Council Education
Asset Management in Niagara Region
Understanding Your Role as a Regional Councillor

November 2024

Council Strategic Priorities

Effective Region

Remaining an employer of choice by transforming service delivery in a way that is innovative, collaborative and fiscally-responsible.

Green and Resilient Region

Focusing on reducing our collective carbon footprint and preparing to adapt to climate change impacts by ensuring current and future infrastructure is resilient.

Equitable Region

Providing opportunities for a safe and inclusive Niagara by listening and responding to our current community needs and planning for future growth.

Prosperous Region

Advocating with senior governments for future growth and enhancing Niagara's transportation network to help support a diverse economy by creating a Region where new and existing businesses can thrive and grow locally, nationally and internationally.

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Asset Management Legislation

Infrastructure for Jobs and Prosperity Act, 2015

Ontario Regulation 558/17: Asset Management Planning for Municipal Infrastructure

Safe Drinking Water Act

Clean Water Act

Environmental Protection Act

Development Charges Act, 1997

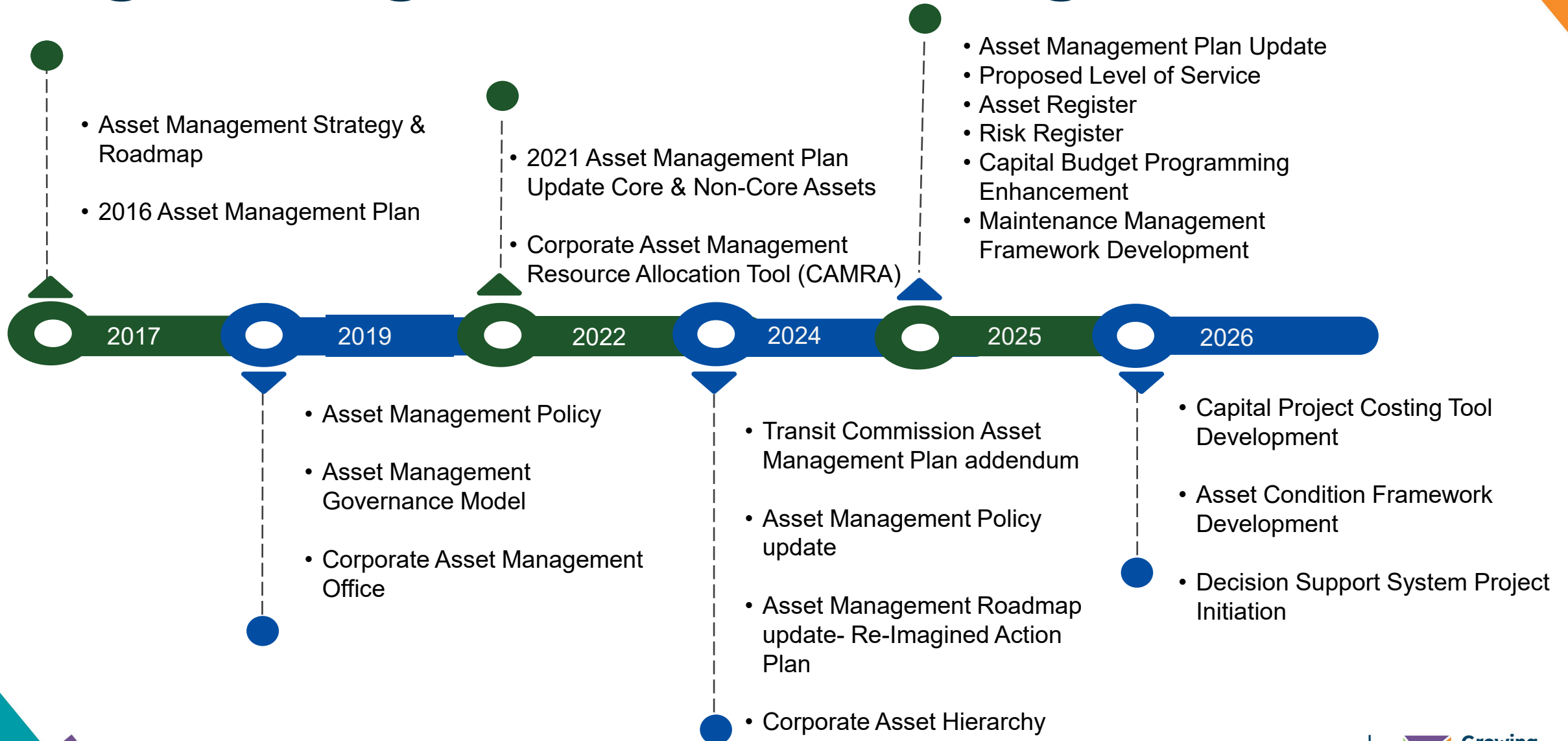Keeping Canada's Economy and Jobs Growing Act, S.C. 2011, c. 24

Provincial Planning Statement, 2024

Other legislative requirements

Canada Community Building Fund (aka Federal Gas Tax Fund)

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Niagara Region's Asset Management

2017
- Asset Management Strategy & Roadmap
- 2016 Asset Management Plan

2019
- Asset Management Policy
- Asset Management Governance Model
- Corporate Asset Management Office

2022
- 2021 Asset Management Plan Update Core & Non-Core Assets
- Corporate Asset Management Resource Allocation Tool (CAMRA)

2024
- Transit Commission Asset Management Plan addendum
- Asset Management Policy update
- Asset Management Roadmap update- Re-Imagined Action Plan
- Corporate Asset Hierarchy

2025
- Asset Management Plan Update
- Proposed Level of Service
- Asset Register
- Risk Register
- Capital Budget Programming Enhancement
- Maintenance Management Framework Development

2026
- Capital Project Costing Tool Development
- Asset Condition Framework Development
- Decision Support System Project Initiation

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Value of Asset Management

Did you know?

- 60% of Canada's core public infrastructure is owned and maintained by municipal governments.

- One-third of municipal infrastructure is in fair, poor, or very poor condition.

- The Canadian Infrastructure Report Card found that "All communities, particularly smaller municipalities, would benefit from increased asset management capacity."

- CIRC 2019

Asset Management Focuses On

- The vision of Niagara Region and how assets support community goals
- Value, purpose, and long-term outcomes of assets
- Managing risks and understanding the context of risks
- Holistic approaches to budgeting
- Collaboration across municipal service areas and with service partners

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Niagara Region Assets Overview

Corporate Asset Management

Core Municipal Infrastructure

Water/Wastewater/Stormwater

Roads / Bridges and Culverts

Non-core Assets

IT, Facilities, Equipment, Fleet, Police, Emergency Medical Services, Children, & Court, Senior Services, Public Health, Community Housing, Transit, Transportation, Waste Management, and Social Assistance & Employment Opportunities

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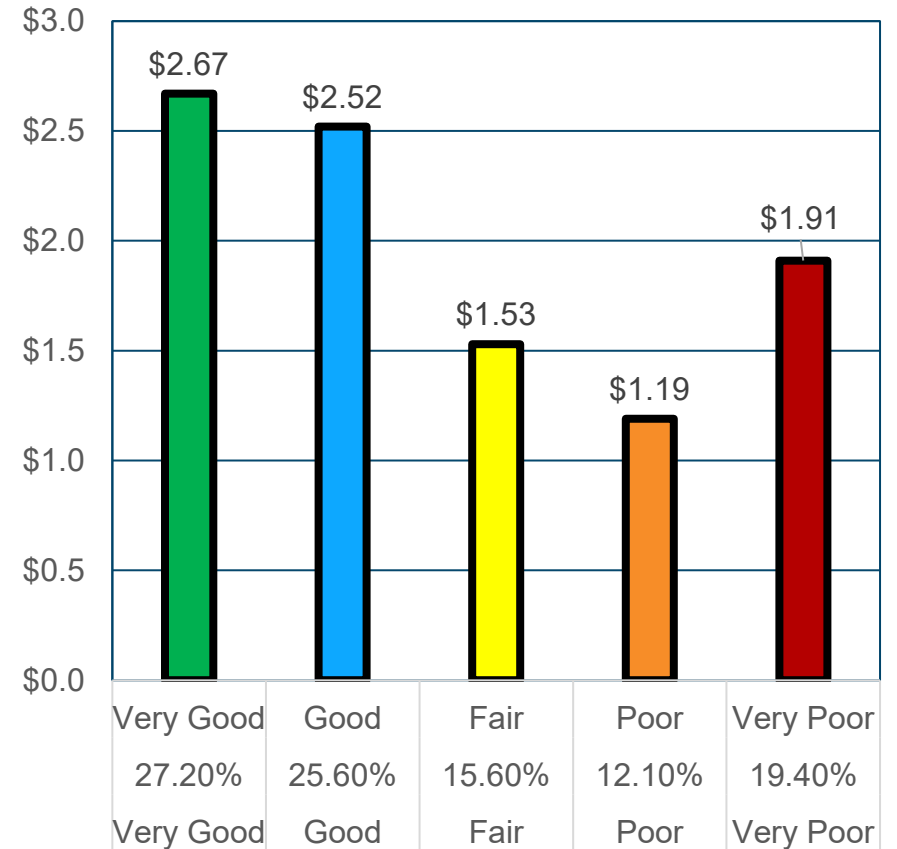# Niagara Region Assets Value

What are our assets worth
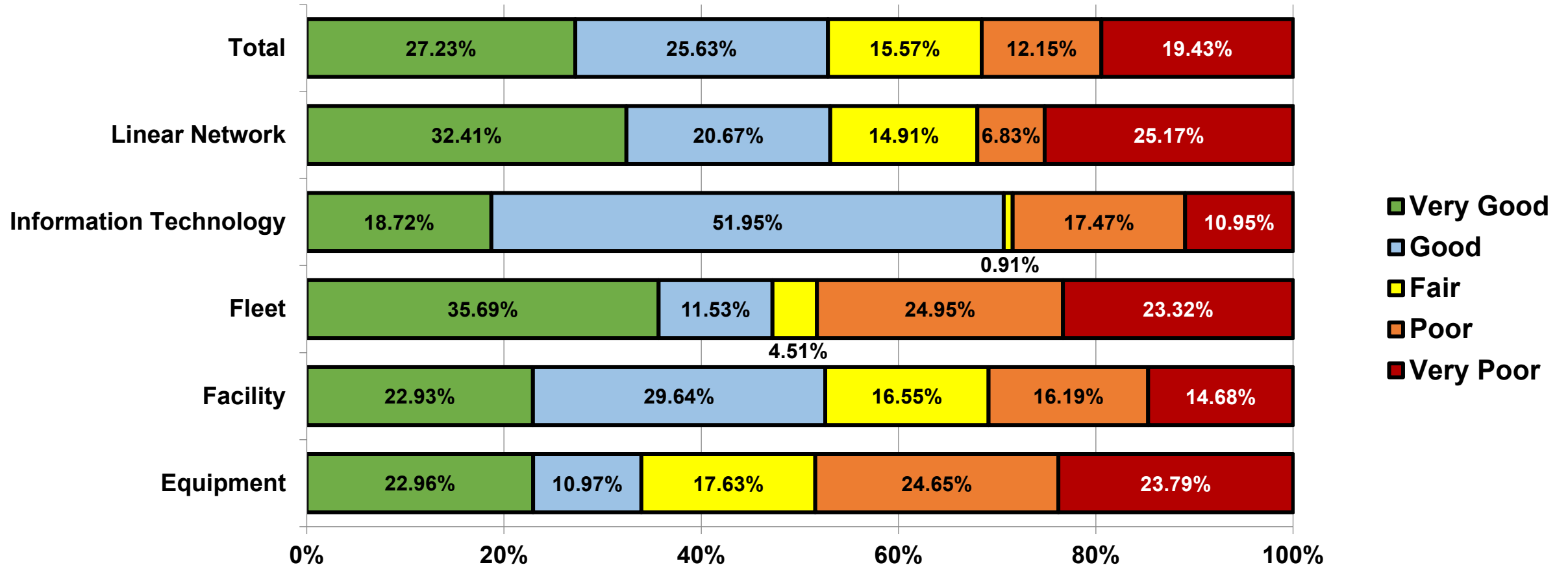
$9.8B

As of Dec 31st, 2021

The Region owns and maintains a significant amount of assets. As of December 31, 2021, The 2021 Corporate Asset Management Plan (2021 CAMP) provides details of maintaining and managing the $9.8 billion in assets replacement value that support the Region's services.

The **Replacement Value** of an asset (also Asset Replacement Cost & Current Replacement Cost) is the cost of replacing an existing asset with a substantially identical new asset or a modern equivalent.

Replacement Value $ Billions

Very Good	Good	Fair	Poor	Very Poor
$2.67	$2.52	$1.53	$1.19	$1.91
27.20%	25.60%	15.60%	12.10%	19.40%
Very Good	Good	Fair	Poor	Very Poor

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What condition are our assets in?

Category	Very Good	Good	Fair	Poor	Very Poor
Total	27.23%	25.63%	15.57%	12.15%	19.43%
Linear Network	32.41%	20.67%	14.91%	6.83%	25.17%
Information Technology	18.72%	51.95%	0.91%	17.47%	10.95%
Fleet	35.69%	11.53%	4.51%	24.95%	23.32%
Facility	22.93%	29.64%	16.55%	16.19%	14.68%
Equipment	22.96%	10.97%	17.63%	24.65%	23.79%

- Asset condition as % of value by asset category

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Niagara Region Core Assets

Niagara Region is responsible for the planning, delivering, maintaining and operating of the Region's core infrastructure, such as Water, Wastewater and Roads Assets.

These activities include:
- Maintaining and operating
- Monitoring asset conditions
- Developing and implementing infrastructure renewal plans through the Asset Management program
- Long Term Planning for growth
- Preparing capital budget by applying Asset Management principles, including CAMRA prioritization, level of service, risk, consequence of failure and optimized decision-making

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Water & Wastewater Infrastructure

Public Works operates and maintains:
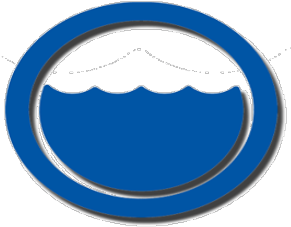
2 "Water Wagons" for the provision of potable water at community events.

Approximately **313+** km of Trunk mains

6 water treatment plants and associated facility assets.

31 outstations, including pump stations, treated water storage facilities, rechlorination facilities, sampling stations, and other facilities, and associated assets.

10 wastewater treatment plants

126 outstations and associated facility assets; outstations include sewage pumping stations, odour control facilities, combined sewer overflow tanks, and a stormwater pumping station.

5 wastewater treatment lagoons

Approximately **145** kilometres of sanitary gravity collection mains.

Approximately **161** kilometres of sanitary force mains.

1 biosolids treatment facility and associated facility assets.

Niagara Region Environmental Laboratory equipment.

Numbers represent quantities

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Transportation and Fleet Assets

Public Works operates and maintains:

1,733 lane kilometres of arterial roads

20,146 trees
1 Fleet Service Centre
585 vehicles

288 traffic signals
18,655 signs
6,295 luminaries

89,085 square meters of bridges

1,785 cross culverts
6,720 driveway culverts

110 kilometres of storm-water sewers

1,276 guide rails
713 retaining walls
13 barriers

241 km of on-road cycling facilities

Numbers represent quantities

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Niagara's Region Non-Core Assets

Information Technology
- **7,515** IT devices, including computers, monitors and mobile devices.
- **579** IT Infrastructure devices and equipment.
- **333** software and applications.

Owned Corporate Facilities
- Niagara Region Headquarter
- The Environmental Centre
- Niagara Falls Public Health Satellite Office

Court Services
- **1** provincial offences court.

Public Health
- **1** Public Health Satellite Office

Emergency Medical Services
- **13** ambulance bases
- **82** vehicles
- **368** emergency medical equipment

Police Services
- **98** pieces of equipment for patrol.
- **103** IT-related devices.
- **340** vehicles
- **1** Headquarter.
  - ✓ **6** divisional districts.
  - ✓ **1** tactical unit
  - ✓ **1** training centre.
  - ✓ **1** fleet service centre

Community Housing
- **9** high-rise residential buildings.
- **20** low-rise residential buildings.
- **12** townhouses.
- **20** single/semi houses.

Senior Services
- **9** Long-Term Care Facilities
- **2,043** equipment, including beds, resident care equipment and medical equipment.
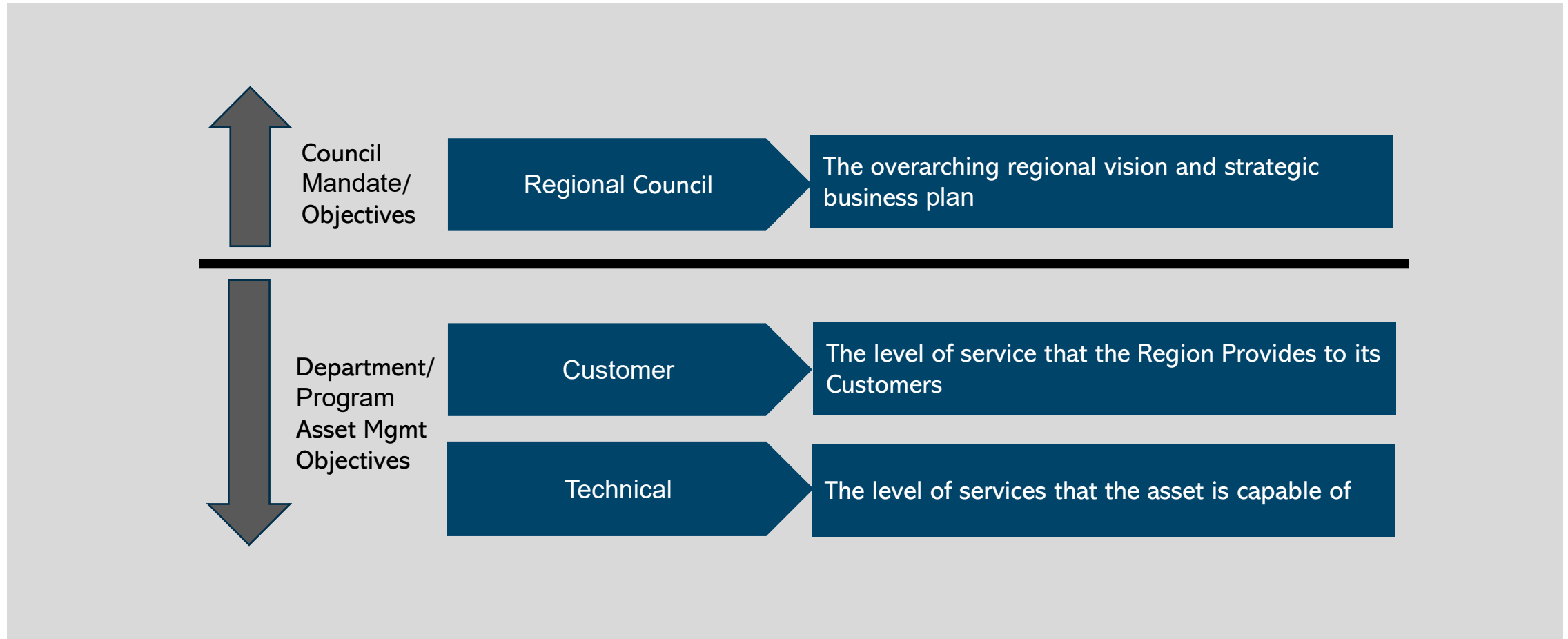
Children Services
- **4** Region-owned daycare facilities.

Social Assistance and Employment Opportunities (SAEO)
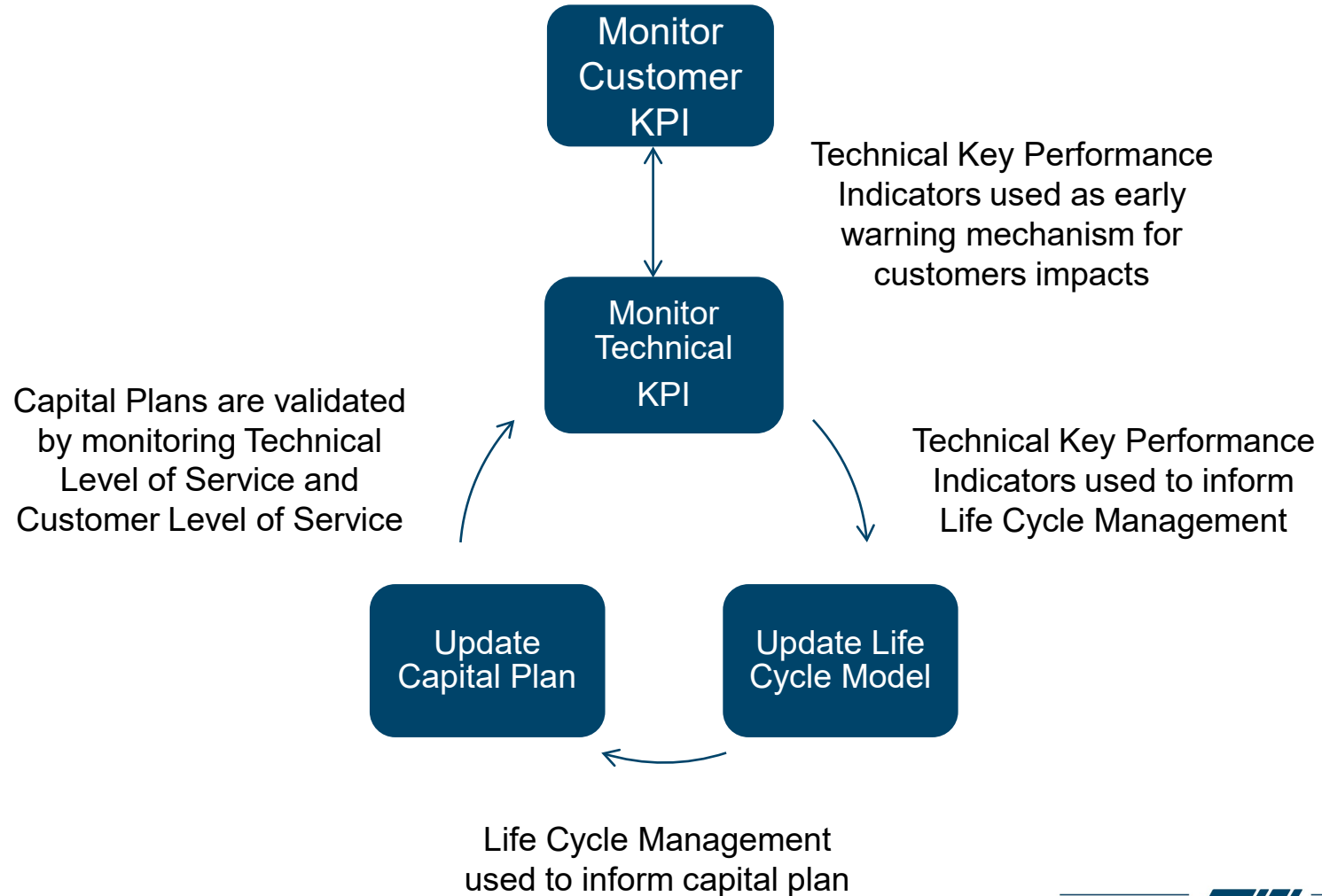- **2** Social Assistance and
- Employment offices.

Numbers represent quantities

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Customer Level of Service

Council Mandate/ Objectives

Regional Council → The overarching regional vision and strategic business plan

Department/ Program Asset Mgmt Objectives

Customer → The level of service that the Region Provides to its Customers

Technical → The level of services that the asset is capable of

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Technical Level of Service
Key Performance Indicators

```
         ┌──────────────┐
         │   Monitor    │
         │   Customer   │
         │     KPI      │
         └──────────────┘
                ↕
         ┌──────────────┐          Technical Key Performance
         │   Monitor    │          Indicators used as early
         │   Technical  │          warning mechanism for
         │     KPI      │          customers impacts
         └──────────────┘

Capital Plans are validated                Technical Key Performance
by monitoring Technical                    Indicators used to inform
Level of Service and                       Life Cycle Management
Customer Level of Service

   ┌──────────────┐    ┌──────────────┐
   │   Update     │    │  Update Life │
   │ Capital Plan │    │ Cycle Model  │
   └──────────────┘    └──────────────┘

              Life Cycle Management
              used to inform capital plan
```

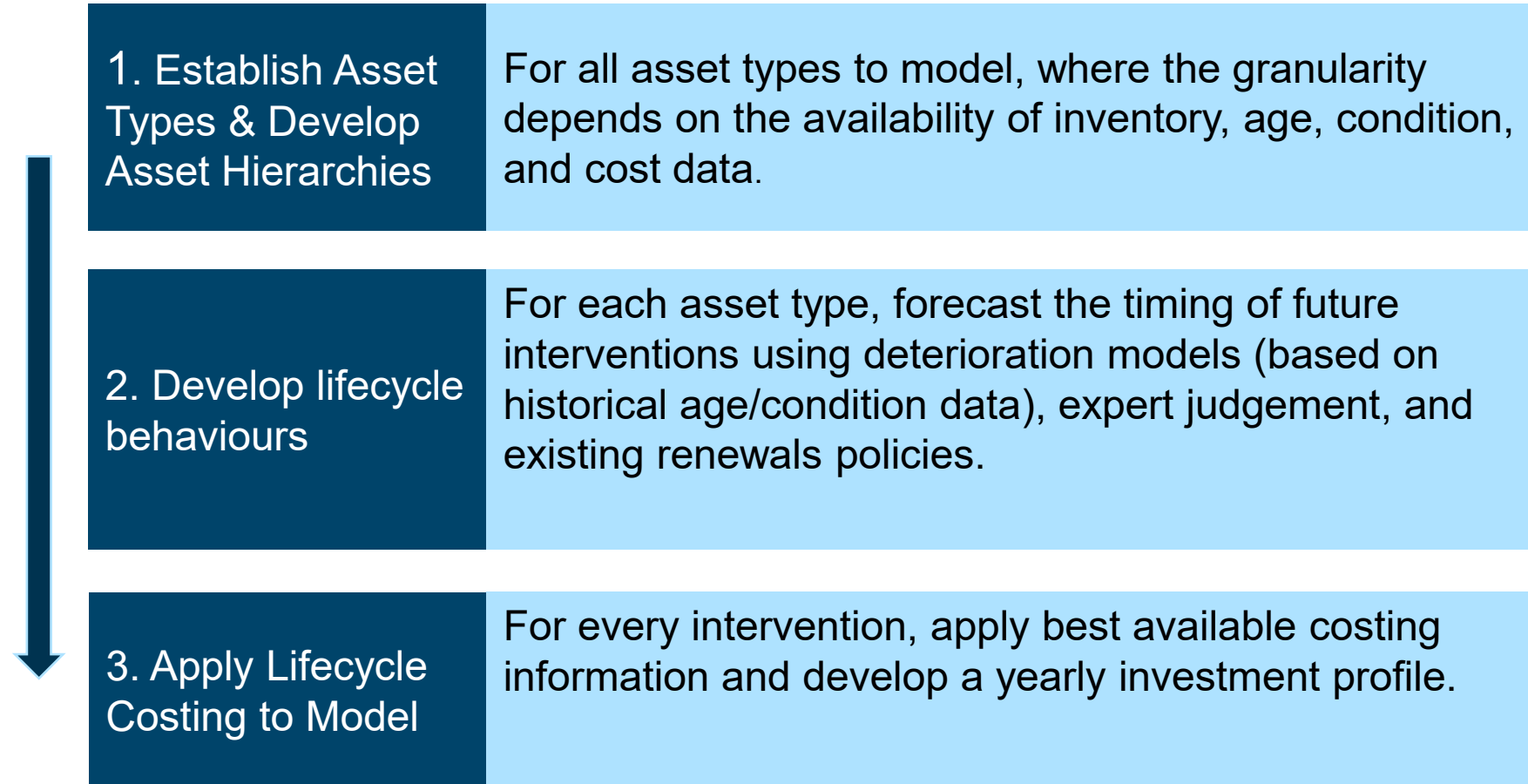Niagara Region

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Typical Levels of Service and Key Performance Indicators Transportation Example

Customer Level of Service	Program Customer Objective	Asset Class	Technical Level of Service	Key Performance Indicator
Safety & Reliability	Safe and efficient movement of people and goods into and within the Region and neighbouring municipalities	Road Network	For paved roads, average pavement condition index value	Average pavement condition index =68
Safety & Reliability	All traffic is supported by regional bridges and culverts	Bridges/Culverts	The average bridge condition index	Average bridge condition index = 69 Average culvert condition index = 70

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Lifecycle Modelling

1. Establish Asset Types & Develop Asset Hierarchies	For all asset types to model, where the granularity depends on the availability of inventory, age, condition, and cost data.
2. Develop lifecycle behaviours	For each asset type, forecast the timing of future interventions using deterioration models (based on historical age/condition data), expert judgement, and existing renewals policies.
3. Apply Lifecycle Costing to Model	For every intervention, apply best available costing information and develop a yearly investment profile.

Model Development Process

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Risk Management

Risk Scoring Approach

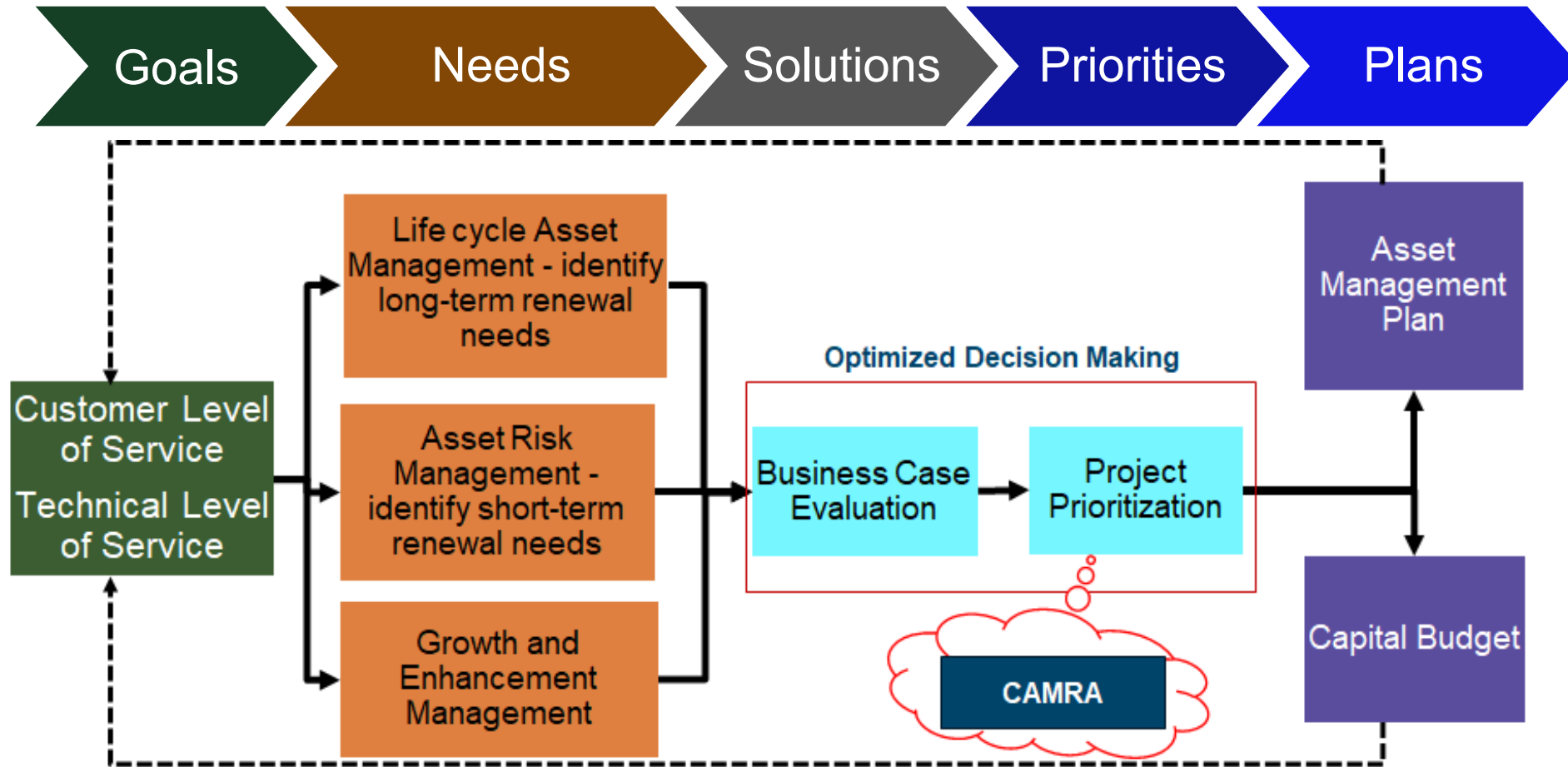| Likelihood					
1.00	🟩	🟨	🟥	🟥	🟥
0.50	🟩	🟨	🟨	🟥	🟥
0.33	🟦	🟩	🟨	🟨	🟥
0.20	🟦	🟦	🟩	🟨	🟨
0.10	⬜	🟦	🟦	🟩	🟩
	10	20	40	80	160

Consequence

Risk Management Approach

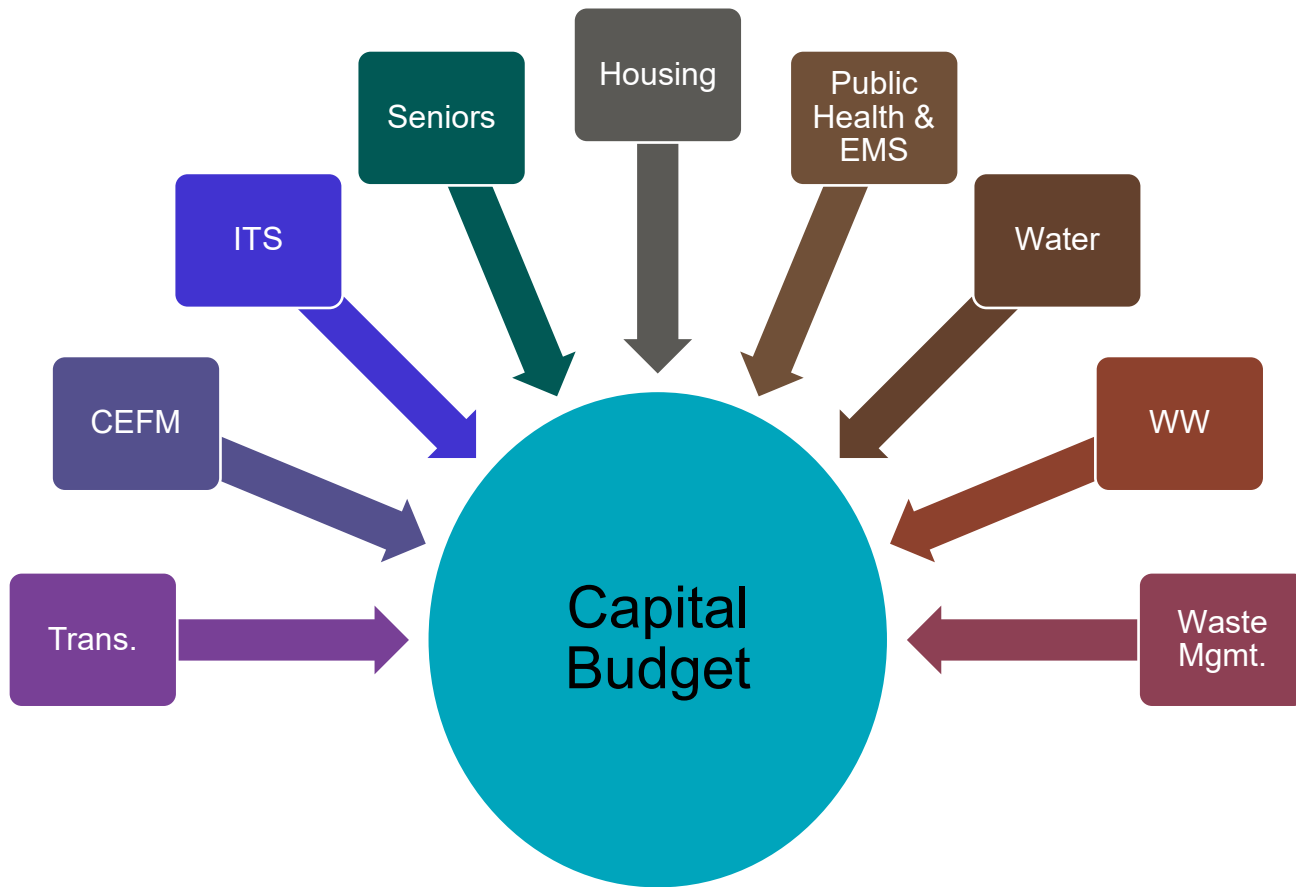|		
🟥	Extreme Risks	Significant to the Region and therefore need to be actively managed (i.e. identify capital renewal options, confirm spares strategy & available redundancy, & review monitoring programs).
🟨	High Risks	Will also be actively managed depending on their nature.
🟩	Moderate Risks	
🟦	Low Risks	Generally acceptable without significant mitigation strategies being implemented, although monitoring may still occur in some form.
⬜	Insignificant Risks	

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Relating Asset Risk to Level of Service

Customer LOS

- **Service Attributes include:**
  - Affordability
  - Health and Safety
  - Availability/Reliability
  - Suitability
  - Environmental Sustainability
  - Responsiveness
  - Timeliness

Corporate LOS

- **Consequence Categories include:**
  - Effective Region
  - Green and Resilient
  - Equitable Region
  - Prosperous Region

Technical LOS

- **Factors include:**
  - Technical objectives,
  - performance measures,
  - Targets

Legislated LOS

- **Legislated Requirements and Standards:**
  - Service and asset safety and reliability
  - Compliance monitoring and reporting.

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Optimized Decision Making within Asset Management Framework

Why CAMRA?

The diagram shows multiple department boxes pointing arrows toward a central "Capital Budget" circle: Seniors, Housing, Public Health & EMS, ITS, Water, CEFM, WW, Trans., Waste Mgmt.

- Annual capital needs far surpass available funding
  - Funding gap (AARI shortfall) is growing
    - 2016 - $73M
    - 2021 - $193M
- Formalized method to prioritize spending required
- Data-supported decision making

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Focus of CAMRA

CAMRA has 2 components

Risk	Council Priority

☐ Risk = PoF * CoF It is measured with 5 weighted criteria under the triple bottom line

☐ Risk ROI = Risk / Net project cost

☐ Projects alignment with Council Strategic Priorities

☐ Represents value to the Region from an opportunity (non-risk)

Applying results for prioritization

1 Risk return on investment (ROI) funded primarily through Base budget
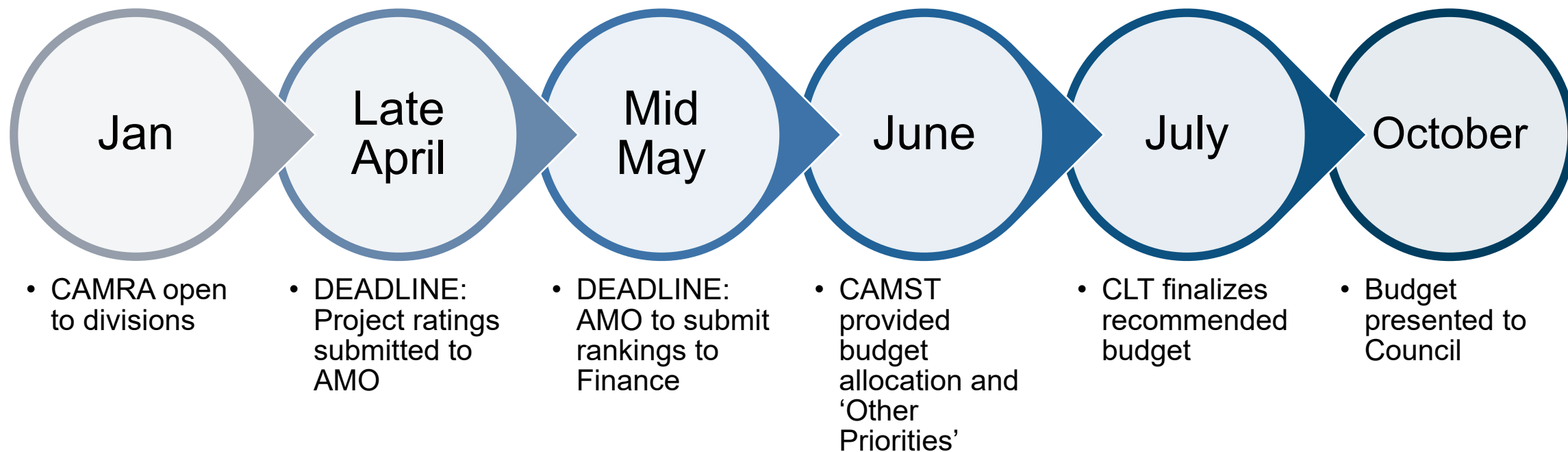
2 Council Priority, Other Priority and Risk ROI funded through Discretionary budget

3 CLT evaluates results and makes final budget recommendation to Council for approval

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2025 Budget CAMRA Timelines

Jan
- CAMRA open to divisions

Late April
- DEADLINE: Project ratings submitted to AMO

Mid May
- DEADLINE: AMO to submit rankings to Finance

June
- CAMST provided budget allocation and 'Other Priorities'

July
- CLT finalizes recommended budget

October
- Budget presented to Council

Finance's Capital Budget timelines direct remaining timelines

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Keeping Council Informed

Type of Communication	Frequency/Timing
Budget	Annually
Asset Management Program Update	Annually
Asset Management Plan	4 years
Asset Management Policy	5 Years
Drinking Water Financial Plan	8 Years

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Key Documents

Asset Management legislation, specifically Ontario Regulation 558/17, is available on the Ontario Government e-Laws website (https://www.Ontario.ca/laws)
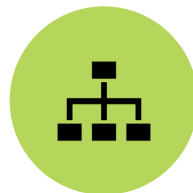
Asset Management Policy C-F-024 -vine

Capital Asset Management Policy C-F-003- vine.

CAMRA Process- vine

Capital Financing Policy - vine

Asset Management Plan- Niagara Region website

Asset Management Governance embedded in the Policy- vine

Asset Management Steering Committee ToR- embedded in the Policy- vine

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Contacts

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