

2018 Enterprise Asset Management Plan

Investments in Peel's Infrastructure



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Executive Summary

The Region of Peel’s infrastructure is a public investment with a replacement value of approximately **\$26.2 Billion**. Good infrastructure enhances the Region’s ability to provide high quality and affordable municipal services to the Peel community and, therefore, the Region is committed to strong stewardship of the public’s assets.

The Enterprise Asset Management Plan outlined in this document is focused on a 10-year planning horizon; however, sustainability is projected over longer terms to coordinate with Master Plans and Development Charges horizons and to determine appropriate and affordable contribution levels of taxes and utility rates to the capital replacement reserves. Enterprise Asset Management is an integrated part of the Region’s strategic and long-term planning practices.

Current State of the Infrastructure

The Region of Peel’s infrastructure is currently achieving a rating of ‘**Very Good**’, exceeding the target of ‘**Good**’ due to a number of positive factors:¹

- The Region’s implementation of a comprehensive asset management policy and strategy for long range, strategic planning of the Region’s infrastructure requirements.
- Steady and prudent levels of reinvestments to maintain state of good repair.
- The Region’s growth and non-growth capital programs have both replaced many outdated and deficient assets and added new, modernized infrastructure.
- Council’s priority to maintain the Region’s assets in a state of good repair without incurring long-term debt.



The rating may change in the future as ongoing condition inspections are completed and asset assessment measures are added or updated.

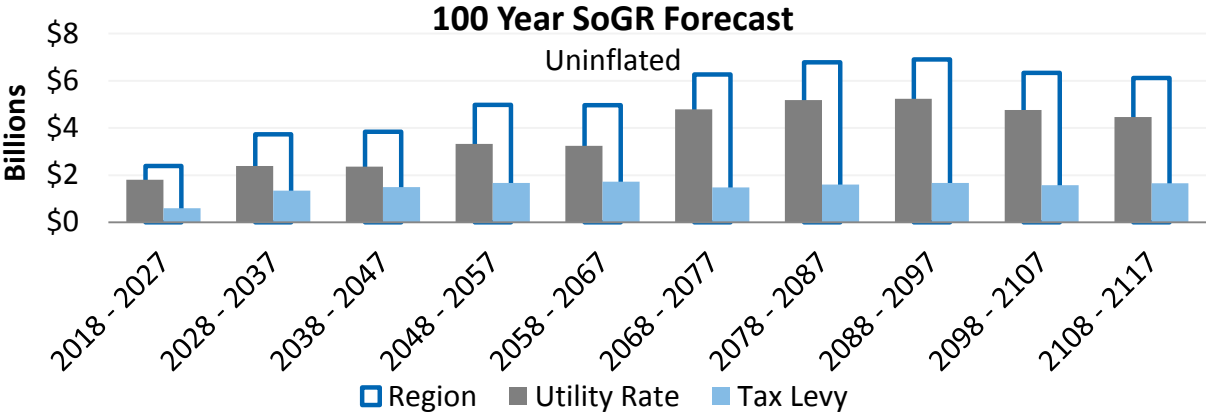
Reinvestment Plan

Reinvestments of **\$2,218.1 Million** are forecasted to be needed over the next 10 years. **\$1,818.1 Million** of this will be required to be funded through Utility Rates and **\$400.0 Million** will be required to be funded through Property Taxes unless alternate funding sources are found.

These investments will maintain the Region’s infrastructure at or above the target Rating.

¹ Descriptions of the Infrastructure Risk Management Scores are included in Appendix I Reading Guide

Long Term Forecast



Infrastructure reinvestment needs are expected to increase steadily over the next 30 years for the Region of Peel. Requirements for the Utility Rate funded infrastructure are expected to continue to grow beyond that as the bulk of the water and wastewater systems are relatively new and account for over 85% of the Region’s infrastructure by replacement value. As these systems age, they will require greater and more frequent reinvestments.

Financing plan

The Region of Peel Debt Management Policy promotes a “Pay as You Go” philosophy to state of good repair financing and discourages the use of debt to fund such work.

Council approved increases in the dedicated capital reserve contributions of **5%** from the utility rates and **1%** from the tax rate as part of the 2018 Budget.

Utility Rate Supported 5% Infrastructure Levy		Tax Supported 1% Infrastructure Levy	
Utility Supported 2018 – 2037 Non-DC Capital Plan Portion to be Funded from Utility Rate \$5.47B	Unfunded Gap	Tax Supported 2018 – 2027 Non-DC Capital Plan Portion to be Funded from Tax \$2.06B	Unfunded Gap
	5% ↑ in 2018 Total Available Funding (including interest) \$3.61B		1% ↑ in 2018 Total Available Funding (including interest) \$1.62B

Despite these increases in reserve contributions, infrastructure financing gaps remain. Options and opportunities to further reduce the Region’s unfunded infrastructure investment gap will be considered with Council and incorporated into future plans.

Emerging Risks and Challenges

Council has adopted a moderate appetite for infrastructure risk, preferring safe service delivery with limited tolerance for uncertainty. The ‘Very Good’ state of the Region’s infrastructure is compatible with Council’s risk appetite and risk tolerance.

Notwithstanding the infrastructure financing gap, and despite the ‘Very Good’ rating of the Region’s infrastructure, there are a number of challenges and unknown conditions underlying the Region’s immense asset portfolio that creates infrastructure risks for which the organization must be prepared.

To improve information on the state of the Region’s infrastructure, a number of studies, condition appraisals and risk assessments are underway on a broad portfolio of assets that will reveal substantial new information on the risks ahead and the required actions to manage the risks. As the new information is accounted for, the high rating of the Region’s infrastructure and the infrastructure outlook may be adjusted, and further capital works and financing identified.





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Introduction

Building new infrastructure and maintaining the existing assets in a state of good repair is critical to the success of the Region of Peel. Good infrastructure enhances the Region’s ability to provide high quality and affordable municipal services to the Peel community.

The Enterprise Asset Management Plan outlines the Region’s corporate strategy and plan to achieve the Region’s long-term infrastructure risk management goal of finding the balance between providing reliable, efficient services, and doing it at the lowest reasonable cost.

Overview of Peel’s Approach

Peel uses a risk-based approach to asset management. Council has approved Asset Levels of Service (ALOS) targets to manage the risks that may affect the Region’s services. ALOS targets are specific to each type of asset and where and how it is being used. While some assets need to be kept in top shape to ensure the residents of Peel receive critical services, others can be run to failure without anyone even noticing a decrease in the services they receive. ¹

The closer the assets are to meeting the ALOS targets, the less risk there is of not delivering the desired service outcomes. The Region measures its progress in managing the infrastructure to the ALOS targets using **Infrastructure Risk Management Scores**. ²

The Region’s long-term goal is to maintain Peel’s infrastructure portfolios at a minimum overall score of ‘**Good**’. A score of ‘**Good**’ maintains the balance between having assets in an adequate state to support the Region’s desired service outcomes and investing in infrastructure at rates that are reasonable and affordable to the public.

The Enterprise Asset Management Plan uses lifecycle models to forecast infrastructure condition, reinvestment needs, and asset related risks to service. The models are specific to the Region’s assets and use the most recently available asset information. ³

- The Focus of the Enterprise Asset Management Plan is a **10-year** forecast which aligns with the Capital Budget.
- The Plan also uses a **20-year** forecast to coordinate with Master Plans, Development Charges horizons, and inform reserve contributions.
- A full **100-year** forecast is used to inform strategic decision making and ensure sustainability in the longer term in line with the full lifecycles of the longest-lived assets.

¹ All current Council approved **Asset Levels of Service** are included as **Appendix II**

² Descriptions of the Infrastructure **Risk Management Scores** are included in **Appendix I**

³ **Appendices III and IV** provide detail of the Region’s asset **replacement value** calculations and asset **lifecycle models**

Strategic Connections to Asset Management

Enterprise Asset Management is an integrated part of the Region of Peel's, annual, strategic, and long-term planning practices. Asset Management supports the strategic objectives of Regional Council, the delivery of services to the public, and the sustainability of the Region of Peel.¹

Alignment with Strategic Plan



Enterprise Asset Management is central to sustainable service delivery and as such, is key to the achievement of the Region's 2015-2035 Strategic Plan.

- The **Vision** describes what we are working towards over the long-term.
- The **Mission** describes how we will deliver on our vision and the difference we want to make.
- **Living, Thriving** and **Leading** are the areas of focus we will improve through this plan.

The Region's **Strategic Plan at a Glance** is available on the Region of Peel website under Strategic Plan.²

Enterprise Asset Management processes have a direct link to the Strategic Plan's long-term outcome of being a government in which the community can trust that "**sustainability and long-term benefits to future generation are considered**".



Status of Regional Infrastructure Assets

Ongoing Asset Management Services at the Region of Peel fall under the **Leading** Area of Focus. Progress towards the 20-Year **Leading** outcomes is measured by tracking key indicators which include the **Status of Regional Infrastructure Assets**.

The **Status of Regional Infrastructure Assets** indicator is measured using the same Enterprise Asset Management processes described in this report.

The Region's progress across all key indicators can be found in the **Community for Life Annual Report**, and in Area of Focus dashboards on the Region of Peel website under Strategic Plan.³

¹ **Appendix V** illustrates the connections between asset management and other planning functions within the Region.

² <http://peelregion.ca/strategicplan/>

³ <http://peelregion.ca/strategicplan/20-year-outcomes/>

Contribution to Service Outcomes

The Region has a large portfolio of services from Water Supply to Income Support. Each service has a desired **Service Outcome** and is aligned with one of the three Areas of Focus: **Living, Thriving**, and **Leading**. Those services and Service Outcomes which are directly supported by infrastructure are included in this Enterprise Asset Management Plan. Enterprise asset management allows the Region to manage the asset related risk to meeting the desired Service Outcomes.

Asset Management Line of Sight

An important principle in asset management is **Line of Sight**. Line of sight in asset management, achieves two important things:

1. People doing the physical work on the infrastructure can see how the work they do supports the strategic goals of the Region.
2. People setting the strategic goals of the Region can see how their decisions change how we manage our infrastructure.

Enterprise Asset Management enables this line of sight, connecting the Service Outcomes down to the assets that support them. ¹

Asset Management as a Service

On top of enabling the line of sight for other services, Asset Management is a service itself. The Region tracks the progress towards the outcomes for each service using different metrics. These are publicly available on the Regional Service Dashboards on the Region of Peel website under Strategic Plan. ²



Asset Management

The Region of Peel builds, maintains and monitors infrastructure

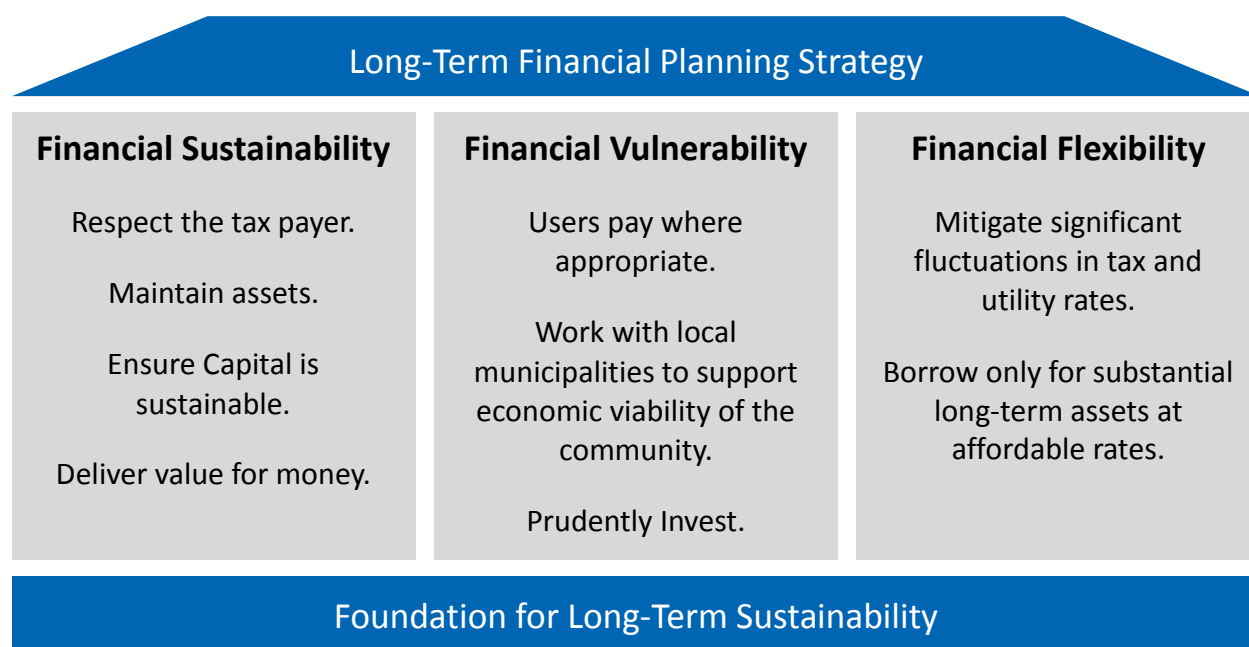
Target: Good; most assets in the portfolio are achieving the desired targets. ³

¹ **Appendix VI** provides an example of the **Line of Sight** between a single asset, an ozone generator in the Water Supply service, and the Strategic Plan.

² <http://peelregion.ca/strategicplan/dashboard/>

³ Descriptions of the Infrastructure **Risk Management Scores** which are used as the metric towards tracking the service outcome of Asset Management are included in **Appendix I**

The Long Term Financial Planning Strategy



The Long Term Financial Planning Strategy (LTFPS) provides a framework through which the Region endeavors to achieve the long-term financial sustainability of Regional services and is available on the Region's website.¹ The LTFPS strives to maintain a balance between three pillars of sustainability: Financial Sustainability, Financial Vulnerability, and Financial Flexibility.

The Strategy has three objectives:

Objective #1:

Ensure financial sustainability of the Region of Peel's services and infrastructure

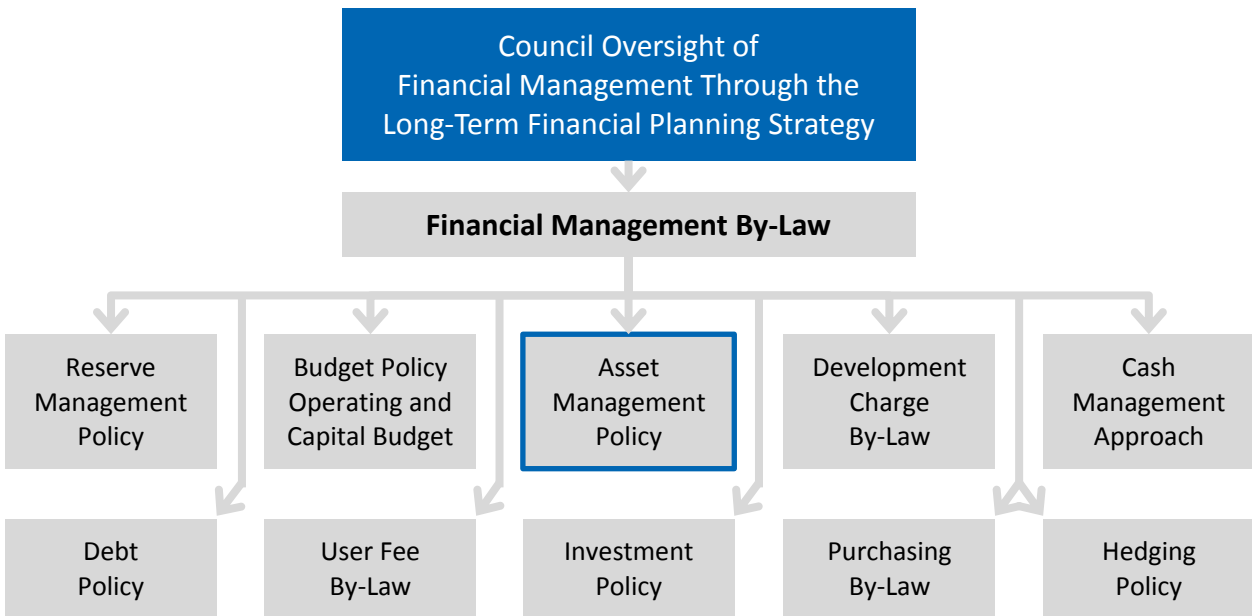
Objective #2:

Minimize the Region of Peel's financial vulnerability to external funding sources

Objective #3:

Manage the Region of Peel's overall financial flexibility





To realize the objectives of the LTFPS, the Region of Peel takes an integrated financial management approach which combines the long-term financial planning and sustainability policies under the Financial Management By-Law. This ensures that asset management needs are not looked at in isolation, but rather planned and balanced with other financial management activities such as reserve and debt management.

The [Asset Management policy](#) specifically supports financial sustainability objectives of the Long Term Financial Planning Strategy:

1.2 – Ensure the Capital Plan is sustainable

1.3 – Maintain existing assets to protect services

This integrated approach ensures that long-term Capital Projections which result from Enterprise Asset Management are directly input into other financial tools such as reserve management.



The Asset Management Policy

Region of Peel Council has approved an Asset Management Policy. The Policy establishes formal management controls for the responsible stewardship of capital infrastructure.

The Asset Management Policy is implemented through the [Enterprise Asset Management Strategy](#).

The policy framework is divided into four key areas:

1. **Levels of Service** – Measures of quality or quantity of service which serves as a desired target for a particular activity, asset or service area as determined by Council;
2. **Risk Management** – Measures risks to assets and by extension to the services the assets provide is a core fundamental of the Enterprise Asset Management Strategy;
3. **Life Cycle Management** – Defines how assets are managed throughout the asset life cycle to maximize the assets' value to the organization and the service to clients; and
4. **Corporate Reporting on Asset Management** – Defines the requirements of Corporate level reporting which is undertaken annually to give an organization wide perspective on the Region of Peel's infrastructure needs and priorities to enable better, more informed strategic planning and decision making.



The Enterprise Asset Management Strategy

The Enterprise Asset Management Strategy defines how the Asset Management Policy is implemented. The strategy forms the basis by which infrastructure is assessed and how infrastructure needs are reported and prioritized in a consistent way across the entire organization. The Enterprise Asset Management Strategy is made up of three sub strategies:

Levels of Service Strategy

The objective of the Level of Service Strategy is to link the assets' condition and performance to the level of service it provides to the customer. Asset Levels of Service are established that enable the delivery of service outcomes the public is expecting to receive. The Asset Levels of Service are approved by Council under the Asset Management Policy.

Risk Management Strategy

The objective of the Risk Management Strategy is to make informed decisions on infrastructure priorities across a very complex and diverse portfolio of assets and to maximize the return on investments. Where services are at risk levels that are beyond the tolerances of Council, the assets generating the higher risks become a priority for infrastructure investments.

Life Cycle Strategy

The objective of the Life Cycle Strategy is to develop a means to measure and forecast the degree to which the assets are not able to meet level of service targets and, therefore, present risk to the customer's services. Asset life cycles are unique to each type of asset and include any refurbishment strategies which prolong the functional lifespan of the asset. Refurbishment strategies maximize the Region's return on asset investments. Using appropriate life cycle patterns for each type of asset improves the Region's ability to predict investment needs over the long-term and to develop financing strategies for those investments.



Levels of Service

Defined Levels of Service are an integral part of the Region of Peel's Enterprise Asset Management Process. Levels of Service allow for the assessment of both financial requirements and risk. The Region's Enterprise Asset Management strategy uses two tiers of Levels of Service:

Customer Levels of Service

Customer Levels of Service (CLOS) describe how a service is expected to be received by the customer and sets non-technical service targets. The Region considers factors including health and safety, adequacy, quantity, quality and other social, financial and environmental factors when defining CLOS.

Asset Levels of Service

Asset Levels of Service (ALOS) are specific and measurable. The Region sets ALOS targets at levels which mitigate the risk of the Region not delivering on the CLOS targets. Some ALOS are discretionary and can be adjusted to suit Council's risk tolerance. Other Asset Levels of Service are regulatory requirements. All Asset Levels of Service are endorsed by Regional Council under Peel's Asset Management Policy. The level of risk to services is determined according to the degree to which the assets are not meeting desired ALOS targets. The Region's Enterprise Asset Management Strategy utilizes two types of Asset Levels of Service:

Asset Condition Levels of Service

Condition Levels of Service measure the physical "health" of the assets. Measures on the condition of the asset can include pipe breaks, pavement wear, roof leaks, foundation cracks, equipment malfunctions and failures. The Condition Levels of Service can be forecasted using lifecycle models. Capital projects to improve the condition of the assets generally involve major rehabilitation or replacement of the assets.

Asset Performance Levels of Service

Performance levels of service measure the "suitability" of the assets. They assess the assets' or asset systems' ability to provide sufficient quality and quantity of service and/or have adequate capacity to reasonably protect against external risks to services. Performance Levels of Service can include ensuring adequate pipe capacities, acceptable heating and cooling of building units, adequate back-up capacity in the event of primary system failures and adequate measures to protect the environment. Capital projects to improve the performance of an asset or system can include replacing and upgrading an old asset with more modern technology, reconfiguring assets or adding additional assets to the system.

Risk Management of the Region’s Infrastructure

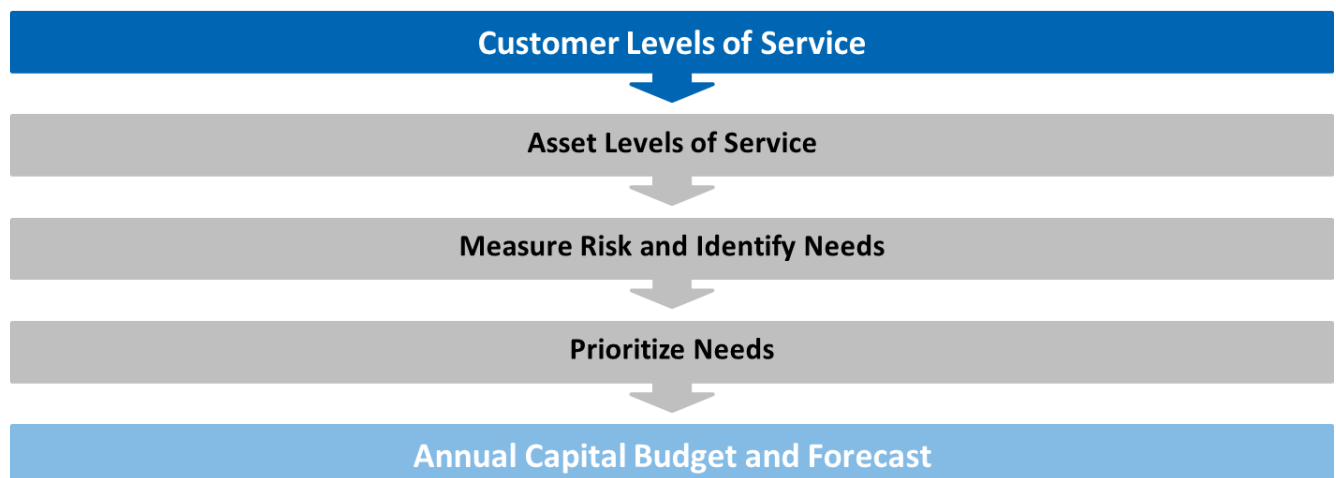
Finding the balance between ensuring that the Region’s infrastructure is in a state to support the Region’s desired Service Outcomes and doing so at the least possible cost to the residents of Peel is about managing risk. The Region could try to maintain all of the assets in a good as new condition, but that would be financially unrealistic for the residents of Peel. At the other extreme, the Region could stop reinvesting in the infrastructure, but then the Region would not be able to provide the services that the residents rely on. Risk management is the tool to find the balance between these extremes.

The risk management approach looks at infrastructure related threats to the Region’s Services and then assesses their **consequence** and **likelihood**. The Enterprise Asset Management Strategy uses the risk-management-based approach to:

1. Identify the assets that are putting Peel’s customer services at undue risk because of condition and/or performance deficiencies as measured by the asset levels of service targets.
2. Prioritize the asset reinvestments to minimize the threats to services based on the risk from potential asset failures or impaired asset performance.

From Level of Service, through Risk, to Budget

The Region of Peel’s Customer Levels of Service requirements inform the Asset Levels of Service targets. ALOS Targets are then used to measure the level of asset risk and in turn risk to services. This structured approach to assessing and forecasting risk both reveals the Region’s asset reinvestment needs and prioritizes those needs for the Region’s annual capital budget and forecast.





Asset Management Reinvestment Plan

The Region of Peel

The Region of Peel’s Infrastructure

What Infrastructure Does the Region Own?

The Region of Peel is the second largest municipality in the Province of Ontario.

The Region owns and operates infrastructure assets including:

- Roads
- Bridges
- Storm water systems
- Pipes
- Pumping stations
- Reservoirs
- Treatment plants
- Waste management facilities
- Buildings
- Fleet, and
- Equipment

These assets support the Region in providing a variety of services to the community.

This plan breaks the asset portfolio down according to the service that is responsible for managing the assets.

The replacement, rehabilitation, and enhancement of assets is primarily funded through either the property taxes or the utility rate.

The asset managing services supported by the **Utility Rate** are:

Wastewater

Water Supply

The asset managing service supported by the **Property Taxes** are

Waste

Roads and Transportation

TransHelp

Paramedics

Long Term Care

Housing Support

Homelessness Support

Child Care

In addition to these services, this plan also includes two internal service providers which manage assets on behalf of many other services. They are:

Operations Support

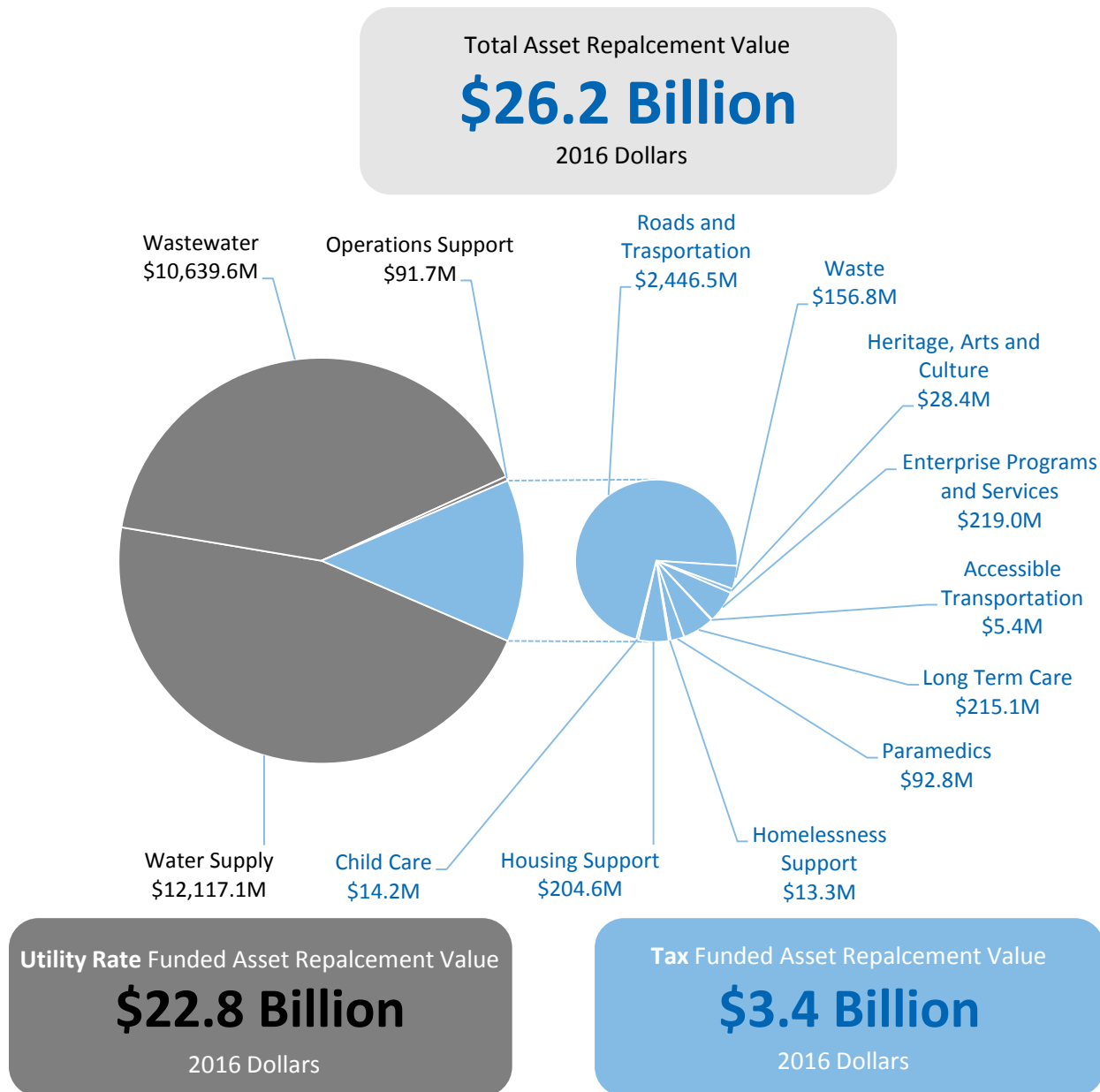
Enterprise Programs and Services (EPS)



Value of the Infrastructure

What Would the Infrastructure Cost to Replace?

The Region's portfolio of directly owned infrastructure has an estimated replacement value of **\$26.2 Billion** (2016 values excluding land).

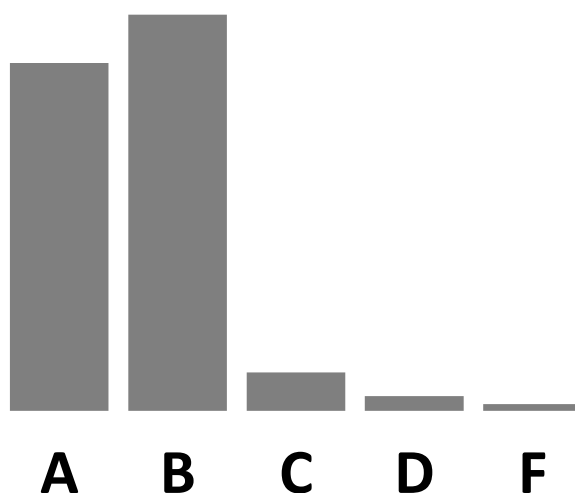


The Region owned assets **covered under the Enterprise Asset Management Strategy** have an estimated replacement value of **\$25.8 Billion** (2016 values excluding land). Currently, the Enterprise Asset Management Strategy does not cover the Inglewood Wastewater Treatment Plant, storm water pipes, retention ponds, catch basins, minor culverts, and the Peel Art Gallery, Museum and Archives facilities.

State of the Infrastructure

What is the Condition of the Infrastructure?

Generally, the Region tries to maintain its infrastructure in a State of Good Repair (B) or better. As infrastructure ages its condition grade will decrease. Reinvestments in the assets will improve the grade. There are cases where the condition for specific types of assets is allowed to degrade further because the risk to services does not increase significantly and the Region can realize cost savings for the tax payer.



How is the Condition Graded?

When the condition of individual assets is assessed, a wide range of techniques are used as appropriate to the infrastructure. Peel's SoGR Condition Grades provide a common way to look at the condition of all the diverse infrastructure that the Region owns.

- | | |
|----------|---|
| A | New or like new condition |
| B | In a good state of repair |
| C | Some non-critical defects; some critical repairs in the near term |
| D | Some critical defects; many critical repairs in the near term |
| F | Many critical defects; immediate repair or replacement required |

How Well is the Infrastructure being Managed?

The goal for the Region of Peel is to have most of the assets financed to achieve their condition and performance targets in order to fully provide efficient and reliable services at rates affordable to the taxpayer. This will achieve a Risk Management Rating of **Good**.

The Region of Peel is currently achieving a rating of:

 **Very Good**



Asset Management

The Region of Peel builds, maintains and monitors infrastructure

Target:  Good

Actual:  **Very Good**

*This indicator is used to measure progress towards the Asset Management **Service** outcomes*



Status of Regional Infrastructure Assets

92%

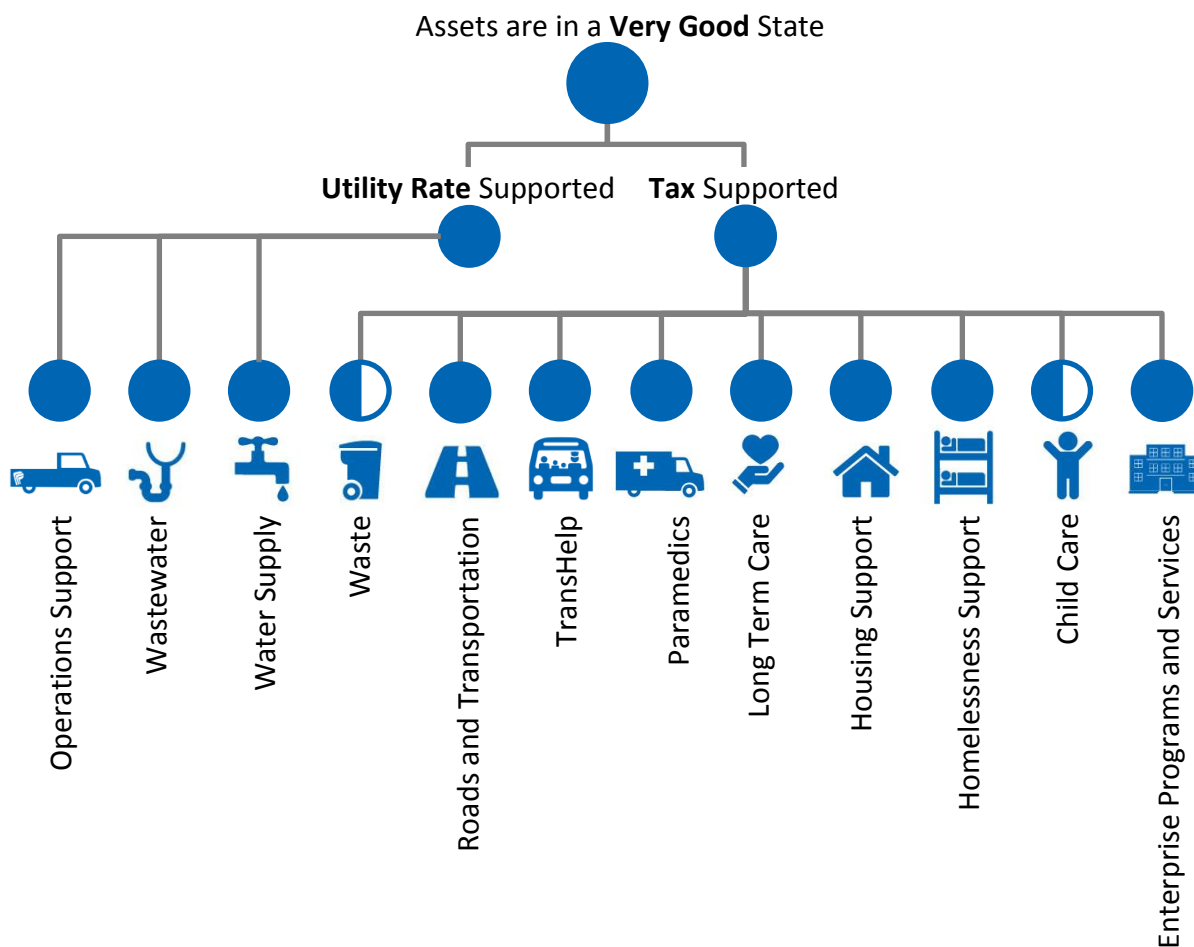
 Good or  Very Good

*This indicator is used to measure progress towards the **Leading** outcomes in the Strategic Plan*

What is the Breakdown of Ratings?



How Do the Services Contribute to the Overall Rating?



What do the Risk Management Ratings mean?

Asset Management is about more than making sure the infrastructure is in good condition. The Region also needs to consider whether the right assets are in the right place to support the desired service outcomes. Do the assets provide enough capacity? Are there spares and backups? Are they meeting all required codes and regulations? Does the community want the infrastructure to look nice? The Region calls these types of requirements Performance Levels of Service. The Risk Management Rating considers both the State of Good Repair (SoGR) Levels of Service and the Performance Levels of Service.

	Very Good	Almost all assets in the portfolio are achieving the desired targets
	Good	Most assets in the portfolio are achieving the desired targets
	Fair	Many assets in the portfolio are not achieving the desired targets
	Poor	Most assets in the portfolio are not achieving the desired targets
	Very Poor	Almost all assets in the portfolio are not achieving the desired targets

Infrastructure Reinvestment Plan for 10 Years

What is the plan?

10-Year Reinvestment Plan	Utility Rate	Tax Levy	Region Total
Condition (SoGR)	\$1,818.1M	\$400.0M	\$2,178.3M
Performance Enhancements*	\$39.8M	\$0.0M	\$39.8M
Total Reinvestment	\$1,818.1M	\$400.0M	\$2,218.1M

Note: Values are in 2018 dollars

Reinvestment requirements of **\$2,178.3 Million** are forecasted for the next 10 years to maintain the infrastructure in a state of good repair. **\$1,818.1 Million** of this will be required to be funded through Utility Rates and **\$400.0 Million** will be required to be funded through the Property Taxes unless alternate funding sources are found.

Infrastructure Enhancement opportunities valued at **\$39.8 Million** have been identified which will improve the ability of the water and wastewater systems to meet the service outcome goals and will be funded through the Utility Rates unless alternate funding sources are found.

Maintenance and Non-Infrastructure Solutions

Maintenance activities are standard operating procedures across the Region's asset portfolio. They are required to meet legislated requirements, the endorsed levels of service, and to optimize asset lifecycles. Maintenance activities are reviewed and optimized within the operational and planning teams of the Region. As maintenance activities are refined, asset lifecycles are adjusted accordingly so that reinvestment requirements and risks are reflected accurately in this plan.

Non-infrastructure solutions are considered in all stages of the planning process. These solutions help identify opportunities to optimize asset lifecycles and reduce asset related service delivery costs through optimizing asset use, monitoring asset condition, and assessing asset specific risk to service.

*Reinvestments in Performance Enhancements are only included where a direct link has been established between the capital reinvestment and a defined improvement in a Performance Asset Level of Service (ALOS), and where performance enhancement is the primary goal of the initiative. Projects where the primary driver is the State of Good Repair (SoGR) can also improve Performance ALOS as a secondary project goal.

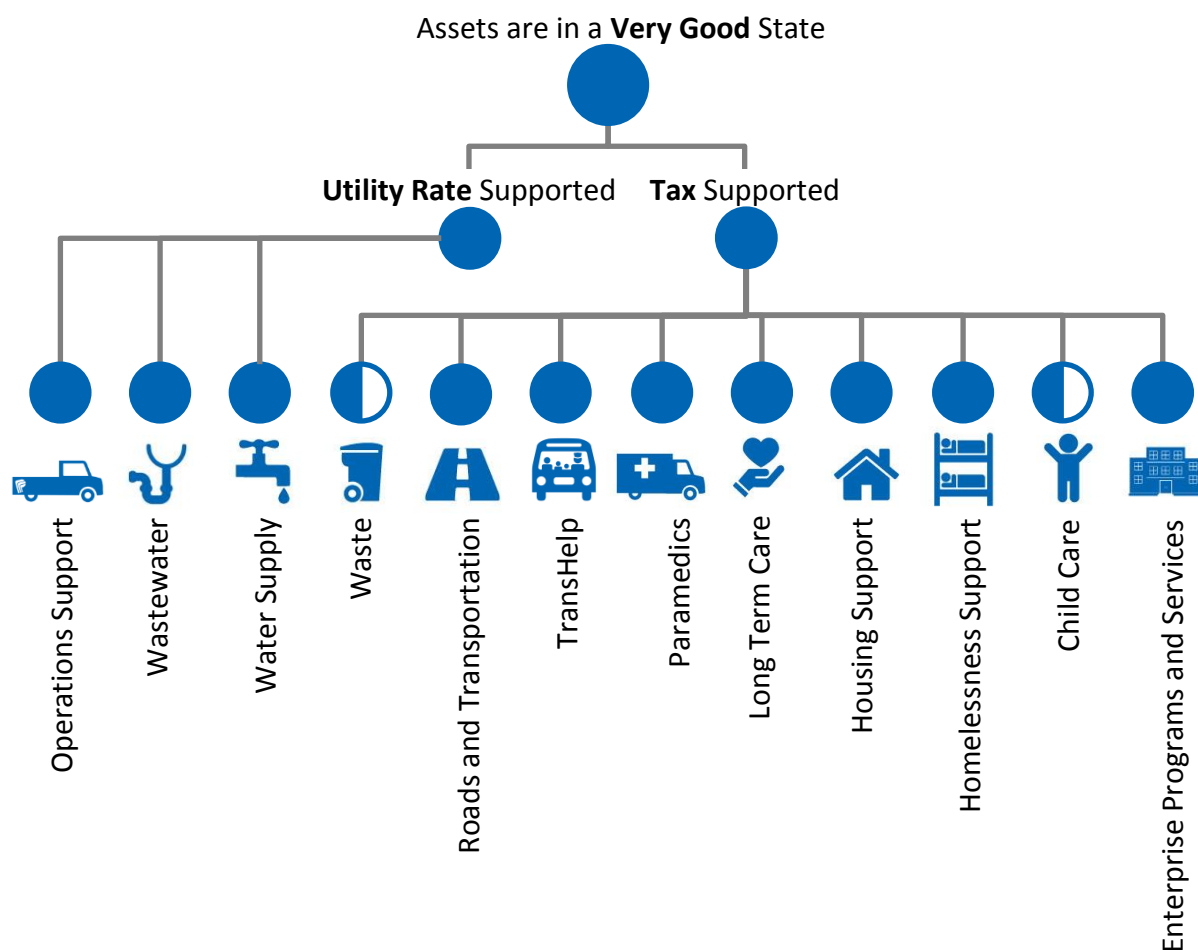
Forecasted State of the Infrastructure in 2027

If The Proposed Reinvestments are Made...

The Region of Peel will maintain an overall rating of:

Very Good

How will the Services Contribute to the Overall Rating?



What do the Risk Management Ratings mean?

	Very Good	Almost all assets in the portfolio are achieving the desired targets
	Good	Most assets in the portfolio are achieving the desired targets
	Fair	Many assets in the portfolio are not achieving the desired targets
	Poor	Most assets in the portfolio are not achieving the desired targets
	Very Poor	Almost all assets in the portfolio are not achieving the desired targets

Summary of 10 Years

Service	Current State		10 Year Reinvestment Plan			
	Current Rating (2018)	Replacement Value (2016 \$ Millions)	SoGR (2018 \$ Millions)	Enhancements (2018 \$ Millions)	Total (2018 \$ Millions)	Forecasted Rating (2027)
Operations Support	●	83.3	53.0	0.0	53.0	●
Wastewater	●	10,625.3	610	7.1	617.0	●
Water Supply	●	12,112.6	1,115.3	32.8	1,148.1	●
Utility Rate Supported Services - Total	●	22,821.2	1,778.2	39.8	1,818.1	●
Waste	◐	156.8	49.3	0	49.3	◐
Roads and Transportation	●	2,082.2	266.0	0	266.0	●
TransHelp	●	5.4	6.8	0	6.8	●
Paramedics	●	92.8	38.3	0	38.3	●
Long Term Care	●	215.1	15.7	0	15.7	●
Housing Support	●	204.6	1.5	0	1.5	●
Homelessness Support	●	13.3	3.3	0	3.3	●
Child Care	◐	8.1	3.4	0	3.4	◐
EPS	●	219.0	15.8	0	15.8	●
Tax Supported Services - Total	●	2,997.2	400.0	0	400.0	●
Region of Peel - Total	●	25,818.4	2,178.3	39.8	2,218.1	●

What do the Risk Management Ratings mean?

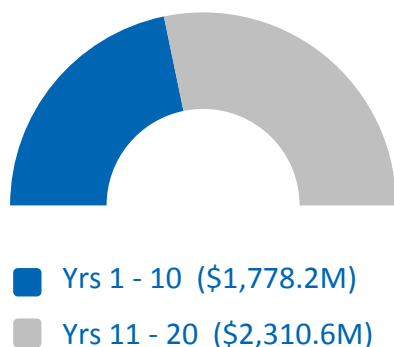
- **Very Good** Almost all assets in the portfolio are achieving the desired targets
- ◐ **Good** Most assets in the portfolio are achieving the desired targets
- **Fair** Many assets in the portfolio are not achieving the desired targets
- ◑ **Poor** Most assets in the portfolio are not achieving the desired targets
- **Very Poor** Almost all assets in the portfolio are not achieving the desired targets

State of Good Repair Forecast for 20 Years

The 20-year State of Good Repair forecasts allow decision makers to take a wider view of the upcoming asset reinvestment needs. Many of the assets that the Region relies on to provide services have very long lifecycles. There will be times when many expensive assets need replacement within a short time span. It is important to see increases and decreases in needs coming, so that plans can be made, and sudden large changes in the Tax and Utility rates can be avoided.

Utility Supported Infrastructure

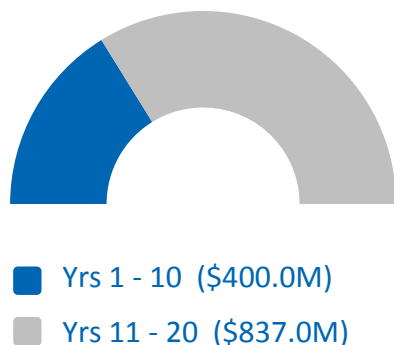
SoGR Reinvestment Forecast



State of Good Repair reinvestment needs are forecasted to **increase slightly** in the next 20 years for the utility rate supported infrastructure portfolio.

Tax Supported Infrastructure

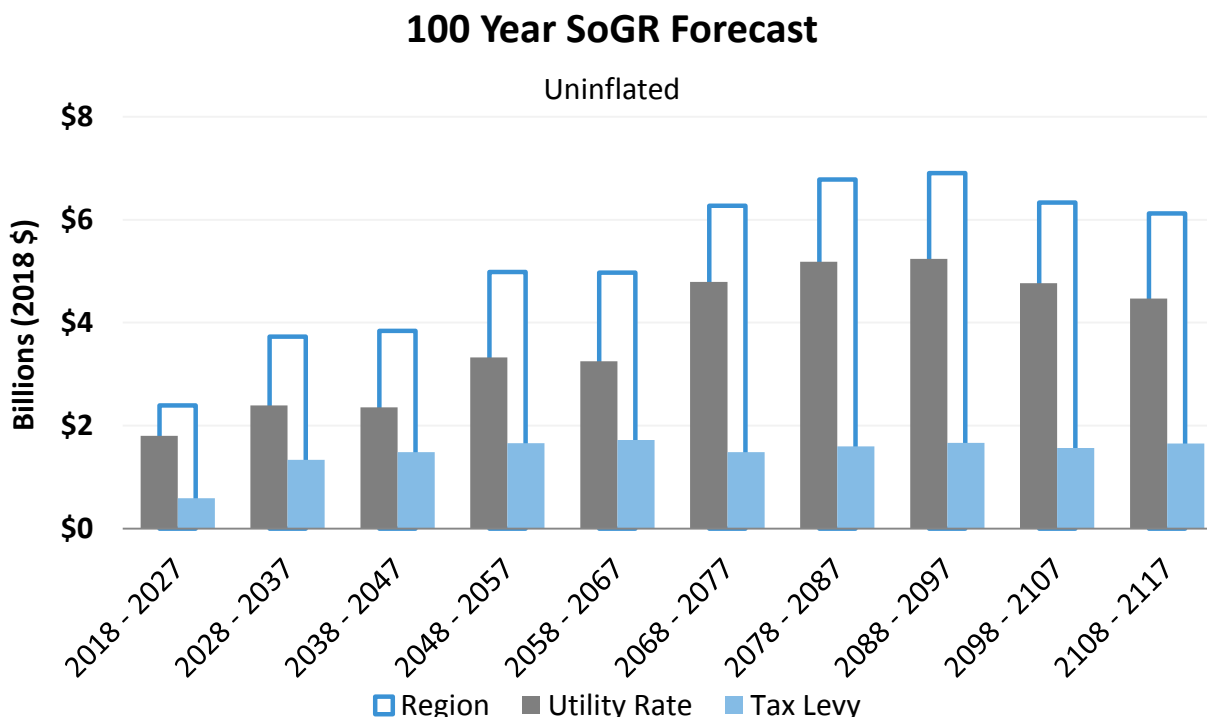
SoGR Reinvestment Forecast



State of Good Repair reinvestment needs are forecasted to **double** in the next 20 years for the tax levy supported infrastructure portfolio.

State of Good Repair Forecast for 100 Years

Long-term infrastructure investment forecasts allow decision makers to anticipate major trends in the Region's infrastructure needs and make proactive financing and asset management decisions. Long-term SoGR projections include the estimated rehabilitation and replacement costs of existing assets as well as the estimated rehabilitation and replacement cost of planned asset growth.



The Region of Peel's Capital SOGR needs are expected to increase steadily over the 80-year timeframe before stabilizing. The first 30 years see an increase in needs in both the rate funded and tax funded portfolios. Thereafter, the tax funded infrastructure needs are forecasted to level off while the utility rate funded infrastructure needs are expected to continue to climb. The steady increase in needs is driven in large part by the water distribution network and the wastewater collection network which together comprise over 70% of the total replacement value of the Region's assets. The pipes in both networks are, to a large extent, relatively new, but will require increased rehabilitation and replacement over time.

Because the 100-Year forecast is shown without forecasted inflation; the dollars can be roughly translated into the volume of work required.

Financing Plan

Infrastructure Reinvestment Financing Strategy

State of good repair capital works are financed through the **Tax-supported Capital Reserve** and **Utility Rate-supported Capital Reserve**.

The Enterprise Asset Management Plan proposes and prioritizes the Region’s infrastructure investment requirements according to their respective reserve financing sources.

The Region of Peel’s Debt Management Policy promotes a “**Pay As You Go**” philosophy to state of good repair financing and generally discourages the use of debt to fund such capital works. This approach was taken primarily to:

Maintain adequate financial capacity (as regulated under the Ontario Municipal Act) to issue sufficient debt to finance the Region’s infrastructure requirements to support population and employment growth identified by the Regional Official Plan, and for which the borrowing costs are financed by development charges; and to

Achieve the three objectives of Peel’s Long Term Financial Planning Strategy:

1. **Ensure financial sustainability**
2. **Minimize financial vulnerability**
3. **Manage financial flexibility**

Financial Modeling

The Region’s Financing Strategy utilizes financial modelling to determine revenue requirements to finance the Region’s annual budget and forecast. The inputs for the Financial Model include, but are not limited to:

- Tax and Utility Rates
- Forecasted growth
- Employment and demographics
- Capital plans
- Operational plans and projections, and
- 20-year Enterprise Asset Management reinvestment forecasts

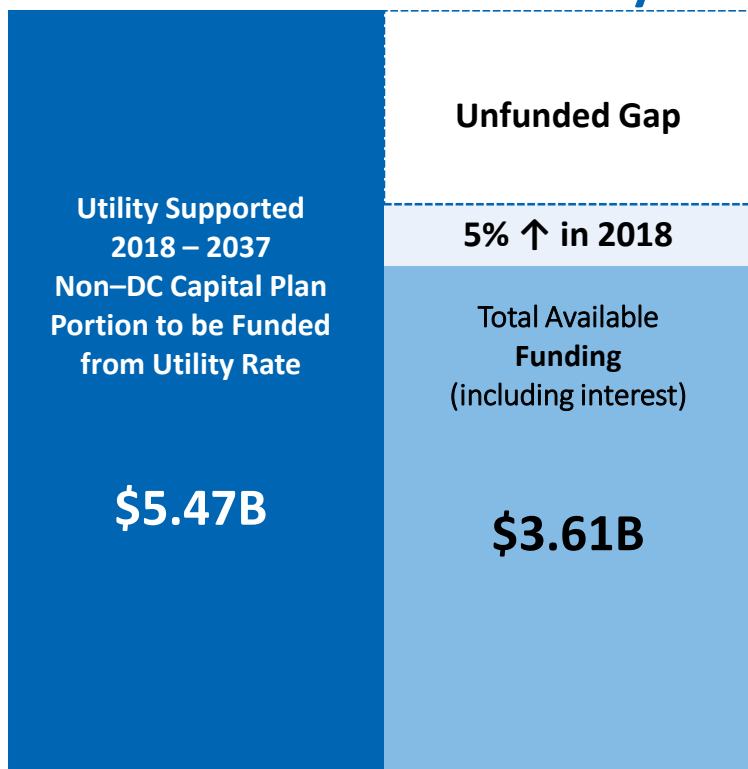
The Model is updated on an annual basis to reflect changes in policy and strategy, and informs the capital planning process. The Financial Model is used in part to determine the adequacy of the tax and utility rate supported reserves and to calculate an appropriate adjustment in rates if required.

Utility Rate Supported Infrastructure Financing Plan

The utility rate infrastructure financing plan uses a 20-year horizon to determine the adequacy of infrastructure reserves. There is expected to be a **\$1.86 billion gap** by the end of 2037 at current reserve funding rates.

A 5% increase in utility rates dedicated to funding the capital reserve is included in the 2018 Capital Plan to partially close the gap. Options and opportunities to further reduce the Region's unfunded infrastructure investment gap will be considered with Council and incorporated into future plans.

Utility Rate Supported 5% Infrastructure Levy

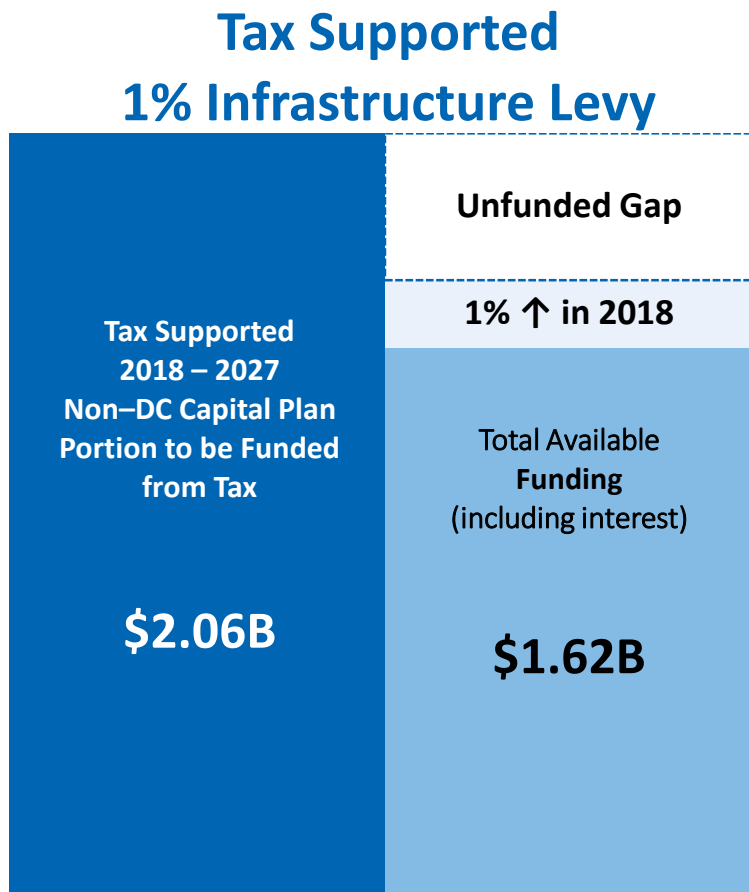


The Utility Rate Capital Reserve gap and the impact of the 2018 dedicated 5% increase.

Tax Rate Supported Infrastructure Financing Plan

The tax rate supported infrastructure financing uses a 10-year horizon to determine the adequacy of infrastructure reserves. There is expected to be a **\$440 million gap** by the end of 2026 at current reserve funding rates.

A 1% increase in property tax rates dedicated to funding the capital reserve is included in the 2017 Capital Plan to partially close the gap. Options and opportunities to further reduce the Region's unfunded infrastructure investment gap will be considered with Council and incorporated into future plans.



The Tax Rate Capital Reserve gap and the impact of the 2018 dedicated 1% increase.

Risks to Financing Plan

Weather and Climate Change Impacts

Weather primarily impacts water consumption during the summer and winter road maintenance programs. Efforts are made to mitigate this risk using trend analysis and the Stabilization Reserves.

Additionally, the risk of damage to assets from significant weather events is increasing which may require increased capital reinvestment to mitigate said damage.

Changes to Level of Service Targets

Level of Service Targets drive the reinvestment forecasts in the Asset Management Reinvestment Plan. Levels of Service are based on regulations, standards, and council approved service levels. Increased regulations and standards will require changes to the level of service targets. Council approved levels of service may also change to better align with the priorities of the community.

Ongoing Condition Assessment Program

Detailed asset condition assessments are carried out across the organization. As the results of assessments are returned, SOGR works are adjusted accordingly to address identified needs.

Regulatory Impacts

Changes to regulations in the Region of Peel's operational environment have significant impact on financial plans and may change:

- What services are provided by the Region
- The content of the Region's capital asset portfolio
- The availability of funding sources
- Design and technology requirements
- Operational practices



Economic Conditions

Changes to economic conditions can impact the Financing Plan. Specific risks to the plan include:

- Increases in labour costs
- Decreases in revenue for recycled materials
- Increases in energy costs
- Increases in debt servicing costs

Significant change to the broader economic condition may also impact the capacity and appetite of the community to pay for services.

Servicing Peel’s Population Growth

Intensification of populated areas – In order to promote better use of land and services, preserve green space and satisfy the Province’s “*Places to Grow*” requirements, there is greater emphasis on intensifying the use of populated lands. Although this is a prudent method to better utilize lands and services, the construction of infrastructure to accommodate growth in such areas can lead to higher initial capital costs and the need to prematurely replace infrastructure which may not have reached its full life span.

Expanding into un-serviced “greenfield” lands – Peel’s growth also requires the urbanization of rural lands. Such expansions require the extension of water, wastewater, roads, solid waste, health and social services to accommodate the added population. The expansion of infrastructure to accommodate these services as well as the increase in Regional fleet and distances to provide services will create added pressures in terms of operating and maintaining the Region’s expanded network.

Impacts from and Alignment with Infrastructure Plans of Other Governments and Agencies

Where the Region of Peel owns or manages infrastructure in proximity to that of other levels of government or external agencies, reinvestment plans may need to be adjusted to align infrastructure planning between organizations. These adjustments have the potential to significantly increase the Region’s infrastructure financing requirements if a high value piece of infrastructure is required to be relocated or enhanced prior to the asset’s normal end of life. Alternatively, there are opportunities for cost sharing between organizations when co-located assets require replacement or rehabilitation within a similar time frame.



Thriving



Communities are integrated safe and complete



Asset Management Reinvestment Plan

Operations Support

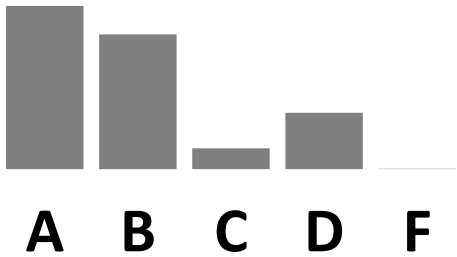
State of the Infrastructure Operations Support

Four works yards
444 vehicles
183 vehicle equipment assets

Total Asset Replacement Value
\$83.3 Million
2016 Dollars

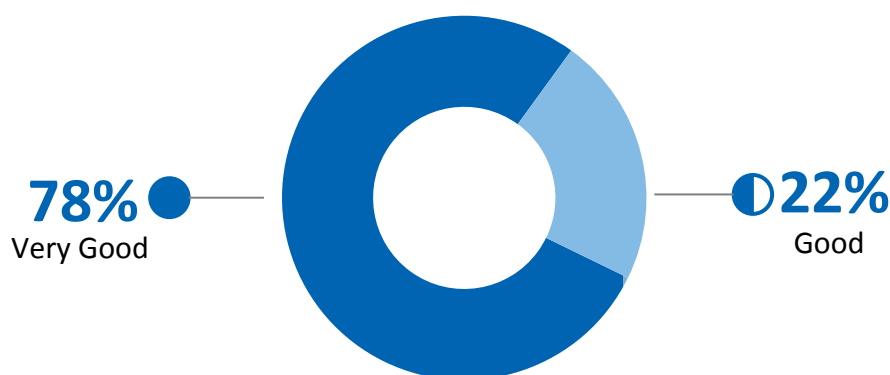
Public Works Yards has recently completed upgrades at two public works yards. The Region is looking at options to fully redevelop the Victoria works yard.
The Fleet assets are currently meeting all level of service targets.

Condition of the Infrastructure



How is the Condition Graded?	
A	New or like new condition
B	In a good state of repair
C	Some non-critical defects; some critical repairs in the near term
D	Some critical defects; many critical repairs in the near term
F	Many critical defects; immediate repair or replacement required

Operations Support is currently achieving a rating of: **Very Good**



Target Customer Levels of Service

Our customers should expect...

The Facilities are structurally sound and in a state of good repair.

The Facilities fully meet the Programs' services requirements.

The Facilities provide a safe, healthy environment for staff and the public.

The Facilities are accessible as required.

Fleet is safe and maintained in a state of good repair

The Fleet quality and availability fully meet the Programs' service requirements

Quick response time on fleet procurement requests



What do the Risk Management Ratings mean?

	Very Good	Almost all assets in the portfolio are achieving the desired targets
	Good	Most assets in the portfolio are achieving the desired targets
	Fair	Many assets in the portfolio are not achieving the desired targets
	Poor	Most assets in the portfolio are not achieving the desired targets
	Very Poor	Almost all assets in the portfolio are not achieving the desired targets

Infrastructure Reinvestment Plan **Operations Support**

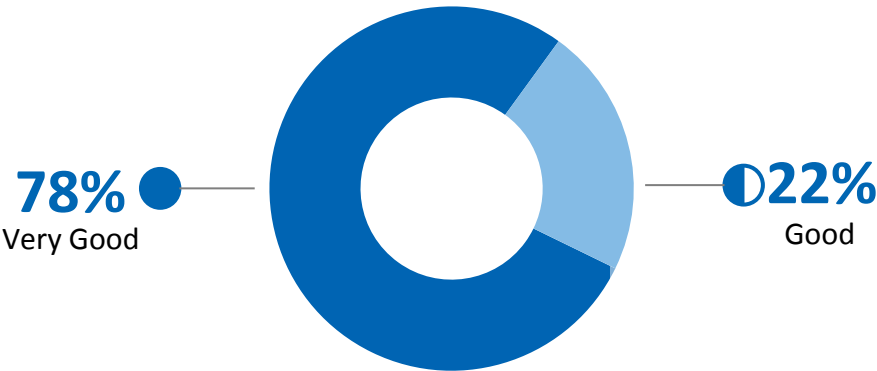
10 Year Reinvestment Plan	
Condition (SoGR)	\$53.0M
Performance Enhancements*	\$0.0M
Total Reinvestment	\$53.0M

Reinvestments of **\$53.0 Million** are forecasted to be needed over the next 10 years to maintain the infrastructure in a state of good repair.

No infrastructure enhancement opportunities have been identified which cannot be incorporated into forecasted state of good repair work.

If the Proposed Reinvestments are made, in 2027...

Operations Support will maintain an overall rating of:  **Very Good**



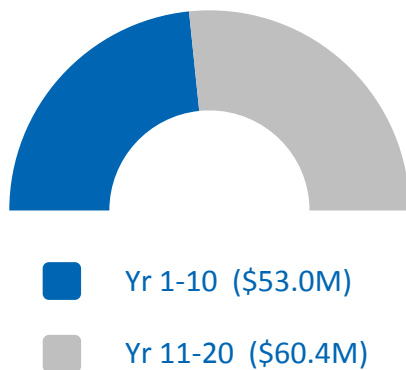
*Reinvestments in Performance Enhancements are only included where a direct link has been established between the capital reinvestment and a defined improvement in a Performance Asset Level of Service (ALOS), and where Performance enhancement is the primary goal of the initiative. Projects where the primary driver is the State of Good Repair (S0GR) can also improve Performance ALOS as a secondary project goal.

10 Year Summary Operations Support



Service	Current State		10 Year Reinvestment Plan			
	Current Rating (2018)	Replacement Value (2016 \$ Millions)	SoGR (2018 \$ Millions)	Enhancements (2018 \$ Millions)	Total (2018 \$ Millions)	Forecasted Rating (2027)
Operations Support	●	83.3	53.0	0.0	53.0	●

20 Year SoGR Forecast Operations Support



State of Good Repair reinvestment needs are forecasted to remain comparable in the next 20 years.

What do the Risk Management Ratings mean?

●	Very Good	Almost all assets in the portfolio are achieving the desired targets
◐	Good	Most assets in the portfolio are achieving the desired targets
○	Fair	Many assets in the portfolio are not achieving the desired targets
◑	Poor	Most assets in the portfolio are not achieving the desired targets
●	Very Poor	Almost all assets in the portfolio are not achieving the desired targets



Asset Management Reinvestment Plan

Wastewater

State of the Infrastructure Wastewater

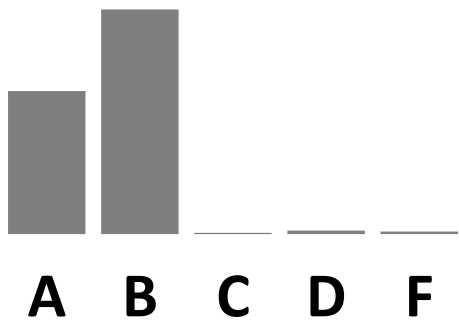
Two treatment plants,
31 sewage pumping stations
3,626 km of sanitary sewer pipes

Total Asset Replacement Value
\$10.6 Billion
2016 Dollars

The wastewater infrastructure is currently sufficient to effectively manage the safe collection and treatment of wastewater; however, the early effects of climate change are beginning to impact the Peel wastewater collection system.

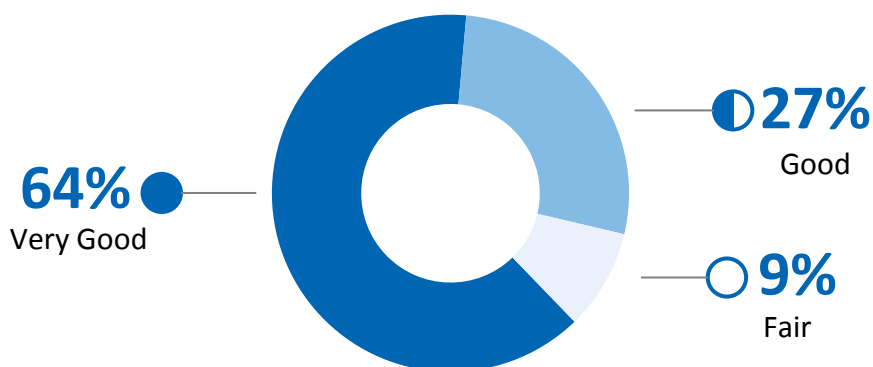
The Region is proactively investigating the potential impacts of climate change on this service, and how the infrastructure could be enhanced to mitigate any risk.

Condition of the Infrastructure



How is the Condition Graded?	
A	New or like new condition
B	In a good state of repair
C	Some non-critical defects; some critical repairs in the near term
D	Some critical defects; many critical repairs in the near term
F	Many critical defects; immediate repair or replacement required

Wastewater is currently achieving a rating of: **Very Good**



Target Customer Levels of Service

Our customers should expect...

Reliable, efficient and effective wastewater collection and treatment

The Facilities are structurally sound and in a state of good repair.

The Facilities fully meet the Programs' services requirements.

The Facilities provide a safe, healthy environment for staff and the public.

The Facilities are accessible as required.



What do the Risk Management Ratings mean?

	Very Good	Almost all assets in the portfolio are achieving the desired targets
	Good	Most assets in the portfolio are achieving the desired targets
	Fair	Many assets in the portfolio are not achieving the desired targets
	Poor	Most assets in the portfolio are not achieving the desired targets
	Very Poor	Almost all assets in the portfolio are not achieving the desired targets

Infrastructure Reinvestment Plan **Wastewater**

10 Year Reinvestment Plan	
Condition (SoGR)	\$610.0M
Performance Enhancements*	\$7.1M
Total Reinvestment	\$617.0M

Reinvestments of **\$610.0 Million** are forecasted to be needed over the next 10 years to maintain the infrastructure in a state of good repair.

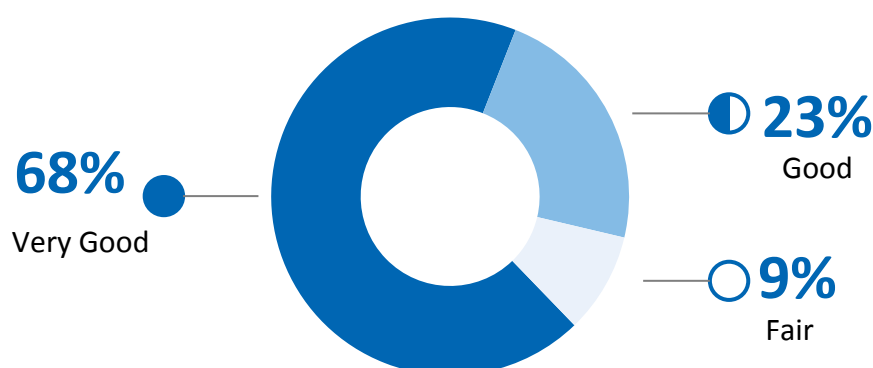
Infrastructure Enhancement opportunities valued at **\$7.1 Million** have been identified which will improve the capacity and redundancy of wastewater pumping stations and help prevent overflows in case of primary equipment failure.

If the Proposed Reinvestments are made, in 2027...

Wastewater will maintain an overall rating of:



Very Good



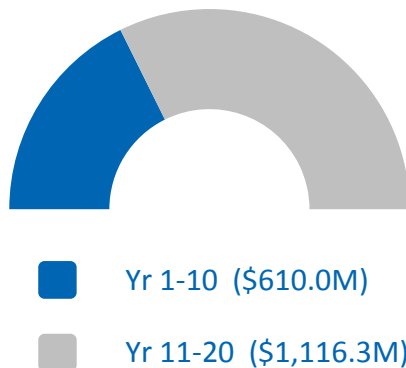
*Reinvestments in Performance Enhancements are only included where a direct link has been established between the capital reinvestment and a defined improvement in a Performance Asset Level of Service (ALOS), and where Performance enhancement is the primary goal of the initiative. Projects where the primary driver is the State of Good Repair (SOGR) can also improve Performance ALOS as a secondary project goal.

10 Year Summary Wastewater



Service	Current State		10 Year Reinvestment Plan			
	Current Rating (2018)	Replacement Value (2016 \$ Millions)	SoGR (2018 \$ Millions)	Enhancements (2018 \$ Millions)	Total (2018 \$ Millions)	Forecasted Rating (2027)
Wastewater	●	10,625.3	610.0	7.1	617.0	●

20 Year SoGR Forecast Wastewater



State of Good Repair reinvestment needs are forecasted to increase in the next 20 years.

What do the Risk Management Ratings mean?

- **Very Good** Almost all assets in the portfolio are achieving the desired targets
- ◐ **Good** Most assets in the portfolio are achieving the desired targets
- **Fair** Many assets in the portfolio are not achieving the desired targets
- ◑ **Poor** Most assets in the portfolio are not achieving the desired targets
- **Very Poor** Almost all assets in the portfolio are not achieving the desired targets



Asset Management Reinvestment Plan

Water Supply

State of the Infrastructure Water Supply

- Two treatment plants
- 15 wells
- 13 pumping stations
- 23 water storage facilities
- 4,522 km of water pipes

Total Asset Replacement Value

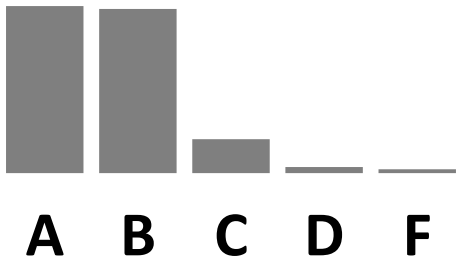
\$12.1 Billion

2016 Dollars

The water infrastructure is in a very good state for delivering safe reliable drinking water.

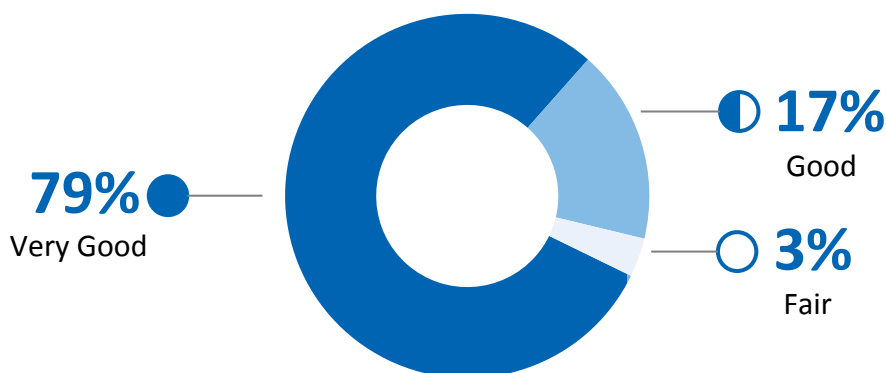
Proactive pipe replacement programs are in place to keep the water system safe and reliable for homes and industries.

Condition of the Infrastructure



How is the Condition Graded?	
A	New or like new condition
B	In a good state of repair
C	Some non-critical defects; some critical repairs in the near term
D	Some critical defects; many critical repairs in the near term
F	Many critical defects; immediate repair or replacement required

Water Supply is currently achieving a rating of: **Very Good**



Target Customer Levels of Service

Our customers should expect...

Potable water which meets or exceeds all regulatory requirements.

Aesthetically pleasing water quality.

Efficient and reliable Water Treatment

Reliable and consistent water pressure and flow

Efficient delivery of water services

The Facilities are structurally sound and in a state of good repair.

The Facilities fully meet the Programs' services requirements.

The Facilities provide a safe, healthy environment for staff and the public.

The Facilities are accessible as required.



What do the Risk Management Ratings mean?

	Very Good	Almost all assets in the portfolio are achieving the desired targets
	Good	Most assets in the portfolio are achieving the desired targets
	Fair	Many assets in the portfolio are not achieving the desired targets
	Poor	Most assets in the portfolio are not achieving the desired targets
	Very Poor	Almost all assets in the portfolio are not achieving the desired targets

Infrastructure Reinvestment Plan **Water Supply**

10 Year Reinvestment Plan	
Condition (SoGR)	\$1,115.3M
Performance Enhancements*	\$32.8M
Total Reinvestment	\$1,148.1M

Reinvestments of **\$1,115.3 Million** are forecasted to be needed over the next 10 years to maintain the infrastructure in a state of good repair.

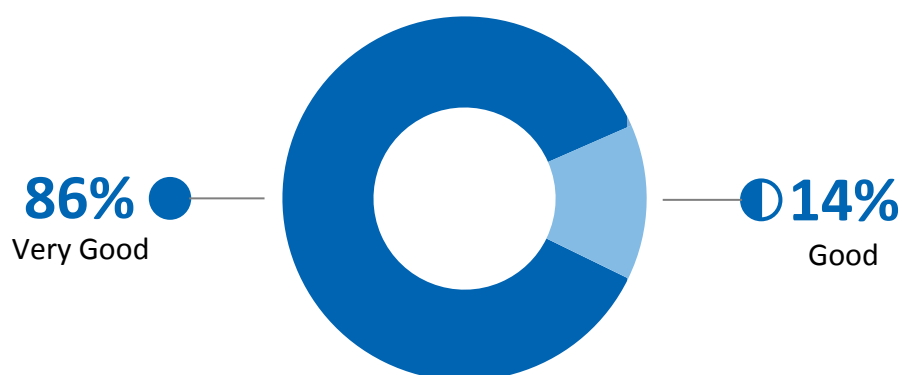
Infrastructure Enhancement opportunities valued at **\$32.8 Million** have been identified which will improve water pressure in some areas and will improve the reliability of service in other areas by adding redundancy within in the pipe network in case of emergency.

If the Proposed Reinvestments are made, in 2027...

Water Supply will maintain an overall rating of:



Very Good



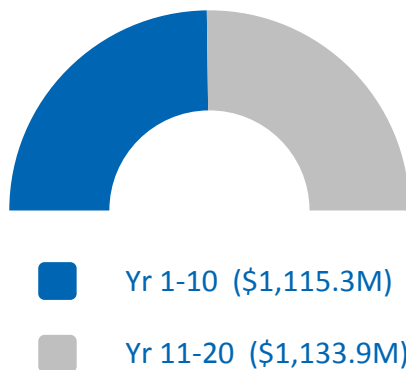
*Reinvestments in Performance Enhancements are only included where a direct link has been established between the capital reinvestment and a defined improvement in a Performance Asset Level of Service (ALOS), and where Performance enhancement is the primary goal of the initiative. Projects where the primary driver is the State of Good Repair (SOGR) can also improve Performance ALOS as a secondary project goal.

10 Year Summary **Water Supply**



Service	Current State		10 Year Reinvestment Plan			
	Current Rating (2018)	Replacement Value (2016 \$ Millions)	SoGR (2018 \$ Millions)	Enhancements (2018 \$ Millions)	Total (2018 \$ Millions)	Forecasted Rating (2027)
Water Supply	●	12,112.6	1,115.3	32.8	1,148.1	●

20 Year SoGR Forecast **Water Supply**



State of Good Repair reinvestment needs are forecasted to remain comparable in the next 20 years.

What do the Risk Management Ratings mean?

●	Very Good	Almost all assets in the portfolio are achieving the desired targets
◐	Good	Most assets in the portfolio are achieving the desired targets
○	Fair	Many assets in the portfolio are not achieving the desired targets
◑	Poor	Most assets in the portfolio are not achieving the desired targets
●	Very Poor	Almost all assets in the portfolio are not achieving the desired targets



Asset Management Reinvestment Plan

Waste

State of the Infrastructure Waste

Six community recycling centres
One composting and curing facility
One material recycling facility

Total Asset Replacement Value

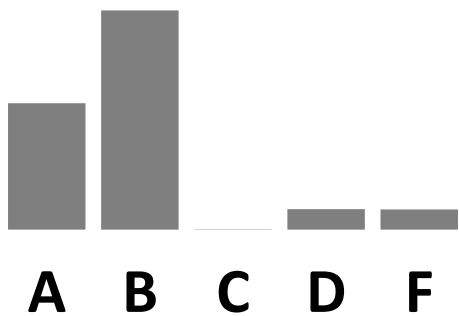
\$156.8 Million

2016 Dollars

Waste management infrastructure is generally achieving the desired targets and is adequately supporting services.

Waste Management staff is working on an Infrastructure Development Plan to support diversion targets outlined by the Region’s Waste Reduction and Resource Recovery Strategy to adapt to Council’s long-term direction.

Condition of the Infrastructure



How is the Condition Graded?	
A	New or like new condition
B	In a good state of repair
C	Some non-critical defects; some critical repairs in the near term
D	Some critical defects; many critical repairs in the near term
F	Many critical defects; immediate repair or replacement required

Waste is currently achieving a rating of:

Good



Target Customer Levels of Service

Our customers should expect...

Biweekly collection of recyclables and processing of recyclables

Biweekly collection of garbage

Weekly collection of organics

Seasonal collection of yard waste – weekly/biweekly

Community Recycling Centres open during appropriate hours to meet community needs

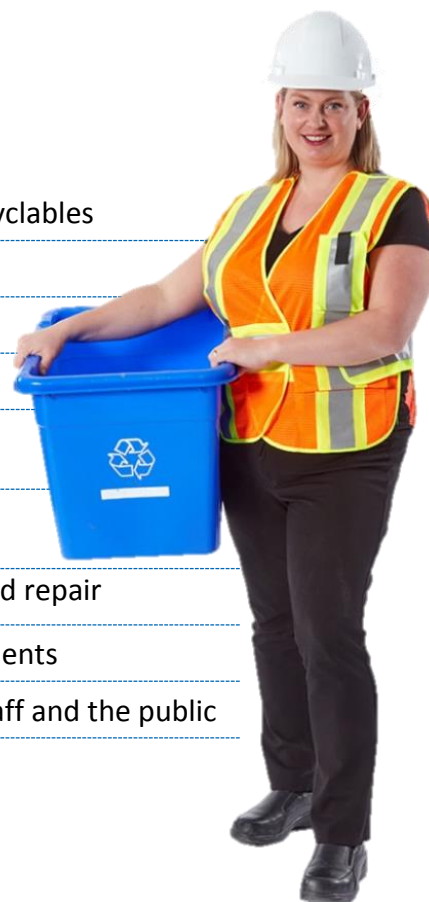
Operations of sites within Certificate of Approval parameters, with no impact on site neighbours

The facilities are structurally sound and in a state of good repair

The facilities fully meet the Programs' services requirements

The facilities provide a safe, healthy environment for staff and the public

The Facilities are accessible as required.



What do the Risk Management Ratings mean?

	Very Good	Almost all assets in the portfolio are achieving the desired targets
	Good	Most assets in the portfolio are achieving the desired targets
	Fair	Many assets in the portfolio are not achieving the desired targets
	Poor	Most assets in the portfolio are not achieving the desired targets
	Very Poor	Almost all assets in the portfolio are not achieving the desired targets

Infrastructure Reinvestment Plan Waste

10 Year Reinvestment Plan	
Condition (SoGR)	\$49.3M
Performance Enhancements*	\$0.0M
Total Reinvestment	\$49.3M

Reinvestments of **\$49.3.0 Million** are forecasted to be needed over the next 10 years to maintain the infrastructure in a state of good repair.

No infrastructure enhancement opportunities have been identified which cannot be incorporated into forecasted state of good repair work.

If the Proposed Reinvestments are made, in 2027...

Waste will maintain an overall rating of:  **Good**



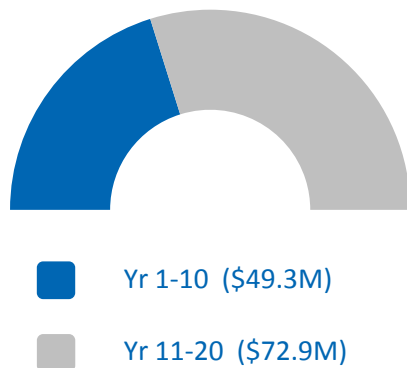
*Reinvestments in Performance Enhancements are only included where a direct link has been established between the capital reinvestment and a defined improvement in a Performance Asset Level of Service (ALOS), and where Performance enhancement is the primary goal of the initiative. Projects where the primary driver is the State of Good Repair (SOGR) can also improve Performance ALOS as a secondary project goal.

10 Year Summary Waste



Service	Current State		10 Year Reinvestment Plan			
	Current Rating (2018)	Replacement Value (2016 \$ Millions)	SoGR (2018 \$ Millions)	Enhancements (2018 \$ Millions)	Total (2018 \$ Millions)	Forecasted Rating (2027)
Waste		156.8	49.3	0.0	49.3	

20 Year SoGR Forecast Waste



State of Good Repair reinvestment needs are forecasted to increase in the next 20 years.

What do the Risk Management Ratings mean?

- Very Good** Almost all assets in the portfolio are achieving the desired targets
- Good** Most assets in the portfolio are achieving the desired targets
- Fair** Many assets in the portfolio are not achieving the desired targets
- Poor** Most assets in the portfolio are not achieving the desired targets
- Very Poor** Almost all assets in the portfolio are not achieving the desired targets



Asset Management Reinvestment Plan

Roads and Transportation

State of the Infrastructure Roads and Transportation

- 1,635 km of Regional roads
- 175 bridges and large culverts
- Two stormwater pumping stations
- 114 noise walls
- 130 retaining walls

Total Asset Replacement Value

\$2.1 Billion

2016 Dollars

The Transportation infrastructure remains in a very good state to provide reliable transportation services. The Region continues to proactively assess the condition of roads infrastructure to support safe and efficient transportation services.

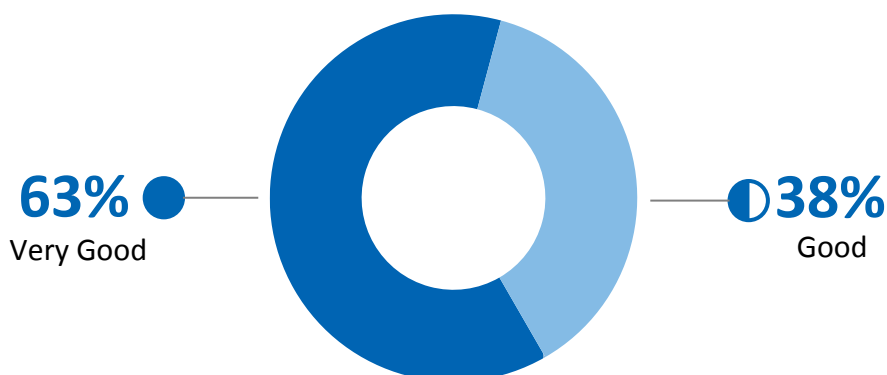
Condition assessment studies of Peel’s storm sewers and roadside retaining walls are underway. The improvements recommended by these studies will be included in future capital plans.

Condition of the Infrastructure



How is the Condition Graded?	
A	New or like new condition
B	In a good state of repair
C	Some non-critical defects; some critical repairs in the near term
D	Some critical defects; many critical repairs in the near term
F	Many critical defects; immediate repair or replacement required

Roads and Transportation is currently achieving a rating of: **Very Good**



Target Customer Levels of Service

Our customers should expect...

Roads are safe and accessible year round and during all weather conditions.

Roads are maintained in a state of good repair at the lowest practical costs.

Roads are capable of supporting all modes of transportation and facilitate emergency vehicles.

Roadways are designed and operated in an environmentally sustainable manner and address social and aesthetic considerations.

Traffic signals are synchronized to promote the highest practical level of progression.

The Facilities are structurally sound and in a state of good repair.

The Facilities fully meet the Programs' services requirements.

The Facilities provide a safe, healthy environment for staff and the public.

The Facilities are accessible as required.



What do the Risk Management Ratings mean?

	Very Good	Almost all assets in the portfolio are achieving the desired targets
	Good	Most assets in the portfolio are achieving the desired targets
	Fair	Many assets in the portfolio are not achieving the desired targets
	Poor	Most assets in the portfolio are not achieving the desired targets
	Very Poor	Almost all assets in the portfolio are not achieving the desired targets

Infrastructure Reinvestment Plan Roads and Transportation

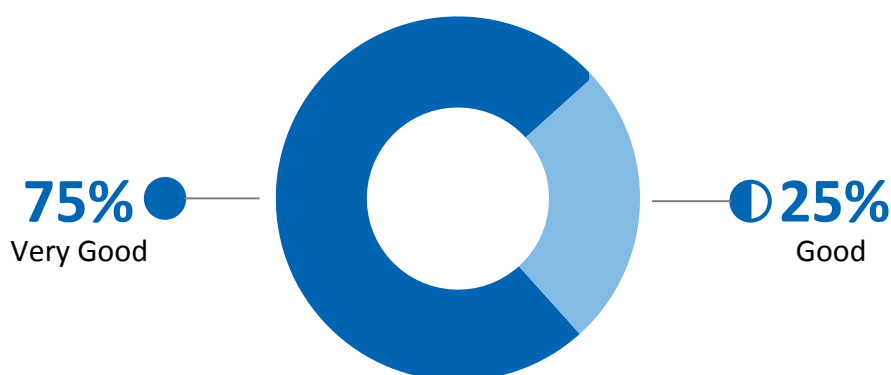
10 Year Reinvestment Plan	
Condition (SoGR)	\$266.0M
Performance Enhancements*	\$0.0M
Total Reinvestment	\$266.0M

Reinvestments of **\$266.0 Million** are forecasted to be needed over the next 10 years to maintain the infrastructure in a state of good repair.

No infrastructure enhancement opportunities have been identified which cannot be incorporated into forecasted state of good repair work.

If the Proposed Reinvestments are made, in 2027...

Roads and Transportation will maintain an overall rating of: **Very Good**



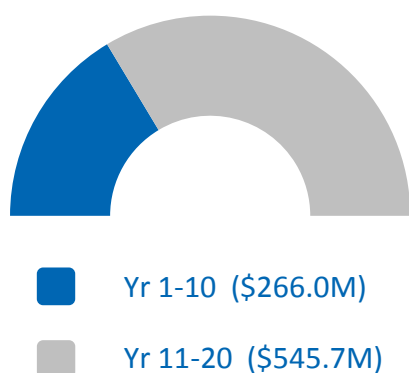
*Reinvestments in Performance Enhancements are only included where a direct link has been established between the capital reinvestment and a defined improvement in a Performance Asset Level of Service (ALOS), and where Performance enhancement is the primary goal of the initiative. Projects where the primary driver is the State of Good Repair (SOGR) can also improve Performance ALOS as a secondary project goal.

10 Year Summary Roads and Transportation



Service	Current State		10 Year Reinvestment Plan			
	Current Rating (2018)	Replacement Value (2016 \$ Millions)	SoGR (2018 \$ Millions)	Enhancements (2018 \$ Millions)	Total (2018 \$ Millions)	Forecasted Rating (2027)
Roads and Transportation	●	2,082.2	266.0	0.0	266.0	●

20 Year SoGR Forecast Roads and Transportation



State of Good Repair reinvestment needs are forecasted to increase significantly in the next 20 years.

What do the Risk Management Ratings mean?

●	Very Good	Almost all assets in the portfolio are achieving the desired targets
◐	Good	Most assets in the portfolio are achieving the desired targets
○	Fair	Many assets in the portfolio are not achieving the desired targets
◑	Poor	Most assets in the portfolio are not achieving the desired targets
●	Very Poor	Almost all assets in the portfolio are not achieving the desired targets



Living



People's lives are improved in their time of need



Asset Management Reinvestment Plan

TransHelp

State of the Infrastructure TransHelp

63 TransHelp vehicles

Total Asset Replacement Value

\$5.4 Million

2016 Dollars

The TransHelp assets are in a very good state to support travel within the community for Peel’s residents in need.

Condition of the Infrastructure

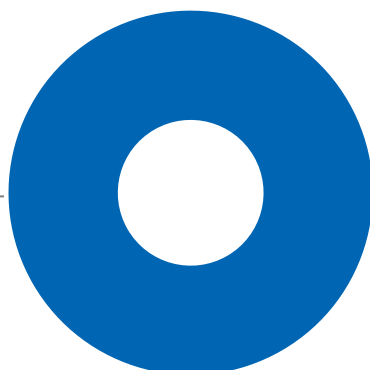


How is the Condition Graded?	
A	New or like new condition
B	In a good state of repair
C	Some non-critical defects; some critical repairs in the near term
D	Some critical defects; many critical repairs in the near term
F	Many critical defects; immediate repair or replacement required

TransHelp is currently achieving a rating of:

Very Good

100%
Very Good



Target Customer Levels of Service

Our customers should expect...

Clients are transported in a safe manner and travel in a clean and well-maintained vehicle by an operator who practices appropriate personal hygiene

Clients are treated with courtesy & respect

Service calls are answered promptly & courteously

Clients are picked up on time and within the pickup window

Transport to a safe place if delivery to original destination is not possible

Clients are taken to the first accessible door of the final destination

Service is compliant with the Accessibility for Ontarians with Disabilities Act (AODA)



What do the Risk Management Ratings mean?

	Very Good	Almost all assets in the portfolio are achieving the desired targets
	Good	Most assets in the portfolio are achieving the desired targets
	Fair	Many assets in the portfolio are not achieving the desired targets
	Poor	Most assets in the portfolio are not achieving the desired targets
	Very Poor	Almost all assets in the portfolio are not achieving the desired targets

Infrastructure Reinvestment Plan TransHelp

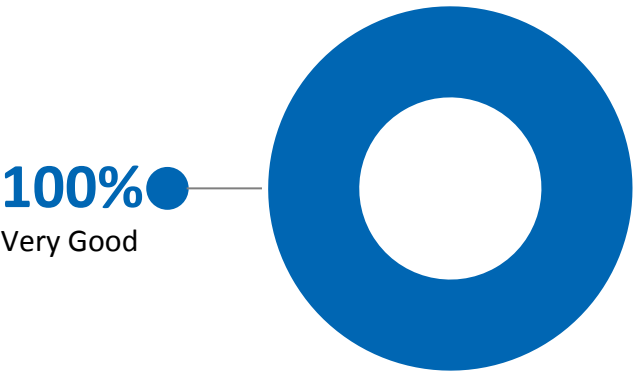
10 Year Reinvestment Plan	
Condition (SoGR)	\$6.8M
Performance Enhancements*	\$0.0M
Total Reinvestment	\$6.8M

Reinvestments of **\$6.8 Million** are forecasted to be needed over the next 10 years to maintain the infrastructure in a state of good repair.

No infrastructure enhancement opportunities have been identified which cannot be incorporated into forecasted state of good repair work.

If the Proposed Reinvestments are made, in 2027...

TransHelp will maintain an overall rating of:  **Very Good**



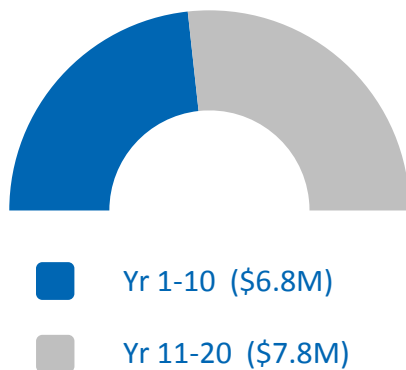
*Reinvestments in Performance Enhancements are only included where a direct link has been established between the capital reinvestment and a defined improvement in a Performance Asset Level of Service (ALOS), and where Performance enhancement is the primary goal of the initiative. Projects where the primary driver is the State of Good Repair (S0GR) can also improve Performance ALOS as a secondary project goal.

10 Year Summary TransHelp



Service	Current State		10 Year Reinvestment Plan			
	Current Rating (2018)	Replacement Value (2016 \$ Millions)	SoGR (2018 \$ Millions)	Enhancements (2018 \$ Millions)	Total (2018 \$ Millions)	Forecasted Rating (2027)
TransHelp	●	5.4	6.8	0	6.8	●

20 Year SoGR Forecast TransHelp



State of Good Repair reinvestment needs are forecasted to remain consistent in the next 20 years.

What do the Risk Management Ratings mean?

- **Very Good** Almost all assets in the portfolio are achieving the desired targets
- ◐ **Good** Most assets in the portfolio are achieving the desired targets
- **Fair** Many assets in the portfolio are not achieving the desired targets
- ◑ **Poor** Most assets in the portfolio are not achieving the desired targets
- **Very Poor** Almost all assets in the portfolio are not achieving the desired targets



Asset Management Reinvestment Plan

Paramedics

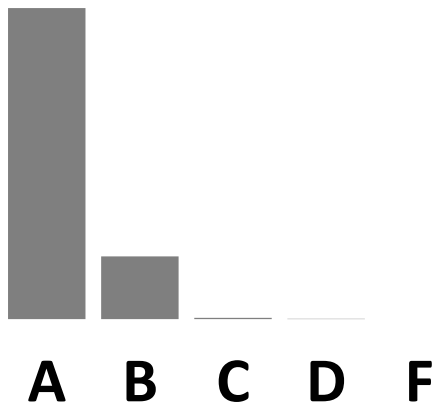
State of the Infrastructure Paramedics

Five regional paramedic stations
124 paramedic vehicles
455 paramedic equipment assets

Total Asset Replacement Value
\$92.8 Million
2016 Dollars

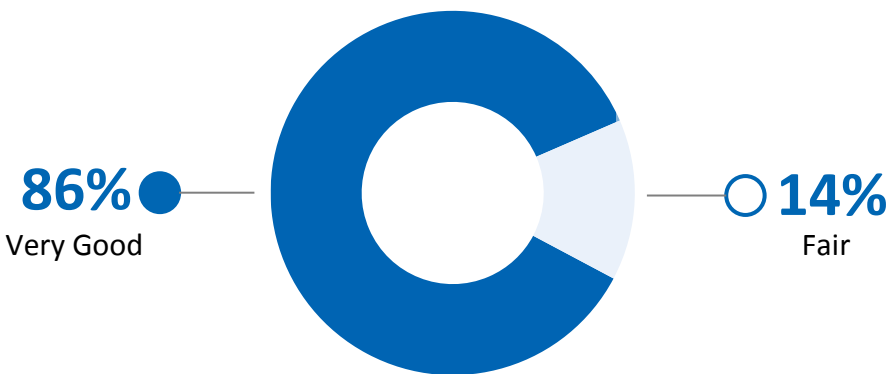
The Region’s paramedic stations portfolio consists of new state-of-the-art-facilities which are in very good condition to support the emergency services provided. Some fleet and equipment are nearing or at the end of their useful life and require replacement.

Condition of the Infrastructure



How is the Condition Graded?	
A	New or like new condition
B	In a good state of repair
C	Some non-critical defects; some critical repairs in the near term
D	Some critical defects; many critical repairs in the near term
F	Many critical defects; immediate repair or replacement required

Paramedics is currently achieving a rating of:  **Very Good**








Target Customer Levels of Service

Our customers should expect...

- Expedient and safe response and possible transport to hospital
- Provide the best evidence based medical care
- Pre-hospital emergency care at the minimum standard of the Ambulance Act
- 24/7 functionality for an emergency service
- Recognizable positioning in the community
- A safe and comfortable environment
- A safe and comfortable environment
- Accessible and properly equipped EMS Facilities



What do the Risk Management Ratings mean?

	Very Good	Almost all assets in the portfolio are achieving the desired targets
	Good	Most assets in the portfolio are achieving the desired targets
	Fair	Many assets in the portfolio are not achieving the desired targets
	Poor	Most assets in the portfolio are not achieving the desired targets
	Very Poor	Almost all assets in the portfolio are not achieving the desired targets

Infrastructure Reinvestment Plan Paramedics

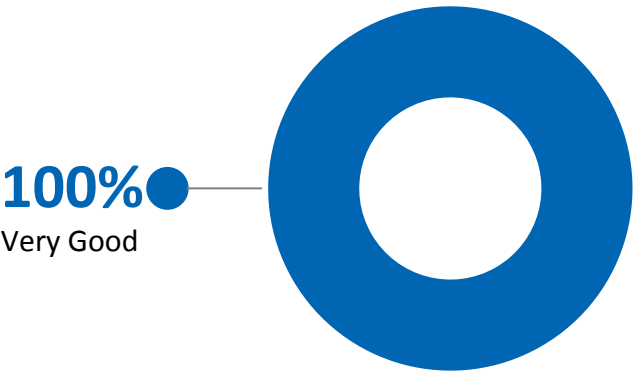
10 Year Reinvestment Plan	
Condition (SoGR)	\$38.3M
Performance Enhancements*	\$0.0M
Total Reinvestment	\$38.3M

Reinvestments of **\$38.3 Million** are forecasted to be needed over the next 10 years to maintain the infrastructure in a state of good repair.

No infrastructure enhancement opportunities have been identified which cannot be incorporated into forecasted state of good repair work.

If the Proposed Reinvestments are made, in 2027...

Paramedics will maintain an overall rating of:  **Very Good**



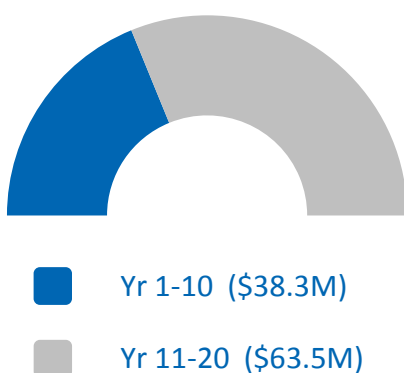
*Reinvestments in Performance Enhancements are only included where a direct link has been established between the capital reinvestment and a defined improvement in a Performance Asset Level of Service (ALOS), and where Performance enhancement is the primary goal of the initiative. Projects where the primary driver is the State of Good Repair (SOGR) can also improve Performance ALOS as a secondary project goal.

10 Year Summary Paramedics



Service	Current State		10 Year Reinvestment Plan			
	Current Rating (2018)	Replacement Value (2016 \$ Millions)	SoGR (2018 \$ Millions)	Enhancements (2018 \$ Millions)	Total (2018 \$ Millions)	Forecasted Rating (2027)
Paramedics	●	92.8	38.3	0	38.3	●

20 Year SoGR Forecast Paramedics



State of Good Repair reinvestment needs are forecasted to increase in the next 20 years.

What do the Risk Management Ratings mean?

●	Very Good	Almost all assets in the portfolio are achieving the desired targets
◐	Good	Most assets in the portfolio are achieving the desired targets
○	Fair	Many assets in the portfolio are not achieving the desired targets
◑	Poor	Most assets in the portfolio are not achieving the desired targets
●	Very Poor	Almost all assets in the portfolio are not achieving the desired targets



Asset Management Reinvestment Plan

Long Term Care

State of the Infrastructure Long Term Care

Five Long Term Care Centres

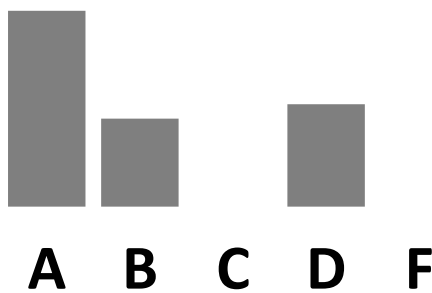
Total Asset Replacement Value

\$215.1 Million

2016 Dollars

The Long Term Care Centres portfolio is in good condition to support the Region’s array of senior care services. The Region monitors the viability of the Long Term Care Centres for meeting the ever-changing requirements. Peel Manor is one such centre that can no longer meet the changing senior care needs of the future and will be replaced with a new facility.

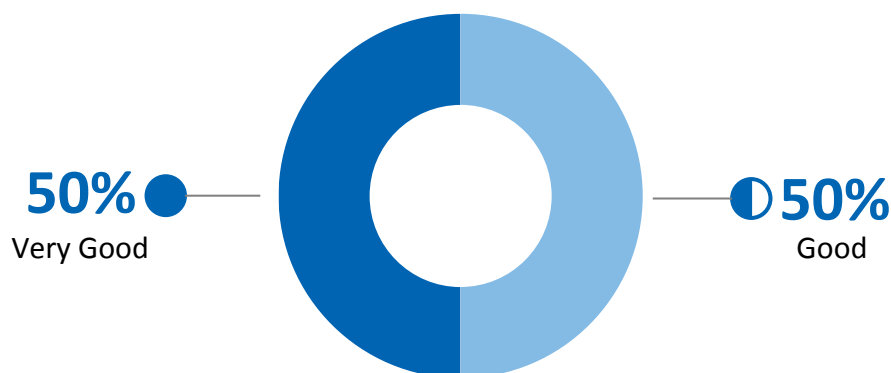
Condition of the Infrastructure



How is the Condition Graded?	
A	New or like new condition
B	In a good state of repair
C	Some non-critical defects; some critical repairs in the near term
D	Some critical defects; many critical repairs in the near term
F	Many critical defects; immediate repair or replacement required

Long Term Care is currently achieving a rating of:

Very Good



Target Customer Levels of Service

Our customers should expect...

Provision of support and services to residents and their families in accordance with the Long Term Care Homes Act

A safe and secure building environment which meets all Long Term Care Homes Act standards

Fully accessible and equipped Facilities (Buildings) to meet the needs of resident, visitors and staff



What do the Risk Management Ratings mean?

	Very Good	Almost all assets in the portfolio are achieving the desired targets
	Good	Most assets in the portfolio are achieving the desired targets
	Fair	Many assets in the portfolio are not achieving the desired targets
	Poor	Most assets in the portfolio are not achieving the desired targets
	Very Poor	Almost all assets in the portfolio are not achieving the desired targets

Infrastructure Reinvestment Plan Long Term Care

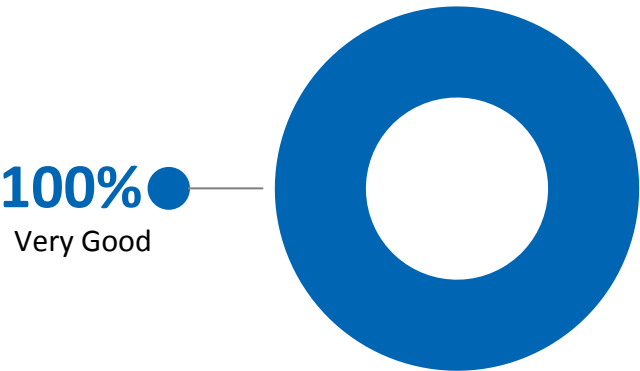
10 Year Reinvestment Plan	
Condition (SoGR)	\$15.7M
Performance Enhancements*	\$0.0M
Total Reinvestment	\$15.7M

Reinvestments of **\$15.7 Million** are forecasted to be needed over the next 10 years to maintain the infrastructure in a state of good repair.

No infrastructure enhancement opportunities have been identified which cannot be incorporated into forecasted state of good repair work.

If the Proposed Reinvestments are made, in 2027...

Long Term Care will maintain an overall rating of:  **Very Good**



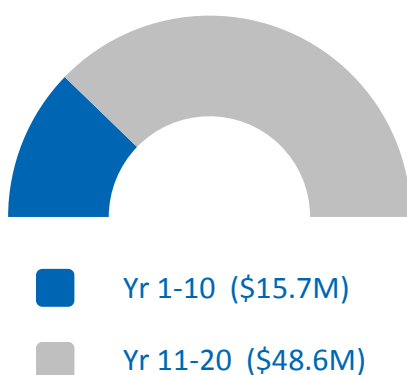
*Reinvestments in Performance Enhancements are only included where a direct link has been established between the capital reinvestment and a defined improvement in a Performance Asset Level of Service (ALOS), and where Performance enhancement is the primary goal of the initiative. Projects where the primary driver is the State of Good Repair (SOGR) can also improve Performance ALOS as a secondary project goal.

10 Year Summary Long Term Care



Service	Current State		10 Year Reinvestment Plan			
	Current Rating (2018)	Replacement Value (2016 \$ Millions)	SoGR (2018 \$ Millions)	Enhancements (2018 \$ Millions)	Total (2018 \$ Millions)	Forecasted Rating (2027)
Long Term Care	●	215.1	15.7	0.0	15.7	●

20 Year SoGR Forecast Long Term Care



State of Good Repair reinvestment needs are forecasted to increase significantly in the next 20 years.

What do the Risk Management Ratings mean?

●	Very Good	Almost all assets in the portfolio are achieving the desired targets
◐	Good	Most assets in the portfolio are achieving the desired targets
○	Fair	Many assets in the portfolio are not achieving the desired targets
◑	Poor	Most assets in the portfolio are not achieving the desired targets
●	Very Poor	Almost all assets in the portfolio are not achieving the desired targets



Asset Management Reinvestment Plan Housing Support

State of the Infrastructure Housing Support

Six affordable housing buildings

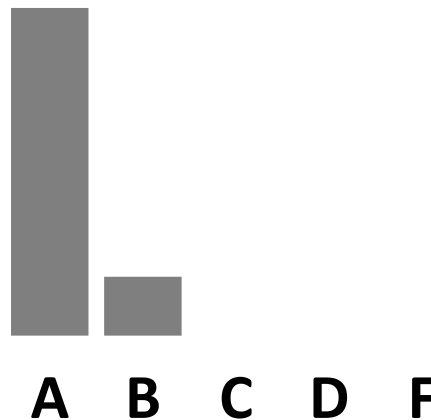
Total Asset Replacement Value

\$204.6 Million

2016 Dollars

The Region's Affordable Housing stock is relatively new. However, intensive use of the facilities requires that ongoing investments continue to maintain a liveable environment for residents and to blend with the surrounding community.

Condition of the Infrastructure



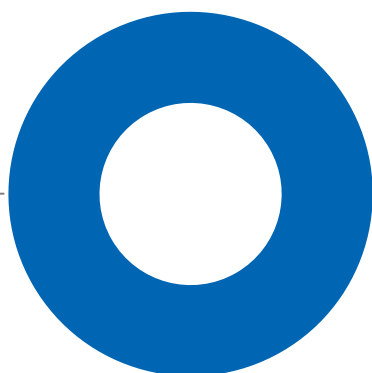
How is the Condition Graded?

A	New or like new condition
B	In a good state of repair
C	Some non-critical defects; some critical repairs in the near term
D	Some critical defects; many critical repairs in the near term
F	Many critical defects; immediate repair or replacement required

Housing Support is currently achieving a rating of:

 **Very Good**

100%
Very Good

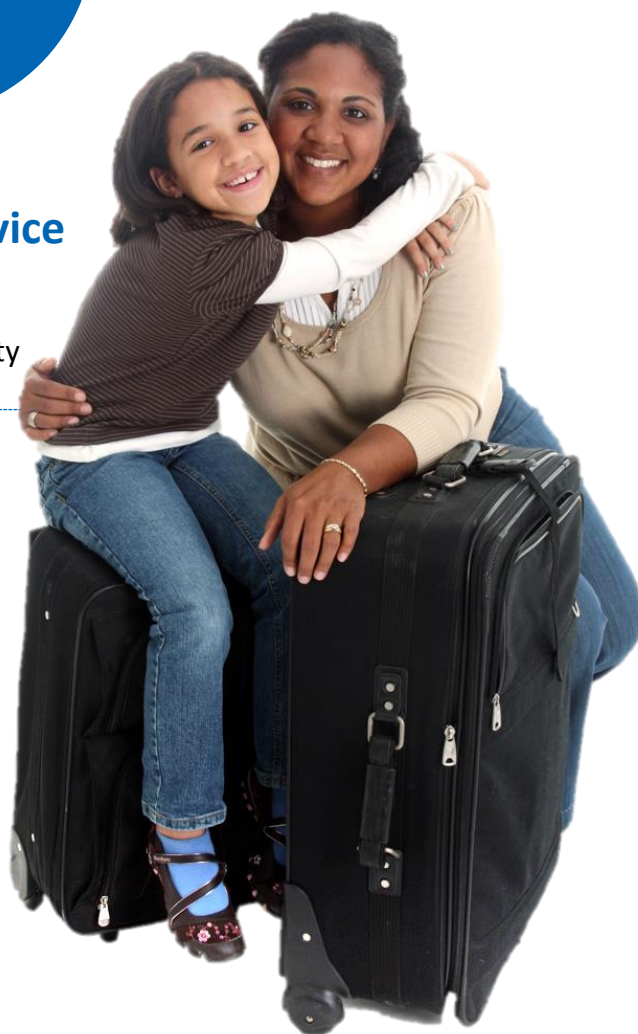


Target Customer Levels of Service






Our customers should expect...

Prompt, efficient and effective property management services.

A safe, well maintained, amenable living environment meeting all legislative requirements



What do the Risk Management Ratings mean?

	Very Good	Almost all assets in the portfolio are achieving the desired targets
	Good	Most assets in the portfolio are achieving the desired targets
	Fair	Many assets in the portfolio are not achieving the desired targets
	Poor	Most assets in the portfolio are not achieving the desired targets
	Very Poor	Almost all assets in the portfolio are not achieving the desired targets

Infrastructure Reinvestment Plan **Housing Support**

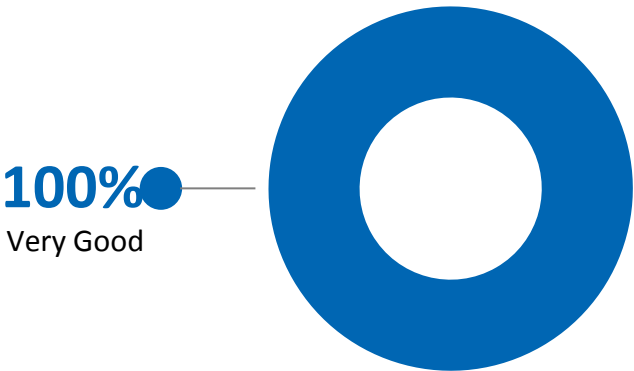
10 Year Reinvestment Plan	
Condition (SoGR)	\$1.5M
Performance Enhancements*	\$0.0M
Total Reinvestment	\$1.5M

Reinvestments of **\$1.5 Million** are forecasted to be needed over the next 10 years to maintain the infrastructure in a state of good repair.

No infrastructure enhancement opportunities have been identified which cannot be incorporated into forecasted state of good repair work.

If the Proposed Reinvestments are made, in 2027...

Housing Support will maintain an overall rating of:  **Very Good**



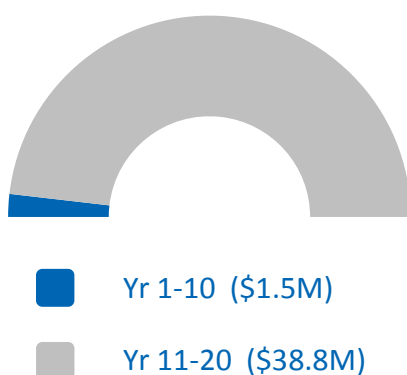
*Reinvestments in Performance Enhancements are only included where a direct link has been established between the capital reinvestment and a defined improvement in a Performance Asset Level of Service (ALOS), and where Performance enhancement is the primary goal of the initiative. Projects where the primary driver is the State of Good Repair (SOGR) can also improve Performance ALOS as a secondary project goal.

10 Year Summary Housing Support



Service	Current State		10 Year Reinvestment Plan			
	Current Rating (2018)	Replacement Value (2016 \$ Millions)	SoGR (2018 \$ Millions)	Enhancements (2018 \$ Millions)	Total (2018 \$ Millions)	Forecasted Rating (2027)
Housing Support	●	204.6	1.5	0.0	1.5	●

20 Year SoGR Forecast Housing Support



State of Good Repair reinvestment needs are forecasted to increase significantly in the next 20 years.

What do the Risk Management Ratings mean?

●	Very Good	Almost all assets in the portfolio are achieving the desired targets
◐	Good	Most assets in the portfolio are achieving the desired targets
○	Fair	Many assets in the portfolio are not achieving the desired targets
◑	Poor	Most assets in the portfolio are not achieving the desired targets
●	Very Poor	Almost all assets in the portfolio are not achieving the desired targets



Asset Management Reinvestment Plan

Homelessness Support

State of the Infrastructure Homelessness Support

Three Homeless Shelters

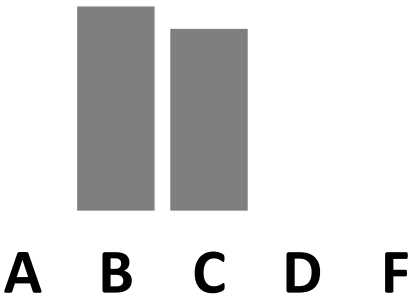
Total Asset Replacement Value

\$13.3 Million

2016 Dollars

The Shelters portfolio is achieving the desired outcome of supporting safe temporary living services. These facilities experience intensive use and high turnover of residents, therefore requiring constant repairs and maintenance.

Condition of the Infrastructure

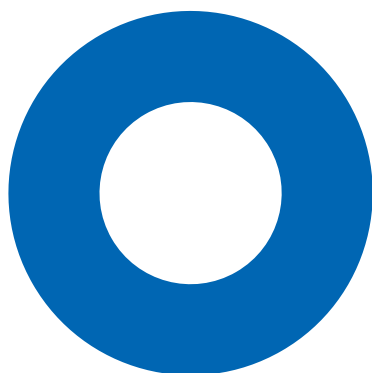


How is the Condition Graded?	
A	New or like new condition
B	In a good state of repair
C	Some non-critical defects; some critical repairs in the near term
D	Some critical defects; many critical repairs in the near term
F	Many critical defects; immediate repair or replacement required

Homelessness Support is currently achieving a rating of:

Very Good

100%
Very Good



Target Customer Levels of Service

Our customers should expect...

Provision of basic needs, protection, referral and the alleviation of trauma associated with homelessness to those in emergency shelters

Immediate, 24 hours access to shelters, and a safe, secure temporary living environment meeting all legislative requirements



What do the Risk Management Ratings mean?

	Very Good	Almost all assets in the portfolio are achieving the desired targets
	Good	Most assets in the portfolio are achieving the desired targets
	Fair	Many assets in the portfolio are not achieving the desired targets
	Poor	Most assets in the portfolio are not achieving the desired targets
	Very Poor	Almost all assets in the portfolio are not achieving the desired targets

Infrastructure Reinvestment Plan Homelessness Support

10 Year Reinvestment Plan	
Condition (SoGR)	\$3.3M
Performance Enhancements*	\$0.0M
Total Reinvestment	\$3.3M

Reinvestments of **\$3.3 Million** are forecasted to be needed over the next 10 years to maintain the infrastructure in a state of good repair.

No infrastructure enhancement opportunities have been identified which cannot be incorporated into forecasted state of good repair work.

If the Proposed Reinvestments are made, in 2027...

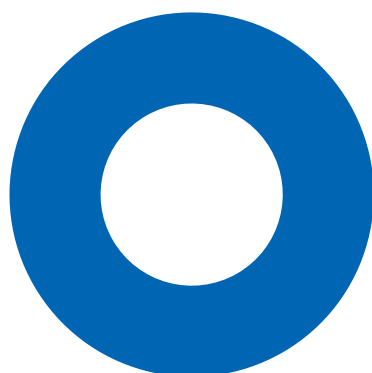
Homelessness Support will maintain an overall rating of:



Very Good

100%

Very Good



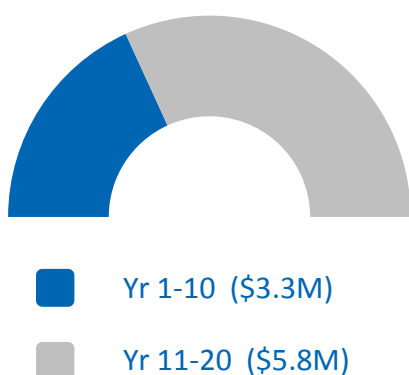
*Reinvestments in Performance Enhancements are only included where a direct link has been established between the capital reinvestment and a defined improvement in a Performance Asset Level of Service (ALOS), and where Performance enhancement is the primary goal of the initiative. Projects where the primary driver is the State of Good Repair (SOGR) can also improve Performance ALOS as a secondary project goal.

10 Year Summary Homelessness Support



Service	Current State		10 Year Reinvestment Plan			
	Current Rating (2018)	Replacement Value (2016 \$ Millions)	SoGR (2018 \$ Millions)	Enhancements (2018 \$ Millions)	Total (2018 \$ Millions)	Forecasted Rating (2027)
Homelessness Support	●	13.3	3.3	0.0	3.3	●

20 Year SoGR Forecast Homelessness Support



State of Good Repair reinvestment needs are forecasted to increase in the next 20 years.

What do the Risk Management Ratings mean?

●	Very Good	Almost all assets in the portfolio are achieving the desired targets
◐	Good	Most assets in the portfolio are achieving the desired targets
○	Fair	Many assets in the portfolio are not achieving the desired targets
◑	Poor	Most assets in the portfolio are not achieving the desired targets
●	Very Poor	Almost all assets in the portfolio are not achieving the desired targets



Asset Management Reinvestment Plan

Child Care

State of the Infrastructure Child Care

Three child care centres

Total Asset Replacement Value

\$8.1 Million

2016 Dollars

The Child Care Centres are in a good state and fully support the child care services. The Region of Peel has leased the facilities to independent child care providers.

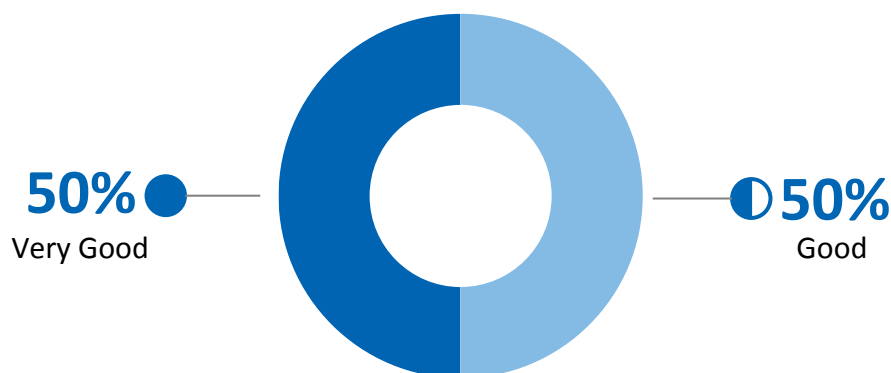
Condition of the Infrastructure



How is the Condition Graded?	
A	New or like new condition
B	In a good state of repair
C	Some non-critical defects; some critical repairs in the near term
D	Some critical defects; many critical repairs in the near term
F	Many critical defects; immediate repair or replacement required

Child Care is currently achieving a rating of:

 **Good**

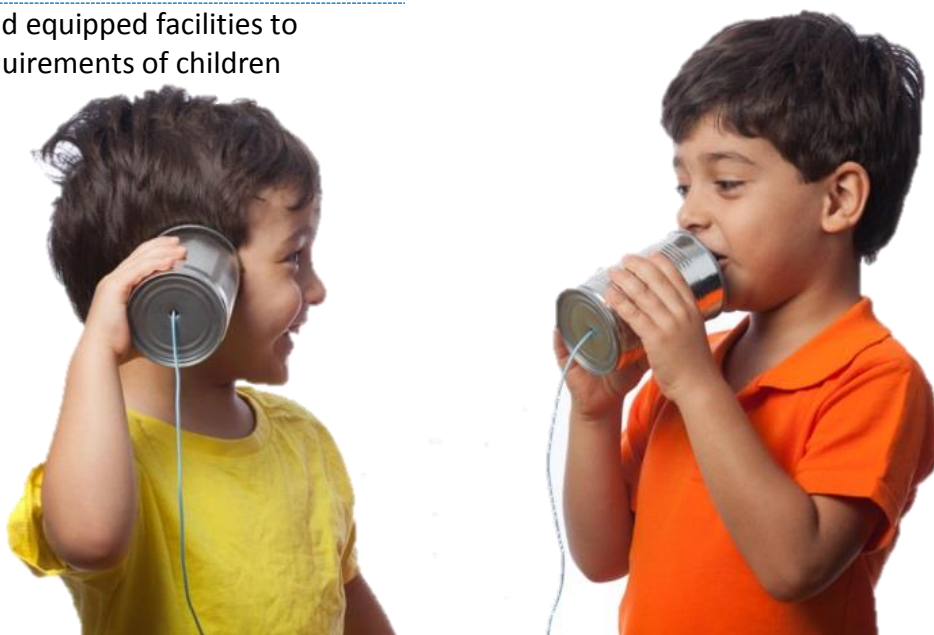


Target Customer Levels of Service






Our customers should expect...

Provision of high-quality licensed child care in a safe environment

Fully accessible and equipped facilities to meet the daily requirements of children and caregivers



What do the Risk Management Ratings mean?

	Very Good	Almost all assets in the portfolio are achieving the desired targets
	Good	Most assets in the portfolio are achieving the desired targets
	Fair	Many assets in the portfolio are not achieving the desired targets
	Poor	Most assets in the portfolio are not achieving the desired targets
	Very Poor	Almost all assets in the portfolio are not achieving the desired targets

Infrastructure Reinvestment Plan Child Care

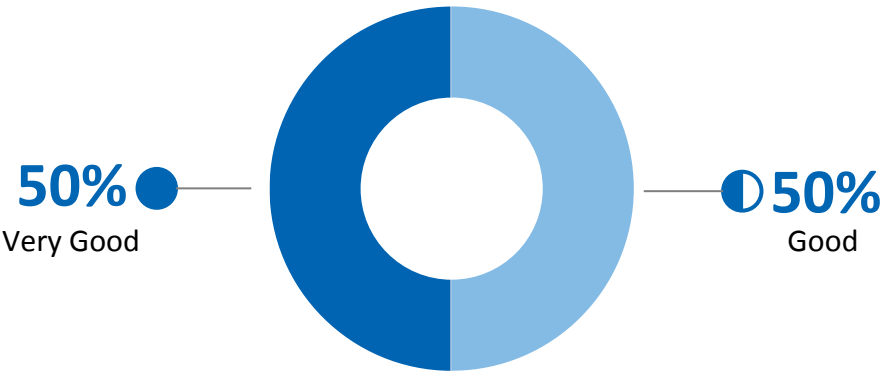
10 Year Reinvestment Plan	
Condition (SoGR)	\$3.4M
Performance Enhancements*	\$0M
Total Reinvestment	\$3.4M

Reinvestments of **\$3.4 Million** are forecasted to be needed over the next 10 years to maintain the infrastructure in a state of good repair.

No infrastructure enhancement opportunities have been identified which cannot be incorporated into forecasted state of good repair work.

If the Proposed Reinvestments are made, in 2027...

Child Care will maintain an overall rating of:  **Good**



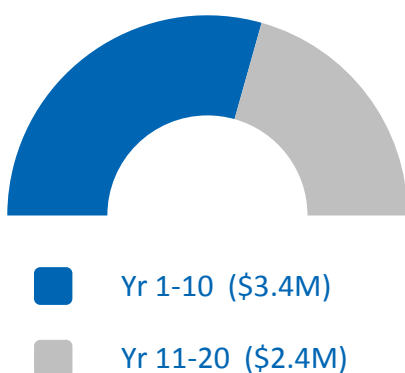
*Reinvestments in Performance Enhancements are only included where a direct link has been established between the capital reinvestment and a defined improvement in a Performance Asset Level of Service (ALOS), and where Performance enhancement is the primary goal of the initiative. Projects where the primary driver is the State of Good Repair (SOGR) can also improve Performance ALOS as a secondary project goal.

10 Year Summary **Child Care**



Service	Current State		10 Year Reinvestment Plan			
	Current Rating (2018)	Replacement Value (2016 \$ Millions)	SoGR (2018 \$ Millions)	Enhancements (2018 \$ Millions)	Total (2018 \$ Millions)	Forecasted Rating (2027)
Child Care		8.1	3.4	0	3.4	

20 Year SoGR Forecast **Child Care**



State of Good Repair reinvestment needs are forecasted to decrease in the next 20 years.

What do the Risk Management Ratings mean?

	Very Good	Almost all assets in the portfolio are achieving the desired targets
	Good	Most assets in the portfolio are achieving the desired targets
	Fair	Many assets in the portfolio are not achieving the desired targets
	Poor	Most assets in the portfolio are not achieving the desired targets
	Very Poor	Almost all assets in the portfolio are not achieving the desired targets



Leading



Government is future oriented and accountable



Asset Management Reinvestment Plan

Enterprise Programs and Services (EPS)

State of the Infrastructure EPS

Two Regional office complexes

Total Asset Replacement Value

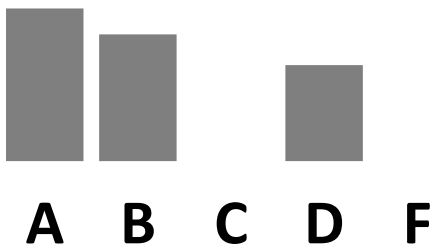
\$219.0 Million

2016 Dollars

Most of the Regional office buildings are fairly new and, therefore, have a very good score.

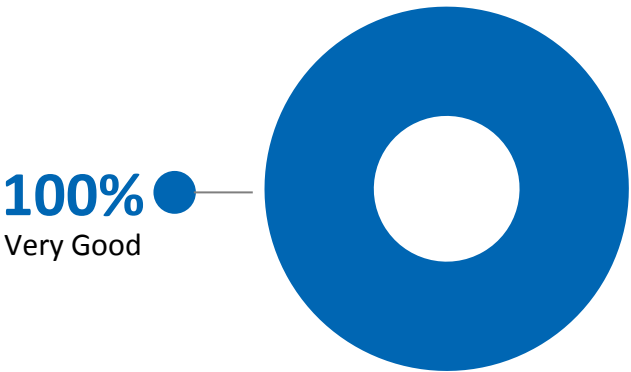
The original building at 10 Peel Centre Drive (Suite A) is 37 years old and requires higher levels of capital to maintain. Suite A remains viable to provide Regional services.

Condition of the Infrastructure



How is the Condition Graded?	
A	New or like new condition
B	In a good state of repair
C	Some non-critical defects; some critical repairs in the near term
D	Some critical defects; many critical repairs in the near term
F	Many critical defects; immediate repair or replacement required

EPS is currently achieving a rating of:  **Very Good**



Target Customer Levels of Service






Our customers should expect...

Regional properties are maintained at an acceptable level of cleanliness and in a state of good repair.

Customer concerns are promptly addressed.



What do the Risk Management Ratings mean?

	Very Good	Almost all assets in the portfolio are achieving the desired targets
	Good	Most assets in the portfolio are achieving the desired targets
	Fair	Many assets in the portfolio are not achieving the desired targets
	Poor	Most assets in the portfolio are not achieving the desired targets
	Very Poor	Almost all assets in the portfolio are not achieving the desired targets


Infrastructure Reinvestment Plan EPS

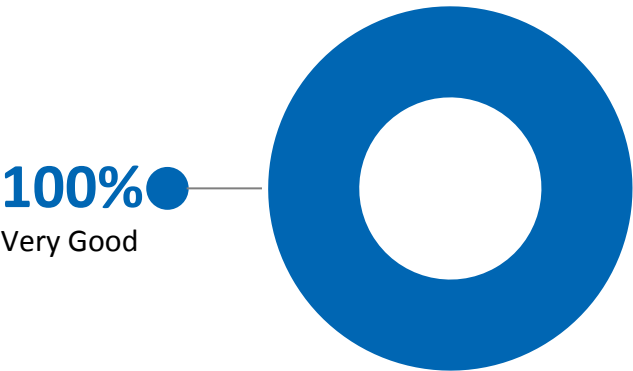
10 Year Reinvestment Plan	
Condition (SoGR)	\$15.8M
Performance Enhancements*	\$0.0M
Total Reinvestment	\$15.8M

Reinvestments of **\$266.0 Million** are forecasted to be needed over the next 10 years to maintain the infrastructure in a state of good repair.

No infrastructure enhancement opportunities have been identified which cannot be incorporated into forecasted state of good repair work.

If the Proposed Reinvestments are made, in 2027...

EPS will maintain an overall rating of:  **Very Good**



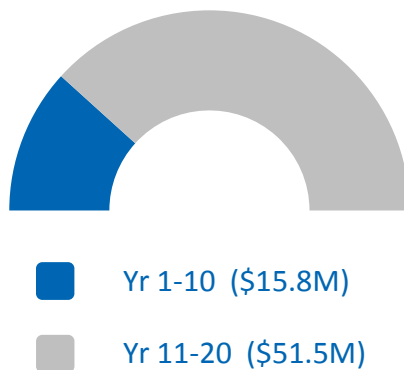
*Reinvestments in Performance Enhancements are only included where a direct link has been established between the capital reinvestment and a defined improvement in a Performance Asset Level of Service (ALOS), and where Performance enhancement is the primary goal of the initiative. Projects where the primary driver is the State of Good Repair (SOGR) can also improve Performance ALOS as a secondary project goal.

10 Year Summary EPS



Service	Current State		10 Year Reinvestment Plan			
	Current Rating (2018)	Replacement Value (2016 \$ Millions)	SoGR (2018 \$ Millions)	Enhancements (2018 \$ Millions)	Total (2018 \$ Millions)	Forecasted Rating (2027)
Enterprise Programs and Services (EPS)	●	219.0	15.8	0	15.8	●

20 Year SoGR Forecast EPS



State of Good Repair reinvestment needs are forecasted to increase significantly in the next 20 years.

What do the Risk Management Ratings mean?

●	Very Good	Almost all assets in the portfolio are achieving the desired targets
◐	Good	Most assets in the portfolio are achieving the desired targets
○	Fair	Many assets in the portfolio are not achieving the desired targets
◑	Poor	Most assets in the portfolio are not achieving the desired targets
●	Very Poor	Almost all assets in the portfolio are not achieving the desired targets

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Reading Guide

Infrastructure Risk Management Ratings

The infrastructure risk management rating indicates the state of the assets relative to the risk they are presenting to service delivery.

The ratings and the accompanying explanations are provided to give a sense of the infrastructure from a general perspective. The health and performance of individual assets may vary widely when grouped into a larger infrastructure portfolio.



Very Good State – Almost all assets are achieving the desired targets.



Good State – Most assets are achieving the desired targets.



Fair State – Many assets are not achieving the desired targets.



Poor State – Most assets are not achieving the desired targets.



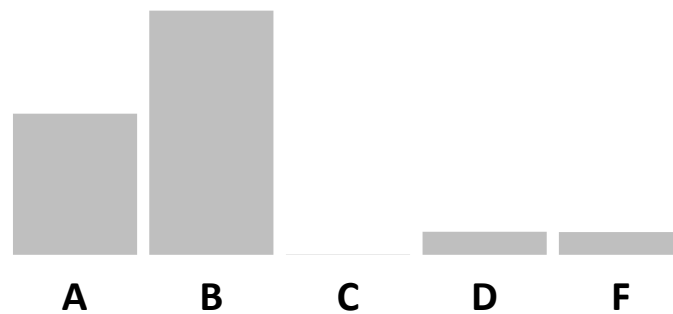
Very Poor State – Almost all assets are not achieving the desired targets.

Interpretation Examples:

In a **Very Good State**: Almost all assets are at or near Asset Level of Service targets and therefore, the risk to services is at a desired state.

In a **Poor State**: Most assets are not achieving Asset Level of Service targets and therefore the risk to services is significantly higher than desired.

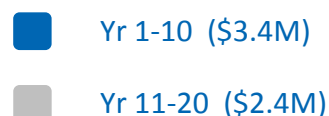
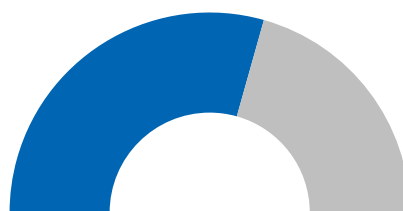
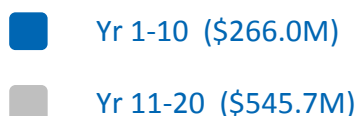
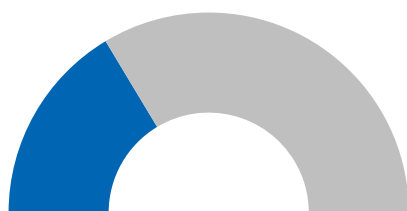
Interpreting The Condition (SoGR) Score Distribution



This indicator breaks down the distribution of asset condition across a standardized alpha grading system (A-F). It measures asset condition (state of good repair), not asset performance. The indicator is provided to help understand the general magnitude of strengths and weaknesses in the asset portfolio. This indicator does not indicate the level of risk to services which is illustrated by the “Infrastructure Risk Management Rating”. The assessment of asset condition is based on asset age, expected life, condition assessment data, and current life cycle strategies which are all worked into the CAM modelling. The distribution is weighted by asset replacement value to allow the condition grades of dissimilar assets to be combined.

- A** New or like new condition
- B** In a good state of repair
- C** Some non-critical defects; some critical repairs in the near term
- D** Some critical defects; many critical repairs in the near term
- F** Many critical defects; immediate repair or replacement

SoGR Capital Reinvestment Outlook



Increasing
future SOGR Capital requirements

Decreasing
future SOGR Capital requirements

Notes on SOGR Capital Reinvestment Outlook

The 'SOGR Capital Reinvestment Outlook' compares the state of good repair capital funding requirements over the next 10 years as a ratio to the following 10 years. It can indicate increasing or decreasing pressures on financing, operations and maintenance requirements, internal resourcing and project management capacity, external capacity and resources, potential service impacts and potential risk impacts.

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Operations Support		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
PW & Corporate Light & Medium Duty Vehicles	Maintain Equipment at a Condition Rating = B (Good)	Replace equipment when it reaches its estimated service life	SoGR
PW & Corporate Heavy-Duty Vehicles & Equipment	Maintain Equipment at a Condition Rating = B (Good)	Replace equipment when it reaches its estimated service life	SoGR
PW & Corporate Standard (or small) Equipment	Maintain Equipment at a Condition Rating = B (Good)	Replace equipment when it reaches its estimated service life	SoGR
PW & Corporate Trailers	Maintain Equipment at a Condition Rating = B (Good)	Replace equipment when it reaches its estimated service life	SoGR
Operations Support Administrative Offices	Building Condition = B (Good)	Maintain Building in an acceptable Condition (as per Facility Condition Index)	SoGR
	Facility Quality and Relationship to Current Standards = C (Fair)	Building and site meet current standards	Performance
	Facility Finishes and Fixtures = B (Good)	Maintain appropriate interior appearance and curb appeal	Performance
	Capacity and Change Adaptability for Program Requirements = B (Good)	Building and site have space and room to grow as needed	Performance
	Facility Environment and Security = B (Good)	Building and site have appropriate security and built environment to support services	Performance
	Facility Amenities for Service Delivery = B (Good)	Building and site has appropriate amenities for staff and the public, and can be accessed easily	Performance
	Accessibility Features = B (Good)	Building and site meet service accessibility needs	Performance

Operations Support		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
Operations Support General Storage	Building Condition = B (Good)	Maintain Building in an acceptable Condition (as per Facility Condition Index)	SoGR
	Facility Quality and Relationship to Current Standards = C (Fair)	Building and site meet current standards	Performance
	Facility Finishes and Fixtures = C (Fair)	Maintain appropriate interior appearance and curb appeal	Performance
	Capacity and Change Adaptability for Program Requirements = C (Fair)	Building and site have space and room to grow as needed	Performance
	Facility Environment and Security = C (Fair)	Building and site have appropriate security and built environment to support services	Performance
	Facility Amenities for Service Delivery = C (Fair)	Building and site have appropriate amenities for staff and the public, and can be accessed easily	Performance
	Accessibility Features = C (Fair)	Building and site meet service accessibility needs	Performance
Operations Support Light Industrial	Building Condition = B (Good)	Maintain Building in an acceptable Condition (as per Facility Condition Index)	SoGR
	Facility Quality and Relationship to Current Standards = C (Fair)	Building and site meet current standards	Performance
	Facility Finishes and Fixtures = C (Fair)	Maintain appropriate interior appearance and curb appeal	Performance
	Capacity and Change Adaptability for Program Requirements = B (Good)	Building and site have space and room to grow as needed	Performance
	Facility Environment and Security = B (Good)	Building and site have appropriate security and built environment to support services	Performance
	Facility Amenities for Service Delivery = B (Good)	Building and site have appropriate amenities for staff and the public, and can be accessed easily	Performance
	Accessibility Features = C (Fair)	Building and site meet service accessibility needs	Performance

Operations Support		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
Operations Support Ancillary Storage	Building Condition = B (Good)	Maintain Building in an acceptable Condition (as per Facility Condition Index)	SoGR
	Facility Quality and Relationship to Current Standards = C (Fair)	Building and site meet current standards	Performance
	Facility Finishes and Fixtures = D (Poor)	Maintain appropriate interior appearance and curb appeal	Performance
	Capacity and Change Adaptability for Program Requirements = B (Good)	Building and site have space and room to grow as needed	Performance
	Facility Environment and Security = B (Good)	Building and site have appropriate security and built environment to support services	Performance
	Facility Amenities for Service Delivery = B (Good)	Building and site have appropriate amenities for staff and the public, and can be accessed easily	Performance
	Accessibility Features = C (Fair)	Building and site meet service accessibility needs	Performance
Operations Support Facilities Site Elements	Building Site Condition = C (Fair)	Maintain site in an acceptable Condition (as per Condition Index)	SoGR

Water Supply		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
Intake	Maintain Equipment at a Condition Rating = B (Good)	Replace equipment when it reaches its estimated service life	SoGR
	Backup capacity for all critical equipment (electrical and mechanical)	Plant can meet water treatment demand if largest piece of equipment fails	Performance
	Provide Standby Power	Enough Standby Power to operate for 36 hours without electricity	Performance
	Provide redundant power supply	Two power feed lines into the plant	Performance
Pre-treatment	Maintain Equipment at a Condition Rating = B (Good)	Replace equipment when it reaches its estimated service life	SoGR
	Security Systems in place and 24/7 monitoring	Monitor activity within the plant	Performance
	Backup capacity for all critical equipment (electrical and mechanical)	Plant can meet water treatment demand if largest piece of equipment fails	Performance
	Provide capacity and technology to produce water of suitable quality	Provide sufficient system capacity to treat raw water to acceptable levels.	Performance
	Provide Standby Power	Enough Standby Power to operate for 36 hours without electricity	Performance
	Provide redundant power supply	Two power feed lines into the plant	Performance
Water Disinfection	Maintain Equipment at a Condition Rating = B (Good)	Replace equipment when it reaches its estimated service life	SoGR
	Backup capacity for all critical equipment (electrical and mechanical)	Plant can meet water treatment demand if largest piece of equipment fails	Performance
	Provide Standby Power	Enough Standby Power to operate for 36 hours without electricity	Performance
	Provide redundant power supply	Two power feed lines into the plant	Performance
	Provide capacity and technology to produce water of suitable quality	Provide sufficient system capacity to treat raw water to acceptable levels.	Performance
	Automated monitoring systems in place	Monitor activity within the plant	Performance

Water Supply		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
Filtration	Maintain Equipment at a Condition Rating = B (Good)	Replace equipment when it reaches its estimated service life	SoGR
	Provide capacity and technology to produce water of suitable quality	Provide sufficient system capacity to treat raw water to acceptable levels.	Performance
	Backup capacity for all critical equipment (electrical and mechanical)	Plant can meet water treatment demand if largest piece of equipment fails	Performance
	Provide Standby Power	Enough Standby Power to operate for 36 hours without electricity	Performance
	Provide redundant power supply	Two power feed lines into the plant	Performance
	Automated monitoring systems in place	Monitor activity within the plant	Performance
Treated Water Storage	Reservoir Condition Score = B (2.5)	Maintain Plant Reservoir in Good Condition (as per Reservoir Score Matrix)	SoGR
	Reservoir Performance Score = B (2.5)	Reservoir to meet safety, hydraulic and security standards	Performance
Chemical Systems	Maintain Equipment at a Condition Rating = B (Good)	Replace equipment when it reaches its estimated service life	SoGR
	Backup capacity for all critical equipment (electrical and mechanical)	Plant can meet water treatment demand if largest piece of equipment fails	Performance
	Provide capacity and technology to produce water of suitable quality	Provide sufficient system capacity to treat raw water to acceptable levels.	Performance
	Provide Standby Power	Enough Standby Power to operate for 36 hours without electricity	Performance
	Provide redundant power supply	Two power feed lines into the plant	Performance
High Lift Pumps	Maintain Equipment at a Condition Rating = B (Good)	Replace equipment when it reaches its estimated service life	SoGR
	Backup capacity for all critical equipment (electrical and mechanical)	Plant can meet water treatment demand if largest piece of equipment fails	Performance

Water Supply		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
High Lift Pumps	Provide Standby Power	Enough Standby Power to operate for 36 hours without electricity	Performance
	Provide redundant power supply	Two power feed lines into the plant	Performance
	Provide adequate pressure during maximum day demands periods	Provide sufficient system capacity to maintain acceptable pressure within the water distribution system	Performance
Plant Wide Support Systems	Maintain Equipment at a Condition Rating = B (Good)	Replace equipment when it reaches its estimated service life	SoGR
	Backup capacity for all critical equipment (electrical and mechanical)	Plant can meet water treatment demand if largest piece of equipment fails	Performance
Water Treatment Automation Systems (SCADA)	Maintain Equipment at a Condition Rating = B (Good)	Replace equipment when it reaches its estimated service life	SoGR
	Provision of redundant network components (WAN)	Backup Network Components to prevent loss of connection	Performance
	Automatic redundant infrastructure	Backup for critical SCADA components	Performance
	Replace hardware before obsolescence	Replace hardware before it becomes less efficient/ not compatible with systems	Performance
	Provide Standby Power	Enough Standby Power to operate for 36 hours without electricity	Performance
	Provide redundant power supply	Two power feed lines into the plant	Performance
	Physical security devices	Site Security against tampering	Performance
	Server configuration to block and detect unauthorized access	Network Security to prevent unauthorized access	Performance
Wells	Maintain Equipment at a Condition Rating = B (Good)	Replace equipment when it reaches its estimated service life	SoGR
	Must meet design capacity	Well can meet water treatment demand	Performance

Water Supply		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
Well Pumps	Maintain Equipment at a Condition Rating = B (Good)	Replace equipment when it reaches its estimated service life	SoGR
	Must meet design capacity	Well can meet water treatment demand	Performance
	Provide sufficient capacity to ensure a minimum service pressure of 50 psi during maximum day demands periods	Provide sufficient system capacity to maintain acceptable pressure within the water distribution system	Performance
	Provide backup pump capacity	Can meet operations demand if largest piece of equipment fails	Performance
Well Disinfection	Maintain Equipment at a Condition Rating = B (Good)	Replace equipment when it reaches its estimated service life	SoGR
	Provide backup capacity for all critical process components	Can meet operations demand if largest piece of equipment fails	Performance
Wells Power Supply	Maintain Equipment at a Condition Rating = B (Good)	Replace equipment when it reaches its estimated service life	SoGR
	Provide Standby Power	Enough Standby Power to operate for 24 hours without electricity	Performance
Groundwater Booster Pumps	Maintain Equipment at a Condition Rating = B (Good)	Replace equipment when it reaches its estimated service life	SoGR
	Back up pump capacity	Can meet operations demand if largest piece of equipment fails	Performance
	Maintain a minimum pressure of 50 psi during maximum day demand periods	Provide sufficient system capacity to maintain acceptable pressure within the water distribution system	Performance
	Standby Power for critical systems	Enough Standby Power to operate for 36 hours without electricity	Performance
Groundwater Water Storage	Reservoir Condition Score = B (2.5)	Maintain Elevated Tank in Good Condition (as per Reservoir Score Matrix)	SoGR
	Reservoir Performance Score = B (2.5)	Maintain Reservoirs and Standpipes to meet safety, hydraulic and security standards	Performance

Water Supply		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
Distribution Mains	Maximum 7 breaks per km of pipe	Replace watermain when it is anticipated to reach 7 breaks per km equivalent	SoGR
	Maintain a minimum pressure of 50 psi during maximum day demand periods	Provide sufficient system capacity to maintain acceptable pressure within the water distribution system	Performance
Small Feeder mains	Maximum 2 breaks per km of pipe	Replace Watermain when it is anticipated to reach 2 breaks per km equivalent	SoGR
	Maintain a minimum pressure of 50 psi during maximum day demand periods	Provide sufficient system capacity to maintain acceptable pressure within the water distribution system	Performance
Large Feeder mains	No Breaks	Replace before breaks could occur. Refining of TLOS is pending further condition assessment studies	SoGR
	Provide sufficient system capacity to meet average day demand during a failure event.	Provide sufficient system capacity to maintain acceptable pressure within the water distribution system	Performance
	Maintain a minimum pressure of 50 psi during maximum day demand periods	Provide sufficient system capacity to maintain acceptable pressure within the water distribution system	Performance
	No Breaks	Replace before breaks could occur. Refining of TLOS is pending further condition assessment studies	SoGR
Transmission Mains	Provide sufficient system capacity to meet average day demand during a failure event.	Provide sufficient system capacity to maintain acceptable pressure within the water distribution system	Performance
	Maintain acceptable velocity	Water velocity within the transmission main to be kept at less than 3 m/s	Performance

Water Supply		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
Water Pumping Station	Maintain Equipment at a Condition Rating = B (Good)	Replace equipment when it reaches its estimated service life	SoGR
	Back up pump capacity	Can meet operations demand if largest piece of equipment fails	Performance
	Maintain a minimum pressure of 50 psi during maximum day demand periods	Provide sufficient system capacity to maintain acceptable pressure within the water distribution system	Performance
	Standby Power for critical systems	Enough Standby Power to operate for 36 hours without electricity	Performance
	Secondary Disinfection System for Rechlorination	Rechlorinate water within reservoir if needed	Performance
Elevated Tanks	Reservoir Condition Score = B (2.5)	Maintain Elevated Tank in Good Condition (as per Reservoir Score Matrix)	SoGR
	Reservoir Performance Score = B (2.5)	Elevated Tank to meet safety, hydraulic and security standards	Performance
Reservoirs	Reservoir Condition Score = B (2.5)	Maintain Reservoir in Good Condition (as per Reservoir Score Matrix)	SoGR
	Reservoir Performance Score = B (2.5)	Reservoir to meet safety, hydraulic and security standards	Performance
Water Pump Station Automation Systems (SCADA)	Maintain Equipment at a Condition Rating = B (Good)	Replace equipment when it reaches its estimated service life	SoGR
	Provision of redundant network components (WAN)	Backup Network Components to prevent loss of connection	Performance
	Automatic redundant infrastructure	Backup for critical SCADA components	Performance
	Replace hardware before obsolescence	Replace hardware before it becomes less efficient/ not compatible with systems	Performance
	Provide redundant power supply	Two power feed lines into the plant	Performance
	Physical security devices	Site Security against tampering	Performance

Water Supply		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
Water General Storage Water General Storage	Building Condition = B (Good)	Maintain Building in an acceptable Condition (as per Facility Condition Index)	SoGR
	Facility Quality and Relationship to Current Standards = C (Fair)	Building and site meet current standards	Performance
	Facility Finishes and Fixtures = C (Fair)	Maintain appropriate interior appearance and curb appeal	Performance
	Capacity and Change Adaptability for Program Requirements = C (Fair)	Building and site have space and room to grow as needed	Performance
	Facility Environment and Security = C (Fair)	Building and site have appropriate security and built environment to support services	Performance
	Facility Amenities for Service Delivery = C (Fair)	Building and site have appropriate amenities for staff and the public, and can be accessed easily	Performance
	Accessibility Features = C (Fair)	Building and site meet service accessibility needs	Performance
Water Heavy Industrial	Building Condition = B (Good)	Maintain Building in an acceptable Condition (as per Facility Condition Index)	SoGR
	Facility Quality and Relationship to Current Standards = C (Fair)	Building and site meet current standards	Performance
	Facility Finishes and Fixtures = C (Fair)	Maintain appropriate interior appearance and curb appeal	Performance
	Capacity and Change Adaptability for Program Requirements = B (Good)	Building and site have space and room to grow as needed	Performance
	Facility Environment and Security = B (Good)	Building and site have appropriate security and built environment to support services	Performance
	Facility Amenities for Service Delivery = C (Fair)	Building and site have appropriate amenities for staff and the public, and can be accessed easily	Performance
	Accessibility Features = C (Fair)	Building and site meet service accessibility needs	Performance

Water Supply		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
Water Medium Industrial	Building Condition = B (Good)	Maintain Building in an acceptable Condition (as per Facility Condition Index)	SoGR
	Facility Quality and Relationship to Current Standards = C (Fair)	Building and site meet current standards	Performance
	Facility Finishes and Fixtures = C (Fair)	Maintain appropriate interior appearance and curb appeal	Performance
	Capacity and Change Adaptability for Program Requirements = B (Good)	Building and site have space and room to grow as needed	Performance
	Facility Environment and Security = B (Good)	Building and site have appropriate security and built environment to support services	Performance
	Facility Amenities for Service Delivery = C (Fair)	Building and site have appropriate amenities for staff and the public, and can be accessed easily	Performance
	Accessibility Features = C (Fair)	Building and site meet service accessibility needs	Performance
Water Process Support Structures	Building Condition = B (Good)	Maintain Building in an acceptable Condition (as per Facility Condition Index)	SoGR
	Facility Quality and Relationship to Current Standards = C (Fair)	Building and site meet current standards	Performance
	Facility Finishes and Fixtures = C (Fair)	Maintain appropriate interior appearance and curb appeal	Performance
	Capacity and Change Adaptability for Program Requirements = C (Fair)	Building and site have space and room to grow as needed	Performance
	Facility Environment and Security = B (Good)	Building and site have appropriate security and built environment to support services	Performance
	Facility Amenities for Service Delivery = B (Good)	Building and site have appropriate amenities for staff and the public, and can be accessed easily	Performance
	Accessibility Features = C (Fair)	Building and site meet service accessibility needs	Performance

Water Supply		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
Water Treatment Facilities Site Elements	Building Site Condition = B (Good)	Maintain site in an acceptable Condition (as per Condition Index)	SoGR
Water Transmission Facilities Site Elements	Building Site Condition = B (Good)	Maintain site in an acceptable Condition (as per Condition Index)	SoGR

Wastewater		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
Collection Sewers	Maintain PACP Condition Grade = Level 3	Replace when sewer is no longer in good condition	SoGR
	No surcharging of pipes	Have sewers of sufficient capacity to prevent surcharging	Performance
Sub Trunk Sewers	Maintain PACP Condition Grade = Level 3	Replace when sewer is no longer in good condition	SoGR
	Maximum hydraulic grade line = 3m below the ground surface elevation directly above the pipe or the top of pipe; whichever is less	Place sewers deep enough to prevent surcharging	Performance
	Access to sewers	Sewers must be accessible for maintenance	Performance
Trunk Sewers	Maintain PACP Condition Grade = Level 3	Replace when sewer is no longer in good condition	SoGR
	Maximum hydraulic grade line = 3m below the ground surface elevation directly above the pipe or the top of pipe; whichever is less	Place sewers deep enough to prevent surcharging	Performance
	Access to sewers	Sewers must be accessible for maintenance	Performance
	Slope Erosion protection around creeks and rivers (geomorphology)	Prevent trunk sewers from being exposed by erosion	Performance
Odour and Corrosion Control Systems	Maintain Equipment at a Condition Rating = B (Good)	Replace equipment when it reaches its estimated service life	SoGR
Forcemains	No Breaks (rating TBD)	Replace before breaks could occur. Refining of TLOS is pending further condition assessment studies	SoGR
Wastewater Pumping Stations	Maintain Equipment at a Condition Rating = B (Good)	Replace equipment when it reaches its estimated service life	SoGR
	Overflows are alarmed	Staff will be automatically notified of overflows	Performance
	Backup capacity for all critical equipment (mechanical)	Can continue to operate if largest piece of equipment fails	Performance

Wastewater		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
Wastewater Pumping Stations	Required hours of wet well storage according to station type as per ROP design standards	Sufficient storage to mitigate the risk of overflows in the event of forcemain failure.	Performance
	Ensure standby power or sufficient wetwell storage to meet Ministry of the Environment regulations	Enough Standby Power to operate without electricity or enough storage to prevent overflows	Performance
	Maintain Equipment at a Condition Rating = B (Good)	Replace equipment when it reaches its estimated service life	SoGR
Wastewater Treatment Automation Systems (SCADA)	Provision of redundant network components (WAN)	Backup Network Components to prevent loss of connection	Performance
	Automatic redundant infrastructure	Backup for critical SCADA components	Performance
	Replace hardware before obsolescence	Replace hardware before it becomes less efficient/ not compatible with systems	Performance
	Provide Standby Power	Enough Standby Power to operate for 36 hours without electricity	Performance
	Provide redundant power supply	Two power feed lines into the plant	Performance
	Physical security devices	Site Security against tampering	Performance
	Server configuration to block and detect unauthorized access	Network Security to prevent unauthorized access	Performance
Wastewater Pump Station Automation Systems (SCADA)	Maintain Equipment at a Condition Rating = B (Good)	Replace equipment when it reaches its estimated service life	SoGR
	Replace hardware before obsolescence	Replace hardware before it becomes less efficient/ not compatible with systems	Performance
	Provide redundant power supply	Two power feed lines into the plant	Performance
	Physical security devices	Site Security against tampering	Performance

Wastewater		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
Wastewater Administrative Offices	Building Condition = B (Good)	Maintain Building in an acceptable Condition (as per Facility Condition Index)	SoGR
	Facility Quality and Relationship to Current Standards = C (Fair)	Building and site meet current standards	Performance
	Facility Finishes and Fixtures = B (Good)	Maintain appropriate interior appearance and curb appeal	Performance
	Capacity and Change Adaptability for Program Requirements = B (Good)	Building and site have space and room to grow as needed	Performance
	Facility Environment and Security = B (Good)	Building and site have appropriate security and built environment to support services	Performance
	Facility Amenities for Service Delivery = B (Good)	Building and site has appropriate amenities for staff and the public, and can be accessed easily	Performance
	Accessibility Features = B (Good)	Building and site meet service accessibility needs	Performance
Wastewater General Storage	Building Condition = B (Good)	Maintain Building in an acceptable Condition (as per Facility Condition Index)	SoGR
	Facility Quality and Relationship to Current Standards = C (Fair)	Building and site meet current standards	Performance
	Facility Finishes and Fixtures = C (Fair)	Maintain appropriate interior appearance and curb appeal	Performance
	Capacity and Change Adaptability for Program Requirements = C (Fair)	Building and site have space and room to grow as needed	Performance
	Facility Environment and Security = C (Fair)	Building and site have appropriate security and built environment to support services	Performance
	Facility Amenities for Service Delivery = C (Fair)	Building and site has appropriate amenities for staff and the public, and can be accessed easily	Performance
	Accessibility Features = C (Fair)	Building and site meet service accessibility needs	Performance

Wastewater		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
Wastewater Heavy Industrial	Building Condition = B (Good)	Maintain Building in an acceptable Condition (as per Facility Condition Index)	SoGR
	Facility Quality and Relationship to Current Standards = C (Fair)	Building and site meet current standards	Performance
	Facility Finishes and Fixtures = C (Fair)	Maintain appropriate interior appearance and curb appeal	Performance
	Capacity and Change Adaptability for Program Requirements = B (Good)	Building and site have space and room to grow as needed	Performance
	Facility Environment and Security = B (Good)	Building and site have appropriate security and built environment to support services	Performance
	Facility Amenities for Service Delivery = C (Fair)	Building and site has appropriate amenities for staff and the public, and can be accessed easily	Performance
	Accessibility Features = C (Fair)	Building and site meet service accessibility needs	Performance
Wastewater Medium Industrial	Building Condition = B (Good)	Maintain Building in an acceptable Condition (as per Facility Condition Index)	SoGR
	Facility Quality and Relationship to Current Standards = C (Fair)	Building and site meet current standards	Performance
	Facility Finishes and Fixtures = C (Fair)	Maintain appropriate interior appearance and curb appeal	Performance
	Capacity and Change Adaptability for Program Requirements = B (Good)	Building and site have space and room to grow as needed	Performance
	Facility Environment and Security = B (Good)	Building and site have appropriate security and built environment to support services	Performance
	Facility Amenities for Service Delivery = C (Fair)	Building and site has appropriate amenities for staff and the public, and can be accessed easily	Performance
	Accessibility Features = C (Fair)	Building and site meet service accessibility needs	Performance

Wastewater		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
Wastewater Light Industrial	Building Condition = B (Good)	Maintain Building in an acceptable Condition (as per Facility Condition Index)	SoGR
	Facility Quality and Relationship to Current Standards = C (Fair)	Building and site meet current standards	Performance
	Facility Finishes and Fixtures = C (Fair)	Maintain appropriate interior appearance and curb appeal	Performance
	Capacity and Change Adaptability for Program Requirements = B (Good)	Building and site have space and room to grow as needed	Performance
	Facility Environment and Security = B (Good)	Building and site have appropriate security and built environment to support services	Performance
	Facility Amenities for Service Delivery = B (Good)	Building and site has appropriate amenities for staff and the public, and can be accessed easily	Performance
	Accessibility Features = C (Fair)	Building and site meet service accessibility needs	Performance
Wastewater Process Support Structures	Building Condition = B (Good)	Maintain Building in an acceptable Condition (as per Facility Condition Index)	SoGR
	Facility Quality and Relationship to Current Standards = C (Fair)	Building and site meet current standards	Performance
	Facility Finishes and Fixtures = C (Fair)	Maintain appropriate interior appearance and curb appeal	Performance
	Capacity and Change Adaptability for Program Requirements = C (Fair)	Building and site have space and room to grow as needed	Performance
	Facility Environment and Security = B (Good)	Building and site have appropriate security and built environment to support services	Performance
	Facility Amenities for Service Delivery = B (Good)	Building and site has appropriate amenities for staff and the public, and can be accessed easily	Performance
	Accessibility Features = C (Fair)	Building and site meet service accessibility needs	Performance

Wastewater		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
Wastewater Treatment Facilities Site Elements	Building Site Condition = B (Good)	Maintain site in an acceptable Condition (as per Condition Index)	SoGR
Wastewater Collection Facilities Site Elements	Building Site Condition = B (Good)	Maintain site in an acceptable Condition (as per Condition Index)	SoGR

Waste		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
Material Recovery Equipment	Maintain Equipment at a Condition Rating =B (Good)	Replace equipment when it reaches its estimated service life	SoGR
	Redundancy on most critical equipment.	Plant can still operate if some of the equipment fails	Performance
	2 days on-site material storage capacity on tipping floor	To accommodate temporary loss of processing capacity	Performance
	Standby Power	Some Standby power to operate if electricity is lost	Performance
	Achievement of design throughput and market specifications for sorted materials	Must have enough equipment and right configuration to produce materials which meet market specifications	Performance
Transfer Stations	Maintain Equipment at a Condition Rating= B (Good)	Replace equipment when it reaches its estimated service life	SoGR
	Redundancy on critical equipment	Plant can still operate if some of the equipment fails	Performance
	2-4 days storage requirements on tipping floor	To accommodate temporary storage of materials	Performance
	Standby Power	Some Standby power to operate if electricity is lost	Performance
Composting and Curing	Maintain Equipment at a Condition Rating= B (Good)	Replace equipment when it reaches its estimated service life	SoGR
	Redundancy - modular box system	Plant can still operate if some of the equipment fails	Performance
CRCs	Maintain Equipment at a Condition Rating= B (Good)	Replace equipment when it reaches its estimated service life	SoGR
	On-site storage in Transtors and bins (1 day)	To accommodate temporary storage of materials	Performance
Leachate Collection System (Pumping Stations)	Maintain Equipment at a Condition Rating= B (Good)	Replace equipment when it reaches its estimated service life	SoGR
	Overflows are alarmed	Staff will be automatically notified of overflows	Performance
	Backup capacity for all critical equipment (mechanical)	Can continue to operate if largest piece of equipment fails	Performance

Waste		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
Gas Collection System	Maintain Equipment at a Condition Rating = B (Good)	Replace equipment when it reaches its estimated service life	SoGR
	Standby Power	Standby power to operate if electricity is lost	Performance
	Automatic redundant infrastructure	Backup for critical SCADA components	Performance
Gas Collection Automation Systems (SCADA)	Maintain Equipment at a Condition Rating = B (Good)	Replace equipment when it reaches its estimated service life	SoGR
	Replace hardware before obsolescence	Replace hardware before it becomes less efficient/ not compatible with systems	Performance
	Provide redundant power supply	Standby power to operate if electricity is lost	Performance
	Physical security devices	Site Security against tampering	Performance
Waste Management Administrative Offices	Building Condition = B (Good)	Maintain Building in an acceptable Condition (as per Facility Condition Index)	SoGR
	Facility Quality and Relationship to Current Standards = C (Fair)	Building and site meet current standards	Performance
	Facility Finishes and Fixtures = B (Good)	Maintain appropriate interior appearance and curb appeal	Performance
	Capacity and Change Adaptability for Program Requirements = B (Good)	Building and site have space and room to grow as needed	Performance
	Facility Environment and Security = B (Good)	Building and site have appropriate security and built environment to support services	Performance
	Facility Amenities for Service Delivery = B (Good)	Building and site has appropriate amenities for staff and the public, and can be accessed easily	Performance
	Accessibility Features = B (Good)	Building and site meet service accessibility needs	Performance

Waste		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
Waste Management Process Support Structures	Building Condition = B (Good)	Maintain Building in an acceptable Condition (as per Facility Condition Index)	SoGR
	Facility Quality and Relationship to Current Standards = C (Fair)	Building and site meet current standards	Performance
	Facility Finishes and Fixtures = C (Fair)	Maintain appropriate interior appearance and curb appeal	Performance
	Capacity and Change Adaptability for Program Requirements = C (Fair)	Building and site have space and room to grow as needed	Performance
	Facility Environment and Security = B (Good)	Building and site have appropriate security and built environment to support services	Performance
	Facility Amenities for Service Delivery = B (Good)	Building and site has appropriate amenities for staff and the public, and can be accessed easily	Performance
	Accessibility Features = C (Fair)	Building and site meet service accessibility needs	Performance
Waste Management Commercial Light Industrial	Building Condition = B (Good)	Maintain Building in an acceptable Condition (as per Facility Condition Index)	SoGR
	Facility Quality and Relationship to Current Standards = C (Fair)	Building and site meet current standards	Performance
	Facility Finishes and Fixtures = B (Good)	Maintain appropriate interior appearance and curb appeal	Performance
	Capacity and Change Adaptability for Program Requirements = B (Good)	Building and site have space and room to grow as needed	Performance
	Facility Environment and Security = B (Good)	Building and site have appropriate security and built environment to support services	Performance
	Facility Amenities for Service Delivery = B (Good)	Building and site has appropriate amenities for staff and the public, and can be accessed easily	Performance
	Accessibility Features = C (Fair)	Building and site meet service accessibility needs	Performance

Waste		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
Waste Management Retail Spaces	Building Condition = B (Good)	Maintain Building in an acceptable Condition (as per Facility Condition Index)	SoGR
	Facility Quality and Relationship to Current Standards = C (Fair)	Building and site meet current standards	Performance
	Facility Finishes and Fixtures = B (Good)	Maintain appropriate interior appearance and curb appeal	Performance
	Capacity and Change Adaptability for Program Requirements = B (Good)	Building and site have space and room to grow as needed	Performance
	Facility Environment and Security = B (Good)	Building and site have appropriate security and built environment to support services	Performance
	Facility Amenities for Service Delivery = B (Good)	Building and site has appropriate amenities for staff and the public, and can be accessed easily	Performance
	Accessibility Features = B (Good)	Building and site meet service accessibility needs	Performance
Waste Management Labour Intense Heavy Industrial	Building Condition = B (Good)	Maintain Building in an acceptable Condition (as per Facility Condition Index)	SoGR
	Facility Quality and Relationship to Current Standards = C (Fair)	Building and site meet current standards	Performance
	Facility Finishes and Fixtures = C (Fair)	Maintain appropriate interior appearance and curb appeal	Performance
	Capacity and Change Adaptability for Program Requirements = B (Good)	Building and site have space and room to grow as needed	Performance
	Facility Environment and Security = B (Good)	Building and site have appropriate security and built environment to support services	Performance
	Facility Amenities for Service Delivery = B (Good)	Building and site has appropriate amenities for staff and the public, and can be accessed easily	Performance
	Accessibility Features = C (Fair)	Building and site meet service accessibility needs	Performance

Waste		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
Waste Management Public Offices	Building Condition = B (Good)	Maintain Building in an acceptable Condition (as per Facility Condition Index)	SoGR
	Facility Quality and Relationship to Current Standards = C (Fair)	Building and site meet current standards	Performance
	Facility Finishes and Fixtures = B (Good)	Maintain appropriate interior appearance and curb appeal	Performance
	Capacity and Change Adaptability for Program Requirements = B (Good)	Building and site have space and room to grow as needed	Performance
	Facility Environment and Security = B (Good)	Building and site have appropriate security and built environment to support services	Performance
	Facility Amenities for Service Delivery = B (Good)	Building and site has appropriate amenities for staff and the public, and can be accessed easily	Performance
	Accessibility Features = B (Good)	Building and site meet service accessibility needs	Performance
Waste Management Medium Industrial	Building Condition = B (Good)	Maintain Building in an acceptable Condition (as per Facility Condition Index)	SoGR
	Facility Quality and Relationship to Current Standards = C (Fair)	Building and site meet current standards	Performance
	Facility Finishes and Fixtures = C (Fair)	Maintain appropriate interior appearance and curb appeal	Performance
	Capacity and Change Adaptability for Program Requirements = B (Good)	Building and site have space and room to grow as needed	Performance
	Facility Environment and Security = B (Good)	Building and site have appropriate security and built environment to support services	Performance
	Facility Amenities for Service Delivery = C (Fair)	Building and site has appropriate amenities for staff and the public, and can be accessed easily	Performance
	Accessibility Features = C (Fair)	Building and site meet service accessibility needs	Performance

Waste		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
Waste Management Facilities Site Elements	Building Site Condition = B (Good)	Maintain site in an acceptable Condition (as per Condition Index)	SoGR

Transportation and Roads		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
Roads	Minimum pavement condition index = 72	Regional Roads to be kept in good condition	SoGR
	Incorporate all feasible and practical aspects of Peel's Road Characterization Policy	Road rehabilitations will retrofit aspects of the road characterization in accordance with the Policy where feasible and practical	Performance
Stormwater Pumping Stations	Minimum condition rating = C (Fair)	Replace equipment when it reaches its estimated service life	SoGR
	Back up capacity for all critical equipment (mechanical)	Can continue to operate if largest piece of equipment fails	Performance
	Ensure standby power or sufficient wetwell storage to meet Ministry of the Environment regulations	Enough Standby Power to operate without electricity or enough storage to prevent overflows	Performance
	Secondary forcemain or storage capacity	Twinned or enough capacity to prevent overflows	Performance
Bridges and Grade Separations	Minimum bridge condition index = 91	Maintain Structures in Good Condition	SoGR
Major Culvert	Minimum condition index = 91	Maintain Structures in Good Condition	SoGR
Regional Noise Walls	Minimum overall rating = C (Fair)	Service Improvement; Maintenance of walls in fair condition per Council Resolution 2015-663	SoGR
	Replace and relocate private noise walls to Regional Property when minimum overall rating <= C (Fair)	Service Improvement; Maintenance of walls in fair condition per Council Resolution 2015-663	Performance
Regional Retaining Walls	Minimum overall rating = C (Fair)	Maintain walls in fair condition	SoGR

Transportation and Roads		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
Transportation Medium Industrial	Building Condition = B (Good)	Maintain Building in an acceptable Condition (as per Facility Condition Index)	SoGR
	Facility Quality and Relationship to Current Standards = C (Fair)	Building and site meet current standards	Performance
	Facility Finishes and Fixtures = C (Fair)	Maintain appropriate interior appearance and curb appeal	Performance
	Capacity and Change Adaptability for Program Requirements = B (Good)	Building and site have space and room to grow as needed	Performance
	Facility Environment and Security = B (Good)	Building and site have appropriate security and built environment to support services	Performance
	Facility Amenities for Service Delivery = C (Fair)	Building and site has appropriate amenities for staff and the public, and can be accessed easily	Performance
Transportation Facilities Site Elements	Accessibility Features = C (Fair)	Building and site meet service accessibility needs	Performance
	Building Site Condition = B (Good)	Maintain site in an acceptable Condition (as per Condition Index)	SoGR

TransHelp		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
Transhelp Fleet	Condition Rating = B (Good)	Replace fleet when it reaches its estimated service life	SoGR

Paramedic Services		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
Paramedics Reporting Stations	Building Condition = B (Good)	Maintain Building in an acceptable Condition (as per Facility Condition Index)	SoGR
	Facility Quality and Relationship to Current Standards = C (Fair)	Building and site meet current standards	Performance
	Facility Finishes and Fixtures = B (Good)	Maintain appropriate interior appearance and curb appeal	Performance
	Capacity and Change Adaptability for Program Requirements = B (Good)	Building and site have space and room to grow as needed	Performance
	Facility Environment and Security = B (Good)	Building and site have appropriate security and built environment to support services	Performance
	Facility Amenities for Service Delivery = B (Good)	Building and site has appropriate amenities for staff and the public, and can be accessed easily	Performance
	Accessibility Features = B (Good)	Building and site meet service accessibility needs	Performance
Paramedics Satellite Stations	Building Condition = B (Good)	Maintain Building in an acceptable Condition (as per Facility Condition Index)	SoGR
	Facility Quality and Relationship to Current Standards = C (Fair)	Building and site meet current standards	Performance
	Facility Finishes and Fixtures = B (Good)	Maintain appropriate interior appearance and curb appeal	Performance
	Capacity and Change Adaptability for Program Requirements = B (Good)	Building and site have space and room to grow as needed	Performance
	Facility Environment and Security = B (Good)	Building and site have appropriate security and built environment to support services	Performance
	Facility Amenities for Service Delivery = B (Good)	Building and site has appropriate amenities for staff and the public, and can be accessed easily	Performance
	Accessibility Features = B (Good)	Building and site meet service accessibility needs	Performance

Paramedic Services		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
Paramedics Facilities Site Elements	Building Site Condition = B (Good)	Maintain site in an acceptable Condition (as per Condition Index)	SoGR
Conveyance Equipment	Condition Rating= B (Good)	Replace fleet and equipment when it reaches its estimated service life	SoGR
Medical Equipment	Condition Rating= B (Good)	Replace fleet and equipment when it reaches its estimated service life	SoGR
Emergency Response Vehicles	Condition Rating= B (Good)	Replace fleet and equipment when it reaches its estimated service life	SoGR
Light and Medium Duty Vehicles	Condition Rating= B (Good)	Replace fleet and equipment when it reaches its estimated service life	SoGR

Long Term Care		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
Long Term Care Centres	Building Condition = B (Good)	Maintain Building in an acceptable Condition (as per Facility Condition Index)	SoGR
	Facility Quality and Relationship to Current Standards = C (Fair)	Building and site meet current standards	Performance
	Facility Finishes and Fixtures = B (Good)	Maintain appropriate interior appearance and curb appeal	Performance
	Capacity and Change Adaptability for Program Requirements = B (Good)	Building and site have space and room to grow as needed	Performance
	Facility Environment and Security = B (Good)	Building and site have appropriate security and built environment to support services	Performance
	Facility Amenities for Service Delivery = B (Good)	Building and site has appropriate amenities for staff and the public, and can be accessed easily	Performance
	Accessibility Features = B (Good)	Building and site meet service accessibility needs	Performance
Long Term Care Centres Site Elements	Building Site Condition = B (Good)	Maintain site in an acceptable Condition (as per Condition Index)	SoGR

Housing Support		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
Peel Region High Density Affordable Housing	Building Condition = B (Good)	Maintain Building in an acceptable Condition (as per Facility Condition Index)	SoGR
	Facility Quality and Relationship to Current Standards = C (Fair)	Building and site meet current standards	Performance
	Facility Finishes and Fixtures = C (Fair)	Maintain appropriate interior appearance and curb appeal	Performance
	Capacity and Change Adaptability for Program Requirements = C (Fair)	Building and site have space and room to grow as needed	Performance
	Facility Environment and Security = B (Good)	Building and site have appropriate security and built environment to support services	Performance
	Facility Amenities for Service Delivery = B (Good)	Building and site has appropriate amenities for staff and the public, and can be accessed easily	Performance
	Accessibility Features = B (Good)	Building and site meet service accessibility needs	Performance
Peel Region Medium Density Affordable Housing	Building Condition = B (Good)	Maintain Building in an acceptable Condition (as per Facility Condition Index)	SoGR
	Facility Quality and Relationship to Current Standards = C (Fair)	Building and site meet current standards	Performance
	Facility Finishes and Fixtures = C (Fair)	Maintain appropriate interior appearance and curb appeal	Performance
	Capacity and Change Adaptability for Program Requirements = C (Fair)	Building and site have space and room to grow as needed	Performance
	Facility Environment and Security = B (Good)	Building and site have appropriate security and built environment to support services	Performance
	Facility Amenities for Service Delivery = B (Good)	Building and site has appropriate amenities for staff and the public, and can be accessed easily	Performance
	Accessibility Features = B (Good)	Building and site meet service accessibility needs	Performance

Homelessness Support		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
Shelter Facilities	Building Condition = B (Good)	Maintain Building in an acceptable Condition (as per Facility Condition Index)	SoGR
	Facility Quality and Relationship to Current Standards = C (Fair)	Building and site meet current standards	Performance
	Facility Finishes and Fixtures = B (Good)	Maintain appropriate interior appearance and curb appeal	Performance
	Capacity and Change Adaptability for Program Requirements = B (Good)	Building and site have space and room to grow as needed	Performance
	Facility Environment and Security = B (Good)	Building and site have appropriate security and built environment to support services	Performance
	Facility Amenities for Service Delivery = B (Good)	Building and site has appropriate amenities for staff and the public, and can be accessed easily	Performance
	Accessibility Features = B (Good)	Building and site meet service accessibility needs	Performance

Child Care		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
Peel Region Child Care Centre Facilities	Building Condition = B (Good)	Maintain Building in an acceptable Condition (as per Facility Condition Index)	SoGR
	Facility Quality and Relationship to Current Standards = C (Fair)	Building and site meet current standards	Performance
Peel Region Child Care Centre Facilities Site Elements	Building Site Condition = B (Good)	Maintain site in an acceptable Condition (as per Condition Index)	SoGR

Enterprise Programs & Services		Asset Levels of Service	
Asset	Level of Service	What Does It Mean?	Type
Headquarters Facilities	Building Condition = B (Good)	Maintain Building in an acceptable Condition (as per Facility Condition Index)	SoGR
	Facility Quality and Relationship to Current Standards = C (Fair)	Building and site meet current standards	Performance
	Facility Finishes and Fixtures = B (Fair)	Maintain appropriate interior appearance and curb appeal	Performance
	Capacity and Change Adaptability for Program Requirements = B (Fair)	Building and site have space and room to grow as needed	Performance
	Facility Environment and Security = B (Good)	Building and site have appropriate security and built environment to support services	Performance
	Facility Amenities for Service Delivery = B (Good)	Building and site has appropriate amenities for staff and the public, and can be accessed easily	Performance
Headquarters Facilities Site Elements	Accessibility Features = B (Fair)	Building and site meet service accessibility needs	Performance
	Building Site Condition = B (Good)	Maintain site in an acceptable Condition (as per Condition Index)	SoGR

Asset Replacement Values

The asset replacement value is the cost that would be incurred to replace the capital asset in its current configuration based on current market and industry prices. It is intended to represent the realistic value to replace the existing assets. To derive the current replacement values, a variety of cost estimation approaches can be applied to the asset inventory depending on the availability of data:

1. **Original Installation Cost** - This method utilizes the original full construction costs of the assets which are then inflated to current values based on the historical inflation.
2. **Unit Costs** - This method uses a unit cost for the asset inclusive of all associated appurtenances (e.g. valves, hydrants, water services on watermain; manholes, services on sewers; pavement surface, sub base, minor cross culverts on roads) and the administration costs to construct the works (engineering and design costs, contingency allowances and project management fees). This unit cost is then factored against the size, type, and/or quantity of assets to generate the total replacement value.
3. **Asset Specific Costing** - This method uses expert judgement and industry knowledge and data to calculate whole asset costs or total costs of the asset as a result of a sum of the assets components. These cost estimates may be calculated by consultants as part of a condition assessment or asset inventory study or may be developed through in-house resources. The inventory detail and valuations are validated with program staff.
4. **Insurance Estimates** - In some cases only insurance estimates are available for the assets. The values are adjusted for administration costs to construct the assets, are adjusted for inflation with and are validated with program staff.
5. **Program Estimation** - Where insufficient data or information exists to use one of the other methodologies, program staff are asked to provide estimates of the asset value. Where necessary, allowances for design, contract administration and contingencies are added.

Inflationary Factors

The assets and asset treatments/replacements are required to be represented in current and future values. Updated cost estimates through specific asset assessments or updated unit costs are not always available. During the interim periods where current infrastructure costs are not available an inflation factor is applied.

Actual historical inflationary increases are used to bring the assets replacement values to current dollars. Forecasted inflation rates are used to project replacement and rehabilitation costs for long-term reserve sustainability modelling according to Region of Peel standards.

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Lifecycle Models

Lifecycle models allow for the forecasting of asset related risk to service and the capital requirements of rehabilitations and replacements. The models are also used to estimate the current condition of assets where condition inspections are not possible or current condition data is not available.

Lifecycle models are calibrated to specific asset classes and are extensively tested and validated with program staff to ensure they represent current best practices and are aligned with risk models. Lifecycle assumptions include strategies for the major rehabilitation and replacement of assets. The models are developed with planned maintenance practices in mind. The lifecycle forecasts assume that the programs are actively managing the assets between treatments, by undertaking the planned maintenance activities. The lifecycles are calibrated with actual asset data, and changes in maintenance practices are reflected in the assumptions. The lifecycle assumptions are reviewed annually, and models are re-calibrated as needed to consider: new practices, changing technologies, and new asset information.

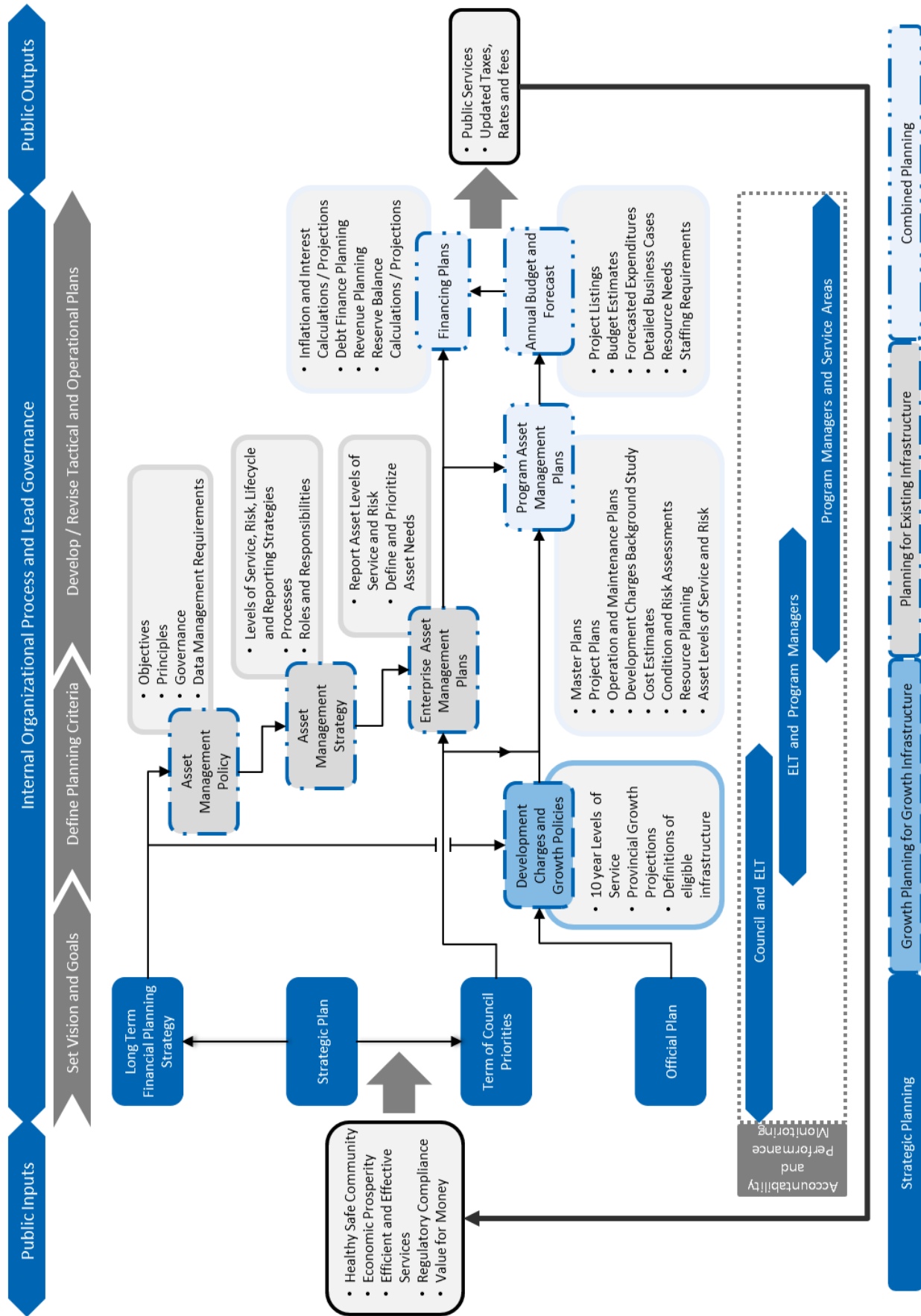
There are four types of lifecycle models used:

1. No Deterioration: This model is used when a measure is not expected to change over time without intervention. Performance levels of service and some condition levels of service are static measures. This model may drive a current need, but will never forecast a future need;
2. Estimated Service Life (ESL): This model is used when either there is insufficient data to develop lifecycle curves for an asset class, or there is no cost benefit to do so. ESL models can include rehabilitations which extend the asset life at defined trigger points. Assets are replaced when they reach the end of life;
3. Lifecycle Curve: This model is used when sufficient data, in house knowledge, or industry knowledge exists to plot the change of an ALOS over time. Lifecycle Curve Models can include rehabilitations which improve the level of service of an asset. Assets are replaced when either they reach a defined ALOS target or reach a defined end of service life; and
4. Forward Works: This model is used for facilities. Detailed Building Condition Assessments (BCAs) are used to forecast a Facility Condition Index (FCI). Rehabilitations occur when the FCI passes a defined trigger point defined by the ALOS.

All lifecycle models require asset class specific baseline data to run. Asset baseline data is evaluated and updated annually and generally includes the following data at a minimum:

- Asset ID and/or Name;
- Asset condition, installation data, Estimate Service Life, and/or Forward Works Plan;
- Asset Replacement and Rehabilitation costs; and
- Asset Size and/or Type (i.e. area, length, volume, diameter, material, or class).

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