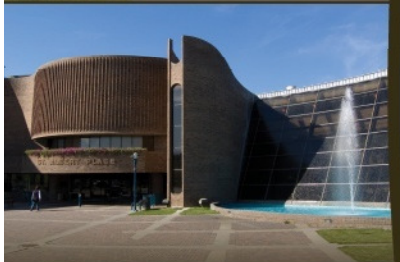


# State of the Infrastructure

2011



# Contents

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- Introduction
- Current conditions
- Continuous improvements
- Conclusion

# Introduction

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- Completed two infrastructure studies in 2004 and 2005.
- Assets covered: roads, sidewalks, buildings, bridges, parks, trails, sanitary, water, storm, signals, and Transit and Public Works equipment.
- Provided the benchmark for long term planning of our infrastructure and management.

# Introduction

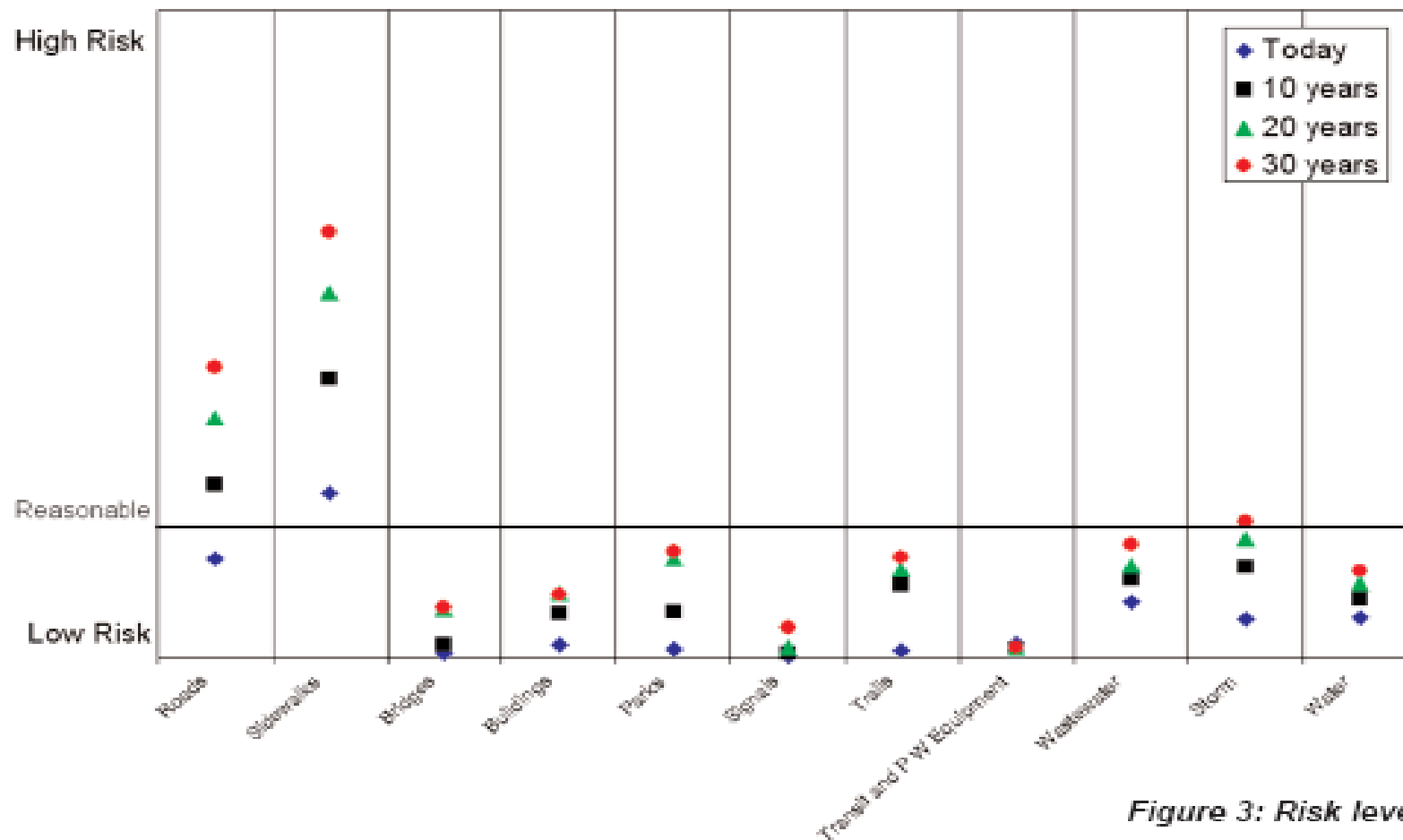


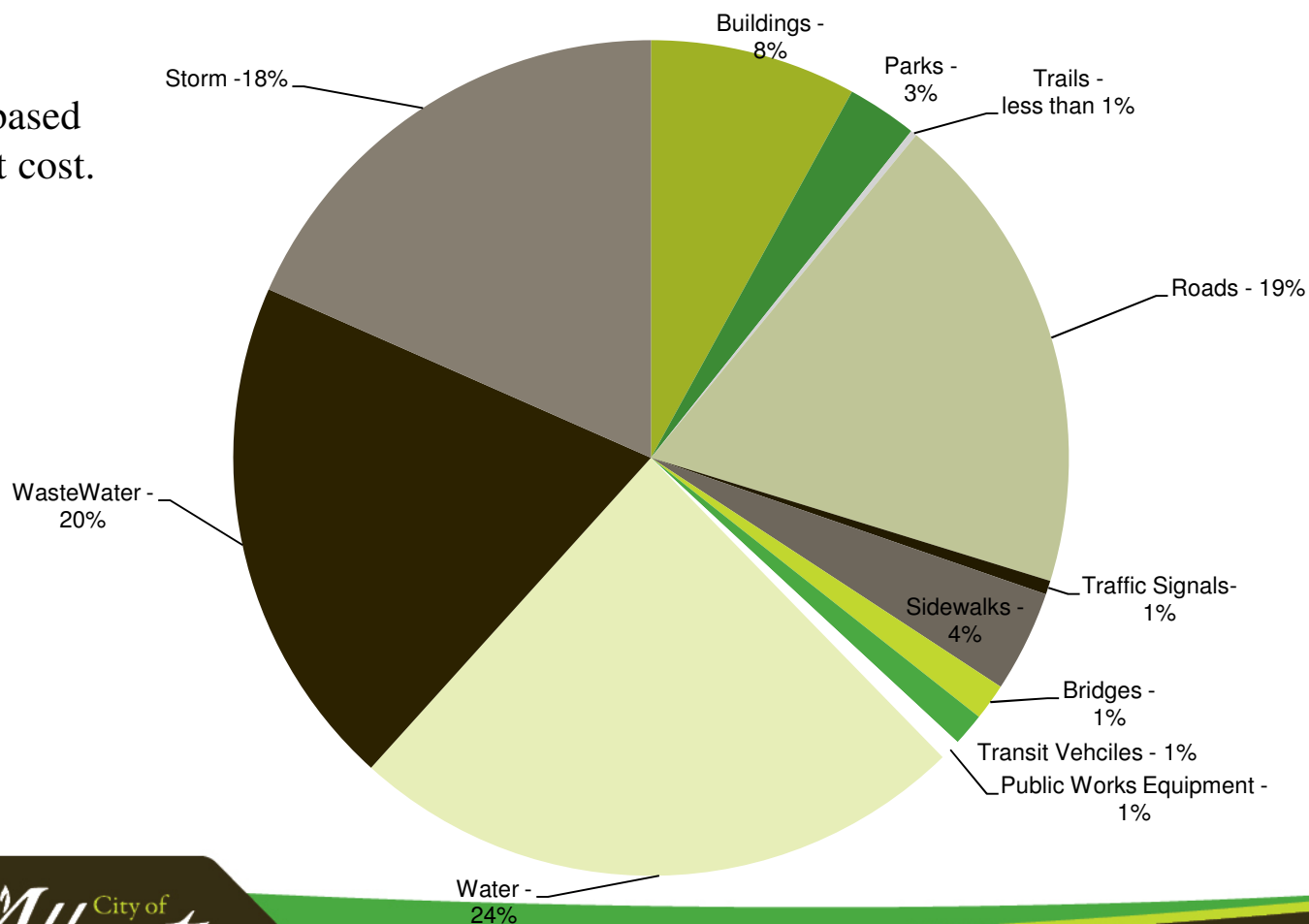
Figure 3: Risk level of all assets

# Introduction

## Percentage Breakdown of Assets

Note:

1. Percentage based on replacement cost.



# Current Condition - Roads

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Total Lane Kilometres – 756 km

Current Program – 3 year cycle of collecting data for the Pavement Management System.

- PQI assessment that is based on weighted factors.
- City re-evaluates roads yearly to produce candidates for the road network programs

# Current Condition - Roads

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## Deterioration Curves

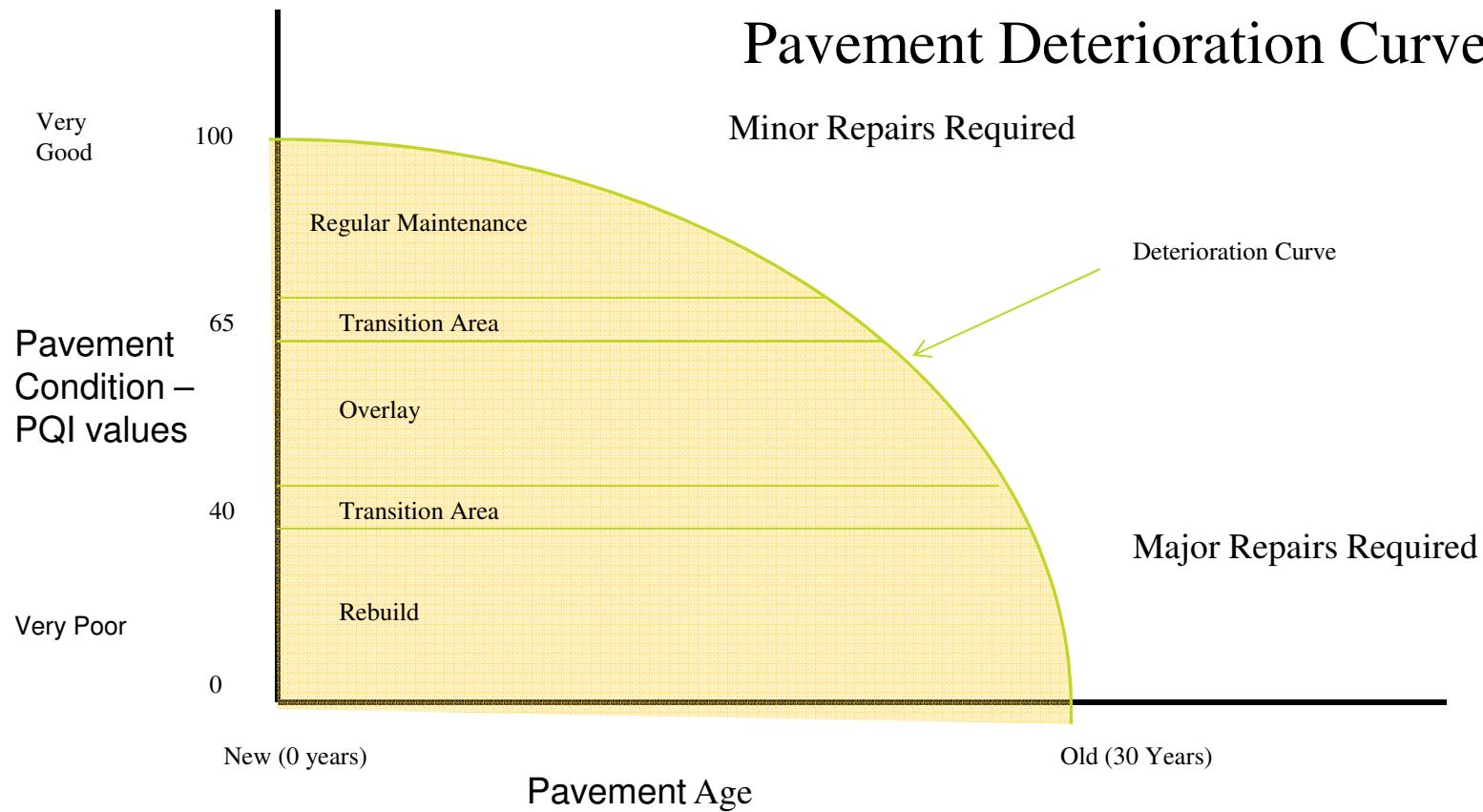
- Helps understand what is happening to the roads over time.
- Identified the needs of the road network.

## Trigger Values

- City identifies the trigger values for where the roads programs will address (overlay, rebuild, do nothing, further investigation required (coring, FWD)).

# Current Condition - Roads

## Pavement Deterioration Curve





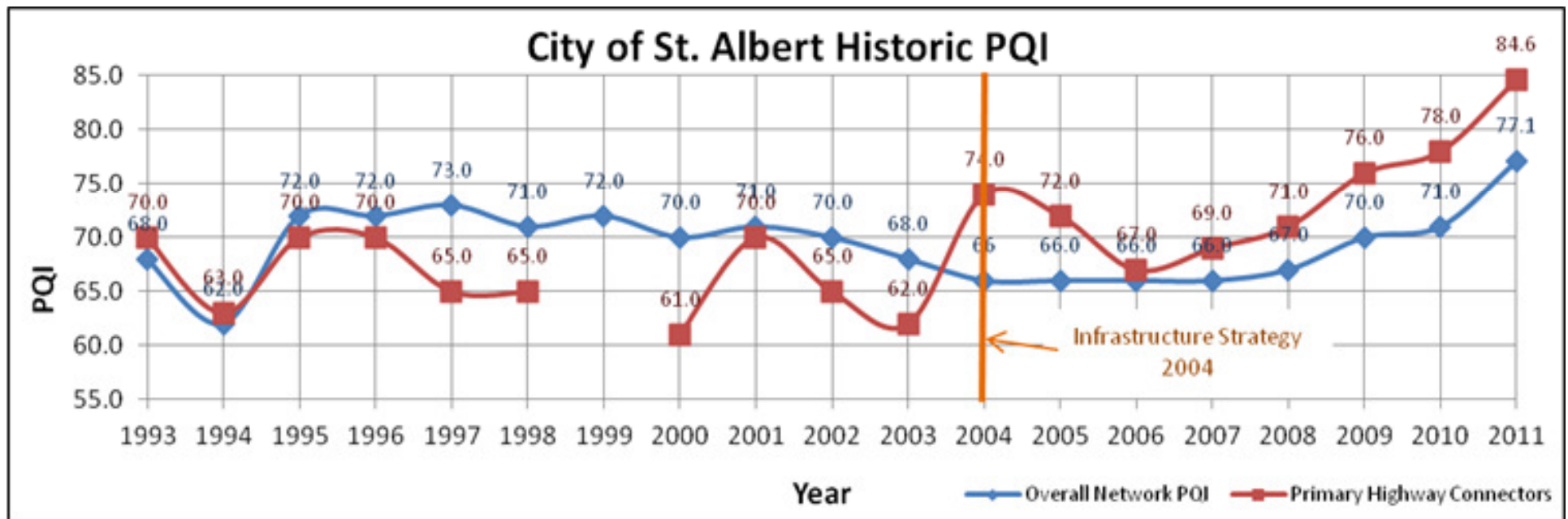
# Current Condition - Roads

## Network PQI (2011)

Functional Class	Present Status			
	PQI	RCI	SDI	SAI
Highway	84.6	75.8	74.9	84.6
Arterial	82	65.9	80.4	86.1
Collector	78.9	60.7	73.6	91.6
Local	73.5	58.4	75.9	91.2
Entire Paved Network	77.1	62.0	76.3	88.3

# Current Condition - Roads

## Historic PQI – City Wide



# Current Condition - Roads

## Local/Collector Overlay Funding

Year	Amount (\$)
2005	129 000
2006	300 000
2007	420 000
2008	480 000
2009	1 800 000
2010	2 100 000
2011	2 170 000
2012	1 793 000
2013	1 660 000

## Arterial Overlay Funding

Year	Amount (\$)
2005	300 000
2006	400 000
2007	720 000
2008	960 000
2009	1 950 000
2010	2 000 000
2011	2 140 000
2012	1 730 000
2013	1 930 000

# Current Condition - Roads

## Local Rebuild Funding

Year	Amount (\$)
2005	0
2006	0
2007	0
2008	0
2009	1 000 000
2010	1 150 000
2011	2 140 000
2012	1 730 000
2013	1 930 000

## Collector Rebuild Funding

Year	Amount (\$)
2005	0
2006	0
2007	0
2008	0
2009	1 000 000
2010	1 150 000
2011	2 140 000
2012	1 730 000
2013	1 930 000

# Current Condition - Roads

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## Intersections

- Stand alone features within the road network.
- Showing signs of deteriorations after a short life span particularly along the high volume routes.
- Study completed in 2011.

# Current Condition - Roads

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2011

- Overlay program experienced a set back with the failures of Dalhousie Street, Dufferin Street and Deerbourne Drive.
- Actions were taken to address these failures that had impacts on other programs.
- Overlay program was partially completed with funds not directed towards the rebuilds in Deer Ridge.
- Falstaff Ave was rebuilt.

# Current Condition - Bridges

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## Overall

6 of various types.

- 10 road way.

- 6 pedestrian.

## Current Condition

- 8 roadway bridges have been reconstructed or rehabilitated since 2004.

- 2 pedestrian bridges have been rehabilitated since 2005.

- 4 pedestrian bridges are identified for rehabilitation work for 2012.

# Current Condition - Bridges

---

## Overall

- 2 of the standard timber bridges will need to be replaced in the next 10-15 years.
- Pedestrian bridges are in fair to good condition.
- St Albert Trail Bridges (x2), Ray Gibbon Drive Bridge and Boudreau Bridge. Minor maintenance required.



# Current Condition - Sidewalks

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Total length	<ul style="list-style-type: none"><li>-455km of concrete sidewalks;</li><li>- 45km of asphalt trails.</li></ul>
Assessments	<ul style="list-style-type: none"><li>-Total network assessed every three years.</li><li>- Identifies rehabilitation, repairs and trip hazard removal .</li></ul>
Note	<ul style="list-style-type: none"><li>- Sidewalk program was deferred in 2011.</li><li>- 1484 trip hazards were removed from the network in 2011.</li></ul>

# Current Condition - Sidewalks

Neighbourhood Condition Rating Distribution

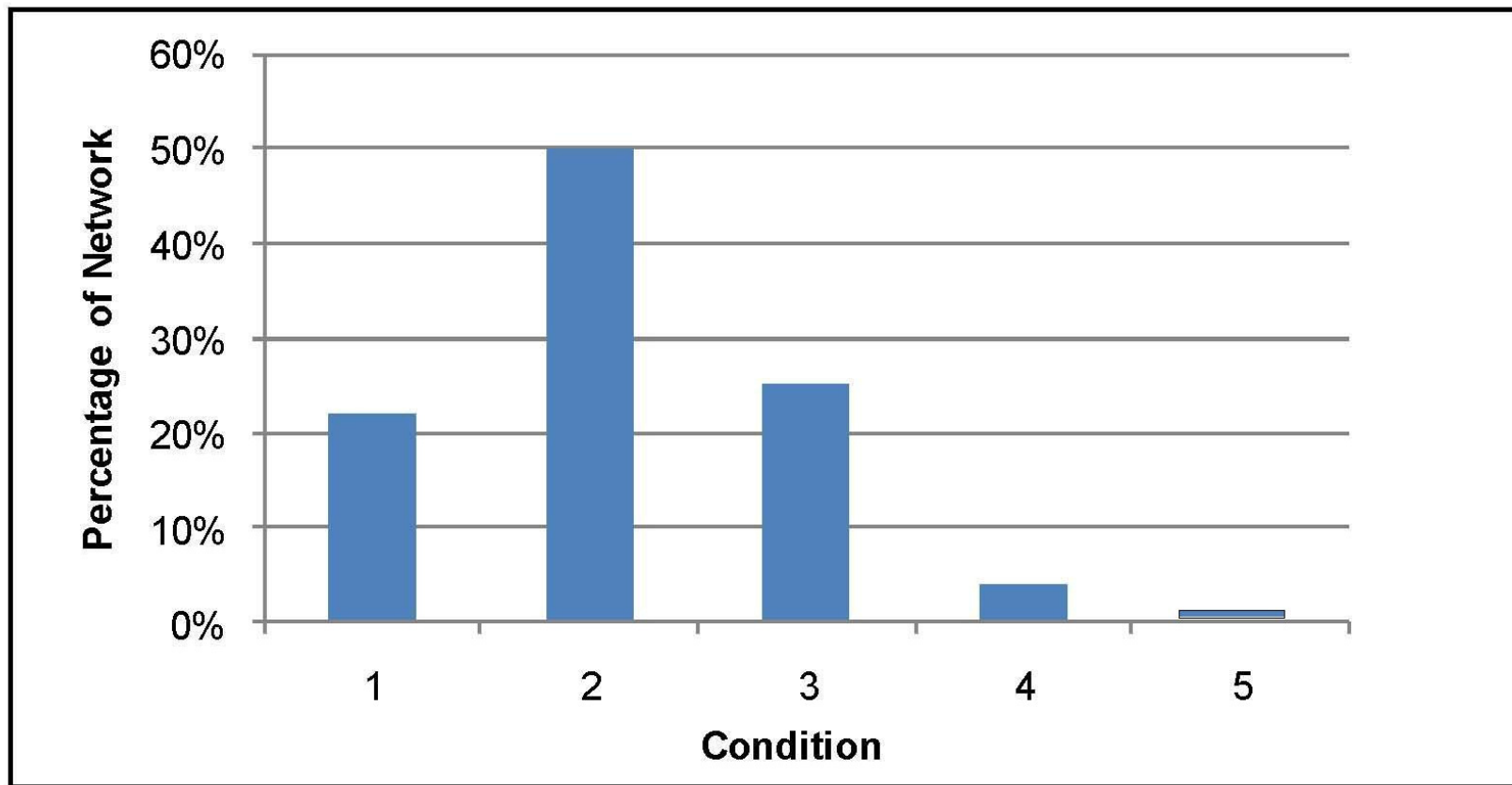
Condition Rating	Neighbourhood
1	North Ridge, Erin Ridge and Oakmont
2	Deer Ridge, Kingswood, Inglewood, Woodlands
3	Lacombe, Pineview, Forest Lawn, Heritage Lakes and the Downtown
4	Sturgeon and Mission
5	Braeside and Grandin

Note: Condition rating numbers:

1 = new

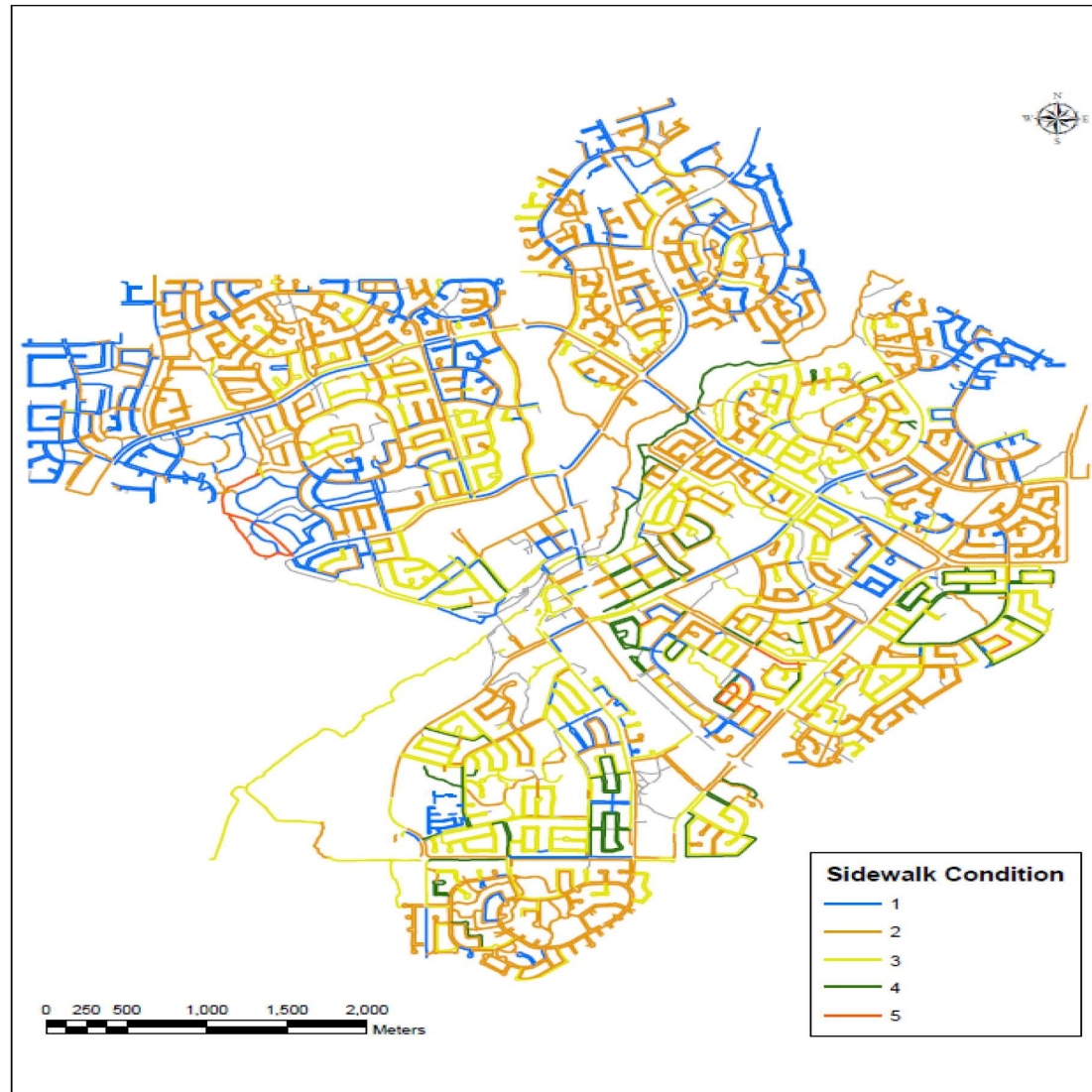
5 = poor.

# Current Condition - Sidewalks



SIDEWALK CONDITION DISTRIBUTION

# Current Condition - Sidewalks



CITY OF ST ALBERT SIDEWALK CONDITION RATING DISTRIBUTION

# Current Condition - Utilities

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The City has a various number of utilities.

Water - 322km of water lines, 4 pump houses, 3 reservoirs, 1597 fire hydrants.

Storm – 259 km of storm lines (includes culverts), 3372 catch basins, 21 storm water ponds, 42 outfalls and 10 storm grit separators.

Wastewater – 280 km of sanitary lines, 12 lift stations (includes three private and 1 Capital Region).

# Current Condition - Utilities

Rating	Implication	Action
1	No structural condition problems	No rehabilitation required (ongoing monitoring and routine maintenance only)
2	Some structural deficiencies noted	No rehabilitation required (ongoing monitoring and routine maintenance only)
3	Structural condition showing deterioration	Some rehabilitation or maintenance required subject to budget availability
4	Structural condition is near failure	Rehabilitation or maintenance required
5	Structural condition has failed	Immediate rehabilitation or maintenance required

Note – rating guide for pipes

# Current Condition - Utilities

## Close Circuit TV (CCTV)

- Provides video on the storm and wastewater pipes.
- Approx 80% of the wastewater network has been videoed and 22% of the storm.
- methods of inspecting water lines is being reviewed.
- 2011 our CCTV crew videoed 26km of pipes and re-inspected 13km.

# Current Condition - Utilities

## Lining Existing Pipes

- Program completed 4.3km of pipe in 2011.
- Addressed roughly 50% of the priority 5 pipes (failed) and 14% of all identified pipe problems.

## Storm

- Engineering has compiled data that has identified 23 trouble areas.
- 2011 work began to address three areas: Oak Vista Drive, Heritage Lake Pond, and Oasis Court.
- Havenwood Pond was completed.



# Current Condition - Utilities

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## Water

- City had 5 water main breaks in 2011, one caused by a contractor.
- Average number for St Albert.

# Current Condition – Buildings/Structures

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## Overall

- City owns 62 buildings of various sizes.
- Public Works Asset Management Branch conducts inspections and reports on buildings.
- Overall buildings are in fair to good condition.

# Current Condition – Buildings/Structures

## Overall

- Structures include any assets that are not buildings such as barrier walls and retaining wall.

## 2011

- Barrier wall studied in 2010/11 and repairs identified for 2012.

- Study initiated to look at the overall conditions of the buildings.

- Aim is to produce a rehabilitation strategy for all City owned building infrastructure.

# Current Condition – Traffic Signals

## Assets

- 52 fully signalized intersections
- 21 Pedestrian ½ signals
- 8 Pedestrian amber flashers
- 3 Fire hall flashers
- 7 school zone flashers (2 solar powered)

## Condition

- 14 intersections are still working on old technology (25+ years). The rest have been upgraded.

# Current Condition – Traffic Signals

2011

- 7 intersections upgraded with video detection cameras.
- 10 intersections upgraded with pedestrian countdown timers.
- 20 intersection traffic signal controllers replaced with new models.

# Current Condition – Traffic Signals



# Current Condition – Traffic Signals



# Continuous Improvements

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## Roads

- Review of the indexes and adjust the pavement program degradation model to reflect St Albert.
- review new options for our roads and intersections that will extend service life.

## Sidewalks

- Sidewalk program 2012 including bus pads.



# Continuous Improvements

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## Bridges

- Review preventive measures that will extend service life.
- Remain proactive with scheduled inspections.

## Buildings/Structures

- review the condition of City owned retaining walls.

## Traffic Signals

- Infrastructure Upgrades.
- Increase operational service levels.

# Conclusion

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## Discussion