various planning, studies and performance assessment activities resulting in poor future project planning and coordination, and prioritization. • Reduced understanding of the value and expenditure in service relating to land acquisition, and overall value of portfolio. • Inaccurate GIS data, and poor data management between systems.	• Support staff in receiving software training to keep them up to date with software and technology advances, and data management best practices. • Develop an asset information/data management standard to ensure that data sets are maintained in a consistent manner, allowing for ease of access and data transfer. • Integrate all asset recommendations from planning and studies into the lifecycle management strategy to ensure alignment of all project and O&M planning. • Develop a continuous improvement plan for regular community engagement, aligned with corporate community engagement cycle for efficient resource uses. • Consider impacts of recommendations on design standards (e.g. fleet equipment to support changed approach, storage facilities, etc.) • Update recommendations from assessment into lifecycle management strategy at regular intervals.
	Conduct community engagement to define priorities and standards to establish budgeting and service levels.	Future Initiative	• Inequitable identification and coordination of stakeholder service delivery priorities. • Negative impacts on reputation due to low levels of engagement.	
	Salt Management Program (Per Climate Change Adaptation Implementation Plan)	Ongoing	• Over-reliant on traditional winter control management programs resulting in negative environmental impacts. • Inefficient resource usage due to poor understanding of advancing technologies and options for winter control.	
	Condition Assessment Program	Paved Roads - annually	• Reduced understanding of asset condition leading to: o Decreased understanding of asset priorities and needs. o Reduce ability to coordinate projects, programs and activities across road network.	
		Unpaved - annually	• Reduced understanding of asset condition leading to: o Decreased understanding of asset priorities and needs. o Reduce ability to coordinate projects, programs and activities across road network.	
Operations and Maintenance	Maintenance such as street sweeping/cleaning, snow and ice removal, line painting, vegetation removal, ditching, etc. determined through inspections, patrol, and complaints	Vegetation removal four times per year, all other activities as required.	• Overall reduction of level service due to increased rate of asset failure and resultant service disruptions and outages.	• Align projects and programs with recommendations from other non-infrastructure solutions (e.g. condition assessments, internal policies, master plans, etc.) to ensure compliance with organizational objectives and efficient use of resources. • Use outputs of community engagement to support targets for maintenance programs, in addition to professional judgement. • Regularly review PLOS achievement against minimum maintenance standards to evaluate performance and support reporting and communication. • Integrate findings of condition assessment work (both road scans as well as internal inspections) to support short term, immediate proactive maintenance activities to minimize reactive maintenance. • Use relevant asset management analysis (e.g. lifecycle forecasting tools, LOS and Risk assessments, and other planning and strategic documents) to support identification of long-term preventative maintenance programs and help build business cases to secure funding for these programs. Preventative maintenance

Lifecycle Activity	Description	Frequency	Risks Associated with Not Completing the Activities	Observations
				programs will also extend asset service life and minimize risk of regulatory non-compliance.
	Minimum maintenance standards (sidewalk inspections and road patrol)	As per O. Reg.239/02; 1/3 of sidewalk network annually.	• Creates a safety hazard for users. • Failure to comply with regulatory requirements.	• Maintain up to date datasets to support prioritization of asset needs and understand the interdependencies between asset networks. Where relevant, request updated datasets provided by contractor in an editable format at the end of the project. • Track work orders in computerized maintenance management system or equivalent to support KPI reporting, look for trends in asset failures by road class, traffic volume, and so on.
	Pothole repairs Crack sealing Reactive maintenance or spot repairs Curb repairs Guiderail damage repairs Maintenance paving Ball bank program Dust suppressant Roadside ditch cleaning/debris removal	As required, in compliance with Minimum Maintenance Standards	• Reduced asset condition leading to: o Increased reactive maintenance needs. o Decreased asset service life. o Increased overall costs. o Higher likelihood of unplanned outages and service disruptions that can impact surrounding infrastructure and services.	
Renewal, Rehabilitation and Replacement	Performing renewals/rehabilitations (asphalt resurfacing, surface treatment reapplication, gravel resurfacing) based on condition inspections and lifecycle renewal procedures	As required	• Reduced asset performance due to poor asset condition. • Increased operational costs due to aging infrastructure. • Increased likelihood of unplanned service disruptions and outages due to unexpected asset failure. • Increased likelihood of project costs due to increased deterioration of asset (e.g. more repairs to road base, etc.).	• Align projects and programs with recommendations from other non-infrastructure solutions (e.g. condition assessments, internal policies, master plans, etc.) to ensure compliance with organizational objectives and efficient use of resources. • Use relevant asset management analysis (e.g. lifecycle forecasting tools, LOS and Risk assessments, and other planning and strategic documents) to support identification of long-term rehabilitation and renewal programs (e.g. resurfacing, etc.) and help build business cases to secure funding for these programs. • Maintain up to date datasets to support prioritization of asset needs and understand the interdependencies between asset networks. Where relevant, request updated datasets provided by contractor in an editable format at the end of the project. • Track work orders in computerized maintenance management system or equivalent to support KPI reporting, look for trends in asset failures by pipe material or manufacturer, and so on.
	Sidewalk repairs (spot replacements, asphalt padding, grinding, slab lifting)	As required	• Reduced asset performance due to poor asset condition. • Increased operational costs due to aging infrastructure. • Increased likelihood of unplanned service disruptions and outages due to unexpected asset failure.	
Disposal	Asset disposal coordinated with asset replacement	Coordinated with replacement/end of life	• Increased costs associated with disposing of assets outside of primary project.	• Align disposal documentation processes with asset hierarchy data structures to streamline TCA reporting.
	Material from roads, sidewalks recycled and repurposed for construction	Coordinated with replacement/end of life	• Failure to meet internal standards and policies around environmental and fiscal responsibility.	• Were applicable, incorporate recycling requirements into procurement process.
Expansion and Service Improvements	Transportation network expansion/upgrades to service new areas or expand capacity of existing network (additional roads and sidewalks, road widening, upgrading loose top roads to hard top, etc.)	Through growth and development	• Inability to meet increasing service demand. • Negative reputational impacts due to declining service delivery.	• Incorporate recommendations from other non-infrastructure planning activities into lifecycle and financial strategy to ensure capacity (both resources, and system design) to support expansion.

Lifecycle Activity	Description	Frequency	Risks Associated with Not Completing the Activities	Observations
	Sidewalk expansions	Through growth and development	• Inability to meet increasing service demand. • Negative reputational impacts due to inadequate and/or unmodernized service delivery..	
	Road conversions/widenings	Through growth and development	• Inability to meet increasing service demand. • Negative reputational impacts due to inadequate and/or unmodernized service delivery.	

Table E- 10: Lifecycle Management Activities for Transportation (Bridges)

Lifecycle Activity	Description	Frequency	Risks Associated with Not Completing the Activities	Observations
Non-Infrastructure	Planning and studies (e.g. Master Plans, financial plans, capacity studies, AMPs, Active Transportation Master Plan, Environmental Assessments)	As required	• Diminished understanding of future needs & growth impacts.	• Support staff in receiving software training to keep them up to date with software and technology advances, and data management best practices.
	Geographic Information System (GIS) data analysis and mapping		• Reduce ability to coordinate project planning within and between service areas. • Reduced understanding of climate change impacts. • Reduced understanding and coordination between various planning, studies and performance assessment activities resulting in poor future project planning and coordination, and prioritization. • Inaccurate GIS data, and poor data management between systems.	• Develop an asset information/data management standard to ensure that data sets are maintained in a consistent manner, allowing for ease of access and data transfer. • Integrate all asset recommendations from planning and studies into the lifecycle management strategy to ensure alignment of all project and O&M planning. • Develop a continuous improvement plan for regular community engagement, aligned with corporate community engagement cycle for efficient resource uses. • Align program with related environmental policies.
	Conduct community engagement to define priorities and standards to establish budgeting and service levels.	Future Initiative	• Inequitable identification and coordination of stakeholder service delivery priorities. • Negative impacts on reputation due to low levels of engagement.	• Consider impacts of recommendations on design standards (e.g. fleet equipment to support changed approach, storage facilities, etc.) • Use a data standard to align incoming data sets from condition assessment with existing asset hierarchy to improve ease of upload.
	Smart about salt program to reduce the impacts of de-icing salts	Ongoing	• Over-reliant on traditional winter control management programs resulting in negative environmental impacts. • Inefficient resource usage due to poor understanding of advancing technologies and options for winter control	
	Bridge and culvert inspection and condition assessment (OSIM) program.	Every 2 years as prescribed through O. Reg. 104/97	• Creates a safety hazard for users. • Failure to comply with regulatory requirements. • Decreased understanding of asset condition leading to increasing reactive work, reduced asset lifespan and higher asset investment.	

Lifecycle Activity	Description	Frequency	Risks Associated with Not Completing the Activities	Observations
Operations and Maintenance	Regular inspections and road patrol	Weekly to Monthly	• Increased reactive maintenance and unplanned closures.	• Align projects and programs with recommendations from other non-infrastructure solutions (e.g. condition assessments, internal policies, master plans, etc.) to ensure compliance with organizational objectives and efficient use of resources. • Use a data standard to align incoming data sets from condition assessment with existing asset hierarchy to improve ease of upload. • Regularly review PLOS achievement against minimum maintenance standards to evaluate performance and support reporting and communication. • Integrate findings of condition assessment work (both road scans as well as internal inspections) to support short term, immediate proactive maintenance activities to minimize reactive maintenance.
	Minimum maintenance standards (road patrol)	As per O. Reg.239/02 and procedures	• Creates a safety hazard for users. • Failure to comply with regulatory requirements.	• Use relevant asset management analysis (e.g. lifecycle forecasting tools, LOS and Risk assessments, and other planning and strategic documents) to support identification of long-term preventative maintenance programs and help build business cases to secure funding for these programs. Preventative maintenance programs will also extend asset service life and minimize risk of regulatory non-compliance. • Maintain up to date datasets to support prioritization of asset needs and understand the interdependencies between asset networks. Where relevant, request updated datasets provided by contractor in an editable format at the end of the project.
	Preventative and reactive maintenance (Structure washing and removing debris, minor repairs, pothole repairs, erosion repairs)	As required	• Increased reactive maintenance, and associated increase in costs. • Reduced asset service life. • Decreased asset performance due to worsening condition. • Increased capital investments due to shortened service life.	• Track work orders in computerized maintenance management system or equivalent to support KPI reporting, look for trends in asset failures by pipe material or manufacturer, and so on.
	Perform Ontario Structure Inspection Manual (OSIM) inspections on bridges, significant culverts, and footbridges	Biennially	• Creates a safety hazard for users. • Failure to comply with regulatory requirements. • Decreased understanding of asset condition leading to increasing reactive work, reduced asset lifespan and higher asset investment. • Increased unexpected asset failure, service disruptions and outages. • Negative reputational impacts.	
Renewal, Rehabilitation and Replacement	Minor rehabilitation (wearing surface repairs, structure repairs as needed)	Determined through Condition Inspections	• Worsening condition of assets due to failure to resolve known defects. • Reduced asset service life. • Creates safety risk for users.	• Align projects and programs with recommendations from other non-infrastructure solutions (e.g. condition assessments, internal policies, master plans, etc.) to ensure compliance with organizational objectives and efficient use of resources. • Use relevant asset management analysis (e.g. lifecycle forecasting tools, LOS and Risk assessments, and other planning and strategic documents) to support identification of long-term rehabilitation and renewal programs (e.g. resurfacing, etc.) and help build business cases to secure funding for these programs. • Maintain up to date datasets to support prioritization of asset needs and understand the interdependencies between asset networks. Where relevant, request updated datasets provided by contractor in an editable format at the end of the project.
	Major renewals/rehabilitations (wearing surface repairs, substructure repairs, superstructure repairs, conversion of use)	Determined through Condition Inspections	• Worsening condition of assets due to failure to resolve known defects. • Reduced asset service life. • Creates safety risk for users.	• Track work orders in computerized maintenance management system or equivalent to support KPI reporting, look for trends in asset failures by pipe material or manufacturer, and so on.

Lifecycle Activity	Description	Frequency	Risks Associated with Not Completing the Activities	Observations
	Full bridge replacement including foundations	At optimal point in lifecycle analysis/end of life, or as determined through Condition Inspections	• Worsening condition of assets due to failure to resolve known defects. • Reduced asset service life. • Creates significant safety risk for users. • Creates significant likelihood of service outages and disruptions. • Negative reputational impacts.	
Disposal	Asset disposal coordinated with asset replacement and material from structures recycled and repurposed for construction	Coordinated with replacement/end of life	• Increased costs associated with disposing of assets outside of primary project.	• Align disposal documentation processes with asset hierarchy data structures to streamline TCA reporting.
Expansion and Service Improvements	Conduct community engagement to define priorities and standards to establish budgeting and service levels for the future.	Future Initiative	• Inequitable identification and coordination of stakeholder service delivery priorities. • Negative impacts on reputation due to low levels of engagement.	• Develop a continuous improvement plan for regular community engagement, aligned with corporate community engagement cycle for efficient resource uses. • Review previously completed community engagement activities, if available, to establish a baseline for the current community engagement activity, where applicable.
	Growth needs are determined based on the Development Charges Study, Township Transportation Master Plan, and Official Plan to service new areas or expand capacity.	Through growth and development	• Inability to meet increasing service demand. • Negative reputational impacts due to inadequate and/or unmodernized service delivery.	• Incorporate recommendations from non-infrastructure planning activities into lifecycle and financial strategy to ensure capacity (both resources, and system design) to support expansion.

Table E- 11: Lifecycle Management Activities for Transportation Services

Lifecycle Activity	Description	Frequency	Risks Associated with Not Completing the Activities	Observations
Non-Infrastructure	Planning and studies (Master Plans, financial plans, capacity studies, AMPs, Regional Transportation Master Plan, traffic counting program, Active Master Transportation Plan, Boundary Road Agreements)	As required/Ongoing	• Diminished understanding of future needs & growth impacts. • Reduce ability to coordinate project planning between service areas. • Reduced understanding of climate change impacts. • Reduced understanding and coordination between various planning, studies and performance assessment activities resulting in poor future project planning and coordination, and prioritization. • Inaccurate GIS data, and poor data management between systems.	• Support staff in receiving software training to keep them up to date with software and technology advances, and data management best practices. • Develop an asset information/data management standard to ensure that data sets are maintained in a consistent manner, allowing for ease of access and data transfer. • Integrate all asset recommendations from planning and studies into the lifecycle management strategy to ensure alignment of all project and O&M planning. • Develop a continuous improvement plan for regular community engagement, aligned with corporate community engagement cycle for efficient resource uses. • Consider development of design standards that includes traffic calming procedures and solutions.
	Conduct community engagement to define priorities and standards to establish budgeting and service levels	Future Initiative	• Inequitable identification and coordination of stakeholder service delivery priorities. • Negative impacts on reputation due to low levels of engagement.	
	Traffic calming procedures and solutions	Ongoing	• Inaccurate data on current traffic needs and levels. • Inadequate or outdated traffic calming procedures and solutions	
Operations and Maintenance	Minimum maintenance standards (road patrol and sign retro-reflectivity)	As per O. Reg.239/02 and SOPs	• Creates a safety hazard for users. • Failure to comply with regulatory requirements.	• Incorporate findings of inspections into asset data, as appropriate. • Update asset data at regular intervals to ensure it reflects all changes.
	Replacement of missing, damaged, and/or deteriorated signs	As required	• Creates a safety hazard for users. • Failure to comply with regulatory requirements.	• Where appropriate, coordinate replacements with other work in proximity.

				• Track work orders in computerized maintenance management system or equivalent to support KPI reporting, look for trends in asset failures by pipe material or manufacturer, and so on.
	Replacement of streetlight luminaires determined by road patrol	As required	• Creates a safety hazard for users. • Failure to comply with regulatory requirements.	
Renewal, Rehabilitation and Replacement	Asset replacement (sidewalks, streetlight poles, street furniture, signage, parking lots & equipment, etc.)	At optimal point in lifecycle analysis/end of life and coordinated with nearby ROW assets through integrated planning.	• Decreased asset condition leading to increasing user safety concerns. • Increased operational costs due to aging infrastructure. • Increased likelihood of unplanned service disruptions and outages due to unexpected asset failure. • Increased likelihood of project costs due to increased deterioration of asset (e.g. more repairs to road base, etc.).	• Align projects and programs with recommendations from other non-infrastructure solutions (e.g. condition assessments, internal policies, master plans, etc.) to ensure compliance with organizational objectives and efficient use of resources. • Maintain up to date datasets to support prioritization of asset needs and understand the interdependencies between asset networks. Where relevant, request updated datasets provided by contractor in an editable format at the end of the project. • Where work is internal, ensure that asset data is updated regular to reflect completed work. • Track work orders in computerized maintenance management system or equivalent to support KPI reporting, look for trends in asset failures by pipe material or manufacturer, and so on.
Disposal	Asset disposal coordinated with asset replacement	Coordinated with replacement/end of life	• Increased costs associated with disposing of assets outside of primary project.	• Align disposal documentation processes with asset hierarchy data structures to streamline TCA reporting.
Expansion and Service Improvements	Traffic management expansion/upgrades to service new areas or expand capacity of existing network (e.g. street signs, streetlights, traffic islands, traffic calming, etc.)	Through growth, warrant studies, and development	• Inability to meet increasing service demand. • Negative reputational impacts due to declining service delivery.	• Incorporate recommendations from non-infrastructure planning activities into lifecycle and financial strategy to ensure capacity (both resources, and system design) to support expansion. • Incorporate recommendations from non-infrastructure planning activities into lifecycle and financial strategy to ensure capacity (both resources, and system design) to support expansion.
	Streetlight improvements (new poles and luminaires, or replacement of old decorative and standard streetlights)	Through growth and development	• Inability to meet increasing service demand. • Negative reputational impacts due to inadequate and/or unmodernized service delivery. • Failure to comply with design standards.	

Table E- 12: Lifecycle Management Activities for Wastewater

Lifecycle Activity	Description	Frequency	Risks Associated with Not Completing the Activities	Observations
Non-Infrastructure	Planning and studies (Master Plans, User Rate Study, financial plans, capacity studies, AMPs, models) • Consolidated Linear Infrastructure Environmental Compliance Approval, sewer modelling, I & I reduction initiatives • Policies, standards/procedures and by-laws (Service Lateral Policy) • Geographic Information System (GIS) data analysis and mapping	As required	• Diminished understanding of future needs & growth impacts. • Reduce ability to coordinate project planning between service areas. • Reduced understanding of climate change impacts. • Inaccurate GIS data, and poor data management between systems.	• Alignment of asset management documents and processes to integrate recommendations from all master plans, service studies, and community engagement activities to maximize planning efficiency, reduce duplication, increase alignment, and support proactive planning and analysis. This will streamline forecasting, business plan development, and understanding of asset priorities and needs. In particular, integration of all asset recommendations from planning and studies into the lifecycle management strategy to ensure alignment of all project and O&M planning, LOS frameworks and Risk Management strategies. • Integration of climate change risks and other studies with on-going condition assessment and monitoring programs to support coordinated planning within the water distribution network and across interconnected services (e.g. parks, facilities, etc.), and to support proactive analysis of climate change impacts to support risk planning.

Lifecycle Activity	Description	Frequency	Risks Associated with Not Completing the Activities	Observations
				• Support staff in receiving software training to keep them up to date with software and technology advances, and data management best practices. • Develop an asset information/data management standard to ensure that data sets relevant to asset management track information in a consistent manner, allowing for ease of access and data transfer.
Operations and Maintenance	Condition assessments (CCTV inspections)	Annual program	• Diminished understanding of sanitary pipe network condition. • Increasing reactive maintenance costs. • Increasing service disruptions and outages, both within Sanitary service and in neighbour services (e.g. transportation and roads network)	• Use data management standard to ensure data collected during CCTV inspection aligns with existing sanitary network register, streamlining updating and QA/QC work. • Align and integrate condition assessment and monitoring program with preventative maintenance to support business case for on-going and/or expanded CCTV program.
	Reactive and preventive maintenance • Spot repair • Service lateral repairs • Appurtenances repairs • Flushing • Pumping station maintenance	Following preventative maintenance programs, or as needed	• Decreasing overall level of service due to increase rate of service disruptions and outages. • Increasing risk of sewer backups. • Increasing risk of regulatory non-compliance, and associated fines and reputational impacts.	• Integrate findings of condition assessment work to support short term, immediate proactive maintenance activities to minimize reactive maintenance. • Use relevant asset management analysis (e.g. lifecycle forecasting tools, LOS and Risk assessments, and other planning and strategic documents) to support identification of long-term preventative maintenance programs and help build business cases to secure funding for these programs. Preventative maintenance programs will also extend asset service life and minimize risk of regulatory non-compliance. • Track work orders in computerized maintenance management system or equivalent to support KPI reporting, look for trends in asset failures by pipe material or manufacturer, and so on.
Renewal (Rehabilitation and Replacement)	Main and service Lining	Based on inspections and condition assessments	• Reduced asset service life resulting in higher capital costs due to more frequent, larger-scale sewer replacement.	• Incorporate findings of condition assessment to proactively identify candidates for relining programs. • Align projects with recommendations from non-infrastructure solutions to ensure compliance with organizational objectives and efficient use of resources. • Maintain up to date datasets to support prioritization of asset needs and understand the interdependencies between asset networks. Where relevant, request updated datasets provided by contractor in an editable format at the end of the project. • Track work orders in computerized maintenance management system or equivalent to support KPI reporting, look for trends in asset failures by pipe material or manufacturer, and so on.
	Pumping station upgrades • Minor Rehabilitation (e.g., programable logic control replacement, pump replacement, valving) • Major Rehabilitation – any time the system needs to be bypassed (e.g., structural repairs, motor control cabinet, valving, header system)	As required	• Decreasing level of service due to unplanned asset failures and outages. • Increasing risk of regulatory non-compliance and associated fines and reputation impacts. • Decreasing service capacity. • Negative impact on surrounding environment in the event of unexpected asset failure leading to leakage or discharge.	
	Major equipment or structural building component replacement. Open cut replacement of mainline pipe and connected assets	When assets reach end of service life	• Decreasing overall level of service due to increase rate of service disruptions and outages. • Increasing risk of sewer blockages and backups. • Increasing risk of regulatory non-compliance, and associated fines and reputational impacts.	• Align projects with recommendations from non-infrastructure solutions to ensure compliance with organizational objectives and efficient use of resources. • Incorporate findings of condition assessment to proactively identify candidates for replacement. • Maintain up to date datasets to support prioritization of asset needs and understand the interdependencies between asset networks. Where relevant, request updated datasets provided by contractor in an editable format at the end of the project.

Lifecycle Activity	Description	Frequency	Risks Associated with Not Completing the Activities	Observations
			• Decreasing service capacity.	• Track work orders in computerized maintenance management system or equivalent to support KPI reporting, look for trends in asset failures by pipe material or manufacturer, and so on.
Disposal	Building and equipment disposal	Coordinated with asset replacement	• Risk of non-compliance with regulatory requirements. • Inefficient use of land and building resources due to leaving vacant structure in place, rather than repurposing/renewing the lot.	• Align projects with recommendations from non-infrastructure solutions to ensure compliance with organizational objectives and efficient use of resources. • Align disposal documentation processes with asset hierarchy data structures to streamline TCA reporting.
	Equipment re-use	As required where possible	• Increased costs due to purchasing new when re-use is possible. • Increased negative environmental impacts due to purchasing new.	• Leverage asset management committees or similar to engage other service areas in conversation about equipment re-use options and/or equipment needs.
Expansion and Service Improvements	Pump/Equipment Upsizing	As identified in the Master Plan and Capacity Studies/Analysis	• Unable to support increasing demand due to population growth.	• Use relevant asset management analysis (e.g. lifecycle forecasting tools, LOS and Risk assessments, and other planning and strategic documents) to assess ability of existing system to meet growth and demand requirements, and use outcomes of analysis to support integrated planning to drive project identification and prioritization across plans, studies and recommendations, and integrate those recommendations into budgeted, actionable project plans. • Maintain up to date datasets to support prioritization of asset needs and understand the interdependencies between asset networks. Where relevant, request updated datasets provided by contractor in an editable format at the end of the project.
	Expansion and upsizing	Through development	• Unable to support increasing demand due to population growth. • Service outages due to unsustainable demand on existing network of assets.	• Incorporate recommendations from non-infrastructure planning activities into lifecycle and financial strategy to ensure capacity to support expansion. • Support staff in on-going training to keep knowledge and skills up-to-date with relevant software systems and requirements governing those systems.
	Supervisory Control and Data Acquisition (SCADA) system and software upgrades	As needed	• Unexpected software outages resulting in loss of data and system control. • Unsupported SCADA system due to being out of date.	• Align asset register with financial register to streamline tracking asset expenditures against funding to compare with levels of service.
	Special Service Levy	Ratepayer Request and Council Approval/Provincial Authority Order	• Unsustainable funding level resulting in decline in overall Level of service.	

Table E- 13: Lifecycle Management Activities for Drinking Water Assets

Lifecycle Activity	Description	Frequency	Risks Associated with Not Completing the Activities	Observations
Non-Infrastructure	Planning and studies (Master Plans, financial plans, User Rate Study, capacity studies, AMPs, Drinking Water Quality Management Standard (DWQMS) Compliance, Form 1 Authorization) • Policies, procedures/standards and by-laws (e.g. municipal servicing connection policy; Break History Mapping; Back Flow Prevention By-Law) • Geographic Information System (GIS) data analysis and mapping	As required	• Diminished understanding of future needs & growth impacts. • Reduce ability to coordinate project planning between service areas. • Reduced understanding of climate change impacts. • Inaccurate GIS data, and poor data management between systems.	• Alignment of asset management documents and processes to integrate recommendations from all master plans, service studies, and community engagement activities to maximize planning efficiency, reduce duplication, increase alignment, and support proactive planning and analysis. This will streamline forecasting, business plan development, and understanding of asset priorities and needs. In particular: ○ Integration of all asset recommendations from planning and studies into the lifecycle management strategy to ensure alignment of all project and O&M planning. • Integration of climate change risks and other studies with on-going condition assessment and monitoring programs to support coordinated planning within the water distribution network and across interconnected services (e.g. parks, facilities, etc.), and to support proactive analysis of climate change impacts to support risk planning. • Support staff in receiving software training to keep them up to date with software and technology advances, and data management best practices. • Develop an asset information/data management standard to ensure that data sets relevant to asset management track information in a consistent manner, allowing for ease of access and data transfer.
	Water usage reduction incentives (Region)	Ongoing	• Unsustainable demand on water system. • Increasing costs to increase system capacity and performance, unrelated to population growth.	• Develop a community engagement strategy to support consistent outreach and education with stakeholders. • use priorities of water reduction program to guide LOS metrics, and use outcomes of LOS framework analysis to support community engagement and education, and assess success of program.
	Condition Assessment Program	Future Initiative	• Uncertainty about asset condition leading to increased likelihood of unexpected asset failure.	• Integration of Condition Assessment data outputs into asset management hierarchy/asset information to streamline data uploads. • Incorporate condition assessments into other plans and reports.
Operations and Maintenance	Repairs (watermains, services, chambers, valves, curb stops, hydrants, appurtenances)	As required	• Decline in service level due to unexpected asset failure and resulting service outage.	• Leverage condition program to support proactive repairs and maintenance programs to maximize service life of assets and quality of asset performance.
	Exercise valves (mainline/curb stops)	Annually/As Required	• Decline in service level due to unexpected asset failure. • Localized flooding due to asset failure. • Increasing costs due to asset failure (e.g. water loss due to leaking, increased maintenance call-outs, etc.)	• Integrate findings of condition assessment work to proactively identify asset candidates for maintenance activities. • Use relevant asset management analysis (e.g. lifecycle forecasting tools, LOS and Risk assessments, and other planning and strategic documents) to support identification of longer term preventative maintenance programs and help build business cases to secure funding for these programs. • Track work orders in computerized maintenance management system or equivalent to support KPI reporting, look for trends in asset failures by pipe material or manufacturer, and so on.
	Valve replacements	As required	• Decline in service level due to unexpected asset failure. • Localized flooding due to asset failure. • Increasing costs due to asset failure (e.g. water loss due to leaking, increased maintenance call-outs, etc.)	
	Watermain flushing (unidirectional)	Annually	• Unexpected pipe blockages, leading to pipe failure and service disruptions.	
	Hydrant inspection (pressure, open/close, drain, operation, stem valve (lead valve), check shut down)		• Increasing public safety issues due to underperforming or failed hydrants quality of fire service response.	

Lifecycle Activity	Description	Frequency	Risks Associated with Not Completing the Activities	Observations
			• Increasing costs due to asset failure (e.g. water loss due to leaking, increased maintenance call-outs, etc.)	
	Leak Detection Program	Ongoing	• Localized flooding due to asset failure. • Increasing costs due to asset failure (e.g. water loss due to leaking, increased maintenance call-outs, etc.)	
Renewal (Rehabilitation and Replacement)	Lining	Future Initiative	• Reduced asset service life resulting in higher capital costs due to more frequent full line replacement.	• Incorporate findings of condition assessment to reinforce professional judgement when proactively identifying candidates for relining programs. • Use an integrated planning approach to coordinate renewal projects with other near-by assets (e.g. in shared right of way, or physically close proximity) where feasible. • Maintain up to date datasets to support prioritization of asset needs and understand the interdependencies between asset networks. Where relevant, request updated datasets provided by contractor in an editable format at the end of the project.
	Replacement of watermains, services, chambers, valves, curb stops, hydrants, appurtenances	When asset reaches poor condition, when relining not undertaken	• Overall decline in water service level due to increased number of outages and service disruptions. • Localized flooding due to asset failure. • Other service area disruptions due to unplanned closures and repairs – i.e. road closures, pedestrian walkways, etc.	• Ensure renewal, rehabilitation and replacement programs are aligned with non-infrastructure activities, such as master plans, studies and assessments.
Disposal	Removed as part of the project or abandoned	Coordinated with watermain replacement	• Inaccurate data and information if mapping indicates pipes are removed, but not recorded in other registers.	• Track information in asset register, use work order management software if available, and/or request contractor to submit editable digital documentation at the end of project to record disposed assets. • Align disposal documentation processes with asset hierarchy data structures to streamline TCA reporting.
	Pipe upsizing	Based on growth, modelling and studies	• Poor distribution service capacity resulting in a failure to achieve PLOS.	• Align projects with recommendations from non-infrastructure solutions • Adopt an integrated planning approach to coordinate expansion projects with other near-by assets (e.g. in shared right of way, or close proximity) to maximize efficient use of resources and timing. • Maintain current data by requesting project data submission as part of close-out of project to be supplied from the contractor in an editable format (e.g. AutoCAD, excel, CVS, etc.) • Incorporate recommendations from non-infrastructure planning activities into lifecycle and financial strategy to ensure capacity to support expansion.
Expansion and Service Improvements	Expansion – new subdivisions	Based on growth, modelling and studies	• Uninhabitable subdivisions without core service provision.	• Align asset register with financial register to streamline tracking asset expenditures against funding to compare with levels of service.
	Special Service Levy	Ratepayer Request and Council Approval/Provincial Authority Order	• Unsustainable funding level resulting in decline in overall Level of service.	• Use PLOS in coordination with other non-infrastructure solutions (e.g. policies around fleet electrification) to monitor for compliance with targets.

Niagara Falls CANADA

aspire CONSULTING

Appendix F

Revenue Forecast

City of Niagara Falls
Asset Management Plan
Asset Management Funding Forecast (2025-2034)

Forecast of Transfers to Reserves		**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**Total**
Transfer to Reserve Fund		$ 9,660,917	$ 9,660,917	$ 9,660,917	$ 9,660,917	$ 9,660,917	$ 9,660,917	$ 9,660,917	$ 9,660,917	$ 9,660,917	$ 9,660,917	**$ 96,609,170**
Transfer to Special Purpose Reserves		$ 1,131,341	$ 1,131,341	$ 1,131,341	$ 1,131,341	$ 1,131,341	$ 1,131,341	$ 1,131,341	$ 1,131,341	$ 1,131,341	$ 1,131,341	**$ 11,313,410**
Transfer to Capital Special Purpose Reserves - Taxation Capital Levy		$ 2,218,736	$ 2,547,160	$ 2,591,302	$ 2,630,320	$ 2,669,779	$ 2,709,825	$ 2,750,473	$ 2,791,730	$ 2,833,606	$ 2,876,110	**$ 26,619,040**
Transfer to Capital Special Purpose Reserves - Remaining		$ 7,281,511	$ 7,281,511	$ 7,281,511	$ 7,281,511	$ 7,281,511	$ 7,281,511	$ 7,281,511	$ 7,281,511	$ 7,281,511	$ 7,281,511	**$ 72,815,110**
Transfer to Capital Special Purpose Reserves - Parking		$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	**$ 500,000**
Total Transfers to Reserve		***$ 20,342,505***	***$ 20,670,929***	***$ 20,715,071***	***$ 20,754,089***	***$ 20,793,548***	***$ 20,833,594***	***$ 20,874,242***	***$ 20,915,499***	***$ 20,957,375***	***$ 20,999,879***	**$ 207,856,730**

Summary of Asset Management Funding	**Allocation from Transfers to Reserves Above**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**Total**
Primary Funding Sources												
1. Transfer to Reserve Fund	**63%**	$ 6,080,000	$ 6,080,000	$ 6,080,000	$ 6,080,000	$ 6,080,000	$ 6,080,000	$ 6,080,000	$ 6,080,000	$ 6,080,000	$ 6,080,000	**$ 60,800,000**
2. Transfer to Special Purpose Reserves	**0%**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
3. Transfer to Capital Special Purpose Reserves - Taxation Capital Levy	**100%**	$ 2,218,736	$ 2,547,160	$ 2,591,302	$ 2,630,320	$ 2,669,779	$ 2,709,825	$ 2,750,473	$ 2,791,730	$ 2,833,606	$ 2,876,110	**$ 26,619,040**
4. Transfer to Capital Special Purpose Reserves - Remaining Transfers	**100%**	$ 7,281,511	$ 7,281,511	$ 7,281,511	$ 7,281,511	$ 7,281,511	$ 7,281,511	$ 7,281,511	$ 7,281,511	$ 7,281,511	$ 7,281,511	**$ 72,815,110**
5. Transfer to Capital Special Purpose Reserves - Parking	**100%**	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	**$ 500,000**
6. CCBF Allocation		$ 3,092,103	$ 3,092,103	$ 3,215,787	$ 3,215,787	$ 3,215,787	$ 3,215,787	$ 3,215,787	$ 3,215,787	$ 3,215,787	$ 3,215,787	**$ 31,910,504**
7. OCIF Funding		$ 4,994,214	$ 3,995,371	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ 8,989,585**
Other Funding Sources	**Non-Growth Portion**											
8. Non-Growth Existing Debt Payments (P+I) - Funded from Budget	**92%**	$ 5,888,316	$ 5,888,316	$ 5,888,316	$ 5,888,316	$ 5,888,316	$ 5,888,316	$ 5,888,316	$ 5,888,316	$ 5,888,316	$ 5,888,316	**$ 58,883,156**
9. Non-Growth New/Anticipated Debt Payments (P+I) - Funded from Budget	**100%**	$ 739,364	$ 739,364	$ 739,364	$ 739,364	$ 739,364	$ 739,364	$ 739,364	$ 739,364	$ 739,364	$ 739,364	**$ 7,393,640**
10. Available Reserve Funds (Capital Non-Growth Related)		$ 1,579,116	$ 1,579,116	$ 1,579,116	$ 1,579,116	$ 1,579,116	$ 1,579,116	$ 1,579,116	$ 1,579,116	$ 1,579,116	$ 1,579,116	**$ 15,791,158**
11. Existing Tax Supported Funding Share - O&M Expenses		$ 30,213,837	$ 30,213,837	$ 30,213,837	$ 30,213,837	$ 30,213,837	$ 30,213,837	$ 30,213,837	$ 30,213,837	$ 30,213,837	$ 30,213,837	**$ 302,138,370**
Total Funding Available		**$ 62,137,196**	**$ 61,466,778**	**$ 57,639,233**	**$ 57,678,251**	**$ 57,717,709**	**$ 57,757,756**	**$ 57,798,403**	**$ 57,839,660**	**$ 57,881,536**	**$ 57,924,040**	**$ 585,840,563**

Note: All values expressed in constant 2025 dollars.