



# **ASSET MANAGEMENT PLAN 2021**

# Table of Contents

ENDORSEMENT .....	4
HOW THIS PLAN IS ORGANIZED .....	5
TOTAL MUNICIPAL ASSET VALUES .....	6
WATER AND SEWER .....	7
STREETSCAPES.....	8
FACILITIES .....	8
RISK MATRIX.....	10
SOURCES OF CAPITAL FUNDING.....	11
RECOMMENDATIONS.....	12
Watermain Asset Management Report Card.....	13
Watermain: Condition, Assessment & Levels of Service.....	14
Pumping Stations Asset Management Report Card.....	16
Pumping Stations: Condition, Assessment & Levels of Service.....	17
Storm Sewers Asset Management Report Card.....	19
Storm Sewers: Condition, Assessment & Levels of Service.....	20
Sanitary Sewers Asset Management Report Card .....	22
Sanitary Sewers: Condition, Assessment & Levels of Service .....	23
Storm Pond Management Asset Management Report Card .....	26
Storm Pond Management: Condition, Assessment & Levels of Service .....	27
Pollution Control Asset Management Report Card.....	28
Pollution Control: Condition, Assessment & Levels of Service .....	29
Bridges and Culverts Asset Management Report Card .....	31
Bridges and Culverts: Condition, Assessment & Levels of Service.....	32
Roads Asset Management Report Card .....	33
Roads: Condition, Assessment & Levels of Service .....	34
Traffic Signals Asset Management Report Card.....	37
Traffic Signals: Condition, Assessment & Levels of Service.....	38
Streetlights Asset Management Report Card.....	39
Streetlights: Condition, Assessment & Levels of Service .....	40
Fleet Asset Management Report Card .....	41
Fleet: Condition, Assessment & Levels of Service.....	42
Municipal & Facility Parking Lots, Paved Trails & Public.....	43
Municipal & Facility Parking Lots, Paved Trails & Public Lanes: Condition, Assessment & Levels of Service.....	44

City Owned Buildings Asset Management Report Card.....46

City Owned Buildings: Condition, Assessment & Levels of Service.....47

Housing Corporation Properties Asset Management Report Card.....49

Housing Corporation Properties: Condition, Assessment & Levels of Service.....50

Airport Asset Management Report Card.....52

Airport: Condition, Assessment & Levels of Service .....53

Playgrounds Asset Management Report Card .....55

Playgrounds: Condition, Assessment & Levels of Service .....56

Outdoor Recreation Facilities Asset Management Report Card.....57

Outdoor Recreations Facilities: Condition, Assessment & Levels of Service .....58

# ENDORSEMENT

We are pleased to update the Asset Management Plan for the City of St. Thomas. This plan serves as a strategic, tactical, and financial document, ensuring the management of the municipal infrastructure follows sound asset management practices and principles, while optimizing available resources and establishing desired levels of service.

The performance of our community's infrastructure provides the foundation for its economic development, competitiveness, prosperity, reputation, and the overall quality of life for its residents. I believe that this asset management strategy will elevate *Our Community, Our Future, Our St. Thomas*.

Sincerely,

Wendell Graves, City Manager

# HOW THIS PLAN IS ORGANIZED

There are **17 major asset classes** that in total are worth **\$1.183B** that are looked after by the City of St. Thomas.

The following pages show summaries of the total assets owned by St. Thomas, the average condition, the annual funding deficit, and the back logged work (often called the infrastructure gap). While St. Thomas has some infrastructure deficit and gaps, it still compares well to most Canadian cities.

The municipal assets are portrayed in a series of infographics that conveying a snapshot of the current state of the City's infrastructure. There are infographics for the overall asset value and then each of the 3 main categories: Water and Sewer, Streetscapes, and Facilities.

A risk matrix portraying the relative order of the 17 asset classes in terms of likelihood and consequence is then shown to guide decisions.

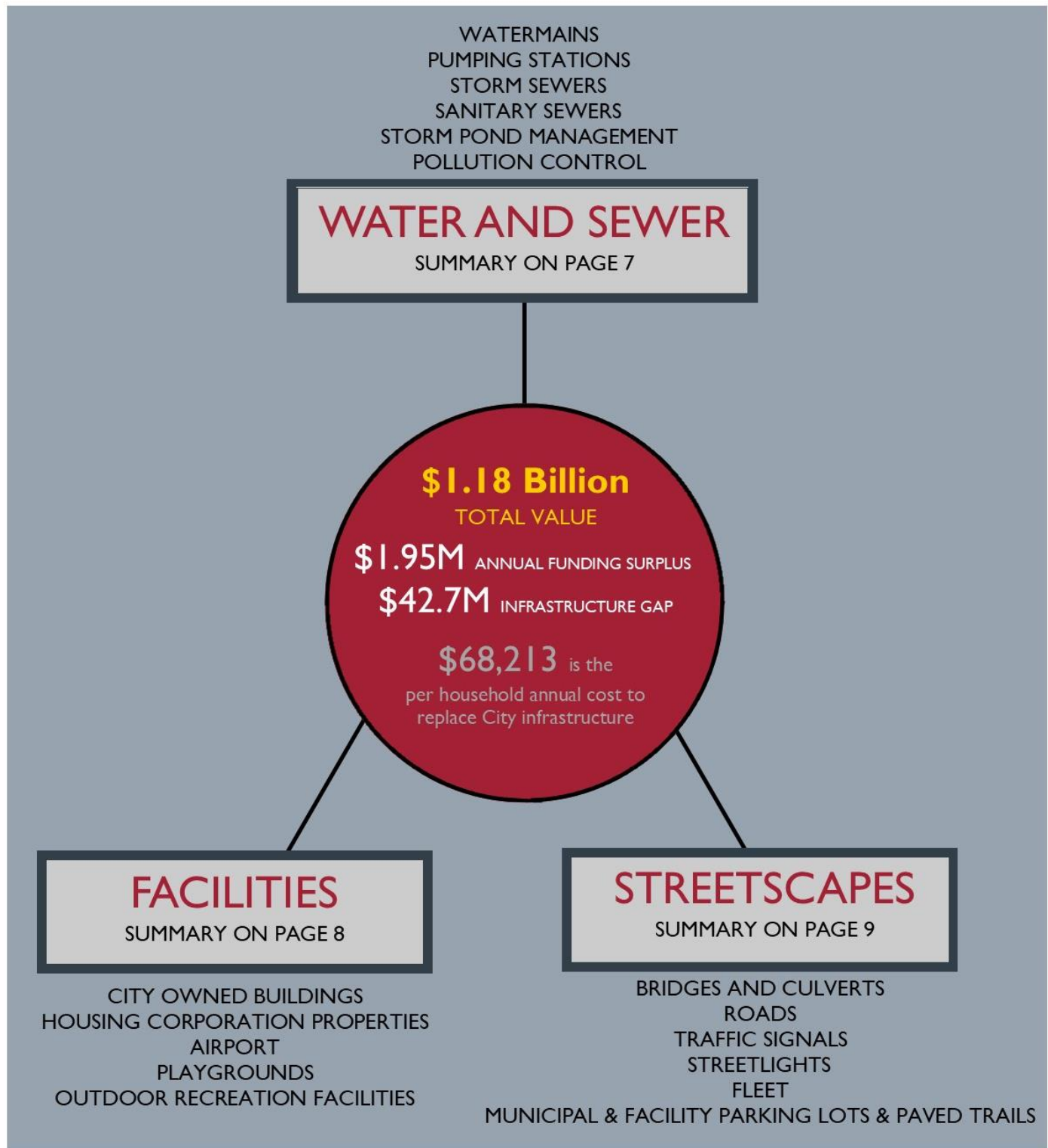
A financial plan shows how much we have been spending and then illustrates how much we should be spending. The various sources of financing are discussed in terms of their sustainability and preferred use.

Next, each asset has its own detailed asset report card describing condition, Canadian average condition, condition trend, historical funding, infrastructure surplus/deficit, and infrastructure gap.

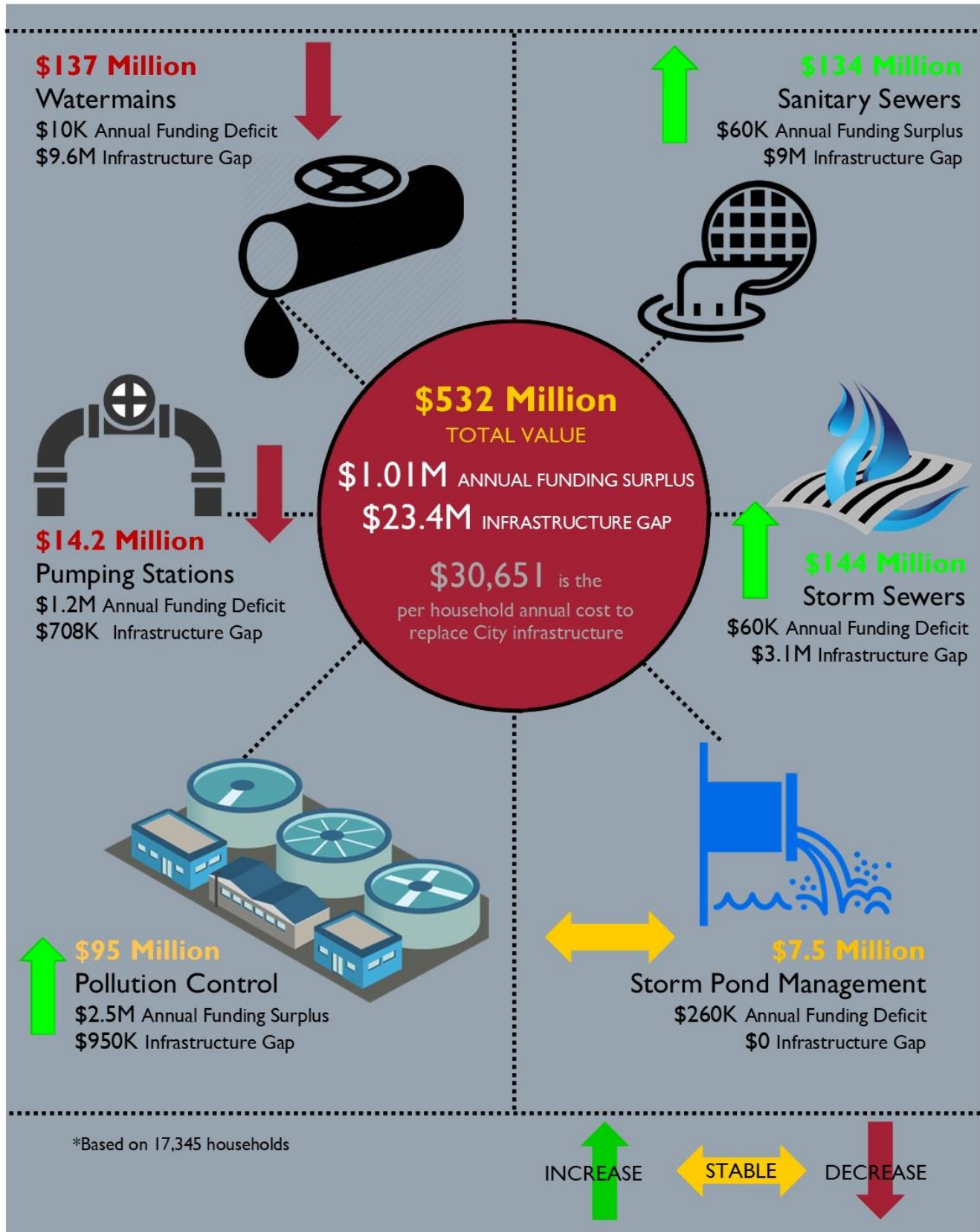
Finally, there are asset descriptions, age distributions, staff assigned to manage the asset, condition assessment methodology; process to develop capital plans, existing levels of service, lifecycle management activities, and finally the proposed levels of service.

This plan is developed in accordance with the requirements as set out in Ontario Regulation 588/17: Asset Management Planning for Municipal Infrastructure under the *Infrastructure for Jobs and Prosperity Act, 2015*.

# TOTAL MUNICIPAL ASSET VALUES

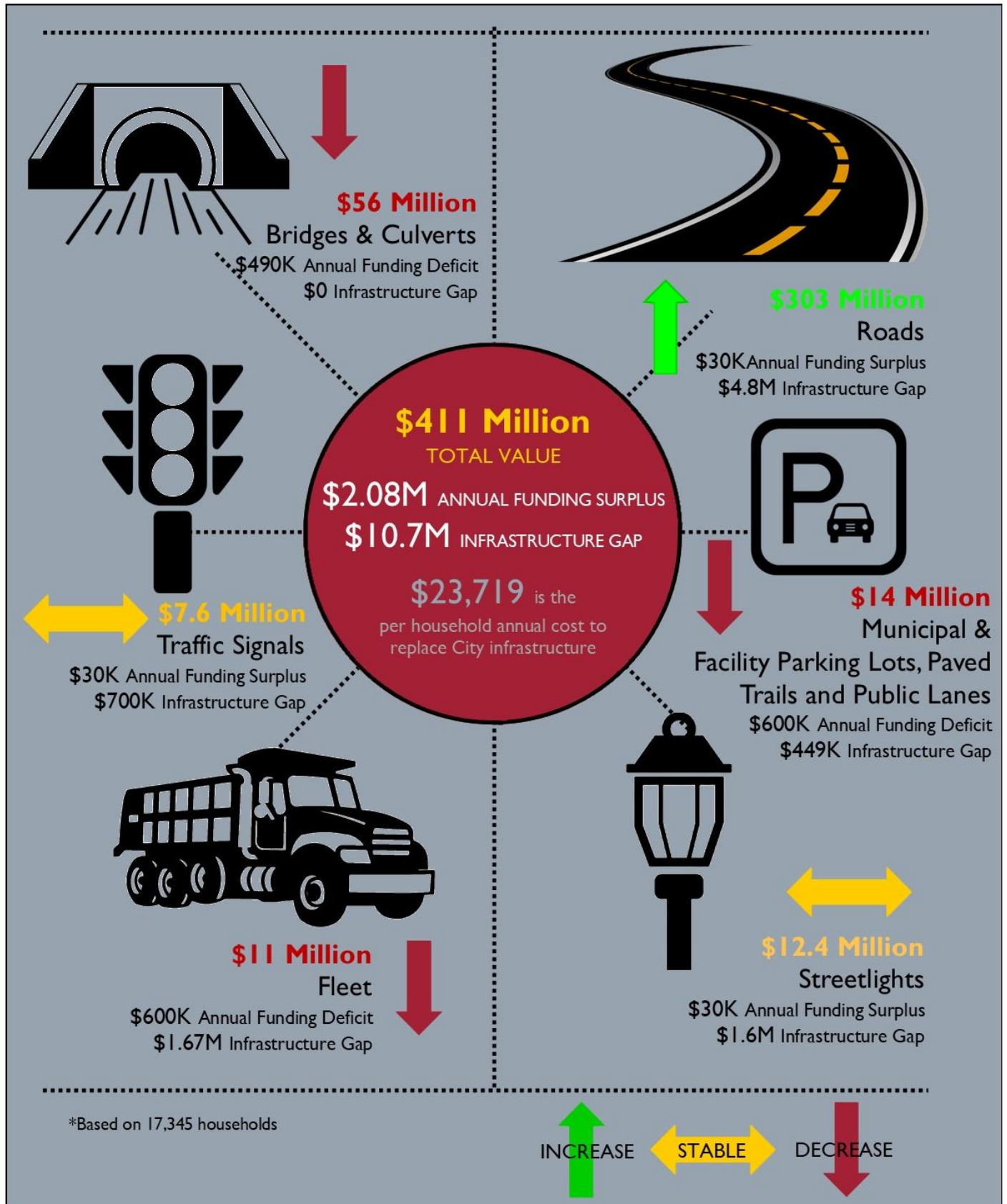


# WATER AND SEWER



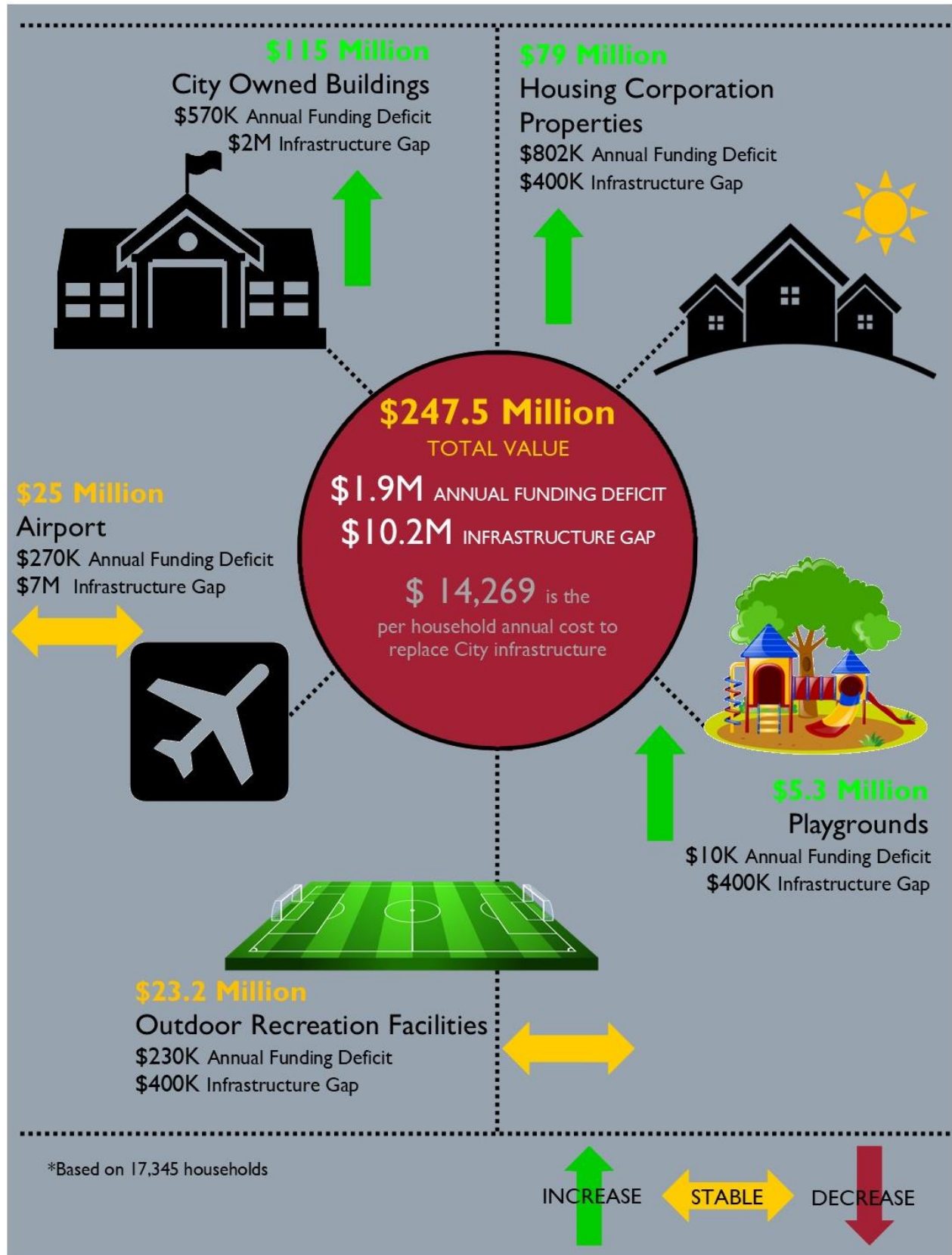


# STREETSCAPES



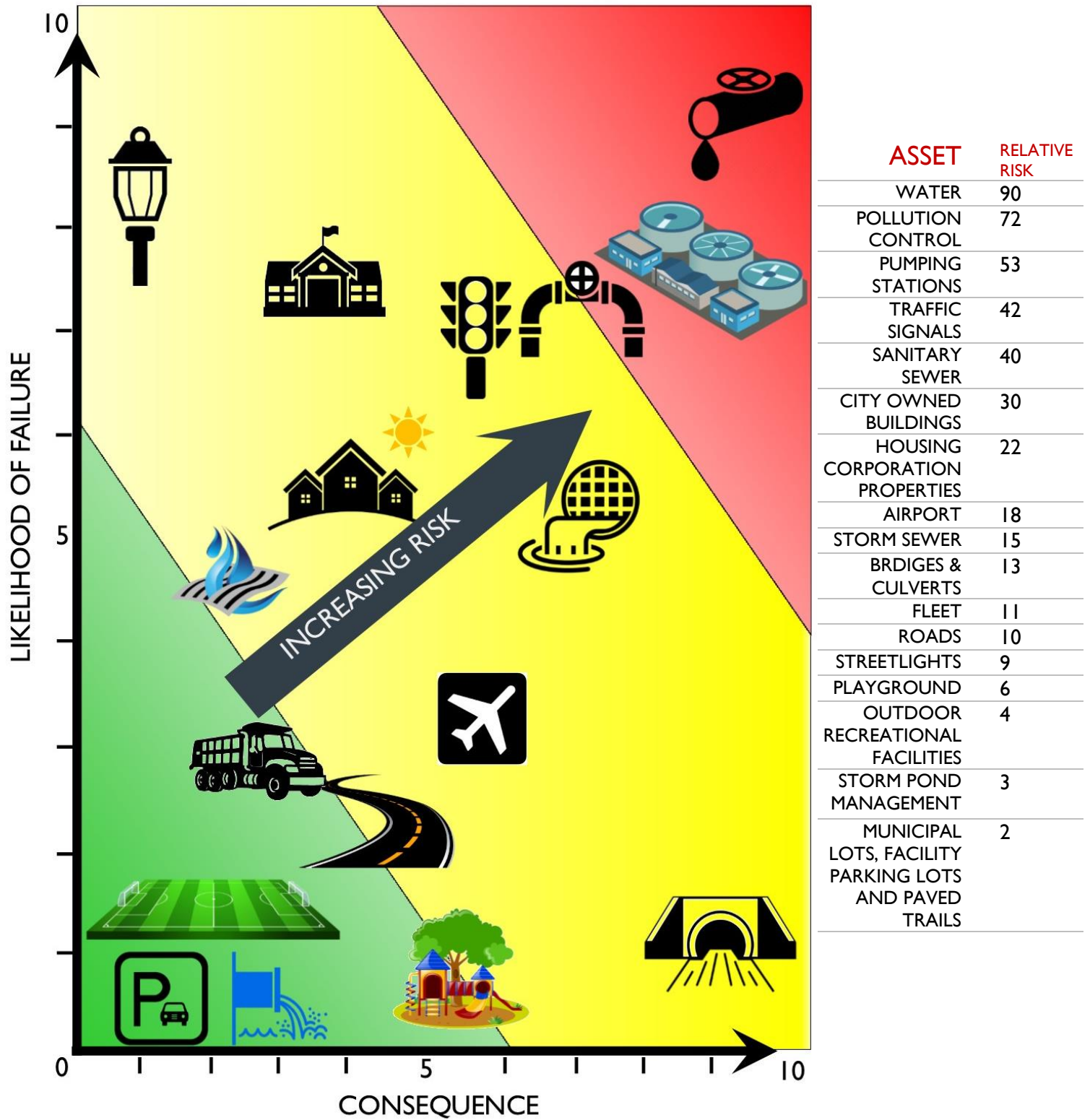


# FACILITIES



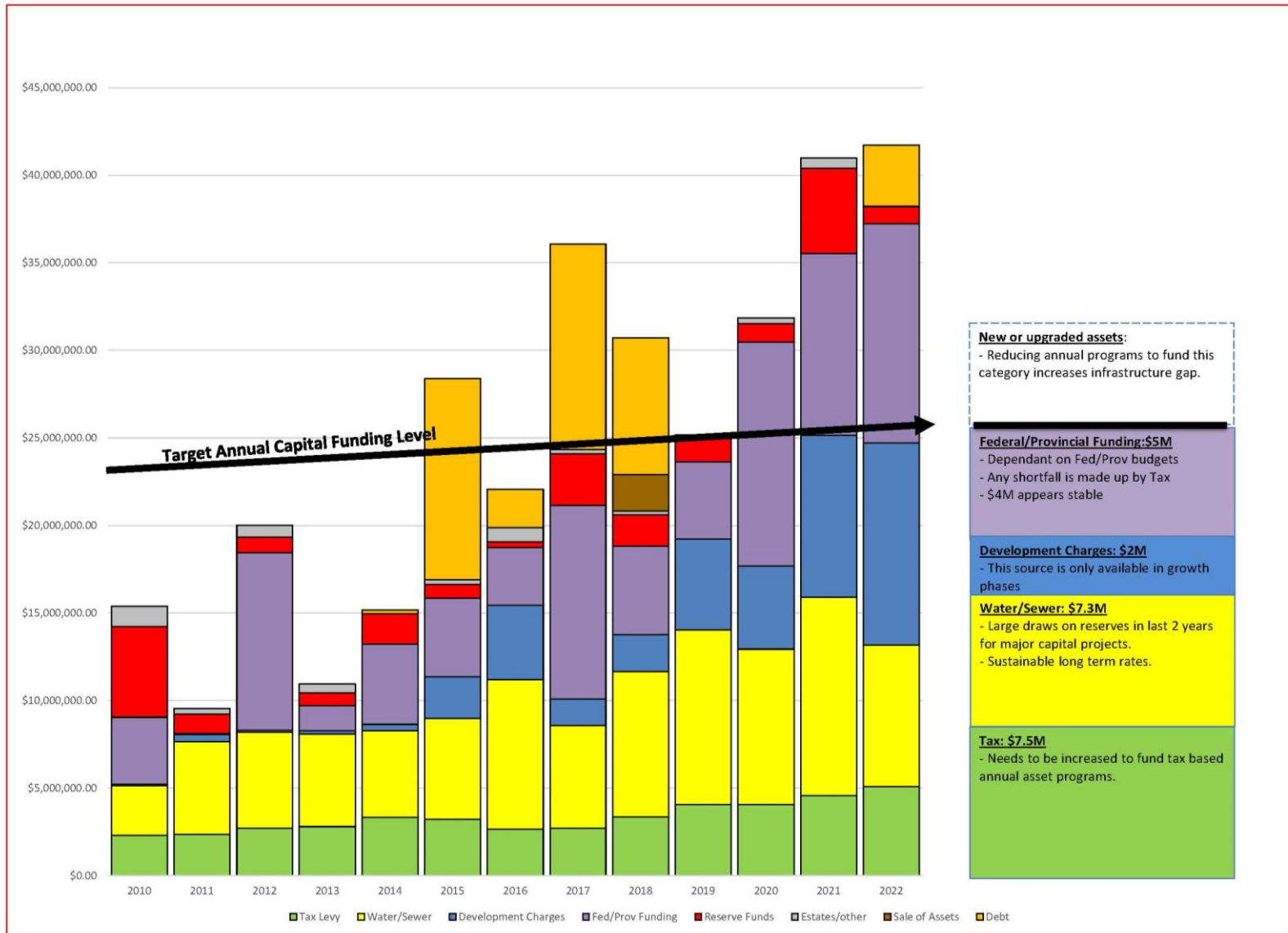
# RISK MATRIX

This Risk Matrix can be used to prioritize choices in capital budgeting and daily operations. It is not recommended to make large shifts as neglecting an asset can lead to a compounded financial risk.



# SOURCES OF CAPITAL FUNDING

The chart below illustrates approved capital budgets from 2010 to 2020 broken down into the sources of financing. The target annual capital funding was calculated using each detailed asset report card and shown in a gradually increasing slope due to population growth. The wide column on the right illustrates the ideal sustainable funding from each source.



# RECOMMENDATIONS

## Financial:

- Increase tax based capital from current \$5.0M to \$10M over next decade
- Monitor and prepare for reduced provincial and federal funding
- Reduce number and value of assets where possible
- Ensure development charges fully fund growth
- Don't expand levels of service until we understand and accept the long term operating cost
- Continue sustainably funding Sewer and Water assets through planned rate increases
- Do not rely on Estates, Selling of Assets, or Reserves as sustainable sources

## Council and Community:

- Prioritize annual funding increases to assets with the largest 5-year average infrastructure deficits including Roads, City Housing Properties, and City Owned Buildings.
- City programs and decisions should focus on the lowest net societal cost which includes capital, operating, user fees, and private costs.
- Don't build new facilities until we understand and accept the long term operating costs
- Consider operating costs when increasing levels of service.
- Improve accessibility to the Library by investing in the Justice Parking Lot adjacent to the Library.

## Administrative:

- Publish asset management plan annually to aide staff, council and the community in financial decisions.
- Create individual Annual Asset Projects for each of the 17 assets.
- Staff asset owners should only request the minimum funding required to achieve levels of service.
- Every asset needs a 10 year plan that is updated annually to minimize unplanned projects.
- Use risk matrix, which includes likelihood and consequence of asset failure, to prioritize spending choices.

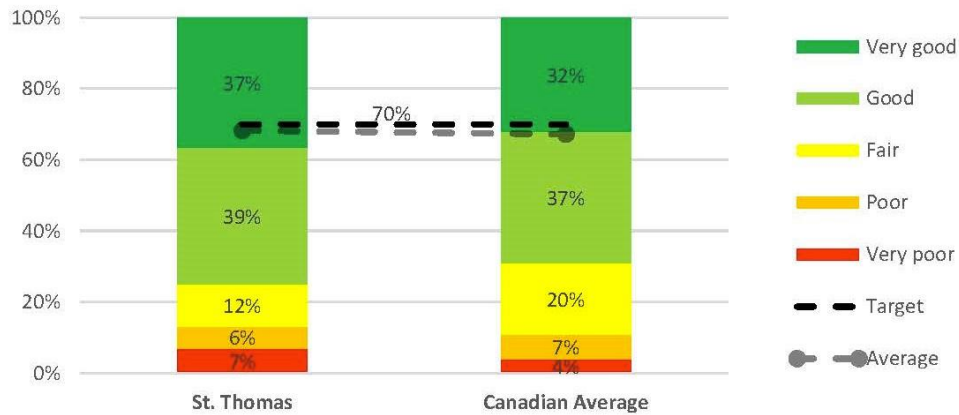
## Future enhancements to Asset Management Plan:

- Create and share 10 year plans for those assets that aren't currently included in this plan.
- Continue to perfect condition assessments and databases.
- Use 5 year averages to calculate funding as individual years move up and down with large projects.

# Watermain Asset Management Report Card

219 kilometres - \$137,000,000 (\$7900/household)

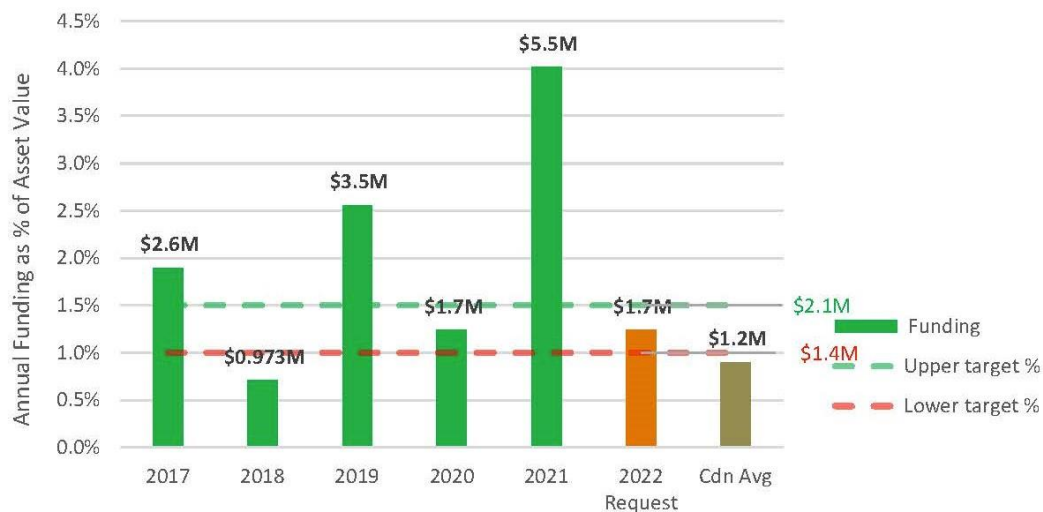
## Asset Condition 0-100



## Condition Trend

2019	2020	2021	Target	Trend
71	70	68	70	↓

## Funding (5 Year Historical)



Infrastructure Gap - \$9,600,000 (\$553/household)

Annual Funding Deficit - -\$10,000 (\$-1/household)

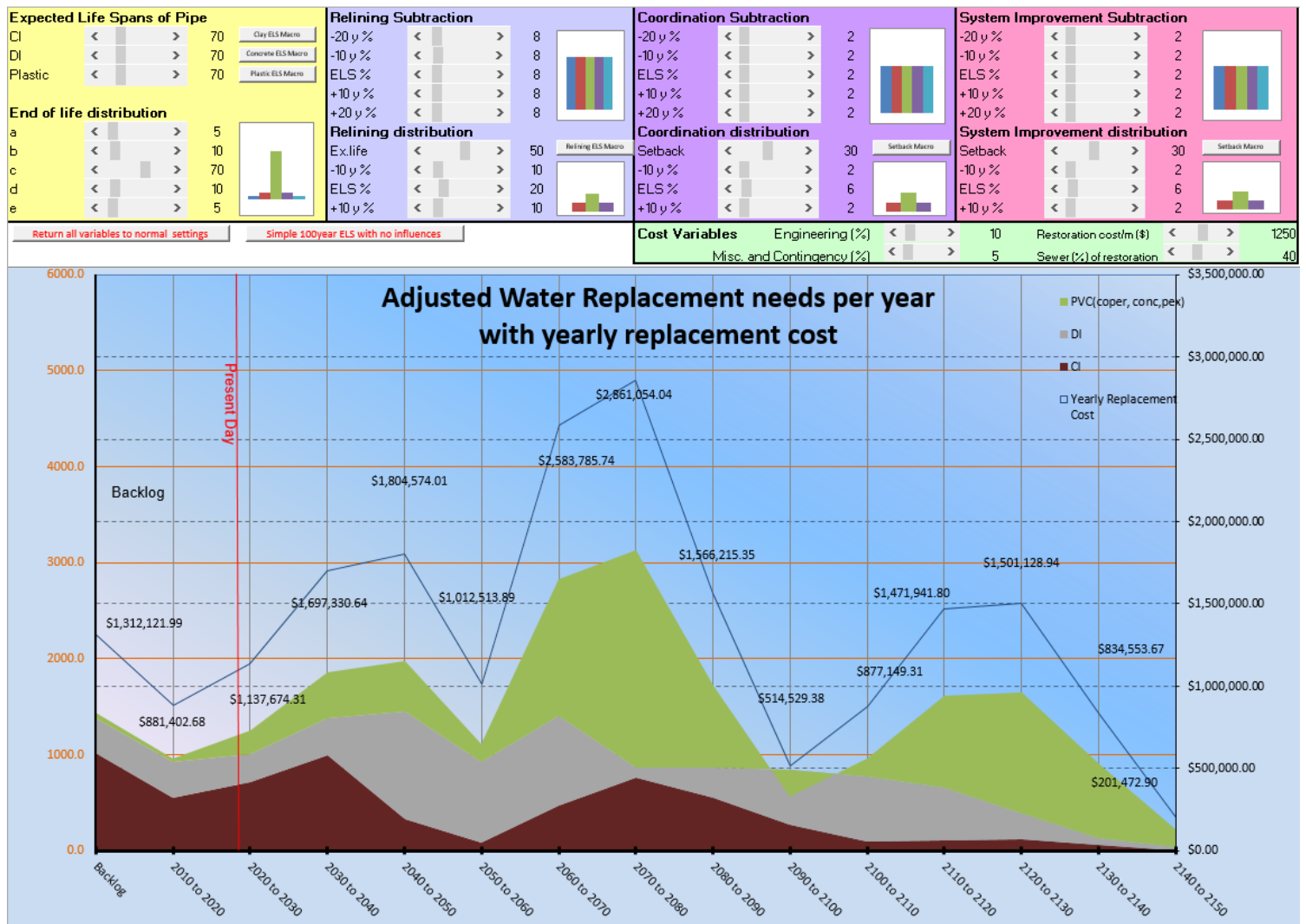


# Watermain: Condition, Assessment & Levels of Service

## Asset description:

- Approximately 219km of watermain
- Sizes between 25mm and 900mm
- Materials include ductile iron, cast iron, polyvinyl chloride (PVC), copper, concrete.
- 2 water pumping stations
- Water services to property line for approximately 15,000 properties
- Water sample stations
- Water valves
- Pressure reducing chambers and valves
- Fire Hydrants

**Age distribution:** A full database of every watermain link is stored in our asset repository (Municipal Data Works). A separate customized replacement model is kept to estimate year and value of replacement needs. The figure below is an excerpt from that water model.

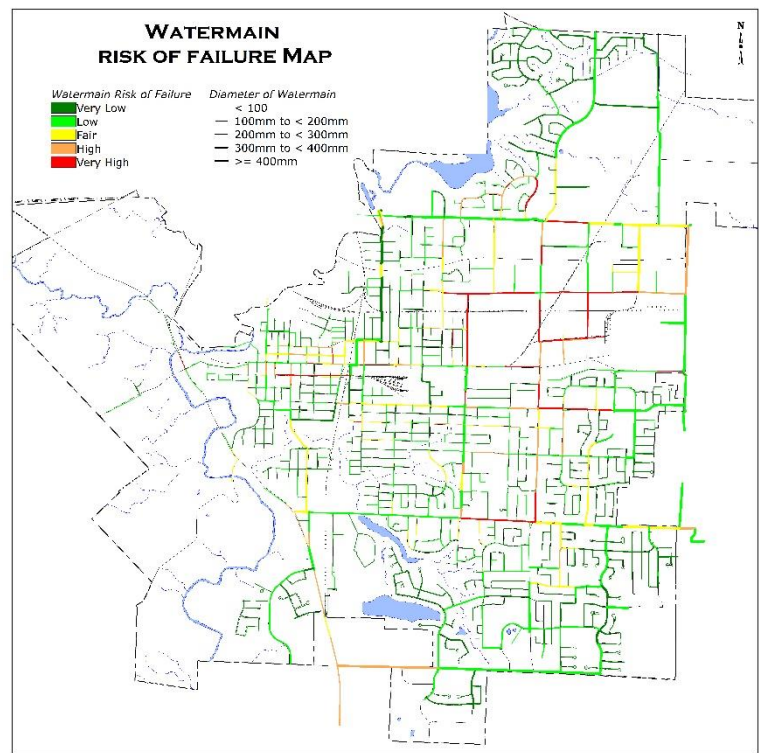


**Staff assigned to manage asset:** Manager of Water and Sewer in conjunction with Manager of Capital Works.



## Condition assessment and methodology

1. The water model applies a customizable age-based deterioration using material, Weibull curves for end of life, and coordination adjustments for relining, capital projects, and system improvements.
2. A risk matrix is used in the creation of the long-term capital plan which combines watermain, storm sewers, sanitary sewers, and roads. The risk matrix includes factors for size, location, environmental impact, and social impact. The end product is shown in the figure to the right.
3. The maintenance of watermain comply with the Ontario Safe Drinking Water Act (SDWA) and associated Drinking Water Quality Management System (DWQMS) policies and procedures.
4. 10-year capital plan submitted into sewer rate study every 5 years.
5. 10-year capital plan submitted into 5-year update of asset management plan.



## Existing Levels of Service (LOS)

1. The city is legislated to maintain the water system as per detailed procedures and levels of service defined in the SDWA.
2. Number of breaks per year per km is modelled into the long-term capital plan.
3. The long-term capital plan combines risk, condition, and financial factors for water, storm, sanitary, and road systems.

## Lifecycle Management Activities

The expected useful life of a watermain is 75 years, on average. The city performs a multitude of lifecycle activities depending on the condition rating of the water and risk associated with its failure. These include:

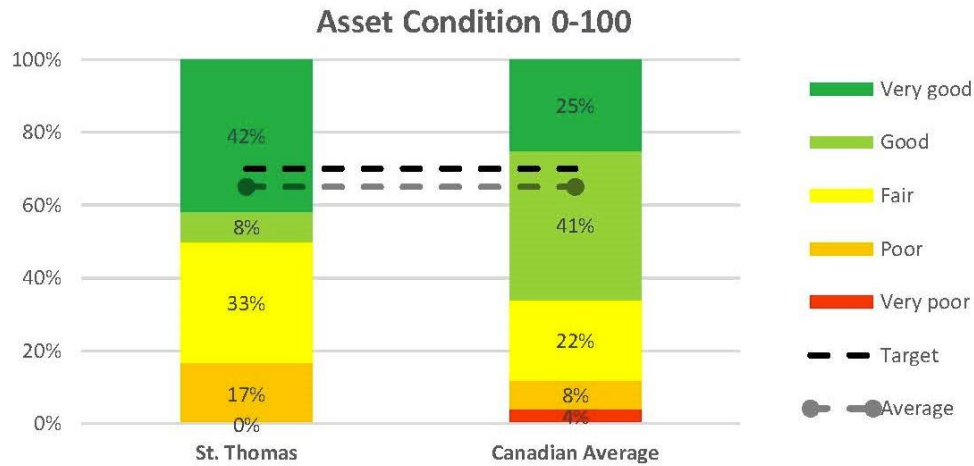
1. Flushing and testing as defined by DWQMS
2. Hydrant and valve maintenance
3. Supervisory Control and Data Acquisition (SCADA) system monitoring and work orders.
4. Watermain and service repairs.
5. Water pump maintenance and repairs at 1 water pumping station.
6. Relining.

## Proposed Levels of Service (LOS):

It is expected that all levels of service for watermain will remain as dictated by DWQMS. Funding of the system is required to be sustainable and is reviewed every 5 years as part of a rate study. Each year the rates are adjusted by City Council.

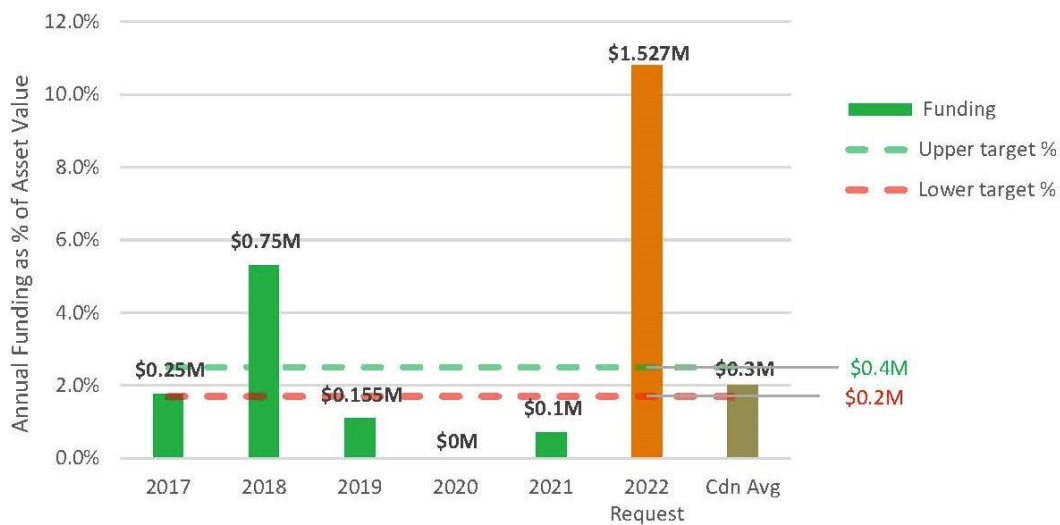
# Pumping Stations Asset Management Report Card

12 pumping stations - \$14,150,000 (\$810/household)



Condition Trend				
2019	2020	2021	Target	Trend
62	75	65	70	↓

## Funding (5 Year Historical)



Infrastructure Gap - \$707,500 (\$40/household)

Annual Funding Deficit - -\$1,230,000 (\$-70/household)

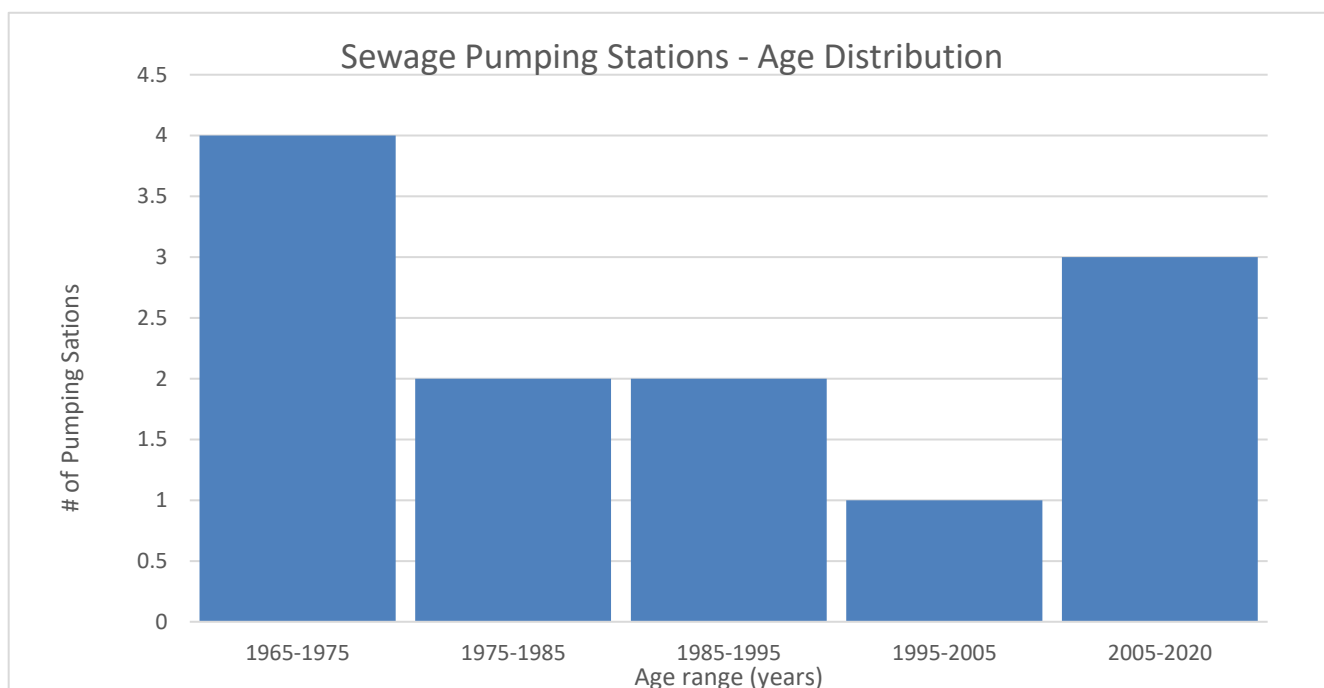
# Pumping Stations: Condition, Assessment & Levels of Service

## Asset description:

- 12 pumping stations
- Capacities between 600 cubic meters/day and 11700 cubic meters/day.
- Backup power systems
- Scada systems
- The newest station was added in 2019 on Elm Street east of Peach Tree Blvd
- Note there are 5 stations owned by Central Elgin that are maintained by St. Thomas that are not part of the asset management system

## Age distribution:

Each station is broken down into components that vary in age.



**Staff assigned to manage asset:** Manager of Pollution Control.

## Condition assessment and methodology:

1. Each station has a projected long-term capital replacement program that is included as part of the Sewer Rate studies. These studies are required to be completed every 5 years and are target a fully sustainable funding level.
2. 10-year capital plan submitted into sewer rate study every 5 years.
3. 10-year capital plan submitted into 5-year update of asset management plan.

## Existing Levels of Service (LOS):

The Ministry of the Environment, Conservation and Parks (MECP) has strict guidelines for certificates of approval, inspections, testing, reporting, and operating. These standards for the absolute bottom limit for level of service. Some output parameters

## Lifecycle Management Activities

1. Staff perform numerous maintenance, repair, testing and reporting activities. A Computerized Maintenance Management System (CMMS) is used to generate planned work orders and record ad hoc repairs.

2. Capital replacement can be interrupted and upsized due to new growth. New growth is typically then funded through Development Charges which are calculated at a 5-year frequency.
3. Any overflows are reported under a strict process to the MECP.

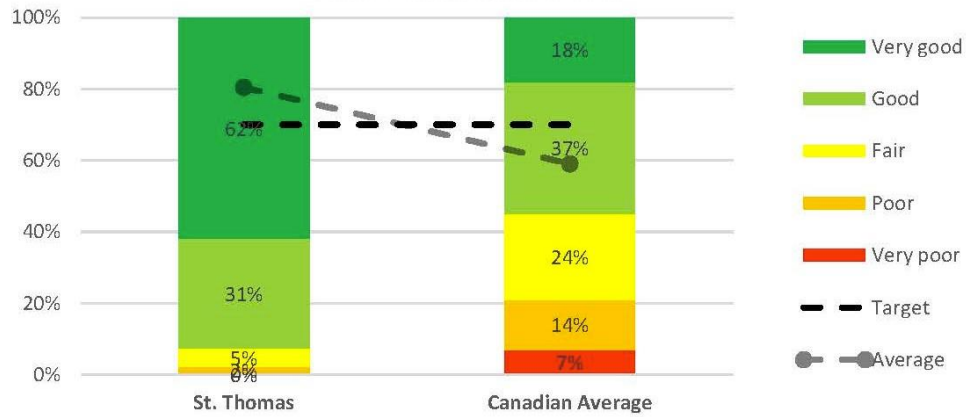
### **Proposed Levels of Service (LOS)**

No change is predicted to provincial regulations which dictate level of service. If the MECP does rerate a station, or redefine capacity per person, or demand new controls on overflows then the resulting funding would need to be added to the City Financial Plan and future Sewer Wastewater Rate Studies.

# Storm Sewers Asset Management Report Card

160 - \$144,000,000 (\$8300/household)

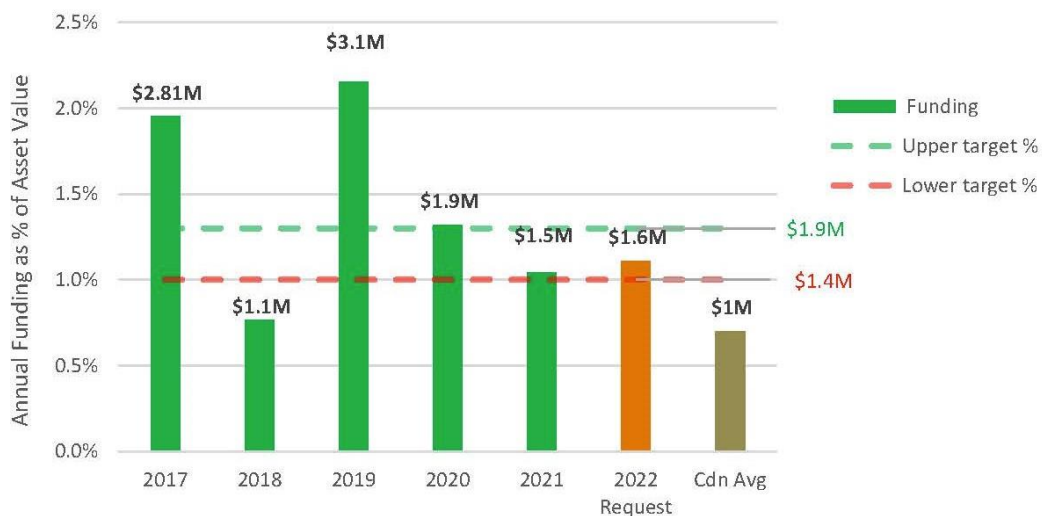
## Asset Condition 0-100



## Condition Trend

2019	2020	2021	Target	Trend
79	79	80	70	↑

## Funding (5 Year Historical)



Infrastructure Gap - \$3,100,000 (\$179/household)

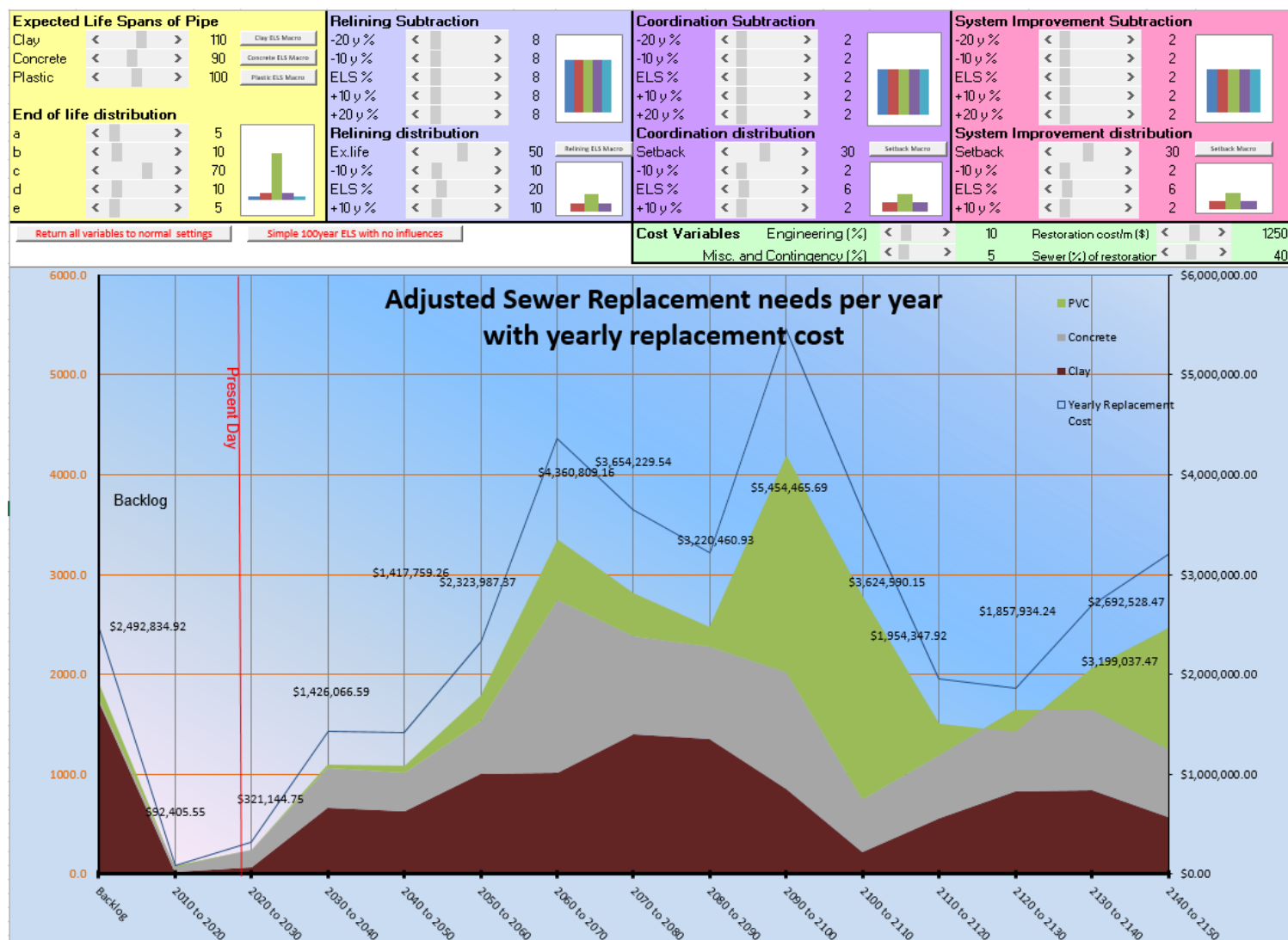
Annual Funding Deficit - -\$60,000 (\$-3/household)

# Storm Sewers: Condition, Assessment & Levels of Service

## Asset description:

- Approximately 160km of storm sewers
- Sizes between 10 mm and 3000 mm
- Materials include High-Density Polyethylene (HDPE), polyvinyl chloride (PVC), CSP, concrete.
- Storm manholes
- Ditch inlet grates
- Storm outlet structures
- Catch basins and leads

**Age distribution:** A full database of every storm sewer link is stored in the asset repository, MDW. A separate customized replacement model is kept to estimate year and value of replacement needs. The figure below is an excerpt from that storm and sanitary sewer model.





**Staff assigned to manage asset:** Manager of Water and Sewer in conjunction with Manager of Capital Works.

### **Condition assessment and methodology**

1. The sewer model applies a customizable age-based deterioration using material, Weibull curves for end of life, and coordination adjustments for relining, capital projects, and system improvements.
2. The long-term capital plan combines watermains, storm sewers, sanitary sewers, and roads. Considerations include size, location, environmental impact, and social impact.
3. 10-year capital plan submitted into sewer rate study every 5 years.
4. 10-year capital plan submitted into 5-year update of asset management plan.

### **Existing Levels of Service (LOS)**

1. The city is legislated to maintain the sewer system as per the Ontario Water Resources Act (OWRA) and various other Federal and Provincial legislation.
2. The following ministries and agencies are involved in approvals, monitoring, and reporting. MECP, Ministry of Natural Resources, Kettle Creek Conservation Authority, and the Department of Fisheries.
3. Number of breaks per year per km is modelled into the long-term capital plan.
4. The long-term capital plan combines risk, condition, and financial factors for water, storm, sanitary, and road systems.

### **Lifecycle Management Activities**

The expected useful life of a storm sewer varies by material, size, depth, and location but is 75 years, on average. The city performs the following management activities via the CMMS:

1. Outlet cleaning
2. SCADA system monitoring.
3. Catch basin cleaning
4. Private drain service repairs.
5. Street sweeping (removal of debris on roadway prior to entry in storm sewer system).
6. Sewer break repairs.
7. Capital replacement can be interrupted and upsized due to new growth. New growth is typically then funded through Development Charges which are calculated at a 5-year frequency.
8. Relining.

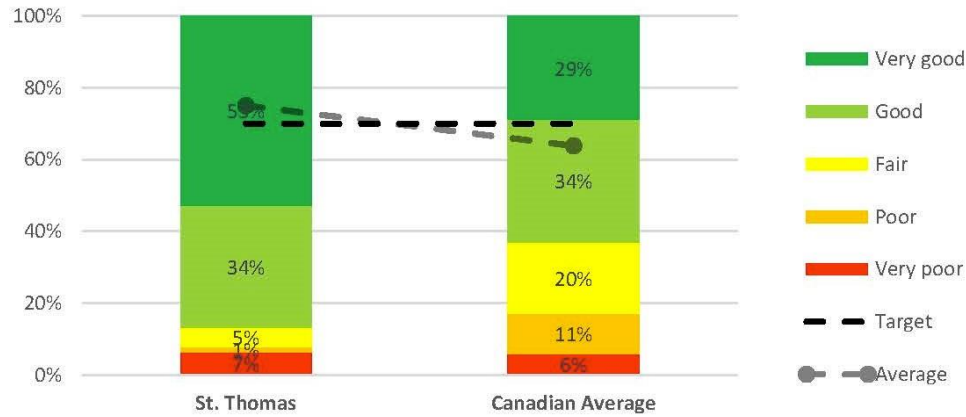
### **Proposed Levels of Service (LOS)**

It is expected that all levels of service for storm sewers will remain as dictated by federal and provincial legislation. Funding of the system is required to be sustainable and is reviewed every 5 years as part of a rate study. Each year the rates are adjusted by City Council.

# Sanitary Sewers Asset Management Report Card

194 kilometres - \$134,000,000 (\$7730/household)

## Asset Condition 0-100



## Condition Trend

2019	2020	2021	Target	Trend
69	73	75	70	↑

## Funding (5 Year Historical)



Infrastructure Gap - \$8,720,000 (\$503/household)

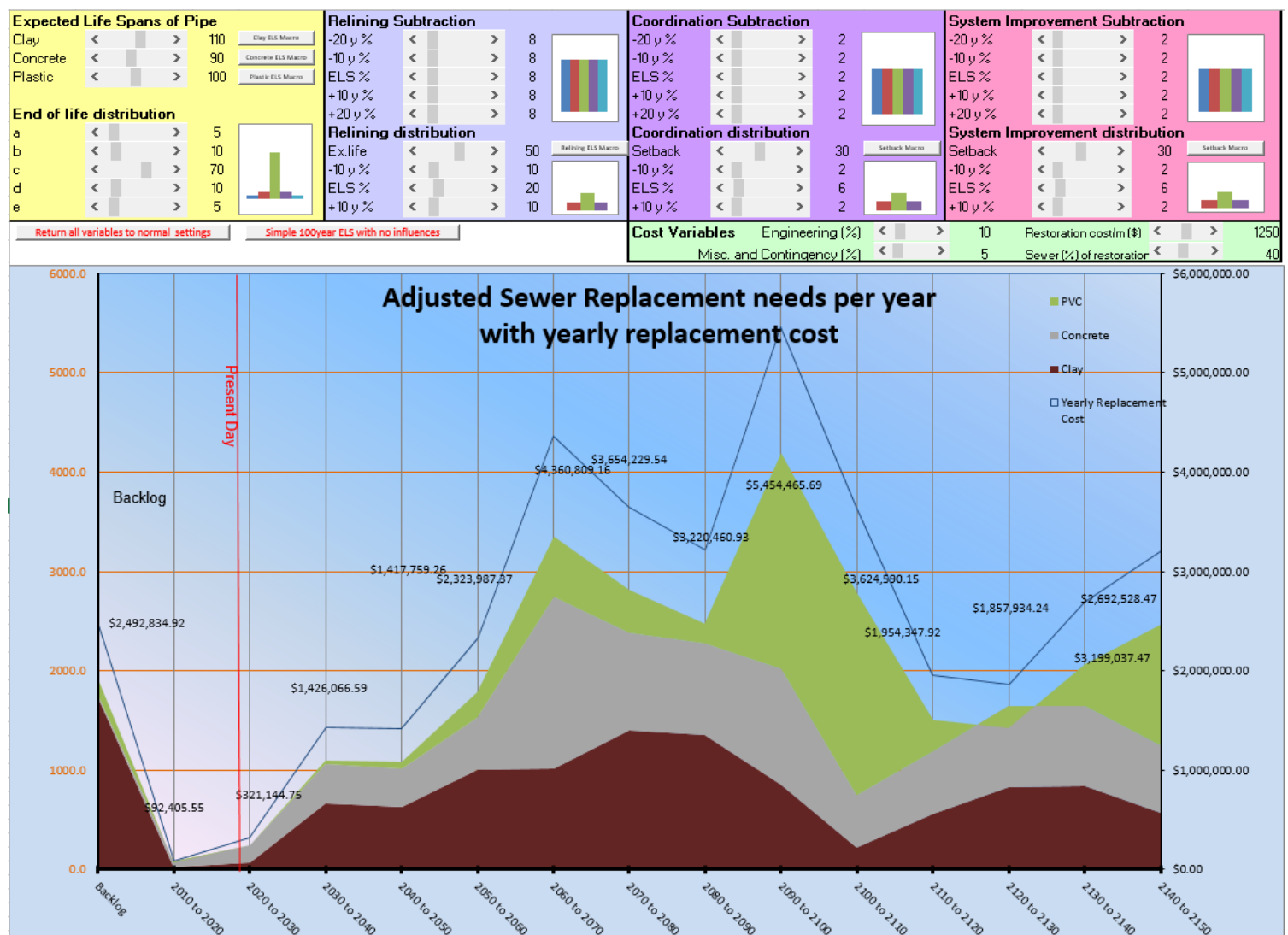
Annual Funding Surplus - \$60,000 (\$3/household)

# Sanitary Sewers: Condition, Assessment & Levels of Service

## Asset description:

- Approximately 194 km of sanitary sewers
- Sizes between 100 mm and 1350 mm
- Materials include HDPE, PVC, CSP, concrete.
- Sanitary manholes
- Private Drain connections to property line
- Overflow control structure in Mill Creek

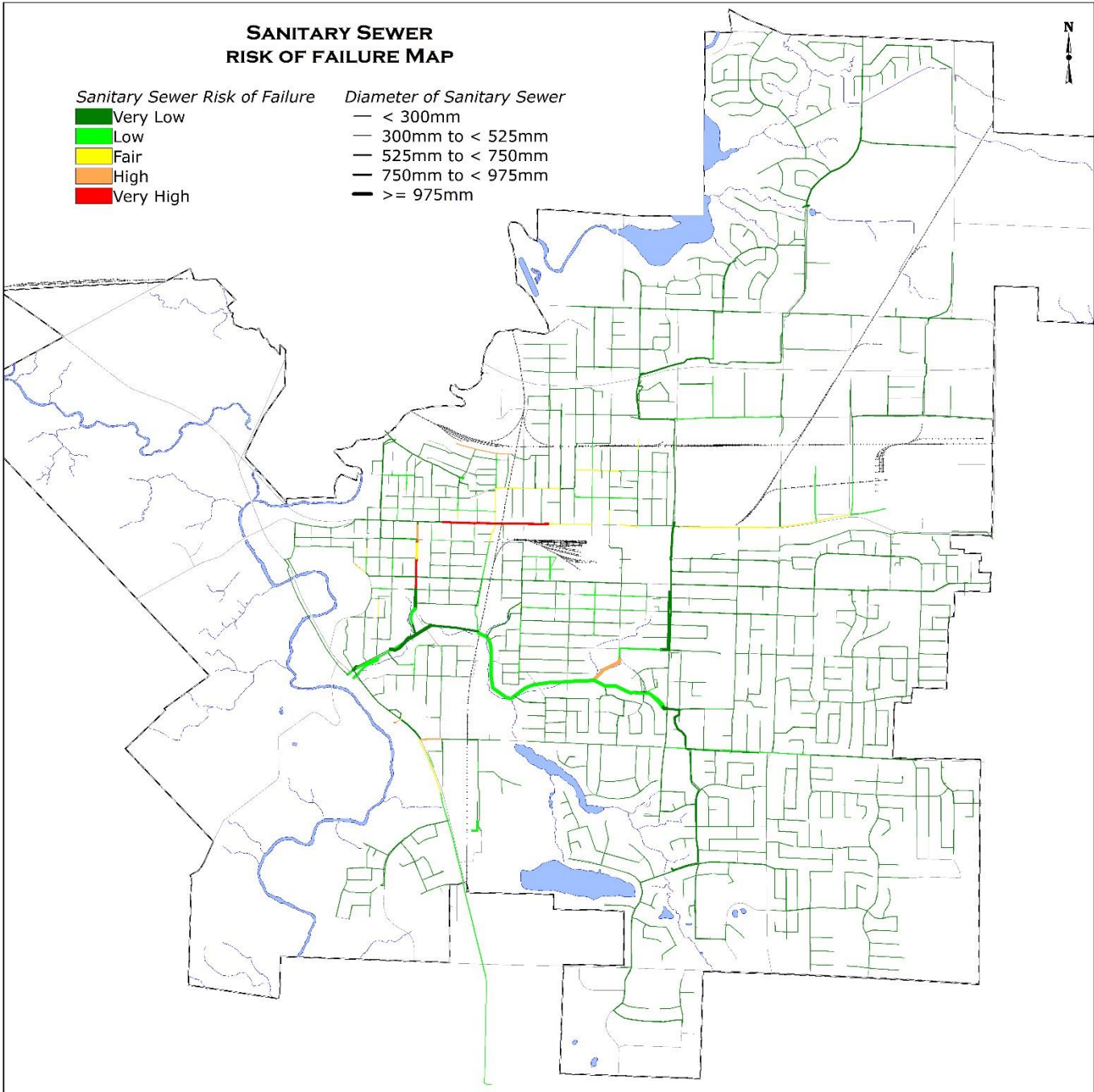
**Age distribution:** A full database of every sanitary sewer link is stored in Municipal Data Works. A separate customized replacement model is kept to estimate year and value of replacement needs. The figure below is an excerpt from that sewer model.



**Staff assigned to manage asset:** Manager of Water and Sewer in conjunction with Manager of Capital Works.

**Condition assessment and methodology**

- 1. The sewer model applies a customizable age-based deterioration using material, Weibull curves for end of life, and coordination adjustments for relining, capital projects, and system improvements.
- 2. A risk matrix is used in the creation of the long-term capital plan which combines watermains, storm sewers, sanitary sewers, and roads. The risk matrix includes factors for size, location, environmental impact, and social impact. The end product is shown in the map to the right.



## Existing Levels of Service (LOS)

1. The city is legislated to maintain the sewer system as per the Ontario Water Resources Act (OWRA) and various other Federal and Provincial legislation.
2. The following ministries and agencies are involved in approvals, monitoring, and reporting. MECP, Ministry of Natural Resources, Kettle Creek Conservation Authority, and the Department of Fisheries.
3. Number of breaks per year per km is modelled into the long-term capital plan.
4. The long-term capital plan combines risk, condition, and financial factors for water, storm, sanitary, and road systems.
5. 10-year capital plan submitted into sewer rate study every 5 years.
6. 10-year capital plan submitted into 5-year update of asset management plan.

## Lifecycle Management Activities

The expected useful life of a storm sewer varies by material, size, depth, and location but is 75 years, on average. The city performs the following management activities via the CMMS:

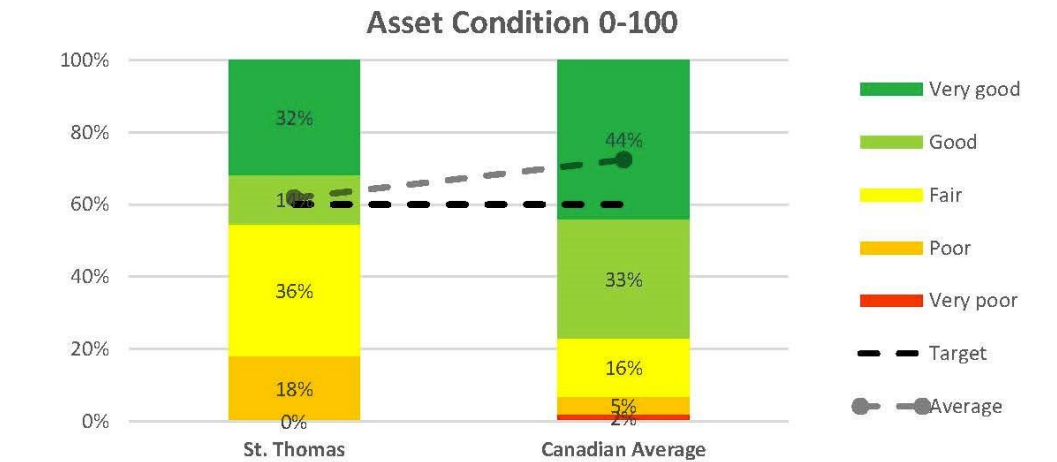
1. Sewer flushing
2. Rodding
3. Outlet cleaning
4. SCADA system monitoring and work orders.
5. Catch basin cleaning
6. Private drain service repairs.
7. Sewer break repairs.
8. Capital replacement can be interrupted and upsized due to new growth. New growth is typically then funded through Development Charges which are calculated at a 5-year frequency.
9. Relining.

## Proposed Levels of Service (LOS)

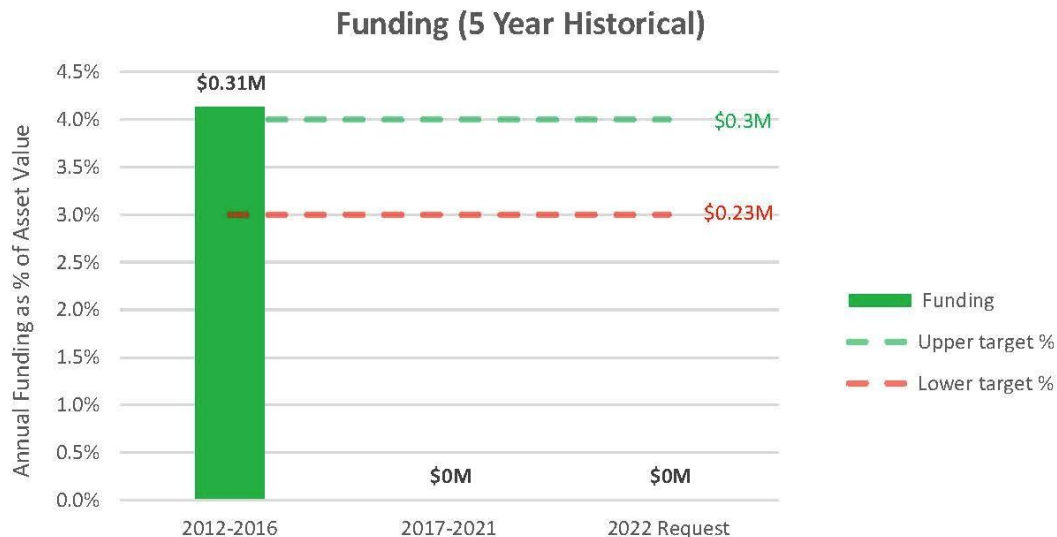
It is expected that all levels of service for storm sewers will remain as dictated by federal and provincial legislation. Funding of the system is required to be sustainable and is reviewed every 5 years as part of a rate study. Each year the rates are adjusted by City Council.

# Storm Pond Management Asset Management Report Card

24 Stormwater Management Ponds - \$7,500,000 (\$430/household)



Condition Trend				
2019	2020	2021	Target	Trend
65	62	62	60	↔



Infrastructure Gap - \$ (\$0/household)

Annual Funding Deficit - -\$260,000 (\$-15/household)



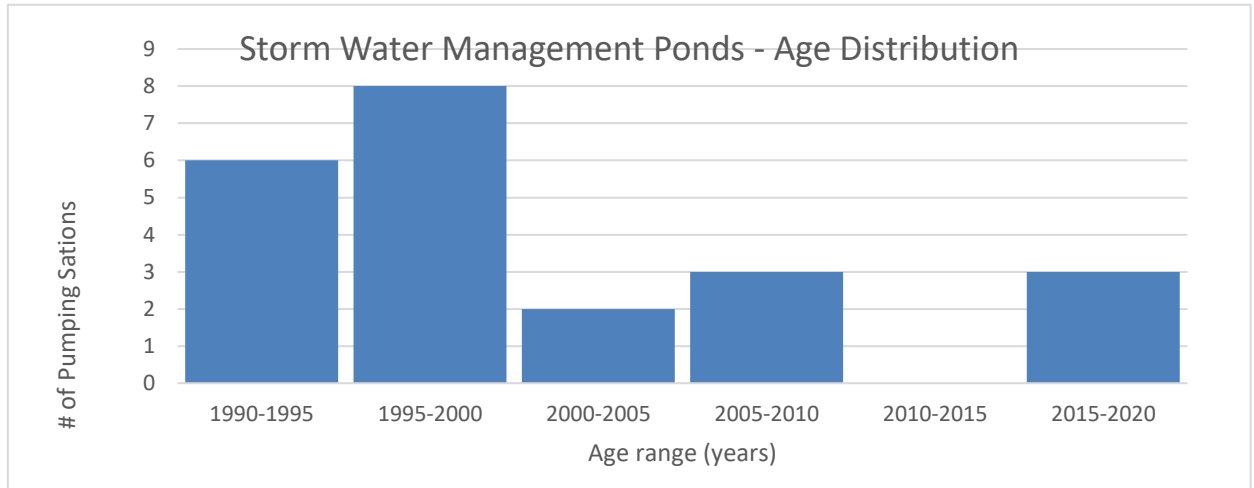
# Storm Pond Management: Condition, Assessment & Levels of Service

## Asset description:

- 24 Ponds ranging in size from 200 sq.m to 28,000 sq.m

## Age distribution:

The majority of swm ponds were built within the 1990's and 2000's. There are several new ponds that will be assumed in 2020 to 2025 approximately.



**Staff assigned to manage asset:** Manager of Water and Sewer.

## Condition assessment and methodology:

1. Existing ponds are monitored as part of the regular monthly activities dictated by the CMMS work order system. Ponds are regularly monitored for inlet flow, outlet flow, overflow, vegetation encroachment, and silt levels.
2. Cleanouts are completed as necessary. However, it is unclear if replacement will ever be needed. It is more likely that efficiencies in cleanouts will become an operating/maintenance function and seldom require capital clean outs.
3. 10-year capital plan submitted into sewer rate study every 5 years.
4. 10-year capital plan submitted into 5-year update of asset management plan.

## Existing Levels of Service (LOS)

1. Ponds are required to function as defined in their original design briefs.
2. The funding for SWM pond maintenance and capital is included in the Sewer Rate Studies which occur on a 5-year cycle although rates are adjusted annually.

## Lifecycle Management Activities

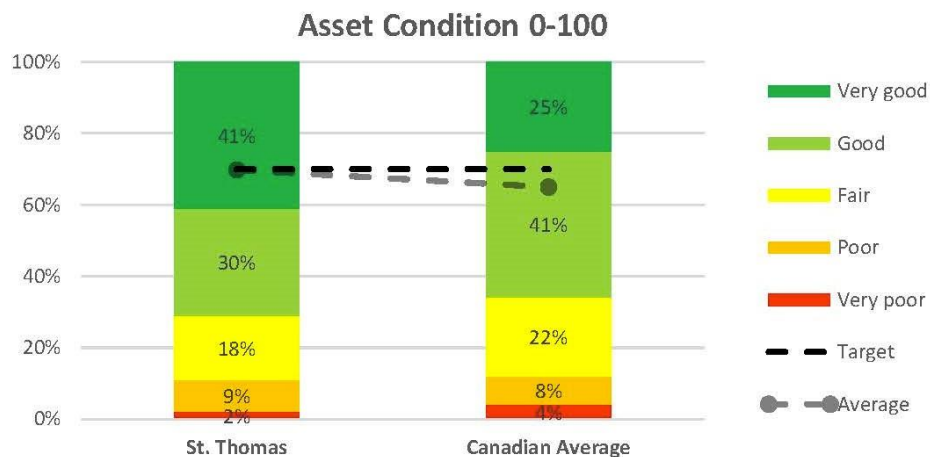
1. Outlet cleaning
2. Vegetation removal
3. Street sweeping
4. Cleanouts as required

## Proposed Levels of Service (LOS)

There are no planned or forecasted changes in LOS.

# Pollution Control Asset Management Report Card

**Pollution Control Plant - \$95,000,000 (\$5480/household)**



Condition Trend				
2019	2020	2021	Target	Trend
69	69	70	70	↑

## Funding (5 Year Historical)



Note: The 2021 request does not include the Green Stream funding (pending approval).

**Infrastructure Gap - \$950,000 (\$55/household)**

**Annual Funding Surplus - \$2,510,000 (\$145/household)**

# Pollution Control: Condition, Assessment & Levels of Service

## Asset description:

- Inlet pipes and screen room
- Grit chamber
- 3 plants each containing tank systems
- Aeration system including blowers, distribution piping, and diffusers
- Full plant back up power system
- Administration building
- Electrical system and controls
- SCADA
- Lab and testing equipment
- Biosolids system (Lystek) including holding tanks, building, process, odour control, and storage)
- Pumps and forcemains between processes
- UV disinfection
- Final pumping station and outlet
- Trailers with portable power and portable pumping capability
- The Mill creek storage system is included in the sanitary sewer system

## Age distribution:

The original plant was built in the early 1900's (Plant 1). There have been 3 plants added since and Plant 1 has been decommissioned. The biosolids system was built in 2017/2018. The backup power was built in 2017. The administration and some outbuildings were built in the 1960's. Each individual asset component above the financial thresholds are listed in MDW

**Staff assigned to manage asset:** Manager of Pollution Control.

## Condition assessment and methodology

1. Staff and the manager keep a prioritized live list of short, medium, and long-term priorities that are not included as regular work orders. These lists are reviewed and adjusted weekly.
2. Each component is kept based on remaining functional ability except when repair time exceeds the cost of replacement.
3. Redundant parts and supplies are kept for most components in the plant
4. 10-year capital plan submitted into sewer rate study every 5 years.
5. 10-year capital plan submitted into 5-year update of asset management plan.

## Existing Levels of Service (LOS)

1. The MECP defines strict operating parameters, testing, and reporting limits. Each altered functional component in the plant requires approval of the MECP.
2. Operating parameters are defined with targets and limits which are reported to the province and federal governments through online portals.
3. Inflow and Infiltration objectives are tracked via a KPI of Treated Flow Percentage. There are collaborative activities including each ESD service area and the Building/Planning department to decrease I/I. To mitigate I/I, storage and rapid treatment should be expanded within a 5 year timeline.
4. A Pollution Prevention Control Plan (PPCP) is being developed to compile all the ongoing operating and capital activities that contribute to improvements in operating parameters.

## Lifecycle Management Activities

1. CMMS is used to plan a very large program of maintenance activities for 5 daily shifts.
2. Outsourced repairs and maintenance as necessary.

**Proposed Levels of Service (LOS)**

It is expected that all levels of service for pollution control will remain as dictated by federal and provincial legislation.

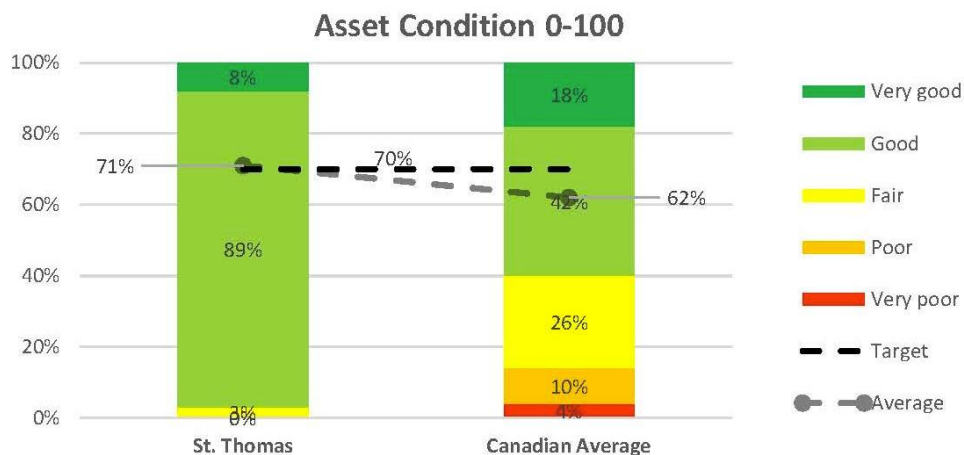
Storage and rapid treatment should be expanded within a 5 year timeline to improve environmental protection.

There has some indication that the MECP may lower allowable overflows as dictated by Provincial Guideline F5-5. In the event this occurs, a significant increase in funding will be required.

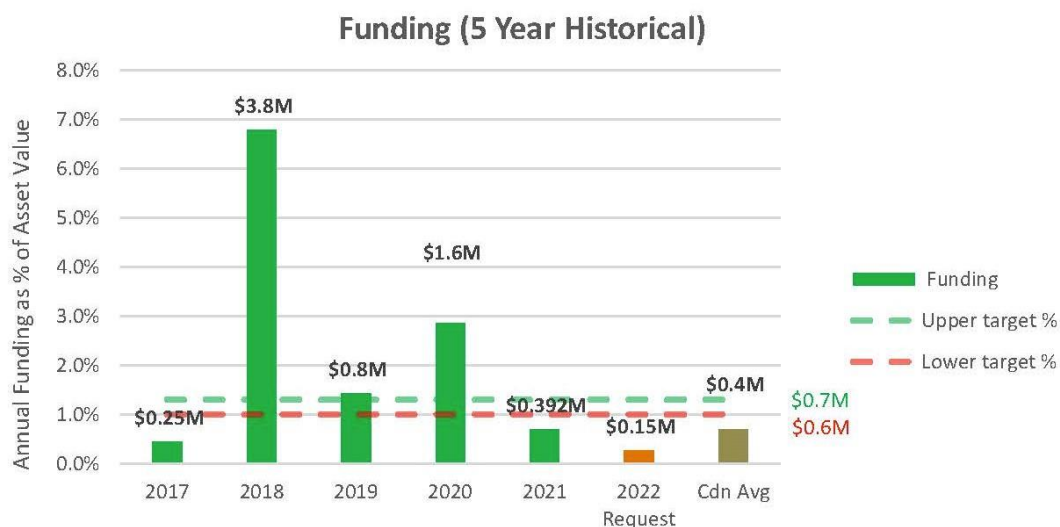
Funding of the system is required to be sustainable and is reviewed every 5 years as part of a rate study. Each year the rates are adjusted by City Council.

# Bridges and Culverts Asset Management Report Card

13 Bridges & 9 Large Culverts - \$56,000,000 (\$3230/household)



Condition Trend						
2017	2018	2019	2020	2021	Target	Trend
61	65	71	72	71	70	↓



Infrastructure Gap - \$ (\$0/household)

Annual Funding Deficit - -\$490,000 (\$-28/household)

# Bridges and Culverts: Condition, Assessment & Levels of Service

## Asset description:

- 13 Bridges
- 9 Large culverts

## Age distribution:

See chart output from MDW database. They included a distributed asset age.

## Staff assigned to manage

**asset:** Manager of Capital Works.

## Condition assessment and methodology:

1. Bi-annual structural review by a P.Eng legislated in Ontario
2. Asset inspection typically conforms to OSIMS (Ontario Structures Inspection Manual) format or achieves the principles
3. Each asset is broken down into components for inspection, maintenance recommendations, and capital recommendations.
4. The results of the biannual inspection advise the Manager of Capital works who introduces capital projects for the following year. Note that capital projects may have a 5-year cycle from planning to design to construction.
5. The maintenance recommendations from the inspections are forwarded to the Manager of Roads and Transportation who may choose an in-house or outsourced solution.
6. 10-year capital plan submitted into 5-year update of asset management plan.

YearBuilt	YearLastRehab	SiteNumber	BridgeName	ReplacementCost	RehabilitationCost
1958	2006	B001	Talbot St. Over CASO	\$500,000	\$82,000
1975	1975	B002	Fairview Ave. Over CASO	\$500,000	\$2,953,000
1983	1983	B003	Dalewood Drive Over Reservoir	\$3,800,000	\$2,077,000
1958	1958	B004	Wellington Road Over Dodds Creek	\$2,469,000	\$1,213,000
1955	1997	B005	Talbot Hill Over Kettle Creek	\$10,112,000	\$4,959,000
1955	1997	B006	Talbot Hill Over Dodds Creek	\$2,204,000	\$1,416,000
1970	1970	B007	Kains	\$2,742,000	\$2,299,000
1997	1997	B008	Sunset Over Kettle Creek - South	\$3,595,000	\$128,000
1997	1997	B009	Sunset Dr. Over Kettle Creek Mid	\$3,580,000	\$132,000
1969	1969	B010	Sunset Drive Over Kettle Creek	\$2,549,000	\$6,000
1956	1956	B011	Fingal Line over Kettle Creek	\$3,366,000	\$1,896,000
1959	1997	B012	Sunset Drive Over Dodds Creek	\$3,652,000	\$1,138,000
1967	1967	B013	Saint George St. Over Kettle Creek	\$3,512,000	\$1,434,000
1965	1965	C002	First Avenue Over Creek	\$509,000	\$516,000
1965	1965	C003	Churchill Crescent Over Creek	\$589,000	\$693,000
1965	2014	C006	Elmina Street Over Creek	\$1,185,000	\$104,000
1998	1998	C007	Elgin Street Over Mill Pond Creek	\$6,759,000	\$0
1940	1997	C008	Sunset Drive Over Mill Pond Creek	\$1,203,000	\$33,000
1992	1992	C011	Major Line Over Auckland Drain	\$614,000	\$0
		C020	Southdale Line West of Bill Martyn	\$750,000	
		C021	Pine Valley Drive North of Greenway	\$750,000	
		C022	Burwell Road	\$750,000	
1950	1950	C005	Fifth Avenue	\$1,403,000	\$1,514,000
1925	1925	C009	Palm Street Over Mill Pond Creek	\$1,214,000	\$1,333,000
1950	1950	C010	Third Avenue Over Creek	\$618,000	\$808,000

## Existing Levels of Service (LOS)

A structure is required to pass the biannual inspection. In the event the inspection, or an inter-period review, recommends the structure is unsuitable then 3 options exist:

1. Closure
2. Traffic load limit
3. Traffic limitation via signals or signs.

## Lifecycle Management Activities

1. Bridge washing
2. Vegetation removal and trimming
3. Railing and end treatment repairs
4. Drainage system clearing and repair
5. Erosion protection monitoring and repair
6. Minor concrete repairs
7. Road surface paving
8. Joint monitoring and cleaning

## Proposed Levels of Service (LOS)

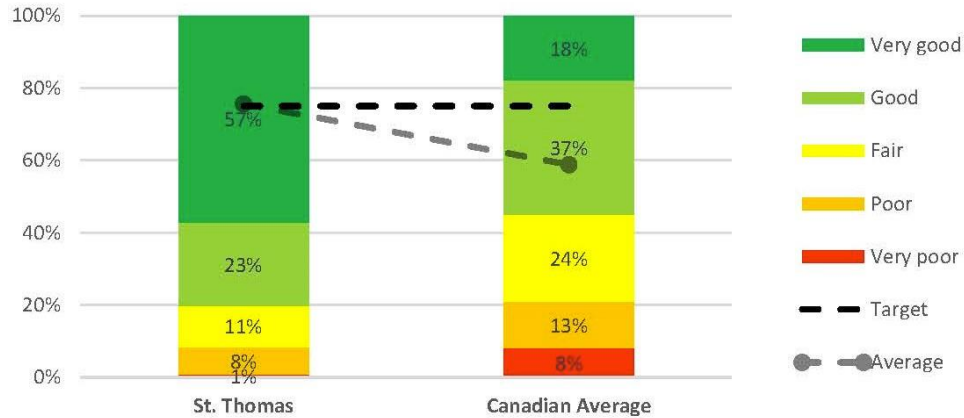
No changes are proposed.



# Roads Asset Management Report Card

490 lane kilometres - \$303,000,000 (\$17470/household)

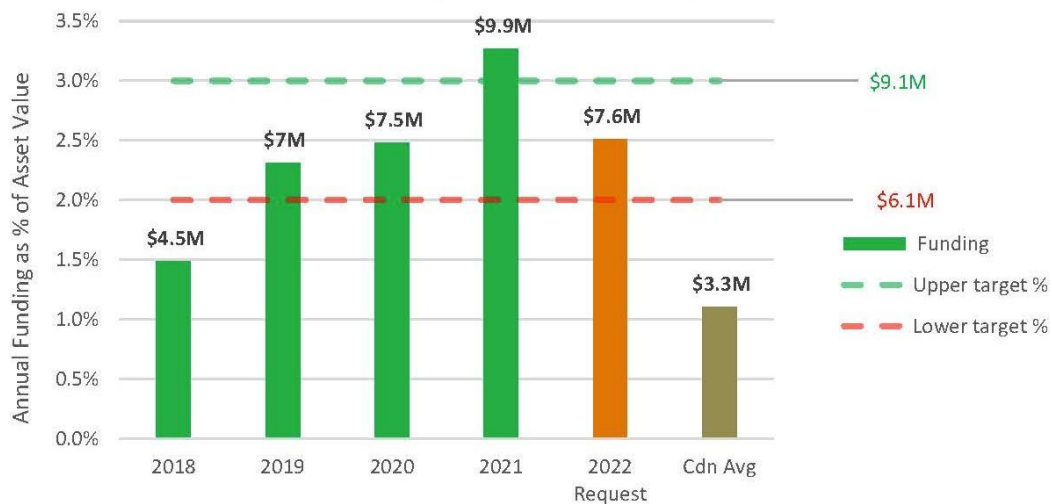
## Asset Condition 0-100



## Condition Trend

2017	2018	2019	2020	2021	Target	Trend
75	75	75	75	76	75	↑

## Funding (5 Year Historical)



Infrastructure Gap - \$4,800,000 (\$277/household)

Annual Funding Surplus - \$30,000 (\$2/household)

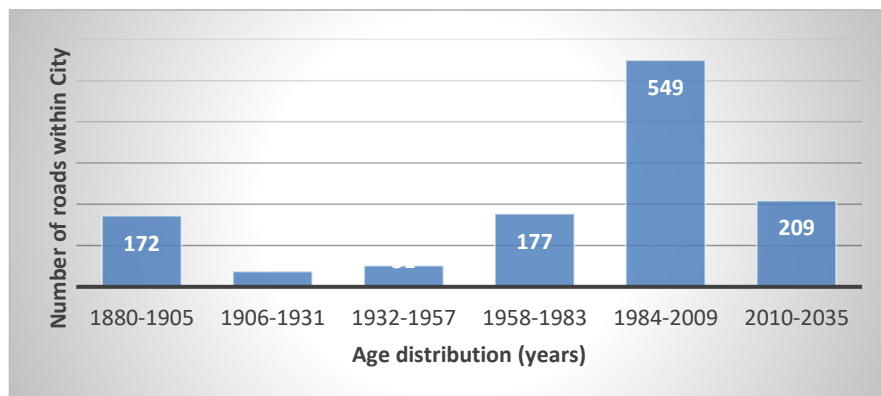
# Roads: Condition, Assessment & Levels of Service

## Asset description:

105 km of Local roads  
52 km of Arterial roads  
35 km of Collector roads

**Age distribution:** The majority of roads were either built or rebuilt between 1984 and 2009, as shown in Figure 1.

**Staff assigned to manage asset:** Manager of Roads and Transportation.



## Condition assessment and methodology

- Road inspections are carried out by senior Roads and Traffic technologist (experienced) and the Asset Management Coordinator. PCI training and detailed knowledge is required to maintain consistent and accurate ratings.
- The City of St. Thomas's road network is broken up into block sections, each with a unique ID. Each section will be rated separately and should reference the unique ID to correspond with the Asset Management System.
- An industry standard rating system, Pavement Condition Index (PCI), is used to rank these roads based on condition and produce an equivalent number that corresponds to a plan of action to replace or reconstruct road.
- The PCI combines two sets of criteria to come up with one rating number. The first is the Ride Comfort Rating.

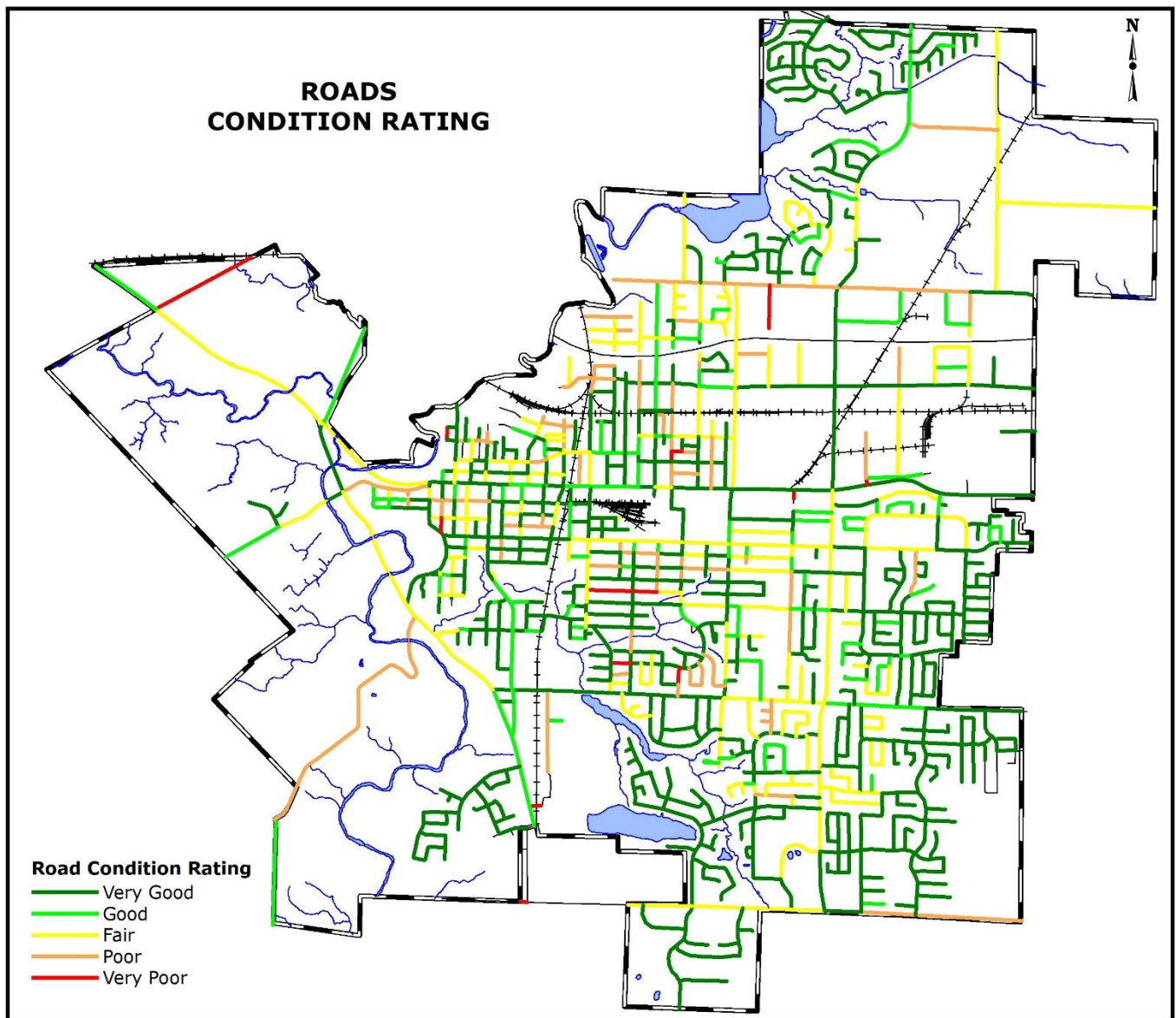
Ride Comfort Rating	Description
0 - 2	<i>Very Poor</i> – Uncomfortable with constant bumps or
2 - 4	<i>Poor</i> – Uncomfortable with frequent bumps or depressions
4 - 6	<i>Fair</i> - Comfortable with intermittent bumps or depressions
6 - 8	<i>Good</i> - Smooth with a few bumps or depressions
8 - 10	<i>Excellent</i> - Very smooth

- The second set of criteria of the PCI focuses on the physical state of the road including: Surface Defects, Surface Deformations and Cracking.
  - The Surface Defects include: Ravelling & loss of surface aggregate and Flushing.
  - The Surface Deformations include: Rippling and Shoving, Wheel Track Rutting and Distortion.
  - Cracking is broken into Longitudinal Wheel Track, Centerline, Pavement Edge, Transverse, and Longitudinal – meander or mid-lane and Random. The first 4 cracking categories are further broken down into Single and Multiple or Alligator forms of cracking.
- Each Pavement defect, deformation or cracking is given a severity of distress rating of either Very Slight, Slight, Moderate, Severe or Very Severe as well as a Density of Distress of either Few (<10% of area) Intermittent (10-20% of area), Frequent (20-40%), Extensive (40-80%) or Throughout (>80%). Explanations of how the Severity of Distress is determined can be found in the [Manual for condition rating of flexible pavement SP-024](#) by the MTO.
- The scores are entered into the program and a calculation produces the PCI. The PCI Decision Matrix is used to determine the remaining useful life of a road asset. This is only a guideline and will need to be used in conjunction with the personal observations of the road inspectors.

PCI Decision Matrix				
TIME OF IMPROVEMENT	FREEWAY	ARTERIAL	COLLECTOR	LOCAL
NOW Reconstruct	< 60	< 50	< 45	< 40
NOW Rehabilitate	60 to 65	50 to 55	45 to 50	40 to 45
1 to 5 years	66 to 75	56 to 75	51 to 70	46 to 65
6 to 10 years	76 to 85	76 to 85	71 to 80	66 to 80
Adequate	>85	>85	>80	>80

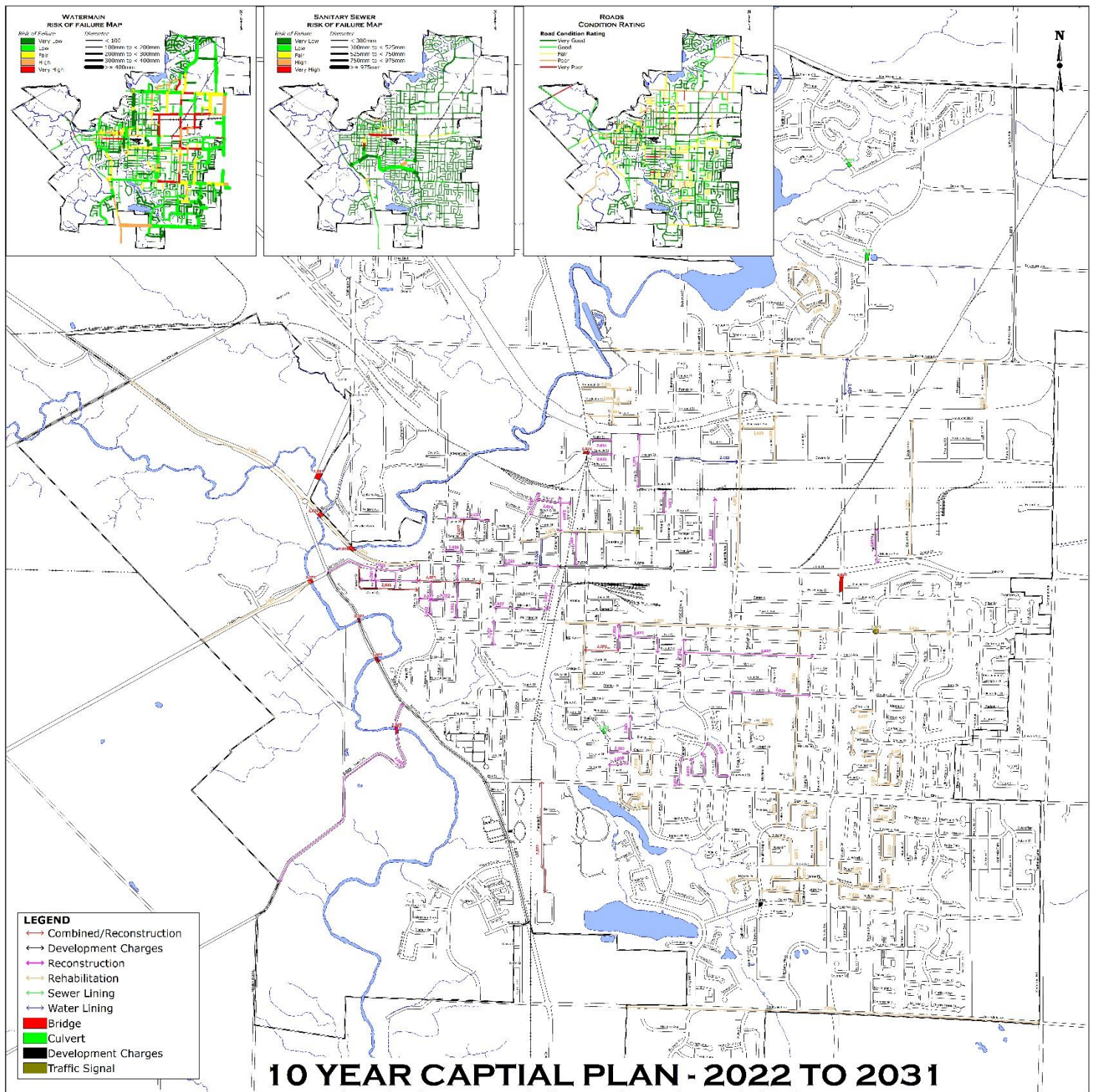
## Existing Levels of Service (LOS)

1. As shown in Figure 3, the city maintains around 192 km of paved roads; 55% of which are local roads, 27% are arterial roads, and 18% are collector roads. These roads are marked based on the optimal condition rating and lifecycle options.
2. The average PCI for paved roads within the city is 75 (as of 2018). There is about 800 metres of unpaved road that is in the Good-Fair category for surface condition.
3. The performance of the roads assets is based solely on the road inspection performed annually.
4. All inspections are done in compliance with Ontario's minimum maintenance standards (MMS) for municipal highways (O. Reg. 366/18).
5. The maintenance of roads complies with the Ontario Highway Traffic Act and applicable sections of Ontario Traffic Manual (OTM)
6. The figure below shows the end results of the condition rating process.



7. The full City map figure on the following page is the compilation of the sewer, water, and road condition ratings. It also factors in new development work, system upsizing, traffic network disruption, business impact, and social impact. Each year this long term capital plan is adjusted based on predicted asset funding.





### Lifecycle Management Activities

The expected useful life of a road asset is 25 years, on average. The city performs a multitude of lifecycle activities depending on the condition rating of the road and risk associated with its failure. These include:

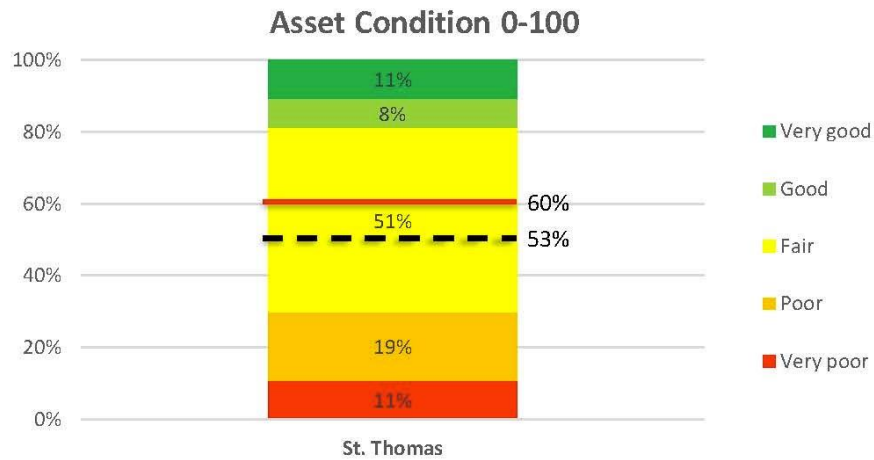
1. Road surface maintenance: road inspection, road patrol, asphalt repairs, shoulder maintenance, asphalt patching, bridge surface, street cleaning, litter on road surface, crack sealing capital
2. Roadside maintenance: sidewalk inspection, sidewalk/curb/gutter maintenance, roadside litter, Safety device maintenance, pavement marking, street and traffic control signs, guidepost and guiderail maintenance, Winter maintenance
3. Winter maintenance: winter patrol, snow plowing, snow removal, sidewalk plowing and bus stop clearing, manual sidewalk, sanding/salting streets, sanding sidewalks, spring cleanup, snow fencing

### Proposed Levels of Service (LOS)

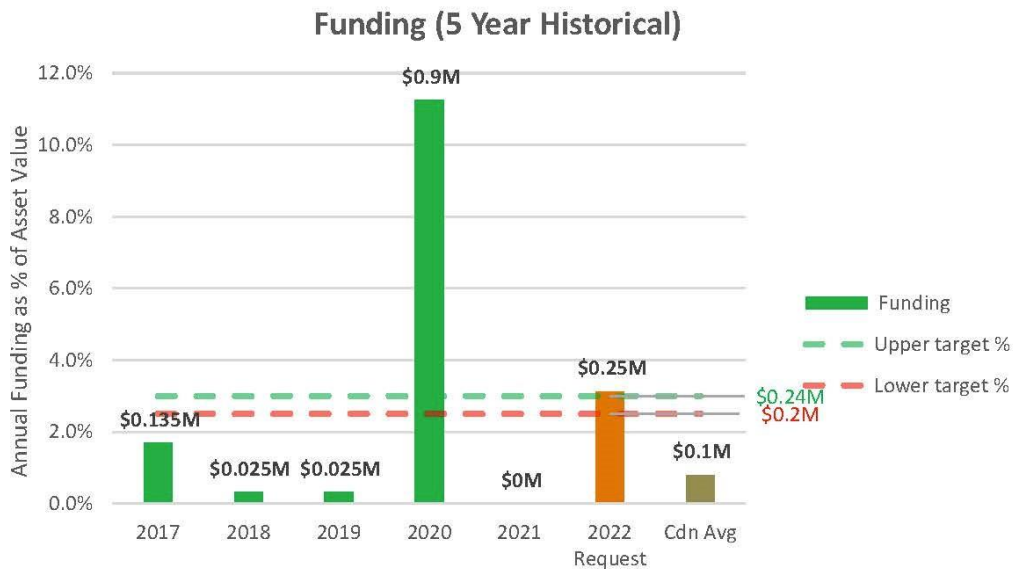
No changes are proposed

# Traffic Signals Asset Management Report Card

40 Traffic Signals - \$8,000,000 (\$460/household)



Condition Trend				
2019	2020	2021	Target	Trend
50	48	48	60	↔



Note: 2020 Request from Federal/Provincial Transit Funding

**Infrastructure Gap - \$700,000 (\$40/household)**

**Annual Funding Surplus - \$30,000 (\$2/household)**

# Traffic Signals: Condition, Assessment & Levels of Service

## Asset description:

- 40 Traffic signals predominantly with 4 legs and pedestrian signals
- 40 Traffic controllers and 1 spare.
- Each signal location includes a power source, poles, arms, heads, electrical wiring, conduits and junction boxes
- 12 Pedestrian crossings (mix of powered, solar, and signs/lines)

**Age distribution:** Vary in age between 1984 and 2019.

**Staff assigned to manage asset:** Manager of Roads and Transportation

## Condition assessment and methodology:

1. Annual inspections are done in compliance with Ontario's minimum maintenance standards (MMS) for municipal highways (O. Reg. 366/18).
2. Each traffic signal is also considered as part of the capital work plan as the street or intersection is reconstructed.
3. New or replacement signals are included as part of the capital budget process.
4. New growth impacts are forecast in development studies, forecasted for inclusion in the development charges, and then constructed as part of the annual capital budget process.

## Existing Levels of Service (LOS)

1. All inspections are done in compliance with Ontario's minimum maintenance standards (MMS) for municipal highways (O. Reg. 366/18).
2. The maintenance of traffic signals complies with the Ontario Highway Traffic Act and applicable sections of Ontario Traffic Manual (OTM)

## Lifecycle Management Activities:

1. Ongoing work orders based on requests from City to outsourced maintenance contractor.
2. Bulb replacement, head adjustment, and electrical repairs via outsourced maintenance contractor.
3. Collision repair

## Proposed Levels of Service (LOS)

No changes are forecasted for this asset. New growth can increase the demand for a traffic signal as traffic volumes rise however those costs are captured in the DC fund process.



# Streetlights Asset Management Report Card

4830 Streetlights & 2055 Poles - \$12,400,000 (\$710/household)



Infrastructure Gap - \$1,550,000 (\$89/household)

Annual Funding Surplus - \$30,000 (\$2/household)

# Streetlights: Condition, Assessment & Levels of Service

## Asset description:

- 4830 Streetlights
- 2055 poles.

**Age distribution:** Poles and arms vary in age between 1920 and present. A mass relamping occurred in 2015/2016 to upgrade to LED. The figure to the right shows a variety of poles types and ages. Note that a large portion of street lights are located on Entegrus poles.

**Staff assigned to manage asset:** Manager of Roads and Transportation.

ASSET ID	ASSET NAME	MATERIAL	COUNT	INSTALLATION DATE	Replacement year
ALUMINUM POLES	ALUMINUM POLES	ALUMINUM	52	2018	2088
WOOD POLES	WOOD POLES	WOOD	1080	1990	2060
2015	2015	WOOD	53	2015	2045
STEEL POLES	STEEL POLES	STEEL	69	1990	2060
CONCRETE POLES	CONCRETE POLES	CONCRETE	76	1990	2040
WOOD POLES	WOOD POLES	WOOD	515	1990	2020
DECORATIVE CONCRETE POLE	DECORATIVE CONCRETE POLE	CONCRETE	210	1990	2040
Sum			2055	2016	2041
Lights on STEI Poles			2775		

## Condition assessment and methodology:

1. Ongoing maintenance is done in compliance with Ontario's minimum maintenance standards (MMS) for municipal highways (O. Reg. 366/18).
2. Each street light section is also considered as part of the capital work plan as the street or intersection is reconstructed.
3. New growth impacts are forecasted in development studies, forecasted for inclusion in the development charges, and then constructed as part of the annual capital budget process.

## Existing Levels of Service (LOS)

1. Having street lights or not is a subjective choice based on perception of walking safety.
2. Lit intersections can reduce accidents. Particular focus should be directed to consistent light levels.
3. All inspections are done in compliance with Ontario's minimum maintenance standards (MMS) for municipal highways (O. Reg. 366/18).
4. The maintenance of traffic signals complies with the Ontario Highway Traffic Act and applicable sections of Ontario Traffic Manual (OTM)

## Lifecycle Management Activities:

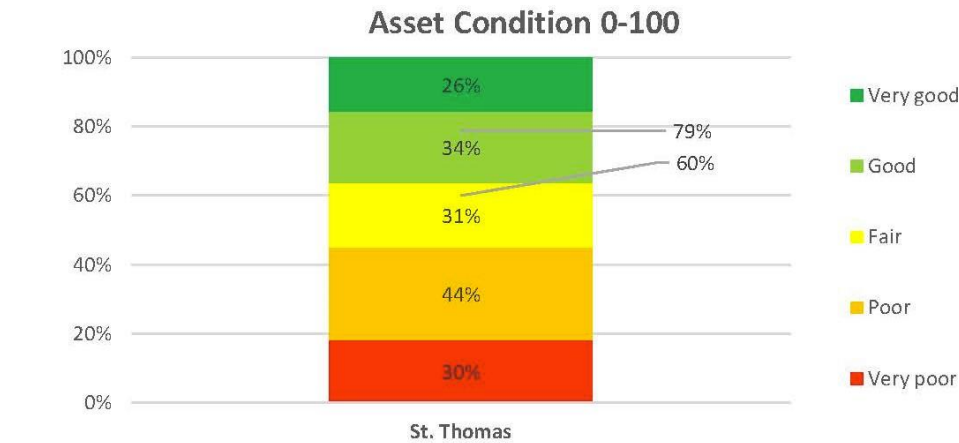
1. Ongoing work orders based on requests from City to outsourced maintenance contractor.
2. Bulb replacement, head adjustment, and electrical repairs via outsourced maintenance contractor.
3. Collision repair

## Proposed Levels of Service (LOS)

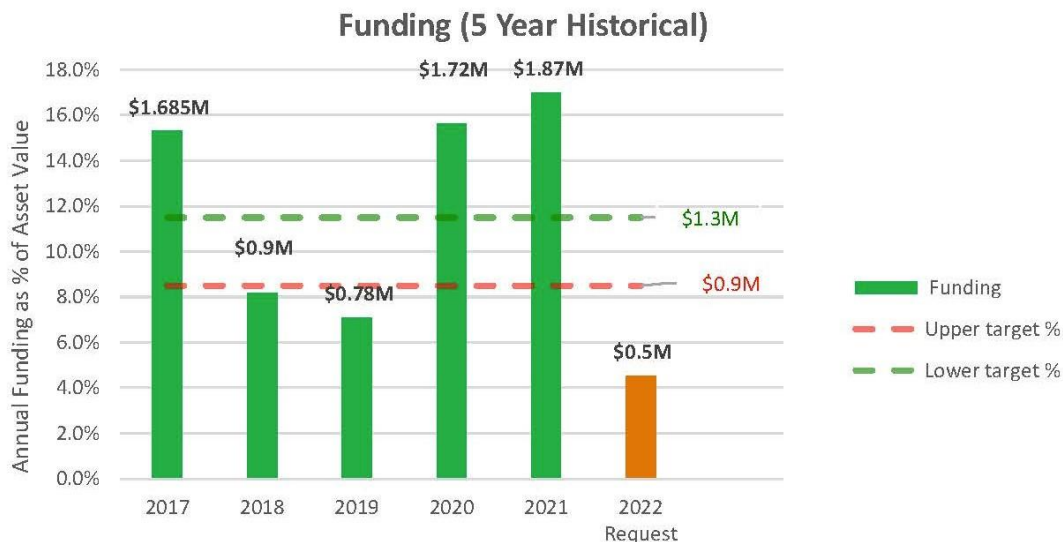
No changes are forecasted for this asset. New growth can increase the demand for a street lights in semi-urban areas which become urban. Ideally, each new subdivision covers that cost or DC funds are used.

# Fleet Asset Management Report Card

**78 Vehicles, 53 Pieces of Equipment & 11 Transit Vehicles - \$11,000,000 (\$630/household)**



Condition Trend				
2019	2020	2021	Target	Trend
90	92	79	60	↓



**Infrastructure Gap - \$1,672,250 (\$96/household)**

**Annual Funding Deficit - -\$600,000 (\$-35/household)**

# Fleet: Condition, Assessment & Levels of Service

## Asset description:

- 78 Vehicles
- 53 pieces of equipment worth \$25k or more.
- 11 Transit Buses
- Passenger vehicles, medium/large trucks, firetrucks, transit buses, street cleaning, water/sewer equipment vehicles.

**Age distribution:** Vary in age between 1980 and 2019. Vehicle and major equipment inventory housed in MDW.

**Staff assigned to manage asset:** Manager of Roads and Transportation

## Condition assessment and methodology:

1. Annual inspections are done inhouse.
2. At expected year of replacement, each vehicle is assessed in terms of its expected operating costs vs the costs of ownership.
3. Decisions are made in conjunction with mechanics, departmental users, and Treasury whether to keep a vehicle past its expected lifecycle or dispose of the asset.
4. Level of service changes are addressed through adjustment in Fleet capabilities, size, and features during the replacement process
5. Replacement vehicles are procured in groups where possible or through regional procurement groups.
6. New growth impacts are forecast in development studies, forecasted for inclusion in the development charges, and then constructed as part of the annual capital budget process.
7. All replacement vehicles and capitalized equipment are reviewed in a 10 year plan and accommodated within a single annual program.
8. Any new vehicles or major equipment request are proposed as separate capital project submissions which require justification administratively and to council.

## Existing Levels of Service (LOS)

1. Inspect and maintain assets as per Ontario Commercial Vehicle Operator's Registration (CVOR) regulations, other applicable legislation, and industry best practices.
2. Speciality vehicles like Fire apparatus and passenger buses have some unique inspections requirements.
3. Fueling systems have unique requirements
4. Licensing requirements dictated by province.
5. Infrastructure gap is due to exemplary asset maintenance which allows assets to function at an adequate level of service outside of it's expected lifecycle.

## Lifecycle Management Activities:

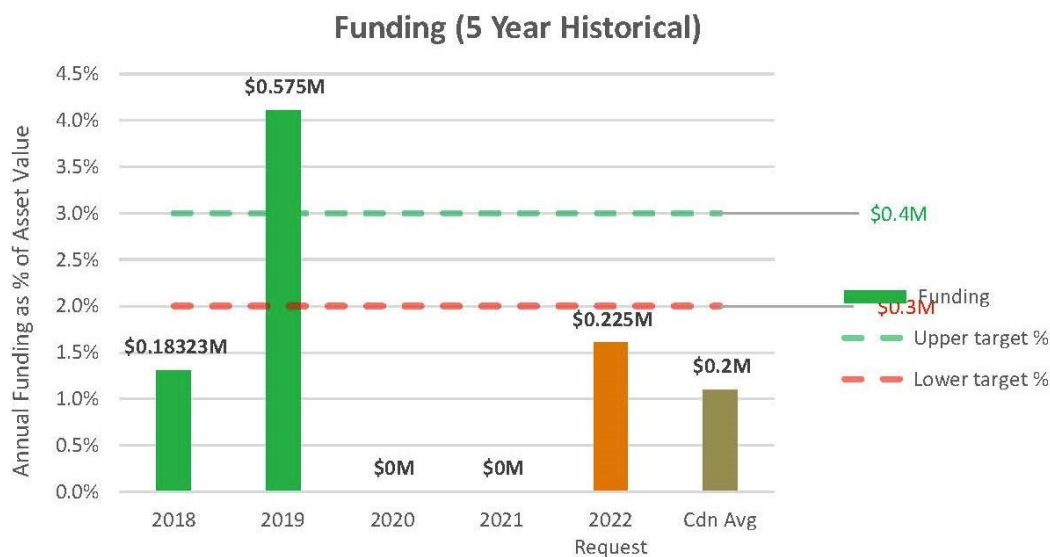
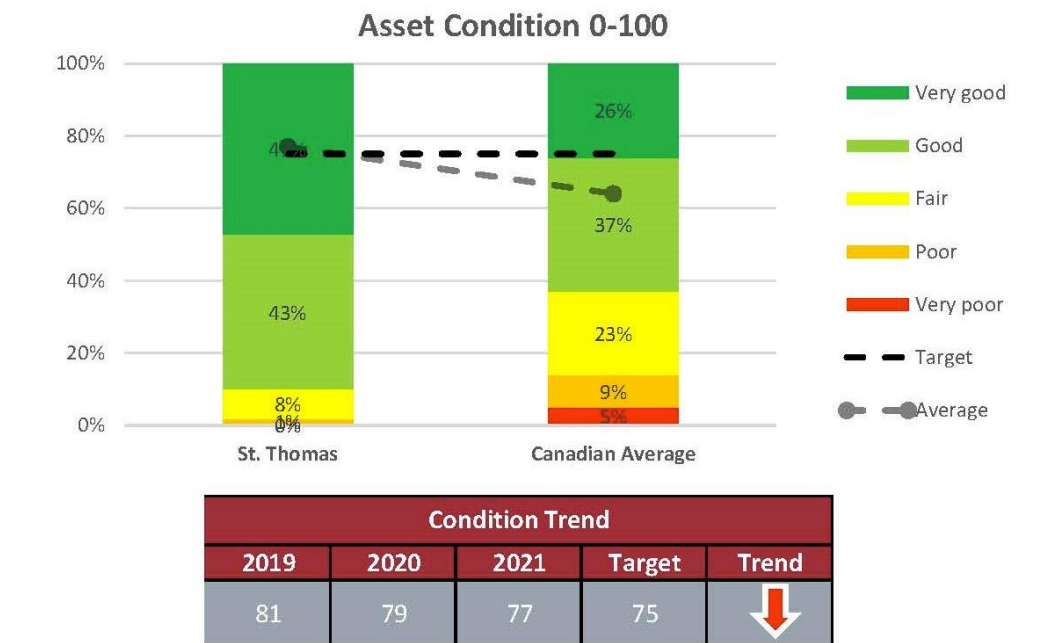
1. Vehicles and equipment are inspected and maintained per regulatory requirements and best practices. Details of the accomplishments and costs are recorded in the CMMS. Planned maintenance and inspection works orders are automatically generated by the work order software.
2. Very minor outsourcing due to speciality repairs
3. Having in-house mechanics with detailed knowledge of every piece of equipment and fleet allows more informed decisions.

## Proposed Levels of Service (LOS)

No changes are forecasted for this asset. New growth can increase the demand for new vehicles based on a larger population and area however those costs are captured in the DC fund process. New facilities can create the need for new vehicles and equipment.

# Municipal & Facility Parking Lots, Paved Trails & Public Lanes Asset Management Report Card

21 Municipal Lots, 20 Facility Lots, 11 Paved Trails & 20 Public Lanes - \$14,000,000 (\$810/household)



**Infrastructure Gap - \$449,315 (\$26/household)**

**4 year Average Annual Funding Deficit - -\$80,000 (\$-5/household)**

# Municipal & Facility Parking Lots, Paved Trails & Public Lanes: Condition, Assessment & Levels of Service

## Asset description:

- 21 Municipally run parking lots
- 9 Municipally owned facility paved parking lots
- 6 Municipally owned facility unpaved parking lots
- 20 Open, Public Lanes
- 11.2 km of paved trails

**Age distribution:** Varies from 1 year to 70 years.

## Staff assigned to manage asset:

- Municipal Parking Lots: Manager of Roads and Transportation
- Facility Parking Lots: Supervisor of Property Management
- Paved Trails: Supervisor of Parks and Forestry

## Condition assessment and methodology:

1. Municipal and Facility Parking Lots and Paved Trails are carried out by senior Roads and Traffic technologist (experienced) and the Asset Management Coordinator. Condition Assessment training and detailed knowledge is required to maintain consistent and accurate ratings.
2. Each Parking Lot and Trail will be rated separately and should reference the unique ID to correspond with the Asset Management System.
3. The industry standard rating system for Roads, Pavement Condition Index (PCI), has been modified and used to rank parking lots and paved trails on condition and produce an equivalent number that corresponds to a plan of action to replace or reconstruct road.
4. Condition Assessment for Parking Lots and Trails is based on an Industry standard Rating system that is used for Roads, Pavement Condition Index (PCI) and is modified to rank the Parking Lots and Trails based on condition and produce an equivalent number that corresponds to a plan of action to replace or reconstruct the Parking Lot or Trail.
5. The PCI combines two sets of criteria to come up with one rating number. The first is the Ride Comfort Rating. The Ride Comfort Rating will take into consideration many modes of transportation including automobile, bicycle, wheelchair, etc.

Ride Comfort Rating	Description
0 - 2	<i>Very Poor</i> – Uncomfortable with constant bumps or
2 - 4	<i>Poor</i> – Uncomfortable with frequent bumps or depressions
4 - 6	<i>Fair</i> - Comfortable with intermittent bumps or depressions
6 - 8	<i>Good</i> - Smooth with a few bumps or depressions
8 - 10	<i>Excellent</i> - Very smooth

6. The second set of criteria of the PCI focuses on the physical state of the Parking Lot or Trail including: Surface Defects, Surface Deformations and Cracking.
  - iv. The Surface Defects include: Ravelling & loss of surface aggregate and Flushing.
  - v. The Surface Deformations include: Rippling and Shoving, Wheel Track Rutting and Distortion.
  - vi. Cracking is broken into Longitudinal Wheel Track, Centerline, Pavement Edge, Transverse, and Longitudinal – meander or mid-lane and Random. The first 4 cracking categories are further broken down into Single and Multiple or Alligator forms of cracking.
7. The scores are entered into the program and a calculation produces the PCI. The PCI Decision Matrix is used to determine the remaining useful life of a Parking Lot or Trail asset. This is only a guideline and will need to be used in conjunction with the personal observations of the road inspectors.

TIME OF IMPROVEMENT	PARKING LOT/TRAIL
NOW Reconstruct	< 40
NOW Rehabilitate	40 to 45
1 to 5 years	46 to 65
6 to 10 years	67 to 80
Adequate	>80



### **Existing Levels of Service (LOS)**

1. The city maintains around 230 000 m<sup>2</sup> of parking lots and 11.2 km of paved trails and 695 640 m<sup>2</sup> of Public Lanes. These assets are marked based on the optimal condition rating and lifecycle options.
2. The average modified PCI for parking lots and paved trails is 80 (as of 2019).
3. The performance of the parking lots and trails based solely on the parking lot and trails inspection performed annually.
4. There are 6 gravel parking lots maintained by the City. These 6 have a level of service adequate to it's function.

### **Lifecycle Management Activities**

The expected useful life of a parking lot or pave trail is 25 years, on average. The city performs a multitude of lifecycle activities depending on the condition rating of the asset and risk associated with its failure. These include:

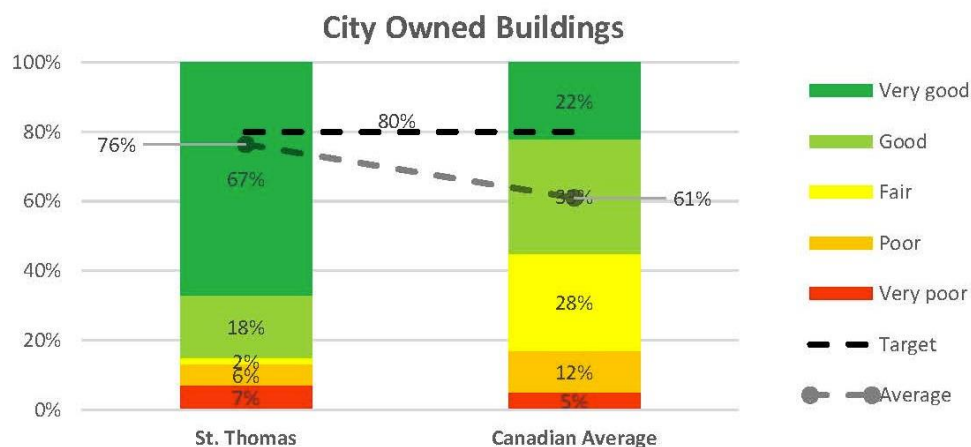
1. Surface maintenance: inspection, asphalt patching, crack sealing, pavement marking
2. Winter maintenance: snow plowing, snow removal, salting

### **Proposed Levels of Service (LOS)**

1. The Justice Building Parking Lot has recently become available for use by the Library, which is adjacent to the Parking Lot. The use of this parking lot will allow patrons to park next to the Library avoiding crossing the road and easily accessing the Library. This parking lot has a very low score of 44.9 and needs to be rehabilitated to accommodate the Level of Service needed to function as a parking lot with multiple accessibility needs.

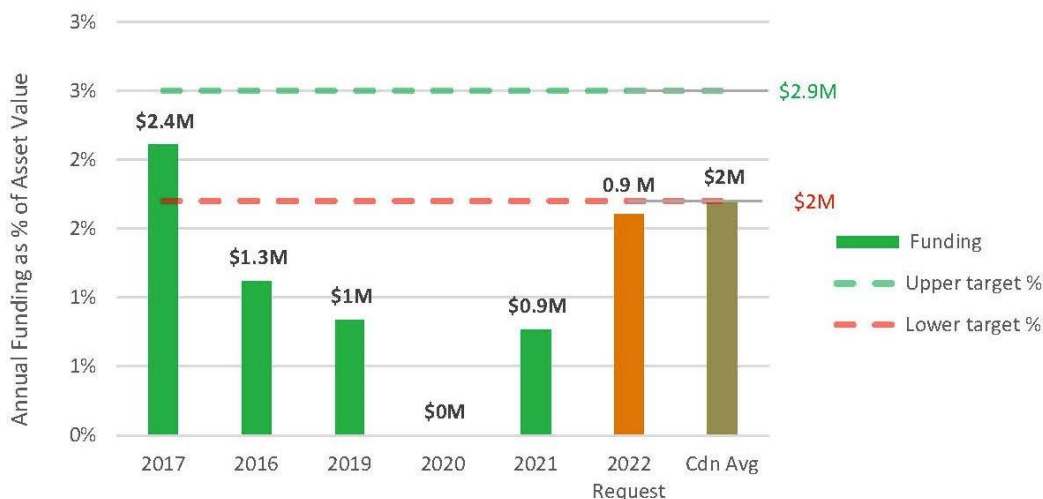
# City Owned Buildings Asset Management Report Card

66 Non- Residential Buildings - \$115,000,000 (\$6630/household)



Condition Trend				
2016	2020	2021	Target	Trend
70	70	76	80	↑

## Funding (5 Year Historical)



Infrastructure Gap - \$2,000,000 (\$115/household)

Annual Funding Deficit - -\$570,000 (\$-33/household)

# City Owned Buildings: Condition, Assessment & Levels of Service

## Asset description:

- Approximately 66 assets
- Asset types include: Arenas, Fire Stations, Police Station, City Hall, Library, Social Services (Ontario Works), Senior Citizens, Long term Care, Community Recycling, Public Works, Markets, Tourism Office, Animal Shelter, Transit Terminal, Monuments, Park Shelters/Pavilions, Signs, Sculptures
- A new Social Services (Ontario Works) facility with 28 affordable housing units is being built with an expected completion date of September 2019
- A new Outdoor Recreation Complex is also scheduled for completion in 2019
- A new Child Care facility is scheduled for 2020

**Age Distribution:** Assets range from Heritage 1898 to present.

**Staff assigned to manage asset:** Supervisor of Property Management.

## Condition Assessment and methodology:

- Currently, no condition assessments exist.
- Property Management will conduct building condition assessments (BCA's) on all City Buildings in 2019/2020.
- The information will be stored in a new condition assessment database software system called AssetPlanner, which contains a condition assessment Module called Asset Planning.
- 20% of the building portfolio will then be reassessed annually and the database updated.
- Any new major building system replacements will be uploaded into the database.
- The Asset Planning Module will be used to create 5-10 year Capital Plans with funding requirements.

## Lifecycle Management Activities:

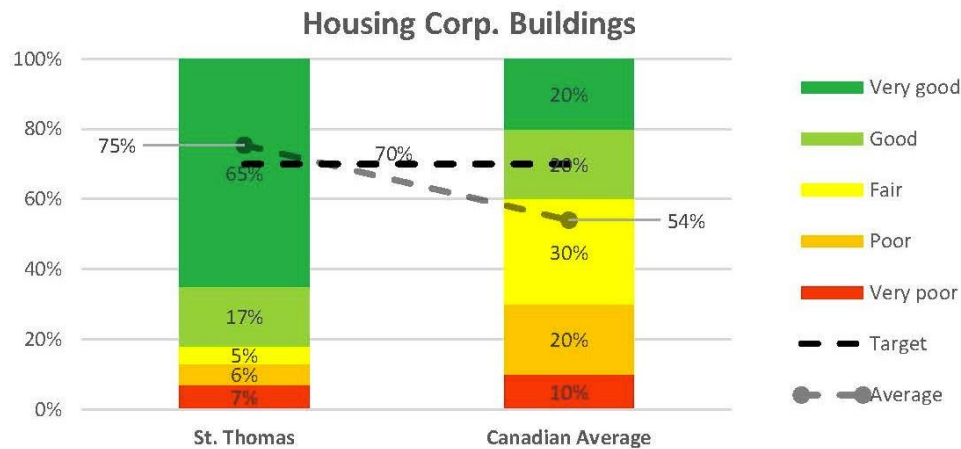
- Property Management will be using the CMMS Maintenance Module in the AssetPlanner software system starting in 2019. The Module will be used for accepting on-line customer service requests, creating work orders for reactive maintenance, scheduling preventative maintenance activities, and for reporting performance indicators.
- AssetPlanner also contains a Project Module that will be used to develop major maintenance and capital projects for building system replacements identified in the Capital Plans above.

## Levels of Service (LOS):

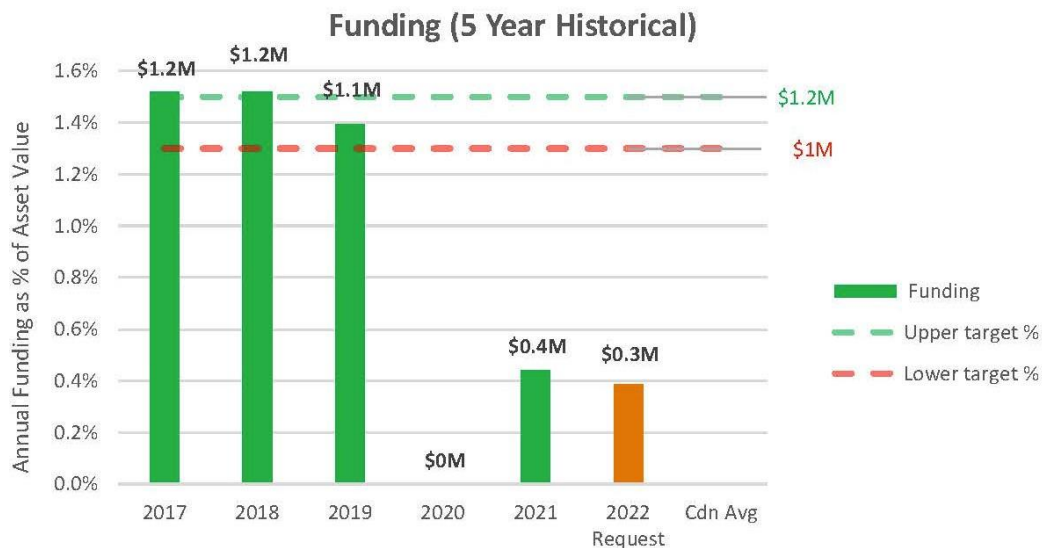
City Building Services - Customer Level of Service (LOS)				
Service Attribute	Service Objective	Performance Measure Process	Current Performance	Expected position in 5 years
<b>CLIENT LEVELS OF SERVICE</b>				
<b>Quality</b>	Building facilities are clean and in good condition for users	Customer service requests relating to service quality	50-75 / month average	Likely to increase
	Organizational measure	% of buildings in very good/good and poor/very poor condition	- 70 % of buildings in very good/good condition - 30% of buildings in poor condition	- 50 % of buildings in very good/good condition - 50% of buildings in poor condition - Condition is likely to reduce as renewal requirements are not being fully funded
	Confidence level Low/Medium/High		Low-Medium (not data based - professional judgement)	Low-Medium (not data based - professional judgement)
<b>Function</b>	Facilities meet users' and program delivery needs	Customer service requests relating to usage and availability	2-3 / average - Just completed Environmental Services Area	same
	Organizational measure.	% of buildings with very good/good and poor/very poor functionality	- 90 % of buildings with very good/good functionality - 10% of buildings with poor functionality	- 90 % of buildings with very good/good functionality - 10% of buildings with poor functionality - Functionality should remain stable as space is renovated to meet new programming needs
	Confidence level Low/Medium/High		Low-Medium (Professional Judgement)	Low-Medium (Professional Judgement)
<b>Capacity/ Utilization</b>	Building facilities have sufficient capacity to meet program delivery needs	Customer service requests relating to usage and availability	2 -3 / year average	same
	Organizational measure.	% of buildings with very good/good and poor/very poor capacity/utilization	- 90 % of buildings with very good/good capacity/utilization - 10% of buildings with poor capacity/utilization	- 90 % of buildings with very good/good capacity/utilization - 10% of buildings with poor capacity/utilization - Capacity/utilization should remain stable as space is renovated and new buildings are introduced
	Confidence level Low/Medium/High		Low-Medium (Professional Judgement)	Low-Medium (Professional Judgement)
<b>City Building Services - Technical Level of Service (LOS)</b>				
Service Attribute	Service Objective	Activity Measure Process	Current Performance	Desired for optimum life cycle cost
<b>TECHNICAL LEVELS OF SERVICE</b>				
<b>Operation</b>	Building facilities meet user's needs	- 20% of buildings/year will have condition assessments	- currently no condition assessments exist - Plan to do all City Buildings in 2019/2020 to establish baseline - New condition assessment software system	Condition – 5 year rolling program
	Buildings are clean	Cleaning scheduled tasks & frequency	- Cleaning Contract in place - task frequencies vary by daily/weekly/monthly/annually	- Continue with same
		Budget	- Condition Assessments - no budget allocation currently - Cleaning \$ 97.37k	- Condition Assessments - \$ 20-30k/yr - Cleaning \$ 120k/yr
<b>Maintenance</b>	Buildings are suitable for purpose	Reactive service requests completed within adopted time frames	- work order cycle time averages 10-15 working days - new Maintenance Management (CMMS) system starting in 2019	Not anticipated to change significantly
		Planned maintenance activities completed to schedule	- 100% of planned maintenance activities required can be completed to agreed schedule - many more PM schedule will be added	Not anticipated to change significantly
		Budget	- under budget - significant backlog in deferred maintenance - Reactive & PM's Maintenance \$ 810k	- Reactive maintenance = 1% of CRV - Planned maintenance = 0.5% of CRV
<b>Renewal</b>	Building facilities meet user's needs	- Most building system renewals required are funded in the Major Maintenance budget - Significant system replacements require Capital funding	Major Maintenance \$525k	- 1.5% of Current Replacement Value (CRV)

# Housing Corporation Properties Asset Management Report Card

113 Residential Buildings - \$79,000,000 (\$4550/household)



Condition Trend				
2019	2020	2021	Target	Trend
61	61	74	70	↑



Infrastructure Gap - \$400,000 (\$23/household)

Annual Funding Deficit - -\$802,000 (\$-46/household)

# Housing Corporation Properties: Condition, Assessment & Levels of Service

## Asset description:

- 113 Assets
- Total area: approximately 409,010 ft<sup>2</sup>
- Current Replacement Value (CRV): \$73,606,242
- Building types include: Single Storey Duplexes, 2 Storey Duplexes, Single Family Homes, 2 Storey Townhouses, 2-4 Storey Apartment Buildings
- A new Social Services (Ontario Works) facility with 28 affordable housing units is being built with an expected completion date of September 2019

**Age Distribution:** Assets range from 1952 - 1979

**Staff assigned to manage asset:** Supervisor of Property Management.

## Condition Assessment and methodology:

- Condition assessments on all assets were conducted in 2015.
- No assessments have been done since; however, they will all be updated in 2020.
- The information is stored in a condition assessment database software system called AssetPlanner, which contains a condition assessment Module called Asset Planning.
- 20% of the building portfolio will be reassessed annually and the database updated.
- Any new major building system replacements will be uploaded into the database.
- The Asset Planning Module will be used to create 5-10 year Capital Plans with funding requirements.

## Lifecycle Management Activities:

- Property Management will be using the CMMS Maintenance Module in the AssetPlanner software system starting in 2020. The Module will be used for accepting on-line customer service requests, creating work orders for reactive maintenance, scheduling preventative maintenance activities, and for reporting performance indicators.
- AssetPlanner also contains a Project Module that will be used to develop major maintenance and capital projects for building system replacements identified in the Capital Plans above.

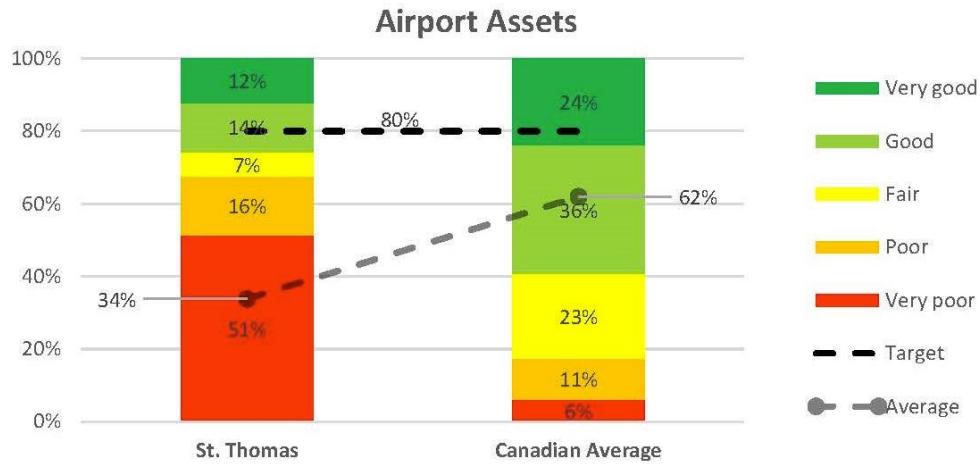


## Levels of Service (LOS):

Housing - Building Services - Customer Level of Service (LOS)				
Service Attribute	Service Objective	Performance Measure Process	Current Performance	Expected position in 5 years
<b>CLIENT LEVELS OF SERVICE</b>				
<b>Quality</b>	Building facilities are clean and in good condition for users	Customer service requests relating to service quality	250-300 / month average	- will likely remain the same
	Organizational measure	% of buildings in very good/good and poor/very poor condition	- 90 % of buildings in good condition - 10% of buildings in poor condition	- 80 % of buildings in good condition - 20% of buildings in poor condition - Condition is likely to reduce as renewal requirements increase and buildings age
	Confidence level Low/Medium/High		Low-Medium (not data based - professional judgement)	Low-Medium (not data based - professional judgement)
<b>Housing Building Services - Technical Level of Service (LOS)</b>				
Service Attribute	Service Objective	Activity Measure Process	Current Performance	Desired for optimum life cycle cost
<b>TECHNICAL LEVELS OF SERVICE</b>				
<b>Operation</b>	Building facilities meet user's needs	- 20% of buildings/year will have condition assessments	- condition assessments completed in 2015 - Plan to start new assessments in 2020	Condition – 5 year rolling program
	Buildings are clean	Cleaning scheduled tasks & frequency	- Cleaning Contract in place - task frequencies vary by daily/weekly/monthly/annually	- Continue with same
		Budget	- Condition Assessments - no budget allocation currently - Cleaning \$ 59k	- Condition Assessments - \$ 20-30k/yr - Cleaning \$ 80k/yr
<b>Maintenance</b>	Buildings are suitable for purpose	Reactive service requests completed within adopted time frames	- work order cycle time averages 10-15 working days	Not anticipated to change significantly
		Planned maintenance activities completed to schedule	- 100% of planned maintenance activities required can be completed to agreed schedule	Not anticipated to change significantly
		Budget	- under budget - significant backlog in deferred maintenance - Reactive & PM's \$ 714k	- Reactive maintenance = 1% of CRV - Planned maintenance = 0.5% of CRV
<b>Renewal</b>	Building facilities meet user's needs	- Most building system renewals required are funded in the Major Maintenance budget - Significant system replacements require Capital funding	- Major Maintenance \$372k	- 1.5% of Current Replacement Value (CRV)

# Airport Asset Management Report Card

**Airport Assets - \$25,000,000 (\$1440/household)**



Condition Trend				
2019	2020	2021	Target	Trend
35	34	34	80	↔

## Funding (5 Year Historical)



**Infrastructure Gap - \$7,000,000 (\$404/household)**

**5 year Average Annual Funding Deficit - -\$270,000 (\$-16/household)**

# Airport: Condition, Assessment & Levels of Service

## Asset description:

A detailed asset database is kept in Municipal Data Works (MDW) including age, initial value, location, replacement value, quantity, asset condition. These assets can be generally categorized as follows:

- Runways
- Taxiways
- Internal roadways and parking lots
- Large Hangers
- Small Hangers
- Sewage treatment
- Water distribution
- Administration buildings
- Maintenance garage
- Fueling equipment
- Fleet
- Airport lighting systems

**Age distribution:** The airport assets vary in age. Although original construction was in the 1940's however most assets have been upgraded to some degree since then. The average age of the runways has been a noted concern for the last decade as dedicated funding has not been available. Consequently, 1 of 3 runways has been closed due to safety concerns. This closure greatly impacts the safety of landing planes in various wind conditions.

**Staff assigned to manage asset:** Airport Superintendent

## Condition assessment and methodology:

1. Runways are inspected in a bi-annual process that rates based on pavement condition index similar to roads. These inspections have been completed by City staff and by outsourced consultants.
2. Building condition assessments (BCA's) are to be conducted every 5 years either in-house or via consultant.
3. Building components are budgeted for in short, medium, and long term methods.
4. Immediate priorities from BCA's or other inspections are completed in house or via contract
5. Medium and long priorities are sorted based on risk, consequence of failure, best value return on investment, maintaining service levels expectations of users, and coordination with long term airport strategy.

## Existing Levels of Service (LOS)

1. BCA's are set based on maintaining occupancy and usage.
2. National Building Code requirements
3. Water and sewer legislation.
4. Runway capacity and usability.
5. Snow clearing as per Transport Canada(TC) regulations.
6. Airport lighting as per TC regulations.
7. Fuel equipment availability key performance indicators (KPI).
8. Fleet equipment availability KPI.
9. Available hangar space for commercial need.

## **Lifecycle Management Activities**

1. Survey and identify obstacles for conflict with airspace.
2. Crack sealing runways
3. Vegetation trimming and removal to maintain clear zones and site lines.
4. Watermain check valve and hydrant checking.
5. Fleet preventative maintenance.
6. Fix immediate needs from BCA's and plan for long term needs.
7. Relining runway pavement markings
8. Check and replace airport lighting

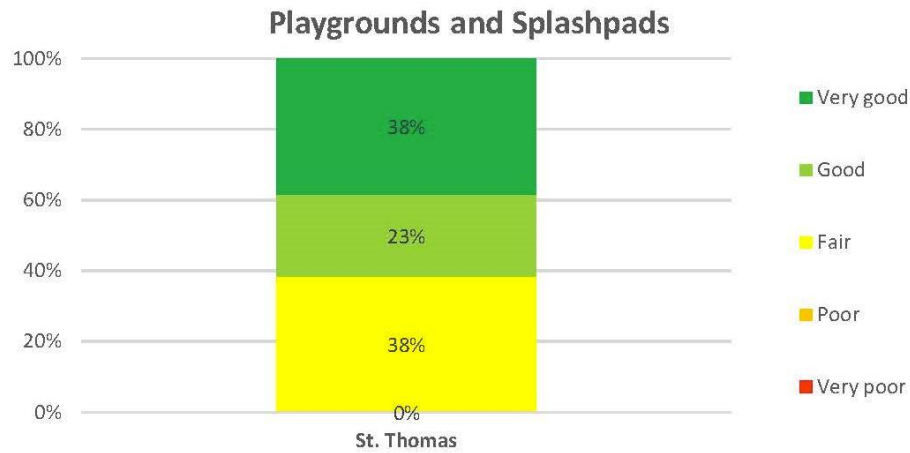
## **Proposed Levels of Service (LOS)**

There are no proposed LOS however it is a key priority to re-open all runways to meet a fundamental safety need and enhance air traffic as a transportation mode.

1 of 3 runways is currently closed. As a result, airport usability is negatively impacted which restricts commercial and private air traffic to the City of St.Thomas and surrounding region.

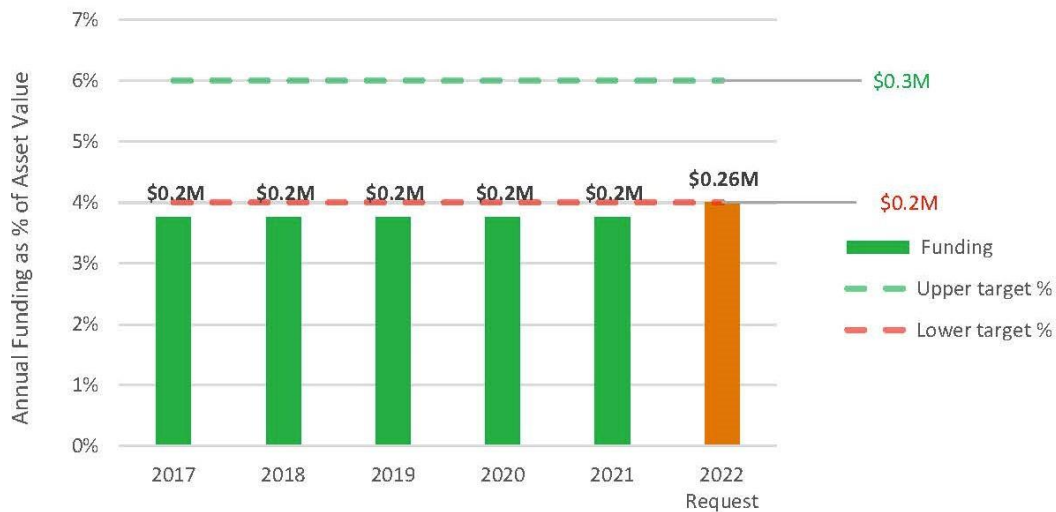
# Playgrounds Asset Management Report Card

23 Playgrounds & 3 Splashpads - \$5,320,000 (\$310/household)



Condition Trend				
2019	2020	2021	Target	Trend
68	67	70	80	↑

## Funding (5 Year Historical)



Infrastructure Gap - \$400,000 (\$23/household)

Annual Deficit - -\$10,000 (\$-1/household)

# Playgrounds: Condition, Assessment & Levels of Service

## Asset description:

- There are 23 playgrounds ranging in size, location, and features.
- 3 splashpads

**Age distribution:** They vary between 1 year old and 20 years since the last major renovation.

**Staff assigned to manage asset:** Supervisor of Parks and Forestry

Applicable CSA section		Compliant with CSA-Z614-14 ?	
Items checked relative to the protective surfacing element		YES	NO
14.0 inclusive	Performance requirements for PLAYSPACE LAYOUT	Y	
10.2 specifically	All equipment with an elevated fall height shall be located on protective surfacing.	Y	
10.3 inclusive	Acceptability of various surfacing materials.	Y	
10.4.2 specifically	A method of containment for loose-fill materials shall be provided.	Y	
10.4.3 specifically	Protective surfacing shall be free from materials that could cause injury.	Y	
10.4.4 specifically	Displacement of loose-fill materials (heavy use areas) shall be monitored, maintained.		N
10.4.5 specifically	Loose-fill materials to be loose, attention shall be paid to maintain consistency.		N
10.4.8 specifically	Standing or ponding water is not acceptable, drainage is essential.	Y	
10.1 specifically	The surfacing material in the protective surfacing zone shall have a Gmax not exceeding 200 and a HIC not exceeding 1000 when tested to the defined fall height. <i>Note: see attached ASTM F1292-99 field test data report</i>		N
<i>Note: items that are shown as "N" (Non Compliant) will be described in full detail later in report</i>			

## Condition assessment and methodology:

1. Annual update of rating.
2. Overall playground rating out of 10.
3. Sort annual needs into short, medium, and long term
4. Short term needs are referred to playground practitioners who may fix themselves or contract out.
5. Medium needs are referred into Major Maintenance program
6. Long term needs are sorted into a 10 year plan and then upcoming year are placed into the capital budget.
7. There is currently \$200k in the annual capital budget that is allotted to 1 or 2 replacements or new builds.

## Existing Levels of Service (LOS):

1. CSA standard Z614-14 is the chosen LOS.
2. Annex H is also met in terms of AODA requirements
3. Minimum playground rating of 2.

## Lifecycle Management Activities

1. Daily, weekly, and monthly inspections depending on location, number of users, and features. Analyze for liability, risk, and general maintenance requirements.
2. Work orders for students to maintain fibar, weeding.
3. Garbage pickup weekly minimum.
4. Repairs and minor maintenance by playground practitioners or contracted out.

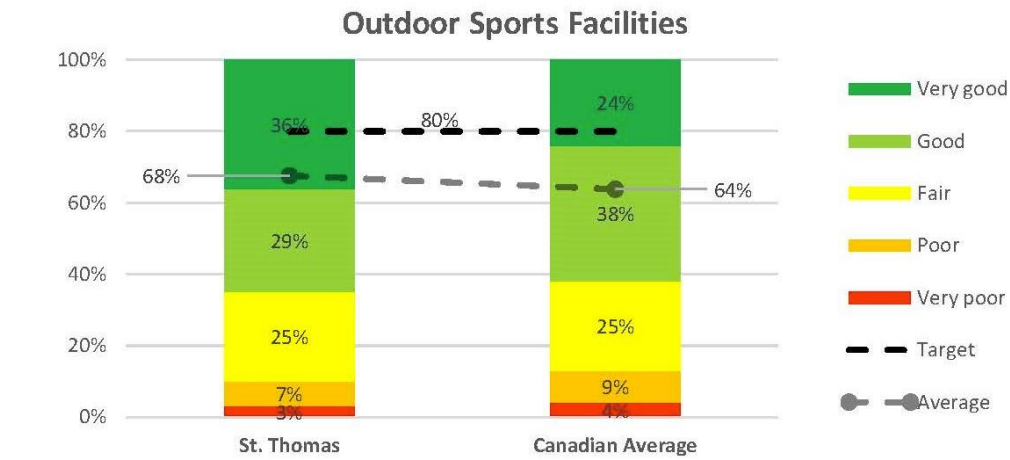
## Proposed Levels of Service (LOS)

1. 2019 review of CSA Z614-14 however no changes anticipated.
2. AODA changes to Annex H have likely stabilized
3. New playgrounds are added as residential growth occurs. New playgrounds at Centennial ball complex and 1Password, as well as future playgrounds in Orchard Park, Shaw Valley, and Parish Park. These will impact operating and capital.

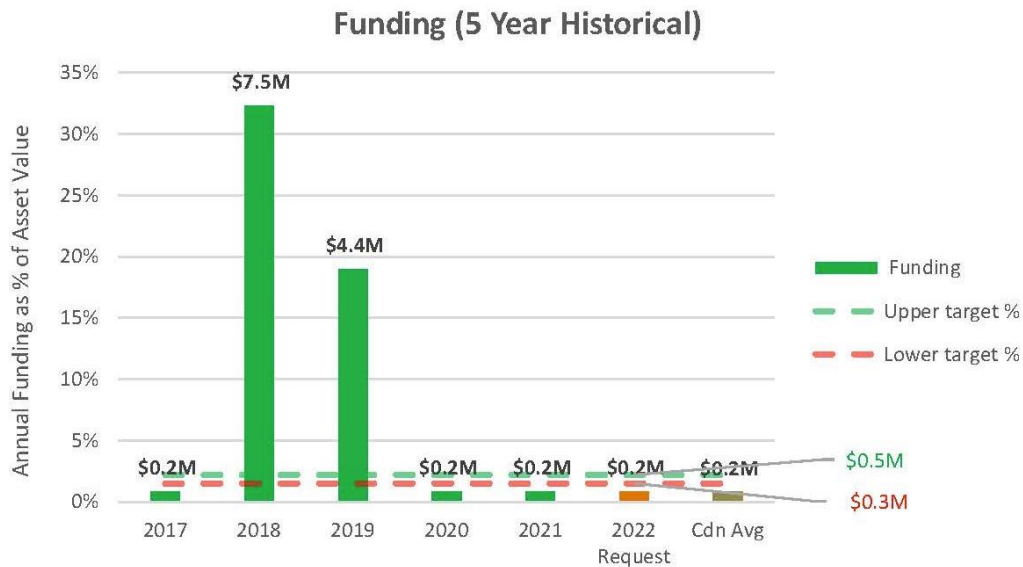


# Outdoor Recreation Facilities Asset Management Report Card

28 Outdoor Facilities - \$23,200,000 (\$1340/household)



Condition Trend				
2019	2020	2021	Target	Trend
66	68	68	80	↔



Infrastructure Gap - \$400,000 (\$23/household)

Annual Funding Deficit - -\$230,000 (\$-13/household)

# Outdoor Recreations Facilities: Condition, Assessment & Levels of Service

## Asset description:

- 1 outdoor pool
- 1PWD – Soccer, basketball, football,
- Athletic and Cowan - Soccer
- New York Central - Baseball
- Lions Park – Baseball, 3 on 3 basketball
- DTL – softball
- Cardinal field - Baseball
- Centennial Ball Complex - baseball
- Pinafore Park – Tennis and Pickleball
- Emslie - Baseball
- Burwell Park – Baseball and basketball
- Gorman Rup – Baseball
- Optimist – Soccer, basketball, baseball
- Applewood – Soccer
- Railway City Skatepark - skateboard
- VA Barrie – Disc Golf
- Water Parks – Disc Golf
- 1Password Park – Basketball, Soccer, multi-featured complex

**Age distribution:** Varies from 1 year to over 100 years.

**Staff assigned to manage asset:** Supervisor of Parks and Forestry

## Condition assessment and methodology:

1. Annual update of rating.
2. Overall playground rating out of 10.
3. Sort annual needs into short, medium, and long term
4. Short term needs are referred to playground practitioners who may fix themselves or contract out.
5. Medium needs are referred into Major Maintenance program
6. Long term needs are sorted into a 10 year plan and then upcoming year are placed into the capital budget.

## Existing Levels of Service (LOS)

1. Sports field monthly inspections for safety and playability
2. Daily and weekly inspections during active seasons.
3. Minimum playground rating of 2.
4. Offseason turf management.

## Lifecycle Management Activities

1. Daily, weekly, and monthly inspections depending on location, number of users, and features. Analyze for liability, risk, and general maintenance requirements.
2. Work orders for students to maintain grass cutting, prepping diamonds, lining, trimming
3. Garbage pickup weekly minimum.
4. Repairs and minor maintenance by playground staff or contracted out.
5. VA Barrie – user group involvement for improvements
6. Cleaning system and disinfection of pool

## Proposed Levels of Service (LOS)