



Region of Peel

Integrating Green Infrastructure into our Corporate Asset Management Methodology

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AGENDA

- 1 Peel Region
- 2 Natural Green Infrastructure Inventory and Condition Assessment
- 3 Asset Valuation and Lifecycle Strategies
- 4 Asset Management at Peel
- 5 Integration of Natural Green Infrastructure
- 6 Challenges and Next Steps



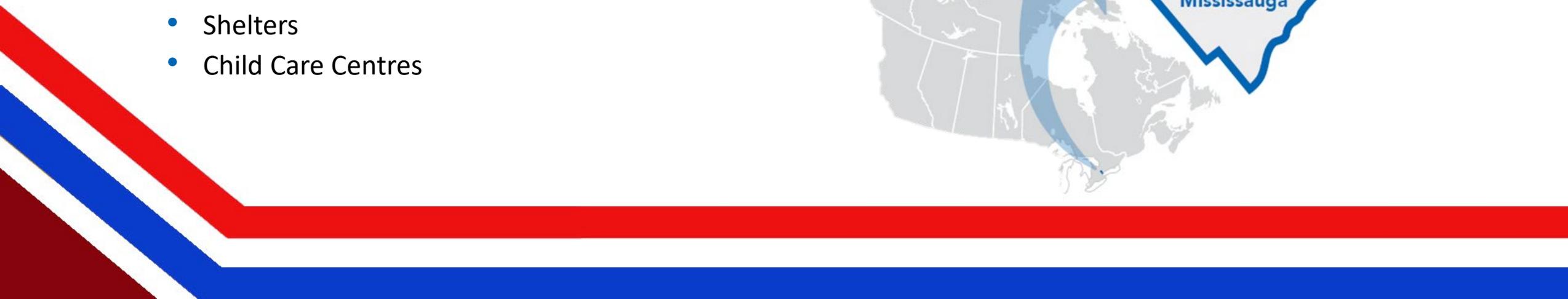
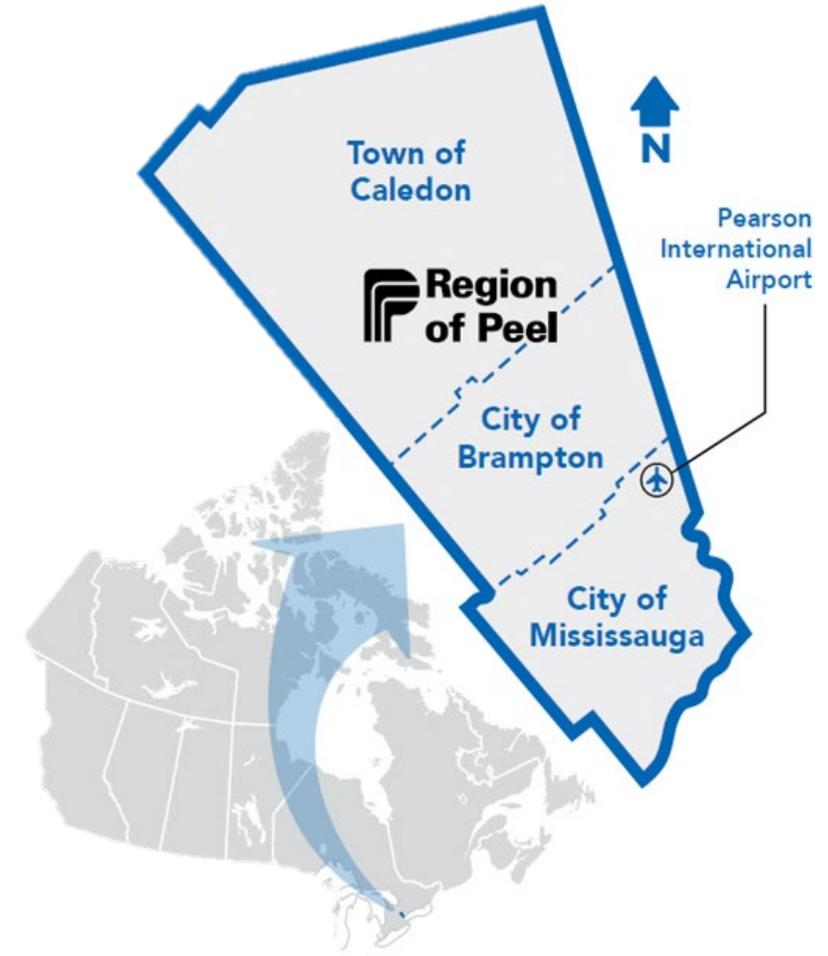


PEEL REGION





- 1.5 million people
- Over \$36B in capital assets:
 - Water & Wastewater (vertical & linear assets)
 - Transportation Infrastructure (1,637km of Regional Roads)
 - Waste Management Processing
 - Long Term Care Centres
 - Paramedic Stations
 - Peel Police (Fleet & Equipment)
 - Heritage Buildings (PAMA)
 - Affordable Housing
 - Regional Administration Offices
 - Works Yards
 - Shelters
 - Child Care Centres



OBJECTIVES

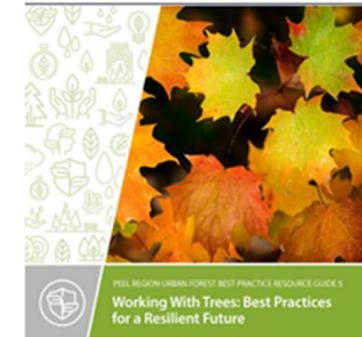
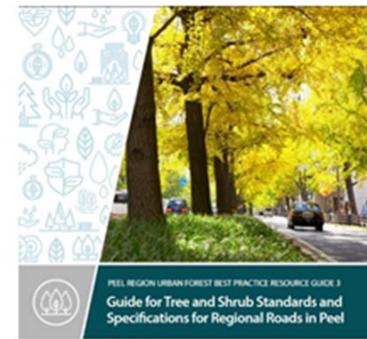
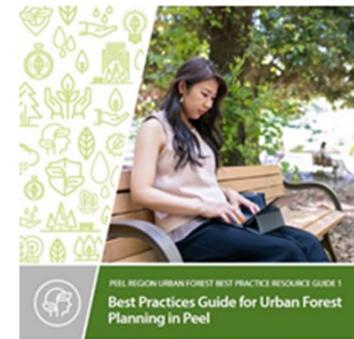


- ✓ To strengthen our ability to grow, manage and maintain a healthy urban forest that will contribute to quality of life for Peel residents.
- ✓ To fulfill urban forest policies and regulations.
- ✓ To transition from reactive to proactive urban forest management.

Urban Forest Best Practice Guides



- Peel Urban Forest Best Practices
- Developed to provide guidance that will help sustain and expand tree cover in Peel's urban areas
- Endorsed by Council in October 2021



Urban Forest Management Plan



- Identify the full scope of the Regional mandate in relation to urban forest assets
- Provide an overall strategy to guide the Region of Peel
- Develop an Action Plan that sets out priorities and budgets to advance the 5-year term initiatives





Inventory and Condition Assessment



Inventory and Condition Assessment



Tree Inspection

Tree Location

Please ensure the tree is placed at the correct location before proceeding. *

43°43'N 79°43'W ± 111 m

Coordinates are not within the accuracy threshold of 1 m

Override Accuracy & Drop Point

Tree Field Photo *

Tree Information

Inspection Date: *
Tuesday, April 25, 2023

Unit Number:

Tree Status: *
 Alive
 Dead

Tree Stump:
 Stump

Site Type: *

Wire Conflict *
No Lines

Encroachment
 No Yes

Support Structure Present *

Water Bag Present *

Tree Identification [Create a copy of this Tree Record?](#)

Tree Genus *

Please select the division
 Deciduous Evergreen

Tree Species *

Canopy Diameter (m) *

Field Comments (Optional)

Potential Concern Immediate Action Required *
 No Yes

Inventory and Condition Assessment

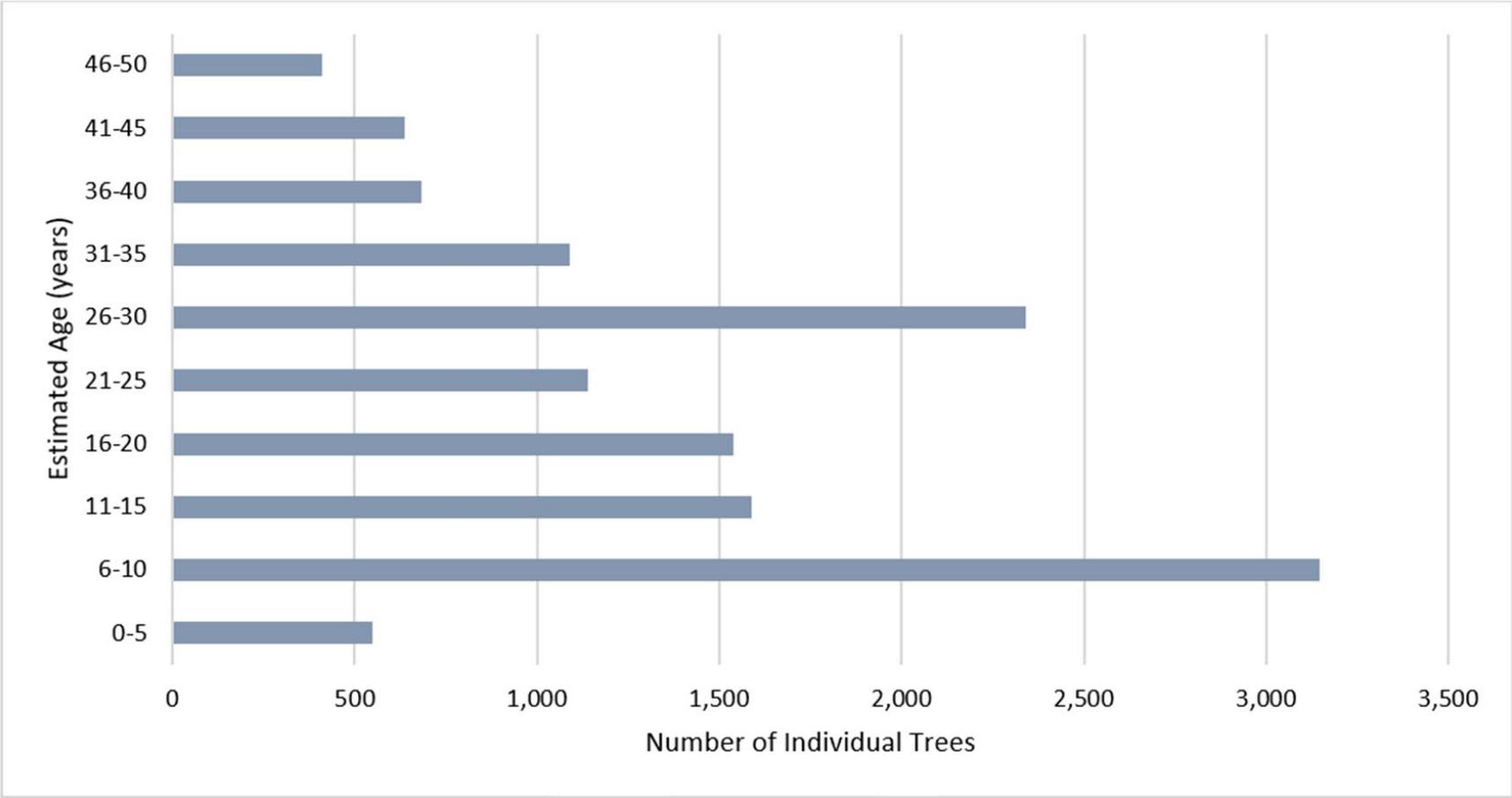


✕
Tree Inspection
📶 ☰

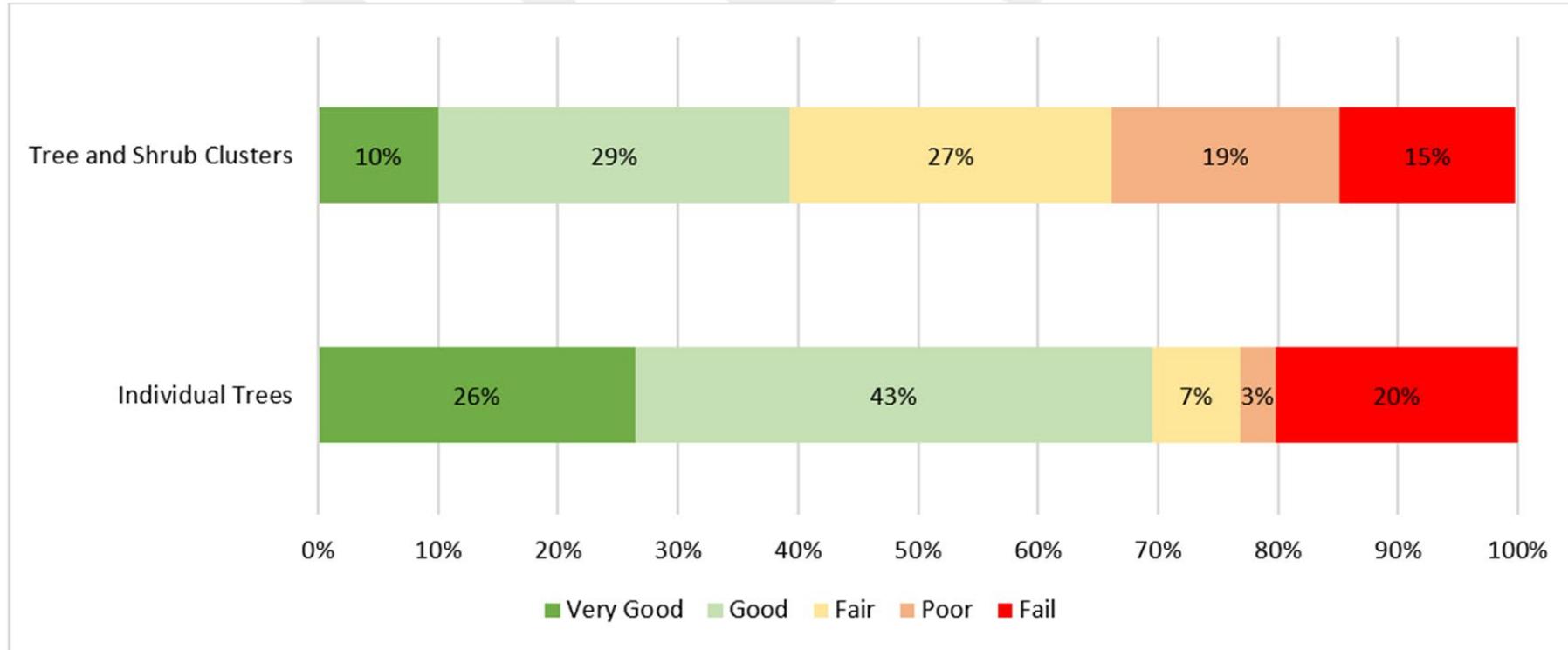
	Tree Condition	Scores
<p>Please select all that apply</p> <div style="display: flex; align-items: center;"> <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="border: 1px solid #0070C0; padding: 2px 5px; background-color: #ADD8E6;">Foliage</div> <div style="border: 1px solid #0070C0; padding: 2px 5px; background-color: #ADD8E6;">Structure</div> <div style="border: 1px solid #0070C0; padding: 2px 5px; background-color: #ADD8E6;">Roots</div> <div style="border: 1px solid #0070C0; padding: 2px 5px; background-color: #ADD8E6;">Pests & Disease</div> </div> </div> <p>Overall Condition</p> <div style="display: flex; align-items: center;"> <div style="border: 1px solid #0070C0; border-radius: 50%; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center; margin-right: 5px;">1</div> <div style="width: 100px; height: 10px; background: linear-gradient(to right, green, yellow, orange, red); border: 1px solid #0070C0; margin-right: 5px;"></div> <div style="border: 1px solid #0070C0; border-radius: 50%; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center; margin-right: 5px;">5</div> <div style="margin-left: 10px;">✕</div> </div>	<p>▼ Foliage Condition</p> <p>Chlorosis * <i>No action if chlorosis is <5% of the crown</i></p> <div style="border: 1px solid #ccc; padding: 2px; display: flex; justify-content: space-between; align-items: center;"> Very Good - No Action Required ▼ </div> <p>Dieback/Deadwood * <i>No action if dieback/deadwood is <5%</i></p> <div style="border: 1px solid #ccc; padding: 2px; display: flex; justify-content: space-between; align-items: center;"> Very Good - No Action Required ▼ </div> <p>Epicormic Sprouting * <i>No action if there is no epicormic sprouting</i></p> <div style="border: 1px solid #ccc; padding: 2px; display: flex; justify-content: space-between; align-items: center;"> Very Good - No Action Required ▼ </div> <p>Leaf Scorch * <i>No action if leaf scorch is <5% of the crown</i></p> <div style="border: 1px solid #ccc; padding: 2px; display: flex; justify-content: space-between; align-items: center;"> Very Good - No Action Required ▼ </div> <p>Wilting * <i>No action if wilting is <5% of the crown</i></p> <div style="border: 1px solid #ccc; padding: 2px; display: flex; justify-content: space-between; align-items: center;"> Very Good - No Action Required ▼ </div>	<p>1 Foliage Condition</p> <p>1 Structure Condition</p> <p>1 Root Condition</p> <p>1 Pest & Disease Condition</p>

⏪
2 of 2
✓

Estimated Age



Asset Condition Distribution





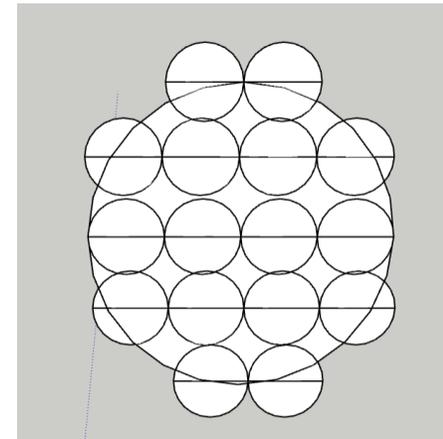
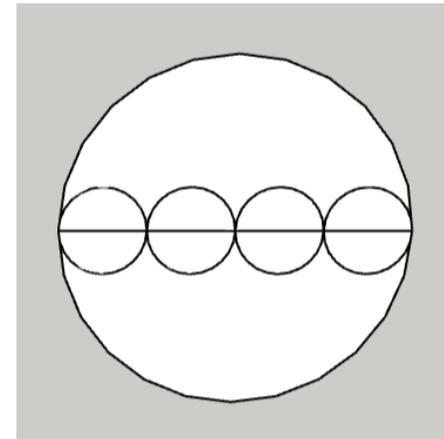
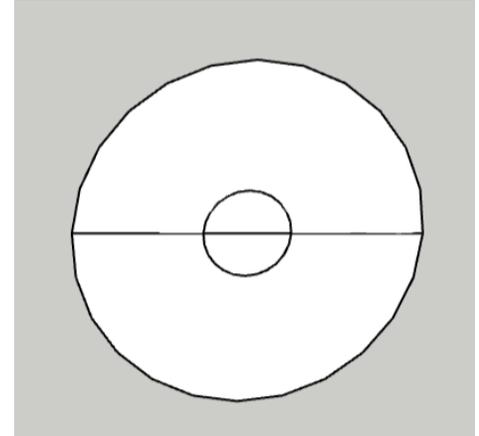
Valuation and Lifecycle Strategies



Replacement Value



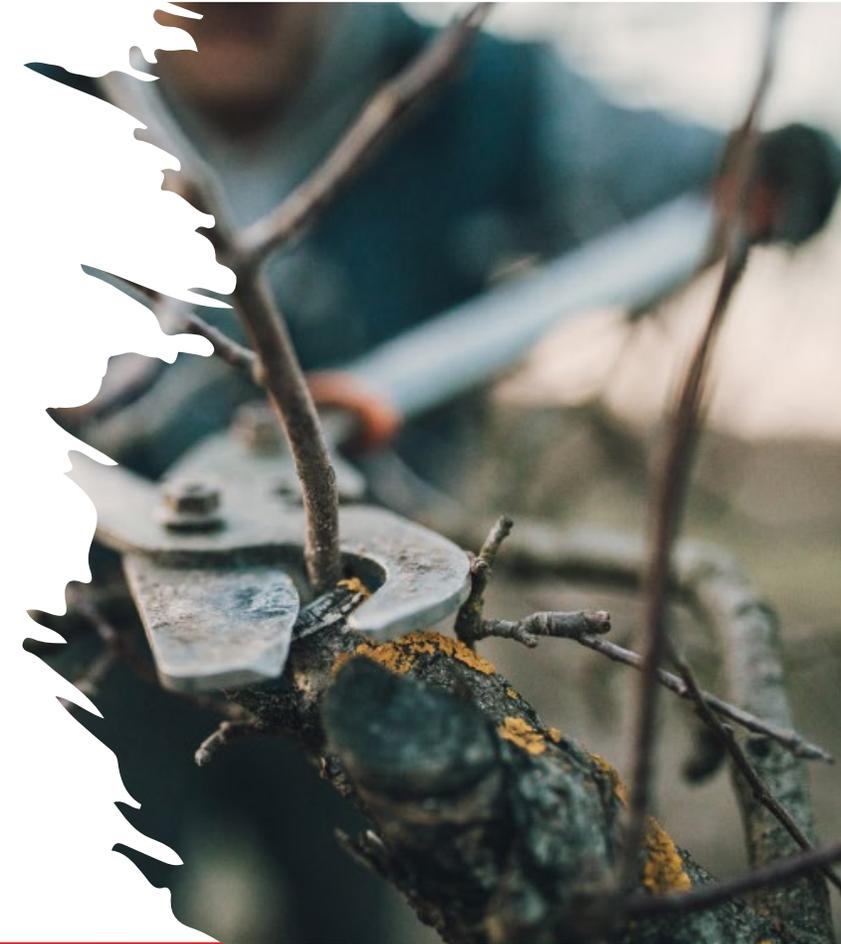
- Methodology Selection
- Aligning with replacing strategy
- Unit Cost * Tree Trunk Area* Condition Factor
 - Replacement of equivalent number of 5cm trees
 - Purchase and Installation
 - Establishment maintenance for first 3 years
 - Tree and Stump Removal



Lifecycle Strategy



- Pruning cycle between 5-10 years
- First three years establishing considered part of capital costs
- Removal and stumping
- Estimated service life: 30 years
- End of life: 35 years

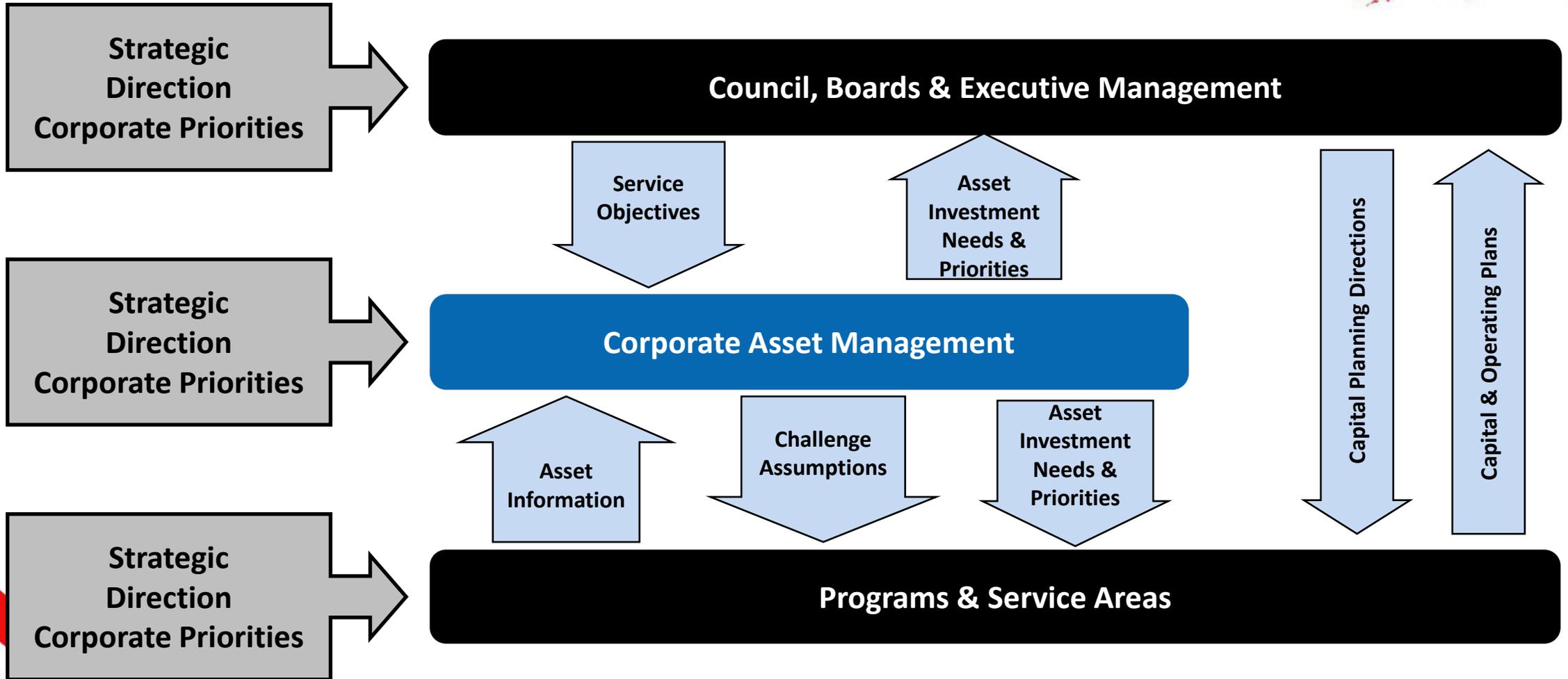


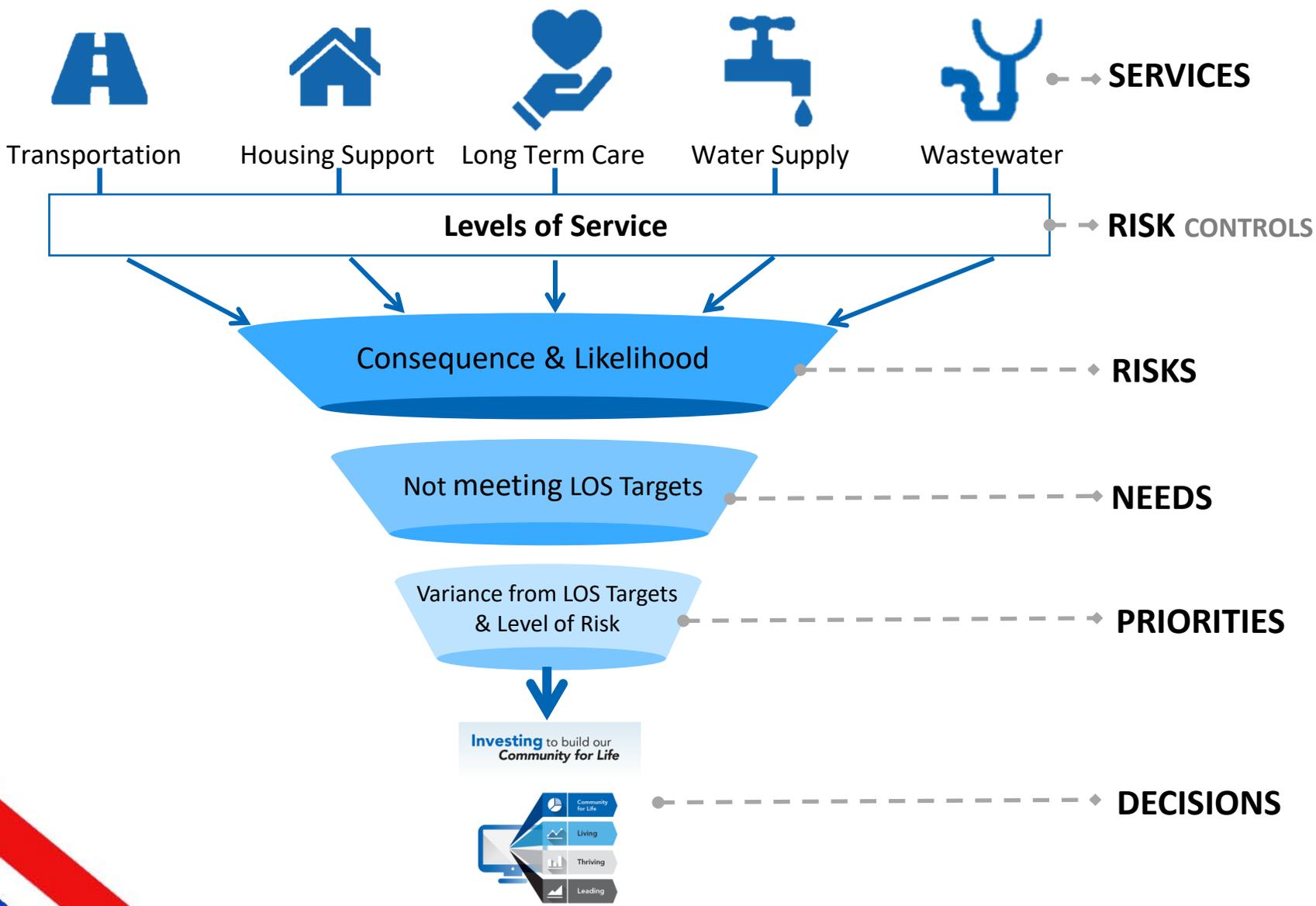


Asset Management at Peel



Corporate Asset Management



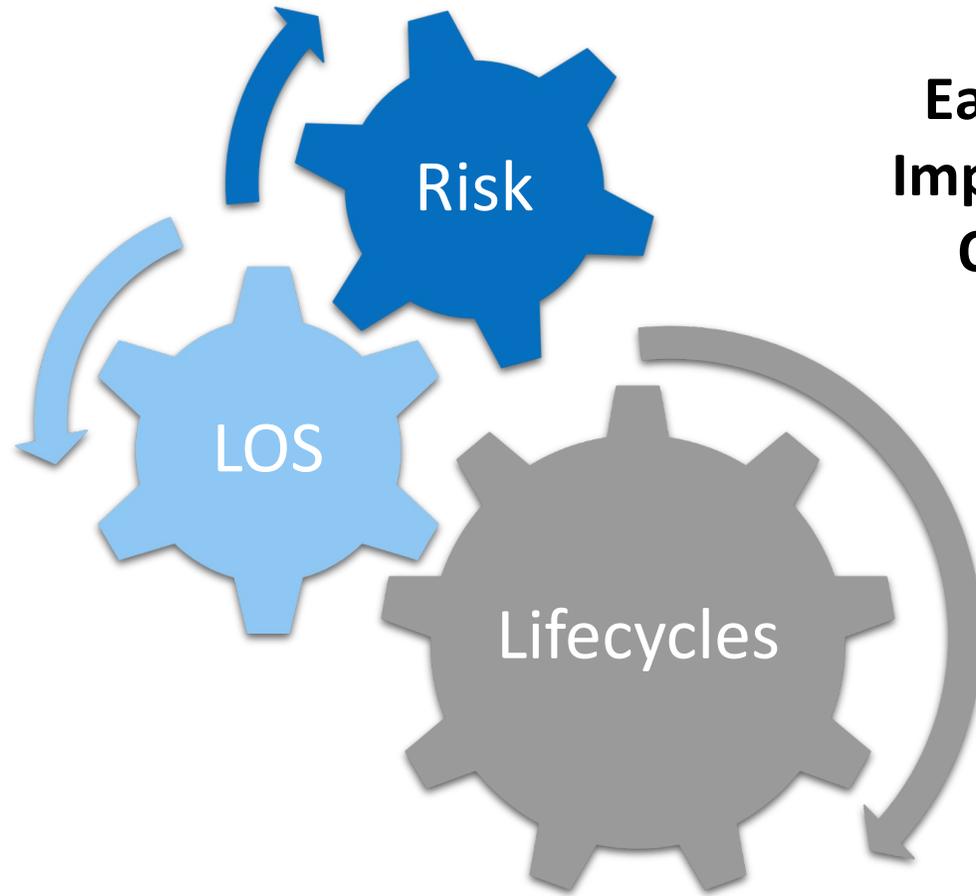


Peel's Corporate Asset Management Strategy



Asset Management Strategy

Making the Connections!



**Each One
Impacts the
Others**





Integration of Green Infrastructure

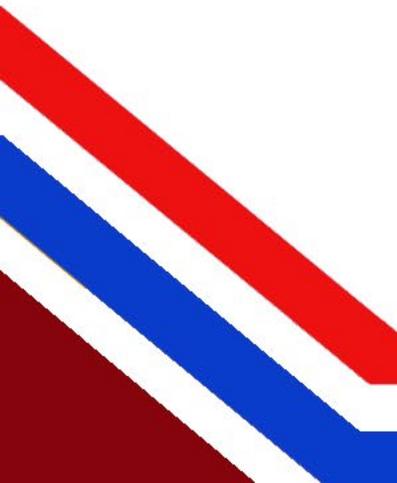


Levels of Service

A defined amount of output for a particular activity or service area against which performance may be measured.

Asset Levels of Service (ALoS)

- What is required of an Asset to provide the Customer Levels of Service (CLOs)
- It is quantifiable, measurable and able to be related back to the asset
- There are two classifications of ALoS;
 - A. Condition ALoS measure
 - B. Performance ALoS measures



Levels of Service Guidelines



1. **Mandatory (regulatory) or discretionary** requirements
2. **Focused on effective & efficient service** delivery to address any or all of the following:
 - Reduce/minimize costs
 - Improve, maintain &/or protect the quality of the service
 - Improve, maintain &/or protect the quantity of the service
3. **Focused on what is necessary** to control/manage the various risks to services
 - Risk cannot be eliminated
4. **Practical & achievable** to manage the risks to services at acceptable/reasonable levels
5. **Data available** to support the measures or will be readily obtainable

Established Levels of Service



Individual Street Trees

- ✓ Maintain a Minimum Overall Condition Rating of C (Fair)

Tree Clusters

- ✓ Maintain a Minimum Overall Condition Rating of C (Fair)

Risk

Consequence
X
Likelihood of Failure

Consequence

- What is the impact of the event?

Probability

- What are the chances of this event occurring?

- ! Remember: Risk can never be eliminated. When using assets to deliver a service, there will always be some risk to asset failure and impact to service delivery.



Risk Boundaries



Residual (Target) Risk

Reasonable Mitigation in place
Asset is Meeting ALOS Targets

Min. Asset Risk to Service



Inherent (Max) Risk

No Risk Mitigation in place
Asset is Failing ALOS Targets

Max. Asset Risk to Service

Risk Boundaries



Potential Risk Event - Compromise to Tree health:

- Severe weather such as high winds, ice storm, heat waves
- Disease spread through invasive species

Risk Boundaries



Consequence of Risk Event

Corporate Risk Evaluation Categories:

- Strategic
- Corporate Image
- Environment
- Health & Safety
- 3rd Party Loss
- Operational
- Financial

Risk Boundaries



Likelihood of Risk Event

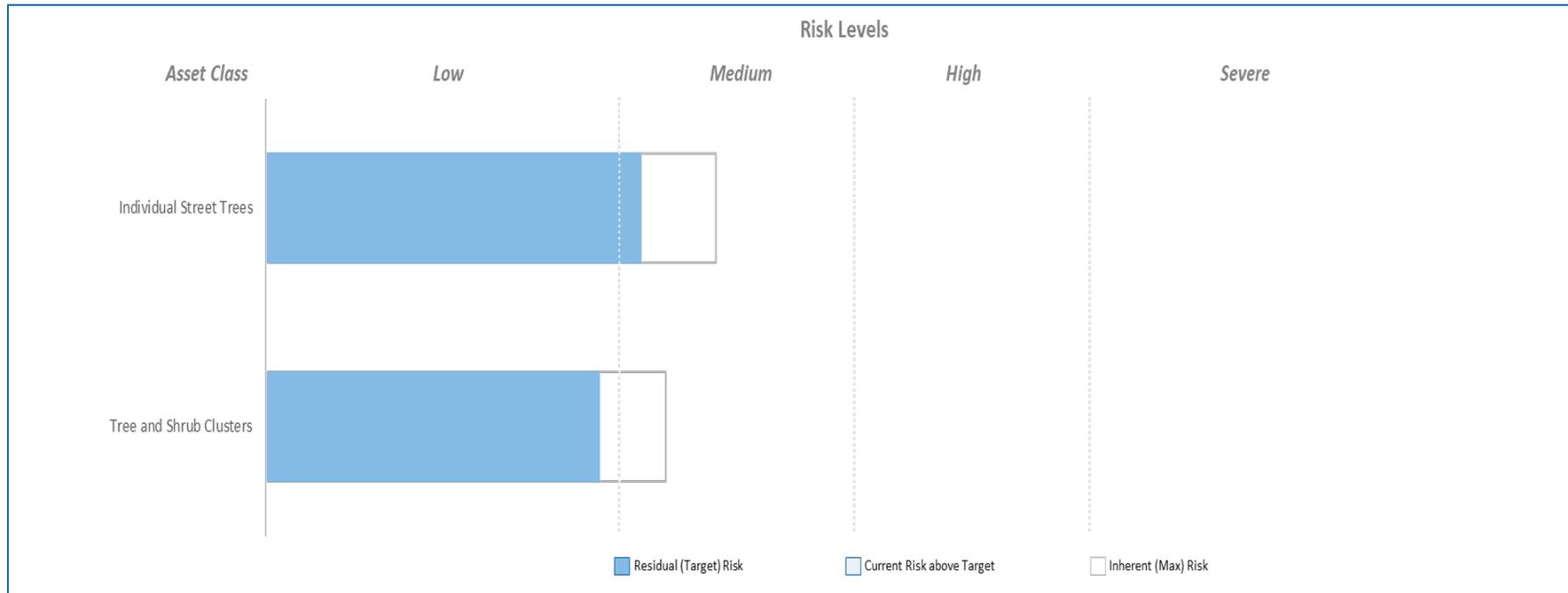
Likelihood at Residual (Target) ALOS:

- Likelihood of a risk event happening at Residual ALOS when:
 - assets are replaced at ESL and
 - all predetermined capital intervention activates are carried out

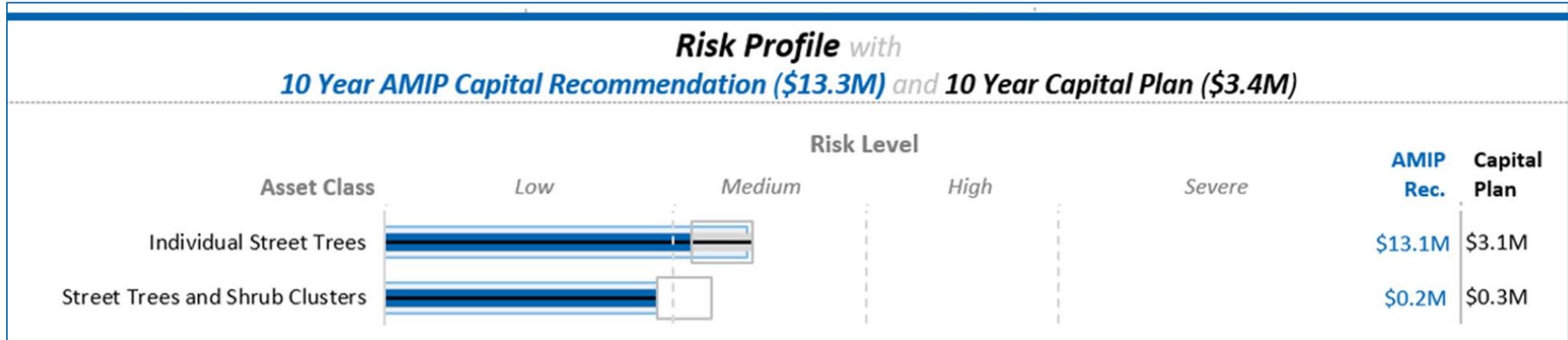
Likelihood at Inherent (Maximum) ALOS:

- Likelihood of a risk event happening at Inherent or ALOS failure point:
 - when assets are not replaced at ESL and
 - predetermined capital intervention activates are not carried out

Risk Profile



Risk Profile





Challenges and Next Steps



Other Levels of Service Measures



Brainstorming: Performance Measure

- Any By-Laws or Legislation requirements (ex. Municipal Act) that apply to our service?
- Any organizational goals identified in the Climate Change Master Plan or Official Plan?
 - Esthetics
 - Air Quality
 - Impact to storm ponds
- Other Levels of Service
 - Percent of trees that have reached maturity (10+ years)
 - Canopy cover
 - Percent of trees in planting areas

Challenges:

- Data availability
- Establishing organizational goals



Ask us Questions

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