



The Regional Municipality of Durham

Committee of the Whole Agenda

Council Chambers
Regional Headquarters Building
605 Rossland Road East, Whitby

Wednesday, June 22, 2022

9:30 AM

Please note: This meeting will be held in a hybrid meeting format with electronic and in-person participation. It is encouraged that members of the public [view the Committee meeting](#) via live streaming, instead of attending the meeting in-person. If in-person attendance is required, arrangements must be made by emailing clerks@durham.ca prior to the meeting date.

1. Roll Call

2. Declarations of Interest

3. Statutory Public Meetings

There are no statutory public meetings

4. Delegations

4.1 Eric Muller, Director, Quest Canada, re: Durham Region Anaerobic Digestion (AD) Facility

5. Presentations

5.1 Stella Danos-Papaconstantinou, Commissioner of Social Services, and Alan Robins, Director, Housing Services, re: At Home in Durham Annual Report (2022-COW-19) [Item 7.F]

6. Correspondence

7. Reports

- | | | |
|----|--|----------------------|
| A) | 2022 Asset Management Plan (2022-COW-14) | 4 - 138 |
| B) | Proposed Wastewater Energy Transfer Project – Dockside Development in the Town of Whitby (2022-COW-15) | 139 - 145 |
| C) | Updated Source Protection Plans and Assessment Reports for Proposed New Municipal Wells in the Hamlet of Blackstock, in the Township of Scugog, and the Communities of Cannington and Sunderland, in the Township of Brock (2022-COW-16) | 146 - 159 |
| D) | Revisions to the Seaton Phase 1 Regional Infrastructure Front Ending Agreement (2022-COW-17) | 160 - 166 |
| E) | Next Steps for the Restoration and Redevelopment of 300 Ritson Road South, in the City of Oshawa (2022-COW-18) | 167 - 172 |
| F) | At Home in Durham, the Durham Housing Plan 2014-2024 Annual Report (2022-COW-19) | 173 - 183 |
| G) | Employment Services Transformation Service System Manager Update (2022-COW-20) | 184 - 195 |
| H) | Modified Payment Schedule for the Brooklin North Landowner Group under the 2012 Regional Official Plan Amendment 128 Minutes of Settlement (2022-COW-21) | 196 - 199 |
| I) | Update on NRFP for the Mixed Waste Pre-sort and Anaerobic Digestion Project (2022-COW-22) | Under Separate Cover |

8. Confidential Matters

- | | | |
|----|--|----------------------|
| A) | Confidential Report of the Commissioner of Finance, Commissioner of Social Services and Acting Commissioner of Works – Closed Matter with respect to information explicitly supplied in confidence to the municipality or local board by Canada, a province or territory or a Crown agency or any of them, regarding a financing opportunity (2022-COW-13) | Under Separate Cover |
|----|--|----------------------|

9. Other Business

10. Adjournment

Notice regarding collection, use and disclosure of personal information:

Written information (either paper or electronic) that you send to Durham Regional Council or Committees, including home address, phone numbers and email addresses, will become part of the public record. This also includes oral submissions at meetings. If you have any questions about the collection of information, please contact the Regional Clerk/Director of Legislative Services.

If this information is required in an accessible format, please contact 1-800-372-1102 ext.2304



The Regional Municipality of Durham Report

To: Committee of the Whole
From: Commissioner of Finance and Commissioner of Works
Report: #2022-COW-14
Date: June 22, 2022

Subject:

2022 Asset Management Plan

Recommendation:

That the Committee of the Whole recommends to Regional Council that:

- A) Regional Council endorse the 2022 Regional Municipality of Durham Asset Management Plan; and
 - B) The asset management plan be posted on the Region's website and the Ministry of Municipal Affairs and Housing be advised.
-

Executive Summary:

1. Purpose

- 1.1 The 2022 Asset Management Plan details the state of the Region's infrastructure, service levels, asset performance, lifecycle analysis, climate change risks and adaptation and mitigation initiatives to protect the Region's assets.
- 1.2 The Region's Asset Management Plan is a collaborative cross departmental effort produced from year-round asset management processes to maintain assets and identify investment needs to meet target service levels. The process is guided by the Region's Corporate Strategic Asset Management Policy.
- 1.3 Aligned with best business practices, the Asset Management Plan informs the Region's long-term planning and the annual business plans, budgets and nine-year capital forecast.
- 1.4 This report maintains the Region's compliance with provincial and federal regulatory requirements and meets grant funding programs' requirements, including new requirements under Ontario Regulation 588/17 that are due by July 1, 2022.

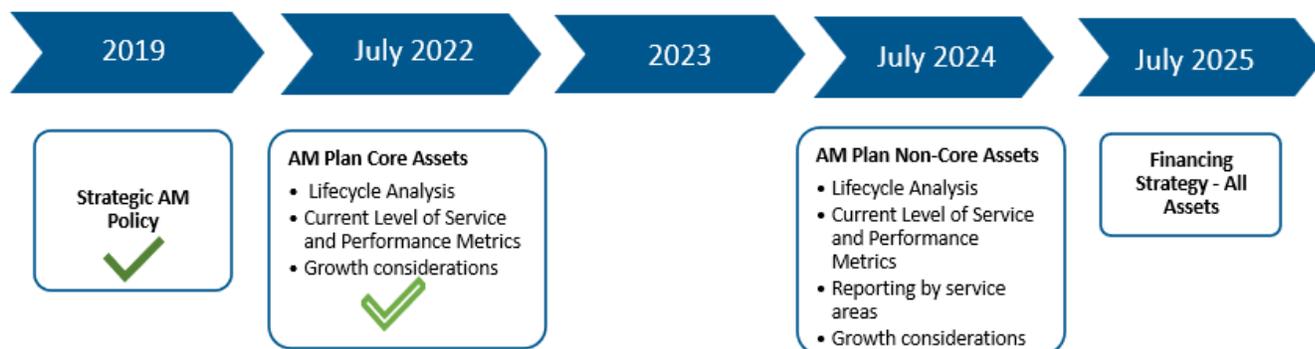
2. Previous Reports and Decisions

- 2.1 On June 26, 2019 Regional Council approved the Region’s 2019 Asset Management Plan ([Report 2019-COW-16](#)). This report presented the Region’s asset management goals, approach and policies, and advised Council on the state of the Region’s infrastructure, service levels, performance, lifecycle considerations and risk and climate change adaptation and mitigation initiatives.
- 2.2 On September 30, 2020 Regional Council approved the Region’s 2020 Corporate Asset Management Update Report ([Report 2020-COW-24](#)). This report provided an update to the Region’s full 2019 Asset Management Plan ([Report 2019-COW-16](#)).

3. Complying with Ontario Regulation 588/17

- 3.1 On January 1, 2018, Ontario Regulation 588/17, Asset Management Planning for Municipal Infrastructure, under the Ontario Infrastructure for Jobs and Prosperity Act 2015, came into effect with a full implementation deadline of 2024. Due to the pandemic, the regulation was amended to provide a one-year extension to implementation timelines. The regulation requires the Region’s municipal asset management plans to include the following new aspects as specified in Figure 1.

Figure 1: Ontario Regulation 588/17 Key Changes and Timeline



- 3.2 Compliance with Ontario Regulation 588/17 is required for senior government capital funding programs like the Canada Community-Building Fund (CCBF), formerly the Federal Gas Tax Fund.
- 3.3 The Region’s 2022 Asset Management Plan achieves the new requirements outlined in Ontario Regulation 588/17 for core assets (Water, Sewer, Roads, Bridges, Culverts and Traffic Systems) by July 1, 2022 and includes:
 - Community levels of service (qualitative descriptions on service scope and reliability);
 - Technical levels of service (technical service delivery metrics);

- Inventory with asset condition, replacement value and remaining useful life; and,
 - Lifecycle analysis on operating and capital investment to maintain current levels of service over a ten-year period.
- 3.4 Lifecycle analysis considers all operating and capital costs required for an asset to deliver its targeted service level over its useful life; from initial acquisition, repairs and maintenance, rehabilitation and eventual decommissioning costs. Ontario Regulation 588/17 requires the lifecycle analysis for a ten-year forecast period.
- 3.5 Regional staff will continue to refine lifecycle data processes and cost analysis aligned with the continual improvement practices enshrined in both the regulation and the Region's Corporate Strategic Asset Management Policy.
- 3.6 Additionally, the Region is well positioned to meet additional reporting requirements due in 2024 and 2025 including:
- Lifecycle reporting requirements for non-core assets;
 - Levels of service and technical metrics for non-core assets;
 - Proposed levels of service and costs associated with proposed and technical levels of service; and
 - A robust financing strategy.
- 3.7 In addition to Ontario Regulation 588/17, the Region's Asset Management Plan ensures compliance with the following:
- The Development Charges Act;
 - The Smart Growth for Our Communities Act, 2015;
 - Requirements under A Place to Grow: Growth Plan for the Greater Golden Horseshoe to support the next Municipal Comprehensive Review (Regional Official Plan Amendment);
 - The Region's Tangible Capital Assets (TCA) Policy;
 - PSAB requirements for the recording of Tangible Capital Assets; and
 - Federal CCBF Agreement requirements.

4. Asset Management Planning Process

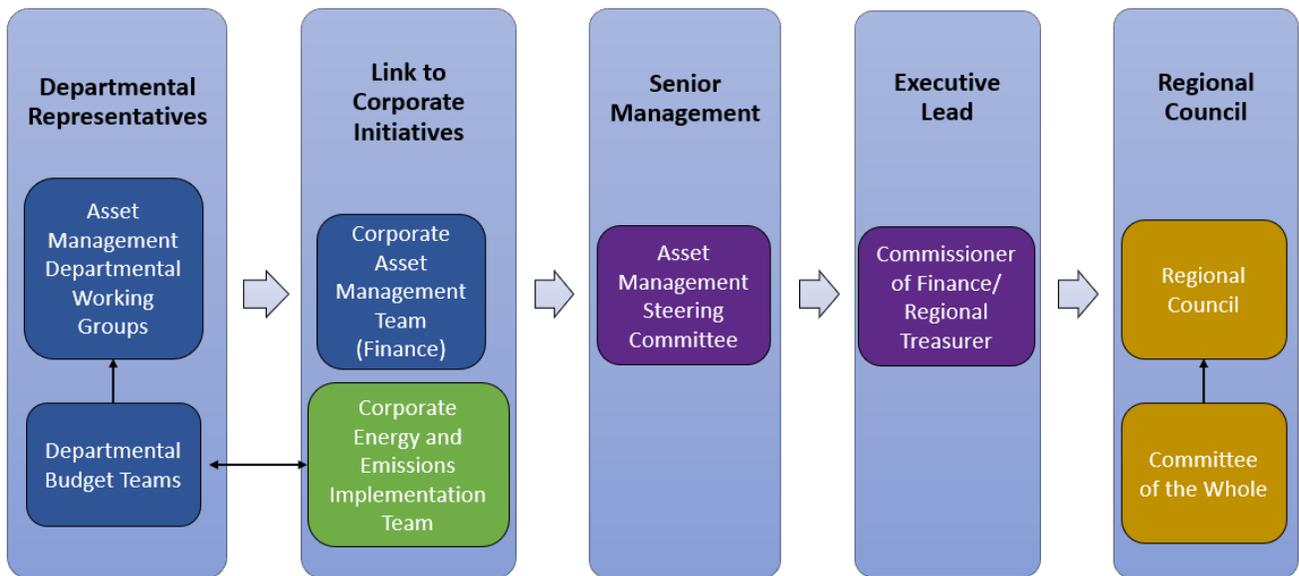
- 4.1 Formal asset management has been in place at the Region since 2004. In 2019, Council approved the Region's first Corporate Strategic Asset Management Policy. The policy articulated asset management goals, objectives, guiding principles as well as an asset management framework. In accordance with Ontario Regulation 588/17, the Region's Corporate Strategic Asset Management Policy must be reviewed and updated at least once every five years.
- 4.2 In 2020, Council received a Corporate Asset Management Update Report that provided an update on the Region's 2019 Asset Management Plan. The report provided an update on the state of the Region's infrastructure including replacement costs, condition rating and updated infrastructure investment needs as of December 31, 2019 to help inform the development of the 2021 budget and nine-year capital forecast;
- 4.3 Asset management planning is a cross-departmental continuous year-round process that supports the development of Regional business and financial plans as illustrated in Figure 2. The asset management planning process is a cornerstone of the Region's annual business planning cycle.

Figure 2: Region's Asset Management Planning Process



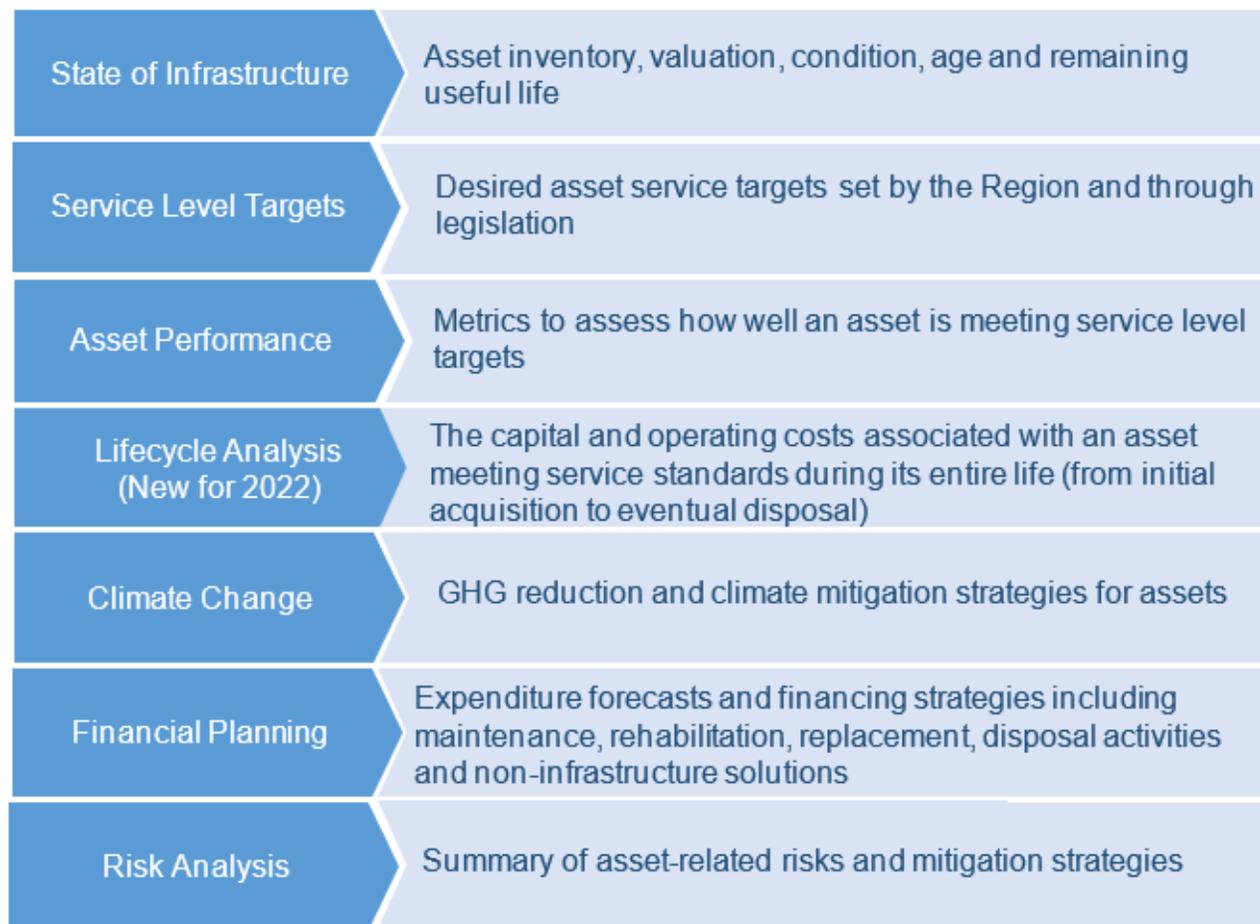
- 4.4 The Asset Management Plan considers asset condition, remaining useful life and service needs and identifies operating and capital requirements including maintenance, repair, rehabilitation, and replacement over a ten-year period. Asset management investment needs and financing strategies are addressed through the annual business plans, budget and nine-year capital forecast.
- 4.5 Development of the Asset Management Plan is led by the Finance Department and overseen by a Director-level Steering Committee. Figure 3 illustrates the governance structure of asset management at the Region.

Figure 3: Regional Asset Management Governance Structure



- 4.6 Departmental working groups, coordinated by the Finance Department collaboratively gather, analyze and report on the various asset management components detailed in Figure 4:

Figure 4: Asset Management Analysis Components



5. Replacement Value of Regional Assets

5.1 The Region’s infrastructure assets have a total replacement value of approximately \$17.85 billion (as of December 31, 2021), of which \$11.50 billion are utility-rate supported and \$6.35 billion are property tax supported.



\$11.50 billion in Utility-Rate supported replacement value



\$6.35 billion in Property Tax supported replacement value

5.2 Replacement values are impacted by both growth (additional infrastructure) and inflationary cost increases. The December 31, 2021 replacement value of the Region’s assets has increased \$1.82 billion (11.39 per cent) from December 31, 2020.

5.3 For 2021, approximately \$73,435 per Durham household would be required to replace the Region’s entire asset inventory. This is a representation of the community’s investment in Regional infrastructure.

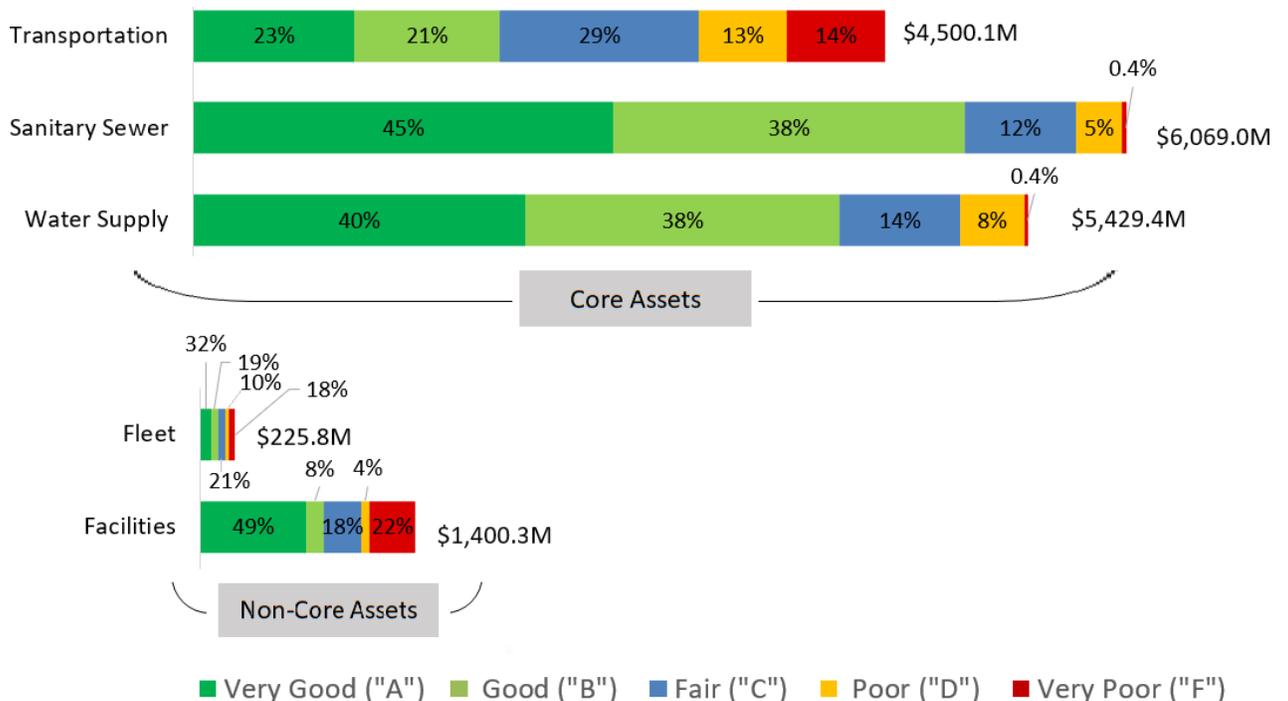


**Investment/Household
to Replace all Assets
\$73,435**

6. The Condition of the Region’s Infrastructure

6.1 Asset condition helps to inform the Region’s prioritization of maintenance, repair and replacement investments. The average condition across all Regional assets is Good and is consistent with the average condition in 2020. Across all assets, most are rated in Fair to Very Good condition (86.3 per cent based on proportion of total replacement value). Figure 5 below displays the total replacement values and condition ratings of the Region’s major asset classes except for equipment (replacement value \$0.2 billion) as these assets are pooled and current condition ratings are not available.

Figure 5: Condition and Replacement Values for Regional Assets*



*Condition ratings for assets may not add to 100 per cent due to rounding.

- 6.2 An asset assessed as Poor or Very Poor condition does not represent a health and safety risk. Rather, these are assets that may not be performing as intended, may be experiencing higher than average rehabilitation and/or maintenance costs due to condition, or may be deemed to be at or near the end of its useful life. When warranted, Very Poor assets are considered for current year replacement or significant rehabilitation. Staff balance replacement and repair work with the impact of asset poor performance to ensure assets are not prematurely replaced and deliver best value to user rate and property taxpayers.
- 6.3 Table 1 outlines the approaches Regional asset management staff employ to assess the condition of each asset class:

Table 1: Asset Condition Assessment Methods

Asset Class	Assessment Methods
Linear Water and Sewer (e.g. buried pipes)	Pipe material, break rates, inspections, remaining service life and operational concerns
Vertical Water and Sewer (facilities)	Site-specific inspections
Roads and Traffic Infrastructure	Inspections and consideration of age-based condition rating where appropriate
Bridges and Culverts >3m	Biennial visual inspections
Facilities	Building Condition Assessment (BCA) and age (where BCA not yet complete)

- 6.4 The assets currently rated in Poor to Very Poor condition will continue to undergo assessment for investment through the 2023 Business Planning and Budget cycle.
 - Of assets in Very Poor condition, roads represent approximately 62.0 per cent (\$640.0 million) with the Pavement Condition Index (PCI) decreasing for the overall Regional network from 53.5 in 2020 to 52.0 in 2021. Roads in Very Poor Condition represent 22.2 per cent of the Region’s total Roads inventory (\$2,882.8 million). Road rehabilitation continues to be a Regional Council priority and the Region’s annual investment in road rehabilitation has increased from \$23.5 million in 2017 to \$38.7 million in 2022, an increase of \$15.2 million (64.7 per cent). Given the nature of road rehabilitation and replacement there is often a time lag between funding approval and project completion. It is anticipated that the increased investment in roads rehabilitation will improve PCI.
 - Facilities represent 29.2 per cent (\$301.7 million) of Regional assets in Very Poor condition. Durham Regional Local Housing Corporation (DRLHC) represents the majority of the Region’s facility assets in Very Poor condition (\$262.6 million). The 2022 Budget includes \$3.3 million for repairs and renovations for DRLHC facilities and an additional \$26.0 million in facility capital works including \$22.24 million for deep energy efficient retrofits at four

DRLHC Senior's housing properties. The 2023 to 2031 capital forecast includes an additional investment of \$55.0 million in DRLHC facilities capital works.

7. Service Levels

7.1 Assets are instrumental in the Region delivering services at its desired service levels. Desired service levels are set both by regulatory compliance and Regional priorities. Regional plans, studies, policies, by-laws influencing all assets' service levels include:

- Durham Region Strategic Plan: 2020 – 2024;
- The Regional Official Plan;
- Durham Region Corporate Climate Change Action Plan;
- Energy Conservation and Demand Management Plan (CDM); and
- The 2022 Durham Accessibility and Inclusivity Standards.

7.2 Additionally, service levels are also influenced by:

- Departmental reports and plans;
- Best engineering and industry practices;
- Regulatory guidelines and/or requirements; and
- Other performance expectations as defined through multiple reports as approved by Regional Council.

7.3 Desired service levels influence asset management planning and subsequent investment decisions. Attachments #2 through #7 outline the desired service levels for each asset class as well as performance measures to track progress.

7.4 Ontario Regulation 588/17 sets out specific technical metrics and qualitative descriptions that must be included in service level reporting for core assets (water, wastewater, roads, bridges, culverts, traffic systems) by July 1, 2022. The Region is compliant with all the service level reporting requirements.

7.5 Moving forward, Regional staff will review and update service level reporting requirements for non-core assets, as required by Ontario Regulation 588/17, in advance of the July 1, 2024 deadline. In addition, service levels for core services will continue to be refined to reflect Regional Council approved goals, plans, policies, strategies as well as best engineering practices.

8. Lifecycle Considerations

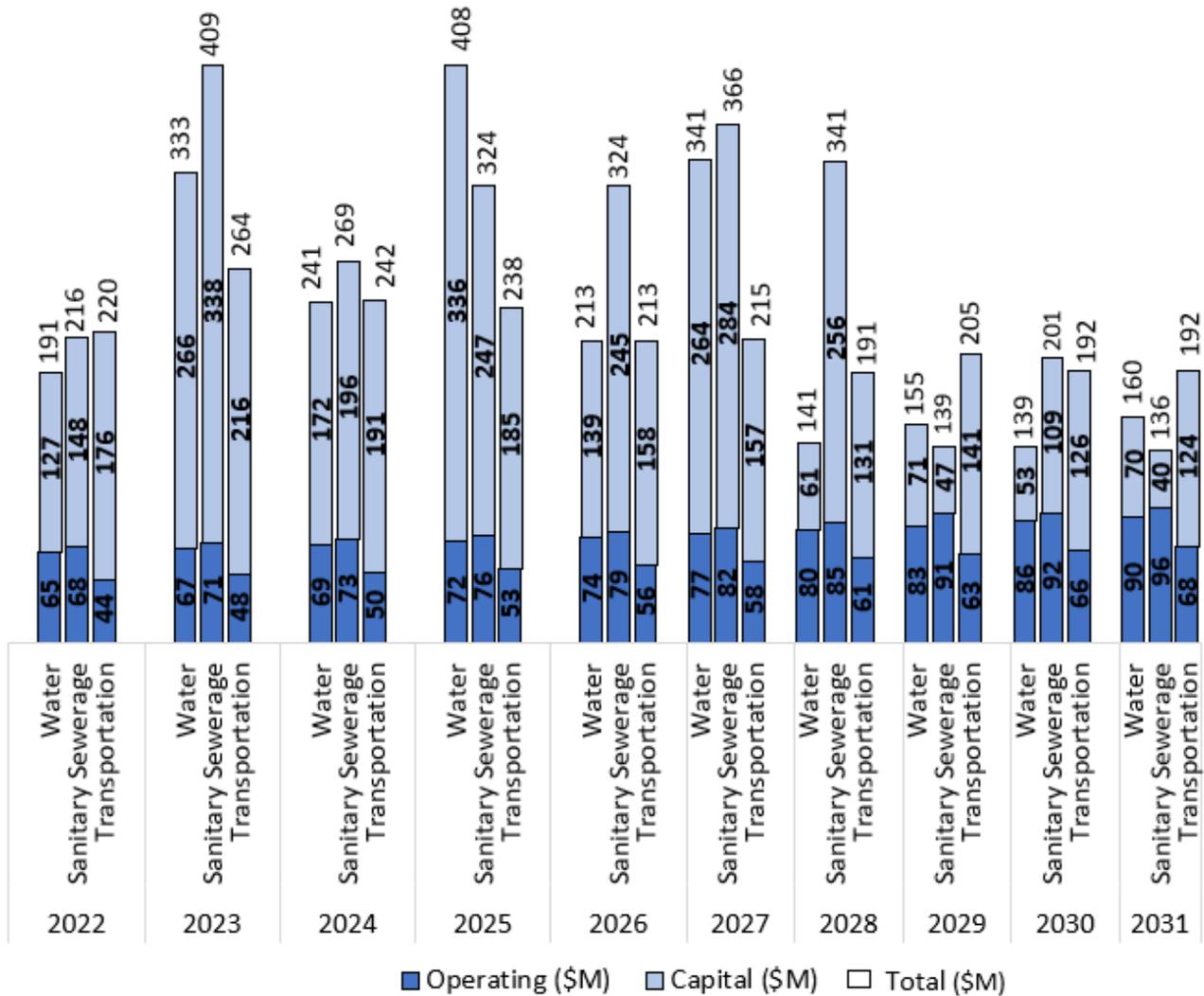
- 8.1 Lifecycle analysis considers the costs for all capital and operating activities undertaken during the life of an asset to ensure it meets its desired service levels and target performance measures at the best value to user rate and property taxpayers. Lifecycle costs begin before an asset is even acquired including planning activities to determine needs, through to eventual asset disposal and possible site remediation activities.
- 8.2 Ontario Regulation 588/17 requires lifecycle analysis for core assets be included in the Region's Asset Management Plan by July 1, 2022. To ensure compliance with the Regulation, staff considered the operating and capital costs needed to ensure assets could deliver on service levels as well as the optimal repair, maintenance and replacement activities over the asset's lifecycle.
- 8.3 Lifecycle costing analysis for core assets is contained in the attached detailed Asset Management Plan and in Attachments #2, #3 and #4. The analysis includes a preliminary comparison of ideal operating and capital asset investment levels over the next ten years compared to the level of investment included in the 2022 Business Plans and Budget and nine-year forecast (2023 to 2031). Asset classes have varying levels of gaps between ideal investment levels and the current approved funding levels which are further outlined in Figure 7 and Attachments #2, #3 and #4.
- 8.4 Regional staff will continue to refine lifecycle costing data processes and analysis techniques in upcoming asset management plans including an assessment of lifecycle costs for non-core infrastructure by July 1, 2024 to remain compliant with Ontario Regulation 588/17.

9. Core Assets Lifecycle Costs and Capital Forecast

Core Assets Lifecycle Costs

- 9.1 In accordance with Ontario Regulation 588/17, the 2022 Asset Management Plan includes an analysis of lifecycle costing for core assets.
- 9.2 The Region's 2022 Business Plans and Budget includes \$627.7 million in gross lifecycle costs (operating and capital) for water supply, sanitary sewerage, roads, storm sewer, bridges, culverts and traffic system as illustrated in Figure 6. Over the nine-year forecast period, total planned lifecycle expenditures total \$6,592.4 million for core assets.

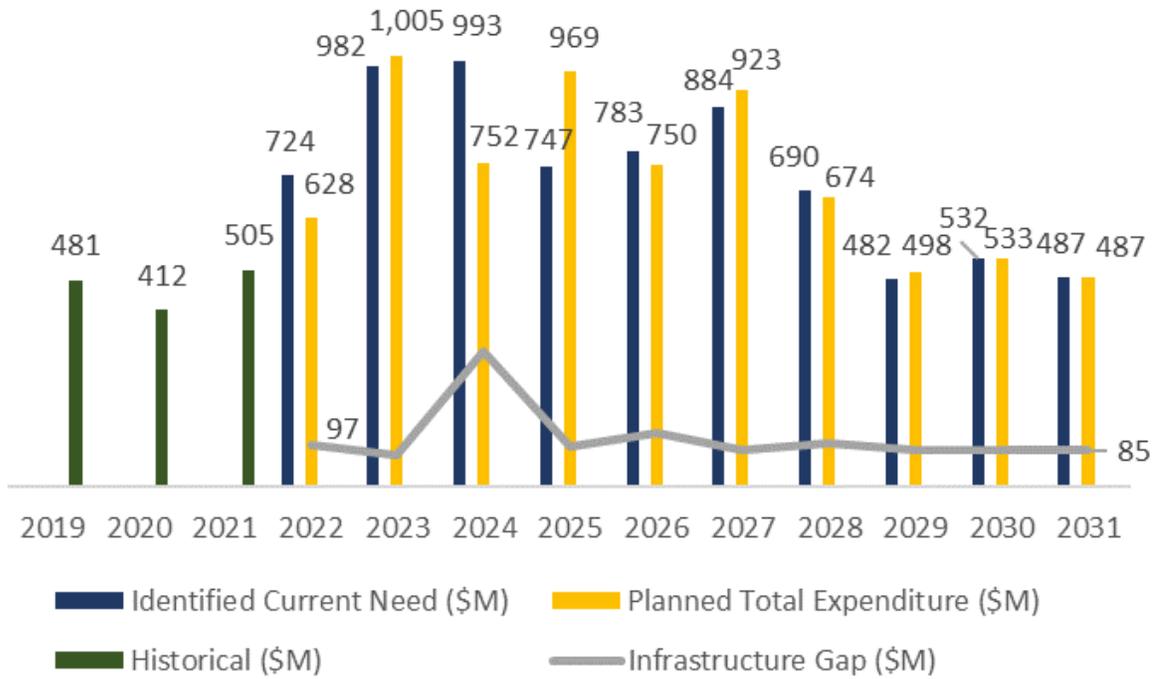
Figure 6: Ten-Year Lifecycle Costs for Core Assets (\$ millions)*



*Operating and Capital may not add to Total due to rounding.

9.3 As part of the lifecycle costing analysis for core assets, staff analysed the current planned funding against expected funding needs (both operating and capital) to meet service levels. Through this analysis an infrastructure funding gap of \$96.6 million in 2022 was identified, decreasing to \$85.0 million by 2031 based on planned investments (Figure 7).

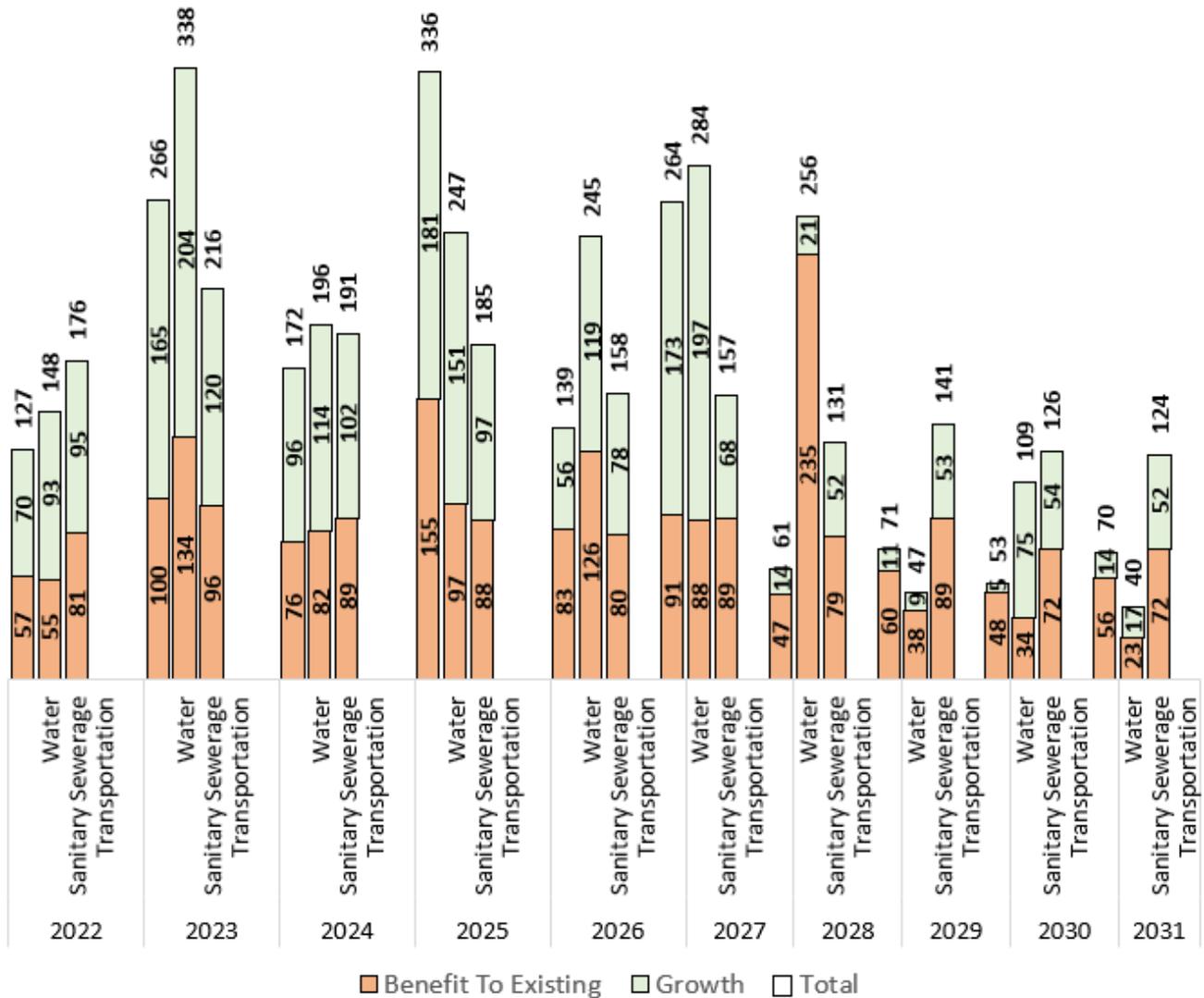
Figure 7: Infrastructure Gap Analysis for Core Assets (\$ millions)



Core Assets Capital Forecast

9.4 The Region’s 2022 Business Plans and Budget identified major capital investments for water, sewer and transportation services of \$5,074.0 million from 2022 to 2031. As illustrated in Figure 8, approximately \$2,555.4 million of this investment is growth related and proposed to be funded primarily from development charges. The balance of \$2,518.6 million will to be funded primarily from property taxes, water and sewer user rates and Regional reserve funds.

Figure 8: Ten-Year Capital Forecast: Core Assets (\$ millions)



*Benefit to Existing and Growth may not add to Total due to rounding.

9.5 Forecasted infrastructure needs will be updated, refined and reprioritized during the 2023 business planning and budget and long-term financial planning processes. Funding needs, gaps and strategies to address these infrastructure needs will also be refined through ongoing long-term capital planning exercises and future business plans and budgets.

10. Climate Change Mitigation and Adaptation Measures

10.1 The Durham Region Corporate Climate Action Plan has set targets to achieve net-zero corporate GHG emissions by 2045. The 2022 Business Plans and Budget includes a number of asset investments to reduce corporate GHG emissions including the purchase of low carbon vehicles, the completion of Durham Region Transit’s zero emission fleet and facility feasibility study, the use of recycled materials

in construction projects, the completion of various deep energy retrofits of a number Regional facilities, and the undertaking of comprehensive building condition assessments and level 3 energy audits to document the baseline and inform the development of a greenhouse gas emissions reduction plan and pathway for the balance of the Region's facilities.

- 10.2 Staff employ strategies to prepare for the impacts of a changing climate as part of ongoing asset management best practices and in accordance with Ontario Regulation 588/17 requirements. Asset design, including material types, technical specifications and location, is all impacted by consideration of climate adaptation.
- 10.3 The asset class attachments (Attachments #2 through #7) provide further details on the specific measures being employed to adapt assets to a changing climate and highlight the ways in which investments in assets are aligned with the Region's corporate GHG inventory reduction targets.

11. Risk

- 11.1 Regional staff proactively analyze potential risks to assets on an ongoing basis considering risk likelihood and impact. Identified risk mitigation strategies include coordinated responses to potential risk events, measures to ensure business continuity, and systems to address service interruption.
- 11.2 The asset class attachments identify risks specific to each asset class as well as mitigation measures.

12. Relationship to Strategic Plan

- 12.1 This report aligns with and addresses the following Durham Region Strategic Plan goal and priorities.
- Goal 5 Service Excellence – to provide exceptional value to Durham user rate and property taxpayers through responsive, effective and fiscally sustainable service delivery. By responsibly managing the Region's assets, the proposed 2022 Asset Management Plan looks to optimize resources to deliver critical infrastructure and servicing for current and future generations.

13. Next Steps

- 13.1 Infrastructure needs identified in this report will inform the 2023 business planning and budget process, including the 2023 Budget Guideline Report, capital planning, and departmental business plans and budgets.
- 13.2 Asset management staff will continue to work collaboratively to meet the remaining asset management regulatory requirements due between 2024 and 2025. The specific next steps include:

- Refining data collection processes and analysis to improve asset management planning capabilities and lifecycle costing, to inform future business plans, budgets, capital forecasts, and long-term financial planning strategies;
- Shifting to fully report on assets by service areas (e.g., DRPS, Social Services) as opposed to asset class categories (e.g., Fleet, Facilities, etc.);
- Defining asset service levels and performance measurement for all non-core assets;
- Refining lifecycle data collection processes and analysis for non-core assets including consideration of operating costs and ideal maintenance, repair and replacement schedules to meet service levels;
- Continuing to work with the Office of the CAO to seek alignment between corporate climate initiatives and asset management processes; and
- Continuing to assess risk, business continuity, asset criticality, and asset reliability.

14. Conclusion

- 14.1 The Asset Management process is a critical element in the Region's business planning, budget and long-term financial planning processes. The Asset Management Plan details the current condition of the Region's assets and forecasts future investment needs for repair, maintenance, and replacements.
- 14.2 The Region's 2022 Asset Management Plan complies with Ontario Regulation 588/17 additional reporting requirements for core assets and has been improved to include a detailed lifecycle analysis which considers operating and capital needs for the entire life of an asset and potential gaps between current and ideal investment levels for the Region's core assets. This analysis will continue to be refined and inform future Business Plans and Budgets.
- 14.3 The overall replacement value of the Region's assets is increasing due to growth demands for additional infrastructure and inflationary pressures which were higher in 2021 than in recent years. The asset class attachments (Attachments #2 through #7) provide additional details on the change in replacement values for each asset class.
- 14.4 The condition of the Region's core assets remained relatively stable year-over-year as a result of preventative maintenance, rehabilitation and timely repairs and replacements with strategic investments planned that will address many assets currently in Very Poor condition. Attachments #2, #3 and #4 provide detail on how well core assets are meeting their service levels and performance targets.
- 14.5 As part of continual improvement, the asset management planning processes of data collection, asset assessment and asset and lifecycle analysis will continue to be refined and improved.

14.6 Regional staff will continue to work collaboratively to meet new reporting requirements for lifecycle costing and current levels of service for non-core assets and the development of financing strategies for core and non-core assets. The Region is well positioned to meet these additional Ontario Regulation 588/17 requirements due in 2024 and 2025.

Attachments:

Detailed 2022 Regional Municipality of Durham Corporate Asset Management Plan

Attachment #1: Regional Asset Inventory, Replacement Value and Condition

Attachment #2: Water Supply Asset Class Report

Attachment #3: Sanitary Sewerage Asset Class Report

Attachment #4: Transportation Asset Class Report

Attachment #5: Durham Region Transit Asset Class Report

Attachment #6: Fleet Asset Class Report

Attachment #7: Facilities Asset Class Report

Attachment #8: Equipment Asset Class Report

Respectfully submitted,

Original Signed By

Nancy Taylor, BBA, CPA, CA
Commissioner of Finance

Original Signed By

Jenni Demanuele
Acting Commissioner of Works

Recommended for Presentation to Committee

Original Signed By

Elaine C. Baxter-Trahair
Chief Administrative Officer



2022 Asset Management Plan

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Attachments

Attachment #1: Regional Asset Inventory, Replacement Value and Condition

Attachment #2: Water Supply Asset Class Report

Attachment #3: Sanitary Sewerage Asset Class Report

Attachment #4: Transportation Asset Class Report

Attachment #5: Durham Region Transit Asset Class Report

Attachment #6: Fleet Asset Class Report

Attachment #7: Facilities Asset Class Report

Attachment #8: Equipment Asset Class Report

1. Overview of Asset Management Processes

- 1.1 Formal asset management has been in place at the Region of Durham since 2004. In 2019, Council approved the Region's first Corporate Strategic Asset Management Policy. The policy articulated asset management goals, objectives, guiding principles as well as an asset management framework. In accordance with Ontario Regulation 588/17 this policy must be reviewed and updated once every five years.
- 1.2 Year-round asset management planning processes are undertaken as part of the Region's best business practices of long-term financial planning as well as to ensure compliance with all senior government grant programs.
- 1.3 Asset investment priorities are identified over a multi-year planning horizon based on lifecycle analysis, asset condition, and risks assessment with the objective of delivering approved service levels that are aligned with corporate goals and comply with regulatory requirements.
- 1.4 Financing to fund identified asset investment priorities is sought through the Region's annual business planning and budget process. Investment decisions balance asset condition and service needs with ensuring assets are not prematurely replaced to ensure best value for rate and property taxpayers and the community.
- 1.5 The 2022 Asset Management Plan includes analysis of the following:
 - Current asset status (inventory, replacement value, condition, average age, and remaining useful life);
 - Service levels and asset performance based on Regionally-defined objectives, best practice and regulatory requirements;
 - Lifecycle analysis for core assets (water, sanitary sewerage system and transportation);
 - Climate mitigation and climate adaption initiatives including linkages to the Corporate Climate Change Action Plan; and,
 - Infrastructure investment needs and financial planning strategies.
- 1.6 Development of the Asset Management Plan is a multi-departmental collaborative process led by the Finance Department and overseen by a Director-level Steering Committee.
- 1.7 The Region's Asset Management Plan and supporting asset management processes are compliant with Ontario Regulation 588/17, the regulation governing municipal asset management plans. Ontario Regulation 588/17 was passed in 2018 with a phased implementation that must be fully implemented by municipalities by July 1, 2025 (as amended in 2021 due to the pandemic).

1.8 The Region's aggregated asset information (inventory, condition and replacement value) is provided in Attachment #1 and Attachments #2 through #8 provide details of each asset class namely water supply, sanitary sewerage, transportation, facilities, transit, fleet and equipment.

2. The State of the Region's Infrastructure

2.1 Under the coordination of the Corporate Asset Management Team in Finance, year-round tracking, assessment and analysis of all Regional assets by departmental asset working teams determine inventory, valuations, conditions, average ages and remaining useful life.

Table 1: Key Components of the State of Infrastructure

Component	Description
Inventory	Asset inventories are tracked by asset class including consideration of new assets acquired and decommissioned assets. Year-over-year changes are identified and analyzed.
Replacement Costs	Asset replacement costs are updated annually using the most up to date information, with significant year-over-year changes analyzed.
Condition Assessment Ratings	Asset condition ratings from an "A" (Very Good) to an "F" (Very Poor) are assigned using the most appropriate assessment methods and the best data available. Rating changes year-over-year are analyzed.
Remaining Useful Life	The average age and useful lives are updated and assigned relative to the asset lifespan.

Asset Inventory

2.2 Table 2 provides a summary of the Region's infrastructure assets as of December 31, 2021. Further details can be found in Attachment 1.

Table 2: Regional Infrastructure Summary

Asset Class	Assets Inventory (December 31, 2021)
Water Supply System	Watermains (2,631 km), control and specialty valves (28,394), hydrants (16,785), service connections (182,448), fire lines (1,948), meters (182,063), water supply plants and well systems (14), pumping stations (10), water storage facilities (14), combined pumping station/storage (8).
Sanitary Sewerage System	Gravity sewers (2,205 km), forcemains (65 km), maintenance holes (32,096), service connections (178,581), water pollution control plants (11), sanitary sewage pumping stations (51), wastewater storage facilities (2).
Transportation System	Roads (2,461 lane km), bridges and culverts >3m (240), culverts<3m (30 km), storm sewer mains (322 km), maintenance holes (5,053), catch basins (5,878), outfalls (475), traffic control signals (493), traffic control systems (16), communication infrastructure (338 km), roadside protection (111 km), signs (20,961), and CCTV (108 intersections).
Region-Owned Facilities	Durham Regional Police Service (DRPS) facilities (8), Durham Regional Local Housing Corporation (DRLHC) facilities (23), Works depots (5), Region of Durham Paramedic Services (RDPS) stations (8), Region-owned childcare facilities (4), waste management facilities (7), long-term care homes (4), and corporate/other facilities (5).
Durham Region Transit (DRT)	241 Transit vehicles (conventional buses, demand responsive service vehicles and supervisory vehicles), 3 garage/maintenance facilities and 2,579 bus pads and shelters.
Vehicles and Fleet	84 RDPS vehicles, 363 DRPS vehicles and 374 Works vehicles
Equipment	Information technology; communications infrastructure; DRPS, long-term care, and RDPS equipment; and Works equipment, furniture and fixtures,

Replacement Value of Regional Assets

2.3 As of December 31, 2021, the Region's infrastructure assets had an estimated replacement value of approximately \$17.85 billion representing an increase of 11.39 per cent from December 31, 2020. (Figure 1 shows both asset condition and replacement values).

2.4 Replacement values assist with long-term financial planning through informing cost estimates for eventual asset replacement at end of useful life. Regional staff consider the following information when assigning replacement values:

- Annual increases in benchmark construction costs (Statistic Canada’s Non-Residential Building Construction Price Index) and other inflationary asset replacement cost pressures;
- Updated market information including recent vendor quotes; and
- Inclusion of new assets into the Region’s inventory to accommodate growth (e.g., new Seaton Paramedic Services Response Station and Training Centre).

The Condition of the Region’s Assets

2.5 Asset condition assessment, coupled with service level targets, play an important role in replacement and maintenance decisions. Table 3 highlights the most common asset condition assessment approaches undertaken at the Region.

Table 3: Asset Condition Assessment Methods

Asset Class	Assessment Methods
Linear Water and Sewer (e.g. pipeline)	Pipe material, break rates, inspections, remaining service life and operational concerns.
Vertical Water and Sewer	Site specific inspections
Roads and Traffic Infrastructure	Inspections and consideration of age-based condition rating where appropriate
Bridges and Culverts >3m	Biennial visual inspections
Facilities	Building Condition Assessment (BCA) and age (where BCA not yet complete)

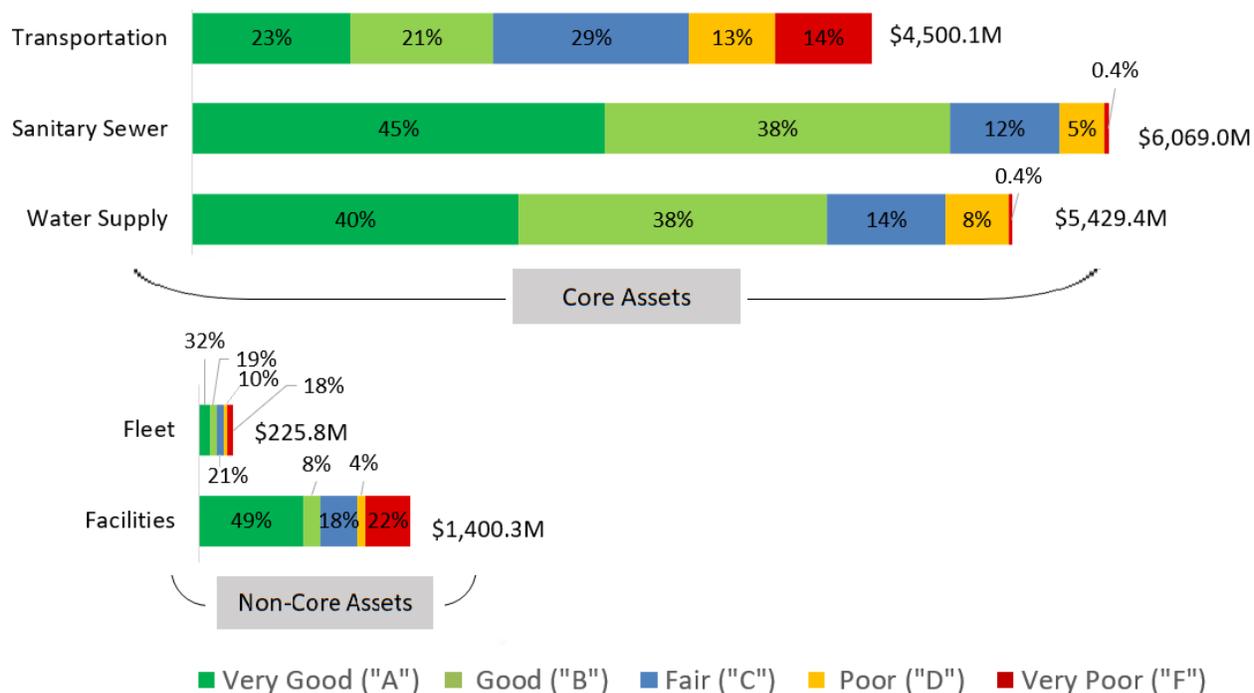
2.6 Using the above-mentioned approaches, Regional assets are assigned one of five condition ratings described in Table 4.

Table 4: Condition Rating Categories and Description

Grade	Rating	Description
A	Very Good	Asset is sound and functioning as intended. Typically, would be a newer asset.
B	Good	Asset is sound and functioning as intended. Typically, could be within mid-range of useful life.
C	Fair	Asset is starting to show signs of deterioration and functioning lower than intended. Typically, asset could be approaching later stages of useful life.
D	Poor	Asset is showing significant signs of deterioration and functioning much lower than intended. Typically, asset could be approaching the end of useful life.
F	Very Poor	Assets are not performing as intended. Typically, asset could be at the end of useful life.

- 2.7 An asset which has been classified as Poor or Very Poor does not represent a health and safety risk. Rather, these are assets that may not be performing as intended, may be experiencing higher than average rehabilitation and/or maintenance costs due to condition, or may be deemed to be at the end of their useful life. When warranted, Very Poor assets are considered for current year replacement or significant rehabilitation. Staff balance replacement and repair work with the impact of asset poor performance to ensure assets are not prematurely replaced and deliver best value to rate and property taxpayers.
- 2.8 The asset management working groups continue to refine, advance, and improve condition-based assessments including the planned completion of Facility BCAs for all Regional facilities by 2023.
- 2.9 Figure 1 illustrates the condition and replacement values for the Region's assets as of December 31, 2021. More detailed information on the asset inventory, replacement value and condition is included in Attachment #1.

Figure 1: Condition and Replacement Values for Regional Assets



2.10 Of the infrastructure assets currently rated in Very Poor condition:

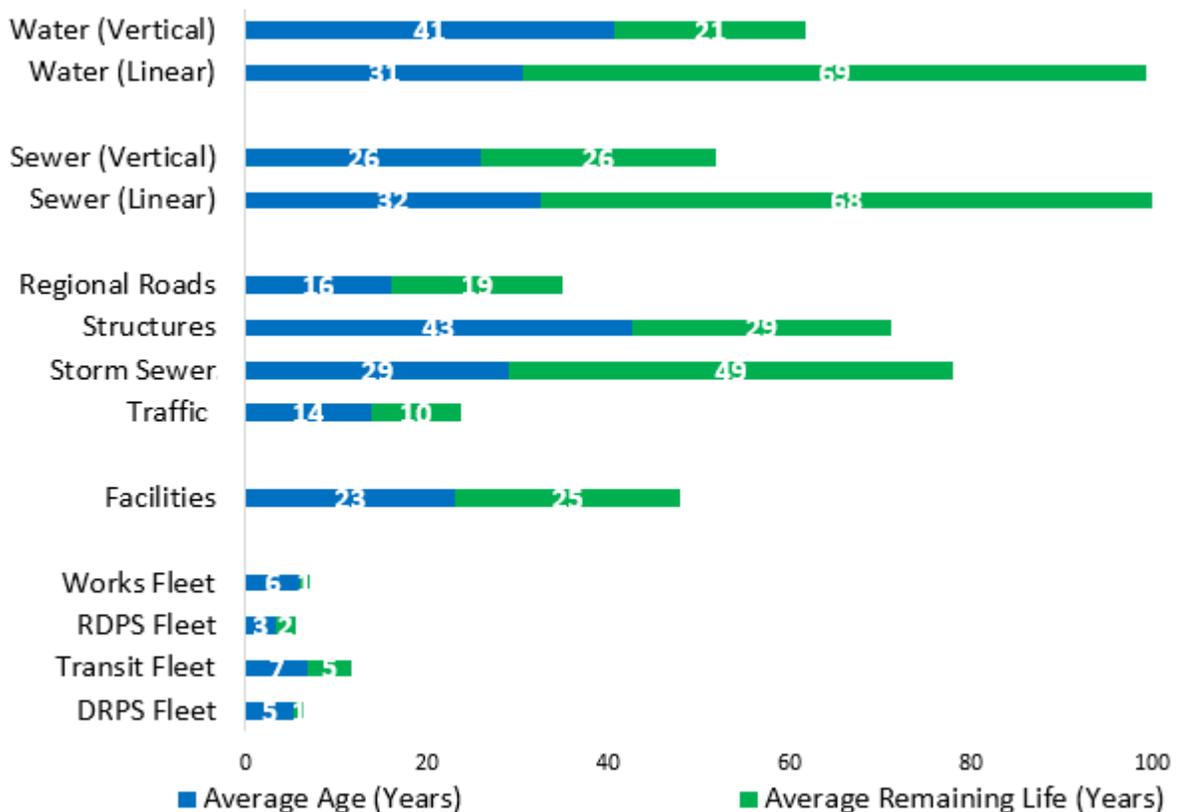
- Roads represent approximately 62.0 per cent (\$640.0 million) with the Pavement Condition Index (PCI) decreasing for the overall Regional network from 53.5 in 2020 to 52.0 in 2021. Roads in Very Poor Condition represent 22.2 per cent of the total Road inventory (\$2,882.8 million). Road rehabilitation continues to be a Regional Council priority and the Region’s annual investment in road rehabilitation has increased from \$23.5 million in 2017 to \$38.7 million in 2022, an increase of \$15.2 million (64.7 per cent). Given the nature of road rehabilitation and replacement there is often a time lag between funding approval and project completion. It is anticipated that the increased investment in roads rehabilitation will impact PCI.
- Facilities represent 29.2 per cent (\$301.7 million) of Regional assets in Very Poor condition. (DRLHC) represents the bulk of Facility assets in Very Poor condition (\$262.6 million). The 2022 Budget includes \$3.3 million for repairs and renovations for DRLHC facilities and an additional \$26.0 million in facility capital works including \$22.2 million for deep energy efficient retrofits at four DRLHC Senior’s housing properties. The 2023 to 2031 capital forecast includes an additional investment of \$55.0 million in facilities capital works.
- There is one bridge with a load restriction which has been approved for replacement and, one bridge with a dimensional restriction due to reduced/minimal vertical and horizontal clearances.

2.11 The assets currently rated in Poor to Very Poor condition will continue to undergo assessment through the 2023 Business Planning and Budget cycle for continued investment. Ongoing maintenance and repair investments for assets in Fair to Very Good condition will continue through annual business planning and budgets processes.

Average Age and Remaining Life of Regional Assets

2.12 Figure 2 summarizes the average age and estimated remaining life by asset class as of December 31, 2021.

Figure 2: Average Age and Remaining Useful Life



Asset Replacement Based on Remaining Useful Life

2.13 Asset useful life considers when an asset came into service, how it has been performing, expected lifespan of the asset and any rehabilitation work undertaken to extend its life.

2.14 Asset useful life can play a role in informing long-term financial planning for asset replacement. Generally, assets that have reached the end of their useful life may experience additional repair and maintenance costs and may be prioritized for replacement or rehabilitation to extend their useful life. Figure 3 and Figure 4 illustrate what the cost would be to replace assets at end of useful life during the 2022 budget and nine-year forecast period and forty-year time period respectively.

Figure 3: 10-Year Asset Replacement Costs Based on Useful Life and Replacement Costs (\$ millions)

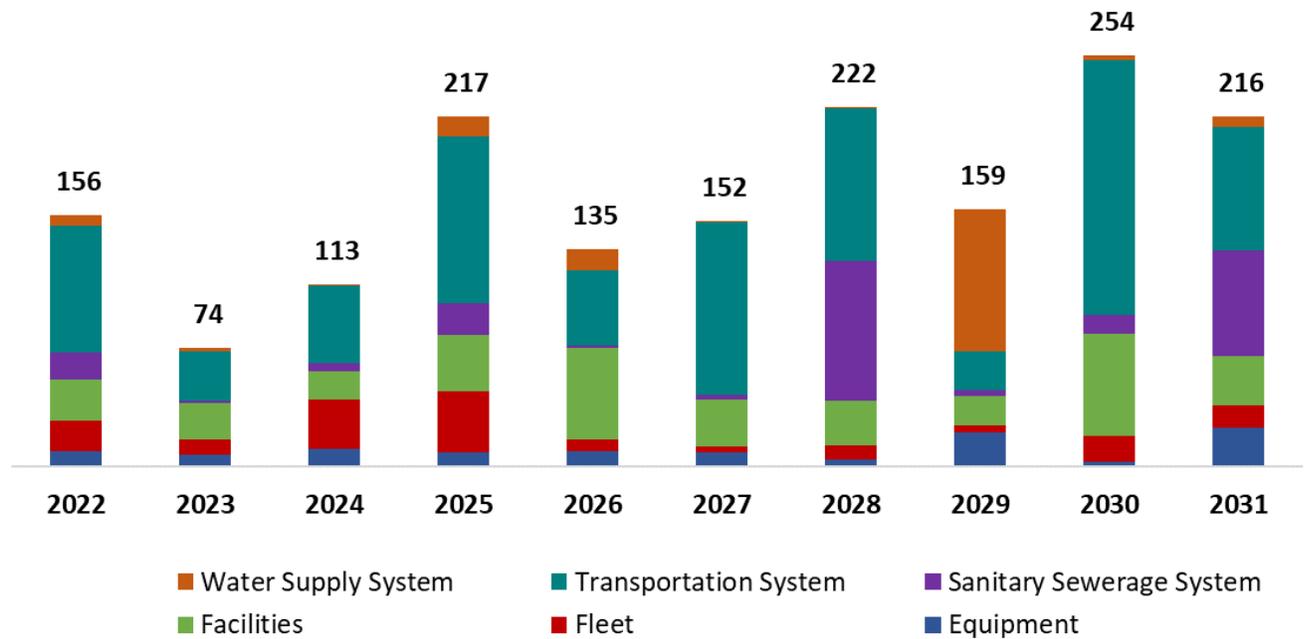
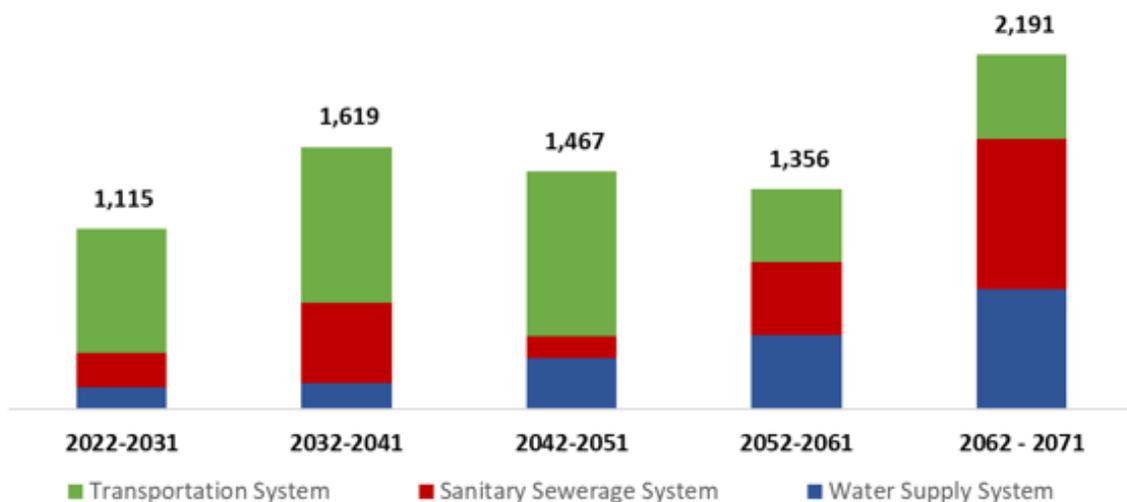


Figure 4: 50-Year Core Asset Replacement Costs Based on Useful Life and Replacement Costs (\$ millions)



2.15 It is also important to assess which assets are considered as operating “Beyond Useful Life” but are still functioning as designed and may be assigned favourable condition ratings of Fair to Very Good. Regional staff monitor the performance and condition of assets operating beyond expected useful life as part of ongoing asset management processes.

3. Asset Management Service Levels and Performance Measurement

3.1 Level of service is a key consideration that influences asset management planning and investment decisions. Assets must be maintained, through ongoing maintenance activities as well as timely repairs, rehabilitation and/or eventual replacement to ensure service levels can be provided.

3.2 Asset management related service levels are defined through the following:

- Approved Regional strategic and master plans, related service standards and supporting plans, policies and by-laws;
- Regulatory compliance requirements; and,
- Other performance expectations as defined through best practice and Regional Council direction.

3.3 For core assets, Ontario Regulation 588/17 requires municipalities to include both community service levels which provide qualitative descriptions on asset reliability and asset management practices as well as technical service levels which focus on service delivery and reliability in their Asset Management Plans.

3.4 Details on the Region’s community and technical service levels for each of the Region’s core assets are provided in Attachments #2 through #4. In addition, the Region has also included some new and refined service levels for non-core assets (e.g., Transit) in Attachment #5 ahead of the July 1, 2024 deadline required under Ontario Regulation 588/17.

3.5 Regionally defined performance measures are further utilized to gauge progress toward achieving corporate goals and desired service levels. Within each asset class attachment (see Attachments #2 through #7), specific service levels, performance goals, targets and measures are highlighted.

- 3.6 Moving forward, staff will complete the service level reporting requirements for non-core assets due by July 1, 2024 in accordance with Ontario Regulation 588/17. In addition, existing service levels will continue to be refined to reflect Regional Council approved goals, plans, policies, strategies as well as best engineering practices.

4. Durham Region's Corporate Goals and Objectives

Durham Region Strategic Plan

- 4.1 The Durham Region Strategic Plan 2020-2024, translates the Region's vision of, "a healthy, prosperous community for all" into concrete goals for Durham's communities. Strategic Plan goals inform asset investment decisions and operating and maintenance activities.
- 4.2 Regional assets and corporate asset management processes support the Region in meeting its Strategic Plan goals. Figure 5 outlines which Strategic Plan goals can be directly linked to asset management.

Figure 5: Strategic Plan Goals Linkages to Asset Management



4.3 The Strategic Plan goals can be further directly linked to the targeted levels of service of an individual asset class as these targets reflect both legislated standards and corporate goals and objectives. Detailed tables linking each service-level target to Strategic Plan goals and other corporative priorities can be found in each asset class attachment (Attachments #2 through #7).

Corporate Strategic Asset Management Policy Goals

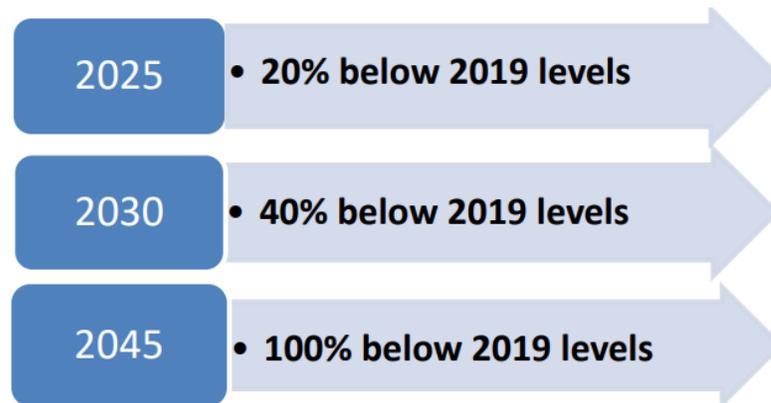
- 4.4 The Corporate Strategic Asset Management Policy approved by Council in 2019 reflects best practices for asset management and various Regional priorities and plans. The following are the Policy's seven objectives:
- 1) The Region will maintain its assets in a safe condition throughout their lifecycles with tolerable risks mitigated through effective strategies, to deliver Regional services at approved levels in a financially prudent and sustainable manner;
 - 2) The Region will maximize the value of its assets by undertaking the most appropriate and cost-effective maintenance, repair, rehabilitation, and/or replacement activities at the most optimal time, to achieve the lowest possible lifecycle cost as feasible;
 - 3) The Region will demonstrate leadership in sustainable asset management, including investments in assets to mitigate (reduce energy use and emissions) and adapt to climate change (to build resiliency), as part of asset management planning;
 - 4) The Region will proactively monitor, identify, and implement asset related risk mitigation measures to ensure the continuity of asset related services, as part of asset management planning;
 - 5) The Region will strive for continuous improvements and innovation in asset management planning, including data analysis, technologies, processes, practices, strategies, and coordination with its lower tier municipalities, neighboring municipalities and senior governments;
 - 6) The Region's asset management planning and reporting process will be transparent and accountable through the development and approval of an Asset Management Plan by Regional Council (which reports performance as well as ensures compliance with all senior government legislative, regulatory, and grant funding reporting requirements); and
 - 7) Infrastructure capital needs identified through asset management planning, as well as risk and climate adaptation and mitigation measures, will be addressed based on funding allocated through the Region's Business Planning and Budget process.

Climate Change Adaptation and Mitigation

- 4.5 Addressing climate change is a critical priority for the Region that is reflected in the Durham Region Strategic Plan 2020 – 2024, the 2020 Council declaration of a climate emergency and the Region's 2021 Corporate Climate Action Plan (CCAP) that positions the Region as a leader in the community-wide effort.
- 4.6 In 2019, the Region introduced a Corporate Strategic Asset Management Policy that specifies that leadership in sustainable asset management, including investments in assets to mitigate (reduce greenhouse gas emissions) and adapt to climate change (to build resiliency), be a key part of asset management planning.

- 4.7 The Region's 2021 Corporate Climate Action Plan (CCAP) establishes corporate GHG emission reduction targets and a carbon budgeting framework. As shown in Figure 6, the Region is moving towards a target of 100 per cent reduction in corporate GHG emissions from the 2019 baseline by 2045.

Figure 6: Corporate GHG Reduction Targets



- 4.8 The clear establishment of corporate performance targets provides guidance for corporate facility operations and will inform updates of the Region's Corporate Energy Conservation and Demand Management Plan, 2019 to 2024.
- 4.9 Corporate climate change considerations and related initiatives continue to be integrated into the Region's asset management planning processes and reporting requirements. Within each asset class attachment, specific climate resiliency and mitigation risks and actions are identified and linked to target service levels as appropriate. Key asset-related climate change initiatives in the 2022 Budget and forecast include:
- Continuation of the Uninterrupted Power Supply (UPS) for traffic signals to ensure adequate backup power for key intersections (\$0.5 million).
 - Complete a Biocover Feasibility Project at the Oshawa Landfill to determine the effectiveness of biocover as a methane reduction measure for closed landfills.
 - Installation of Electrical Vehicle (EV) chargers at the Ajax, Oshawa/Whitby, Scugog and Sunderland Depots, the Durham York Energy Centre (DYEC), Clarington Municipal Hazardous Special Waste (MHSW), the Durham Recycling Centre (DRC), Seaton Paramedic Station, five Durham Regional Local Housing Corporation properties, Oshawa and Ajax Transit Garages, Transit Maintenance Facility, and Durham Regional Police Operations Training Centre and East Division for a total gross cost of \$1.2 million, with \$0.365 million in proposed recoveries through Zero Emission Vehicle Infrastructure Program grant funding.
 - New and replacement hybrid and electric vehicles for fleet.
 - Acquisition of the Region's first electric buses.
 - Use of recycled materials in construction projects.

- Comprehensive building condition assessments and level 3 energy audits for development of a baseline and greenhouse gas emissions reduction plan and pathway for Regional buildings at an estimated cost of \$2.5 million.
 - A \$22.24 million capital project for deep energy efficient retrofits at four DRLHC Senior's housing properties.
 - Deep energy retrofits at 101 Consumers Drive, in the Town of Whitby to obtain a near-zero energy outcome at an estimated cost of \$8.4 million.
- 4.10 The 2022 Asset Management Plan's assessment of climate-related risks and climate adaptation and mitigation initiatives complies with the requirement of Ontario's asset management planning regulation (Ontario Regulation 588/17) to consider vulnerabilities that may be caused by climate change as part of asset management planning.
- 4.11 GHG emission impacts (with a view towards reduction targets) and climate resiliency will continue to be integrated into asset planning and supporting lifecycle analysis, where possible.

Barrier Free Infrastructure

- 4.12 Ensuring inclusive and accessible environments is a key corporate value for Durham Region and new facility and retrofit projects, whether owned or leased by the Region, are guided by Durham's accessibility and inclusivity standards and provincial requirements.
- 4.13 Provincial requirements include those related to the Ontario Building Code Act, Accessibility for Ontarians with Disabilities Act, 2005 (AODA), The Ontarians with Disabilities Act, (ODA), Ontario Regulation 191/11 Integrated Accessibility Standards Regulation (IASR): the Provincial Policy Statement, and the Human Rights Code.
- 4.14 Meeting the requirements of the Accessibility for Ontarians with Disabilities Act (AODA), 2005, outlined under the Integrated Accessibility Standards Regulations (IASR) continues. The Region of Durham continues to look for ways to go beyond the regulations.
- 4.15 Development of Durham Building Standard is in progress and will inform the design of public spaces as it relates to environmental sustainability, space optimization, accessibility and inclusivity.
- 4.16 The Accessibility Advisory Committee (AAC) and/or the AAC Site Plan review sub-committee continue to be consulted by staff for their review and input on projects.
- 4.17 The following are ongoing asset-related accessibility initiatives:
- New public facilities are designed and built for full accessibility;

- Existing facility upgrades include removing trip hazards and implementing accessibility features (e.g., depressed curbs, ramps, smooth sidewalks, tactile plates, automatic doors and accessible reception areas, parking, entrances and washrooms etc.);
- Effective facility and transportation enhancements including accessible signage, bus stops/shelters, traffic signals, pedestrian poles and signals, sidewalks, curbs and reduced crossing distances at cross walks; and,
- Increased maintenance activities to enhance accessibility through enhanced snow clearing and de-icing.

Coordination of Planning and Partnerships with Other Governments

4.18 Successful coordination and partnerships with other governments related to asset management include:

- Partnership with the City of Oshawa and Town of Whitby to deliver an integrated solid waste management system. Oshawa and Whitby collect garbage and organic waste in their municipalities, while the Region collects these in the other six area municipalities as well as Blue Box material collections across all eight municipalities. The province is currently developing a provincial Blue Box collection system run by producers that will replace municipal collection programs. The program will roll out between 2023 and 2025 and Durham Region is scheduled to transition its Blue Box material collections by July 2024;
- The Durham York Energy Centre (DYEC) in the Municipality of Clarington is co-owned by the Region of Durham (78.6 per cent) and York Region (21.4 per cent) and is operated by the private sector through a design-build-operate public-private-partnership (P3) model under a 20-year Project Agreement to 2036. The facility processes 140,000 tonnes of garbage/year of which 110,000 is from Durham residents. Through an Environmental Certificate of Approval amendment, the Region is anticipating approval to increase the amount of DYEC processing throughput by 20,000 tonnes per year commencing in 2022 to fully utilize available equipment and further divert waste going to landfills;
- The Next Generation Interoperable Communications Platform (NextGen) allows DRPS, other Regional Departments and other stakeholders (fire services and public works staff from the area municipalities, Ontario Power Generation (OPG)) to jointly use the communication platform to improve service efficiency and achieve cost efficiencies;
- DRT and Metrolinx coordination and partnerships include:
 - DRT continued participation in the Metrolinx-led Joint Transit Procurement Initiative (TPI) for the procurement of vehicles, equipment, technology, supplies and services to increase buying power, assist in standardization of equipment and leverage industry expertise.
 - The Metrolinx-led Durham Scarborough Bus Rapid Transit, Transit Project Assessment Process (TPAP) was completed on March 29, 2022.

- DRT continues to use the PRESTO fare collection system under agreement with Metrolinx.
 - DRT continues to leverage Metrolinx Radio service under agreement with Metrolinx.
 - Effective March 15, 2022, DRT riders connecting to a Metrolinx GO train or bus are no longer required to pay DRT fares as Metrolinx has agreed to reimburse DRT 100 per cent of fare revenues for such trips. Prior to March 15, 2022, riders were required to pay \$0.80, with Metrolinx only reimbursing the difference between this rate and the full DRT fare rate.
 - DRT, Works, Federal and Provincial Government coordination and partnerships include the ongoing implementation of Investing in Canada Infrastructure Program (ICIP) Transit Stream projects, including vehicle replacements, facility construction and bus rapid transit implementation;
 - The Regions of York and Durham work in partnership to operate, maintain and expand the Duffin Creek Water Pollution Control Plant (WPCP) and related sanitary sewerage infrastructure;
 - The Region works with the five conservation authorities to ensure environmental objectives are met related to watershed planning, environmental conservation and protection, as well as contracting with the Lake Simcoe Region Conservation Authority for the management of the Durham Regional Forest on behalf of the Region;
 - The Region in partnership with the Region of York, Region of Peel, City of Toronto and nine Conservation Authorities have developed the Oak Ridges Moraine Groundwater Program which provides a collaborative approach to collecting, analyzing and disseminating water resource data and information as a basis for effective stewardship and management of water resources; and
 - Co-ordination of planning and timing for infrastructure construction with the local area municipalities (e.g., Roads Capital Budget and Water and Sewer Capital Budget, Area Municipal Road Program, MTO and GO Transit Projects).
- 4.19 The Region's best business practice for coordination complies with Ontario Regulation 588/17 to coordinate where possible connected and/or interrelated assets with other municipalities and delivers on the Region's commitment to continuous improvement. This is also consistent with the Region's Corporate Strategic Asset Management Policy.

5. Lifecycle Overview

- 5.1 Lifecycle costing is a comprehensive consideration of the capital and operating activities (Table 5) that must be taken during the life of an asset to ensure it meets the desired service levels and target performance measures. Lifecycle costs can begin before an asset is even acquired through planning activities to determine needs (e.g., master plans) and continue through to eventual asset disposal and possible site remediation activities.
- 5.2 The focus of capital lifecycle activities includes ongoing regular inspections and timely preventative repair and maintenance and applying the most appropriate treatment at the optimal time. The goal of capital lifecycle activities is to maximize asset lifespan at the lowest possible cost and risk.
- 5.3 Operating lifecycle activities considers direct (e.g., fuel costs for fleet) and indirect activities (e.g., tree trimming programs along Regional Roads) required to ensure the asset can meet its service goals.
- 5.4 Ontario Regulation 588/17 requires lifecycle costing analysis for a ten-year period by July 1, 2022 for core assets and July 1, 2024 for non-core assets. The analysis must include:
 - Full lifecycle costing of assets; all maintenance, repair, replacement and related-operating activities required over the life of an asset (from acquisition to disposal).
 - Options for which lifecycle activities could be undertaken to meet desired service levels including risks associated with any options and which represent the lowest cost to deliver on service levels.
- 5.5 The Region is in compliance with Ontario Regulation 588/17. Going forward staff will consider data processes and analysis techniques, and lifecycle assumptions to refine the lifecycle analysis provided in this initial lifecycle costing exercise. Staff will also proactively prepare for lifecycle analysis reporting for non-core assets due to be implemented by July 1, 2024.

Table 5: Key Concepts: Asset Lifecycle Activities

Activity Type	Description
Operating	All operating activities required to ensure the asset can meet service level delivery (e.g. snow plowing roads)
Maintenance	Regular scheduled inspections and preventative maintenance, or repair activities associated with unexpected events.
Renewal and Rehabilitation	Major repairs designed to extend asset life, restore level of service and/or defer the need for replacement.
Replacement	Replacement occurs when the asset has reached the end of its useful life and/or renewal and rehabilitation activities are no longer considered appropriate.
Disposal	Activities associated with decommissioning an asset including sale or disposal.
Expansion	Planned activities to expand services either to enhance service levels (e.g., service frequency) or meet growth demands.

6. Lifecycle Analysis Core Assets

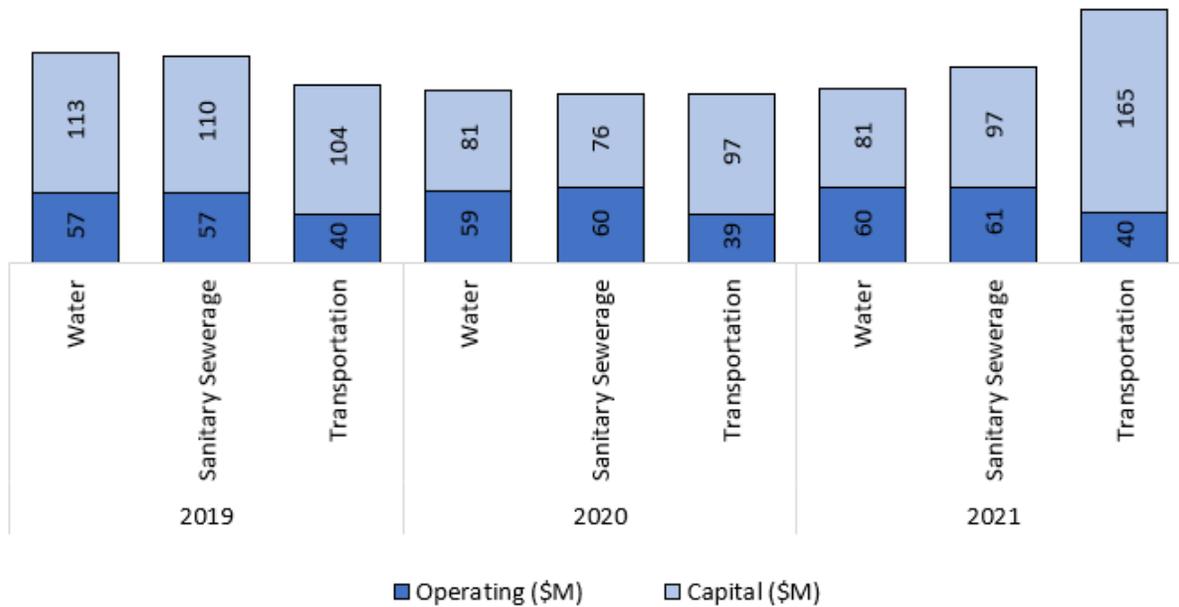
- 6.1 Regional staff undertook lifecycle costing analysis for core assets to determine historical and planned capital and operating lifecycle activities. Asset management practices such as condition assessments and expected useful life analysis inform capital and operating lifecycle activities.
- 6.2 To assess capital lifecycle costs, staff considered rehabilitation and replacement activities that extend the useful life of assets and/or meet service delivery targets.
- 6.3 In addition to repair and maintenance activities, staff considered other ongoing operating expenditures required for assets to meet target service levels. Some examples include overhead costs (e.g., office/depot space, training, software, etc.), gas and fuel, utilities and fleet rentals.

Historical Lifecycle Expenditures for Core Assets

- 6.4 Regional Council has supported significant investment in Regional assets, including new and expanded infrastructure, capital replacement expenditures, and maintenance and operating expenditures. Such investments are essential to maintaining the performance of existing infrastructure assets and achieving desired levels of service.

6.5 Figure 7 summarizes the budgeted capital investments and actual operating expenditures for water supply, sanitary sewerage, roads, bridges and culverts and traffic programs over the last three years (2019 to 2021 inclusive) on a lifecycle basis.

Figure 7: Historical Lifecycle Operating Expenditure and Capital Budget – Core Assets (\$ millions)

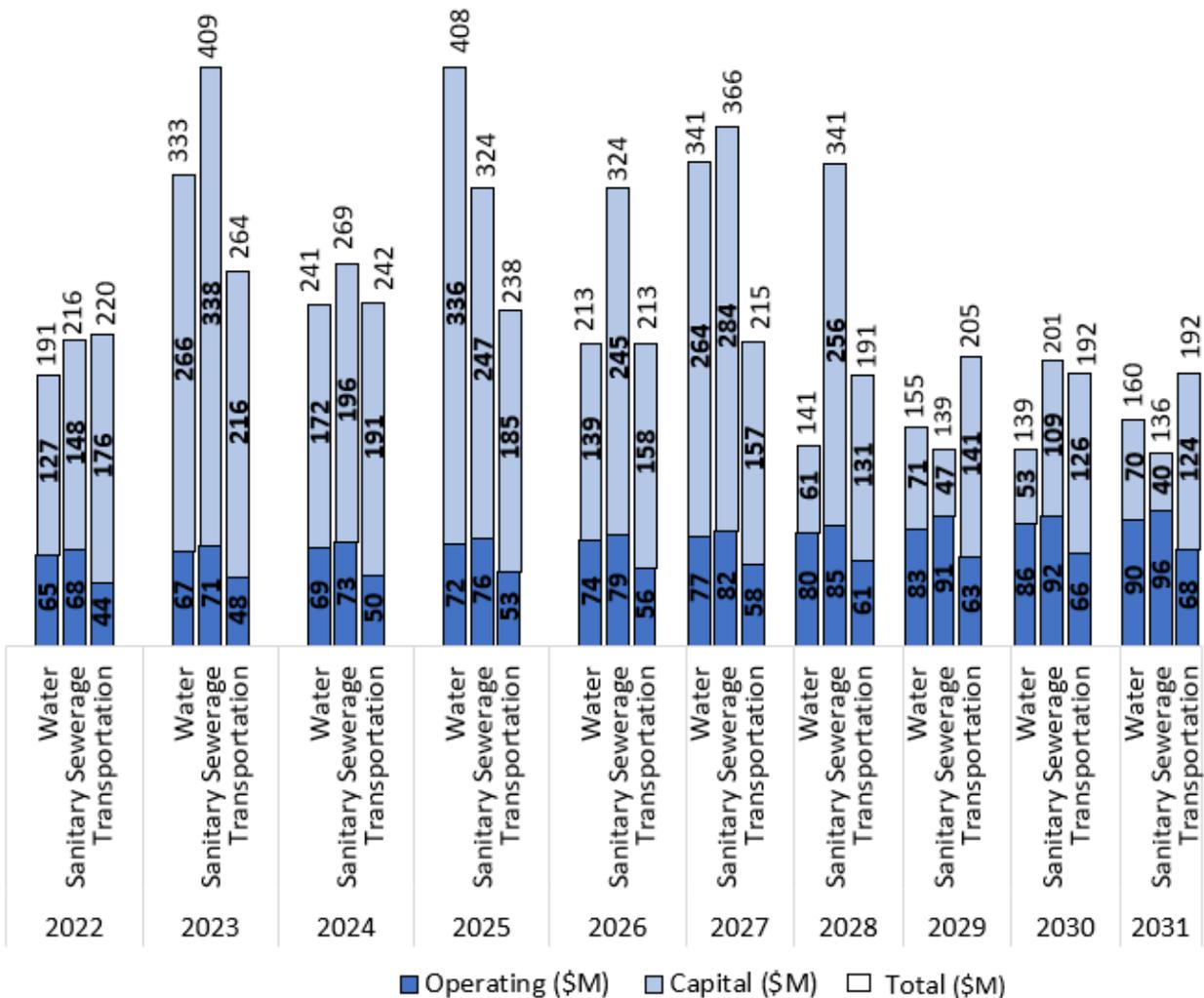


6.6 As compared to 2019, annual spending in maintenance and operations in 2021 increased by approximately \$8.1 million (4.5 per cent) while budgeted annual capital investment increased by \$15.8 million (4.9 per cent) to meet expansion and existing infrastructure investment needs for core assets.

Planned Lifecycle Core Asset Expenditures (2022 - 2031)

6.7 Total operating lifecycle expenditures for core assets total \$177.1 million in 2022 and approximately \$2.0 billion over the nine-year forecast period. Capital funding totals \$450.5 million in 2022 and \$4.6 billion over the nine-year forecast period. Figure 8 below provides planned capital, and operating expenditures for core assets over the Budget 2022 and nine-year forecast period.

Figure 8: Ten-Year Lifecycle Costs for Core Assets (\$ millions)*

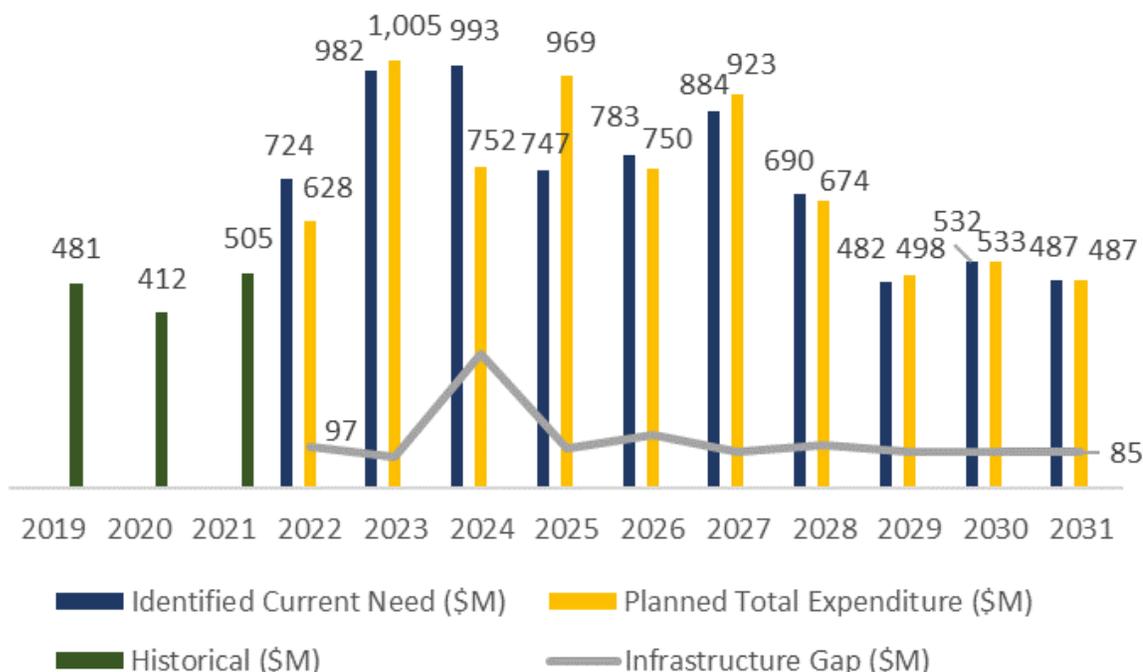


*Operating and Capital may not add to Total due to rounding.

Infrastructure Gap Analysis

6.8 As part of lifecycle analysis, staff undertook a gap analysis that compared identified funding needs to meet service level targets against planned expenditures for core assets. Figure 9 below provides identified funding needs, planned expenditures and the infrastructure gap.

Figure 9: Infrastructure Gap Analysis Core Assets (\$ millions)



6.9 Year-over-year variability in planned capital spending is primarily a result of major water supply and sanitary sewerage plant renewal and expansion projects over the forecast period. The Region continues to utilize flexible financing sources such as the Asset Management Reserves, Development Charge funding, Water Rate Stabilization Reserve Fund, Sewer Rate Stabilization Reserve Fund and the strategic use of debt financing to ensure predictable, stable and gradual changes to user rates. Further details on Regional financing strategies can be found in Table 6. Reserve funds will play a critical role in the forecast years.

6.10 Lifecycle costing analysis for core assets identified a current funding gap of \$96.6 million in 2022 decreasing to \$85.0 million by 2031 based on planned investments. It is important to note that any rehabilitation or replacement work required to meet health and safety or legislative standards are reflected in the planned total expenditure.

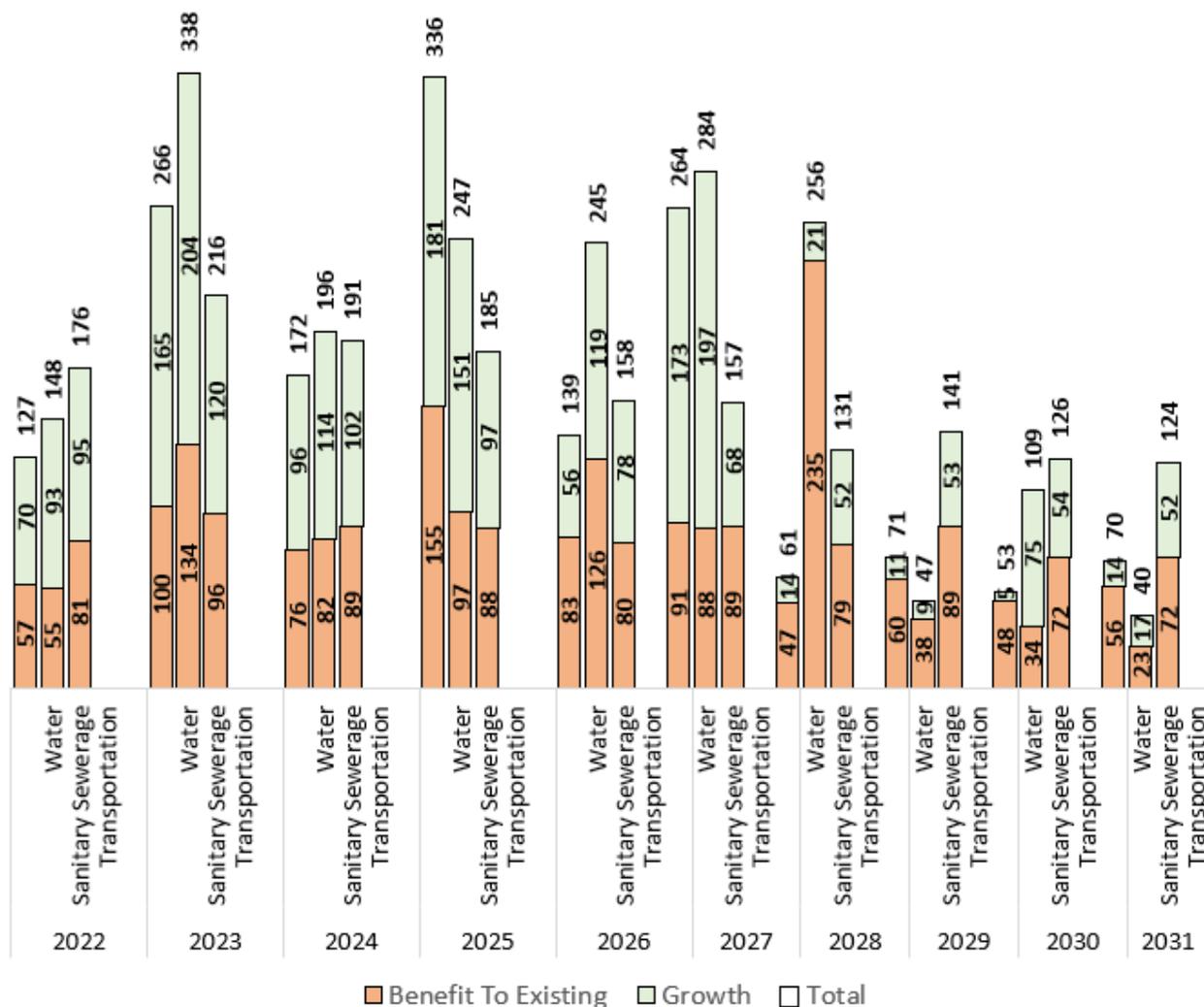
6.11 The identified current need reflects accelerating project timelines for some non-urgent projects. Not accelerating these projects may result in increased repair and maintenance work or not meeting service level targets which is balanced with cost savings to property taxpayers and utility ratepayers and ensuring full value is extracted from assets by avoiding premature replacement. Further details on lifecycle costing and infrastructure gap analysis for core assets can be found in Attachments #2 through #4.

- 6.12 Staff will continue to monitor funding needs and refine identification and assessment processes including utilizing Maximo, the Region's new Enterprise Maintenance Management System (EMMS). The next steps for Maximo will enhance asset management capabilities and allow for improved analysis of lifecycle costing.
- 6.13 Moving forward, Regional staff will be further refining lifecycle costing analysis and data collection for core assets and will undertake lifecycle costing analysis for non-core assets by 2024 in accordance with Ontario Regulation 588/17.

7. Capital Forecast and Financing Options

- 7.1 Growth-related infrastructure requirements are forecasted as part of the Region's business and capital planning process and as part of development charge (DC) studies.
- 7.2 In accordance with Schedule 3 of the Growth Plan for the Greater Golden Horseshoe, Durham Region is forecast to reach significant employment and population growth by 2051:
- Population growth to 1,300,000 residents by 2051, an increase of 79.8 per cent over 2021; and
 - Employment growth to 460,000 employees by 2051, an increase of 90 per cent over 2021.
- 7.3 As part of Envision Durham, the Municipal Comprehensive Review of the Regional Official Plan (ROP) is currently being updated and revised forecast numbers will be reflected in future asset management reporting.
- 7.4 Growth infrastructure and related service demands are analyzed within the Region's DC By-law and supporting DC Background Study, which are updated at a minimum every five years. The DC Study estimates the anticipated capital requirements and related costs attributable to new development over the long-term to accommodate the growth in population and employees. The DC By-law and Background Study plan for the growth forecasts contained within the ROP.
- 7.5 The asset management plan and subsequent business plans, budgets and long-term capital forecasts often result in refinements to growth-related capital projects and financing projections, consistent with annual data updates and changing economic and financial environment. There are often timing differences due to the significant investment in resources to generate DC background studies, asset management plans, and long-term capital forecasts.
- 7.6 Capital growth requirements were considered as part of the 2022 Budget and nine-year forecast.

Figure 10: Ten-Year Capital Forecast: Core Assets (\$ millions)*



*Benefit to Existing and Growth may not add to Total due to rounding.

7.7 Forecasted infrastructure needs will be updated, refined and reprioritized during the 2023 business planning and budget process and long-term capital planning. Funding needs, gaps and strategies to address these infrastructure needs will also be refined through business planning, budgets and long-term financial planning.

8. Funding Options

8.1 The Region’s financing approach for assets is guided by the Long-Term Financial Planning Framework and the Corporate Asset Management Policy’s goal to deliver Regional services at approved levels in a financially prudent and sustainable manner. Asset management planning in the annual budget planning exercises inform investment needs.

- 8.2 The annual property tax levy, water supply and sanitary sewerage user rates, reserves, reserve funds, development charges, Canada Community-Building Funds, provincial gas tax revenue and the strategic and sustainable use of debt are important financing tools to maintain and expand Regional assets.
- 8.3 Table 6 below provides a summary of the Region's key infrastructure financing options. Further details of planned capital investments in 2022 and during the nine-year forecast can be found in the asset class attachments.

Table 6: Key Regional Financing Sources

Funding Source	Purpose
Regional Roads Rehabilitation Reserve Fund	Provides sustainable funding to address the rehabilitation needs of the road network.
Regional Roads Reserve - Growth	Provides sustainable property tax funding for the property tax portion of growth-related projects.
Vision Zero Initiatives Reserve Fund	Supports projects to meet Regional Council Vision Zero targets.
Regional Bridge Rehabilitation Reserve Fund	Addresses bridge rehabilitation and replacement needs.
Water Rate Stabilization Reserve Fund and Sewer Rate Stabilization Reserve Fund	In addition to providing funding to stabilize water and sewer user rates, funds are used for major water and sanitary sewer capital projects and asset management needs.
Water Supply and Sanitary Sewerage Asset Management Reserve Fund	Funds high priority capital initiatives related to repair, rehabilitation and replacement of existing water supply and sanitary sewer assets.
General Levy Asset Management Reserve Fund	Funds high priority capital initiatives related to repair, rehabilitation and replacement of existing assets (i.e., general purpose needs, such as facilities).
Equipment Replacement Reserve	Funding for regional works equipment and fleet replacements.
Various Service Area Reserve Funds	Funds rehabilitation, replacement and growth needs for DRT, RDPS and Social Housing.

Funding Source	Purpose
Capital Impact Stabilization Reserve Fund and Capital Project Reserve	Enables contributions towards capital project financing to mitigate impacts on tax levy from major projects, ensures adequate capital funding for Regional priorities and ongoing business continuity.
Development Charges	Funding to pay for infrastructure growth needs. The Region charges development charges for all eligible asset classes to maximize recoveries related to growth infrastructure per the principle that 'growth pays for growth' as permitted under the Development Charges Act (DCA) legislation.
Canada Community-Building Fund (formally Federal Gas Tax) and Provincial Gas Tax	Provincial Gas Tax funds: expanding and improving public transit. Canada Community-Building Funds: source of funding for eligible Regional infrastructure projects.
User Rates	A portion of annual water and sanitary sewer user rate revenues are dedicated to the highest priority needs.
Property Taxes	A portion of annual property tax revenues are utilized to finance upgrades, rehabilitation and the replacement of infrastructure assets for Regional roads, transit and other tax-supported programs.
Debt Financing	For large-scale capital projects which may require significant up-front financing over a shorter time horizon, debt financing options provide the ability to distribute the costs over a longer time horizon to current and future users who will benefit from the use of the infrastructure asset.

9. Risk Assessment

- 9.1 Staff continuously monitor and assess asset risk including likelihood and impact and the effectiveness of mitigation controls.
- 9.2 Table 7 includes a sample of identified risks for the Region's assets in achieving its service level standards as well as the mitigation controls to address these risks.

Table 7: Asset-Related Risks and Mitigation Measures

Risk	Existing Controls	Remediation
Disruption to Water Supply	<p>Maintenance, repair and rehabilitation (e.g., lining and cathodic pipe protection)</p> <p>Studies, inspections, monitoring controls and systems (e.g., leak detection, SCADA alerts)</p> <p>Source water and well head protection</p>	<p>Continue condition assessments and prioritize repair, maintenance, and rehabilitation needs and programs</p> <p>Continue erosion mitigation studies and strategies, monitoring, and use of systems</p> <p>Continue to include prioritized remediation work and system improvements for funding through financial and business planning</p>
Loss of Utilities and Fuel	<p>Essential services policies and business continuity/emergency plans</p> <p>Standby power, on call service contracts, system redundancies, and re-routing plans</p> <p>Fuel delivery system and water and sewer monitoring systems</p>	<p>Continue programs to ensure facility/ depot standby power and fuel storage systems, water and sewer monitoring, service contracts and continuity plans</p> <p>Assess criticality of facilities/depots and continue prioritization and planning</p> <p>Continue Traffic UPS equipment</p>
Major Facility System Failures	<p>Well maintained assets and equipment (i.e., proactive maintenance programs)</p> <p>Business continuity/emergency plans</p> <p>Standby power, on call service contracts, parts inventory, and system redundancies</p> <p>Capital and financing planning</p>	<p>Continued condition assessments and maintenance and rehabilitation program</p> <p>Continue programs to ensure standby power, fuel storage systems, IT services, service contracts and continuity plans</p> <p>Prioritize remediation work and continue rehabilitation funding</p>

Risk	Existing Controls	Remediation
<p>Disruption to Sanitary Sewerage Collection</p>	<p>Asset condition assessments for forcemains and gravity pipes</p> <p>Maintenance, repair and rehabilitation</p> <p>System alerts/controls and emergency response planning</p> <p>Increase contingency through pipe twinning</p>	<p>Continued condition assessments (including larger pipe inspections) and maintenance, repairs and rehabilitation programs and funding through budget process</p> <p>Reassess contingency planning and prioritize needs and available funding</p> <p>Continue with SCADA system upgrades to improve management control during storms</p>
<p>Sanitary Sewerage Inflow and Infiltration (I/I)</p>	<p>I/I program, flow monitoring equipment and performance assessments during storms</p> <p>Capital investments and system repairs</p> <p>Household drainage surveys and education</p>	<p>Continue to prioritize I/I program strategies</p> <p>Continue to include and prioritize funding through the financial and business planning and budget process</p>

10. Next Steps

10.1 The infrastructure needs and challenges identified in this report will continue to be considered through future business planning, budget and long-term capital planning processes.

10.2 Asset management staff will continue to work collaboratively to improve asset management planning, data collection and analysis as part of continual improvement, as well as to work towards meeting the remaining new asset management regulatory requirements of Ontario Regulation 588/17 due in 2024 and 2025. Specific next steps include:

- Continue to refine data collection, methodology and analyses as well as data verification protocols to enhance accuracy, consistency, and improve asset management planning capabilities to better inform business plans, budgets, capital forecasts, and long-term financial planning strategies;
- Migrate reporting and analysis to service area reporting (e.g., DRPS, Social Services) as opposed to asset class category (e.g., Fleet, Equipment, etc.);
- Identify target service levels and performance measures for all non-core assets and continue to refine service levels for core assets;

- Continue to ensure integration of climate adaptation and mitigation into asset management planning in alignment with the Corporate Climate Change Action Plan;
- Refine lifecycle options, data, costing, and analysis for core assets and implement lifecycle analysis for non-core assets by the regulatory deadlines of July 1, 2024;
- Continue to assess risk, business continuity, asset criticality, and asset reliability to develop, consider and incorporate risk mitigation approaches; and
- Continue to consider growth needs and infrastructure and servicing costs based on growth projections, as part of asset management planning.

11. Conclusions

- 11.1 The Asset Management Plan report is a key part of the financial planning, business planning and budget processes, providing the necessary information to facilitate capital planning.
- 11.2 The Region's collaborative asset management process has supported several successful asset management strategies and initiatives, which are detailed within each individual asset class attachment (Attachments #2 through #7).
- 11.3 The overall replacement value of the Region's assets is increasing due to growth demands for additional infrastructure and as a result of inflationary pressures which were higher in 2021 than in recent years. The asset class attachments (Attachments #2 through #7) provide additional details on the change in replacement values for assets.
- 11.4 The condition of the Region's core assets remained relatively stable year-over-year as a result of preventative maintenance, rehabilitation and timely repairs and replacements, with strategic investments planned that will address many assets currently in Very Poor condition.
- 11.5 This report complies with Ontario Regulation 588/17 thus ensuring the Region is eligible for senior-level government funding grants.
- 11.6 As part of continual improvement, the asset management planning processes of data collection, asset assessment and asset analysis will be reviewed including refining lifecycle analysis.
- 11.7 Regional staff will continue to work collaboratively to meet new reporting requirements for lifecycle costing and current levels of service for non-core assets and the development of financing strategies for core and non-core assets. The Region is well positioned to meet the additional Ontario Regulation 588/17 requirements due in 2024 and 2025.

Regional Asset Inventory, Replacement Value and Condition (Attachment #1)

Category	2019			2020			2021		
	Inventory	Replacement Value (\$M)	Condition	Inventory	Replacement Value (\$M)	Condition	Inventory	Replacement Value (\$M)	Condition
Water Supply System									
Vertical Assets - Treatment, Pumping & Storage									
Supply Plants and Well Systems	14	\$ 638.7	C-	14	\$ 657.1	C-	14	\$ 719.5	C-
Pumping Stations	10	\$ 30.6	C+	10	\$ 31.4	C+	10	\$ 35.6	C+
Water Storage Facilities	14	\$ 70.5	B	14	\$ 72.3	C+	14	\$ 79.5	C+
Combined Pumping Station/Storage	8	\$ 184.1	C+	8	\$ 188.9	B-	8	\$ 206.8	B-
Facilities Other	3	\$ 1.5	B-	3	\$ 1.5	B-	5	\$ 4.0	B-
Total Vertical	49	\$ 925.4	C-	49	\$ 951.3	C-	51	\$ 1,045.4	C-
Linear Assets - Water Distribution									
Mains (km)	2,564	\$ 2,492.4	B+	2,601	\$ 2,627.3	B+	2,631	\$ 2,909.9	B+
Control Valves	26,922	\$ 204.7	B+	27,334	\$ 213.2	B+	27,698	\$ 236.5	B+
Specialty Valves	665	\$ 14.4	B+	685	\$ 15.4	B+	696	\$ 17.2	B+
Service Connections	178,652	\$ 837.9	B+	180,437	\$ 867.9	B+	182,448	\$ 960.6	B+
Hydrants	16,301	\$ 173.8	B+	16,491	\$ 180.3	B+	16,785	\$ 201.0	B+
Fire Lines	1,936	\$ 19.6	B+	1,948	\$ 20.1	B+	1,948	\$ 22.2	B+
Meters	177,032	\$ 33.2	B+	179,553	\$ 33.8	B+	182,063	\$ 36.6	B+
Total Linear	404,072	\$ 3,776.1	B+	409,049	\$ 3,958	B+	414,269	\$ 4,384.0	B+
Total Water Supply	404,121	\$ 4,701.5	B	409,098	\$ 4,909.4	B	414,320	\$ 5,429.4	B
Sanitary Sewerage System									
Vertical Assets - Treatment, Pumping & Storage									
Water Pollution Control Plants	11	\$ 1,051.9	C+	11	\$ 1,079.0	C+	11	\$ 1,236.5	C+
Wastewater Pumping Stations	51	\$ 291.4	C+	51	\$ 298.9	C+	51	\$ 327.3	C+
Wastewater Storage Facilities	2	\$ 6.7	A	2	\$ 6.9	A	2	\$ 7.5	A
Water Facilities Other	N/A	N/A	N/A	1	\$ 2.4	A	1	\$ 2.6	A
Total Vertical	64	\$ 1,350.0	C+	65	\$ 1,387.2	C+	65	\$ 1,574.0	C+
Linear Assets - Sewerage Collection									
Gravity Sewers / Siphons (km)	2,151	\$ 2,442.6	B+	2,177	\$ 2,542.7	B+	2,205	\$ 2,808.8	B+
Forcemains (km)	64	\$ 119.4	A-	64	\$ 124.5	B+	65	\$ 139.9	B+
Maintenance Holes	31,269	\$ 464.0	B+	31,629	\$ 481.4	B+	32,096	\$ 533.2	B+
Service Connections	174,827	\$ 883.4	A-	176,588	\$ 910.6	A-	178,581	\$ 1,013.1	A-
Total Linear	208,311	\$ 3,909.4	B+	210,459	\$ 4,059.2	A-	212,947	\$ 4,495.0	A-
Total Sanitary Sewerage	208,375	\$ 5,259.4	B+	210,524	\$ 5,446.4	B+	213,012	\$ 6,069.0	B+

Category	2019			2020			2021		
	Inventory	Replacement Value (\$M)	Condition	Inventory	Replacement Value (\$M)	Condition	Inventory	Replacement Value (\$M)	Condition
Transportation System									
Roads (arterial)									
Urban (lane km)	1,012	\$ 1,123.2	C+	1,021	\$ 1,165.9	C+	1,068	\$ 1,341.5	C+
Rural (lane Km)	1,378	\$ 1,378.9	C+	1,378	\$ 1,432.3	C-	1,393	\$ 1,541.3	C-
Bridges and Culverts (>3m)	234	\$ 589.8	B	237	\$ 612.6	B	240	\$ 788.6	B
Total Roads, Bridges & Culverts	2,624	\$ 3,091.8	C+	2,636	\$ 3,210.8	C+	2,701	\$ 3,671.4	C+
Storm Sewer System									
Storm Sewer Mains (km)	304	\$ 478.3	C	320	\$ 520.2	C	322	\$ 573.1	C
Culverts (<3m) (km)	30	\$ 34.3	C	30	\$ 40.2	C	30	\$ 44.0	C
Maintenance Holes	4,751	\$ 29.3	C	5,017	\$ 31.7	C	5,053	\$ 35.0	C
Catchbasins	5,525	\$ 34.0	C	5,807	\$ 36.7	C	5,878	\$ 40.7	C
Outfalls	288	\$ 0.5	C	473	\$ 1.1	C	475	\$ 1.2	C
Total Storm Sewer	10,899	\$ 576.4	C	11,646	\$ 630.0	C	11,758	\$ 693.9	C
Traffic Control System									
Control Signals/ Flashing Beacons	464	\$ 77.1	C+	486	\$ 78.9	C+	493	\$ 88.3	B
Traffic Management Systems	17	\$ 7.6	C-	17	\$ 7.6	C-	16	\$ 5.7	C
Communication Infrastructure (km)	320	\$ 10.5	B-	320	\$ 10.7	B-	338	\$ 12.6	B-
Regulatory, Warning and Info Signs	22,275	\$ 4.4	A-	21,300	\$ 4.4	A	20,961	\$ 4.7	A
Roadside Protection (km)	104	\$ 20.5	C	104	\$ 20.9	A-	111	\$ 23.1	A-
CCTV	103	\$ 0.3	A-	107	\$ 0.3	C	108	\$ 0.4	C-
Total Traffic Control	23,283	\$ 120.4	C+	22,334	\$ 122.9	B-	22,027	\$ 134.7	B
Total Transportation	36,806	\$ 3,788.5	C+	36,617	\$ 3,963.7	C+	36,485	\$ 4,500.0	C+
Regionally Owned Facilities									
DRLHC	23	\$ 261.5	D+	23	\$ 268.2	F+	23	\$ 293.7	F
Durham Regional Police Service	8	\$ 117.4	B+	8	\$ 120.4	B	8	\$ 131.8	B
Regional Works Depots	5	\$ 53.9	C	5	\$ 55.2	C	5	\$ 60.5	C
Paramedic Services	8	\$ 32.1	B+	8	\$ 32.9	B	8	\$ 36.1	B
Regional Child Care Facilities	4	\$ 9.2	D+	4	\$ 9.4	D+	4	\$ 10.3	D+
Waste Management Facilities	7	\$ 264.2	A	7	\$ 271.1	A	7	\$ 296.8	A
Long Term Care (LTC) Facilities	4	\$ 263.4	B+	4	\$ 270.2	B	4	\$ 295.8	B-
DRT Facilities	3	\$ 81.9	A-	3	\$ 84.0	A-	3	\$ 91.9	A-
DRT Pads and Shelters	2,437	\$ 11.3	n/a	2,293	\$ 11.1	n/a	2,579	\$ 14.6	A
Administration Facilities	3	\$ 123.3	A-	3	\$ 126.5	A-	3	\$ 138.5	B+
Parking Structure	1	\$ 22.4	A	1	\$ 22.9	A	1	\$ 25.1	A
Centennial Building	1	\$ 4.6	B	1	\$ 4.8	B	1	\$ 5.2	B
Other	1	\$ 1.7	D	n/a	n/a	n/a	n/a	n/a	n/a
Total Facilities	68	\$ 1,246.8	B	67	\$ 1,276.8	B-	67	\$ 1,400.3	B-

Category	2019			2020			2021		
	Inventory	Replacement Value (\$M)	Condition	Inventory	Replacement Value (\$M)	Condition	Inventory	Replacement Value (\$M)	Condition
Fleet									
Transit Works	257	\$ 139.6	C	260	\$ 147.0	C	241	\$ 136.9	C
Durham Regional Police Service	359	\$ 40.3	C-	367	\$ 47.8	D	374	\$ 52.2	B-
Paramedic Services	83	\$ 23.2	A-	83	\$ 23.2	A-	84	\$ 25.8	A-
Total Fleet	1,058	\$ 212.7	C	1,062	\$ 228.0	C	1,062	\$ 225.8	C
Equipment									
Water	n/a	\$ 22.6	n/a	n/a	\$ 22.2	n/a	n/a	\$ 27.3	n/a
Sewer	n/a	\$ 15.3	n/a	n/a	\$ 17.0	n/a	n/a	\$ 17.4	n/a
Transportation	n/a	\$ 9.3	n/a	n/a	\$ 7.3	n/a	n/a	\$ 7.6	n/a
Waste Management	n/a	\$ 11.8	n/a	n/a	\$ 14.0	n/a	n/a	\$ 14.5	n/a
RDPS (Paramedics)	n/a	\$ 5.4	n/a	n/a	\$ 5.3	n/a	n/a	\$ 5.6	n/a
DRPS (Police)	n/a	\$ 43.8	n/a	n/a	\$ 44.3	n/a	n/a	\$ 49.2	n/a
DRT (Transit)	n/a	\$ 10.6	n/a	n/a	\$ 15.5	n/a	n/a	\$ 15.3	n/a
Health	n/a	\$ 2.3	n/a	n/a	\$ 2.0	n/a	n/a	\$ 2.3	n/a
Social Services	n/a	\$ 20.0	n/a	n/a	\$ 21.1	n/a	n/a	\$ 22.5	n/a
Administration	n/a	\$ 47.0	n/a	n/a	\$ 50.9	n/a	n/a	\$ 61.9	n/a
Total Equipment		\$ 188.1			\$ 199.5			\$ 223.8	
Total²	650,427.6	\$ 15,397.0	\$ -	657,367.6	\$ 16,023.8	\$ -	664,946.1	\$ 17,848.3	

¹ Facilities inventory total excludes DRT bus stop pads and shelters

² 2019 Replacement values have been restated

1. Water Supply Asset Class Report (Attachment #2)

Service Level Objectives
<ul style="list-style-type: none"> • To provide a safe and sufficient water supply while complying with all Provincial and Federal Acts and Regulations. • To protect the environment and the quality and quantity of ground and surface water. • To support the coordination of growth and achieve and maintain an optimal condition standard for all existing and new water supply system assets.



Total 2021 Replacement Value
\$5,429.4 million
 ↑ 11% from 2020

Average Condition
 (Year-over-Year Trend)
B →

- 14** Water Supply Plants and Well Systems
- 10** Water Pumping Stations
- 8** Combined Water Pumping Stations/ Storage Facilities
- 14** Water Storage Facilities
- 5** Other Water Facilities
- 2,631** km watermains
- 27,698** control valves
- 182,448** service connections
- 696** Speciality Valves
- 16,785** hydrants
- 1,948** fire lines
- 182,063** meters

1.1. Water Supply Inventory Overview

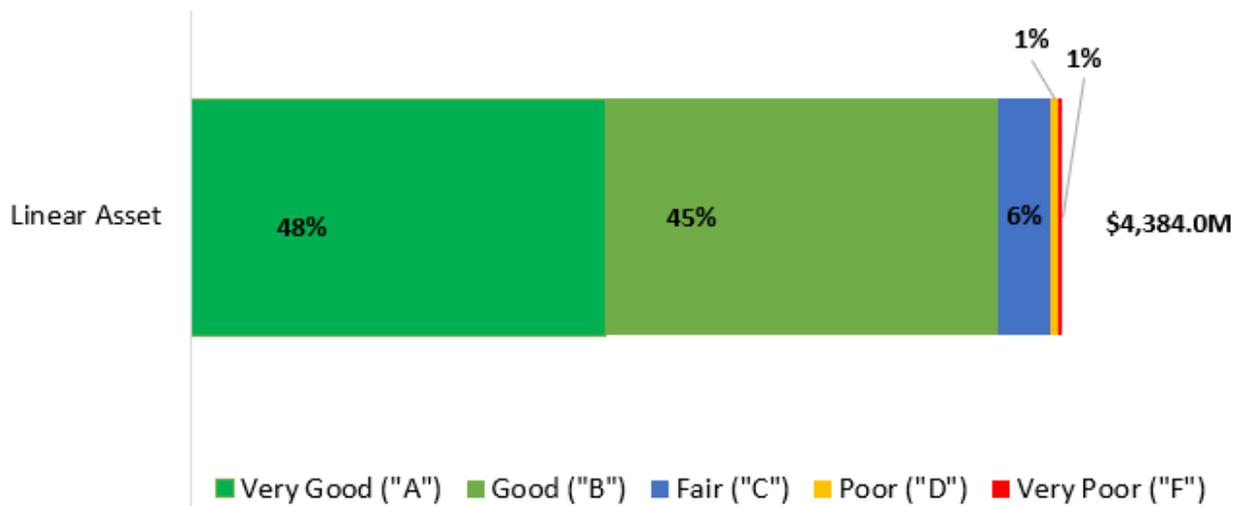
Durham’s water supply system assets consist of both vertical and linear assets. Vertical assets treat, store and pump drinking water and linear assets distribute the water to residents and businesses through pipes.

1.2. Water Supply Condition Ratings, Replacement Values and Average Ages

The overall water supply condition rating in 2021 was B representing no year-over-year condition change. Condition ratings for vertical (C-) and linear assets (B+) also remained stable year-over-year. Overall replacement values totalled \$5,429.4 million, a 10.6 per cent increase over 2020 primarily as a result of inflationary replacement cost increases and also minor increases to linear assets to accommodate growth.

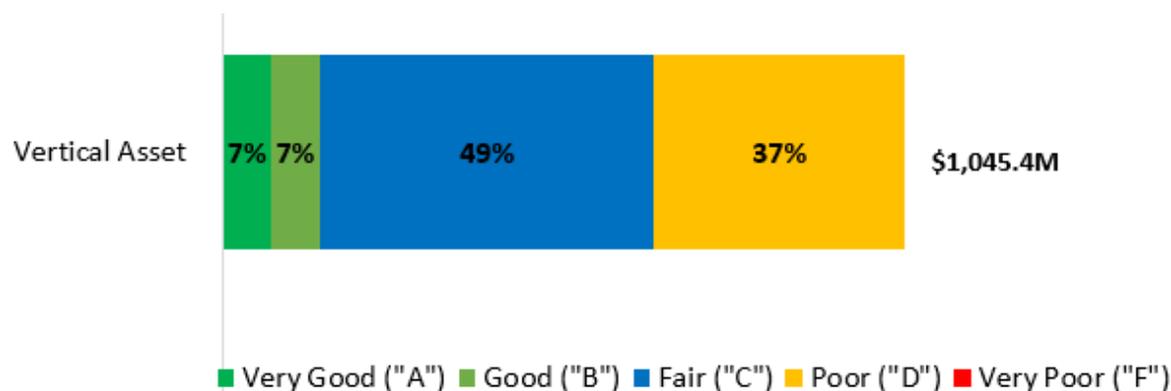
Figure 1 illustrates the condition rating and replacement value of linear and vertical water supply assets.

Figure 1: Water Supply Linear Assets Condition and Replacement Values*



*Condition ratings for assets may not add to 100 per cent due to rounding

Figure 2: Water Supply Vertical Assets Condition and Replacement Values*



1.3. Water Supply Condition Assessment Methods

Table 1 outlines the assessment methods used to determine condition ratings.

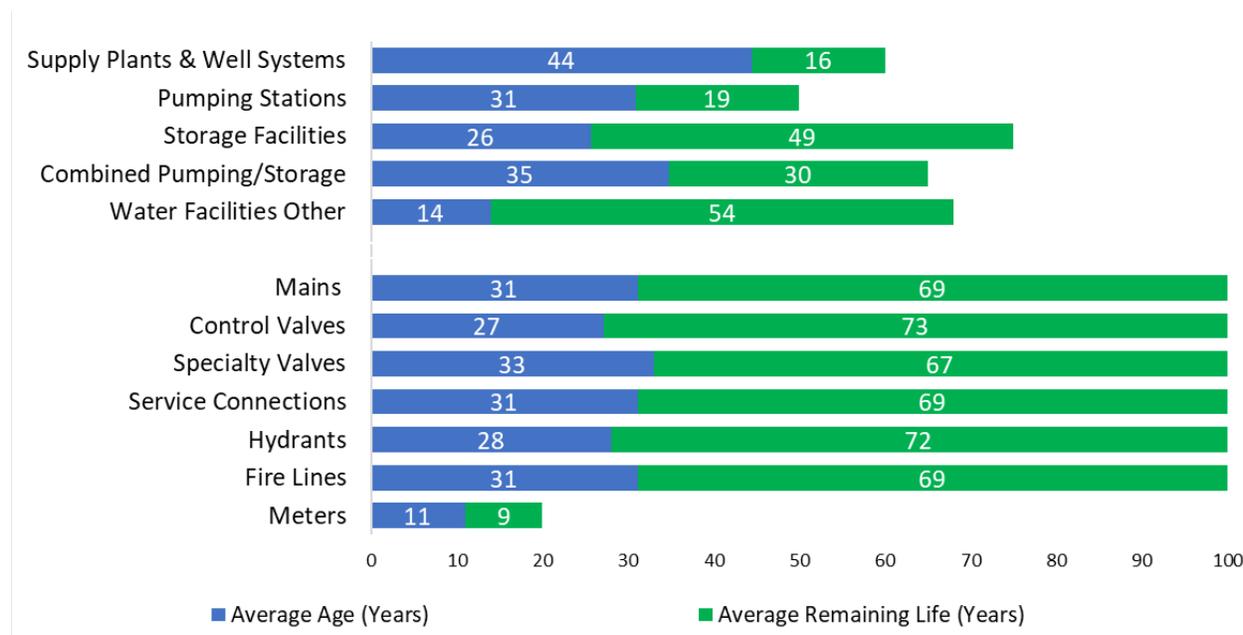
Table 1: Water Supply Condition Assessment Methods

Asset Class	Assessment Methods
Plants, pumping stations, wells and reservoirs	Site-specific detailed condition assessments for the process equipment and building structure are planned at all facilities in the coming years. They are coordinated with upcoming capital projects where possible. In the interim, a high-level scoring was done for all sites by Operations and Facilities staff for long range planning. Staff also recommend repair work for incorporation into the annual operating and capital budgets.
Water towers/standpipes	Annual site-specific inspections per legislated requirements.
Watermains	Consideration of the number of watermain breaks, break rate, pipe material, age, maintenance concerns and issues, lining type, and cathodic protection.
Fire lines, hydrants and water meters	Condition rating is based on age.
Control valves, service connections and specialty valves	Condition rating is based on the connected watermain condition scores.

1.4. Water Supply Average Age and Remaining Useful Life

Figure 3 summarizes the average age and remaining asset life of water system assets. Overall, the water system is relatively young with an average remaining life of 70 years for those assets with a useful life of 100 years.

Figure 3: Water System Average Age and Remaining Useful Life



1.5. Water Supply Levels of Service and Performance Measurement

Service level objectives and performance targets are set through Regional Council approved master plans, studies, policies and procedures, as well as through departmental studies and regulatory and/or compliance guidelines.

Table 2: Plans, Studies, Policies, Procedures, Regulations that Inform Service Levels

Regional Plans, Studies, Policies, & Procedures
<ul style="list-style-type: none"> • Regional Water Supply System Design Standards & Specifications • Regional Water Supply System By-law 89-2003 • Regional Backflow Prevention By-law 24-2018 • Region’s Service Connection Cleaning By-law 90-2003 • Service Levels for Water Operation • The Great Lakes St Lawrence Cities Initiative and the Sustainable Municipal Water Management Framework

- Credit Valley-Toronto and Region-Central Lake Ontario Source Protection Plan
- South Georgian Bay Lake Simcoe Source Protection Plan
- Trent Conservation Coalition Source Protection Plan
- Lake Simcoe Protection Plan

Regulatory Compliance Requirements and Guidelines

- Ontario Safe Drinking Water Act 2002 and associated Regulations:
 - Ontario Regulation 169/03 Ontario Drinking Water Quality Standards
 - Ontario Regulation 170/03 Drinking Water Systems
 - Ontario Regulation 128/04 Certification of Drinking Water System Operators and Water Quality Analysts
 - Ontario Regulation 188/07 Licensing of Municipal Drinking Water Systems
 - Ontario Regulation 453/07 Financial Plans
 - Ontario Regulation 248/03 Drinking Water Testing Services
- Clean Water Act 2006
- Ontario Water Resources Act, R.S.O. 1990 and associated Regulations:
 - R.R.O. 1990, Reg. 903: Wells
 - Ontario Regulation 387/04 Water Taking and Transfer
- Great Lakes Protection Act, 2015
- Lake Simcoe Protection Act, 2008
- Environmental Protection Act, R.S.O. 1990
- Water Opportunities and Conservation Act, 2010
- Oak Ridges Moraine Conservation Act, 2001
- Greenbelt Act, 2005
- Planning Act, R.S.O. 1990
- Building Code Act, 1992 and Ontario Regulation 332/12 Building Code
- Ontario Regulation 319/08 Small Drinking Water Systems
- Canadian Drinking Water Guidelines
- Environmental Management Standard ISO 14001
- Quality Management Standard ISO 9001:2000
- Technical Support Document for Ontario Drinking Water Standards, Objectives, and Guidelines.

Detailed service level descriptions and targets are outlined in the Community Levels of Service, Technical Levels of Service and Performance Measures subsections that follow.

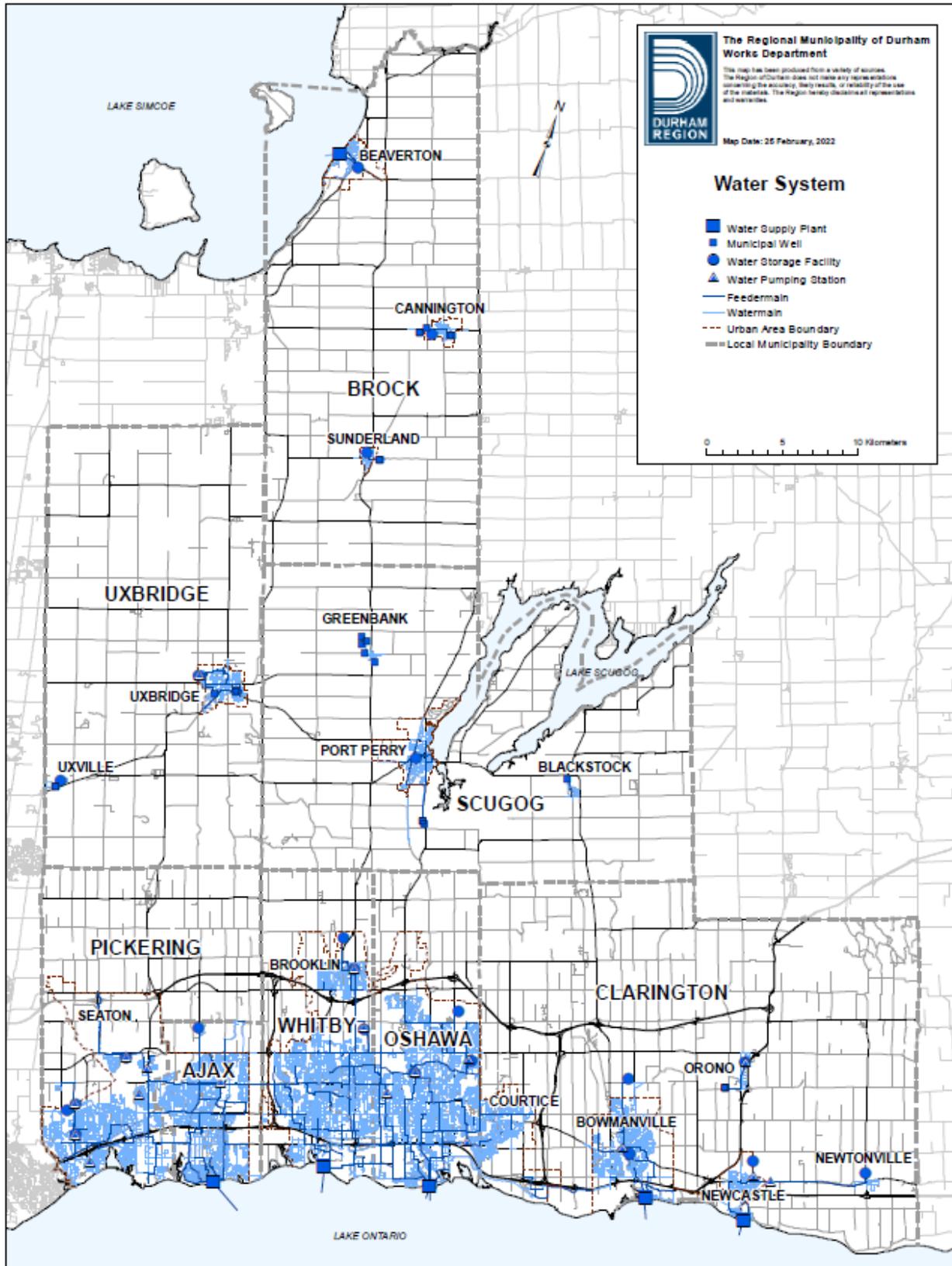
Community Levels of Service

Community levels of service provide qualitative descriptions of service reliability, service standards and service scope as required by Ontario Regulation 588/17.

Table 3: Community Levels of Service

Criteria	Description
Description, which may include maps, of the user groups or areas of the municipality that are connected to the municipal water system.	Approximately 95 per cent of Durham's municipal tap water comes from Lake Ontario, with the remaining from underground sources (wells) and Lake Simcoe for the Beaverton area. Map 1 identifies the areas that are connected to the Region of Durham's water supply system.
Description, which may include maps, of the user groups or areas of the municipality that have fire flow.	Proximity to a hydrant is a benefit of being connected to the water supply system for fire protection. There are 16,785 fire hydrants in Durham Region. There is 100 per cent fire flow in the Region of Durham with 92 per cent of residents having direct supply from hydrants.
Description of boil water advisories and service interruptions.	Boil water advisories can be issued due to adverse water quality testing results or suspected contaminants. They protect water users from potential health risks. Due to the Region's rigorous and thorough water treatment and testing process, there were zero boil advisory days in 2021.

Map 1: Durham Region's Water Supply and Fire Flow System



Technical Levels of Service

Ontario Regulation 588/17 includes a list of required technical metrics for water supply systems as shown in Table 4.

Table 4: Technical Service Levels per Ontario Regulation 588/17

Technical Metric	Target	Year of Measure		
		2019	2020	2021
Percentage of Properties Connected to the Region's Water Supply System	100 per cent of Properties with Proximity to a Watermain to be Connected	99%	99%	99%
Measures the percentage of properties connected to the Region's treated water supply system. Only properties within an Urban Boundary can be potentially connected to a water system. Durham has a number of properties in rural areas.				
Percentage of Properties Where Fire Flow is Available	100 per cent of Properties with Proximity to a Watermain has Fire Flow	100%	100%	100%
This measure tracks the percentage of properties that have fire flow in the Region. Any property in proximity to a watermain has fire flow through hydrants.				
Service Interruptions due to Watermain breaks	0.00 per cent	0.00%	0.00%	0.00%
The number of connection-days per year where service is disrupted due to watermain breaks compared to the total number of properties connected to the municipal water system.				
Boil Water Advisory Days	Zero days annually	0	0	0
The number of connection-days per year where a boil water advisory notice is in place compared to the total number of properties connected to the municipal water system.				

Performance Measures

Beyond community service levels and technical reporting requirements of Ontario Regulation 588/17, a number of performance metrics are being tracked to measure how well assets are meeting service level objectives.

Table 5: Performance Measures

Performance Measure	Target	Year of Measure		
		2019	2020	2021
Condition Index Rating	0.2 per cent of linear assets rated as very poor	0.50%	0.40%	0.54%
Measure identifies the per cent of linear assets (watermains, hydrants, valves, service connections, fire lines and water meters) rated as "Very Poor" calculated on total replacement value of these assets.				
Non-Revenue Water	Reduce non-revenue water by 0.5 per cent annually	13.80%	14.57%	13.69%
Measures non-revenue water as a percentage of total water treated. Non-revenue water is a total of unbilled authorized consumption, apparent losses and real losses. Examples of each type are as follows: <ul style="list-style-type: none"> • Unbilled Authorized = flushing hydrants at dead ends, in new developments or following replacement or repair of hydrant. • Apparent Losses = unauthorized consumption like water theft at hydrants and customer metering inaccuracies. • Real Losses = leakage on mains and service connections, overflows at water storage facilities and at point of customer metering. 				
Valves Inspected	100 per cent of line valves ≥300mm every 2 years	90%	84%	84%
	100 per cent of line valves <300mm every 6 years	90%	87%	89%
Percent of valves inspected per current Durham Service Levels. The purpose is to ensure all valves are operational when required for use and to minimize water losses.				
Hydrants Inspected	100 per cent of hydrants inspected annually	99%	99%	99%
Measures the percentage of hydrants inspected annually per Durham Service Level. The goal is to ensure sufficient, reliable service for fire protection.				

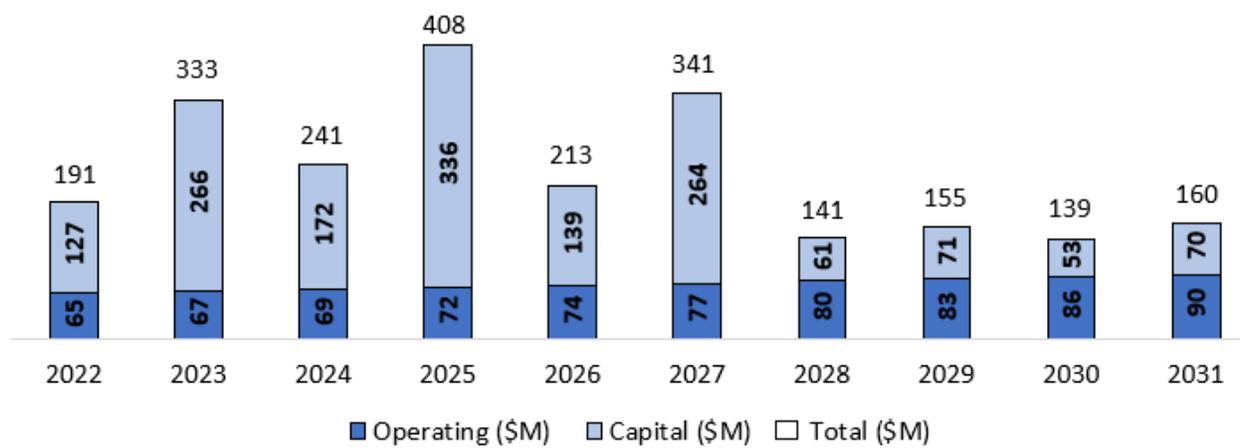
Performance Measure	Target	Year of Measure		
		2019	2020	2021
Condition Index Rating	0 per cent of vertical assets rated as very poor	4.85%	4.84%	0.00%
Measure identifies the percentage of plants (including wells, pumping stations and water storage facilities) rated very poor. The condition percentage is based on replacement value rather than number of sites.				
Compliance to Drinking Water Standards and MECP Regulatory Requirements	100 per cent compliance of drinking water test results annually	100.00%	99.90%	99.88%
Measures compliance to MECP drinking water standards using number of drinking water test results within standards (Ontario Regulation 169/03 microbiological tests only) / total number of drinking water tests performed at the plants and on the distribution system. Purpose is to ensure safe water source to all residents of Durham. Microbiological tests on commissioned and operating systems including any tests carried out in addition to Regulatory requirements.				
Back-up power capabilities	100 per cent of plants, wells, and pumping stations with back up generators	83%	83%	83%
	100 per cent of generators newer than 30 years in age	88%	79%	83%
Ensure that all plants, wells and pumping stations' back-up power generators are no older than 30 years. Portable generators used at maintenance hole-type pumping stations and those too small to house a generator are not included in the calculation. The age measure is calculated using only the number of existing generators currently in place.				
Mainline Valves in Operable Condition	100 per cent of valves in operable condition	99%	99%	99%
This measures the percent of valves that are found to be operable during annual inspections. The Region's strives to keep all valves operable and schedules required valve repairs as soon as possible.				

1.6. Lifecycle

Water Supply System maintenance and rehabilitation lifecycle activities aim to extend the useful life of linear and vertical assets and improve service delivery. For some linear assets such as cast iron and ductile iron watermains, there are activities that can be done to slow deterioration and extend the useful life.

Figure 4 illustrates capital and maintenance lifecycle costs for the water supply asset class.

Figure 4: Lifecycle Costs Water Supply Operating and Capital (\$ millions)*



*Operating and Capital may not add to Total due to rounding.

Lifecycle Activities

In the past, cement lining was used to improve water flow and quality as well as reduce internal pipe corrosion. The structural lining technology that is used by the Region now provides the same benefits but also renews the pipe to an almost new condition. Cathodic protection is used extensively throughout the Region to slow external corrosion on iron watermains. These rehabilitation methods have the benefit of improving the condition of the watermains while limiting the amount of disruption to residents and the cost to rate payers.

Full pipe replacement is preferred when the watermain condition is in very poor condition or when there is an opportunity to coordinate with other infrastructure work such as road reconstruction or sanitary sewer replacement.

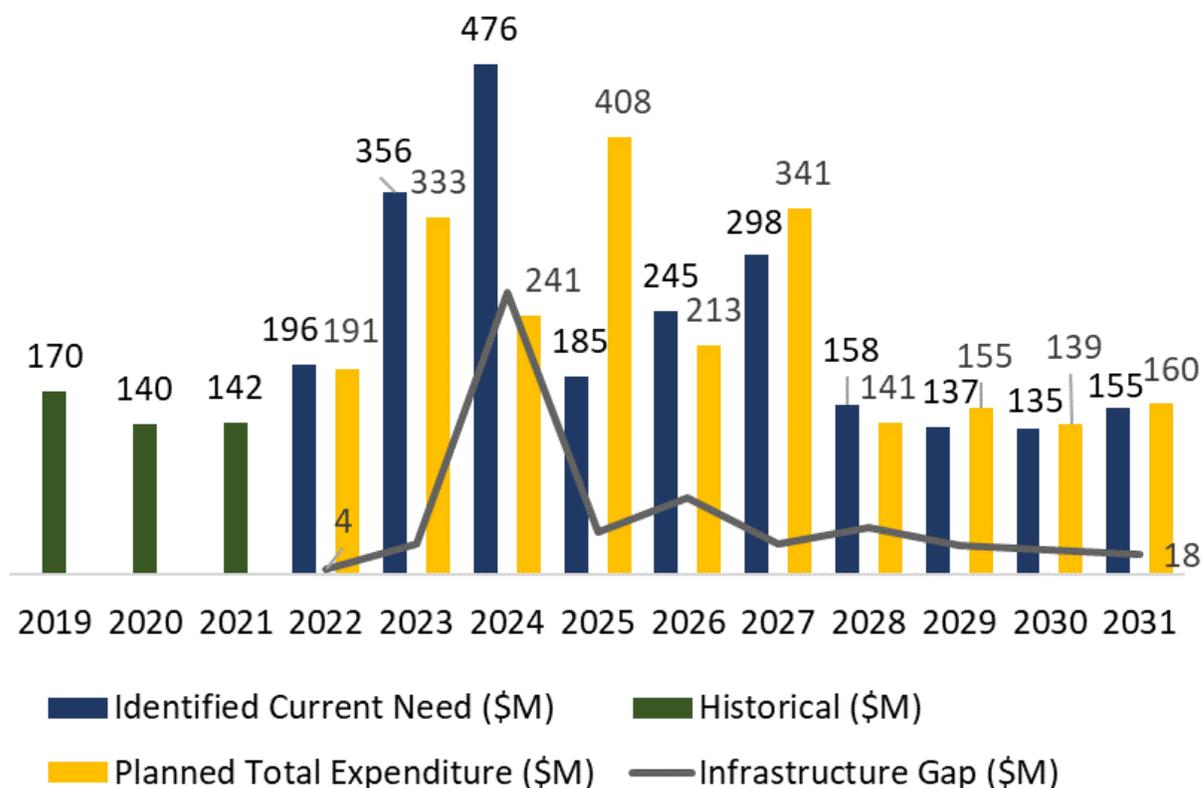
For vertical water system assets, lifecycle activities are informed by detailed site-specific condition assessments as well as by Operations and Facilities staff knowledge of issues as they attend the various sites regularly. The detailed inspections inform rehabilitation and renewal activities and forecast investment needs over the long-term.

In addition to repair and maintenance activities, other ongoing operating expenditures are required to ensure water assets can meet service levels. Some examples include overhead costs (e.g., office staff, training, software, etc.), gas and fuel, utilities, chemicals and fleet rentals.

Total operating lifecycle expenditures for water total \$764.7 million over the 2022 Budget and nine-year forecast period (2023 to 2031) while capital funding totals \$1,558.2 million over this period. Figure 5 below provides planned capital and operating expenditures for the water system for 2022 and the nine-year forecast period. Additionally, staff have undertaken an analysis to forecast the funding required to optimally sustain current service levels.

Any rehabilitation or replacement work required to meet health and safety or legislative standards are reflected in the planned total expenditures while the identified current need builds on the approved budget to accelerate some lower priority works as illustrated in Figure 5.

Figure 5: Water System: Lifecycle Gap Analysis (\$ millions)



In 2022, the infrastructure gap is estimated at \$4.4 million. Based on currently planned expenditures this infrastructure gap grows to \$18.2 million in 2031.

The identified current need reflects accelerating replacements for some non-urgent linear projects. Not accelerating these projects may result in increased repair and maintenance work which is balanced with cost savings to rate payers and ensuring full value is extracted from assets by avoiding premature replacement. It is important to note that the planned total expenditure poses no health and safety risk or material impacts to service as compared to the identified current need scenario.

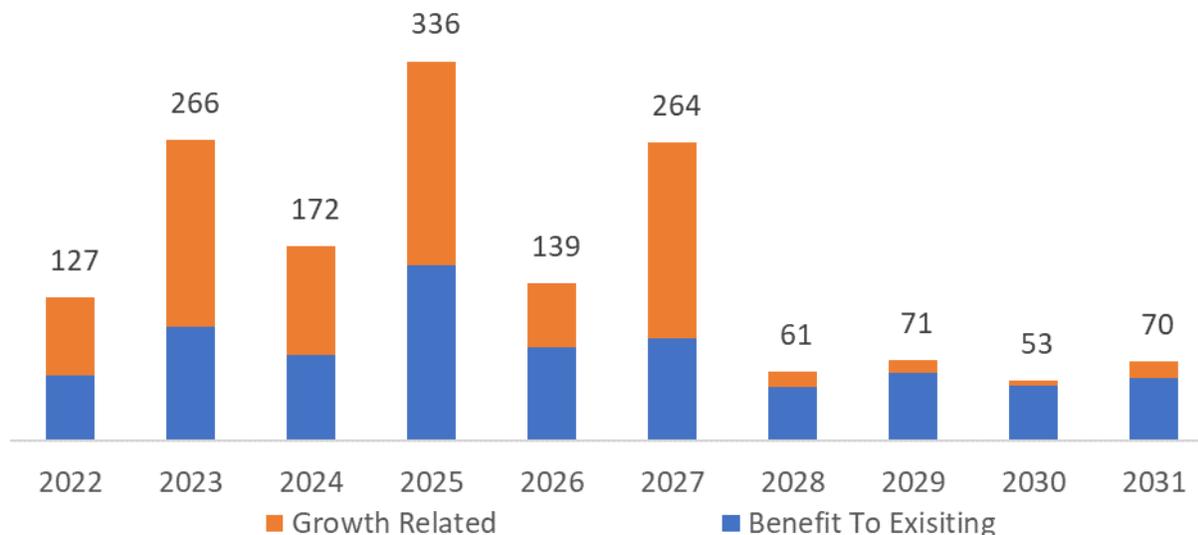
Staff will continue to monitor funding needs and refine identification and assessment processes. The recently implemented enterprise maintenance management and workorder software system, Maximo, will enhance asset management capabilities and allow for improved analysis for lifecycle costing.

Moving forward, staff will be further refining lifecycle costing analysis and data collection for both linear and vertical water supply assets that will be reported in future asset management plans.

1.7. Water System Capital Forecast

Major capital investments for the water supply system identified through the 2022 business plans and budget process (rehabilitation and growth) total \$126.9 million for 2022 and \$1,431.2 million over the 2023 to 2031 forecast period.

Figure 6: Water System Capital Forecast (\$ millions)



Capital investments

The 2022 Water Supply Capital Budget includes \$5.6 million in linear improvements in collaboration with the Transportations Department, Local Municipalities and Ministry of Transportation Ontario (MTO) projects.

There is an additional \$12.9 million for the Region to replace watermains which includes valves, hydrants and water service connections independently.

In addition, there is also \$5.5 million included for other linear replacements such as water meters and hydrants. For water supply buildings and plant equipment (vertical assets), there is approximately \$9.8 million included in the 2022 Water Supply Capital Budget to address asset management needs.

A key project in the budget and forecast period is a three-year project starting in 2022 to retrofit existing water meters with radio frequency remote reading devices to minimize manual meter readings. The total estimated cost of this initiative over the three-year period is \$10.0 million.

Capital investments in water supply assets to meet growth needs totals approximately \$70 million in 2022 including advancements in the servicing of employment lands.

1.8. Climate Change

Climate Mitigation: Water Supply System Strategies to Reduce GHG Emissions

The Durham Region Corporate Climate Action Plan has set targets to achieve net-zero GHG emissions by 2045. The corporate GHG inventory includes emissions produced to treat, store and pump water as well as non-energy GHG emissions associated with water management operations.

Key climate change mitigation accomplishments in water supply systems for 2021 include:

- Energy management programs and equipment replacements which are more energy efficient to reduce the growth of emissions.

Key 2022 to 2031 initiatives that support GHG reductions include:

- Completion and implementation of the Water & Wastewater GHG Emission Management Strategy.
- Significant water supply process and facility upgrades scheduled for 2022 and 2023 including the implementation of initiatives from Durham's Energy Conservation and Demand Management Plan.

Climate Adaptation: Increasing the Resiliency of Water Supply System

A changing climate can put additional pressures on systems through extreme weather events that necessitate proactive measures and modifications to system design.

Priority climate change mitigation measures for the water supply system include:

- The Cannington Water Supply System New Well and Pumpouse with Standby Power– detailed design complete, the tender has been awarded and construction has commenced.

- Enhancing erosion protection at creek crossings to protect pipes and associated structures.
- Replacement of standby generators at Whitby WSP, Grandview PS, Waverly PS, Beaverton WSP and Port Perry Well 6.

Climate adaptation will continue to be addressed through the business planning, budget and long-term financial planning processes to ensure a proactive approach.

1.9. Risk Assessment

Regional staff investigate potential risks to water supply assets on an ongoing basis, considering probability, potential consequences and suitability of risk mitigation controls. Table 6 highlights some key identified risks as well as ongoing and new mitigation measures.

Table 6: Water Systems Risk Mitigation Strategies

Risk	Mitigation
Loss of external utilities	Standby generation assessments, options analysis and implementation. Uninterrupted Power Supply (UPS) systems and upgrades. Update depot-specific contingency plans and training programs. Essential services policies, contingency plans, and continuity plans. Capital redundancy and work around programs. (e.g., twinning, looping, etc.).

Risk	Mitigation
<p>Disruption to water supply and water quantity losses</p>	<p>Maintenance and infrastructure rehabilitation and replacement programs.</p> <p>Inspections, risk assessments and source water protection practices.</p> <p>Capital redundancy and continuity programs (e.g., twinning, looping, etc.).</p> <p>Engineering, hydrology, design and erosion mitigation studies and strategies.</p> <p>Water meter replacement and funding strategy.</p> <p>Wellhead protection and management program.</p> <p>Cement lining and cathodic pipe protection strategy.</p> <p>Bulk water dispensing strategy.</p> <p>Leak detection program.</p> <p>SCADA alerts and controls.</p>
<p>Potential for water contamination</p>	<p>Regional source water protection plans and wellhead protection programs.</p> <p>Water quality testing and SCADA alerts and controls.</p> <p>Lead pipe strategy.</p> <p>Sewer Use By-law and Backflow Prevention Program and By-law.</p> <p>Maintain effective emergency, contingency, and continuity plans.</p> <p>Spill control procedures.</p> <p>Maintenance and infrastructure rehabilitation and replacement programs.</p>

1. Sanitary Sewerage System Asset Class Report (Attachment #3)

Service Level Objectives

- To provide safe and reliable wastewater collection and treatment for all Durham residents, businesses and industries.
- To protect the environment, improve the quality of effluent discharged, and comply with all Provincial and Federal Acts and Regulations.
- To support the coordination of growth and maintain an optimal condition standard for all existing and new sanitary sewerage system assets.



11 Water Pollution Control Plants
51 Pumping Stations
3 Other Wastewater Facilities
2,205 km Gravity Sewers
65 km Forcemains
32,096 Maintenance Holes
178,581 Service Connections

Total 2021 Replacement Value
\$6,069 million
↑ **11%** from 2020

Average Condition
(Year-over-Year Trend)
B+ ➡

1.1 Asset Inventory Overview

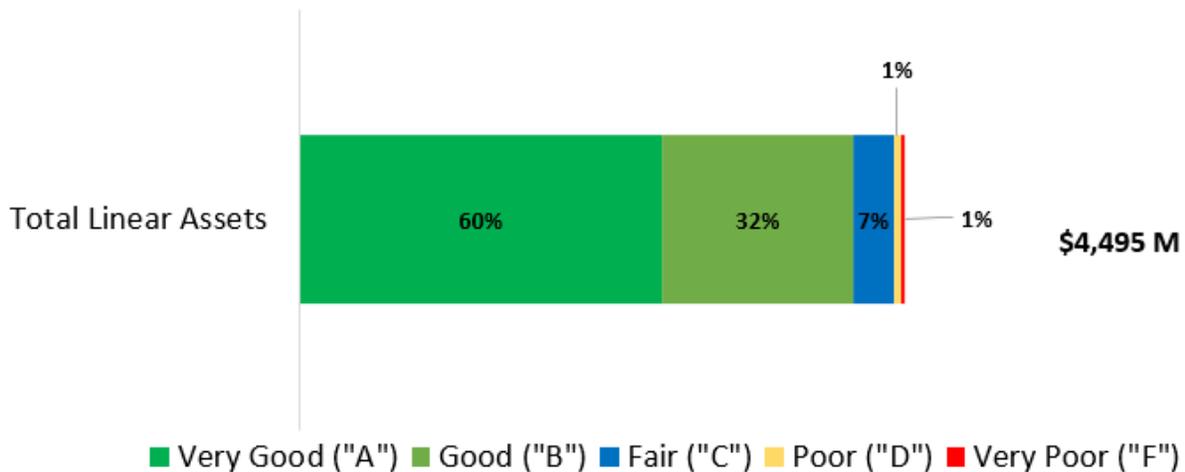
Durham Region’s sanitary sewerage system consists of vertical and linear assets. Vertical assets refer to facilities that treat and pump sanitary sewage and store excess sewage while linear assets collect sanitary sewage and provide a piped route from customers to the treatment plants.

1.2 Sanitary Sewerage Condition Ratings, Replacement Values and Average Ages

The overall condition rating for sanitary sewerage remained B+ in 2021 as compared to 2020 with condition ratings for vertical (C+) and linear assets (A-) remaining stable. Overall replacement values increased 11.4 per cent over 2020 as a result of inflationary replacement cost increases and minor increases to linear assets to accommodate growth.

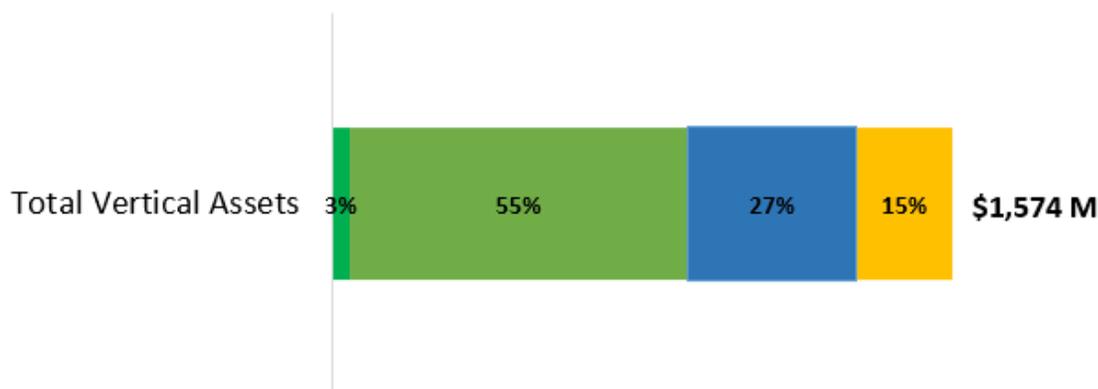
Figure 1 below illustrates the condition rating and replacement value of linear and vertical sewer assets.

Figure 1: Linear Sanitary Sewerage Assets Condition and Replacement Values



*Condition ratings for assets may not add to 100 per cent due to rounding.

Figure 2: Vertical Sanitary Sewerage Assets Condition and Replacement Values



■ Very Good ("A")
 ■ Good ("B")
 ■ Fair ("C")
 ■ Poor ("D")
 ■ Very Poor ("F")

*Condition ratings for assets may not add to 100 per cent due to rounding

1.3 Sanitary Sewerage Condition Assessment Methods

Table 1 outlines the assessment methods used to determine condition ratings.

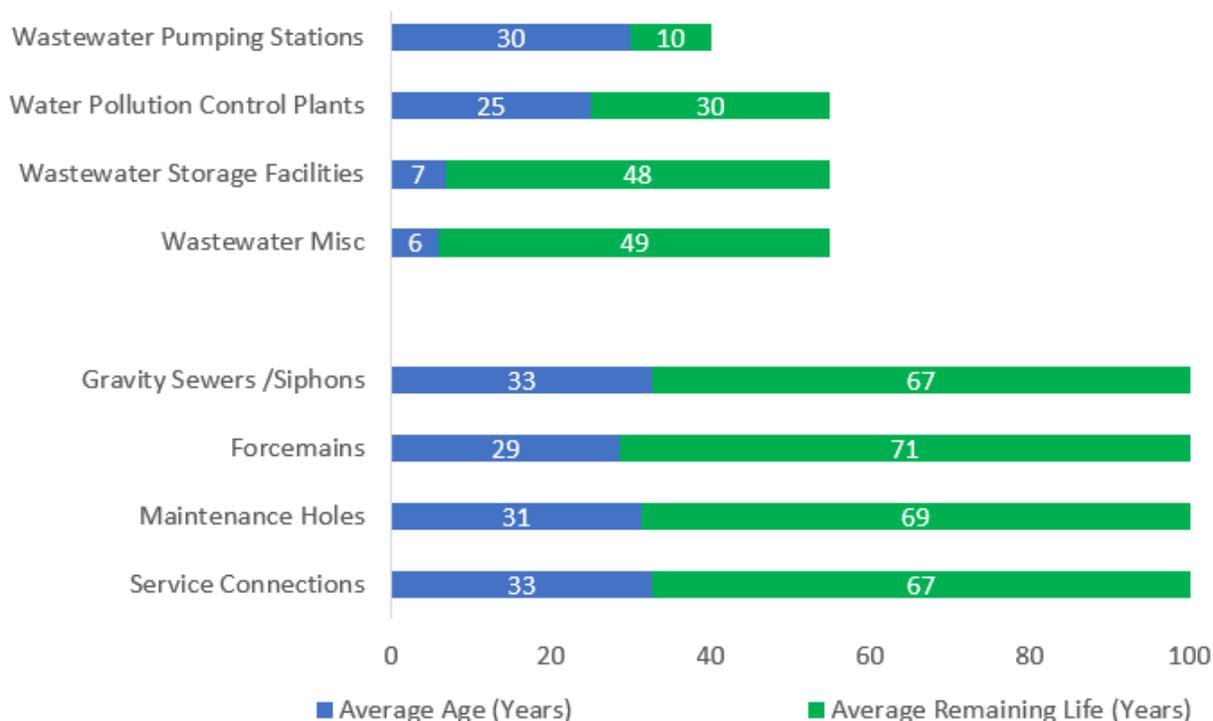
Table 1: Sanitary Sewerage Condition Assessment Methods

Asset Class	Assessment Methods
Plants, Pumping Stations and Storage	Site-specific detailed condition assessments for the process equipment and building structure are planned at all facilities in the coming years. They are coordinated with upcoming capital projects where possible. In the interim, a high-level scoring was done for all sites by Operations and Facilities staff for long range planning. Staff recommend repair work for incorporation into the annual operating and capital budgets.
Gravity Sanitary Sewers and Forcemains	Structural grade score from CCTV inspections, material type, age of the pipe and any concerns or issues from Maintenance Operations are used to compile a score for each pipe segment. Forcemains also use break history in scoring.
Maintenance Holes and Chambers	Infrastructure age.
Service Connections	Assigned same score as the gravity sewer they are connected to.

1.4 Sanitary Sewerage Average Age and Remaining Useful Life

Figure 3 summarizes the average age and remaining asset life of sanitary sewer assets as of December 31, 2021. Overall the sanitary sewerage system is relatively young as evidenced by generally significant remaining useful life.

Figure 3: Sanitary Sewerage System Average Age and Remaining Useful Life



1.5 Levels of Service and Performance Measurement

Service levels objectives and performance targets are set through Regional Council approved master plans, studies, policies and procedures, as well as through departmental studies and regulatory and/or compliance guidelines.

Table 2: Plans, Studies, Policies, Procedures, Regulations that Inform Service Levels

Regional By-Laws, Departmental Studies, Policies, & Procedures
<ul style="list-style-type: none"> • The Region’s Sanitary Sewer System By-Law • Service Levels for Sanitary Sewerage Operation • The Region’s Service Connection Cleaning By-law 90-2003 • Water Pollution Control Plan and Storm Water System By-law • Regional Sanitary Sewerage System Design Standards and Specifications

Regulatory Compliance Requirements and Guidelines

- Wastewater System Effluent Regulations (WSER)
- Environmental Protection Act of Ontario
- Pollution Prevention Plan (P2)
- Lake Simcoe Protection Plan
- Water Opportunities and Water Conservation Act
- Ontario Water Resources Act
- Fisheries Act
- Ontario Regulation 129/04 Licencing of Sewage Works Operators
- Ontario Regulation 248/03 Drinking Water Testing Services
- Clean Water Act
- Human Pathogens and Toxins Act and Regulation (SOR/2015-44)
- Canadian Biosafety Standard and Guidelines
- ISO/IEC 17025:2017 General requirements for competence of testing and calibrating laboratories

Detailed service level descriptions and targets are outlined in the Community Level of Service, Technical Levels of Service and Performance Measures subsections that follow.

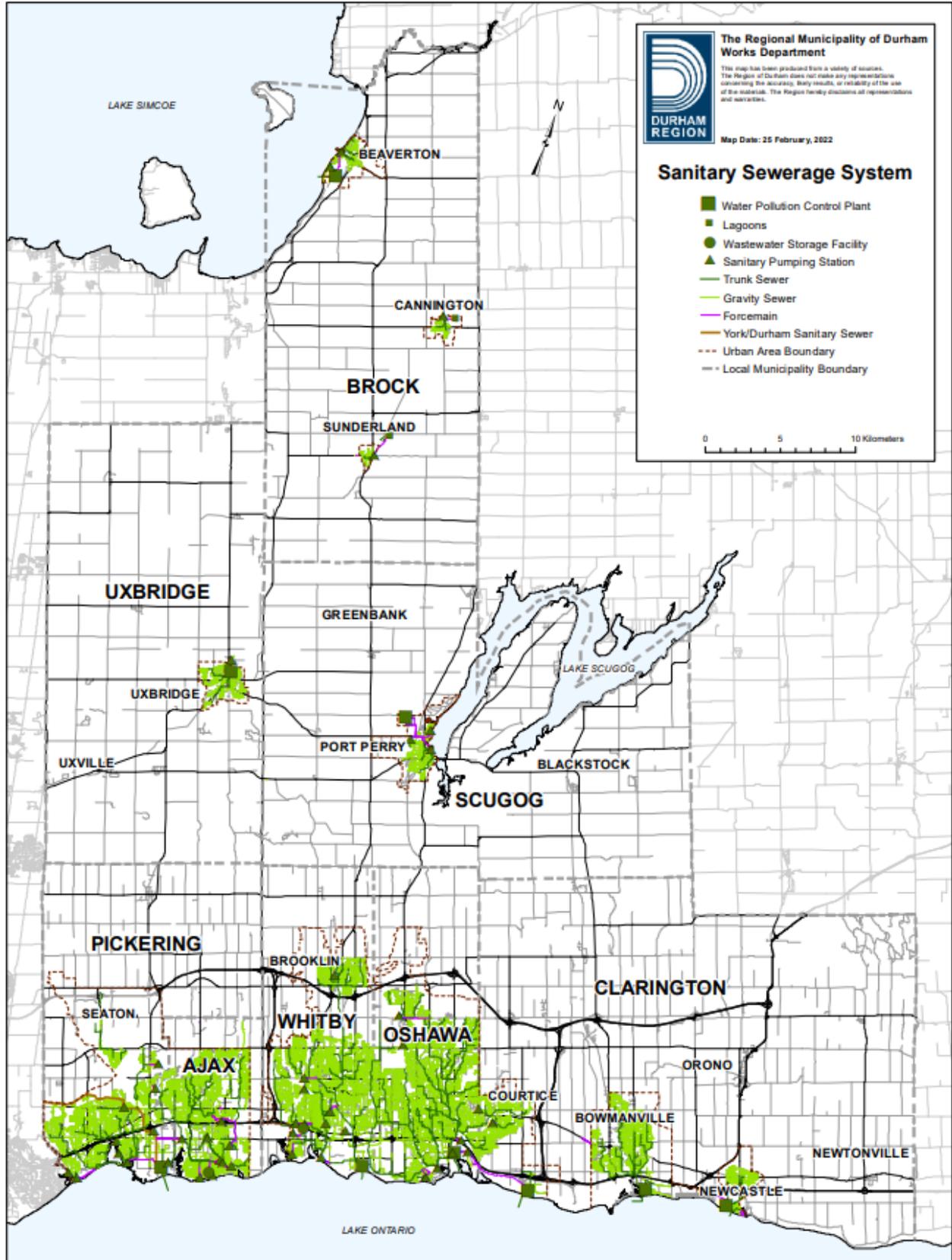
Community Levels of Service

Community levels of service provide qualitative descriptions of service reliability, service standards and service scope as required in Ontario Regulation 588/17.

Table 3: Community Levels of Service

Criteria	Description
Description which may include maps of areas of the municipality that are connected to the wastewater system.	Refer to Map 1.
Description of how stormwater can get into sanitary sewers in the wastewater system, causing sewage to overflow into streets or backup into homes.	Infiltration can occur at poor joints in the pipe or at lids of maintenance holes along the sewer system. In older neighbourhoods, the foundation drains are connected to the sewer system.
Description of how sanitary sewers in the municipal wastewater system are designed to be resilient to avoid events described above.	<p>Annual inflow & infiltration reduction program to continue identifying potential stormwater entry points in the sanitary sewerage system.</p> <p>Additional flow monitoring work on key sewers on selected sanitary sewers to identify cross connections from the storm drainage system and rainwater downspouts.</p> <p>Prohibiting the connection of foundation drains to the sanitary sewerage system for new builds and educating the public on disconnecting existing foundation drains.</p> <p>Backflow prevention program on all water services that could pose a hazard to the municipal drinking water system.</p>
Description of the effluent (treated sewage liquid) that is discharged from sewage treatment plants.	The Region's sanitary sewage is treated in accordance with Ministry of the Environment, Conservation and Parks effluent quality regulations. Effluent undergoes full unit processes as per each plant's Environmental Compliance Approval before being discharged into the plant's approved receiving water body.

Map 1: Map of Durham Region Sanitary Sewerage System



Technical Levels of Service

Ontario Regulation 588/17 includes a list of required technical metrics for sanitary sewerage systems as shown in Table 4.

Table 4: Technical Service Levels per Ontario Regulation 588/17

Technical Metric	Target	Year of Measure		
		2019	2020	2021
Percentage of Properties connected to Region's Wastewater System	100 per cent of Properties with Proximity to a Sanitary Sewer to be Connected	99%	99%	99%
Measures the percentage of properties in proximity to a sanitary sewer that are connected to Durham's wastewater system. Only properties within an Urban Boundary can be potentially connected to a sewage system. Durham has a number of properties in rural areas.				
Number of Effluent Violations Per Year to Total Number of Properties Connected to Region's Wastewater System	0 per cent of Effluent Violations to Properties Connected to Region's Wastewater System	0%	0%	0%
This measures the percentage of effluent violations compared to the total number of properties connected to the Region's wastewater system.				
Number of Wastewater Backups to Total Number of Properties Connected to Region's Wastewater System	0 per cent of Wastewater Backups to Properties Connected to Region's Wastewater System	0%	0%	0%
This measures the percentage of wastewater backups compared to the total number of properties connected to the Region's wastewater system.				

Performance Measures

Beyond community service levels and technical reporting requirements of Ontario Regulation 588/17, a number of performance metrics are being tracked to measure how well assets are meeting service level objectives.

Table 5: Performance Measures

Performance Measure	Target	Year of Measure		
		2019	2020	2021
Condition Index Rating	0.1 per cent of linear assets rated as very poor	0.50%	0.64%	0.60%
<p>Measure identifies the percentage of sewer system (gravity, forcemains, maintenance holes, chambers and service connections) which are in very poor rating calculated on the total replacement value of these assets. Condition scoring factors include material type of pipe, remaining service life, CCTV inspection score and Operational staff input.</p>				
Mainline Sewer Inspections	10 per cent of sanitary sewers inspected by CCTV per year	8.09%	8.26%	6.70%
<p>Measures percentage of sanitary sewers inspected by CCTV every year as per Durham Service Levels. The target is 10 per cent of gravity sewers only (not including siphons) per year so a number of 10 per cent or greater in the above chart is meeting the target. The procedure provides a report on the condition of gravity sewers (preventative inspection). Based on the results, a full replacement or a repair/rehabilitation is scheduled as required.</p>				
Sanitary Maintenance Hole Inspections	50 per cent of maintenance holes inspected annually	44%	46%	47%
<p>Measures the percentage of maintenance holes inspected on a two-year cycle as per Durham Service Levels. The target is 50 per cent inspected each year. It is a preventative maintenance procedure which validates condition.</p>				
Mainline Sewer Cleanings	50 per cent of ≤375mm diameter sewers cleaned annually	50%	43%	49%
<p>Measures percentage of sewers cleaned based on size as per Durham Service Levels. A value in the chart above of 50 per cent indicates that the target has been met for the gravity pipes 375 mm diameter and less. This is a maintenance program that can reduce the number of sewer blockages and emergency type calls.</p>				

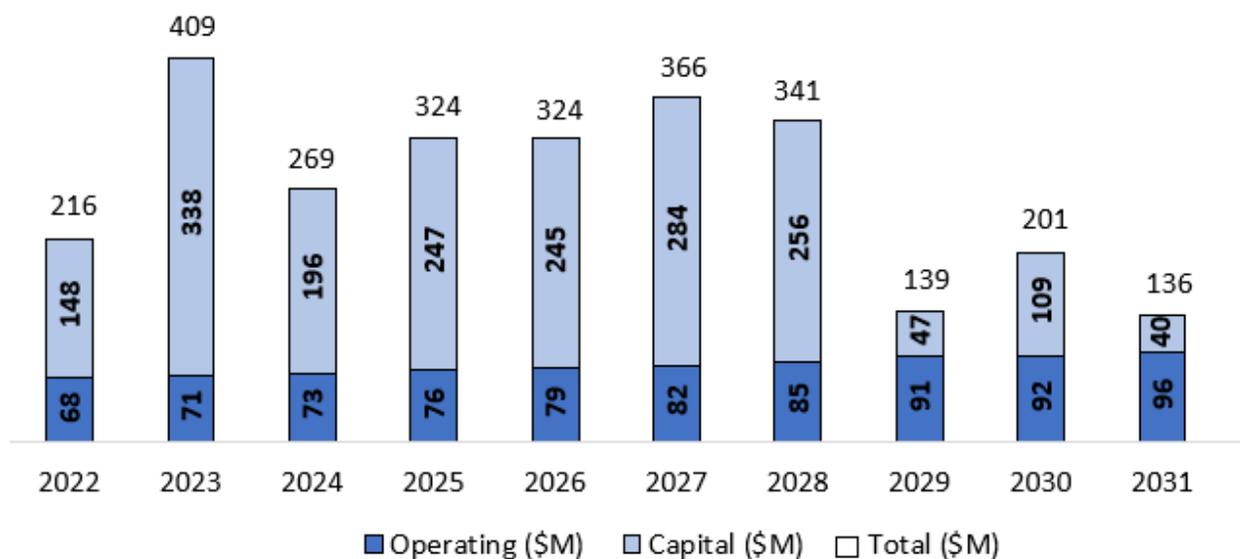
Performance Measure	Target	Year of Measure		
		2019	2020	2021
Condition Index Rating	0 per cent of vertical assets rated as very poor	0.30%	0.30%	0.00%
<p>Measure identifies the percentage of plants, pumping stations and sewage storage facilities which have very poor rating. A high level assessment completed by plant operations staff for the process equipment and facilities staff for the building condition is used for scoring until a detailed condition inspection can be done at that location. It is anticipated that detailed condition assessments of all facilities will be done over the next 5 to 7 years. The condition percentage is calculated on replacement value not number of sites.</p>				
Odour Complaints	0 valid odour complaints per year	0	1	0
<p>Odour complaints can be indicative of the operating process at the sewerage treatment plants. The annual target for this measure is zero valid odour complaints from the public.</p>				
Compliance with MECP Regulatory Requirements	0 per cent wastewater by-passed treatment annually	0%	0%	0%
<p>Measures the percentage of untreated wastewater in accordance with wastewater by-passes as reported to the MECP (numerator) as a share of total megalitres of treated wastewater plus estimated megalitres of untreated wastewater (denominator).</p>				
Back up Power Capabilities	100 per cent of plants and pumping stations with back-up generators	96%	96%	96%
	100 per cent of generators newer than 30 years in age	67%	65%	61%
<p>Ensure that all plants (lagoons not included) and pumping stations have a back up power generator that is no older than 30 years. Only pumping stations that can house a generator are included in the calculation. Portable generators can be used at the other locations. The age measure is calculated using only the number of existing generators currently in place.</p>				

1.6 Lifecycle

Sanitary sewerage system maintenance and rehabilitation lifecycle activities aim to extend the useful life of linear and vertical assets and improve service delivery. For linear assets these renewal activities include pipe liners, ream and seal technology, and pipe segment replacements.

Figure 4 illustrates capital and maintenance lifecycle costs for the Sanitary Sewerage asset class.

Figure 4: Lifecycle Costs Sanitary Sewerage Operating and Capital (\$ millions)*



*Operating and Capital may not add to Total due to rounding.

Total operating lifecycle expenditures for sewer total \$813.6 million over the 2022 Budget and nine-year forecast period while capital funding totals \$1,910.9 million over this period.

Lifecycle Activities

Full replacements are preferred when the linear asset condition is in Very Poor condition, or when there is an opportunity to coordinate with other infrastructure work such as road reconstruction or watermain replacement for cost savings.

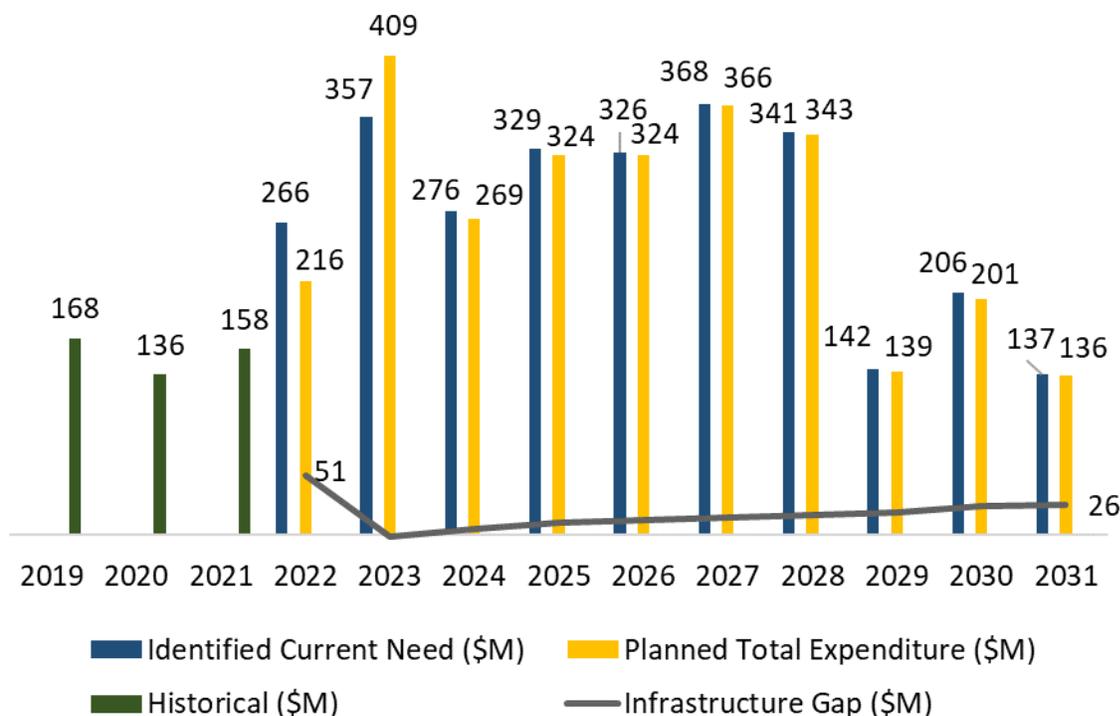
For vertical sewage system assets, lifecycle activities are informed by detailed site-specific condition assessments as well as by Operations and Facilities staff knowledge of issues by attending the various sites regularly. The detailed inspections inform rehabilitation and renewal activities and forecast investment needs over the long-term.

In addition to repair and maintenance activities, other ongoing operating expenditures are required to ensure sanitary sewerage assets can meet service levels. Some examples include overhead costs (e.g., office staff, training, software, etc.), gas and fuel, utilities, chemicals and fleet rentals.

Lifecycle Gap Analysis

Staff have undertaken an analysis to forecast the funding required to optimally sustain current service levels. Any rehabilitation or replacement work required to meet health and safety or legislative standards are reflected in the planned total expenditures while the identified current need builds on the approved budget to accelerate some non-urgent works as illustrated in Figure 5.

Figure 5: Sanitary Sewerage: Lifecycle Gap Analysis (\$ millions)



In 2022, the infrastructure gap is estimated at \$50.6 million. Based on currently planned expenditures this infrastructure gap declines to \$25.8 million in 2031.

The identified current need primarily reflects earlier replacements for some non-urgent linear projects. Not accelerating these projects, may result in increased repair and maintenance work. It is important to note that the planned expenditure investment level poses no health and safety risk or material impacts to service as compared to the identified current need scenario.

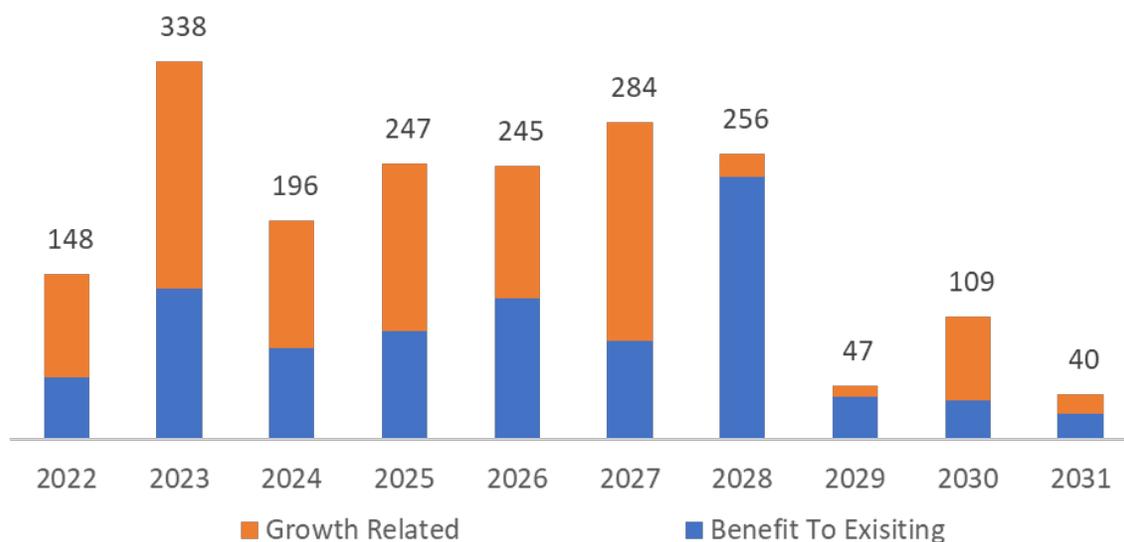
Staff will continue to monitor funding needs and refine identification and assessment processes. The recently implemented enterprise maintenance management and workorder software system, Maximo, will enhance asset management capabilities and allow for improved analysis for lifecycle costing.

Moving forward, staff will be further refining lifecycle costing analysis and data collection for both linear and vertical sanitary sewerage assets that will be reported in future asset management plans.

1.7 Sanitary Sewerage Capital Forecast

Major capital investments for sanitary sewerage services identified through the 2022 business planning and budget process (rehabilitation and growth) total \$147.6 million for 2022 and \$1,763.3 million over the 2023 to 2031 forecast period.

Figure 6: Sanitary Sewerage Capital Forecast (\$ millions)



The 2022 Sanitary Sewerage Systems Business Plans and Budget includes \$8.2 million to address the priority sewer linear assets in poor or very poor condition and \$89.3 million for plant equipment (vertical assets), to address asset management needs.

1.8 Climate Change

Climate Mitigation: Sanitary Sewerage Strategies to Reduce GHG Emissions

The Durham Region Corporate Climate Action Plan has set targets to achieve net-zero GHG emissions by 2045. The corporate GHG inventory includes emissions produced to pump and treat wastewater as well as non-energy GHG emissions associated with wastewater management operations.

Combined, water and wastewater treatment operations are the largest sources of corporate energy consumption and, in 2020, produced approximately 27,200 tCO₂e or 16 per cent of total corporate emissions. These emissions are largely related to wastewater treatment, which includes non-energy GHG emissions.

Key climate change mitigation accomplishments for sanitary sewerage systems in 2021 include:

- Completion of an Integrated Resource Recovery study for the Duffin Creek Water Pollution Control Plant on behalf of Durham and York Regions. This study outlines several projects with significant GHG reduction potential that will be evaluated by Regional Staff in collaboration with York Region for inclusion in future business plans, budgets and long-term capital forecasts.

Key Budget 2022 to 2031 initiatives that support GHG reductions include:

- Completion and implementation of the Water & Wastewater GHG Emission Management Strategy.
- Significant sanitary sewerage process and facility upgrades scheduled for 2022 and 2023 including blower upgrades at Harmony Creek and Courtice Water Control Pollution Plants and the implementation of initiatives from Durham's Energy Conservation and Demand Management Plan.

Climate Adaptation: Increasing the Resiliency of Sanitary Sewerage System

A changing climate can put additional pressures on systems through extreme weather events that necessitate proactive measures and modifications to system design. Priority climate change mitigation measures for sanitary sewerage system include:

- Ensure adequate standby power, redundancies, business continuity and supervisory control and data (SCADA) systems throughout program areas;
- Reduce potential infiltration and inflow of groundwater or stormwater into the sanitary sewer collection system to mitigate flooding and inflow risk;
- Enhance erosion protection at creek crossings to protect sanitary sewer systems; and,
- Assess climate adaptation requirements within the asset management planning process to inform:
 - Operations and preventative maintenance programs;
 - Capital rehabilitation and replacement priorities;
 - Inventory management planning; and,
 - Redundancy and contingency planning.

Climate adaptation will continue to be addressed through the business planning, budget and long-term financial planning processes to ensure a proactive approach.

1.9 Risk Assessment

Regional staff investigate potential risks to sanitary sewerage system assets on an ongoing basis. Table 6 highlights some high impact potential risks as well as ongoing and new risk mitigation measures.

Table 6: Sanitary Sewerage Systems Risk Mitigation Strategies

Risk	Mitigation
Broken forcemain/trunk sanitary sewer	<p>Pipe twinning capital program to increase forcemain redundancy.</p> <p>SCADA system alerts, controls and improvements.</p> <p>Maintain emergency, contingency re-routing and continuity plans.</p> <p>Forcemain condition assessment pilot project.</p> <p>Inspection and asset repairs, maintenance, and replacements.</p>
Sanitary sewerage inflow and infiltration (I&I)	<p>Gather data to understand performance during extreme storms.</p> <p>System repairs, proactive maintenance, and capital investments.</p> <p>Monitor flows, conduct household drainage surveys and I&I education.</p> <p>Minimize on-site water retention.</p>
Disruptions to wastewater treatment services (e.g. extended loss of power)	<p>Maintain emergency, contingency and continuity plans.</p> <p>Ensure adequate stand-by power and UPS as needed.</p> <p>On-call service contracts.</p> <p>SCADA alerts, response, communication and control.</p> <p>Repairs, preventative maintenance and rehabilitation investments.</p>
Potential contamination of adjacent drinking water sources	<p>Source Water Protection Plan implementation.</p> <p>Phosphorous Reduction Strategy.</p> <p>Effluent Requirements.</p> <p>Sewer Use By-law.</p> <p>SCADA alerts, response, communication and control.</p> <p>Monitor and ensure adequate capacity at all facilities.</p> <p>Vertical and linear condition assessments.</p> <p>Plant upgrades/ replacements.</p> <p>Capital improvements and effluent improvements.</p> <p>Maintain emergency, contingency and continuity plans.</p>

1. Transportation System Asset Class Report (Attachment #4)

Service Level Objectives
<ul style="list-style-type: none"> ● Achieve and maintain an acceptable condition standard for all Regional transportation assets. ● Regional roads will be continuous and connected. ● Regional roads will be reliable, functional, and serve all modes and users as appropriate and feasible within the context of each project. ● Regional roads will be expanded and grow with the Region to provide capacity for users. ● Continue to plan asset management infrastructure investments that recognize service impacts.



Total 2021 Replacement Value
\$4,500.0 million
 ↑ 14% from 2020

Average Condition
 (Year-over-Year Trend)
C+ ➡

2,461 lane km Road Network

120 Bridges

120 Culverts >3m

11,406 Storm Appurtenances
(catchbasins, etc.)

352 km Storm Mains and
Culverts <3m

16 Traffic Management Systems

21,454 Traffic Control (Flashing
Beacons, Signs, etc.)

338 km Traffic Communication
Infrastructure

111 km Roadside Protection

108 CCTV

1.1 Description of Transportation System Assets

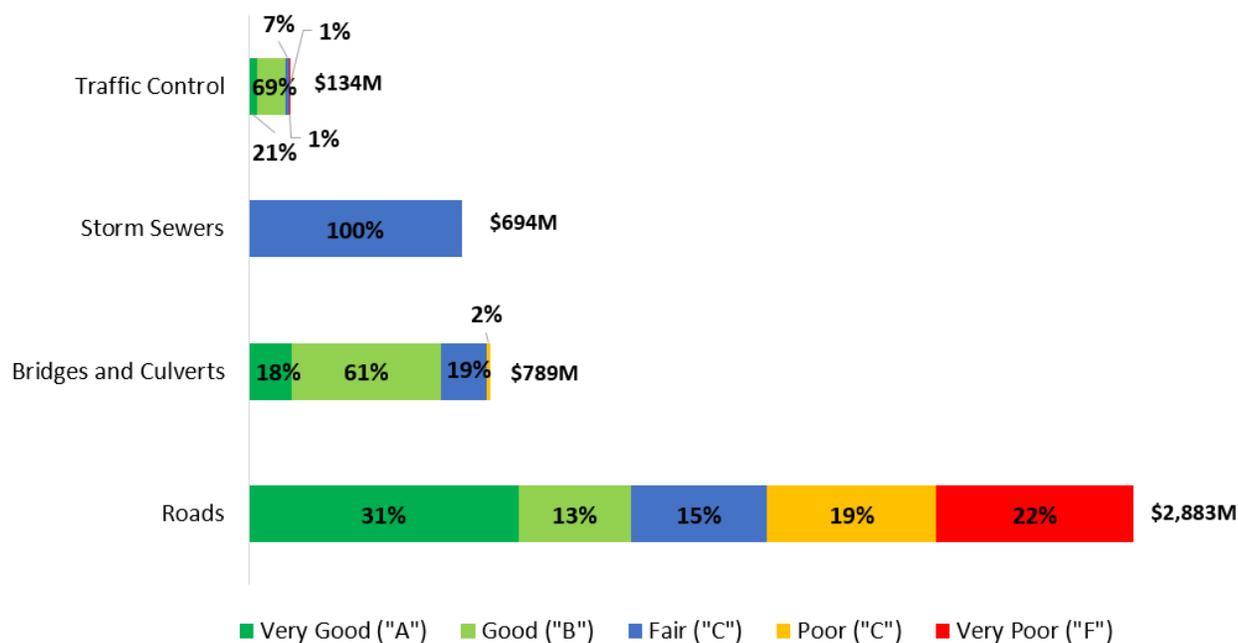
Durham’s transportation system assets include a network of urban and rural arterial road segments (including bus only and cycling lanes), bridges, culverts, infrastructure to capture storm water flows from Regional roads, traffic control and safety systems.

1.2 Transportation Condition Ratings, Replacement Values and Average Ages

The Transportation asset class has an overall condition rating of C+ comprised of road network (C+), storm sewers (C), bridges and culverts greater than 3m in length (B), and traffic control (B). Condition ratings have remained stable year-over-year for Transportation asset classes.

The average Pavement Condition Index (PCI) for Regional Roads was 52.0 in 2021, a slight decrease from 53.5 in 2020. The average Bridge Condition Index (BCI) for bridges remained stable year over year and the average BCI for culverts greater than 3m slightly improved to 74.2 in 2021 from 73.8 in 2020. Further details can be found in Table 4. There is one bridge with a load restriction, that is proposed for replacement with approved capital funding. There is also one bridge with a dimensional restriction due to reduced/minimal vertical and horizontal clearances.

Figure 1: Transportation Condition and Replacement Values



*Condition ratings for assets may not add to 100 per cent due to rounding

Overall replacement value of \$4.5 billion represents an increase of 13.5 per cent (\$536.6 million) from 2020 to 2021 driven primarily by inflationary increases to construction and material costs, shifts among the four types of roads and other minor increases to overall asset inventory.

1.3 Transportation Condition Assessment Methods

Table 1 provides details on the assessment methods used to determine the condition of Transportation assets.

Table 1: Transportation Assets Condition Assessment Methods.

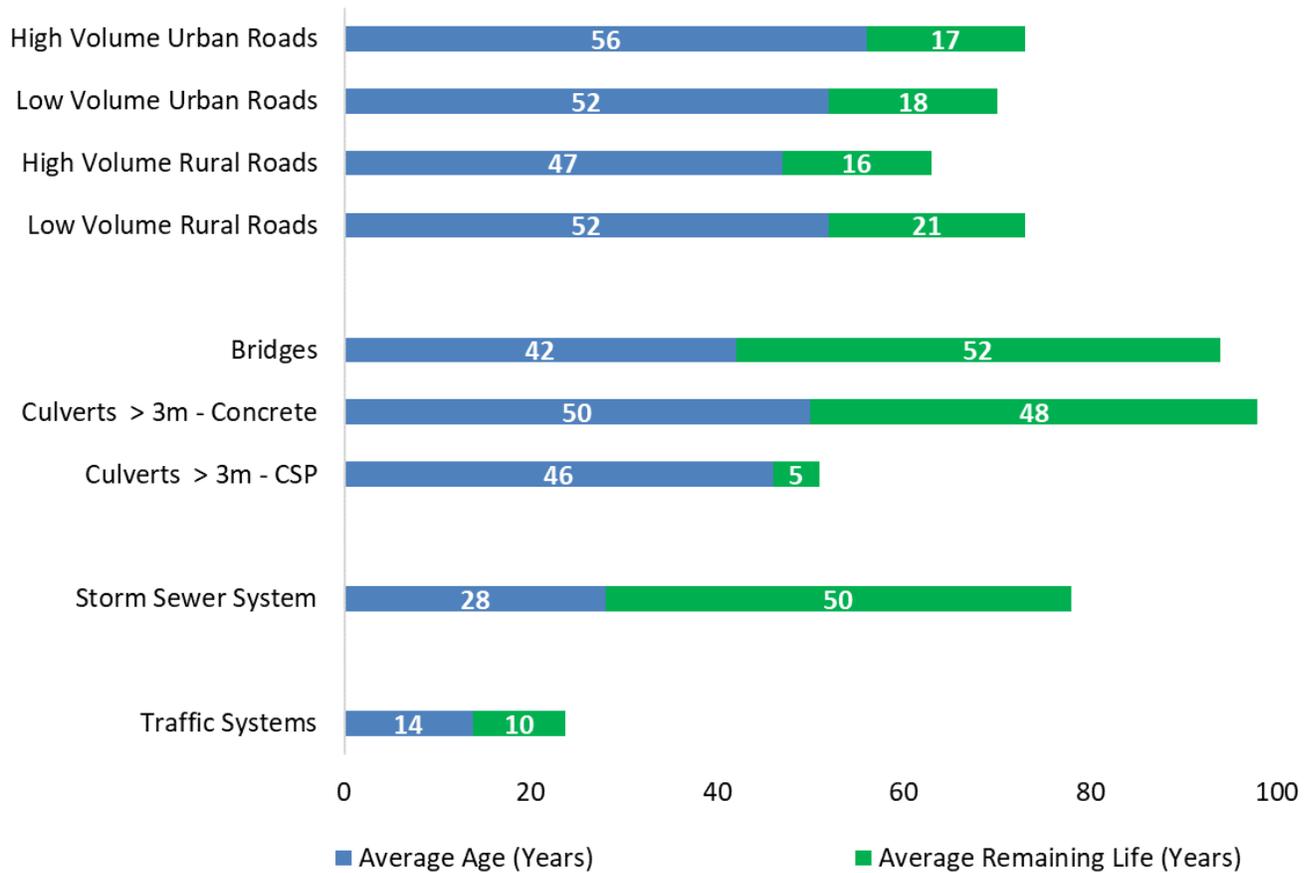
Asset Class	Assessment Methods
Roads	Works Department assessment of pavement for 50 per cent of the road network annually to generate a Pavement Condition Index (PCI) based on: <ul style="list-style-type: none"> • Road surface condition (i.e., ride). • Structural adequacy (i.e., distress). PCI is converted into a condition rating.
Bridges and culverts greater than 3m*	Works Department assessment of 50 per cent of inventory annually to generate Bridge Condition Index (BCI). For BCI, each structure element is inspected in accordance with the Ministry of Transportation Ontario Structure Inspection Manual 2018. BCI is then calculated using the MTO Bridge Condition Index Manual 2009 and is a weighted average of all structure elements and their conditions. BCI is converted into a condition rating.
Traffic Control Signals	Each signalized intersection is rated based on condition.
Traffic Signs	Visual condition assessments including testing for reflectivity.
Other Traffic Assets	A combination of condition assessments and age-based assessments.

*BCI is not used to rate or indicate the safety of a bridge or culvert. Any safety issues are immediately reported to the Region by the inspector for immediate action and repair.

1.4 Transportation System Average Age and Remaining Useful Life

Figure 2 summarizes the average age and remaining life of the transportation system as of December 31, 2021.

Figure 2: Transportation System Remaining Useful Life



1.5 Levels of Service and Performance Measurement

Service levels objectives and performance targets are set through Regional Council approved master plans, studies, policies and procedures, as well as through departmental studies and regulatory and/or compliance guidelines.

Table 2: Plans, Studies, Policies, Procedures, Regulations that Inform Service Levels

Departmental Plans, Studies, Policies, & Procedures
<ul style="list-style-type: none"> • Transportation Master Plan • Road Maintenance Operations Service Levels • Transportation System Design and Maintenance Standards and Specifications • Salt Management Plan • Traffic and Parking By-law • Intelligent Transportation System Strategic Plan • Sign Inventory and Reflectivity Review • Roadside Protection Inventory Review • Regional Cycling Plan • Vision Zero
Regulatory Compliance Guidelines and Requirements
<ul style="list-style-type: none"> • Minimum Maintenance Standards for Municipal Highways (Ontario Regulation 239/02) • Standards for Bridges (Ontario Regulation 472/10) • Public Transportation and Highway Improvement Act, • Transportation Association of Canada Geometric Design Guide for Canadian Roads • Environmental Assessment Act • Canada Transportation Act • Highway Traffic Act

Detailed service level descriptions and targets are outlined in the Community Level of Service, Technical Levels of Service and Performance Measures subsections that follow.

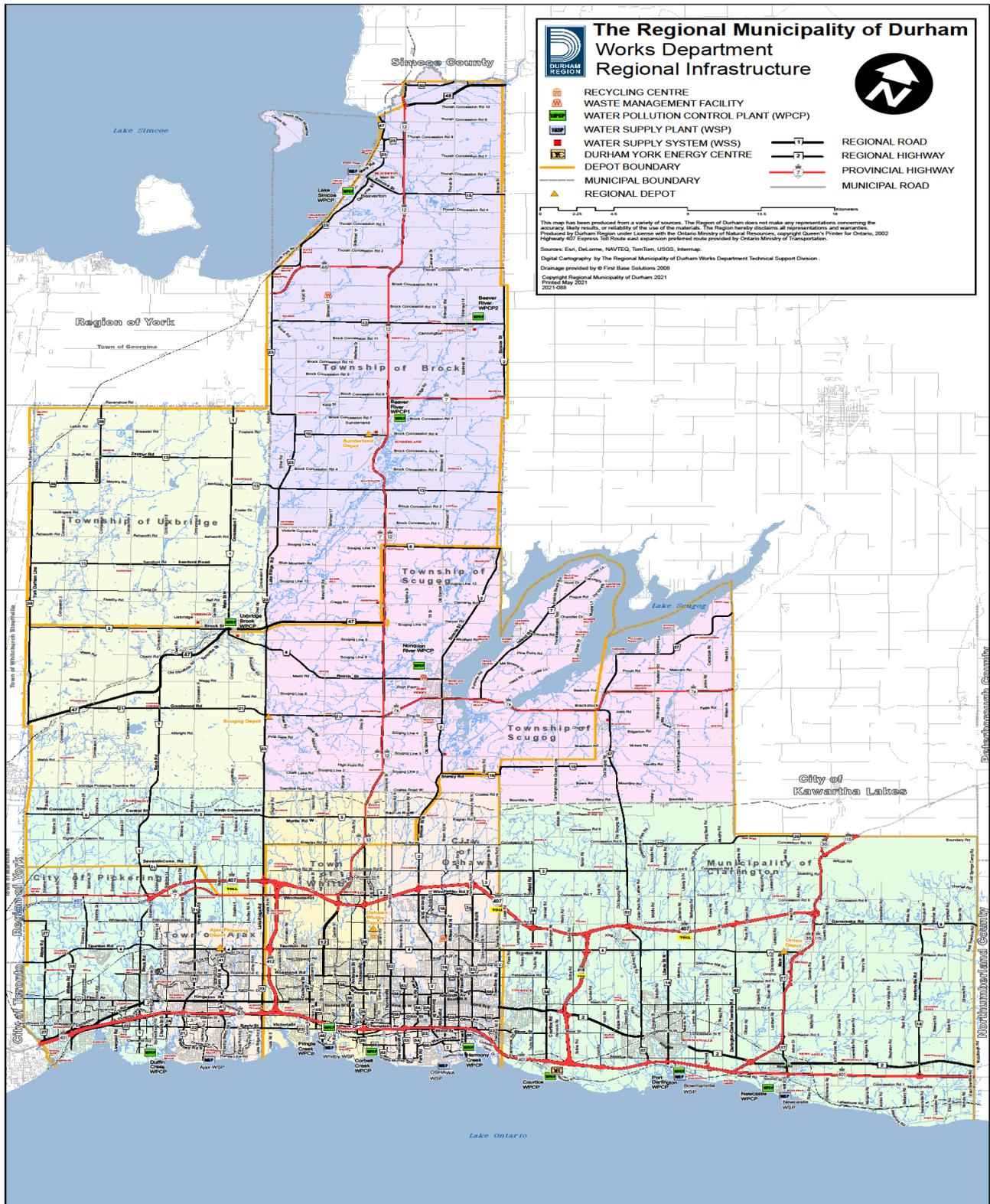
Community Levels of Service

Community levels of service provide qualitative descriptions of service reliability, service standards and service scope and reporting criteria are mandated in Ontario Regulation 588/17.

Table 3: Community Levels of Service

Criteria	Description
Description, which may include maps, of the road network in the municipality and its level of connectivity.	Refer to Map 1.
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.	Refer to Map 2.
Description or images that illustrate the different levels of road class pavement condition.	Refer to Figure 3.
Description of the traffic that is supported by municipal bridges (e.g., heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, cyclists).	The Region’s bridges and culverts are designed, built and support all vehicular traffic, including motor vehicles, heavy transport vehicles and emergency vehicles. Cyclists and pedestrians are also accommodated where bike lanes, sidewalks and/or multi-use paths are provided on the bridge structures.
Description or images of the condition of bridges and how this would affect use of the bridges.	Refer to Figure 4.
Description or images of the condition of culverts and how this would affect use of the culverts.	Refer to Figure 4.

Map 1: Durham Region Road Network



Map 2: Regional Floodplain Potential

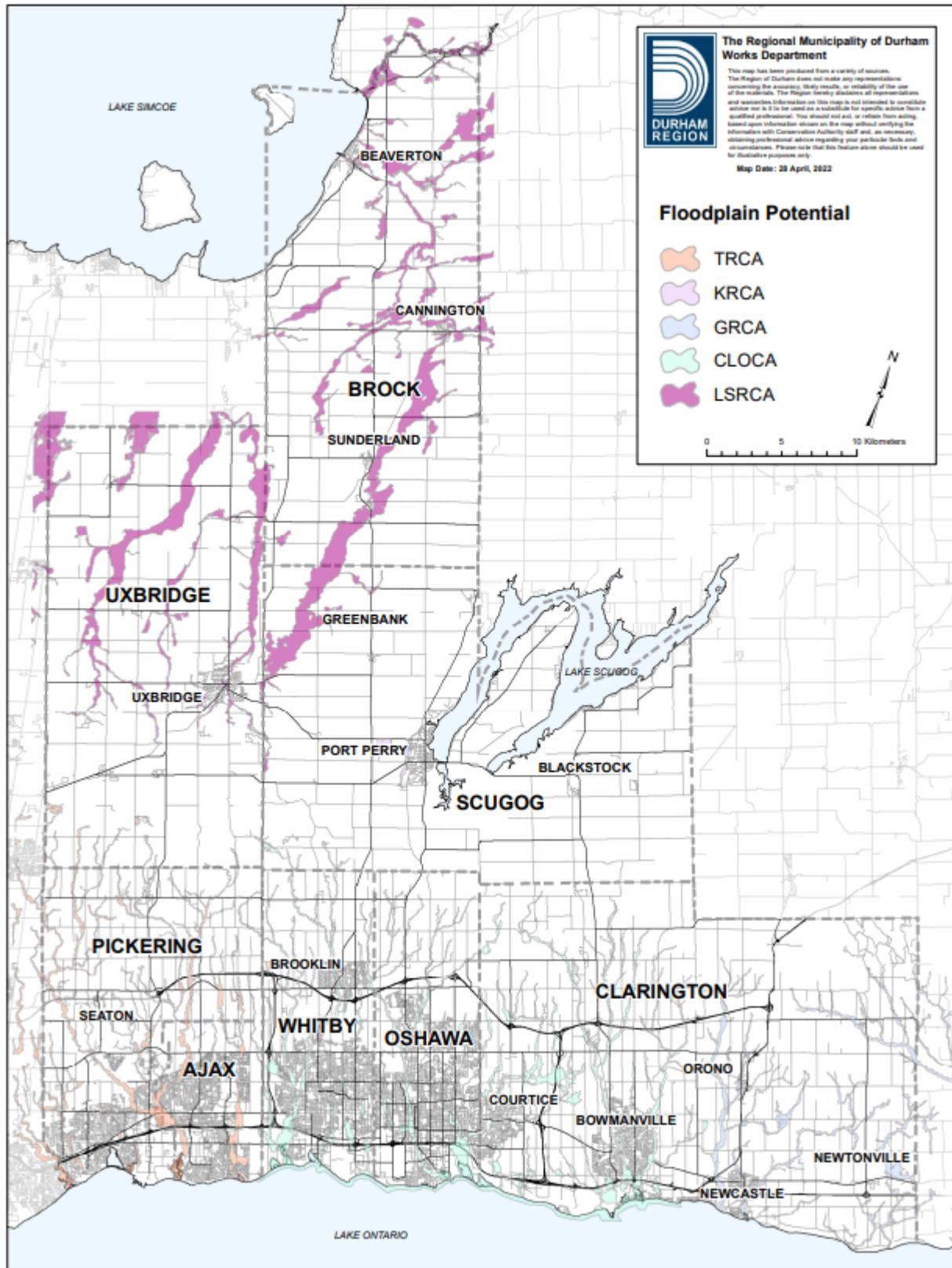


Figure 3: Regional Road Condition Index Rating

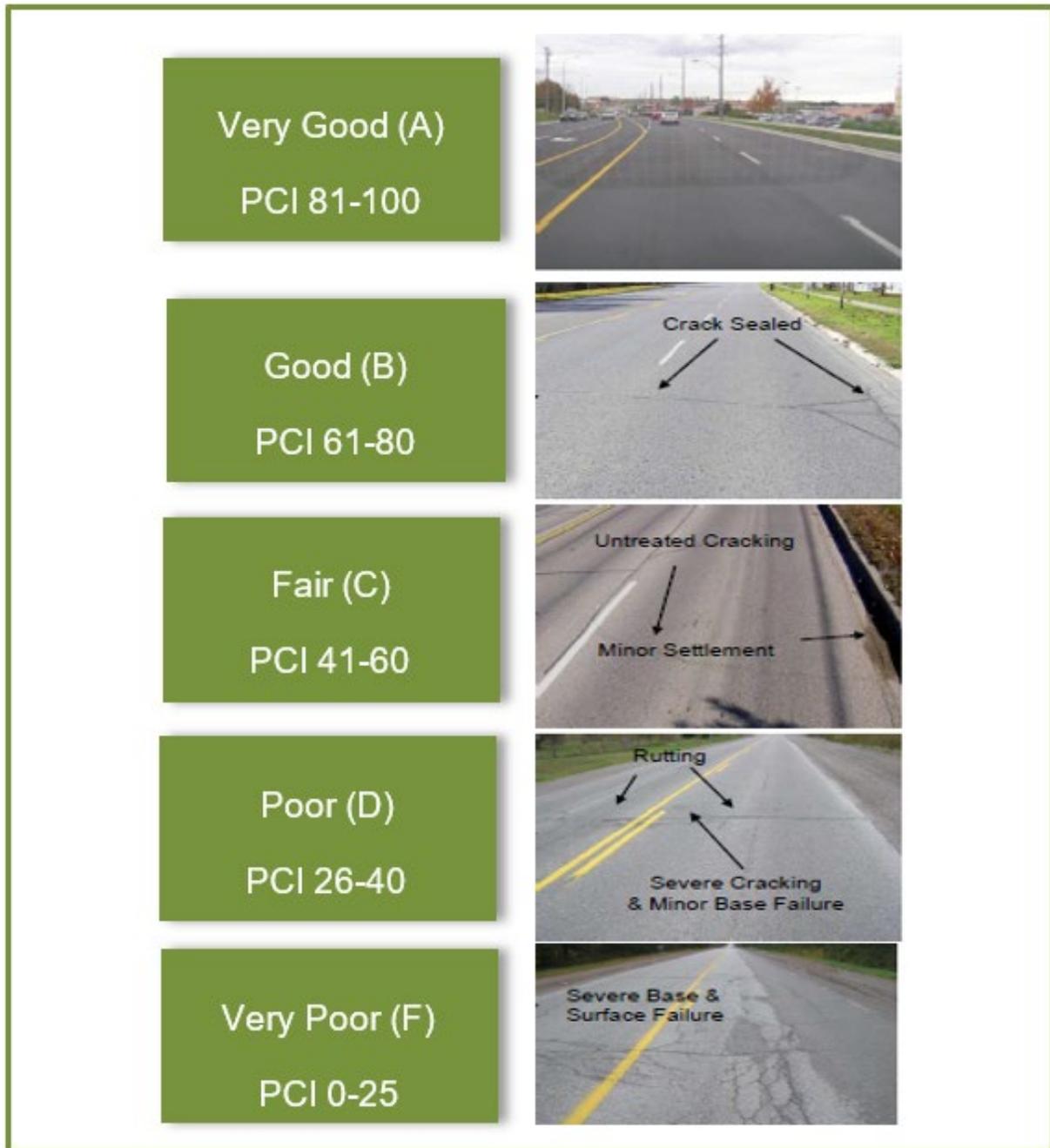


Figure 4: Structure BCI Condition Ratings

Rating	Bridge Condition	Culvert Condition	Description/How Condition Impacts Use
<p>Very Good (BCI 80-100)</p>			<p>New bridge or culvert, no signs of deterioration, use not affected</p>
<p>Good (BCI 70-79)</p>			<p>Minor signs of deterioration, minor levels of maintenance required, use not affected</p>
<p>Fair (BCI 60-69)</p>			<p>Signs of deterioration, exceeding levels of maintenance, may require load posting</p>
<p>Poor (BCI < 60)</p>			<p>Significant deterioration, approaching end of service life, may require load posting</p>

Technical Levels of Service

Ontario Regulation 588/17 mandates reporting on prescribed technical metrics for roads, bridges, culverts greater than 3m and stormwater management assets.

Table 4: Technical Levels of Service per Ontario Regulation 588/17

Technical Metric	Target	Year of Measure		
		2019	2020	2021
Network average pavement condition index (PCI)	Network average PCI rating of 65	53.0	53.5	52.0
PCI summary of every regional road segment in a network-weighted average. PCI is rated between 0 to 100, with 100 being the best condition and 0 being the worst condition.				
Number of lane km's of regional roads Per Durham's land area (km ²).	To achieve a target of 1.1	0.94	0.95	0.97
This measure reports the number of Regional road lane kilometres as a proportion of the size of the Region's land area (2,537 km ²) and can identify growth in the Regional road network over time relative to its land size.				
Weighted average bridge condition index value for structures	Network weighted average BCI rating of 70 for Bridges	76.4	76.6	76.6
	Network weighted average BCI rating of 70 for culverts (> 3m)	74.1	73.8	74.2
Summary of the weighted average bridge condition index (BCI) value for bridges and culverts greater than 3m.				
Number of bridges with loading and dimensional restrictions	To have no bridges with loading or dimensional restrictions	1	2	2
This measure summarizes the number of bridges that have loading and/or dimensional restrictions. The target is 0 to ensure the transportation network is fully accessible, functional and available for all users.				
Percentage of properties in municipality resilient to a 100-year storm	90% of properties resilient to 100-year storm	N/A	N/A	94%
2021 is the first year technical levels of service for stormwater were analyzed/reported. These measures will continue to be reviewed and refined for future Asset Management Reports.				

Technical Metric	Target	Year of Measure		
		2019	2020	2021
Percentage of the municipal stormwater management system resilient to a 5-year storm	100 per cent of the SWM system resilient to a 5-year storm	N/A	N/A	98%
2021 is the first year technical service levels for stormwater were analyzed/reported. These measures will continue to be reviewed and refined for future Asset Management Reports.				

Note the Region does not have unpaved, collector or local roads and does not report on these technical metrics

Performance Measures

Beyond community service levels and technical reporting requirements of Ontario Regulation 588/17, Transportation tracks a number of performance metrics to measure how well assets are meeting service level objectives.

Table 5: Transportation Performance Measures

Performance Measures	Target	Year of Measure		
		2019	2020	2021
Road Condition Distribution	No more than 25 per cent of Inventory is in Poor to Very Poor Condition	41%	41%	42%
Measure identifies percentage of road assets falling into the Poor to Very Poor condition category. Target recognizes that implementation of additional funding generally is phased over time. Condition distribution provides a clearer overall picture rather than just focusing on one asset condition. Current/Baseline measure data is the percentage of total lane kms.				
Structure Condition for Bridges and Culverts	85 per cent of Structures Rated Good to Very Good	79.9%	76.4%	71.3%
This measure summarizes the percentage of bridges and culverts that are rated in Good to Very Good condition based on the bridge condition index (BCI) value.				

1.6 Lifecycle

Transportation lifecycle activities include capital investments and operating activities required to meet service needs at the lowest cost and risk for Regional roads, bridges, culverts, stormwater management systems assets and traffic systems over their entire useful lives.

Figure 5 illustrates operating and capital lifecycle costs for the Transportation asset class.

Figure 5: Lifecycle Costs Transportation Operating and Capital (\$ millions)*



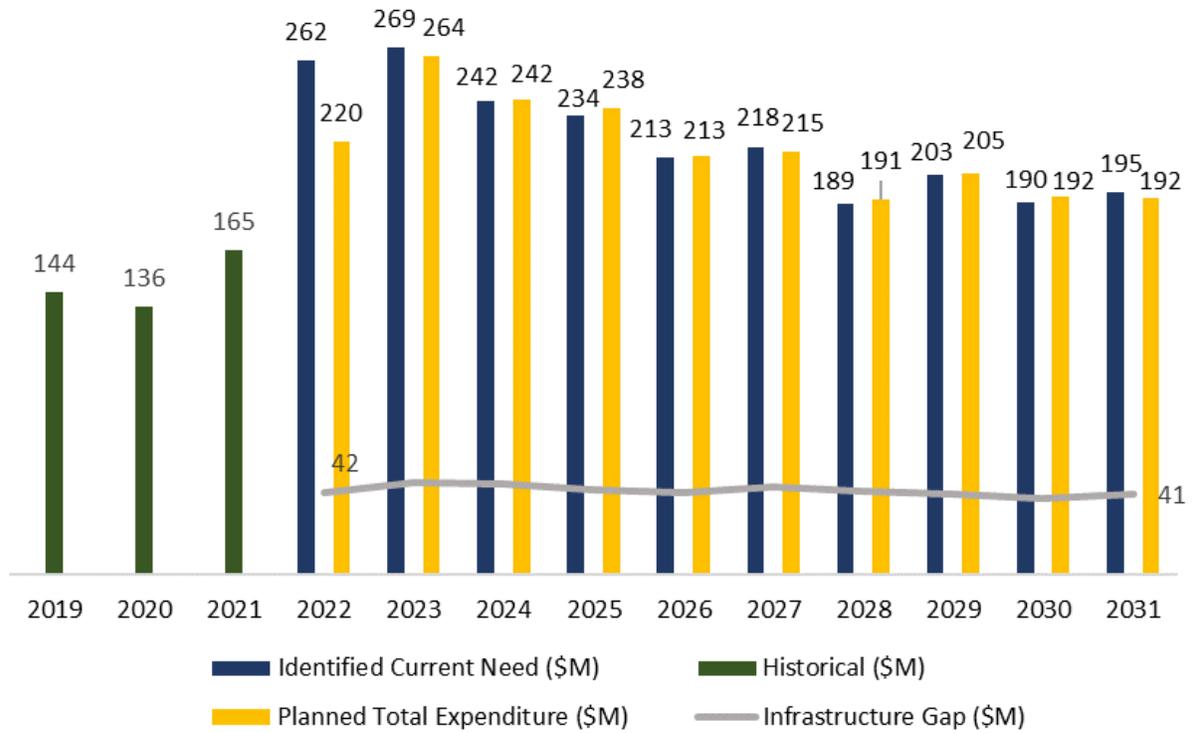
*Operating and Capital may not add to Total due to rounding.

Staff in various service areas of Transportation (Roads, Structures and Traffic) have undertaken an analysis to forecast the current funding required to optimally sustain current service levels. Figure 6 illustrates historical lifecycle costs as well as identifies an infrastructure gap for the Transportation Asset class as a whole. Any rehabilitation or replacement work required to meet health and safety or legislative standards are reflected in the planned total expenditures.

In 2022, the infrastructure gap is estimated at \$41.6 million. Based on currently planned expenditures this infrastructure gap declines slightly to \$41.0 million.

Further details on lifecycle costing and the identified infrastructure gap are provided in the subsections that follow.

Figure 6: Transportation: Lifecycle Gap Analysis (\$ millions)



Roads

Timely road maintenance and rehabilitation lifecycle activities can extend the useful life of a road avoiding costly, premature replacement and improve PCI ratings for the Regional roads network. Figures 7 and 8 illustrates how following rehabilitation and maintenance guidelines can prolong the useful life of a road.

Figure 7: Preventative Maintenance Impact on Road Replacement (High Volume Urban)

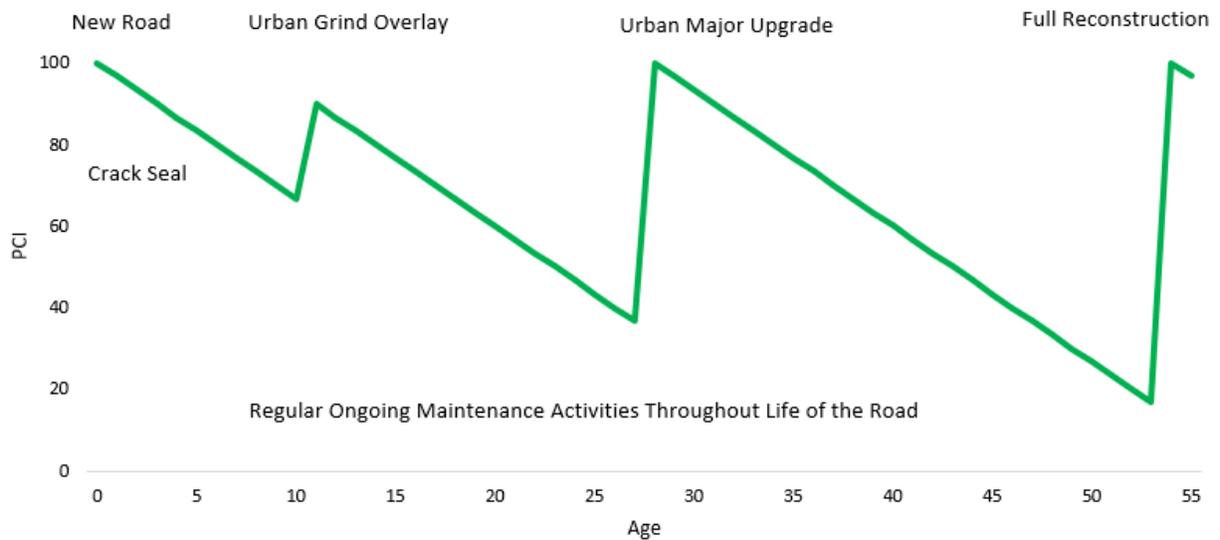
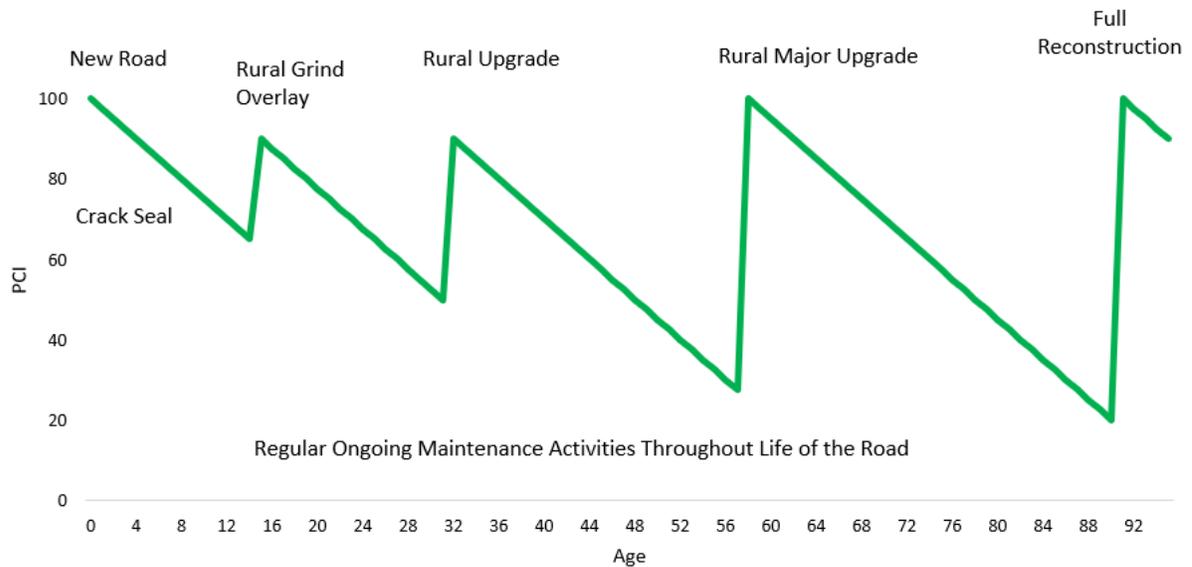


Figure 8: Preventative Maintenance Impact on Road Replacement (Low Volume Rural Roads)



The Region uses a road rehabilitation optimization software program, along with road treatment guidelines (Table 6), and the consideration of other factors (e.g., volumes), to determine the timing and type of treatment to be applied within the confines of available funding.

Table 6: Road Maintenance Guideline

Activity	PCI Criteria	PCI Reset
Rural/Urban Crack Treatment	PCI >80<= 90	Maintain
Rural Grind Overlay	PCI >65<= 75	90
Rural Upgrade	PCI >35<= 65	90
Rural Major Upgrade	PCI =>20<= 35	100
Rural Reconstruction	PCI <20	100
Urban Grind Overlay	PCI >45<= 70	90
Urban Major Upgrade	PCI >30<= 45	100
Urban Reconstruction	PCI<= 30	100

The exact timing and type of road lifecycle treatment can vary due to car and truck volumes and strategic prioritization decisions. For example, there may be instances where it would be beneficial to allow the pavement condition of a particular road to reach the next suggested treatment type to align timing of rehabilitation works.

In addition to maintenance activities, staff must undertake other ongoing operating activities to ensure that Regional roads deliver their expected levels of service. Some key non-maintenance operating lifecycle activities include winter plowing, roadside dust control, and overhead (payroll, communication expenses, vehicle fuel) at facilities and depots.

The identified current need for roads is not met in planned expenditures resulting in a cumulative infrastructure funding gap of \$31.2 million by 2031. Identified current needs represents a backlog of reconstruction or rehabilitation of roads falling below a PCI of 65. Planned expenditures reflect prioritizing road investments and an overall slower pace of improving network road conditions.

Bridges and Culverts (greater than 3m)

The bridges and culverts greater than 3m are inspected biennially, where a Bridge Condition Index (BCI) is calculated that assists in informing which treatment shall be applied to structures to maintain or improve their condition. The BCI is not used to rate or indicate the safety of a bridge or culvert. Any safety issues are immediately reported to the Region by the inspector for immediate action and repair.

The Region's bridge investigations and repair programs including deck repair program, expansion joint replacement program, and culvert repair program, are essential to maintaining the Region's bridge network in a safe and optimal condition and extending their useful life at the lowest cost to taxpayers.

In addition to maintenance activities, staff must undertake other ongoing operating activities to ensure that Regional structures deliver their expected levels of service. Some key non-maintenance operating lifecycle activities include tree and lawn cutting, bridge cleaning/washing, and overhead (staff support and administrative expenses).

The current approved budget and planned nine-year forecast are meeting service needs for bridges and culverts, as such there is no identified infrastructure funding gap.

Traffic

The capital traffic program targets and prioritizes annual modernization needs of aging traffic signal equipment (typically traffic signal controllers) to improve reliability, functionality, and operating efficiency as well as to address the replacement for LED traffic signals.

In addition to capital replacement and improvement activities, staff must undertake operating activities to ensure that the traffic network delivers its expected levels of service. Some operating costs include overhead (payroll, communication expenses, uniforms, software), signal maintenance and systems and a portion of facility costs for 101 Consumers Drive in Whitby.

The identified current need for Traffic is not met in planned expenditures resulting in a cumulative infrastructure funding gap of \$9.8 million by 2031 primarily to accelerate certain non-urgent projects (e.g., uninterrupted power supply) and accelerate replacement of certain assets to improve service delivery.

The planned expenditures deliver traffic signal capital improvements according to forecast and approved schedules which result in improved service over the nine-year forecast period without the risk of premature replacement of assets. It is important to note that the approved budget and forecast poses no health and safety risk as compared to the identified current need scenario.

Going forward, lifecycle costing for Transportation will be refined including refining assumptions to identify needs and further defining traffic service levels. These improvements will be reflected in future asset management reports and lifecycle gap analysis.

1.7 Transportation Capital Forecast

The 2022 Transportation capital budget totals \$176 million including:

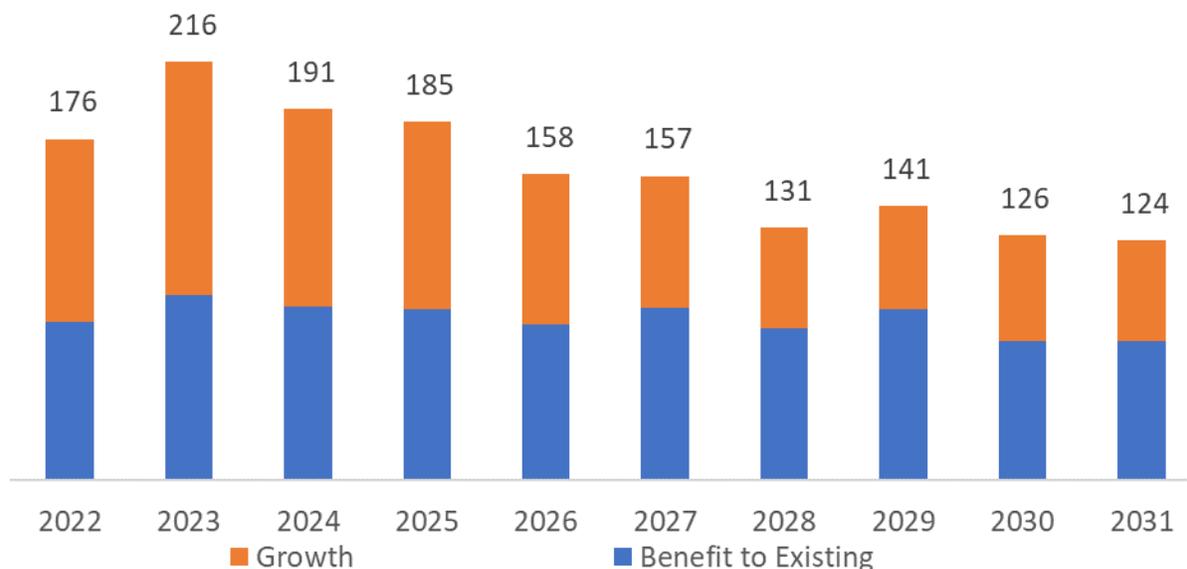
- \$38.7 million for road rehabilitation projects, \$12.8 million for bridge rehabilitation and replacement projects.
- \$32.3 million in Transportation infrastructure to support bus rapid transit which is partially funded through the Investing in Canada Infrastructure Program Transit Stream (ICIP). This initiative will contribute to reducing community GHG emissions.

- \$1.5 million in capital expenses related to increasing safety on the Regional road network.

The total transportation capital expenditure over the 2023-2031 forecast period is estimated at \$1.4 billion. Key highlights of the forecast include:

- Annual average investment of \$45 million throughout the forecast period to bring the average pavement condition of the Region’s road network from its current Pavement Condition Index (PCI) level of 53 to 65.
- The forecast also includes significant costs related to bridge rehabilitation and replacements, including pressures in 2023 related to the advancement of rehabilitation work on three bridges in coordination with Metrolinx as it implements the Bowmanville GO Rail Expansion project.
- \$13.6 million in cycling infill projects over the forecast to support the Regional Cycling Plan.

Figure 9: Transportation Capital Forecast (\$ millions)



1.8 Climate Change

Climate Mitigation: Transportation Strategies to Reduce GHG Emissions

The Durham Region Corporate Climate Action Plan has set targets to achieve net-zero GHG emissions by 2045. The corporate GHG inventory related to Transportation assets includes emissions associated with Works Depots used to support the operating and maintenance of the Regional Road network and from operating traffic signals. Emission details related to Works department (fleet and depots) activities to maintain the Regional Roads network can be found in the Facilities and Fleet attachments. GHG emissions from Transportation assets represent a very small portion of overall corporate emissions.

Ongoing and planned activities to reduce Transportation GHG emissions include:

- In 2022, the Regional Road 18 Pilot Reconstruction Project will divert 6 tonnes of mixed plastic and 400 tonnes of recycled glass from Durham Region's Material Recovery Facility (MRF) and incorporate it into new asphalt. This will reduce the amount of virgin material mined and trucked for road construction.
- Studying innovative technologies for future incorporation of an estimated 300 tonnes of mixed plastic, 240 tonnes of PET plastic and all recycled glass processed at Durham Region's Material Recovery Facility into new asphalt through the Region's annual road program.

Climate Adaptation: Increasing the Resiliency of Transportation Assets

Staff continue to assess transportation strategies to mitigate against the impacts of a changing climate and have already integrated several considerations into Regional business and financial plans.

Risk and climate related mitigation programs for 2022 include:

- Continuation of the Uninterrupted Power Supply (UPS) for traffic signals to ensure adequate backup power for key intersections (\$0.5 million);
- Structure investigations (\$0.1 million);
- Paved shoulders for rural road construction projects where feasible (as recommended in the Transportation Master Plan); and
- Other ongoing traffic initiatives including \$0.6 million for Intelligent Transportation Systems (ITS) projects, \$0.9 million for Accessible Pedestrian Signal (APS) installations, and \$1.5 million for roadway safety program and Durham Vision Zero Program.

Moving forward, staff will continue to investigate, monitor, and explore ongoing proactive strategies and programs, which help prevent adverse climate impacts to roads and structures including:

- Resilient Asphalt: Monitoring the impacts of climate changes on the performance of asphalt and concrete products used in regional roads construction, with product specifications adjusted as needed to mitigate and enhance materials' performance;
- Adaptive Structures (culverts, bridges and storm sewers): Monitoring of the impacts from increased storm intensity on the capacity and integrity of regional structures;

- The Region, in consultation with conservation authorities, including the Toronto and Region Conservation Authority (TRCA) and the Central Lake Ontario Conservation Authority (CLOCA) undertook a flood risk assessment of the regional roads and capacity assessment of watercourse crossing (bridges and culverts) under the current and future climate scenarios (2050's and 2080's) to help identify candidate projects for enhanced resilience measures. Regional staff are analyzing the results of the study for implications on business and asset management planning;
- Embankment and Erosion Control: Adjusting specifications and design criteria to mitigate erosion. Road shoulders are primed with liquid asphalt and liquid calcium chloride to control dust and erosion with frequent inspections of erosion prone areas; and
- Road Safety and Response: State-of-the-art road weather information systems to monitor weather/pavement conditions (e.g. infrared road temperature sensors).

Staff will continue to ensure asset management plans advance long-term and effective responses to climate change.

1.9 Risk Assessment

Table 7 includes a sample of identified risks for the Region's Transportation assets in achieving its service level standards as well as the mitigation controls to address these risks.

Table 7: Risk Mitigation Strategies

Risk	Mitigation
Extended Power outage	Ensure standby power at traffic intersections and Traffic Operations Centre. Ensure effective emergency, contingency and business continuity plans.
Asset structural failures or impacts to asset effectiveness	Optimization of asset life cycles, proactive maintenance and cleaning. Asset Management database, inspections and patrols. Pest control programs (e.g., beaver damage to culverts, bridges). Design considerations for future storm events. Effective emergency, contingency and business continuity plans. Adequate redundancies and proactive detours and closures where required.
Extreme wind events and	Adequate redundancies and proactive detours and closures

Risk	Mitigation
<p>storms beyond existing capacity/response capability affecting roads, structures and sites.</p>	<p>where required. Effective emergency, contingency and business continuity plans (REMS). Post-storm clean-up protocol, assessments and improvements.</p>
<p>An increase in winter freeze-thaw cycles and temperatures at or near 0°C</p>	<p>Extensive winter control programs (e.g., salt management plan). State-of-the-art weather systems and Roadway Condition Advisory System. Optimization of asset life cycles including proactive maintenance. Design considerations and erosion control (roads, shoulders, structures).</p>
<p>Potential for road washouts/ditch flooding and overland flooding that could cause contaminant migration (e.g., road salt, oil, grease)</p>	<p>Optimization of asset life cycles, proactive maintenance and cleaning. Inspections and patrols. Effective emergency, contingency and business continuity plans (REMS). Adequate redundancies and proactive detours and closures where required. Design considerations and erosion control (roads, shoulders, structures).</p>
<p>Motor vehicle road incidents</p>	<p>Design, inspection and maintenance standards. Road signage, roadside protection and inventory assessments. Effective emergency, contingency and business continuity plans. Extensive Winter Control Program (RCAS) and Roadway Event Management System (e.g., speed and condition warnings). Implementation of the Region’s Vision Zero Program. Proactive detours and closures where required for safety.</p>

1. Durham Region Transit Asset Class Report (Attachment #5)

Service Level Objectives
<ul style="list-style-type: none">• Increase ridership and enhance customer experience.• Develop and operate a transit system that is available, consistent, direct, frequent and seamless thereby providing enhanced mobility for Durham Region residents and visitors with an attractive alternative to the personal car.• Increase operational effectiveness through asset management planning for future growth and existing assets.• Maintain an acceptable condition standard for all Regional Transit assets.



188 Conventional Buses
35 Specialized Buses
18 Supervisory Fleet
3 Maintenance, Administrative and Bus Storage Facilities
2,579 Bus Pads and Shelters

Total 2021 Replacement Value
\$243.4 million
↑ **0.5%** from 2020

Average Condition
(Year-over-Year Trend)
B- →

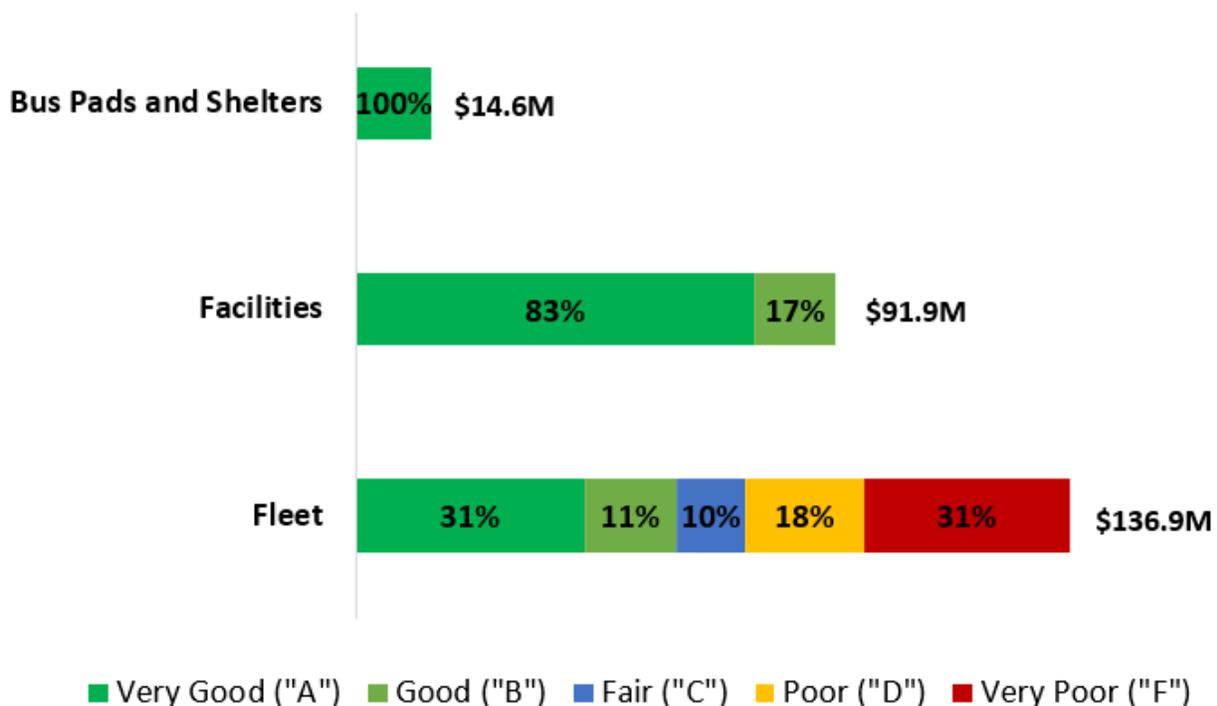
1.1 Asset Inventory Overview

Durham Region Transit’s (DRT) assets consist of a fleet of revenue vehicles, non-revenue vehicles, facilities and hard surface bus stops and shelters. In 2020 sixty-foot articulated (accordion) buses were added for the first time to DRT’s fleet to provide additional capacity along frequent service networks.

1.2 DRT Condition Ratings, Replacement Values and Average Ages

The overall DRT condition rating in 2021 was B- consistent with 2020. Overall replacement values totalled \$243.4 million, a 0.5 per cent increase over 2020 primarily as a result of inflationary pressures partially offset by strategically deferred replacements due to reduced service demand during the pandemic and network and operational efficiencies. By 2026, fleet inventory is planned to return to pre-pandemic levels. Figure 1 below illustrates the condition rating and replacement value of DRT assets.

Figure 1: DRT Assets Condition and Replacement Values*



*Condition ratings for assets may not add to 100 per cent due to rounding

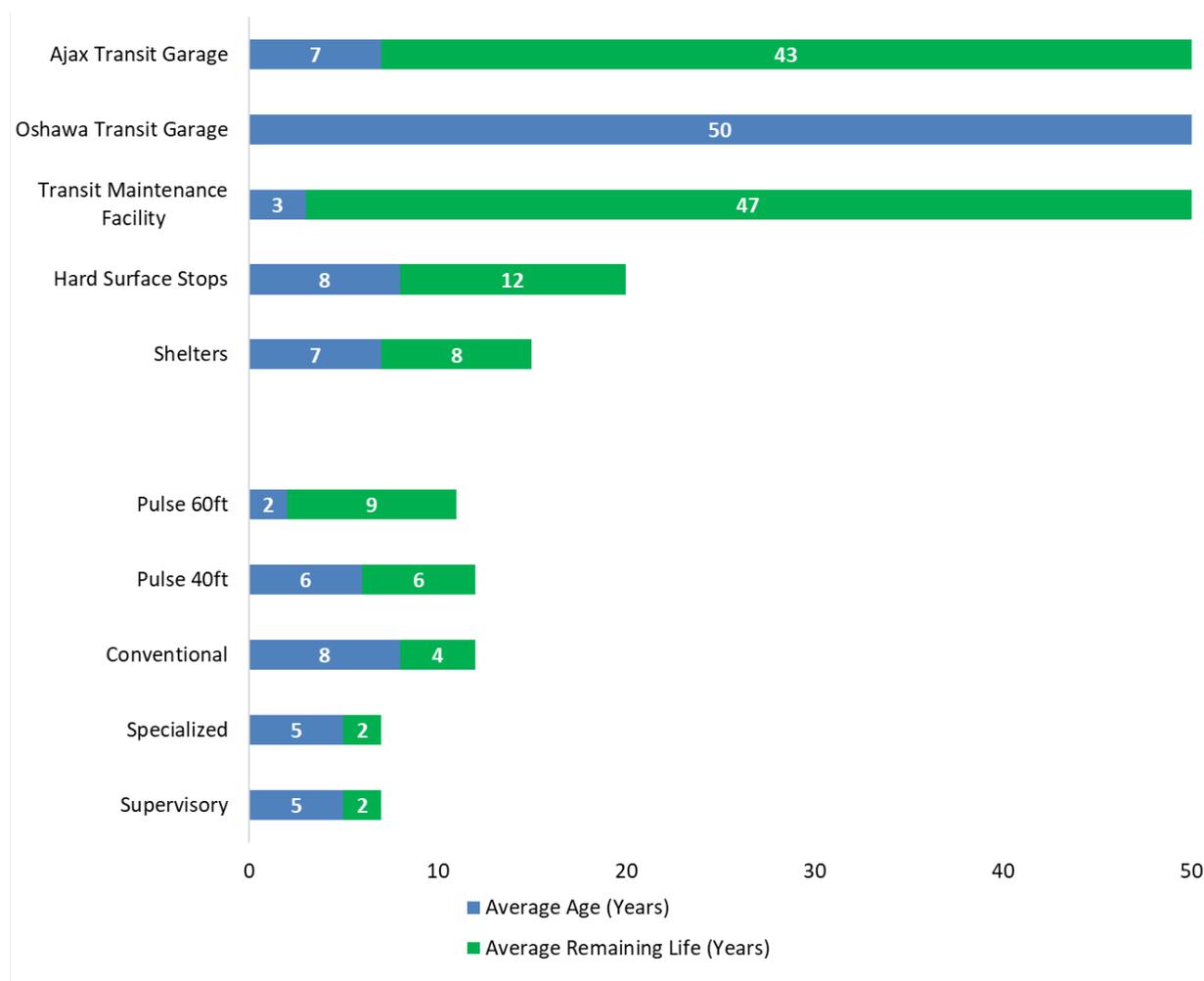
Table 1 outlines the assessment methods used to determine condition ratings.

Table 1: DRT Condition Assessment Methods

Asset Class	Assessment Methods
Facilities	<p>Building Condition Assessments (BCA). Facilities staff undertake high-level surveys where assessments have not yet been undertaken.</p> <p>Condition rating criteria are used as the basis for rating facility sub structures, shells, interiors, and site work, which are considered major building elements evaluated through the BCA assessment.</p>
Bus Stop Pads and Shelters	<p>All bus shelters have all been installed since 2016 except for 2 older ones which are in good condition. There is no formal method for assessing the condition of bus shelters however, when there is an issue with bus shelters, they are repaired immediately.</p>
Fleet	<p>Condition rating criteria is based on mileage.</p>

Figure 2 summarizes the average age and remaining asset life of the DRT storage and maintenance garages and fleet as of December 31, 2021. The Transit Maintenance Facility and Ajax Transit Garage are relatively young while ongoing maintenance and rehabilitation at the Oshawa Transit Garage has resulted in a Good rating and the facility is projected to operate beyond its expected service life.

Figure 2: DRT Average Age and Remaining Useful Life



As of December 31, 2021, the average age of DRT’s conventional fleet is 6.4 years. DRT has been strategically delaying bus replacement as a result of reduced service demand due to the pandemic with 8.5 per cent of conventional buses over 12 years old. Over the forecast period vehicle replacements are planned to allow for the return to pre-pandemic service standards.

1.3 DRT Community Levels of Service

Table 2 outlines the various Regional Council approved plans, studies, and policies, as well as regulatory and or compliance guidelines that inform DRT’s service level priorities.

Table 2: Plans, Studies, Policies, Procedures, Regulations that Inform Service Levels

Departmental Plans, Studies, Policies, & Procedures
<ul style="list-style-type: none"> • The Route Ahead 2022-2025 Service Strategy • Durham Region Transit Demand Responsive Transit Study • Transportation Master Plan • 2022 DRT Business Plans and Budget • Regional Transit 2022 Development Charge Background Study and By-law • DRT Long-term Service and Financing Strategy (under development) • Facility Needs Study • Regional Facilities Design Standards and Specifications • Regional Official Plan
Regulatory/Compliance Guidelines
<ul style="list-style-type: none"> • Ministry of Transportation Periodic Mandatory Commercial Vehicle Inspections (PMCVI) • Motor Vehicle Inspection Station Licencing & Standards • Public Transportation and Highway Improvement Act • Commercial Vehicle Operators Registration Program (CVOR) • Motor Vehicle Repair Standards • Truck and Bus National Safety Code • Ontario Building Code Standards • Accessibility for Ontarians with Disabilities Act (AODA) • Environmental Assessment Act • Ontario Fire Code

DRT's The Route Ahead 2022-2025 Service Strategy, identified the following key service pillars:

- **Availability:** Service is available in all areas of Durham Region, using a mix of scheduled service and demand response service delivery models with reduced average wait times;
- **Innovation:** Leverage technological solutions and service delivery models to meet customers' changing needs;

- Reliability: Remain flexible by adapting to evolving travel patterns;
- Safety: Improving the customer environment throughout a customer's journey; and
- Growth: Serving new growth areas as early as possible.

Technical Service Levels and Performance Measures

Asset management staff have identified key asset-related technical service levels and performance measures as noted in Table 3. Reporting on Community Levels of Service and Technical Levels of Service puts DRT in compliance with Ontario Regulation 588/17 two years ahead of the legislated timeline.

Table 3: DRT Performance Measures

Performance Measure	Target	Year of Measure		
		2019	2020	2021
Average Conventional Fleet Age	Maintain Average Age of Conventional Fleet at 7 years of age	7.0	6.9	6.4
This performance measure captures the average age of the conventional bus fleet.				
Percentage of Conventional Fleet Exceeding 12 Year Useful Life	To allow no more than 10 per cent of conventional bus fleet to exceed 12 years of age or older	19.8%	14.8%	8.5%
This performance measure identifies the percentage of conventional bus fleet which is 12 years of age or older. Typically, it is acceptable to have a small portion of the fleet exceed its useful life to a threshold of 10 per cent.				
Kilometres per litre of Diesel Fuel	To achieve 2.1 kilometres per litre of diesel fuel	2.1	2.2	2.3
This performance measure captures the fuel economy of DRT's conventional fleet by calculating the number of kilometres that is achieved for each litre of diesel fuel. Target is based on industry standards.				

1.4 Maintenance and Repairs

Fleet Maintenance and Repairs

Vehicle deterioration occurs by component, rather than holistically. DRT maintains the condition of its fleet assets using a three phased approach:

- Annual review of major powertrain components on a bus-by-bus basis;
- A preventative maintenance schedule based on manufacturers' recommendations and a semi-annual vehicle safety inspection process as regulated by the Ontario Ministry of Transportation.
- Required unscheduled repairs and running repairs.

Fleet preventative maintenance is scheduled when kilometres reach prescribed targets. Kilometers are tracked through nightly recording of kilometers driven for each bus into the fuel reporting software, which is then transferred to Maximo, the Region's maintenance management workorder software system.

Table 4: Preventative Maintenance Schedules for DRT Conventional Fleet

Inspection Type	KMs
A Inspection	Every 10,000 km
B Inspection	Every 20,000 km
C Inspection	Every 40,000 km
D Inspection	Every 80,000 km

Table 5 below, provides a sample of DRT's estimated fleet maintenance and fuel measures for conventional buses.

Table 5: Sample of DRT Estimated Maintenance and Fuel for Conventional Fleet

Year	# of Buses	Annual KM	Maintenance/Repair		Fuel Cost		Total Cost	\$/KM
			Annual Cost	\$/KM	Annual Cost	\$/KM		
2021	176	10,927,609	\$10,970,657	\$1.00	\$5,484,058	\$0.50	\$16,455,715	\$ 1.51
2020	183	11,565,880	\$11,303,164	\$0.98	\$4,347,728	\$0.38	\$15,650,892	\$ 1.35
2019	207	14,639,317	\$11,558,763	\$0.79	\$7,130,551	\$0.49	\$18,689,314	\$ 1.28

DRT targets an expected useful life of twelve years for conventional buses after which point a bus can require significant structural refurbishment and becomes more costly to repair. Both maintenance costs and bus reliability can be impacted as a bus nears the end of its useful life and eventually, the bus will become a spare and used only when necessary.

Facilities Maintenance and Repairs

Facilities deteriorate by component rather than as a whole. Staff in the Facilities area of the Works Department undertake maintenance, repair and rehabilitation activities for these components at optimal times to allow the assets to provide service levels at the lowest risk in the most cost-effective manner.

Maintenance and replacement decisions are being further refined through the recent implementation of Maximo, the Region’s maintenance management workorder software system and Ameresco, the Region’s capital asset management workorder planning software system (CAMPs). DCAM staff can better identify and refine forecasted future repair, maintenance, and rehabilitation needs and subsequent cost estimates based on the recording and tracking of past treatments, current condition ratings and needs, useful life, changing compliance, building and energy codes, modernization and return on investment.

Table 6 provides a summary of some useful life guidelines for facility components, which provides some broad time frames for when replacements could potentially occur. Changing compliance, building and energy codes, modernization, return on investment and other specific needs of DRT are also considerations in facility infrastructure decisions.

Table 6: Building Elements’ Useful Life

Less than 10 Years	12 to 20 Years	25 to 50 Years	Over 50 Years
Interior Finishes	Building Envelope	Mechanical Electrical Plumbing Elevators	Structure

Staff continue the analysis of DRT lifecycle costing. This analysis will be included in future Asset Management Plans in alignment with the July 1, 2024 Ontario Regulation 588/17 requirement.

1.5 DRT Capital Forecast

The 2022 Budget includes \$16.1 million in DRT capital investments including the following significant projects:

- Acquisition of two replacement BRT buses (\$1.4 million);
- Replacement of four mini buses and three vans for demand responsive service (\$1.5 million);
- Design work for the Oshawa Transit Garage administration building demolition and rebuild (\$0.6 million);
- Bus stop infrastructure improvements (\$3.6 million);
- Advancing planning, design and engineering for DRT's new facility in north Oshawa (\$2.5 million);
- Electric vehicle charging infrastructure acquisitions and installations for the battery electric bus pilot, which are supported through previously approved federal government funding (\$3.0 million); and
- Replacement of the fuel tank at DRT's Ajax Transit Garage (\$0.8 million).

Currently, DRT's nine-year capital forecast (2023-2031) includes \$390.1 million in capital expenses. Costs related to transit vehicle replacements are anticipated to represent a significant pressure in future years. Currently, it is estimated that DRT must replace 147 40-foot buses (\$98.7 million), seven articulated buses (\$7.6 million), and 30 specialized services vehicles (\$5.9 million) over the nine-year forecast period to maintain its fleet in good working condition and maintain the target average vehicle age. Furthermore, the capital forecast also includes significant expansion facility costs, including an estimated \$155.0 million in 2024 for the new north Oshawa storage and maintenance facility. Approximately \$4 million in DRT capital expenses approved as part of the 2022 Business Plans and Budgets have been financed using Federal and Provincial funding provided under the Investing in Canada Infrastructure Program - Transit Stream (ICIP). Over the forecast period, an additional \$10.5 million in DRT capital expenses are forecasted to be financed using ICIP. Significant ICIP funding is also supporting the development of bus rapid transit infrastructure within the transportation infrastructure capital plans.

1.8 Climate Change

Climate Mitigation: DRT Strategies to Reduce GHG Emissions

The Durham Region Corporate Climate Action Plan has set targets to achieve net-zero GHG emissions by 2045. In 2020, Transit produced approximately 16,500tCO₂e or 10 per cent of the Region's total corporate emissions.

DRT GHG reduction strategies focus on maximizing the efficiency of energy and fuel usage. Key climate change mitigation accomplishments for DRT in 2021 included:

- Purchasing 4 plug-in hybrid SUVs
- Finalizing the specifications for its first 10 hybrid electric buses. These hybrid electric buses are expected to be delivered in Q3 2022.
- Entering into negotiations with Oshawa Power and Utilities Corporation (OPUC) and eCamion for the charging equipment and infrastructure at DRT's Oshawa Depots (both Farewell & Raleigh), required to support the battery electric bus pilot scheduled to begin in 2023.

Key 2022 and forecasted initiatives that support DRT's GHG reductions include:

- Acquisition of DRT's first eight battery electric buses as part of the battery electric bus pilot.
- Design and construction of a new flagship net zero transit operations and maintenance facility at 2400 Thornton Road in Oshawa. Construction is expected to begin in 2024 with completion in 2026.
- Continued implementation of solar lighting in DRT bus shelters.
- Completion of DRT's zero emission fleet and facility feasibility study in 2022, with a report approved by the Transit Executive Committee on its fleet transition plan to zero greenhouse gas emission vehicles in June 2022.

While transit's share of the overall corporate carbon footprint may increase as the DRT fleet expands, DRT continues to explore and implement strategies to make transit an attractive alternative to personal vehicles to support community GHG reductions.

Climate Adaptation: Increasing the Resiliency of DRT Assets

The current focus of DRT climate adaptation work includes ensuring effective and up-to-date emergency, contingency and business continuity plans, in addition to adequate standby power and redundancies (e.g., spare parts and vehicles). DRT is also expanding bus shelters, which will increase protection against the potential impacts of a changing climate (e.g., a higher frequency of extreme storms) in addition to the usual impacts of cold and ice related to winter weather.

Climate adaptation will continue to be addressed through the Region's business planning cycle, including risk management, asset management and long-term financial planning processes to ensure a proactive approach.

1.8 Risk Assessment

Regional staff analyze potential risks to DRT’s assets on an ongoing basis. Table 7 highlights some high impact potential risks and ongoing and planned risk mitigation measures.

Table 7: DRT Risk Mitigation Strategies

Risk	Mitigation
<p>Chargeable Equipment Failure (e.g., engine and/or transmission failure, emission control systems)</p>	<p>Preventative maintenance, repairs, replacements and proper storage of vehicles and equipment.</p> <p>Inspections and maintenance of operational and compliance standards.</p> <p>Inventories of critical parts and spare vehicles and re-scheduling/re-routing.</p> <p>Maintenance protocols and warranties.</p> <p>Driver training and protocols.</p>
<p>Loss of External Utilities or Fuel</p>	<p>Maintain effective up-to-date emergency, contingency and continuity plans.</p> <p>Ensure adequate standby power at DRT facilities and partnership with Region Facilities.</p> <p>Development of fuel shortage plans.</p> <p>Essential services policies and procedures.</p>
<p>Vehicle Collision</p>	<p>Supervisory investigation.</p> <p>Driver screening, training and recertification programs.</p> <p>Compliance and licensing standards.</p> <p>MTO specified procedures inspection audit of Driver Certification Program by Internal Audit Division</p> <p>Maintain effective emergency and contingency plans.</p>
<p>Security Breach (e.g., theft, vandalism, terrorism)</p>	<p>On-site/on-bus safety systems and protocols including on-board surveillance system.</p> <p>Geographical Positioning System technology on buses and other vehicles.</p> <p>Durham Region Transit Security Strategy.</p> <p>Maintain effective up-to-date emergency, contingency and continuity plans.</p>

Risk	Mitigation
<p>Weather Related (e.g., Winter ice/cold and more frequent freeze-thaw cycles)</p>	<p>Winter control program (e.g., vehicle, shelter and facility warming and/or de-icing and snow removal etc.).</p> <p>In-bus water/ice slip hazard identification and mitigation.</p> <p>Asset management – preventative maintenance (e.g., in-bus HVAC).</p> <p>Post-storm clean-up.</p> <p>Condition audits and inspections.</p> <p>Maintain effective up-to-date emergency, contingency and continuity plans.</p>

1. Fleet Asset Class Report (Attachment #6)

Service Level Objectives
<ul style="list-style-type: none"> • Maintain fleet in a state of good repair, meeting or exceeding industry standards and manufacturers’ requirements, and minimizing vehicle downtime while capturing warranty claims on new equipment. • Provide sufficient vehicles and equipment in a safe, reliable, and adequate condition to provide service levels and adapt to changes in business needs. • Manage and optimize parts inventory to minimize costs through procedures and guidelines that ensure competitive bidding, cost effective purchasing practices, and inventory control processes in accordance with Regional policies and the Purchasing By-law. • Maintain an orderly fleet turnover process, ensuring cost effective fleet operations, considering low carbon options where available and suitable, and participate in joint procurement opportunities where appropriate and beneficial.



44 Ambulances

- 6** Paramedic Emergency Response Vehicles
- 34** Paramedic Support Vehicles
- 188** Police Patrol Vehicles
- 175** Police Non-Patrol Vehicles
- 374** Works Fleet

Total 2021 Replacement Value:
\$88.9 million

RDPS: \$10.9M **↑ 10%** from 2020

DRPS: \$25.8M **↑ 11%** from 2020

Works: \$52.2M **↑ 9%** from 2020

Average Condition B
(Year-over-Year Trend)

RDPS: B- ↑

DRPS: A- →

Works: B- ↑

Asset Inventory Overview

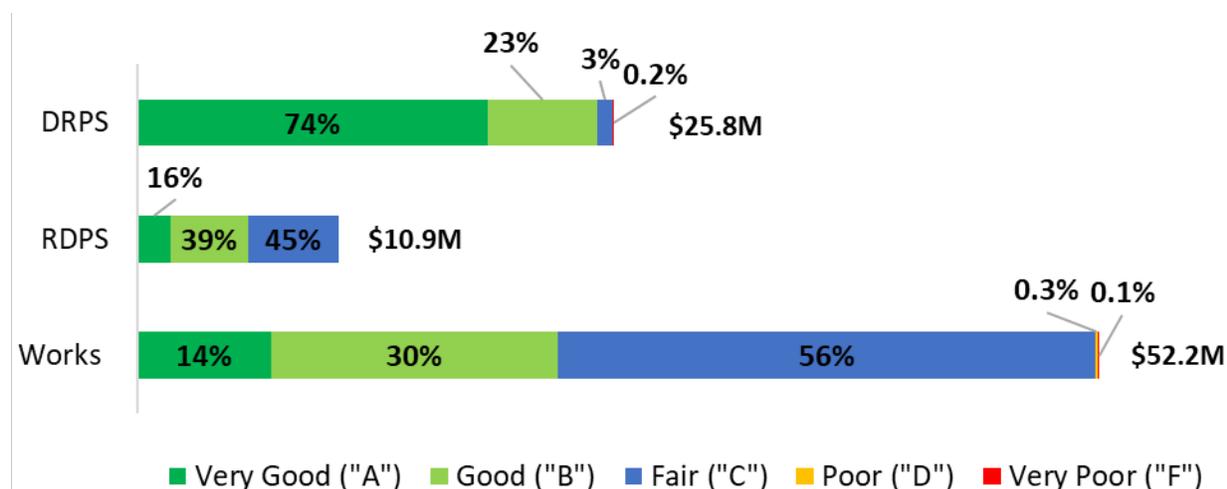
Regional fleet assets include vehicles, plows and trailers in the Region of Durham Paramedic Services (RDPS), Works Department (includes Works vehicles used for core assets (Water/Sewer/Transportation) and Durham Regional Police Service (DRPS). Detailed data and information relating to Durham Regional Transit (DRT) fleet is contained within Attachment #5.

In future asset management reports, fleet will be reported along functional lines with separate attachments dedicated to RDPS, Works, and DRPS.

1.1 Fleet Condition Ratings, Replacement Values and Average Ages

Durham Region’s fleet (excluding DRT fleet) has an average overall condition rating of B. The average condition ratings are DRPS A-, RDPS B- and Works Fleet B-. The figure below illustrates condition ratings and replacement value of fleet for DRPS, RDPS and Works.

Figure 1: Fleet Condition and Replacement Values*



*Condition ratings for assets may not add to 100 per cent due to rounding

Total replacement values for fleet increased by 9.1 per cent for Works fleet, 10.4 per cent for RDPS and 11.2 per cent for DRPS over 2020 largely due to inflationary price increases and minor increases in asset inventories.

Table1 outlines the assessment methods used to determine fleet condition.

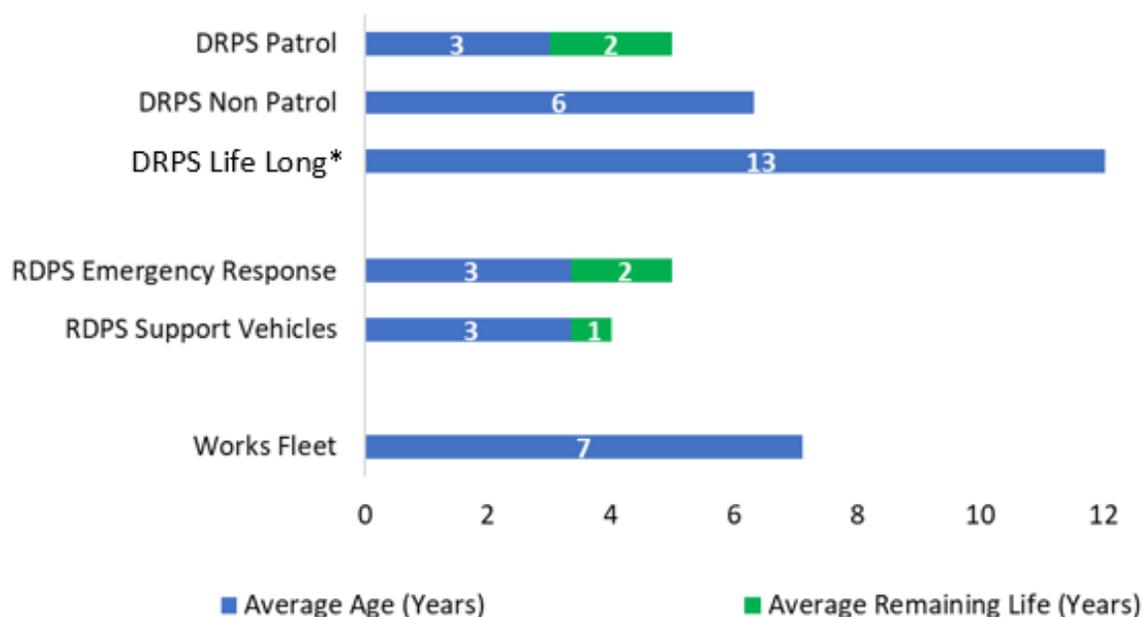
Table 1: Fleet Asset Condition Assessment Methods

Asset Class	Assessment Methods
DRPS*	Age, odometer, ongoing/pending maintenance requirements, and visual assessment for condition factors as per the scale below: <ul style="list-style-type: none"> • A+ or A++ would be Excellent or “as new” condition, A has minor wear and tear but still in peak operating condition. • B is a mid-life vehicle which, while it may have significant use, is still highly reliable but shows its age with more obvious signs of interior/exterior wear and tear from severe or long service. • C is approaching end of life due or overdue for replacement based on time, odometer reading, condition or greater emergence of costly maintenance/repair issues and non-safety related component failures.
Works Fleet	Mileage, run hours, age, and regular full inspections of vehicle condition.
RDPS	Mileage, vehicle inspection

*All DRPS vehicles fully meet OEM, legislative safety, and public appearance standards, and as such none can be classed as D (Poor) or E (Very Poor).

Figure 2 shows the average age and remaining useful life of the various fleet assets as of December 31, 2021.

Figure 2: Remaining Useful Life



*DRPS Life Long includes historical vehicles kept primarily for ceremonial and display purposes as well as the patrol helicopter.

1.2 Works Fleet Lifecycle Management

The Region’s Works fleet often operates in harsh conditions typically over extended shifts which can increase deterioration rates. The fleet follows a proactive maintenance and repair program, leveraging Maximo, the Region’s maintenance management software system, to streamline regulatory compliance requirements and preventive maintenance. The Region’s maintenance program aligns with best industry standards, regulatory requirements and manufacturers’ specifications.

Vehicle replacement is informed by staff assessment of historical maintenance and costs, current mechanical and structural condition, mileage, operating hours, performance/obsolescence, replacement costs, and other factors to balance investment in new vehicles with repair costs and ensure optimization of the vehicles’ lifecycle. Financing for vehicle replacements is provided through the Equipment Replacement Reserve which is funded through annual reserve contributions based on the utilization of the Region’s fleet. This financing model provides flexibility for replacements based on lifecycle consideration which may result in variability in the number of replacements per year over the capital forecast. This strategy has provided a safe, operational fleet of vehicles that are in good condition overall.

Moving forward, staff will further refine the lifecycle costing analysis for the fleet category of assets in accordance with the next stage of phased-in reporting changes under Ontario Regulation 588/17.

1.3 RDPS Fleet Lifecycle Management

RDPS has two main vehicle types: emergency response vehicles (ambulances, rapid response vehicles, and emergency support units) and management support vehicles. These vehicle types are managed differently given their use in operations.

The Region has a rigorous preventative maintenance program to keep vehicles in peak working condition while optimizing cost efficiency by ensuring preventative maintenance is completed and avoiding more costly repairs. Preventative maintenance programs for ambulances are delivered in accordance with provincial standards.

RDPS fleet is funded approximately 50 per cent through Ministry of Health subsidies with the balance funded by the Region. Ministry funding influences the fleet replacement program as vehicles must be kept for a minimum of 54 months to be eligible for Ministry of Health replacement funding.

RDPS uses a staged vehicle deployment approach for ambulance and other emergency response vehicles that balance service demands and maximizes the life of the fleet, where:

- For the first 3 years of a vehicle's life it serves as frontline.
- After 3 years, a vehicle becomes a spare/contingency.
- After 4 years, the vehicle becomes a secondary spare and is mainly utilized in support of contracted event services (e.g., Canadian Tire Motorsport Park, Tribute Communities Centre events).
- After 4.5 years, vehicles are classified as pending decommission and are replaced shortly thereafter subject to RDPS Business Plans and Budget approvals.

Vehicles demonstrating higher prevalence of mechanical issues and maintenance requirements and/or unusually high kilometres of travel or engine hours are replaced first. Retired rapid response vehicles, command vehicles and management support vehicles are often used administratively as paramedic transport vehicles until such time as they are permanently decommissioned and removed from service. Paramedic transport vehicles are used during shift changes to transport incoming paramedics to change tours of duty where on-duty paramedic crews are operationally unable to return to their originating paramedic response station. This is required, for example, for hospital offload delay challenges.

Table 2 provides the fleet maintenance and fuel measures for 2019, 2020 and 2021.

Table 2: Estimated RDPS Maintenance and Fuel for Emergency Response Vehicles

Year	Annual Vehicle Availability	Annual KM Driven	Maintenance Cost		Fuel Cost	
			Total	\$/KM	Total	\$/KM
2019	98%	1,802,450	\$572,200	\$0.32	\$600,165	\$0.33
2020	98%	2,577,007	\$558,258	\$0.22	\$600,557	\$0.23
2021	98%	2,948,974	\$545,905	\$0.19	\$947,633	\$0.32

Table 3: Estimated RDPS Maintenance and Fuel for Management Response Vehicles

Year	Annual Vehicle Availability	Annual KM Driven	Maintenance Cost		Fuel Cost	
			Total	\$/KM	Total	\$/KM
2019	98%	96,889	\$28,695	\$0.29	\$26,080	\$0.27
2020	98%	182,185	\$25,699	\$0.14	\$44,036	\$0.24
2021	98%	218,364	\$25,608	\$0.12	\$56,422	\$0.26

In keeping with the RDPS fleet replacement plan, the 2022 Business Plans and Budget includes the replacement of 10 ambulances in 2022 (\$2.02 million) with five of these ambulances being hybrid, two emergency response vehicle replacements (\$0.15 million), one hybrid administration vehicle (\$0.04 million) and between eight to ten ambulance replacements per year (\$18.16 million) over the forecast period (2023-2031) aligned with the forecasted replacement schedule. The 2022 Business Plans and Budget also includes one new additional ambulance (\$0.18 million) to service the new Seaton paramedic response station, a new support vehicle (\$0.04 million) to expand the Primary Care Outreach Program, and 8 vehicles to support the new Community Paramedicine Program (\$0.50 million fully funded by the Ministry of Long-Term Care).

Moving forward, RDPS will continue to monitor, track, and refine lifecycle costing for fleet management to comply with the future requirements of Ontario Regulation 588/17. Updates will be reported in future Asset Management Plans.

1.4 DRPS Fleet Lifecycle Management

DRPS has a preventative maintenance program to keep vehicles in peak working condition to minimize the risk of failure and optimize cost efficiency by maintaining versus repairing the fleet. DRPS vehicles are maintained in accordance with guidelines based on manufacturers' service program.

DRPS employs the following fleet replacement criteria:

- Marked patrol automobiles are replaced at the earlier of 6 years of service or 160,000 to 200,000 km;

- Unmarked vehicles are replaced at the earlier of 7 years of service or 170,000 to 200,000 km; and,
- Trucks are replaced at the earlier of 10 years of service or 300,000 km.

The replacement schedule ensures that vehicles are available for officers to serve the public, while minimizing the total cost of ownership over their useful life. The kilometres driven and vehicle age do not fully capture the engine wear resulting from the significant time cruiser engines are required to idle while officers are carrying out their duties which also impacts the useful life of the vehicles.

Consistent with the fleet replacement plan for DRPS, the 2022 DRPS Business Plans and Budget includes the replacement of 36 marked patrol vehicles (\$1.6 million), and 19 unmarked vehicles (\$0.8 million) as well as the addition of four new marked patrol vehicles (\$0.2 million), and one new unmarked vehicle (\$0.04 million) to respond to growth in service requirements. The cost of the primary response vehicles includes upfitting costs (e.g., sirens, light bars, push bars, communication systems, etc.) to meet operational requirements and ensure public safety. The nine-year capital forecast (2023 to 2031) includes the projected replacement of 367 marked vehicles (\$22.9 million) and 98 unmarked vehicles (\$4.4 million).

The following are fleet maintenance and fuel measures for 2019, 2020 and 2021.

Table 4: DRPS Maintenance and Fuel Measures for Primary Response Vehicles

Year	Annual Vehicle Availability	Annual KM Driven	Maintenance Cost		Fuel Cost	
			Total	\$/KM	Total	\$/KM
2019	97%	5,569,636	\$785,472	\$0.14	\$1,099,230	\$0.20
2020	98%	5,975,129	\$1,226,767	\$0.21	\$1,051,654	\$0.18
2021	97%	5,730,420	\$1,564,903	\$0.27	\$1,423,721	\$0.25

Table 5: DRPS Maintenance and Fuel Measures for Secondary Response Vehicles

Year	Annual Vehicle Availability	Annual KM Driven	Maintenance Cost		Fuel Cost	
			Total	\$/KM	Total	\$/KM
2019	99%	3,270,662	\$457,893	\$0.14	\$376,839	\$0.12
2020	98%	2,938,929	\$448,497	\$0.15	\$319,018	\$0.11
2021	98%	3,527,644	\$457,707	\$0.13	\$475,374	\$0.13

Moving forward, DRPS will continue to monitor, track, and refine lifecycle costing for internal fleet management, investment decisions through business planning and budgets, external and internal reporting, and to comply with the future requirements of Ontario Regulation 588/17. Updates will be reported in future Asset Management Plans.

1.5 Fleets: Performance Measurement

Service level objectives and performance targets are set through Regional Council and Police Service Board approved master plans, studies, policies and procedures, as well as through departmental studies and regulatory and/or compliance guidelines.

Table 6: Plans, Studies, Polices, Procedures, Regulations that Inform Service Levels

Departmental Plans, Studies, Policies, & Procedures
<ul style="list-style-type: none"> • Various Regional Departmental program area studies, plans, policies and procedures
Regulatory/Compliance Guidelines and Requirements
<ul style="list-style-type: none"> • Highway Traffic Act • Motor Vehicle Inspection Station Licencing and Standards • Motor Vehicle Repair Standards • Truck and Bus National Safety Code • Commercial Vehicle Operators Registration Program (CVOR) • Ministry of Transportation PMCVI (Periodic Mandatory Commercial Vehicle Inspection) • Ministry of Health/Emergency Medical Services Accreditation (RDPS) • Provincial approved fleet replacement schedule (RDPS)

For RDPS, ambulances follow preventative maintenance programs in accordance with provincial standards. As a result, 98 per cent of ambulances and vehicles were available to provide services.

DRPS fleet preventative maintenance programs ensured that in 2021, 97 per cent of primary response vehicles and 98 per cent of secondary response vehicles were available for service.

For the Works Department fleet, the Region has a rigorous preventative maintenance program to keep vehicles in peak working condition, minimizing the risk of failure and maximize cost efficiency. This ensures that vehicles can continue to assist in providing water, sewer, transportation and traffic services.

Moving forward, staff will further refine service levels and performance measures to comply with the future phased-in reporting requirements of Ontario Regulation 588/17. Service levels will align with individual departments goals and service level objectives, as well as comply with any specific program area regulatory requirements. Updates will be provided in future Asset Management Plans.

1.6 Climate Change

Climate Change Mitigation: Reducing GHG Emissions from Fleet

The Durham Region Corporate Climate Action Plan has set targets to achieve net-zero GHG emissions by 2045. Fleet greening is a Regional priority across all Regional fleet (including DRT) and is forecast to achieve 1,319 tonnes of GHG reduction from 2021 to 2025.

Key climate change mitigation accomplishments in 2021 include:

- As of September 2021, the DRPS fleet had 46 hybrid electric vehicles in its total fleet of approximately 400 vehicles, representing slightly more than 10 per cent.
- For Works, the purchase of nine plug-in hybrid SUVs, replacing seven internal combustion engines, and adding two additional plug-in hybrid SUVs to the Utility Finance and Ajax Water Supply Plant fleets.
- Works Fleet Operations implemented Maximo, the Region's maintenance management and workorder software system that assists in data management for fleet operations, maintenance, and fuel consumption.
- RDPS purchased two hybrid ambulances.
- DRPS fuel consumption reduced by 111,096 litres from 2020 (despite an increase in travel of 344,006 kilometres to meet the needs of community safety) due to increasing use of vehicles with hybrid, stop-start and other technologies. DRPS is continuing its transition to greener vehicles where appropriate.

Key 2022 initiatives that support fleet greening include:

- DRPS fleet vehicle replacements continue the transition the fleet to lower emission outputs through the reduction of vehicles powered solely by an internal combustion engine (ICE) and procuring vehicles with hybrid or full electric technology where feasible. The build of DRPS's high-use marked patrol vehicles are replaced with gas-electric hybrids and 64 per cent of the planned replacement vehicles for 2022 are scheduled to be lower or zero emission vehicles (ZEV) where appropriate and available with DRPS acquiring 35 low carbon or zero emission vehicles.
- Works vehicle replacement and acquisition plan includes a new plug-in electric hybrid SUV for the Facilities Maintenance and Operations division, two new plug-in electric hybrid ½ ton pickup trucks for the Orono and Sunderland Depots, replacement of two electric hybrid ½ ton pickup trucks at Duffin Creek WPCP and the Oshawa/Whitby Depot.
- RDPS vehicle replacements include five hybrid-electric ambulances, one replacement hybrid vehicle and four new supervisory hybrid vehicles.

Additionally, Works is planning to pilot a battery EV and a dual fuel-propane pickup truck in 2023. Installation of EV chargers at various facilities to support the transition to electric vehicles is underway.

A continuing focus across the Regional fleet is the reduction of engine idling, which increases fuel and engine efficiencies and decreases GHG emissions. Driver training includes reduced idling policies and procedures. While emergency fleets must maintain ready vehicles to ensure public safety standards, the RDPS fleet utilizes ECO idle reduction systems to reduce GHG emissions.

Climate Adaptation: Increasing the Resiliency of Regional Fleets

The Region protects its fleets from risks associated with the changing climate through:

- ongoing inspections and preventative maintenance programs;
- winter alerts and control programs;
- prudent fleet lifecycle replacements;
- sheltered garages and maintenance facilities;
- fleet service and asset redundancies;
- staff training; and
- effective and up-to-date emergency, contingency and business continuity plans.

1.7 Risk Assessment

Table 7 includes a sample of identified risks for the Region’s fleet in achieving its service level standards as well as the mitigation controls identified to address these risks.

Table 7: Risk Mitigation Strategies

Risk	Mitigation
Loss of Fuel	Maintain effective and up-to-date emergency, contingency and continuity plans. Ensure adequate standby power. Essential services policies and procedures. Audit of fuel purchasing cards. Fuel deliveries and re-routed programs/services and redundancies. Mobile services and on-call service contracts.

Risk	Mitigation
Security Breaches and Theft	<p>Onsite safety systems and protocols (e.g., surveillance, patrols, fencing, emergency training, policies and plans).</p> <p>Geographical Positioning System technology on vehicles.</p> <p>Maintain effective and up-to-date emergency, contingency and continuity plans.</p>
Vehicle Accidents	<p>Supervisory oversight.</p> <p>Driver screening, training and recertification programs.</p> <p>Compliance and licensing standards.</p> <p>Maintain effective emergency and contingency plans.</p>
Equipment Failures	<p>Preventative maintenance and capital replacement programs and plans.</p> <p>External service contracts.</p> <p>Safety codes, warranties and guidelines.</p> <p>Inspections, checklists and accreditations.</p> <p>Proper equipment and vehicle storage.</p> <p>Fleet maintenance re-scheduling and redundancies (e.g. spare vehicles and parts inventory).</p>
Winter ice/cold and more frequent freeze-thaw cycles	<p>Winter control program (e.g., vehicle, shelter and facility warming and/or de-icing and snow removal etc.).</p> <p>Slip hazard identification and mitigation.</p> <p>Inspections.</p> <p>Maintain effective and up-to-date emergency, contingency and continuity plans.</p>

1. Region Owned Facilities Asset Class Report (Attachment #7)

Service Level Objectives
<ul style="list-style-type: none"> • Achieve and maintain an acceptable condition standard for all regionally owned facilities that meets the needs/established service levels of the core users. • Support the coordination of growth as well as provide diverse facility requirements based upon clientele utilization. • Ensure a life cycle asset management approach to prioritize capital investments with consideration of measures to reduce GHG emissions for new facilities, expansions and renovations, and to maintain existing facilities in a good state of repair. • Maintain the security of all facilities and Regional sites, including access control, parking management, emergency response, and security systems. • Plan, supervise and implement building/office design (including continuous improvement in energy conservation) as well as staff relocations in a timely and professional manner with minimal disruption to staff and the delivery of their programs.



23 Durham Regional Local Housing Corporation Properties

- 8** DRPS Facilities
- 8** RDPS Facilities
- 5** Works Depots
- 4** Child Care Centres
- 4** LTC Homes
- 7** Waste Management Facilities
- 5** Other (Admin Buildings, etc.)

Total 2021 Replacement Value

\$1,293.8 million

↑ **9.5%** from 2020

Average Condition
(Year-over-Year Trend)

B- →

1.1 Facility Inventory Overview

The facilities asset class includes Regional buildings and structures across diverse service areas. Water supply and sanitary sewerage vertical facility assets can be found within the water supply and sanitary sewerage asset class attachments (Attachments #2 and #3). DRT facilities, bus stops and shelters are discussed in greater detail in Attachment #5.

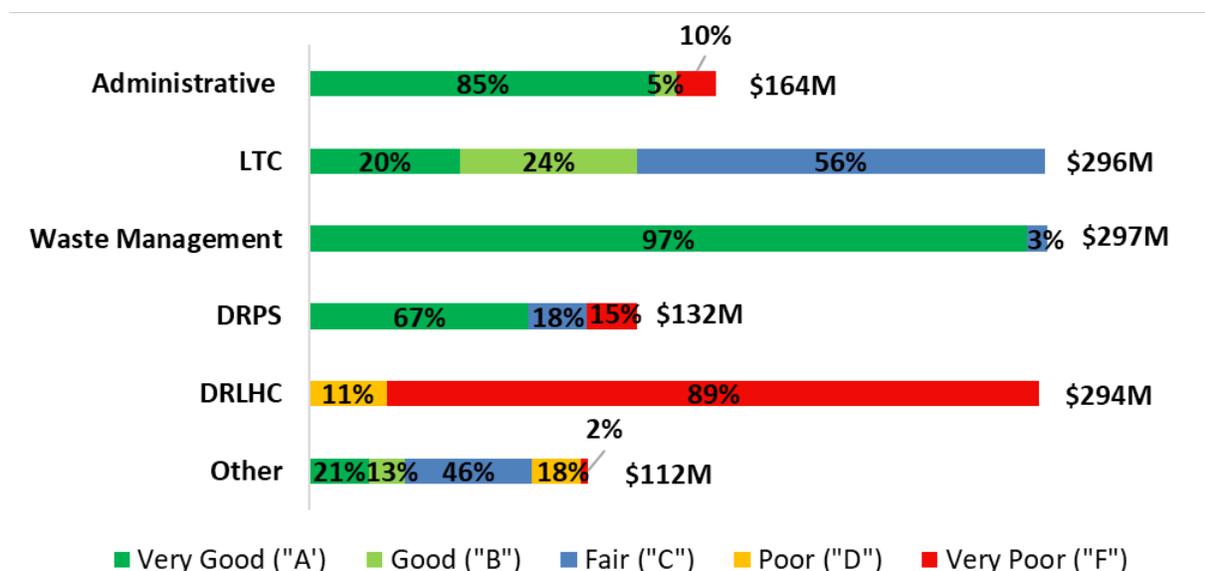
In future asset management reports, facilities will be reported along functional lines with separate attachments dedicated to RDPS, Works, DRPS, Waste Management Services, and Social Services.

1.2 Facilities Condition and Replacement Values

The overall condition rating for Facilities remained B- or Good in 2021 as compared to 2020 with only Administrative facilities experiencing a downgrade from Very Good to Good. Overall replacement values increased by 9.5 per cent over 2020 as a result of inflationary replacement cost increases.

Figure 1 illustrates the condition rating and replacement value of the Region’s Facility assets.

Figure 1: Facilities Condition and Replacement Values*



*Condition ratings for assets may not add to 100 per cent due to rounding.

1.3 Facilities Condition Assessment Methods

Regional staff employ a Building Condition Assessment (BCA) method for assessing the condition of Regionally-owned facilities. For each facility, a BCA is performed on a 10-year cycle by external consultants. BCAs assess the condition of major building elements, sub-structures, shells, interiors, services and site work.

Since 2016, the Region has used a capital asset management and planning software system to assist with the collection, management, and reporting of BCA data.

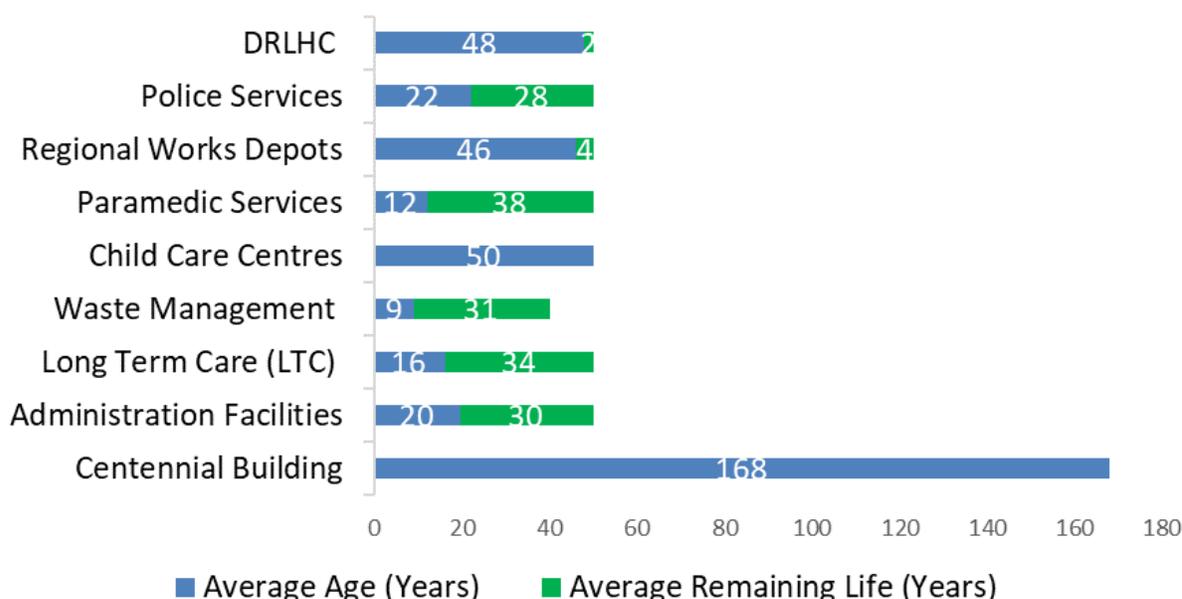
To date, 57 BCAs have been completed or are in progress, with six to be performed by 2023. Previously approved Regional Business Plans and Budgets as well as the 2022 Regional Business Plan and Budget includes \$0.2 million per year to continue these BCAs.

The condition rating for each facility is based on the BCA results of the identified capital needs and associated costs and timing for them (derived from the life cycle of the building components) as a proportion of its total replacement value.

1.4 Facilities Average Age and Remaining Useful Life

The average age and remaining useful live for facility assets as of December 31, 2021 are outlined in Figure 2.

Figure 2: Region Owned Facilities Remaining Useful Life



1.5 Facilities Levels of Service and Performance Measurement

Service level objectives and performance targets are set through Regional Council approved master plans, studies, policies and procedures, as well as through departmental studies and regulatory and/or compliance guidelines.

Table 1: Plans, Studies, Policies, Procedures, Regulations that Inform Service Levels

Departmental Plans, Studies, Policies, & Procedures
<ul style="list-style-type: none"> • Various Regional Departmental program area plans, policies and procedures • Works Depot Rationalization Study • Paramedic Services Master Plan • At Home in Durham • Durham Building Standard (under development)
Regulatory Compliance/Guidelines and Best Practices
<ul style="list-style-type: none"> • Ontario Building Code Standards • Ontario Fire Code Requirements • Accessibility for Ontarians with Disabilities Act (AODA) • Environmental Assessment Act • The Green Energy Act (Ontario Regulation 397/11) • Ministry of Labour Worker Safety/Training requirements • Canadian Environmental Assessment Act • Canadian Environmental Protection Act • Local Building Code Standards • Design Standards and Specifications (American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Standards)

Community Levels of Service

Levels of service for facilities are based on achieving and maintaining an acceptable condition standard for all Region owned facilities to allow the various program areas to achieve their service standards. This is measured through the tracking of the Facility Condition Index, which ranks the facilities from Very Good, Good, Fair, Poor, and Very Poor based on a calculation of a ratio of current maintenance cost to the current replacement value. As of December 31, 2021, 45.5 per cent of Regional building facilities had a Facilities Condition Index (FCI) rating of Very Poor or Poor, as reported in Table 2. FCI compares the ratio of a building's maintenance costs to the building's replacement costs.

Achieving and maintaining an acceptable condition standard for facilities requires regular and ongoing capital and preventative maintenance programs. This covers all elements of the building systems including the site and site services. To track and assess capital/maintenance needs, the Works Department's Facilities Design, Construction and Asset Management (DCAM) staff performs BCAs. DCAM is targeting to complete BCAs on all Region owned buildings by 2023.

At year-end 2021, a total of 57 detailed BCAs were in progress or completed. Approximately 87 per cent of all Regionally owned facilities have a completed BCA, as reported in Table 2 with the remaining six building BCAs to be performed over the next two years.

The Facilities Maintenance and Operations Depot, located at 289 Water Street in the Town of Whitby, will be demolished to accommodate the expansion of the Whitby Water Supply Plant. Demolition is expected to take place in 2023, therefore no further BCAs are planned at this site as a result.

The priority for the condition assessments is directed towards facilities where age-based or other ratings identified the facility as being Poor and/or Very Poor and where completing BCAs within an asset group will complete the group as a whole.

Technical Service Levels and Performance Measures

Asset management staff have identified key asset-related performance measures to assist in ensuring progress towards achieving asset-related goals and objectives related to facilities, as noted in Table 2.

Table 2: Performance Measures

Performance Measure	Target	Year of Measure		
		2019	2020	2021
Facility Condition Index (FCI)	0% of facilities rated as either Poor or Very Poor by 2023	27.2%	45.5%	45.5%
Measure used as an indicator of relative facility condition and its elements where FCI , defined as the ratio of current maintenance cost to the current replacement value of the facility, is taken from a recent building condition assessment (within past 5 years). It is recognized that the baseline measure may shift as BCAs completed and FCI ratings are updated to reflect more up-to-date information.				
% of Facilities with completed Building Condition Assessments	100% of Facilities to have a completed BCA by 2023	78%	83%	87%
This measures the percentage of facilities that have had Building Condition Assessment. Performance target is to complete BCA for all Regional owned facilities by 2023.				

1.6 Facilities: Maintenance, Repair and Rehabilitation

Facilities deteriorate by component rather than as a whole. Staff in the Facilities Maintenance and Operations Division of the Works Department complete reactive and preventative maintenance, repair and rehabilitation activities for these components at optimal times to allow the assets to provide service levels at the lowest risk in the most cost-effective manner. The type and timing of maintenance, repair, rehabilitation and replacement activities are determined through a number of considerations.

Table 3 below provides a summary of the expected useful life for major building components, which in turn, provides some broad time frames for when repair, rehabilitation, renewal and replacements could potentially occur. Changing compliance, building and energy codes, modernization and return on investment are also considerations in facility infrastructure decisions, given implications to both operating and maintenance complexity and lifecycle costs.

Maintenance and replacements decisions are being further refined through the recent implementation of Maximo, the Region’s maintenance management and workorder software system and Ameresco, the Region’s capital asset management planning software system (CAMPs). DCAM staff can better identify and refine forecasted future repair, maintenance, and rehabilitation needs and subsequent cost estimates based on the recording and tracking of past treatments, current condition ratings and needs, useful life, changing compliance, building and energy codes, modernization and return on investment. The CAMPs system is capable of producing up to a 25-year work plan to support long-term asset management planning. Maintenance and replacement needs are considered as part of the business planning, budget and long-term capital planning processes. This ensures facilities are maintained in a good state of repair to enable service areas to meet their targeted levels of service.

Table 3: Expected Useful Life of Building Components

10 Years	12 to 20 years	25 to 50 years	Over 50 years
Interior finishes	Building Envelope	Mechanical Electrical Plumbing Elevators	Structure

Key repair, rehabilitation and replacement activities for facilities approved in the Region’s 2022 Business Plans and Budget include:

- An increase in one Facilities Maintenance Mechanic in Housing Services to provide support for the delivery of maintenance repairs and monitoring of operational building systems for the DRLHC;

- For DRLHC \$3.3 million has been budgeted for repairs and renovations to maintain building envelope, structural components and unit interiors of housing stock. An additional \$26.0 million is budgeted for facility capital works including \$22.2 million for deep energy efficient retrofits at four DRLHC Senior's housing properties;
- For DRPS, approximately \$9.8 million has been budgeted for facility operations, maintenance and major repairs and renovations. In 2021, debentures were issued in the amount of \$63.9 million for Clarington Phase 2; and
- For RDPS \$1.5 million was budgeted for facility operations, maintenance and major repairs and renovations.

In future Asset Management Plans, Regional staff will undertake lifecycle costing analysis for Regionally-owned facilities by service area in accordance with Ontario Regulation 588/17.

1.7 Climate Change

Climate Change Mitigation: Facilities Strategies to Reduce GHG Emissions

The Durham Region Corporate Climate Action Plan has set targets to achieve net-zero corporate GHG emissions by 2045. The corporate GHG inventory includes energy used in all Region-owned buildings.

Works DCAM staff are leading the development of a Durham Building Standard to provide direction for low carbon new development and retrofits of Regional facilities. This standard will provide a framework for decision-making in terms of sustainability and resilience, space optimization, accessibility/inclusivity for facility-based capital projects with quantifiable and measurable outcomes. The Durham Building Standard is anticipated to be finalized in 2022.

Key 2022 initiatives that support GHG reductions include:

- A \$22.24 million capital project for deep energy efficient retrofits at four DRLHC Senior's housing properties.
- Initiation of a feasibility study for an Oshawa Landfill Biocover Pilot to assess the potential for an alternative landfill cover system that will biologically convert up to 50 per cent of the methane to carbon dioxide.
- Incorporation of low carbon measures at the planned Clarington Police Complex (CPC) and new RDPS Station and Training Facility in Seaton
- Comprehensive building condition assessments and level 3 energy audits for development of a baseline and greenhouse gas emissions reduction plan and pathway for Regional buildings at an estimated cost of \$2.5 million.
- Deep energy retrofits at 101 Consumers Drive, in the Town of Whitby to obtain a near-zero energy outcome at an estimated cost of \$8.4 million.

Going forward staff are exploring a variety of innovate initiatives to lower GHG emissions produced by facilities including a potential rooftop solar PV installation at Fairview Lodge LTC facility, Regional Headquarters and for the new Beaverton Supportive Housing facility. The proposed new Seaton LTC facility is also incorporating zero emissions standards into its preliminary designs. The workplace modernization project at Regional Headquarters is intended to alleviate the need for additional new office construction and reduce current energy requirements.

Climate Adaptation: Increasing the Resiliency of Regional Facilities

The current focus of corporate climate adaptation work is to ensure levels of service to the public are maintained. This is achieved through:

- Assessing climate adaptation requirements within the asset management planning process;
- Operating, securing, maintaining, repairing and upgrading Regional facilities; and
- Facility design and construction that considers climate adaptation (e.g., erosion control, standby power management, storm water management).

1.8 Risk Assessment

Regional staff analyze potential risks to facility assets on an ongoing basis. Table 4 highlights some high impact potential risks and ongoing and planned risk mitigation measures.

Table 4: Risk Mitigation Strategies

Risk	Mitigation
Loss of External Utilities/Fuel	Ensure adequate standby power at Regional facilities. On call services and service contracts. Essential services policies and procedures and staff training. Social services and DEMO secondary response policy. Maintain effective emergency, contingency and continuity plans. Remote/hybrid work environment.

Risk	Mitigation
Major Facility System Failures	<p>Proactive maintenance, repairs and capital replacements.</p> <p>Inventory of equipment and parts.</p> <p>Inspections, condition assessments and capital planning for gaps.</p> <p>Maintain emergency, contingency and business continuity plans.</p> <p>Mobile and on call service contracts.</p> <p>Essential services policies and procedures.</p>
Environmental Health Issues	<p>Sealed units and quarantine protocols.</p> <p>Inspections and preventative maintenance.</p> <p>Service contracts.</p> <p>Pest Control programs.</p> <p>Cleaning protocols and preventative spraying.</p> <p>Asset management – inspection and remediation programs, smooth surfaces and materials management.</p> <p>Maintain effective emergency, contingency and continuity plans.</p>
Facility Site Hazards	<p>Security programs and protocols.</p> <p>Health and Safety Programs.</p> <p>Warning protocols and signage.</p> <p>Proactive maintenance, rehabilitation and capital replacements.</p> <p>Inspections and condition assessments.</p> <p>Winter control programs for adequate de-icing and snow removal.</p> <p>Maintain effective emergency, contingency and continuity plans.</p>

1. Equipment Asset Class Report (Attachment #8)

1.1 Description of Equipment Assets

The equipment asset class includes information technology (IT) equipment (laptops, desktops, servers, printers etc.), Durham Regional Police Service (DRPS) equipment, long-term care equipment (beds, ceiling lifts, kitchen equipment etc.), Region of Durham Paramedic Services (RDPS) equipment (stretchers, defibrillators etc.) and Works Department equipment (forklifts, backhoes, excavators, pumps, compressors, CCTV inspection equipment, skid loaders, bull dozers etc.).

Furniture, fixtures and communications infrastructure are also included within this asset class.

1.2 Equipment Replacement Cost

The total estimated replacement cost for the Region's equipment as of December 31, 2021 is estimated at \$223.8 million, an increase of 12.2 per cent from 2020.

Table 1: Equipment Replacement Value (\$ millions)*

Asset Group	Replacement Costs (\$M)			2020 to 2021 Change (\$M)	2020 to 2021 % Change
	2019	2020	2021		
Water	22.6	22.2	27.3	5.2	23%
Sewer	15.3	17.0	17.4	0.5	3%
Transportation	9.3	7.3	7.6	0.3	4%
Waste Management	11.8	14.0	14.5	0.4	3%
RDPS (Paramedics)	5.4	5.3	5.6	0.3	5%
DRPS (Police)	43.8	44.3	49.2	5.0	11%
DRT (Transit)	10.6	15.5	15.3	-0.2	-1%
Health	2.3	2.0	2.3	0.4	19%
Social Services	20.0	21.1	22.5	1.5	7%
Administration	47.0	50.9	61.9	11.1	22%
Total	188.1	199.5	223.8	24.3	12.2%

*Rows and columns may not add due to rounding

Ontario Regulation 588/17 requires all assets to be reported on a service-area basis (e.g., Social Services, DRT, etc.) versus by asset class by July 2024.

If this information is required in an accessible format, please contact 1-800-372-1102 ext. 3540.



The Regional Municipality of Durham Report

To: Committee of the Whole
From: Acting Commissioner of Works and Commissioner of Finance
Report: #2022-COW-15
Date: June 22, 2022

Subject:

Proposed Wastewater Energy Transfer Project - Dockside Development in the Town of Whitby

Recommendations:

That the Committee of the Whole recommends to Regional Council:

- A) That Regional Municipality of Durham staff be directed to work with Creative Energy and Brookfield Homes (Ontario) Whitby Limited to develop a Memorandum of Understanding and enter into a Waste Energy Transfer Agreement for the Dockside Development to the satisfaction of the Commissioner of Works, Commissioner of Finance, and the Regional Solicitor; and
 - B) That the Regional Chair and Clerk be authorized to execute any necessary documents or agreements relating to the Waste Energy Transfer project for the Dockside Development.
-

Report:

1. Purpose

- 1.1 This report provides an update on a proposal from Brookfield Homes (Ontario) Whitby Limited (Brookfield) to include a proposed district energy system within their Dockside Development. The Dockside Development is located on the east

and west sides of Brock Street South (Regional Road 12), immediately south of Pringle Creek in the Town of Whitby (Attachment #1). The proposed district energy system would exchange energy from the Regional Municipality of Durham's (Regional) sanitary sewer system to meet most of the space heating and cooling needs of the site.

- 1.2 The proposed energy exchange with a Regional trunk sanitary sewer would be the first of its kind in Durham Region. This is an innovative project for which the Region requires new policies, standard agreements and protocols. Therefore, staff propose to advance discussions on a Memorandum of Understanding (MOU) for advancing this initial project.
- 1.3 As outlined in [Report #2022-INFO-16](#), staff have engaged the services of ReShape Strategies to review the common approaches and best practices related to similar projects in North America.

2. Background

- 2.1 Through the Durham Community Energy Plan and Durham Region Corporate Climate Change Action Plan, the Region has committed to demonstrating leadership in responding to climate change – including striving towards achieving carbon neutrality as a corporation (by 2045) and Region-wide (by 2050). The Region can play a key enabling role in the path to carbon neutrality through collaboration with the building and development industry on policies, programs and infrastructure solutions that support greenhouse gas (GHG) emission reductions in the built environment.
- 2.2 The Region's wastewater assets have the potential to contribute to both corporate and Region-wide GHG reduction targets by transferring thermal energy (e.g., heating and cooling) between the trunk sanitary sewer collection system and adjacent buildings and facilities thereby displacing energy consumption (e.g., natural gas and/or electricity) that might otherwise come from fossil fuel energy sources. Such projects, referred to as wastewater energy transfer (WET) projects, can reduce GHGs from the building sector which is the second largest source of community-wide emissions in the Region. Enabling WET projects can play a key role in implementing the Region's climate change action plans and achieving community-wide net-zero GHG emissions.
- 2.3 This technological process of using energy from wastewater has been successfully applied in Europe for many years and has gained popularity in North

America in the last several decades. In Canada, the Resort Municipality of Whistler, the Metro Vancouver Regional District, and the City of Halifax have successfully provided access to municipal infrastructure for WET projects. The City of Toronto has approved a WET project at the Toronto Western Hospital which is in pre-construction design. Once operational, the Toronto Western Hospital WET project will be the largest in the world and reduce the hospital's natural gas consumption by 90 percent.

- 2.4 The Region is also undertaking a comprehensive water and wastewater GHG emissions management strategy where the study will include, among other items, an assessment of the overall heat recovery potential from the Region's wastewater system. This study will further inform on areas of the system which may yield the greatest degree of energy exchange potential, both for private sector participants wishing to utilize wastewater energy to displace traditional fossil fuel energy requirements for their respective developments, as well as for potential Regional opportunities. The Region has also recently conducted a feasibility study focused on waste energy transfer using similar technology at the Courtice WPCP.
- 2.5 Regional staff have had ongoing discussions with Brookfield to facilitate the first WET project in Durham Region. The project is expected to generate significant renewable heating and cooling energy for Brookfield's Dockside Development and by displacing fossil fuel use, the proposed sewer heat recovery project would realize material GHG emissions avoidance. The energy system is proposed to be owned and operated by Creative Energy which already owns and operates several district energy systems in Canada. The Region will retain ownership of the trunk sanitary sewer system and will remain responsible for its ongoing operations and maintenance.

3. Wastewater Energy Transfer Pilot Project – Next Steps

- 3.1 Key considerations for the advancement of this initial WET project will include:
 - a. Development of a MOU, including a term sheet, to include potential terms and conditions of a proposed agreement, drawing on the experience of other jurisdictions. The MOU would outline the developer's anticipated obligations as it relates to the design, construction, operation and maintenance of the facility and notes that all project risks are to be assumed by the developer;

- b. Consideration of financial impacts and fees, which could be flat rates for access to municipal infrastructure (e.g., road right-of-way, sewer connection), and/or indexed fees based on energy extracted from, and/or discharged to the Regional wastewater system;
- c. Recognition that this initiative will have long-term obligations/commitments by the Region, including the provision of access to wastewater flow over a multi-decade period that will need careful consideration to inform and guide similar future WET projects;
- d. Recognition of the thermal capacity of the trunk sanitary sewer collection system required to accommodate other potential development proposals 'upstream' or 'downstream' of the approved development site that may not be available once this commitment is made; and
- e. Given the community-wide GHG emission avoidance benefits, the Region may also wish to seek maximum retention of environmental benefits/attributes generated as a direct and/or indirect result of the WET project, where possible.

4. Financial Implications

- 4.1 WET Agreements are not expected to result in net costs to the Region. Potential financial benefits resulting from potential WET related fees are expected to be modest and similar to other flat rates for access to municipal infrastructure or could be based on the quantity of energy transferred with the wastewater.
- 4.2 In addition, the ownership of environmental benefits/attributes may also present a potential financial benefit to the extent that such benefits/attributes can either be marketed or they can be retained and retired against corporate emissions obligations and provide an alternative cost-effective approach to achieving the Region's corporate sustainability objectives. The allocation of any environmental benefits/attributes created through the implied emissions avoidance realized through the displacement of traditional fossil fuels with wastewater energy transfer will be discussed further as part of the ongoing discussions with Creative Energy.

5. Previous Reports and Decisions

- 5.1 [Report #2022-INFO-16](#) "Proposed Wastewater Energy Transfer Project - Dockside Development in the Town of Whitby".

6. Relationship to Strategic Plan

6.1 This report aligns with/addresses the following strategic goals and priorities in the Durham Region Strategic Plan:

a. Goal #1 – Environmental Sustainability

- Accelerate the adoption of green technologies and clean energy solutions through strategic partnerships and investment.
- Demonstrate leadership in sustainability and addressing climate change.

7. Conclusion and Next Steps

7.1 It is recommended that staff from the Works Department, Finance Department, Corporate Services – Legal Services, and the CAO’s Office – Strategic Initiatives Division continue further discussions with Creative Energy and Brookfield. Staff will work towards the development of the required MOU and associated agreements, where the Region will enter into those necessary agreements relating to the Dockside Development with the approval of the Commissioners of Works and Finance, and the Regional Solicitor.

7.2 Given this WET project would be the first of its kind in Durham Region, the pilot project will assist in further shaping the development of future policies, standard agreements and protocols to support the pre-screening, review and approval of any future WET projects.

7.3 This report has been reviewed by Corporate Services – Legal Services and the Planning and Economic Development Department.

7.4 For additional information, contact: Joseph Green, Acting Manager, Technical Support, at 905-668-7711, extension 3443.

8. Attachments

Attachment #1: Location Map

Respectfully submitted,

Original signed by:

Jenni Demanuele, CPA, CMA
Acting Commissioner of Works

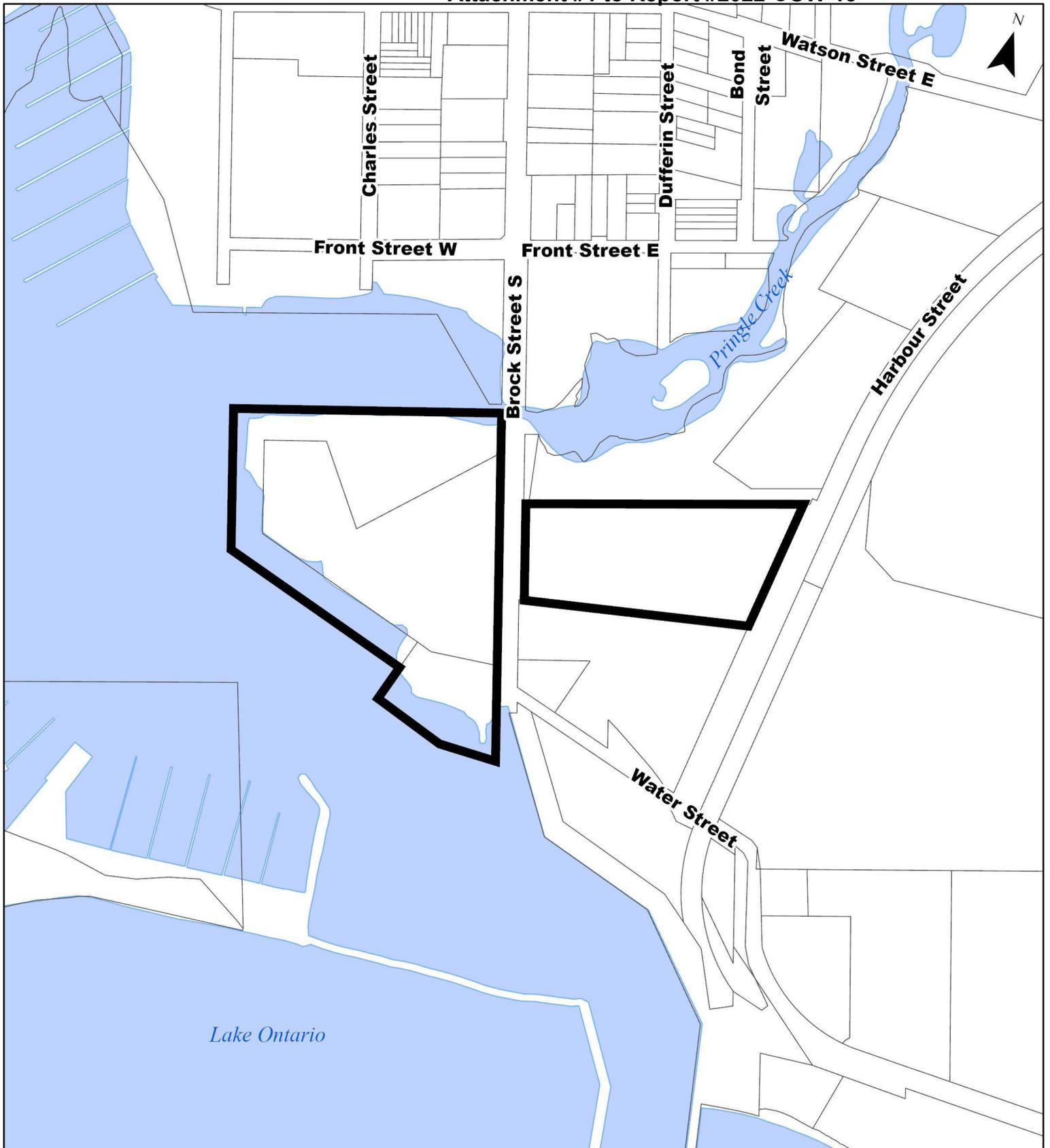
Original signed by:

Nancy Taylor, BBA, CPA, CA
Commissioner of Finance

Recommended for Presentation to Committee

Original signed by:

Elaine C. Baxter-Trahair
Chief Administrative Officer



Brookfield Development Town of Whitby

If this information is required in an accessible format, please contact 1-800-372-1102 ext. 3540.



The Regional Municipality of Durham Report

To: Committee of the Whole
From: Acting Commissioner of Works and Commissioner of Planning and Economic Development
Report: 2022-COW-16
Date: June 22, 2022

Subject:

Updated Source Protection Plans and Assessment Reports for Proposed New Municipal Wells in the Hamlet of Blackstock, in the Township of Scugog, and the Communities of Cannington and Sunderland, in the Township of Brock

Recommendation:

That the Committee of the Whole recommends to Regional Council:

- A) That the proposed amendments to the Trent Source Protection Plan and Kawartha-Haliburton Assessment Report, as per Section 34 of the *Clean Water Act, 2006*, resulting from the proposed new municipal well for the Blackstock Drinking Water System, be endorsed;
- B) That the proposed amendments to the South Georgian Bay Lake Simcoe Source Protection Plan and Lake Simcoe Assessment Report, as per Section 34 of the *Clean Water Act, 2006*, resulting from the proposed new municipal wells in the Cannington and Sunderland Drinking Water Systems, be endorsed;
- C) That the commencement of the public consultation process by Trent Conservation Coalition and the South Georgian Bay Lake Simcoe Source Protection Region be authorized; and
- D) That the new Wellhead Protection Areas (WHPAs) for Blackstock, Cannington and Sunderland Drinking Water Systems and associated mapping be incorporated into the Durham Official Plan following approval by the Minister of the Environment, Conservation and Parks, and be added to the Kawartha-Haliburton and Lake Simcoe Assessment Reports.

Report:**1. Purpose**

- 1.1 The purpose of this report is to provide an overview of proposed changes related to the Wellhead Protection Areas (WHPAs) in Blackstock, Cannington, and Sunderland resulting from the proposed addition of new wells to each Drinking Water System (DWS). In addition, this report summarizes the process required to amend the Source Protection Plans and Lake Simcoe and Kawartha-Haliburton Assessment Reports (AR).
- 1.2 The proposed new municipal wells are located in the following three groundwater based DWSs owned and operated by the Regional Municipality of Durham (Region):
 - a. Blackstock DWS is located in the Township of Scugog, Trent Conservation Coalition (TCC) Source Protection Region (SPR) and the Kawartha-Haliburton Source Protection Authority (KHSPA);
 - b. Cannington DWS is located in the Township of Brock, South Georgian Bay Lake Simcoe (SGBLS) SPR, Lake Simcoe Source Protection Authority; and
 - c. Sunderland DWS is located in the Township of Brock and South Georgian Bay Lake Simcoe SPR, Lake Simcoe Source Protection Authority.
- 1.3 According to the *Clean Water Act, 2006* (the *Act*), before water can be provided to the public from any new well connected to the Drinking Water System (except in an emergency situation) the technical work including the delineation of the new WHPA, aquifer vulnerability assessment, and enumeration of significant threats must be incorporated into the respective Source Protection (SP) Plans and the Assessment Reports (AR) within which the subject well is located.

2. Background

- 2.1 The Blackstock DWS currently includes one active well (MW8) and one inactive well (MW7) which was never connected to the DWS. The existing inactive well (MW7) is now proposed to be connected to provide security to the Blackstock DWS.

- 2.2 The Cannington DWS currently includes five active wells (MW2, MW3, MW4, MW7 and MW8) and two recently constructed wells (MW9 and MW10) which are planned to be connected to the DWS.
- 2.3 The Sunderland DWS presently consists of two wells; the existing well (MW1) and a new well (MW3), which was drilled in 2017 and became operational in September 2019 under a declared emergency. Well MW3 replaced well MW2 because raw water quality degraded after a routine rehabilitation program and the existing treatment could not use any current UV technology.
- 2.4 The Source Protection Committee at each of the SPR typically develop and update Source Protection Plans, including SP Polices to protect existing and future municipal drinking water sources within their watersheds. Each Source Protection Committee also prepares the Assessment Report, which characterizes the entire watershed of the Source Protection Region. SP Plans and ARs must be amended when approved by the Minister of the Environment, Conservation and Parks.
- 2.5 Under Section 34 of the *Clean Water Act, 2006*, the proposed amendments to the Trent SP Plan and AR are required because of the delineation of the new WPHA for the new well MW7 for the Blackstock DWS.
- 2.6 The proposed amendments to the South Georgian Bay Lake Simcoe SP Plan and AR are required because of the newly delineated WHPAs for the new wells (MW9 and MW10) for Cannington and the new Emergency well (MW3) for Sunderland DWSs.

3. Technical Work to Meet Source Water Protection Requirements

- 3.1 Characterization and understanding of the underlying hydrologic and hydrogeologic systems form the foundation of SP planning and the assessment of risk to groundwater resources.
- 3.2 Given the complexity of these systems, including new data and information acquired over the years, the Region identified the need to update the extensive regional suite of numerical modelling tools to better represent the hydrologic and groundwater flow systems extending across Durham. This includes updates to local conditions in the northern communities. The development and calibration of the suite of numerical models are referred to as the Durham 2021 Model.

- 3.3 The updated modelling work better reflects the current state of knowledge of the regional stratigraphy in the Region and is more representative of observed hydrogeological data, and of the current conceptual understanding of the areas around the municipal wellfields. The Durham 2021 Model is constructed within a single unified regionally extensive framework that accommodates both local-scale assessments around municipal wellfields and larger scale modelling of regional features and flow systems on the watershed or multi-watershed scale.
- 3.4 The updated WHPAs delineated for the new and existing wells at Blackstock, Cannington and Sunderland DWS are shown in Attachments 1 to 3. The updated vulnerability scores within new WHPAs are shown on Attachments 4 to 6.
- 3.5 In addition, as part of the technical work, the Assessment of Drinking Water Threats was updated within newly delineated WHPAs for the new and existing wells at Blackstock, Cannington and Sunderland DWS.
- 3.6 There are both important similarities and differences between the current and recently developed WHPAs. Several factors were considered and investigated to develop an understanding of the causes for the differences between the historical and updated WHPAs for the municipal supply wells. The factors considered include:
- Conceptualization of the hydrostratigraphy;
 - Numerical model development and the simulation approach for surface water features;
 - Specified recharge distributions;
 - Pumping rates specified for the delineation of the historical and updated WHPAs;
 - Hydrogeological properties (aquifer thicknesses, hydraulic conductivity and porosity); and
 - The techniques used for delineating the WHPAs.

4. Process to Amend of Source Protection Plans, Section 34 of the Act

4.1 Amendments under Section 34 of the *Act* for implementing source protection requirements are summarized below:

- a. Early Planning - municipal residential drinking water system owners and local Source Protection Authority (SPA) discuss owners' intention of establishing or altering a system;

- b. Notification from Owner - System owner conducts technical EA and source protection planning work (mapping, vulnerability) and provides confirmation to the local SPA of their input in applying for a permit/licence from MECP;
- c. Source Protection Work – System owner completes and submits WHPA mapping and vulnerability delineation to local SPA and the leading SPA Program Manager;
- d. Notice from SPA – Local SPA reviews technical work to determine if work is sufficiently completed and issues a Notice to the Owner stating that the works are complete. Owner then applies for Drinking Water Works Permit/Licence;
- e. SPA Update Early Engagement 1 - Local SPA informs affected municipalities that a Council Resolution will be required and starts early engagement with MECP for feedback;
- f. Plan Amendments(s) Developed – SPA and SPC agree on amendments required;
- g. Early Engagement 2 – At the discretion of the local SPA, copies of the proposed amendments can be provided to the Clerk of the affected municipalities and other persons;
- h. Pre-consultation - Notice of SPP revisions including draft policy text, summary of rationale for changes and a request for written comments sent to impacted bodies including municipalities and government bodies;
- i. Municipal Endorsement - Municipalities affected by proposed amendments pass a Council Resolution endorsing the amendments if this has not already been accomplished in pre-consultation step h;
- j. Public Consultation - Local SPA publishes proposed amendments on website with hardcopies to be made available and notification in the newspaper and to affected parties. Public consultation to last minimum 35 days from the date of notification;
- k. Finalize Amendment Package – System owner obtains final endorsement from SPA board(s) and prepares MECP submission package;
- l. SPA Submission to MECP – Including cover letter confirming SPA board(s) support of amendments, proposed amendments, revised explanatory documents, summary of all consultation activities and example of notices;

- m. Provision of Water – Chair of SPC, Local and Lead SPAs receive notification from MECP that amendments to the Source Protection Plan have been approved. The new wells can now supply water to the public; and
 - n. Once the WHPAs for Blackstock, Cannington and Sunderland are approved by the MECP and added to the Assessment Reports, associated amendments can be made to the Regional Official Plan.
- 4.2 The Region has already completed steps a to h. Municipal endorsement (step i) is required to complete the public consultation process (step h).

5. Financial Implications

- 5.1 The proposed endorsement does not require any financial commitment by the Region, beyond the typical requirements related to the operation and maintenance of the groundwater supply systems which are recovered through the water user rate revenue.

6. Relationship to Strategic Plan

- 6.1 This report aligns with/addresses the following strategic goals and priorities in the Durham Region Strategic Plan:
- a. Goal 5.1 Optimize resources and partnerships to deliver exceptional quality services and value
 - b. Goal 5.2 Collaborate for a seamless service experience
 - c. Goal 5.3 Demonstrate commitment to continuous quality improvement and communicating results

7. Conclusion

- 7.1 The Regional Municipality of Durham (Region) must complete source water protection requirements including delineation of new Wellhead Protection Areas and enumeration of potential Significant Threats within the new Wellhead Protection Areas for any new wells before water is provided to the public.
- 7.2 It is recommended that the proposed amendments to the Trent Source Protection Plan and Kawartha-Haliburton Assessment Report, as per Section 34 of the Clean Water Act, 2006, resulting from the new municipal well for the Blackstock Drinking Water System, be endorsed.

- 7.3 It is recommended that the proposed amendments to the South Georgian Bay Lake Simcoe Source Protection Plan and Lake Simcoe Assessment Report, as per Section 34 of the *Clean Water Act, 2006*, resulting from new municipal wells in the Cannington and Sunderland Drinking Water Systems, be endorsed.
- 7.4 It is recommended that the commencement of the public consultation process by Trent Conservation and the South Georgian Bay Lake Simcoe Source Protection Region, be authorized.
- 7.5 It is recommended that the new Wellhead Protection Areas (WHPAs) for Blackstock, Cannington and Sunderland and associated mapping will be incorporated into the Durham Official Plan following approval by the Minister of the Environment, Conservation and Parks and be added to the Kawartha-Haliburton and Lake Simcoe Assessment Reports.
- 7.6 For additional information contact: Beata Golas, Senior Hydrogeologist, at 905-668-7711, extension 3447.

8. Attachments

Attachment #1: Blackstock WHPA Comparison

Attachment #2: Cannington WHPA Comparison

Attachment #3: Sunderland WHPA Existing and New

Attachment #4: Blackstock Vulnerability Scores

Attachment #5: Cannington Vulnerability Scores

Attachment #6: Sunderland Vulnerability Scores

Respectfully submitted,

Original signed by:

Jenni Demanuele, CPA, CMA
Acting Commissioner of Works

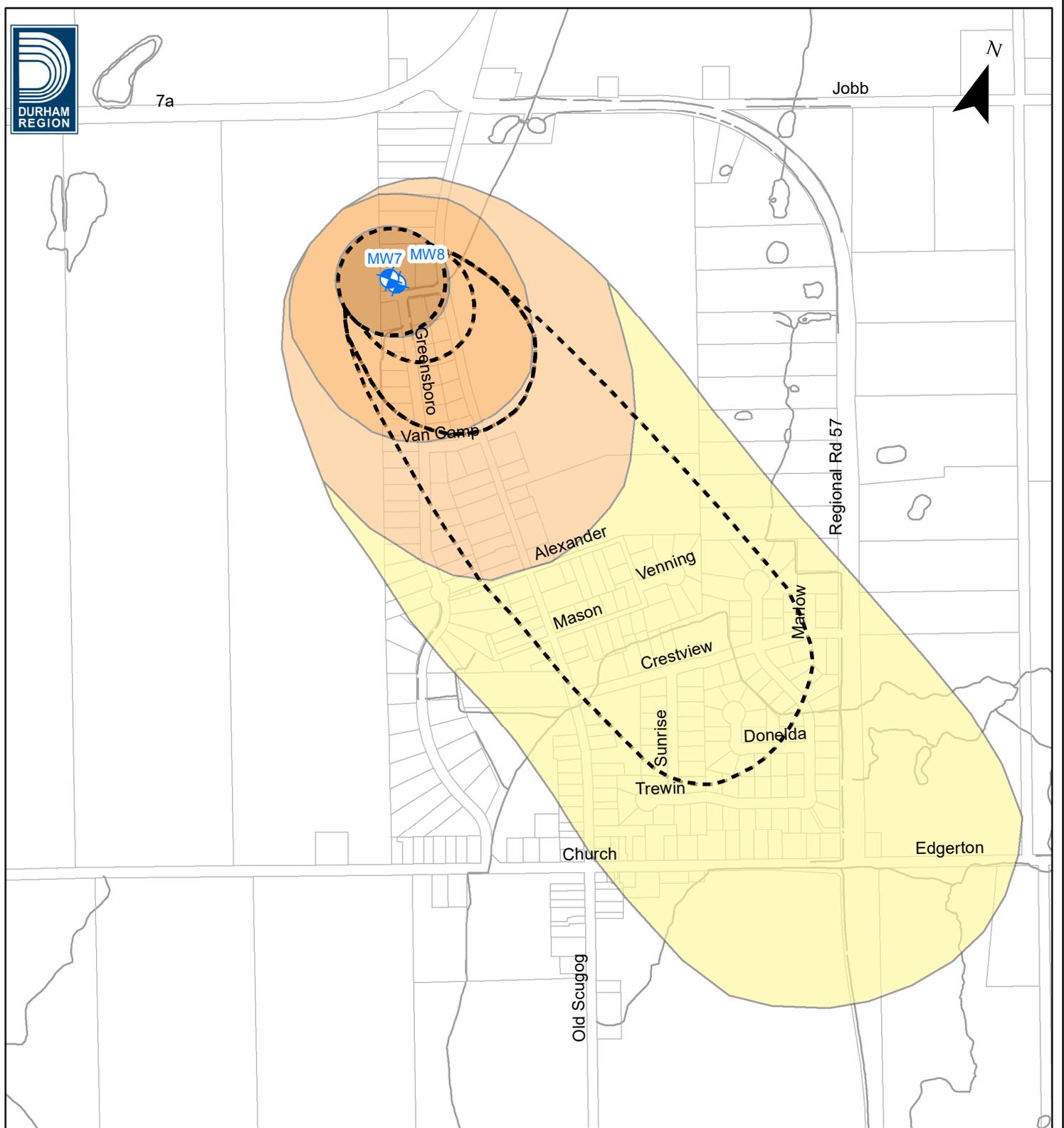
Original signed by:

Brian Bridgeman, MCIP, RPP
Commissioner of Planning and Economic
Development

Recommended for Presentation to Committee

Original signed by:

Elaine C. Baxter-Trahair
Chief Administrative Officer



Legend

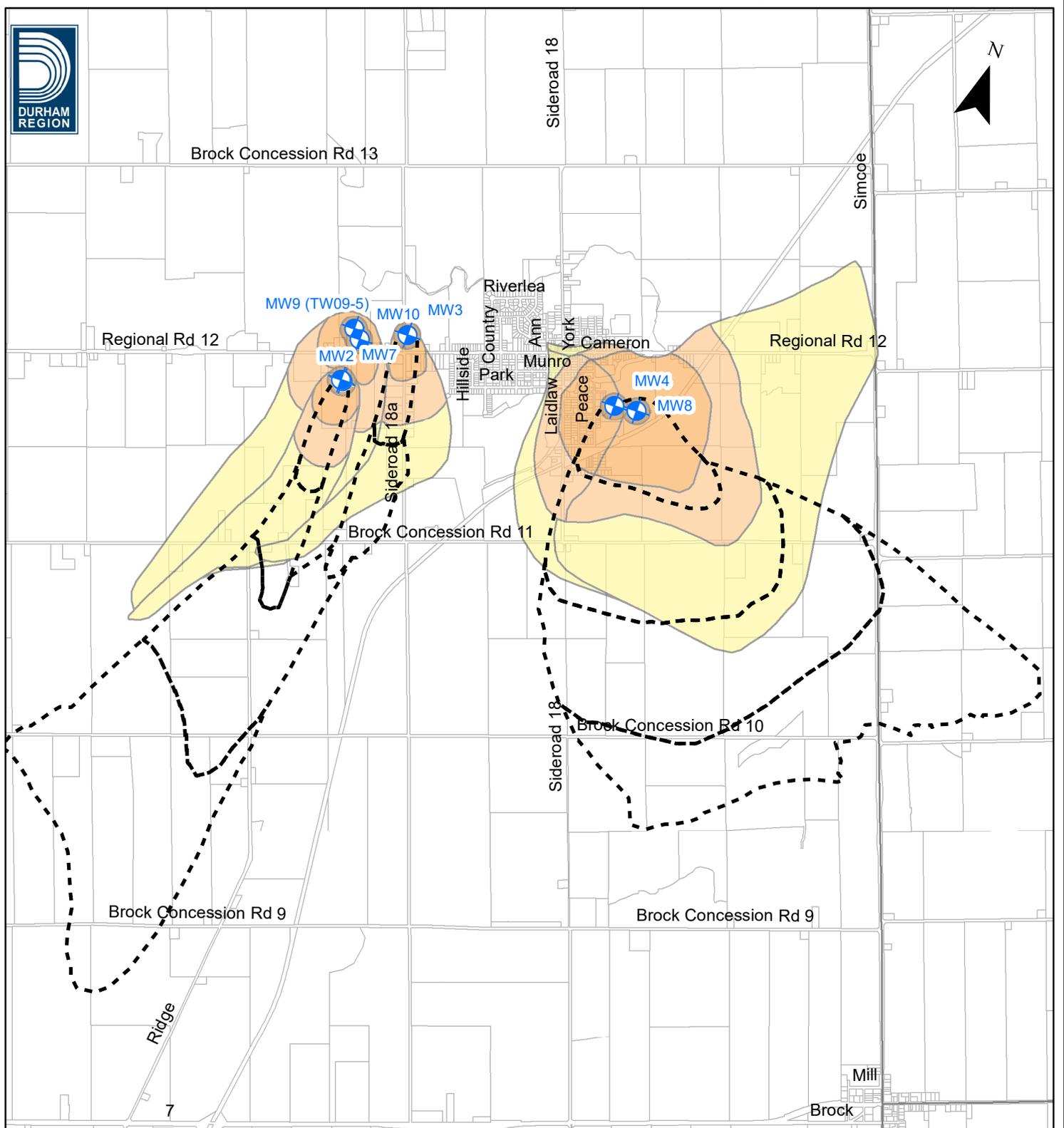
-  Municipal Wells
-  Previous WHPA
-  WHPA-A
-  WHPA-B
-  WHPA-C
-  WHPA-D

Proposed Versus Existing Wellhead Protection Areas Blackstock



1:10,000

Figure



Legend

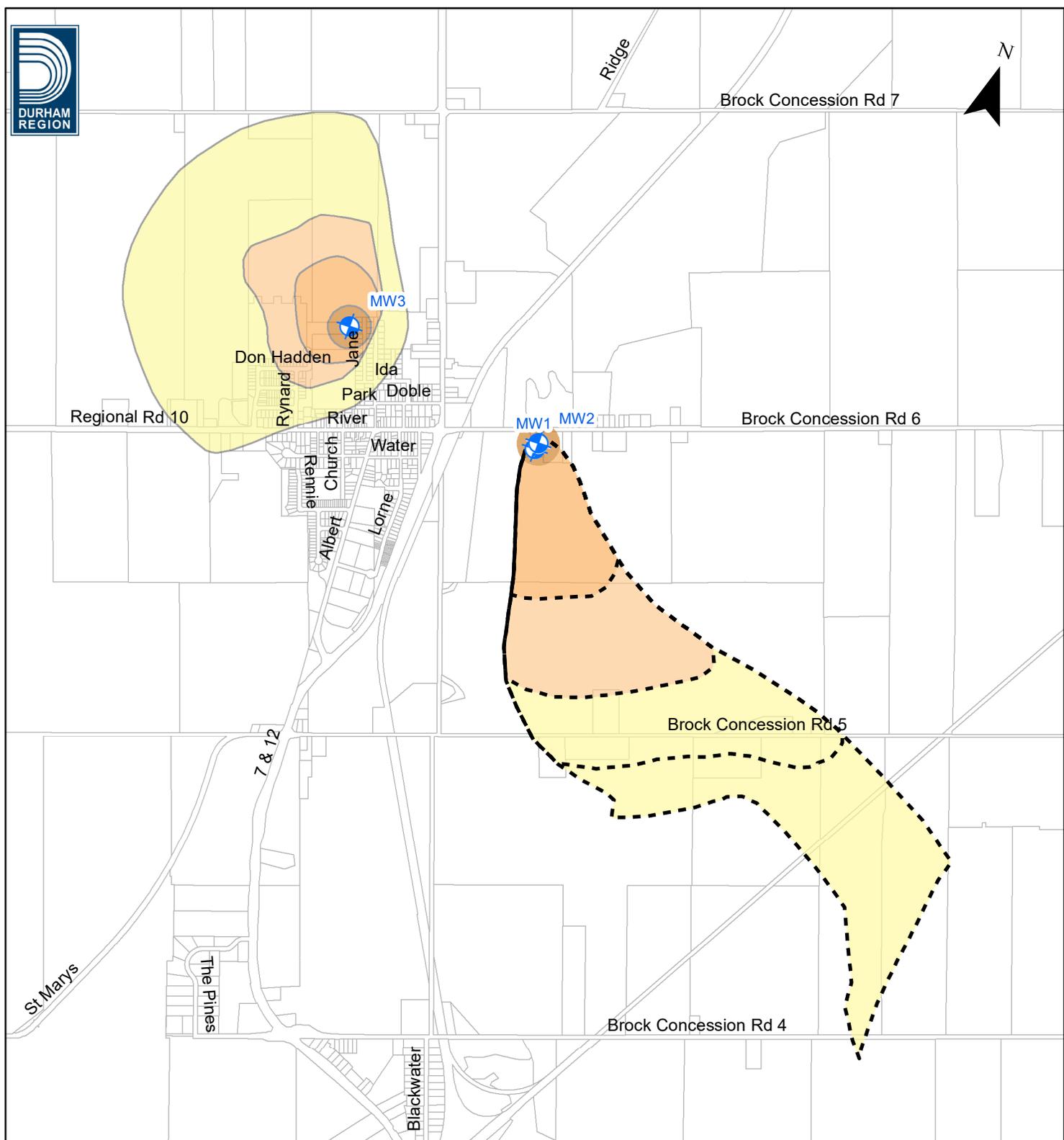
-  Municipal Wells
-  Previous WHPA
-  WHPA-A
-  WHPA-B
-  WHPA-C
-  WHPA-D

Proposed Versus Existing Wellhead Protection Areas Cannington



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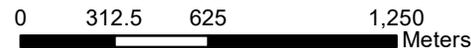
Figure



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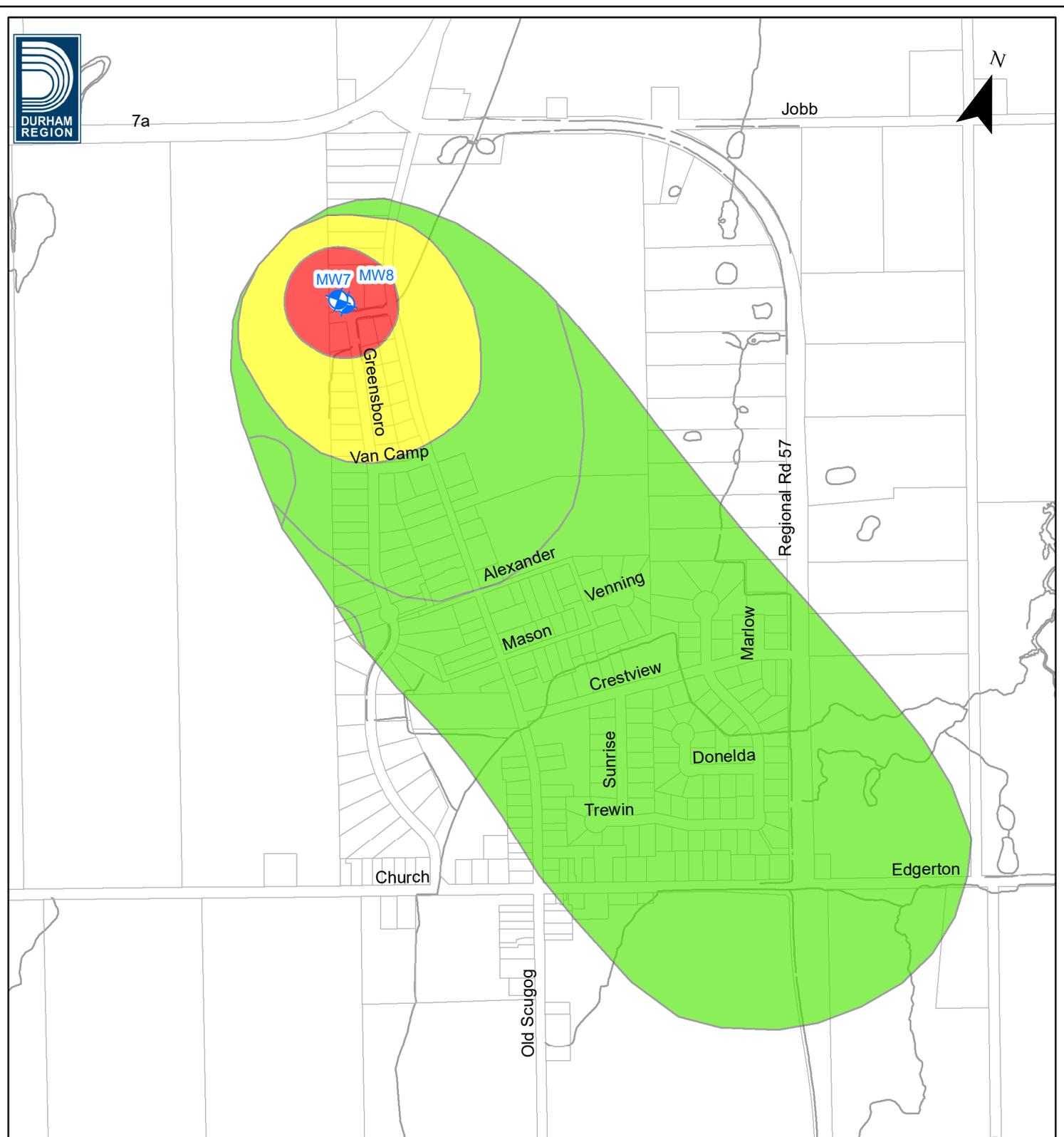
- Municipal Wells
- WHPA MW1 AND MW2 (2003)
- WHPA MW3 (2021) WHPA-A
- WHPA-B
- WHPA-C
- WHPA-D

Emergency Versus Existing (2003) Wellhead Protection Areas Sunderland



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Figure



Legend

 Municipal Wells

Vulnerability Score

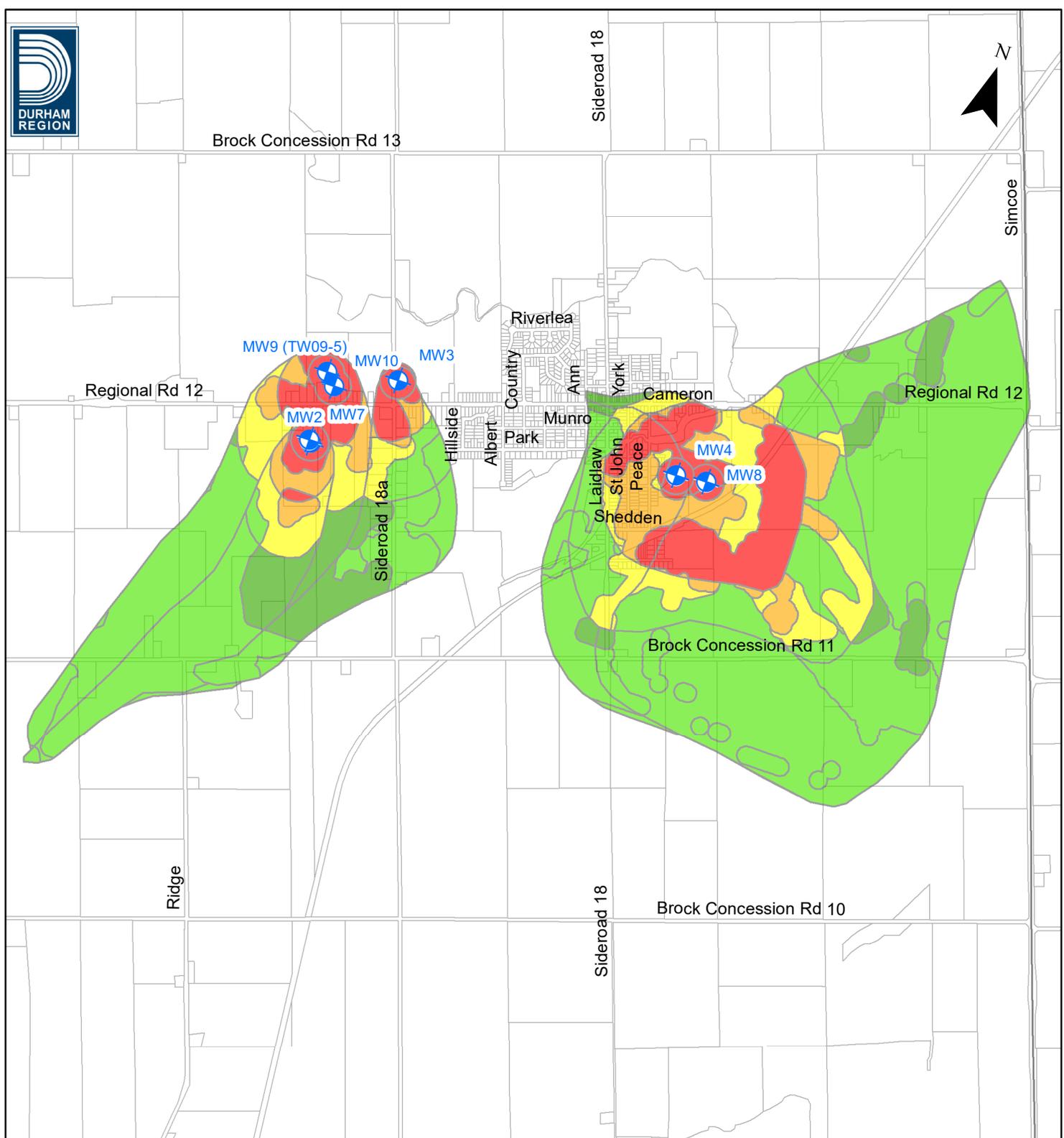
-  10
-  8
-  6
-  2

**Vulnerability Scores
Blackstock**

0 125 250 500 Meters

1:10,000

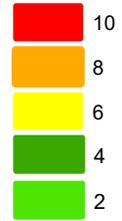
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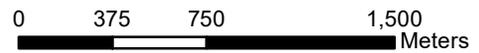
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 Municipal Wells

Vulnerability Score

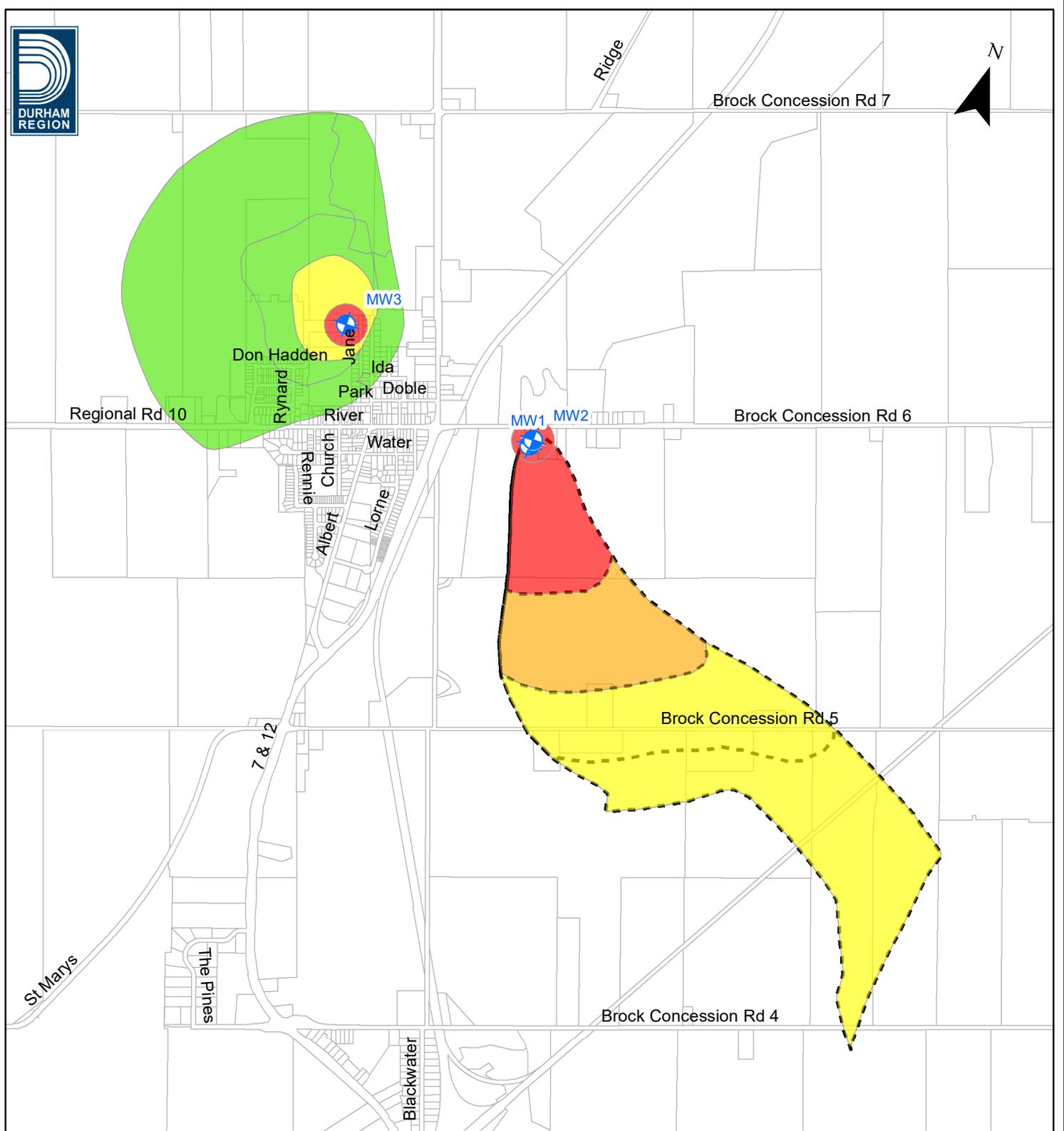


**Vulnerability Scores
Cannington**



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Figure



Legend

-  Municipal Wells
-  Existing (2003) WHPA

Vulnerability Score

-  10
-  8
-  6
-  2

**Emergency Versus Existing (2003)
Vulnerability Scores
Sunderland**



1:25,000

Figure

If this information is required in an accessible format, please contact 1-800-372-1102 ext. 3540.



The Regional Municipality of Durham Report

To: Committee of the Whole
From: Acting Commissioner of Works, Commissioner of Finance, and
Commissioner of Corporate Services
Report: #2022-COW-17
Date: June 22, 2022

Subject:

Revisions to the Seaton Phase 1 Regional Infrastructure Front Ending Agreement

Recommendations:

That the Committee of the Whole recommends to Regional Council:

- A) That to accommodate the development of a proposed food manufacturing campus which requires approximately 60 acres (24 hectares) of Prestige Employment Land, located north of Highway 407, south of Highway 7 and west of Whites Road (Regional Road 38) which represents the first phase of the food campus development, the Seaton Phase 1 Regional Infrastructure Front Ending Agreement (Phase 1 RFEA) be amended to:
- i) Modify the limits of the Seaton Phase 1 lands to expand the Phase 1 Prestige Employment Lands from 200 acres to 260 acres
 - ii) Include a condition that the sanitary sewage flows resulting from the development of the balance of the Phase 1 Prestige Employment Lands be capped at the capacity of the downstream sanitary sewer;
 - iii) Require the Regional Attribution Prepayment, currently set at \$192,065 per hectare be applied to the new Phase 1 Prestige Employment Lands, at the rate in effect at the time of payment and that these Prepayments continue on the remaining Phase 1 Prestige Employment Lands until the full commitment contained in the Phase 1 RFEA is met;

- B) That the Regional Chair and Clerk be authorized to execute an amendment to the Seaton Phase 1 Regional Infrastructure Front Ending Agreement, in a form satisfactory to the Regional Solicitor; and
 - C) That a copy of this report be sent to the City of Pickering.
-

Report:**1. Purpose**

- 1.1 The purpose of this report is to seek Regional Municipality of Durham (Region) Council approval to revise the Seaton Phase 1 Regional Infrastructure Front Ending Agreement (Phase 1 RFEA) to expand the limits of the Phase 1 Prestige Employment Lands from 200 acres to 260 acres. Additional amendments to the RFEA related to the financial arrangements will also be required to facilitate these changes.

2. Background

- 2.1 In November of 2015, the Region and the Seaton Landowners Group (the LOs), which includes the Province as a landowner, executed the Phase 1 RFEA for Seaton. Phase 1 includes the financing and construction of the Regional infrastructure required to service 9,800 Single Detached Equivalent (SDE) residential units and 200 acres (81 ha) of Prestige Employment Lands. The Province has sold a portion of the Prestige Employment Lands and is actively marketing the remainder of the 200 acres (81 ha). The limits of Phase 1 are shown in Attachment #1.
- 2.2 The limits of Phase 1 were determined, in part, based on the allowable allocation of capacity in the sanitary sewer and water supply systems, especially related to the capacity of the Ajax Water Supply Plant (WSP). The Ajax WSP will need to be expanded to allow development to continue in Phase 2 of Seaton. These works are included in the 2022 Water Supply Business Plans and Budget and nine-year forecast. The available capacity at the Ajax WSP for Seaton Phase 2 development will depend on the plant capacity required by all other developments outside of Seaton, within the urban service area which includes the Town of Ajax and the City of Pickering.
- 2.3 The Province is requesting that the Phase 1 RFEA be amended to add approximately 60 acres (24 ha) of Prestige Employment Lands for a proposed food manufacturing campus. It is planned that the proposed food manufacturing

campus will be allocated the required sanitary sewer and water supply system capacity. The location of this proposed project is outside of the existing Phase 1 limits (see Attachment #1). The available Phase 1 Prestige Employment Lands (i.e., the remainder of the original 200 acres) could not accommodate the proposed food manufacturing campus development.

- 2.4 The Province has offered to cap the maximum sanitary flows from the expanded 260 acres (105 ha) of Prestige Employment Lands to the capacity of the existing sanitary sewer system at the south end of the Prestige Employment Lands. Regional staff will review all future employment lands development applications to ensure the total design flows never exceed the capacity of the sewer system.
- 2.5 In order for the subject lands to utilize the Phase 1 Regional infrastructure funded by the LOs group, the Phase 1 RFEA must be amended to address these changes in Phase 1 development limits and the corresponding capacity allocation. All current signatories to the Phase 1 RFEA must agree to the amendment for the proposed food campus to proceed.

3. Regional Infrastructure

- 3.1 The proposed 60-acre (24 ha) food campus is intended to include more than one million square feet of manufacturing and distribution space, spread over five buildings.
- 3.2 Water supply for the project will be provided from the existing Zone 5 watermain located on Whites Road (Regional Road 38). The completion of the Zone 5 water pumping station is also required for this site, which is scheduled for completion later this year.
- 3.3 The sanitary sewer designed to service the proposed food campus site is located to the west of the campus and has not been constructed or planned to be constructed as part of the Seaton Phase 1 RFEA. Until a Phase 2 RFEA is negotiated to construct this future sewer, this site will connect to the Phase 1 sanitary sewer constructed on the east side of Whites Road, north of the Highway 407 Express Toll Route (ETR).
- 3.4 A sanitary sewer analysis has been completed to determine the impact of the temporary connection to the existing Phase 1 sanitary sewer. The analysis includes the following assumptions:

- (i) The balance of Phase 1 employment and residential lands build out at, or less than, Regional standard design flows;
 - (ii) No additional development beyond Phase 1 can be directed to the Phase 1 sanitary sewer (employment or residential) until the future sanitary sewer is constructed and the flows from the food campus are redirected to it; and
 - (iii) The Federal lands are not developed before the subject lands are diverted to the future sanitary sewer, to be constructed through a future front ending agreement with the Seaton Landowners.
- 3.5 This analysis has determined that the Phase 1 sanitary sewer can accept these temporary flows with acceptable impacts to the system. However, should the balance of the Phase 1 Prestige Employment Lands develop with design flow requirements greater than the Regional standard design flows, development of some of the Phase 1 Employment Lands may need to be held to ensure the capacity of the existing sanitary sewer system is not exceeded.

4. Financial Implications

- 4.1 There are no additional capital costs to the Region for this proposed development. However, the Phase 1 RFEA requires certain prepayments for developments in Phase 1.
- 4.2 The Phase 1 RFEA requires a Regional Attribution Prepayment related to water supply and sanitary sewer from all 200 acres of Prestige Employment Lands in Seaton. This payment is necessary to ensure the Region is made whole at the end of Phase 1 development for the attribution capital costs. The current amount is \$192,065 per hectare (ha) and is payable at building permit issuance. This additional 24 ha of land for the proposed food manufacturing campus will be subject to this payment, and payments will continue from all other Prestige Employment Lands until the LOs' commitment in the Phase 1 RFEA is fully achieved.

5. Previous Reports and Decisions

- 5.1 Report #2015-J-25: Proposed Regional Front-Ending Agreement and Related Agreements for the Development of the Seaton Community, in the City of Pickering.

- 5.2 Report #2019-W-62: Seaton Phase 1 Regional Infrastructure Front Ending Agreement – Amendment Agreement.
- 5.3 Report #2021-COW-6: Seaton Phase 2 Regional Front Ending Agreement – Regional Objectives and Commencement of Negotiations.

6. Relationship to Strategic Plan

- 6.1 This report aligns with/addresses the following strategic goals and priorities in the Durham Region Strategic Plan:
- a. Goal 3 – Economic Prosperity
- To build a strong and resilient economy that maximises opportunities for business and employment growth, innovation and partnership.

7. Conclusion

- 7.1 It is recommended that the revisions discussed in this report be incorporated into an amended agreement to the Seaton Phase 1 Regional Infrastructure Front Ending Agreement to allow the proposed food campus to proceed within the employment lands.
- 7.2 This report has been reviewed by Corporate Services – Legal Services.
- 7.3 For additional information, contact: Paul Gillespie, Manager, Development Approvals, at 905-668-7711, extension 3443.

8. Attachments

Attachment #1: Location Plan

Respectfully submitted,

Original signed by:

Jenni Demanuele, CPA, CMA
Acting Commissioner of Works

Original signed by:

Nancy Taylor, BBA, CPA, CA
Commissioner of Finance

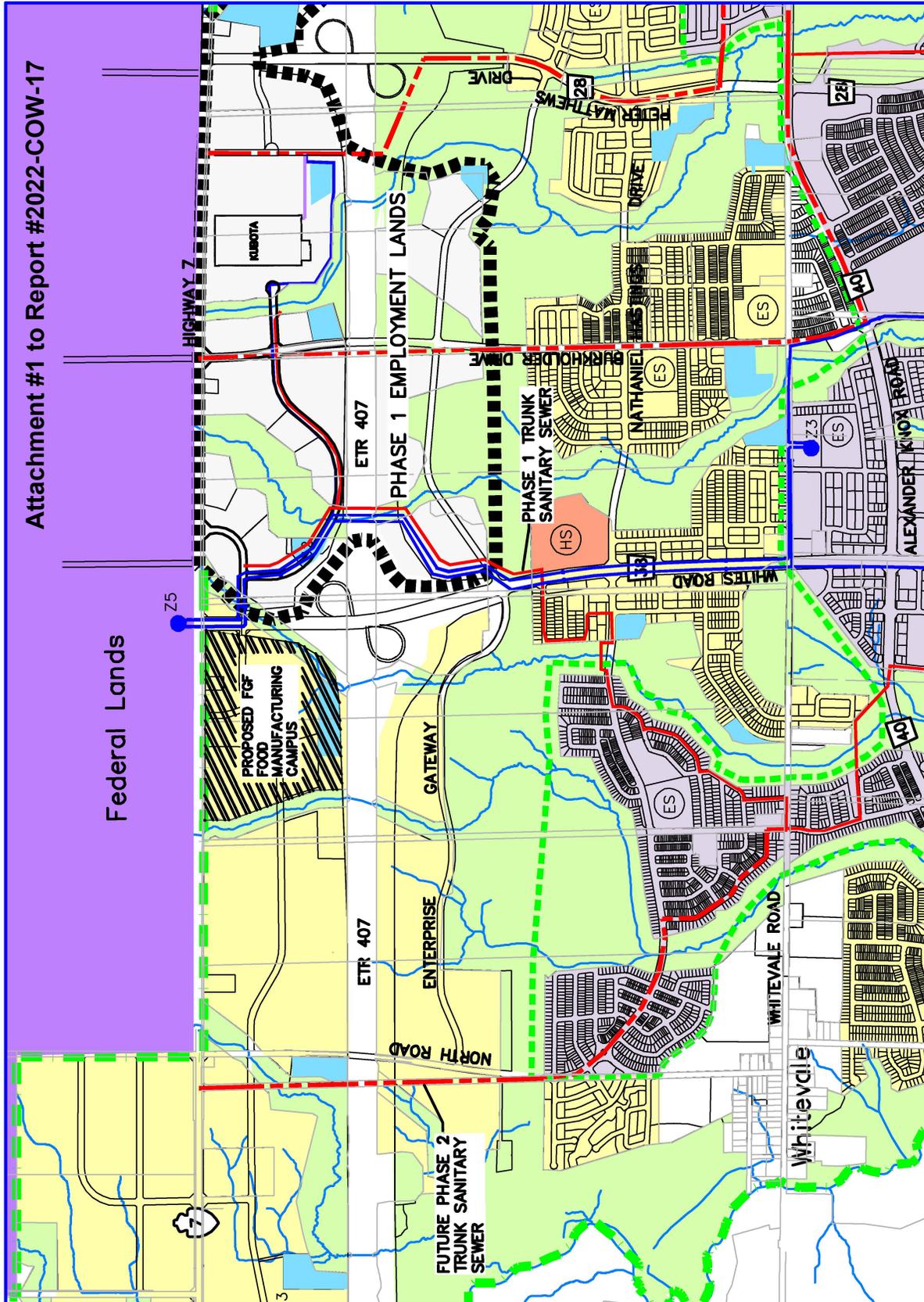
Original signed by:

Don Beaton, BCom, M.P.A.
Commissioner of Corporate Services

Recommended for Presentation to Committee

Original signed by:

Elaine C. Baxter-Trahair
Chief Administrative Officer



Legend

-  Existing Sanitary Sewer
-  Future Sanitary Sewer
-  Existing Watermain
-  Phase 1 Employment Lands Boundary



Attachment #1: Location Plan

If this information is required in an accessible format, please contact 1-800-372-1102 ext. 3540.



The Regional Municipality of Durham Report

To: Committee of the Whole
From: Acting Commissioner of Works and Commissioner of Finance
Report: #2022-COW-18
Date: June 22, 2022

Subject:

Next Steps for the Restoration and Redevelopment of 300 Ritson Road South, in the City of Oshawa

Recommendations:

That the Committee of the Whole recommends to Regional Council:

- A) That the overview of the proposed project plan for the restoration and redevelopment of the former Ritson Public School located at 300 Ritson Road South in the City of Oshawa be received for information;
 - B) That financing for the detailed site investigation work estimated at \$550,000 be provided to support advancing the building and site development at the discretion of the Commissioner of Finance; and
 - C) That the Commissioner of Finance be authorized to execute any necessary agreements with respect to the grant funding associated with the implementation of GHG reduction measures at this location.
-

Report:

1. Purpose

- 1.1 The purpose of this report is to provide Regional Municipality of Durham (Region) Council with an overview of the proposed project plan for the restoration and redevelopment of the former Ritson Public School located at 300 Ritson Road South in the City of Oshawa (Oshawa).

1.2 This report also seeks authorization to commence detailed building and site investigative work to inform future project phases and guide the proposed conceptual site planning.

1.3 Dollar amounts followed by an asterisk (*) are before applicable taxes.

2. Background and Previous Reports

2.1 In November 2020, Durham Regional Council approved the Master Housing Strategy and committed to the initiation of 1,000 new affordable rental/supportive housing units and to increase the supply of medium to high-density housing in Durham.

2.2 The Durham District School Board (DDSB) declared the former Ritson Public School, located at 300 Ritson Road South, surplus to their needs and offered it for sale at fair market value.

2.3 Report #2021-COW-24 authorized staff to enter into negotiations with the DDSB and to enter into an Agreement of Purchase and Sale at the Regional Municipality of Durham's (Region) estimated fair market value of \$6,990,400. The Region had until October 19, 2021, to submit a fair market value offer for the site under the DDSB's disposition regulations.

2.4 Report #2021-COW-33 authorized staff to amend the offer of compensation from \$6,990,400 to \$7,490,000 as negotiated with the DDSB for the acquisition of 300 Ritson Road South, Oshawa.

2.5 The Region took possession of the site on January 26, 2022.

2.6 On May 9, 2022, the Region was notified that its Expression of Interest Submission under the Low Carbon Economy Challenge Champions Stream titled "Regional Municipality of Durham Net Zero Carbon Building Retrofit for 300 Ritson Road South, Oshawa" was successfully evaluated, resulting in an invitation to submit a Formal Proposal for \$2,000,000 in funding to implement GHG reduction measures at this location.

3. Project Development

3.1 The physical work to be undertaken at the 300 Ritson Road South site will follow two streams involving the existing building and the undeveloped lands.

3.2 Project Stream 1 will involve the restoration and renovation of the former Ritson Public School building. Exterior building envelope restoration and surrounding

- site improvements will be undertaken to ensure building elements remain structurally intact to preserve and maintain the original building character. The project team will explore retrofitting the building systems to meet energy targets as well as the potential for on-site energy generation such as solar. This work can advance separately from the interior renovation work that will be guided by the determination of services and programming to be delivered from this location.
- 3.3 Once the interior programming has been determined through a consultative process, detailed design for interior renovations and exterior restorations to meet the programming will commence. The staging of the work will be determined based on when the services are desired to commence and the availability of funds to advance the work. The method of project delivery will be determined based on the scope of the individual work packages.
- 3.4 Project Stream 2 will examine the potential for the undeveloped lands (approximately 2 acres). Conceptual massing and master planning for the development of the undeveloped lands will be undertaken. Work completed at this stage will be used to determine the appropriate method to deliver the planned development and to inform the detailed design work that will follow. Delivery options could be led solely by the Region or in partnership with other organizations or the private sector.
- 3.5 Public consultation will be the foundation leading into each stream of work. There will be a significant connection between the activities proposed in the former school building and how the remainder of the site is developed. Staff propose that to commence the project, full consultation for both streams of work be undertaken simultaneously to ensure there is no disconnect and that the site integration and adjacencies are effective.
- 3.6 Consultations will involve Regional staff, staff from the City of Oshawa, the community and other service agencies, and will target the identification of services to be delivered from the building and inform the conceptual development of the undeveloped lands on the site.
- 3.7 The proposed phasing of the project will be broken down into distinct phases:
- a) Planning, consultation, and conceptual design work.
 - Retention of master planning consultant for community consultation, program development and conceptual design work:
 1. Development of scope of work.

2. RFP (Request for Proposals) process.
 3. Onboarding of selected consultant and commencement of assignment.
- Stakeholder consultation and needs analysis with internal Regional departments, City of Oshawa staff, the community and external agencies and organizations for:
 1. Project Stream 1: Proposed program and services to be developed in the former school building.
 2. Project Stream 2: The conceptual designs and site massing concepts for the vacant lands.
 - Ongoing exploration of external funding opportunities/financing for building restoration, greenhouse gas (GHG), energy upgrades, etc.
- b) Project Stream 1: Design and renovation of the existing building and Ritson Road frontage site.
- Determine construction delivery model.
 - Commence procurement project.
 - Detailed design and construction documentation.
 - Execute agreements for use of space as required (applicable to external agencies and organizations).
- c) Project Stream 2: Commencement of development process for vacant lands.
- Determine development approach (Regional, private, partnership, other).
 - Commence procurement process/negotiations.
 - Execution of agreements determined by development approach (lease, partnership, contracts, other).
 - Detailed design and construction documentation.

4. Interim Works

- 4.1 Interim works is estimated at \$550,000*; \$375,000* to retain professional services to undertake the consultation and conceptual planning and site massing activities and \$175,000* for works broken down as follows:

- d) Archaeological Assessment - \$23,000*
- e) Geotechnical Survey - \$25,000*
- f) Geophysical Survey - \$20,000*
- g) Updated Phase 1 ESA - \$14,000*
- h) Full Designated Substance Survey (DSS) Report - \$11,000*
- i) Air Quality Testing - \$2,000*
- j) Minor building security upgrades - \$20,000*
- k) Roof drainage repairs - \$35,000*
- l) Preliminary Structural Assessment - \$25,000*

5. Financial Implications

- 5.1 It is recommended that financing for the detailed site investigation work estimated at \$550,000* be provided to support advancing the building and site development at the discretion of the Commissioner of Finance.
- 5.2 As noted in this report, the Region was notified that its Expression of Interest submitted under the Low Carbon Economy Challenge Champions Stream is advancing to the formal proposal stage. If the formal proposal is approved, the Commissioner of Finance will execute any necessary agreements related to this initiative.

6. Conclusion

- 6.1 Staff have developed a high-level project plan as presented in this report to guide the process of restoring and redeveloping the Ritson Public School located at 300 Ritson Road South in Oshawa. The detailed scope of work for the professional services required for the planning, consultation and conceptual design stages will be developed over the next few months.
- 6.2 In the interim, staff will undertake background work and studies that will inform the more detailed work to be undertaken in 2023 throughout the balance of 2022, with financing to be provided.
- 6.3 Staff will continue to investigate external funding opportunities applicable to this project and advance any applications required as appropriate.
- 6.4 For additional information, please contact Andrew MacIntosh, Project Manager, at 905-260-4384.

Respectfully submitted,

Original signed by:

Jenni Demanuele, CPA, CMA
Acting Commissioner of Works

Original signed by:

Nancy Taylor, BBA, CPA, CA
Commissioner of Finance

Recommended for Presentation to Committee

Original signed by:

Elaine C. Baxter-Trahair
Chief Administrative Officer

If this information is required in an accessible format, please contact 1-800-372-1102 ext. 2463.



The Regional Municipality of Durham Report

To: The Committee of the Whole
From: Commissioner of Finance, Commissioner of Social Services and
Commissioner of Planning & Economic Development
Report: #2022-COW-19
Date: June 22, 2022

Subject:

At Home in Durham, the Durham Housing Plan 2014-2024 Annual Report

Recommendation:

That the Committee of the Whole recommends to Regional Council:

- A) That this report be received for information as the legislatively required annual report on the progress of At Home in Durham, the Durham Housing Plan 2014-2024;
- B) That in order to advance the goals of At Home in Durham:
 - i) The Commissioner of Social Services be authorized to shift funding within the current funding envelope between all service level standard eligible units and financial housing benefits, including commercial rent supplement, Durham Rent Supplement, community housing provider programs, the Durham Portable Housing Benefit, and future municipally funded housing benefits that may be developed, in order to be more responsive to local needs and maximize the number of available housing units;
 - ii) The facilitation currently undertaken to remove certain projects with fully discharged mortgages from the Housing Services Act be discontinued, and instead Regional staff be authorized to explore opportunities to partner with the community housing providers that operate these projects to continue to provide affordable housing under Part VII.1 of the Housing Services Act; and
- C) That a copy of this report be forwarded to the Ministry of Municipal Affairs and Housing (MMAH).

Report:**1. Purpose**

- 1.1 The purpose of this report is to update the Committee of the Whole and Regional Council on progress related to At Home in Durham, the Durham Housing Plan 2014-2024, including recommendations to advance its objectives. This serves as the eighth annual progress report for the Plan.

2. Background

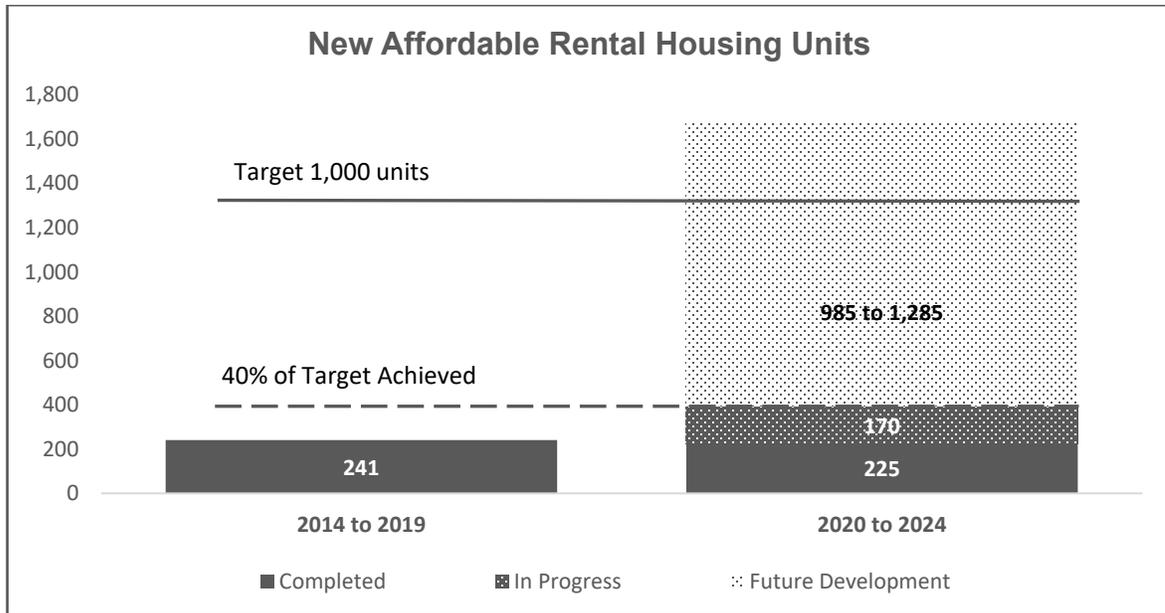
- 2.1 Regional Council approved At Home in Durham, the Durham Housing Plan 2014-2024 in June 2014 (Report #2014-J-16).
- 2.2 At Home in Durham is supported by the work of the Master Housing Strategy (Report # 2020-COW-27) and the recommendations of the Affordable and Seniors Housing Task Force (Report #2017-COW-249).
- 2.3 At Home in Durham sets out four goals and primary actions that aim to improve affordability and access to housing, protect the existing affordable housing supply, encourage housing diversity, and build capacity in the housing system. These goals are:
- Goal 1: End Homelessness in Durham
 - Goal 2: Affordable Rent for Everyone
 - Goal 3: Greater Housing Choice
 - Goal 4: Strong and Vibrant Neighbourhoods.
- 2.4 At Home in Durham commits to ambitious targets in relation to these goals, including the initiation of the development of 1,000 new affordable rental housing units over the final five years of the current plan.
- 2.5 In July 2020, the Housing Services Act (HSA) was amended in line with the provincial Community Housing Renewal Strategy to:
- a. Provide a streamlined legislative framework for community housing that will incent community housing providers to stay in the housing system once their original operating agreements and mortgages end (EOA/EOM).
 - b. Make it easier for service managers and housing providers to meet the housing needs of their communities, while enabling opportunities for long-term sustainability and new community housing development.
- 2.6 These changes afford the opportunity for the Regional Municipality of Durham (Region) to be more flexible in its approach to community housing and municipally funded financial housing assistance programs to further advance the goals and objectives of At Home in Durham and the Master Housing Strategy.

3. Previous Reports and Decisions

- 3.1 [Report #2014-J-16](#) At Home in Durham, the Durham Housing Plan 2014-2024.
- 3.2 [Report #2022-INFO-46](#) Housing Services Act – Regulation Changes
- 3.3 [Report #2022-COW-7](#) Regional Incentive Program for Affordable Housing
- 3.4 [Report #2020-COW-27](#) Master Housing Strategy.
- 3.5 [Report #2020-SS-15](#) Portable Housing Benefits
- 3.6 [Report #2019-COW-25](#) At Home in Durham, the Durham Housing Plan 2014-2024 – Five-year Review.
- 3.7 [Report #2019-COW-4](#) 2019 Regional Social Housing Servicing and Financing Study – approval of Durham Portable Housing Benefit pilot
- 3.8 [Report #2017-COW-257](#) 2018 Regional Social Housing Servicing and Financing Study – flexibility to shift units between rent supplement and community housing
- 3.9 [Report #2017-COW-249](#) Affordable and Seniors Housing Task Force.
- 3.10 [Report #2016-COW-84](#) 2017 Regional Social Housing Servicing and Financing Study – reallocation of mortgage subsidy savings at EOM.

4. New Affordable Rental Housing Development

- 4.1 Since the introduction of At Home in Durham in 2014, there has been a marked shift in the issue of housing affordability across the province, creating a “housing crisis” that has made the need for action even greater than it was when At Home in Durham was first developed.
- 4.2 In order to address the significant and increasing affordability needs of low- and moderate-income renters in Durham, the Region has committed to the initiation of 1,000 new affordable rental housing units over the final five years of At Home in Durham (Report #2019-COW-25). A robust and affordable housing sector is critical to eliminating homelessness and building healthy, strong and vibrant communities.
- 4.3 Since 2014, the Region has leveraged considerable federal and provincial funding for the development of new affordable rental housing in Durham.
 - a. In the first five years of the plan (2014 to 2019), 241 new units were developed across 5 different properties.
 - b. Since the beginning of 2020, an additional 225 units have been completed, and 170 units are currently under development.
 - c. An estimated additional 985 to 1,285 potential units have been identified as future development opportunities.



- 4.4 There are seven projects currently under development both directly by the Region and in partnership with non-profit organizations. Projects are at varying stages of completion and are anticipated to be finished between December 2022 and March 2026. These are:
- a. The Region’s Beaverton Supportive Housing project that will provide 47 units of affordable, supportive and transitional housing.
 - b. Three projects under development by Durham Region Non-Profit Housing Corporation (DRNPHC) as part of their long-term sustainability strategy:
 - 24 affordable townhouse units in Oshawa for families.
 - 52-unit apartment building for seniors in Clarington, that will provide 26 affordable rental units.
 - redevelopment of a current community housing site in Oshawa that will increase the total available units and include 26 affordable rental units.
 - c. Co-operative housing project providing 18 affordable and supportive housing units for seniors, people with developmental disabilities and people with mental health and addictions issues.
 - d. Non-profit project that will provide 27 affordable and supportive housing units for youth on former school property in Oshawa.
 - e. Motel acquisition project in Whitby that is providing 26 affordable supportive and transitional housing units for homeless women (24 units are currently occupied and 2 are still under development).
- 4.5 In addition to the projects currently in progress, there is potential for the initiation of an estimated 985 to 1,285 new affordable rental housing units over the life of At Home in Durham. Notably:

- a. The Durham Live lands in Pickering has approvals through a Ministerial Zoning Order for 1,650 new residential units, of which 150 units will be affordable purpose-built rental housing.
 - b. The regeneration of the Durham Regional Local Housing Corporation (DRLHC) has the potential to add about 900 to 950 additional community housing units across four DRLHC sites, of which as many as half could be rent-geared-to-income or below CMHC average market rent. Early work has begun to develop strategies, identify potential, mitigate impact to current tenants, and estimate costs in relation to two of these sites.
 - c. In 2021, Regional Council authorized the purchase of the former Ritson Road Public School property in Oshawa with the potential to explore development opportunities with the private sector for the creation of 100 to 400 medium and/or high density affordable rental housing units on the site, as well as community supports for seniors and child care.
 - d. Consultations continue with Infrastructure Ontario to explore the opportunity to jointly redevelop surplus Regionally owned land in the town of Whitby, which has potential to create approximately 250 affordable purpose-built rental housing units as part of a larger redevelopment.
 - e. The Region continues to work closely with community partners who have identified development opportunities to provide housing with supports for people experiencing homelessness.
- 4.6 The creation of the Region's new At Home Incentive Program will provide up-front capital funding for purpose-built affordable rental housing through annual Calls for Applications (Report #2022-COW-7). The Program will be supported by a new At Home Incentive Program Reserve Fund, with base funding of \$5.5 million and annual contributions, subject to the annual Business Plans and Budget process. Program materials are under development, and the first Call for Applications is anticipated to be issued in the fall of this year.
- 4.7 At a total of 395 units either completed or in progress since 2020, the Region has already initiated about 40 per cent of the targeted 1,000 units – and has identified potential future development opportunities that are on track to exceed this target. The At Home Incentive Program will further advance the Region's goals in meeting this affordable housing target.

5. Financial Housing Assistance

- 5.1 In addition to its commitments to increase the affordable housing supply in the region, Goal 2 of At Home in Durham commits to increase rental assistance for low-income households.

- 5.2 The current rental housing supply in Durham is limited, and almost 37 per cent of renters are in core housing need,¹ mostly due to affordability. The median income of renter households in Durham is only \$45,700², but a renter would need to earn \$54,920 in order to afford average market rent (\$1,373 per month³) at 30 per cent of their income.
- 5.3 Financial housing assistance programs help to bridge the gap between income and rental costs and are critical to address the immediate needs of low- and moderate-income households in Durham, as new affordable housing development can take years to complete. New development saw increasing delays throughout the COVID-19 pandemic, caused by supply chain constraints and labour shortages.
- 5.4 The Region currently offers direct financial housing assistance to low-income households through the:
- Durham Portable Housing Benefit (Durham PHB) – a municipally-funded benefit that can be used anywhere in Durham.
 - Durham Housing Allowance – a temporary provincially-funded benefit that can be used anywhere in Durham; the benefit will end in 2024.
 - Canada-Ontario Housing Benefit (COHB) – a federally/provincially funded benefit that is administered by the Ministry of Finance (MOF) and can be used anywhere in Ontario.
- 5.5 Provincially/federally funded benefits represent the majority of direct financial housing assistance in Durham (about 71 per cent). These programs are administered under federal/provincial program guidelines, and most are time limited in nature. In the case of COHB, which is administered directly by the MOF, recipients are not well supported to maintain their benefit and can also move the benefit outside of Durham.
- 5.6 In contrast, the Durham PHB provides a more stable and flexible benefit to address local needs in the region. In July 2019, the Region piloted 70 benefits under the newly introduced Durham PHB program (Report #2019-COW-4). Despite the success of the program (Report #2020-SS-15), it has not yet been expanded, and very few benefits become available annually through turnover (only 4 benefits in 2021).

¹ Core housing need means that a household falls below one of the Canada Mortgage and Housing Corporation (CMHC) adequacy, affordability or suitability standards, and would have to spend 30 per cent or more of gross income to afford the median rent for alternative housing that meets all standards: 1) adequate dwellings are reported as not requiring major repairs; affordable dwellings cost less than 30 per cent of gross income; and 3) suitable dwellings have enough bedrooms for the size and make-up of the household.

² Statistics Canada, Census 2016

³ Canada Mortgage and Housing Corporation, Rental Market Survey Data Tables, Greater Toronto Area (2021)

5.7 In order to better address housing affordability pending the development of new affordable rental housing, staff will be requesting increased financial housing assistance through the annual budget process.

6. Community Housing

6.1 The Master Housing Strategy commits to support the preservation and modernization of community housing, including opportunities for more flexible partnerships and support for capital needs.

6.2 In 2016, Regional Council directed that at the end of operating agreements or end of mortgages (EOA/EOM) with community housing providers (Report #2016-COW-84):

- a. The Region seek approval to remove housing providers at EOA from the HSA⁴ in order to ensure that the Region does not assume any contingent liability for any future refinancing of these housing projects.
- b. The Region enter into new rent supplement agreements with housing providers at EOA/EOM in order to retain affordable housing units in the community.
- c. Staff establish an operating framework for creating new partnerships with community housing providers, non-profit housing related organizations and the private sector as existing providers reach EOA/EOM.

6.3 The intent of this direction was to ensure that affordable housing continues to be provided and the Region continues to meet its legislated service level standards (SLS) under the HSA.

6.4 In July 2020, the HSA was amended to provide a new streamlined framework for community housing at EOA/EOM, which will be enacted in July 2022 in line with new regulatory requirements and flexibility for service managers, like the Region of Durham (Report #2022-INFO-46). Notably:

- a. Service managers may enter into new service agreements under Part VII.1 of the HSA with housing providers that reach EOA/EOM, as well as new providers that are not currently operating under the HSA.
- b. Service managers will be permitted to include municipally funded housing assistance programs that comply with specified criteria under their legislated SLS, in addition to rent-geared-to-income (RGI) units and portable housing benefits (PHB).
- c. Housing providers who no longer want to partner with service managers at EOA/EOM may enter into exit agreements, subject to the providers plans for the continued operation, redevelopment or reinvestment in affordable housing.

⁴ Staff were directed to request the Province seek a waiver under section 9(d) of the Canada-Ontario Social Housing Agreement for housing providers at EOA, and subsequently remove these providers from Schedule 6 of Ontario Regulation of the HSA.

- 6.5 Part VII.1 agreements must have a term of at least 10 years and include a financial plan of at least 5 years that has been jointly developed by the housing provider and service manager. There is flexibility to negotiate provider targets for RGI and for other municipally funded housing assistance as part of the agreement, but housing assistance received by current households must be preserved.
- 6.6 The SLS changes provide an opportunity to rethink the types of housing assistance offered in community housing, both now and after EOA/EOM. Municipally funded benefits are not required to follow prescriptive provincial wait list rules, and the cost to subsidize social assistance recipients receiving these benefits will be less than for RGI.
- 6.7 Currently, the Region has limited municipally funded housing benefits – 35 Durham Rent Supplement units and 35 Durham PHB – that are currently excluded under SLS but will be included beginning July 1, 2022.
- 6.8 There is already flexibility to move SLS units between commercial rent supplement and community housing provider programs (Report #2016-COW-84). In order to ensure the Region continues to meet its legislated SLS under the HSA and prepare for new Part VII.1 agreements at EOA/EOM, **it is recommended that the Commissioner of Social Services be authorized to shift funding within the current funding envelope between all service level standard eligible units and financial housing benefits, including commercial rent supplement, Durham Rent Supplement, community housing provider programs, the Durham PHB, and future municipally funded housing benefits that may be developed, in order to be more responsive to local needs and maximize the number of available housing units.**
- 6.9 The current Regional Council direction to remove community housing projects at EOA/EOM from the HSA and enter into rent supplement agreements is less flexible than the new HSA framework and risks loss of affordable housing units. Additionally, community housing providers that enter into Part VII.1 agreements or exit agreements are no longer considered designated providers under the HSA for which the Region holds contingent liability. Notwithstanding the direction per Report #2016-COW-84, **it is recommended that the facilitation currently undertaken to remove certain projects with fully discharged mortgages from the Housing Services Act be discontinued, and instead Regional staff be authorized to explore opportunities to partner with the community housing providers that operate these projects to continue to provide affordable housing under Part VII.1 of the Housing Services Act.**
- 6.10 Regional staff continue to work with community housing providers under the current framework, including conducting regular operational and RGI reviews. As community housing providers move closer to EOA/EOM, it is critical that these partnerships be preserved, including flexible and responsive approaches to reviews and audits that consider the unique needs of the provider.

6.11 The sustainability of community housing is vital to meeting the affordability needs of low- and moderate-income residents in Durham and to creating strong and vibrant neighbourhoods as envisioned in At Home in Durham.

7. Envision Durham

7.1 Envision Durham is the Region's Municipal Comprehensive Review of the Regional Official Plan. Proposed Policy Directions under Envision Durham present potential changes to land use planning policies, including proposed directions for housing and affordable housing, such as:

- a. Completing a Regional Housing Assessment Report to support the Region's area municipalities to undertake Inclusionary Zoning within their respective jurisdictions.
- b. Strengthening policies to prevent the loss of rental housing.
- c. Establishing a new affordable housing target for at least 35 per cent of new housing within Strategic Growth Areas.
- d. Adding a new policy to encourage less expensive housing including secondary units, microhomes, purpose-built rental housing and medium and high-density apartments in areas that are well served by local amenities including transit, schools and parks.
- e. Encouraging reduced parking standards as a way to support the delivery of affordable housing, including purpose-built rental housing.

7.2 The new Regional Official Plan is expected to be complete in 2023 and is anticipated to include enabling policies that will create a more supportive and permissive environment for affordable rental housing in the region in line with the goals of At Home in Durham.

8. Homelessness Initiatives

8.1 In 2019, the Region partnered with the Canadian Alliance to End Homelessness to participate in its Built for Zero campaign. The goal of the campaign is to help a core group of leading communities to achieve and sustain functional zero⁵ chronic homelessness, in alignment with the goals of At Home in Durham.

8.2 The Region has fully implemented a By-Name List, which is a real-time list of people known to be experiencing homelessness, as well as a co-ordinated access system that enables community partners to prioritize and work more effectively with this vulnerable population.

8.3 Although the benefits of the By-Name List and co-ordinated access system continue to be challenged by COVID-19 shelter restrictions and a challenging rental housing

⁵ Functional zero means that a community has no more than three chronically homeless people on its By-Name List, or 0.1 per cent of its most actively homeless number (whichever is greater) sustained for three consecutive months.

market, the homelessness sector in Durham was successful in assisting 219 homeless individuals and families to find housing in 2021 – including 114 people who had previously been chronically homeless.

- 8.4 The Region continues to work with community partners to provide housing opportunities and supports for people experiencing homelessness. A robust and affordable rental housing sector – including an increased supply of community housing and affordable housing in the private market – as well as supports and flexible and timely financial housing assistance will help to end homelessness in Durham.

9. Relationship to Strategic Plan

- 9.1 This report aligns with and addresses the following strategic goals and priorities in the Durham Region Strategic Plan:

- a. Goal 2: Community Vitality – To foster an exceptional quality of life with services that contribute to strong neighbourhoods, vibrant and diverse communities, and influence our safety and well-being.
 - 2.1 – Revitalize existing neighbourhoods and build complete communities that are walkable, well-connected, and have a mix of attainable housing.
- b. Goal 3: Economic Prosperity – To build a strong and resilient economy that maximizes opportunities for business and employment growth, innovation and partnership.
 - 3.2 – Leverage Durham's prime geography, social infrastructure, and strong partnerships to foster economic growth.
- c. Goal 4: Social Investment – To ensure a range of programs, services and supports are available and accessible to those in need, so that no individual is left behind.
 - 4.1 – Revitalize community housing and improve housing choice, affordability and sustainability.
 - 4.2 – Build awareness and community capacity to address poverty.

10. Conclusion

- 10.1 This is the eighth annual progress report of At Home in Durham, the Durham Housing Plan 2014-2024. It reports on current and future initiatives under the Master Housing Strategy and the recommendations of the Affordable and Seniors' Housing Task Force that operationalize and support the goals of the plan.
- 10.2 The goals and actions of At Home in Durham will improve affordability and access to housing with and without supports, protect the existing affordable housing supply,

encourage housing diversity, and build capacity in the housing system. The Region is making progress in realizing these goals.

10.3 Over the final five years of the plan, the Region of Durham is committed to initiating the development of 1,000 new affordable housing units. Projects completed or currently under development represent about 40 per cent of this target, and the new At Home Incentive Program will further advance this progress.

10.4 The new regulatory framework under the Housing Services Act provides an opportunity for the Region to be more responsive to local needs and to grow and sustain the community housing portfolio in line with the strategic direction of At Home in Durham.

10.5 Staff will continue to update Regional Council on the progress of initiatives undertaken per the Master Housing Strategy and At Home in Durham as they arise.

Respectfully submitted,

Original signed by:

Nancy Taylor BBA, CPA, CA
Commissioner of Finance

Original signed by:

Stella Danos-Papaconstantinou
Commissioner of Social Services

Original signed by:

B. E. Bridgeman, MCIP, RPP
Commissioner of Planning and
Economic Development

Recommended for Presentation to Committee

Original signed by:

Elaine Baxter Trahair
Chief Administrative Officer



The Regional Municipality of Durham Report

To: Committee of the Whole
From: Commissioner of Social Services, Commissioner of Planning and Economic Development and Commissioner of Finance
Report: #2022-COW-20
Date: June 22, 2022

Subject:

Employment Services Transformation Service System Manager Update

Recommendation:

That the Committee of the Whole recommends to Regional Council:

- A) That subject to a successful award from the Province of Ontario, authorization to execute a funding agreement and any other necessary documentation to establish and operate as an Employment Service Manager for the Durham Region catchment area through a consortium led by the Region of Durham, be delegated to the Chief Administrative Officer over the summer and fall of 2022 subject to the concurrence of the Regional Commissioner of Social Services, the Regional Treasurer, and the Regional Solicitor.

Report:

1. Purpose

- 1.1 The purpose of this report is to obtain approval to enter into a funding agreement to operate as an Employment Service Manager, subject to a successful award, and provide the relevant background information on the Regional Municipality of Durham's (Region) proposed bid under the Ontario Government's Employment Services Transformation (EST) plan as it relates to Income and Employment Supports delivered by Municipal partners, including the Region.
- 1.2 Details will be provided on the roll out of the initial phase which included three prototype areas (2019-2020) and the second phase which is currently underway.

- 1.3 The report will touch on key elements of the transformative plan including the opportunities that will emerge, specifically the shift for Ontario Works (OW) from an emphasis on employability to stability support.
- 1.4 Information will also be provided regarding the Service System Manager (SSM) Consortium Group Agreement.

2. Background

- 2.1 In February 2019, the Ontario Government announced their plan to transform employment services across the province from being “fractured, unnecessarily complex, and not sufficiently focused on getting the results job seekers, employers and Ontario’s economy need to grow and succeed”¹ to a more streamlined service delivery model that would integrate all employment services into Employment Ontario (EO).
- 2.2 The EST plan is part of the larger social assistance reform plan to “Restore Dignity, Independence and Empowerment to Social Assistance Systems” announced in November 2018.²
- 2.3 Currently, employment services in most of Ontario is delivered either through OW for clients in receipt of OW and Ontario Disability Support Program (ODSP) or through EO agencies who deliver services for individuals and employers in the public. EO’s services can also be accessed by OW and ODSP clients.
- 2.4 This two-system approach involves multiple provincial ministries (Ministry of Children, Community and Social Services and the Ministry of Labour, Training and Skills Development) and therefore multiple sets of rules and regulations. There are other Provincial Ministries that also offer programs for training or education. In addition, the Federal government offers targeted training and education programs³.
- 2.5 The two systems operated by EO and OW often offer overlapping programming and training. As such, rather than an integrated and encompassing system, the current employment services are a group of similar yet fragmented programs being offered by multiple stakeholders.
- 2.6 There are currently nine unique Employment Ontario service providers in Durham Region.
- 2.7 The new model for employment services includes the migration of OW and ODSP Employment Assistance from the Ministry of Children, Community and Social

1 [Ontario News: "Province Helping Job Seekers and Employers Make Ontario Open for Business" - 2019](#)

2 [Ontario News: "Ontario's Government for the People Announces Plan to Restore Dignity, Independence and Empowerment to Social Assistance System" - 2018](#)

3 [Employment and Social Development Canada - Funded Programs - Canada.ca](#)

Services (MCCSS) to EO funded through the Ministry of Labour, Training and Skills Development (MLTSD).

- 2.8 The key elements of the transformation plan as it relates to Ontario Works Social Assistance and Municipal partners are⁴;
- Integrating social assistance employment services into Employment Ontario,
 - Introducing a new competitive, local service delivery model
 - Ensuring employment services work effectively with other government services.
- 2.9 Beginning in fall 2019 the process to develop the new competitive local service delivery model commenced. Implementation followed a phased in approach with initial roll out in three prototype areas (Peel Region, Hamilton-Niagara Peninsula, and Muskoka-Kawarthas).
- 2.10 The competition to become an employment Service System Manager (SSM) is open to any public, not-for-profit, private sector organization or current Consolidated Municipal Service Manager (CMSM) and District Social Services Administrative Board service managers (DSSAB).
- 2.11 In the three prototype areas Municipalities ceased delivering Employment Services to OW and ODSP clients, shifting their focus instead to the delivery of income support and stability supports.
- 2.12 This shift to centralized performance-based service delivery aligns with the Province's vision for social assistance to transform and provide more efficient, person-centered supports for low-income residents⁵.

3. Previous Reports and Decisions

- 3.1 2020-INFO-116, Ontario Modernizing Application Process for Social Assistance.
- 3.2 2021-SS-4, Recovery and Renewal: Ontario's Vision for Social Assistance Transformation.

4. Employment Services Transformation: Phase Two and Beyond

- 4.1 On June 10, 2021, the Ministry continued with a phased roll – out of the transformation of employment services with the Request for Qualification (RFQ) for the nine catchment areas for Phase 1 and Phase 2. The nine catchment areas included in this phase include Durham, Halton, Kingston-Pembroke, Kitchener-

4 [Ontario News: "Transforming Ontario's Employment Services" - 2019](#)

5 [Recovery & Renewal: Ontario's Vision for Social Assistance Transformation | Ontario.ca](#)

Waterloo-Barrie, London, Ottawa Region, Stratford-Bruce Peninsula, Windsor-Sarnia, and York.

- 4.2 The Region of Durham Consortium (Consortium) consisting of The Regional Municipality of Durham, Durham Workforce Authority (DWA), and Durham College (DC) was deemed successful in the RFQ for the Phase 2 Call for Proposal stage in the fall of 2021.
- 4.3 On April 29, 2022, the Ministry released a Call for Proposals (CFP) as the second stage of the competitive process for Phase 2 province-wide implementation. Applicants who qualified under the RFQ from Phase 2 catchment areas were invited to compete to be the SSM.
- 4.4 The five in-scope Catchment Areas for this phase include Durham, London, Ottawa, Windsor-Sarnia, and Kitchener-Waterloo-Barrie.
- 4.5 As a qualified applicant, the Consortium has proceeded in the competition.
- 4.6 The CFP closing date is July 4, 2022, by 16:00 Toronto, ON time and the competitive process is expected to be completed by the end of 2022.
- 4.7 The same process for selection that occurred under Phase 1 is being applied to the roll out⁶:
 - Request for Qualification
 - Call for Proposal selection identification
 - Finalized Agreements
 - Implementation of services
- 4.8 On April 25, 2022, MLTSD announced the successful SSMs for the Phase 1 catchment areas of York; Halton; and Stratford-Bruce Peninsula. The new SSMs are:
 - a. York: WCG
 - WCG are a Canadian subsidiary of the International APM Group Pty Ltd., a global human service organization based in Australia.
 - WCG is the current SSM for the prototype catchment area of Peel.
 - b. Halton: Fedcap Inc.
 - Serving over 250,000 people each year across an international footprint (Canada, US, and UK), the Fedcap Group delivers services within four

[6 Ministry of Labour, Training and Skills Development - Memo to EO Network on Employment Services Transformation Provincial Rollout - 2021](#)

- major areas of practice (workforce development, educational services, occupational health services and economic development).
- Fedcap Inc. is the current SSM for the prototype catchment area of Hamilton- Niagara.
- c. Stratford-Bruce Peninsula: The Corporation of the County of Bruce
- The Corporation of the County of Bruce leads a consortium that includes the Corporation of the County of Grey, the Corporation of the County of Huron, and the Corporation of the City of Stratford.
- 4.9 The remaining catchments with higher levels of complexity such as Toronto and Northern Ontario will proceed in 2023.
- 4.10 MLTSD will provide further information and updates throughout the process.
- 5. Service System Manager Consortium Agreement**
- 5.1 MLTSD has defined a Consortium and included the parameters as “a group of two or more organizations that have entered into a written agreement to jointly apply to become an SSM. One organization within the Consortium must act as the Lead Call for Proposal (CFP) Applicant that enters into a transfer payment agreement with the ministry. As the legal entity that has entered into the agreement with the ministry, the Lead CFP Applicant is responsible for ensuring that the requirements of the agreement are met, including performance, distributing funding, data sharing, and continuity of service delivery.”
- 5.2 The Regional Municipality of Durham is the Lead CFP Applicant.
- 5.3 The purpose of the Consortium is to provide system-wide integrated employment service in a timely, effective, and efficient manner which is responsive to the needs of each member’s service area and within the broader service area.
- 5.4 The Consortium will operate and govern itself in an equitable, co-operative, and collaborative manner based on consensus decision making, shared leadership and shared accountability while ultimately the Region will make the final decisions.
- 5.5 The Lead CFP Applicant must submit a copy of the contractual agreement between Consortium members to the ministry prior to the Call for Proposal closing date.
- 5.6 As the Lead within the Consortium, it will be noted that we have access to the corporation as a whole which will include local government oversight, an existing information technology infrastructure (IT), legal expertise, financial and audit oversight, and expertise in Economic Development.
- 5.7 The Consortium recognizes the importance of finding and enacting local solutions to local issues in order to support effective system-wide service delivery.

- 5.8 As the designated System Service Manager for Social Assistance, Housing and Homelessness, and Early Learning and Child Care, the Region is responsible for responding to local needs and building system capacity in these sectors and has extensive experience overseeing systems planning and management of local human services throughout the region. These critical systems are integrated, people focused, and outcomes driven and utilize an in-depth understanding of the unique social, economic, regional, and demographic issues that define our community.
- 5.9 As Service Manager and Community Entity on behalf of the Governments of Ontario and Canada respectively for Housing Services and Homelessness Prevention, the Region serves an important role in the coordination and delivery of services and benefits. As the lead systems planning organization on homelessness at a local level, the Region has accountability for funding allocations, performance management, strategy development and implementation, in collaboration with service providers, other governments, and those with living/lived experience of homelessness.
- 5.10 The Region has demonstrated experience leading, developing and designing programs and services for diverse populations, and the complex, ever changing needs of residents as evidenced through the successful design, delivery, and oversight of a Local Immigration Partnership (LIP) and a Community Safety and Well-being Plan. The Region has held the federal contract for the LIP for over 10 years. With membership of over 100 community partners across sectors working to meet the unique needs of newcomer residents, the LIP relies on local labour market and economic information to inform local planning.
- 5.11 The Region ensures that human services are planned, coordinated, and delivered in conjunction with the federal and provincial governments, our 8 local municipal partners, community organizations and our robust public health department.
- 5.12 The Region's Economic Development and Tourism Division's main objectives are to create job opportunities, increase the property tax base and nurture private sector investment. To accomplish these objectives, the division engages in strategic business missions, partners with local area municipalities, industry, educational institutions, and various international agencies. As a key partner within the consortium lead organization, this group will offer key insights to support job development, labour market analysis, and workforce strategies.
- 5.13 The DWA is a community-based not for profit with over 20 years' experience delivering academically rigorous and reliable labour market research in Durham Region. DWA provides comprehensive labour market information, job finding tools online, and a reference and referral site support for post-COVID supports for job search, business support organizations and local industry information. Working with the broader community, the DWA creates initiatives that focus on local issues identified by labour market data, and regularly partners with community

- organizations to make this information available to the local workforce at every community service level.
- 5.14 DC has demonstrated its unwavering commitment to student success with high quality, innovative programs led by exceptional professors since 1967. DC develops an annual Business Plan in collaboration with departments by drawing on the expertise of its diverse teams, and strengths of the community. The plan ensures that DC incorporates its values of collaboration, excellence, innovation, integrity, respect, social responsibility, diversity, and inclusion into every level of its daily operations. DC has been providing employment services to the community for over 25 years. In addition, DC is a current service provider in the prototype region of Muskoka-Kawarthas.
- 5.15 All members of the Consortium have extensive partnering, consultation, and system planning experience meeting community needs and will provide strong public accountability and transparency, both locally and provincially.
- 5.16 All members of the Consortium provide services throughout the entire region, supporting clients and employers in all communities, with the capacity to utilize multi-channel delivery methods as appropriate: by phone, online, and virtual supports through each of their websites, strong online presence, and mature IT capabilities.
- 5.17 As a Consortium, the Region, DWA, and DC have physical itinerant locations in communities across the region; Brock, Uxbridge, Ajax, Oshawa, Whitby, Scugog, Pickering, and Clarington.
- 5.18 All Consortium members have a long history of working together supporting each other's service delivery and work within a strong network of community service organizations, libraries, faith communities and with the 8 local municipalities. As active members of all local Chambers of Commerce and Boards of Trade, the partners develop and maintain relationships with employers across the region and gain the necessary insight into local labour market information relevant to their individual and collective work.
- 5.19 The Consortium members all have extensive experience developing and designing programs that meet the diverse needs of the clients and employers they serve. They are committed to ensuring that people of all ages and abilities enjoy the same opportunities as they live, work, play, learn, and invest in our communities. Barriers are identified and mitigated with accessible communication supports, documents, website materials and other information available in accessible formats in accordance with the *Accessibility for Ontarians with Disabilities Act*.
- 5.20 As Lead applicant, the Region's commitment to transparency and accountability are guided by the Strategic Plan and the Budget Management Policy and Purchasing By-law. All financial processes are underpinned by rigorous validation processes and authorizations.

- 5.21 The Region adheres to the Municipal Conflict of Interest Act and employs a robust Internal Audit and Fraud framework, including policy proactive measures.
- 5.22 OW financial and service level data are regularly reported to MCCSS, Regional Council, and stakeholders. Regional Council is the main approval authority for all major financial decisions and acts as the Board of Directors for the SSM. Council members are elected in accordance with the Ontario Municipal Elections Act.

6. Impact of the Recovery and Renewal Plan on Employment Services Transformation

- 6.1 On February 11, 2021, MCCSS announced the Recovery and Renewal: Ontario's Vision for Social Assistance Transformation Plan.
- 6.2 The plan acknowledges the impact that COVID-19 had and continues to have on the systems currently in place for Social Assistance, regardless the transformation of services, including employment services, will continue as scheduled.
- 6.3 The current schedule indicates that changes will take place in three phases taking place over the next three years until 2024. When fully implemented, Ontario's Social Assistance Recovery and Renewal plan will shift the functional focus for municipal delivery partners from eligibility determination and the administration of benefits and employment supports to the provision of stability supports and service navigation for social assistance clients.
- 6.4 The longer-term vision includes broader human services integration that extends service supports and service navigation for all low-income residents, a [working vision for Social Assistance \(msdsb.net\)](https://www.msdsb.net). This would potentially extend the breadth of clientele in Durham from those on Social Assistance to all low-income households in Durham.
- 6.5 The provincial Recovery and Renewal plan has reaffirmed the Province's vision for change to Social Assistance including the transformation of employment services and the move to stability supports as a primary focus for OW.

7. Region of Durham Employment Services

- 7.1 In 2021, Ontario Works Employment Supports had an average monthly caseload of 1,618 and provided a variety of employment support programs to improve outcomes for Ontario Works clients.
- 7.2 During 2021, clients obtained 625 jobs through the Employment Development Program, including 332 clients who exited Ontario Works into 289 full-time and 43 part-time jobs.
- 7.3 52 Ontario Works participants graduated from the Pathway Program, with 45 graduates securing employment and 30 participants exiting Ontario Works to employment following the program.

- 7.4 Employment Supports staff provided case management to 164 Learning, Earning and Parenting (LEAP) Participants (16-25 years old) receiving Ontario Works and working towards completing their Ontario Secondary School Diploma and for 333 young adults (18-24 years old) to plan for their education, volunteering, and obtaining employment. There were 15 LEAP graduates.
- 7.5 91 clients participated in the Self Employment Program, which resulted in 11 successful businesses.
- 7.6 Virtual Workshops were developed during the COVID-19 pandemic to provide needed life stability and employment support to OW and ODSP clients. From January to December 2021, 421 multi-session virtual workshops were provided with a total of 3012 participants attending.
- 7.7 If chosen, the Consortium will provide an integrated local service delivery model that will ensure that job seekers and businesses are provided with the best possible employment services to meet all needs.
- 7.8 With the ability to increase service capacity and coordination via the Consortium, Durham Region will be well positioned to improve positive employment outcomes and life stability for individuals.
- 7.9 The Consortium will work together to help support improved system efficiency whilst ensuring local responsiveness to the needs of social assistance clients, people with disabilities, francophones, black, Indigenous Peoples, people of colour and the community at large.

8. Risk, Operational Impact, and Financial Implications

- 8.1 As transformation of both employment services and social assistance delivery proceeds, the funding model will evolve and align with the shifts in roles and responsibilities. As the responsibility for employment services shifts from the Region and other existing providers to the SSM, so too will the funding that is associated with employment programming.
- 8.2 In the RFQ, the funding model is described, including the core component of Operational Funding, Performance-based Funding and Employment-related Financial Supports for Job Seekers and Employers, as well as Transitional Funding.

8.3 Table 1: Maximum SSM Funding Available in Durham⁷

Funding Category	2023-24 (\$)	2024-25 and ongoing (\$)
Planning Period Funding	215,000	0

⁷ Ministry of Labour, Training and Skills Development Call for Proposal Tender Number: Tender_16801

Transition Period Funding	1,288,000	0
Transition Phase Outcome Funding	125,000	0
Integrated ES Delivery Funding Category	2023-24 (\$)	2024-25 and ongoing (\$)
Transitional Operating Funding	9,377,000	0
Transitional Employment-related financial supports for job seekers and employers Funding	2,921,000	0
Operational Funding	4,293,000	17,170,000
Employment – related financial supports for job seekers and employers – for all clients	618,000	2,470,000
Employment – related financial supports for job seekers and employers – Dedicated for ODSP clients with a Disability (ODSP Reserve)	140,000	560,000
Estimated performance -based Funding*	1,263,000	5,050,000
Total	20,240,000	25,250,000

*Performance Outcomes funding will be dependent on achieving employment outcomes.

- 8.4 As per the CFP, the Minimum Annual Client Volume for the Durham catchment area is 10,050 clients.
- 8.5 Currently, Ontario Works is delivered locally by regional staff, of which some are primarily associated with the program delivery of employment supports, to help people develop skills and find and keep jobs. As previously noted, the new employment services transformation system will be led by a Service System Manager selected by the Province through the competitive process. There is a possibility that the Durham Consortium will not be chosen as the SSM. If that were to occur, the new system will reduce municipal responsibility, and related funding, for employment supports.
- 8.6 There is also an expectation by the province that the Service System Manager will take on an element of financial risk as there are key performance indicators

attached to components of the funding. The funding model will include an [Incentive and Consequences Framework](#) for a range of high performance to non-compliant service system managers, which may ultimately include termination of the agreement. If the performance indicators are not met, the financial costs would be borne by the Region under the terms of the proposed consortium agreement.

- 8.7 Whether the consortium is successful or not, the current staff positions that are aligned with the employment programming and associated property tax funding will be transitioned to other divisions within the Social Services Department to support community outreach, homelessness prevention, and life stability efforts. In some instances, positions will be transitioned through attrition. The intent will be to limit any property tax levy impacts related to the delivery of programming, while reducing the requirement for layoffs and reduced program offerings to our community's most vulnerable residents.
- 8.8 Ongoing variance analysis and forecasting of expenditures will take place by Regional staff.
- 8.9 Future budget implications will be addressed through the annual Business Plans and Budgets process, with updates to be provided to the appropriate Committee and Council as required.

9. Relationship to Strategic Plan

- 9.1 This report aligns with/addresses the following strategic goals and priorities in the Durham Region Strategic Plan.
- a. Goal 2: Community Vitality - To foster an exceptional quality of life with services that contribute to strong neighbourhoods, vibrant and diverse communities, and influence our safety and well-being.
 - b. Goal 4: Social Investment - To ensure a range of programs, services and supports are available and accessible to those in need, so that no individual is left behind.
 - c. Goal 5: Service Excellence - To provide exceptional value to Durham taxpayers through responsive, effective, and fiscally sustainable service delivery.

10. Conclusion

- 10.1 The transformation of employment services will continue through 2022 following a similar pattern as has occurred in the prototype areas in Ontario.
- 10.2 The Employment Services Transformation has been included in the plan for Recovery and Renewal and is an integral part of the Province's plan to transform social assistance.

10.3 Regional staff will continue to monitor the progression of the Ministries' Employment Services Transformation plan and the Recovery & Renewal: Ontario's Vision for Social Assistance Transformation plan. These two plans are operating parallel to each other with intersection at certain points, both with potential for significant impact and changes to Municipally run social services.

10.4 As further information is made available on the status of the Employment Services Transformation and the Region of Durham, updates will be provided.

Respectfully submitted,

Original signed by

Stella Danos-Papaconstantinou
Commissioner of Social Services

Original signed by

Brian Bridgeman, MCIP, RPP
Commissioner of Planning and Economic
Development

Original signed by

Nancy Taylor BBA, CPA, CA
Commissioner of Finance

Recommended for Presentation to Committee

Original signed by

Elaine C. Baxter-Trahair
Chief Administrative Officer

If this information is required in an accessible format, please contact 1-800-372-1102 ext. 2304.



The Regional Municipality of Durham Report

To: Committee of the Whole
From: Commissioner of Works, Finance and Planning and Economic and
Development
Report: #2022-COW-21
Date: June 22, 2022

Subject:

Modified Payment Schedule for the Brooklin North Landowner Group under the 2012
Regional Official Plan Amendment 128 Minutes of Settlement

Recommendation:

That the Committee of the Whole recommends to Regional Council:

- A) That a further extension for the payment of \$10.7 million by the Brooklin North Landowners Group under the Regional Official Plan Amendment 128 Minutes of Settlement due on November 4, 2022 (with interest from November 4, 2019) be provided with \$2.5 million due on November 4, 2022 and a series of payments to December 31, 2023 with the specific terms to be approved by the Chief Administrative Officer with the concurrence of the Commissioners of Planning and Economic Development, Works, and Finance, and the Regional Solicitor; and
- B) That the Regional Solicitor be authorized to execute any necessary agreements.

Report:

1. Purpose

- 1.1 The purpose of this report is to recommend a change to the timing of the payment to be made by the Brooklin North Landowner Group in the amount of \$10.7 million under the Regional Official Plan Amendment (ROPA) 128 Minutes of Settlement, executed in 2012 in response to the Landowner Group's request for assistance due to delays in servicing their lands, including the supply of electricity.

2. Background

- 2.1 The ROPA 128 Minutes of Settlement executed in 2012 contained provisions requiring four groups of landowners to provide payments totalling \$20 million to the Region. As approved by Regional Council (Report No. 2014-J-19), these funds are to be used to fund Regional Seaton facilities (i.e., police, paramedic, works depot etc.). The original timing of the payments is understood to have been linked to the anticipated development of each group's land.
- 2.2 In 2015, Regional Council approved Report No. 2015-J-50 in response to a request from the landowners to defer the timing of the payments by three years. The table below provides the original and revised payment schedule, totaling \$20 million. As approved in the report, these payments also became subject to interest charges from the original payment date to the time of payment at the Region's short-term borrowing rate.

Table 1
Original and Revised Schedule of Payments
Under the ROPA 128 Minutes of Settlement

Original Payment Schedule	Revised Payment Schedule ⁽¹⁾	Amount (\$million)
West Whitby: November 4, 2017	West Whitby: November 4, 2020	\$4.5 (received in 2017)
Brooklin North: November 4, 2019	Brooklin North: November 4, 2022	\$10.7
Columbus: November 4, 2022	Columbus: November 4, 2025	\$3.2
Courtice: November 4, 2022	Courtice: November 4, 2025	\$1.6

Note:

1. Payments are due on the revised dates above or the time of first draft subdivision or condominium plan registration, whichever is earlier. The West Whitby Landowner Group received first draft subdivision registration in 2017 and thus fulfilled their financial obligation in November 2017, therefore no interest payments were imposed as the payment was made in accordance with the original payment schedule.

3. Previous Reports and Decisions

- 3.1 Report No. 2014-J-19 recommended that the payments totalling \$20 million made under the ROPA 128 Minutes of Settlement be dedicated towards the cost of the facilities in Seaton (police, paramedic, works depot etc.). Report No. 2015-J-50 recommended a change to the original payment schedule to be made under the ROPA 128 Minutes of Settlement.

4. Proposed Change to the Payment by the Brooklin North Landowners Group

- 4.1 Regional staff had recent discussions with the Brooklin North Landowner Group regarding their concerns on the interest rate being applied to the deferred payment. Regional staff clarified that the Region's short-term borrowing rate, and not the development charge indexing rate, will be applied to the deferred payments.
- 4.2 However, the Landowners remain significantly delayed by external factors in obtaining draft plan approvals for the North Brooklin lands due to a variety of factors, including the inability of Elexicon to service the lands until later in the fall of 2023 due to supply chain issues. The discussion also confirmed that the Region is not responsible for any of the delays.
- 4.3 Since any modification of the payment schedule requires Regional Council approval, it is being recommending that a further extension for the payment of \$10.7 million by the Brooklin North Landowners Group be considered with \$2.5 million due on November 4, 2022 and a series of payments to December 31, 2023 with the specific terms to be approved by the Chief Administrative Officer with the concurrence of the Commissioners of Planning and Economic Development, Works, and Finance, and the Regional Solicitor.

5. Financial Implications

- 5.1 Under the recommended revised payment schedule, the Region will continue to receive the funds in a timely manner to support the construction of facilities in Seaton.
- 5.2 The recommended modification would preserve the payment of interest by the landowners to offset the delay.

6. Relationship to Strategic Plan

- 6.1 This report aligns with/addresses the following strategic goals and priorities in the Durham Region Strategic Plan:
- a. Goal 5: Service Excellence - To provide exceptional value to Durham taxpayers through responsive, effective and fiscally sustainable service delivery.

7. Conclusion

- 7.1 Regional staff are recommending a further extension in the payment of \$10.7 million as requested by the Brooklin North Landowner Group, given the delay in development of their lands.
- 7.2 Under the recommended revised payment schedule, the Region will continue to receive the funds (\$10.7 million) by the Brooklin Landowner Group in a timely manner to support the construction of facilities in Seaton.
- 7.3 This report has been reviewed by the Regional Solicitor.

Respectfully submitted,

Original Signed By

Jenni Demanuele, CPA, CMA
Acting Commissioner of Works

Original Signed By

Nancy Taylor, BBA, CPA, CA
Commissioner of Finance

Original Signed By

Brian Bridgeman, MCIP, RPP
Commissioner of Planning and Economic
Development

Recommended for Presentation to Committee

Original Signed By

Elaine C. Baxter-Trahair
Chief Administrative Officer

If this information is required in an accessible format, please contact 1-800-372-1102 ext. 3540.



The Regional Municipality of Durham Report

To: Committee of the Whole
From: Acting Commissioner of Works, Commissioner of Corporate Services and
Commissioner of Finance
Report: #2022-COW-22
Date: June 22, 2022

Subject:

Negotiated Request for Proposal Results for the Design, Build, Operate and Maintain Contract for a Mixed Waste Pre-sort and Anaerobic Digestion Facility

Recommendation:

That the Committee of the Whole recommends to Regional Council:

- A) That Regional Council cancel the Region's Mixed Waste Pre-sort and Anaerobic Digestion Facility ("AD Project") procurement process at this juncture in accordance with the requirements of the Negotiated Request for Proposal, NRFP 1080-2021 ("NRFP").
-

Report:

1. Purpose

- 1.1 The purpose of this report is to inform Regional Council on the outcome of the NRFP process for the AD Project and provides details on the next steps.

2. Background

- 2.1 In June 2018, Regional Council approved a Mixed Waste Pre-sort and Anaerobic Digestion (AD) facility as the preferred technologies for the Region's long-term organics management strategy (Report # 2018-COW-146).

Council Direction on the Service Delivery Model and AD Technology

- 2.2 In June 2019 (Report #2019-COW-17), Regional Council directed staff to proceed with the Mixed Waste Pre-sort facility and AD facility utilizing wet anaerobic digestion under a design, build, operate and maintain (“DBOM”) service delivery approach. This decision was made after a careful assessment of the advantages and disadvantages, as articulated by GHD Limited and Ernst and Young Orenda Corporate Finance Inc, of proceeding with a DBOM service delivery model compared to a private sector service contract.

Council Direction on the Exploration of a Joint Venture/Partnership

- 2.3 In June 2018 (Report #2018-COW-146), Regional Council directed staff to explore and issue a non-binding Expression of Interest (“EOI”) to solicit interest in a joint venture to procure, finance, and share net costs arising from the AD Project. Epcor Commercial Services Inc. (“Epcor”) was the chosen respondent through the EOI process and Regional Council authorized staff to commence negotiations with Epcor to establish a joint venture/partnership with the Region on the AD Project (Report #2019-COW-22). Unfortunately, the parties reached an impasse in negotiations on some of the key joint venture terms, as outlined in 2020-COW-20, and Regional Council authorized a settlement to terminate the relationship with Epcor and proceed with the AD Project as a sole public owner.

Council Direction on Siting

- 2.4 In September 2019 (Report #2019-COW-22), Regional staff, in consultation with GHD, developed siting criteria for the AD Project. In March 2020, GHD released the draft Siting Report to the public for discussion and consultation. In the comparative site analysis, six (6) sites were considered using the siting criteria, which included assessing environmental impacts, transportation considerations, site infrastructure, synergies with regional infrastructure and avoiding demolition/remediation costs to prepare the site.
- 2.5 In light of this analysis and comprehensive public consultation, Regional Council approved the South Clarington site as the recommended development site for the AD Project (Report #2020-COW-20).

Regional Council Direction on Procurement Process

- 2.6 In June 2019 (Report #2019-COW-17), Regional Council directed staff to proceed with procurement of the AD Project through a two-step Request for Prequalification (“RFPQ”) and Negotiated Request for Proposal (“NRFP”) process.
- 2.7 On June 23, 2021, staff (Report #2021-COW-14) informed Council of the outcome of the RFPQ (RFPQ-1062-2020) for the AD Project and Council authorized staff to proceed with the issuance of the NRFP for the AD Project to the top three qualified respondents. These respondents were:
- a. Durham Renewable Resources Group (“DRRG”): Maple Reinders PPP Ltd., AIM Group Capital Ltd., and EllisDon Capital Inc.
 - b. Durham Recovery Solutions (“DRS”): Sacyr Environmental USA LLC and Anaergia
 - c. Durham Organics Processing Partners (“DOPP”): Alberici Constructors Inc. and Acciona
- 2.8 These three respondents met the minimum 70 percent scoring requirement, underwent reference checks, evaluation of financial conditions and capacity and reference facility verification prior to recommendation to Regional Council for proceeding. Details of the evaluation were provided in Report #2021-COW-14.

3. NRFP Process

- 3.1 Given the magnitude and complexity of the AD Project, the RFPQ and NRFP processes were subject to rigorous due diligence rules and followed the best industry practices used by major provincial and federal infrastructure project agencies across Canada. This was critical to ensure compliance with any funding opportunities that were or could become available. This process included anti-lobbying protocols, standardized and confidential communications with respondents and oversight by a Council approved fairness monitor, P1 Consulting Services, and the Region’s other external consultants, Deloitte LLP, WeirFoulds LLP and GHD.
- 3.2 The NRFP was issued to the three respondents on August 9, 2021. Included in the NRFP was a draft copy of the Project Agreement, which was informed by the DYEC precedent, drafted and refined by external legal counsel, WeirFoulds LLP, in consultation with the Region’s technical and financial consultants and Regional staff. As per the terms of the NRFP, the Project Agreement was further refined and revised in consultation with the respondents during the commercially

confidential meetings (“CCM”) that commenced in October 2021 and concluded in January 2022.

4. NRFP Evaluation

- 4.1 Two of the three respondents submitted proposals to the AD Project: DRRG and DRS. Given the complexity of the AD Project, the respondents requested an extension to the proposal submission deadlines, which was endorsed by the Region’s fairness monitor, P1 Consulting Services. As such, the technical submissions closed on April 28, 2022, and the financial submissions closed on May 26, 2022. The technical evaluation team consisted of Regional staff, with GHD providing subject matter expertise where necessary, and the financial evaluation team consisted of Regional staff and Deloitte LLP.
- 4.2 The evaluation criteria for the NRFP took into consideration the entire scope of the AD Project, including the Project Agreement and its Appendices. The scoring matrix established minimum thresholds for various criteria. If a respondent failed to meet any one of these thresholds, they would not proceed in the evaluation process. Both respondents met all minimum thresholds noted herein.
- 4.3 Respondents were evaluated in the following areas:

Rated Criteria Category	Weighting (points)	Minimum Threshold
Mandatory Financial Requirements (see Appendix D, D-4 for details)	Pass/Fail	N/A
1.0 Proposed Development Plan Evaluation Criteria	10	N/A
2.0 Proposed Design Evaluation Criteria	30	N/A
3.0 Proposed Operations Evaluation Criteria	30	N/A
Technical Subtotal	70	42

Proposal Price (see Appendix C, Pricing Form for details)	30	N/A
Total	100	N/A

Technical Evaluation Requirements and Results

4.4 The NRFP identified the following technical criteria for the evaluation of the proposals:

- a. Project Management and Risk;
- b. Work Plan, Breakdown, Structure, Schedule;
- c. Overall Facility, Site and Process Design;
- d. Mixed Waste Processing Facility;
- e. Anaerobic Digestion Facility;
- f. Operation Plans;
- g. Hand Back Requirement and Lifecycle Schedule;
- h. Quality Assurance.

4.5 The review of the technical submissions was conducted independently by three members of the technical project team based on the validation of the respondent's ability to meet the criteria as outlined in the NRFP document. Following established purchasing protocols, the evaluation team met with representatives of the Finance Department – Purchasing Division (“Purchasing”) and the Fairness Monitor and discussed their respective insights while reaching consensus with respect to the scoring of each criterion.

4.6 It was determined that both respondents provided sound technical proposals in alignment with the Region's mandate and overall objectives.

Financial Evaluation Requirements and Results

4.7 The NRFP identified the following Mandatory Financial Requirements for evaluation of Financial Proposals (on pass/fail):

- a. Pricing Spreadsheets;
- b. Financial Model;
- c. Financial Model Audit Letter;
- d. Letter from Chief Financial Officer (“CFO”) or other authorized officer on the final financial approach;

- e. Letter of support for Construction;
 - f. Letter of support for O&M;
 - g. Letter of support for Subcontractors.
- 4.8 On May 26, 2022, both respondents provided financial submissions to support their technical submissions. The proposals were submitted to the Region in confidence. As such, staff have provided Council with a confidential summary of these financial submissions in order to make a fulsome decision on the recommendation herein (See Confidential Attachment #1).
- 4.9 The review of the Financial Proposal Submissions was conducted independently by two (2) evaluators, including a representative from Deloitte LLP, with support from two (2) subject matter experts from Deloitte LLP. Following the independent evaluation, the Financial Evaluation Team met with the Fairness Monitor and Purchasing for a consensus meeting. Thereafter, the final Financial Evaluation reports were submitted to purchasing and the fairness monitor. This process was completed on June 7, 2022, at which time staff were then permitted to view the proposals in their entirety and assess next steps.
- 4.10 In Report #2022 -COW-2, staff and external financial and technical consultants estimated that the capital cost for the AD Project would be approximately \$242 million or \$40.1 million more than 2020 estimate (Report #2020-COW-20) and \$78.5 million more than the 2019 estimated (Report #2019-COW-17). This estimate accounted for the impact of COVID-19 and other market pressures on infrastructure projects known at the time; and anticipated proposal premiums due to reduced market tolerance for project risks.
- 4.11 The financial proposals that were received by the two respondents were significantly higher than the anticipated cost of the AD Project because of an unexpected and rapid rise in material, shipping and labour costs over the past few months. The combined effect of the rapid escalation in material, labour and shipping costs, coupled with the uncertainty of how these costs may continue to increase, have caused suppliers and subcontractors at every level to significantly increase their costs and projections of costs on larger and long-term capital projects like the AD Project. This increase at every level of the supply chain has compounded and resulted in the proposals submitted well above the Region's projected costs as noted in Report# 2022-COW-2. The Region is experiencing this on all large infrastructure projects currently in the procurement/project costing process and it continues to remain uncertain when the market will stabilize.

- 4.12 Upon receipt of these proposals, the Region, in consultation with the Fairness Monitor, established a confidential process to meet with the two respondents the week of June 13th to seek an explanation for the inflated proposals and explore whether the capital costs could be substantively reduced without changing the technical scope of the AD Project. Due to the confidential nature of these procurement meetings, staff cannot publicly disclose the details of those discussions. However, staff can disclose that both respondents did provide options to decrease the up-front capital costs, but staff concluded that those options could not decrease the capital costs within an acceptable range and in a timely manner without substantively changing the scope of the AD Project. As such, staff do not recommend proceeding with the AD Project at this juncture given current international market conditions and recommend that staff revisit the short and long-term waste management plan and report back to Regional Council in the new year.
- 4.13 As per the NRFP and Council direction (Report# 2022-COW-2), the Region will pay the honorariums in the amount of \$400,000 to both DRRG and DRS. This is not only legally required but is a demonstration of good faith for the efforts undertaken and value added by both respondents and will encourage future participation in Regional projects.

5. Next Steps

- 5.1 Staff do not recommend proceeding with the AD Project at this juncture. However, the imperative need to proceed with a long-term waste management strategy remains. The Region has four (4) key objectives that were to be met by the AD Project: 1) addressing legislative mandates; 2) addressing the service requirements of the Region's growing population; 3) addressing capacity limitations of the Region's existing waste disposal infrastructure, and 4) increasing environmental sustainability through an increase in overall diversion.
- 5.2 The Region had developed an interim solution to process organics in anticipation of the time it would take to operationalize the AD Project. However, the use of existing infrastructure and contracts is, and was always meant to be, a short-term solution. The status quo will not adequately address the anticipated legislation, capacity needs and budgetary pressures on a go forward basis in the absence of the AD Project proceeding at this juncture. As such, staff will need to re-assess the short-term solution while working towards a sustainable long-term integrated waste management system.

5.3 Considering the foregoing, staff will report back to Council in 2023 to provide a plan to address the Region's short and long-term waste management needs in a cost effective and environmentally responsible manner. This plan will consider the prevailing state of the market in relation to large infrastructure projects and staying apprised of available funding opportunities, prevailing and evolving technologies, a re-evaluation of service delivery options and current and anticipated legislation.

6. The Future of the AD Project

6.1 The AD Project, or a variation thereof, continues to remain the preferred solution for the Region. Council approved the AD Project as a necessary measure to address the Region's projected waste management needs in an environmentally responsible manner. The benefits of the AD Project remain:

- a. GHG Reduction: Durham Region declared a climate emergency in 2020 and developed a Corporate Climate Action Plan (CCAP) to guide efforts to reduce greenhouse gas (GHG) emissions from Regional operations. The AD Project will generate the most significant GHG reductions than any other short-term corporate project.
- b. Renewable Natural Gas: The AD Project will generate a significant source of renewable natural gas and sources of revenues from such production (which will only grow as the carbon cost of fossil fuels increases).
- c. Legislative Compliance: The AD Project will ensure the Region is compliant with anticipated regulations for banning organics from landfills and for recovering organics and food waste.
- d. Diversion: The AD Project will help the Region divert over 70 percent of its organic waste from curbside collection program to AD and at least 50 percent from its multi-residential collection program.
- e. Delay DYEC Expansion: The AD Project will allow the Region to reduce up to 30,000 tonnes of capacity at the DYEC and delay its expansion for at least 15 years.

6.2 Furthermore, the Region has developed significant intellectual property, including complex procurement documentation/processes, technical background/modeling and a developed Project Agreement, that was informed by industry experts. These will be invaluable assets in future procurement processes for the AD Project or other long term waste management strategy projects. It should result in a streamlined, expedited and less costly procurement process/es. This process also helped the Region to develop some of its Renewable Natural Gas opportunities and strategies.

7. Relationship to Strategic Plan

7.1 This report aligns with/addresses the following strategic goals and priorities in the Durham Region Strategic Plan:

- a. Goal 1.1 Accelerate the adoption of green technologies and clean energy solutions through strategic partnerships and investment
- b. Goal 1.2 Increase waste diversion and resource recovery
- c. Goal 1.4 Demonstrate leadership in sustainability and addressing climate change
- d. Goal 5.1 Optimize resources and partnerships to deliver exceptional quality services and value

8. Conclusion

8.1 The Region's long term waste management strategy continues to be an imperative that needs to be addressed and while staff do not recommend proceeding with the AD Project during this volatile economic market, staff continues to remain committed to finding cost effective and environmentally responsible methods for the Region's projected waste management needs.

8.2 This report has been reviewed by the Works, Finance and Corporate Services Departments.

8.3 For additional information, contact: Gioseph Anello, Director, Waste Management Services at 905-668-7711, extension 3445.

9. Attachments

Attachment #1: Confidential Financial Submissions

Respectfully submitted,

Original signed by:

Jenni Demanuele, CPA, CMA
Acting Commissioner of Works

Original signed by:

Don Beaton, BCom, M.P.A.
Commissioner of Corporate Services

Original signed by:

Nancy Taylor, BBA, CPA, CA
Commissioner of Finance

Recommended for Presentation to Committee

Original signed by:

Elaine C. Baxter-Trahair
Chief Administrative Officer