ASSET MANAGEMENT PLAN WORKSHOP

URBAN SYSTEMS

Pinawa MANITOBA

March 2020

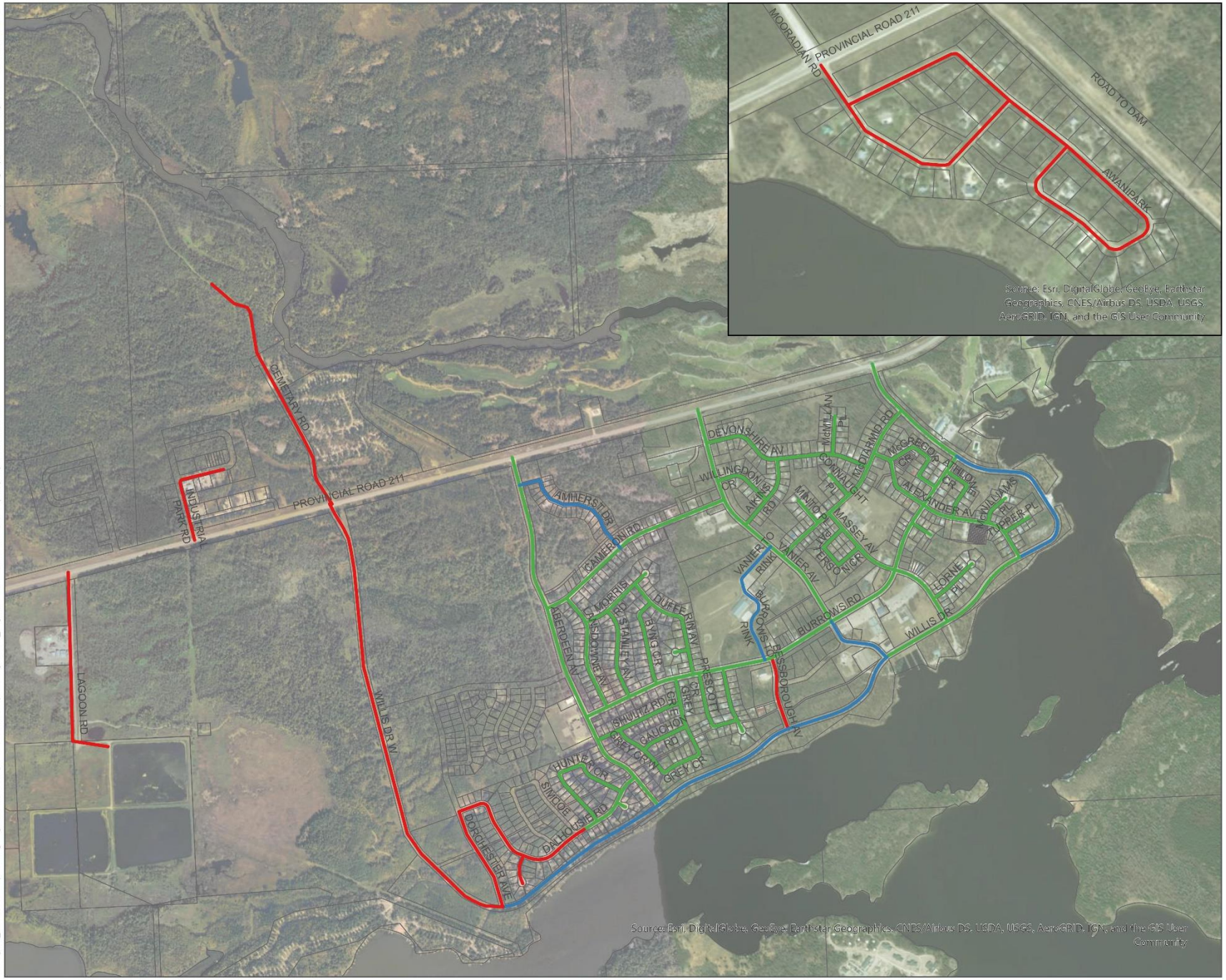
WORKSHOP OVERVIEW

- GIS Mapping - Development of a New Tool
- Asset Replacement Forecast
- Break Out Group – Discussion & Feedback
- Asset Management Plan
- Asset Management Policy

GIS – A NEW TOOL

LEVERAGING PREVIOUS INVESTMENTS


BURROWS TOWN



LGD of Pinawa

Asset Management

Road Surface Material

Road Surface Material

- Gravel
- Asphalt
- Concrete

The accuracy & completeness of information shown on this drawing is not guaranteed. It will be the responsibility of the user of the information shown on this drawing to locate & establish the precise location of all existing information whether shown or not.

0 200 400
Meters

Coordinate System:

NAD 1983 UTM Zone 14N

Data Sources:

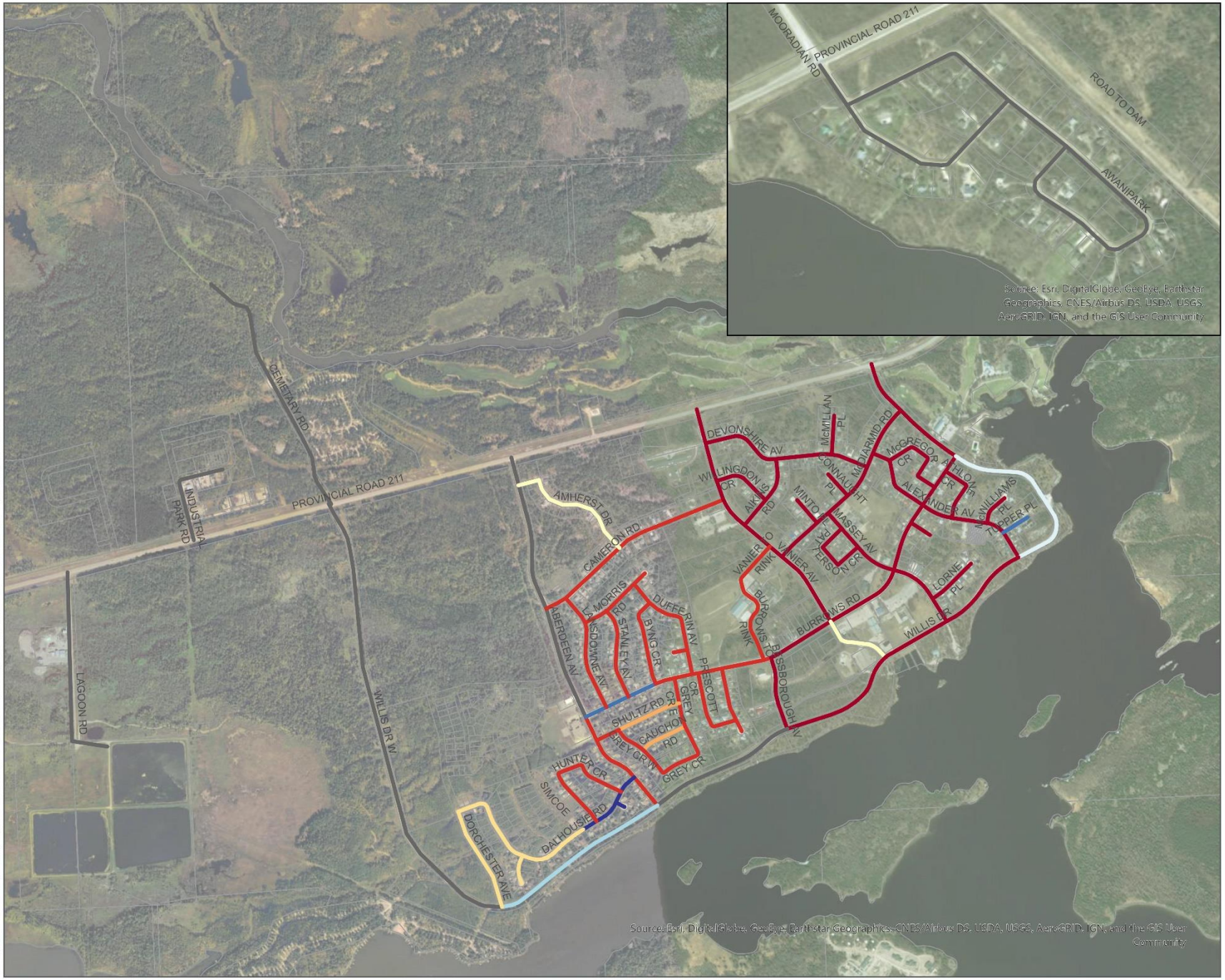
LGD of Pinawa

Project #:	4636.0001.01
Author:	SQ
Checked:	DS
Date:	2020 / 3 / 16

URBAN systems

FIGURE R1

Last updated by squalle on Monday, March 16, 2020 at 9:47 AM
U:\Projects_EDM\9999\Temp Working Projects\Pinawa AM (WPG 4636.0001.01)\GIS\Projects\Pro_Projects\Pinawa Water and Roads Gap Maps aprx\Road Material



LGD of Pinawa

Asset Management

Road Surface Install Year

Road Surface Year

- 1961
- 1966
- 1990
- 2005
- 2010
- 2016
- 2017
- 2018
- 2019
- Unknown

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0 200 400
Meters

Coordinate System:

NAD 1983 UTM Zone 14N

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URBAN systems

FIGURE R2

Last updated by squalle on Monday, March 16, 2020 at 9:26 AM
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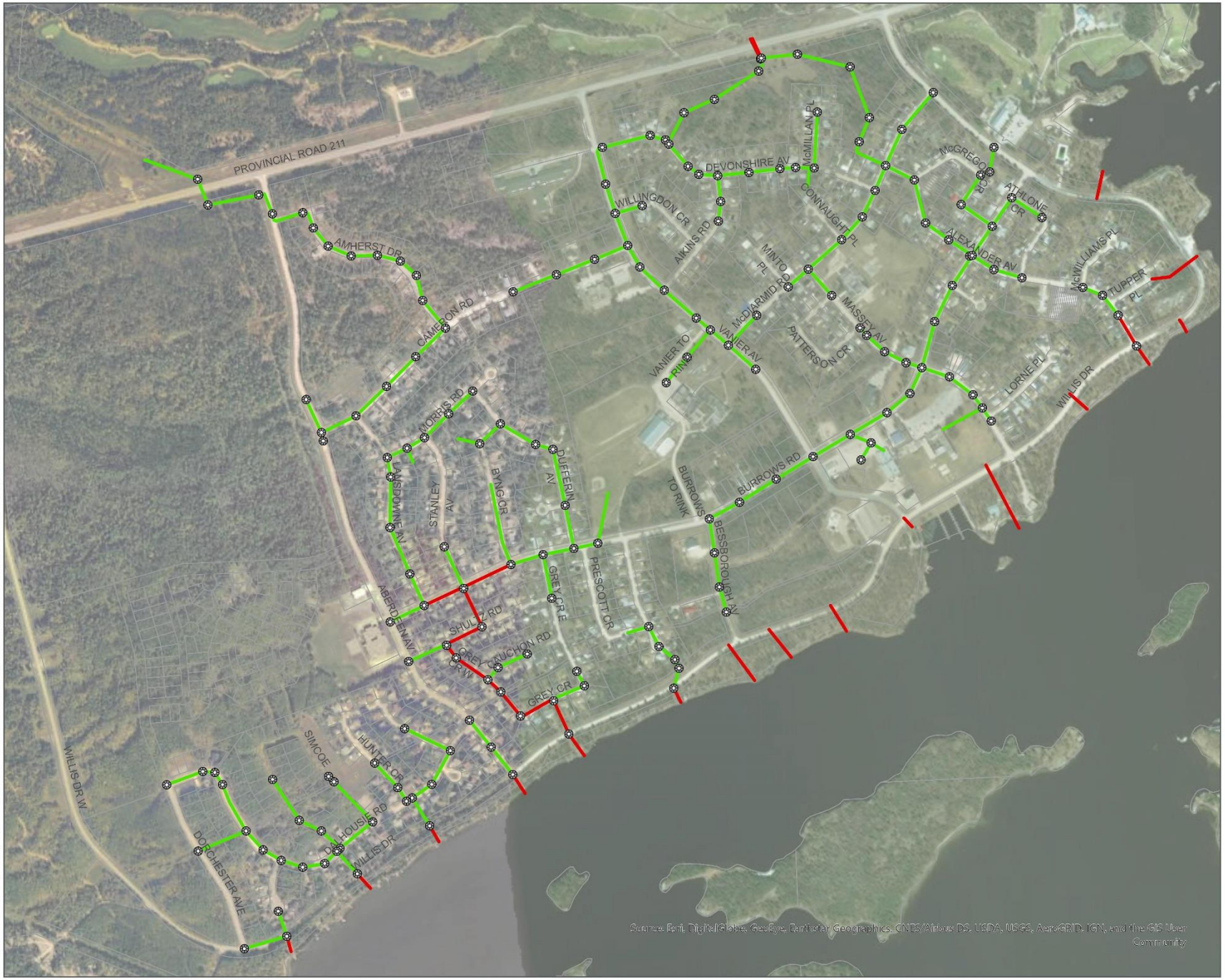

LGD of Pinawa

Asset Management

Storm Main Material

Manhole

Gravity Main Material

- Corrugated Metal
- Concrete

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0 100 200 300

Meters

Coordinate System:

NAD 1983 UTM Zone 14N

Data Sources:

LGD of Pinawa

Project #:	4636.0001.01
Author:	SQ
Checked:	DS
Date:	2020 / 3 / 16

URBAN systems

FIGURE ST1

Last updated by squelle on Monday, March 16, 2020 at 10:09 AM
U:\Projects_EDM\9999\Temp Working Projects\Pinawa AM (WPG 4636.0001.01)\GIS\Projects\Pro_Projects\Pinawa San and Stm Gap Maps.aprx\Storm Material

LGD of Pinawa

Asset Management

Storm Main Size

Manhole

Gravity Main Size (mm)

- 200
- 300
- 375
- 450
- 525
- 600
- 750
- 900
- 1050
- 1200
- 1350
- 1500

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0 100 200 300

Meters

Coordinate System:

NAD 1983 UTM Zone 14N

Data Sources:

LGD of Pinawa

Project #:	4636.0001.01
Author:	SQ
Checked:	DS
Date:	2020 / 3 / 16

URBAN systems

FIGURE ST2

Last updated by squelle on Monday, March 16, 2020 at 10:01 AM
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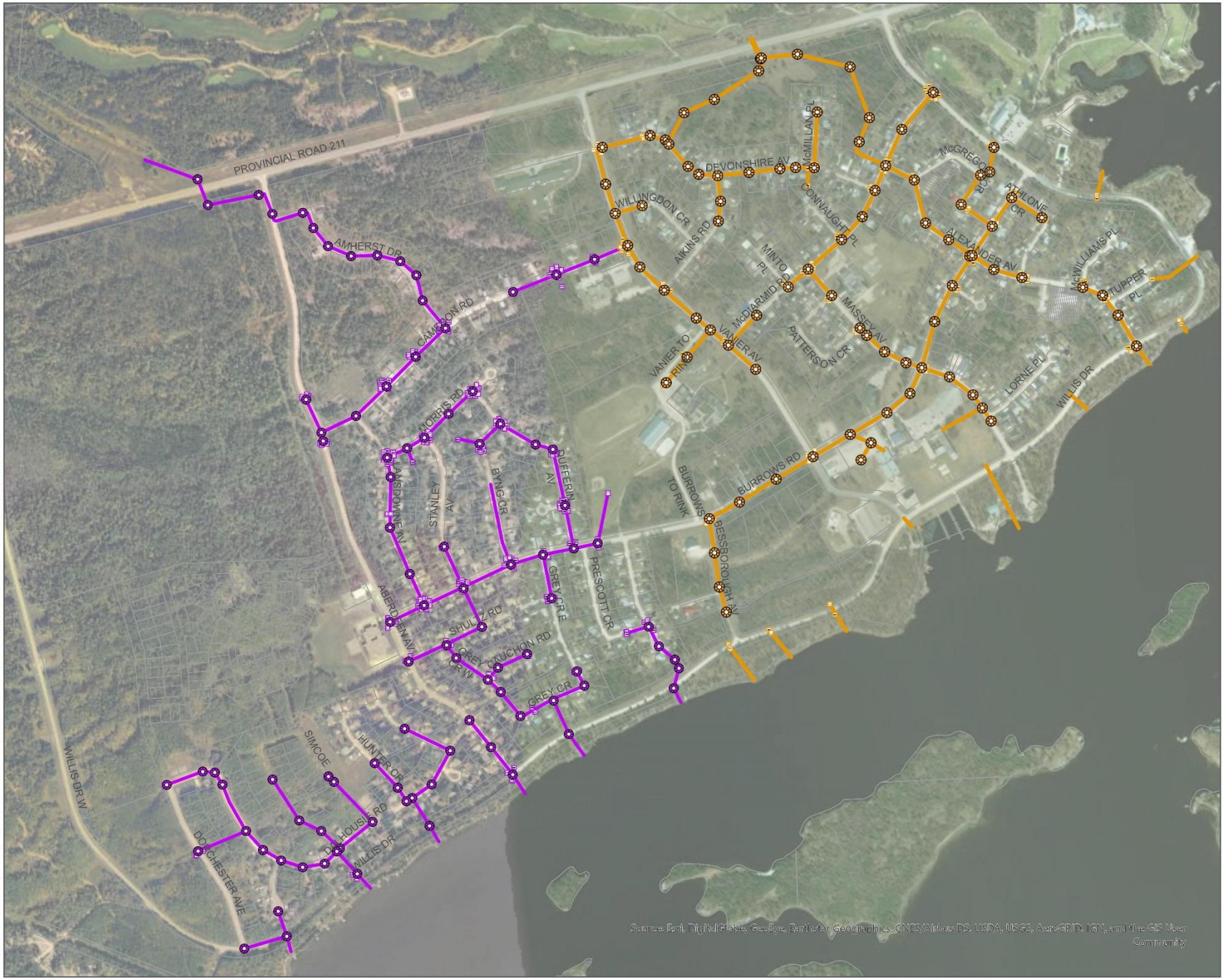

LGD of Pinawa

Asset Management

Storm Install Year

Manhole Install Year

Install Year

- 1966
- 1961
- Unknown

Inlet Install Year

- 1961
- 1966

Gravity Main Install Year

- 1966
- 1961

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0 100 200 300

Meters

Coordinate System:

NAD 1983 UTM Zone 14N

Data Sources:

LGD of Pinawa

Project #:	4636.0001.01
Author:	SQ
Checked:	DS
Date:	2020 / 3 / 16

URBAN systems

FIGURE ST3

Last updated by squalle on Monday, March 16, 2020 at 9:59 AM
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20 YEAR FINANCIAL MODEL

ASSET REPLACEMENT FORECAST A.R.F.

What is an A.R.F.?

- An overview of all assets owned and their attributes and replacement costs

How is it developed?

- Uses information in the asset inventory
- Uses theoretical asset age to forecast asset replacement
- Uses replacement cost (today's $) as opposed to historical cost

Who can use it?

- Council
- Senior Administration and Finance
- Technical and Operations Staff

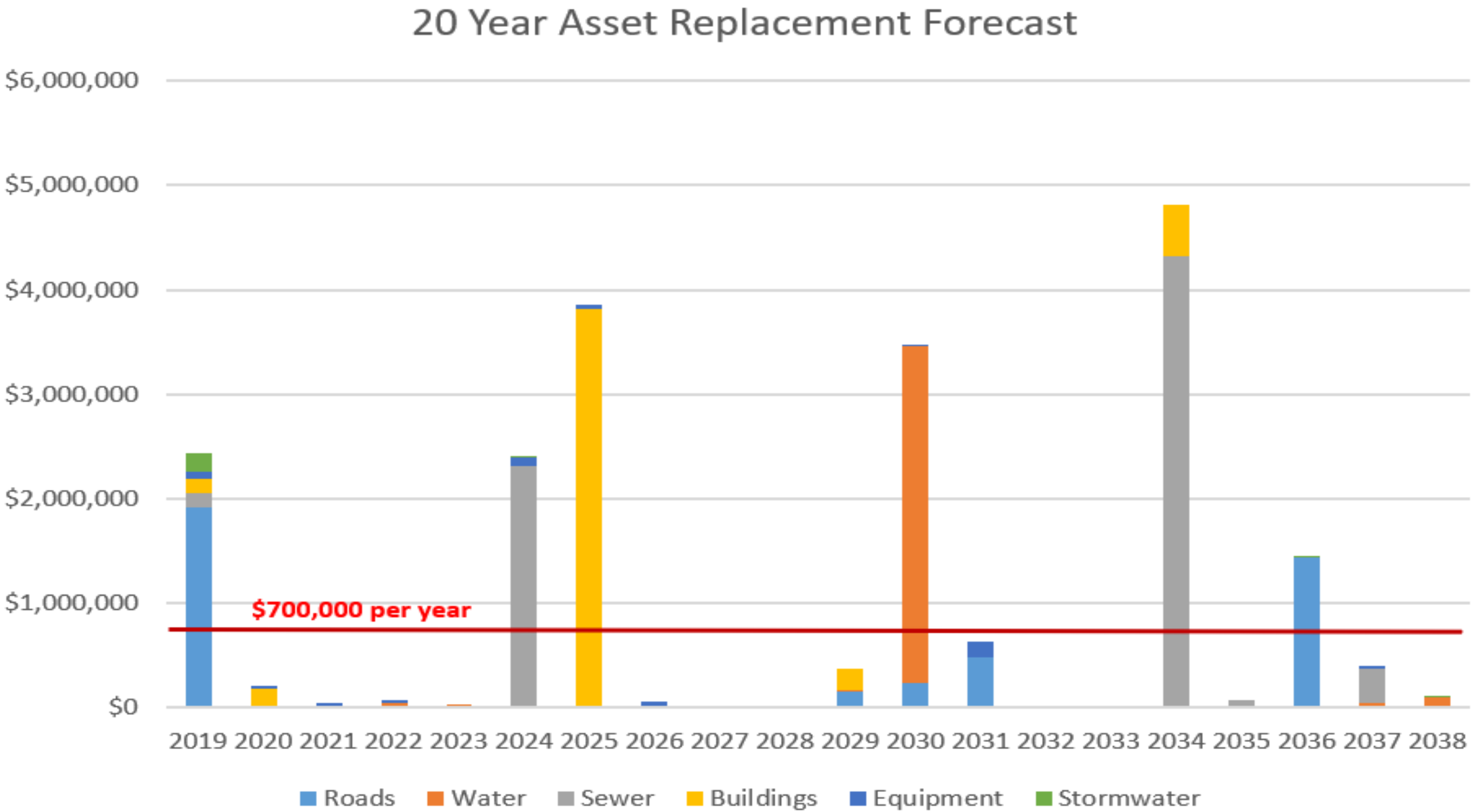
How can the A.R.F be used?

- It is meant to give you a high-level understanding of your strategic risk
- It helps with understanding where your highest replacement value assets are, and how old they are
- Combined with understanding your service needs and risks, it can help you make decisions about infrastructure investments
- It is **NOT** your TCA report, capital plan, budget plan, or a rehabilitation program

Asset Replacement Forecast

What is the "**Average Annual Life Cycle Investment (AALCI)**"?

- It is the total value of your assets divided by their theoretical useful life
- It is meant to be a tool for assessing your financial capacity for infrastructure investment


20 Year Asset Replacement Forecast
$6,000,000
$5,000,000
$4,000,000
$3,000,000
$2,000,000
$1,000,000
$0
$700,000 per year
2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038
Roads
Water
Sewer
Buildings
Equipment
Stormwater

Asset Replacement Forecast

What is **infrastructure backlog**?

- It's the value of the assets that have reached their theoretical age before 2020 and haven't been replaced yet.

What is **remaining life**?

- The number of years before the asset reaches its theoretical age, based on its install year.

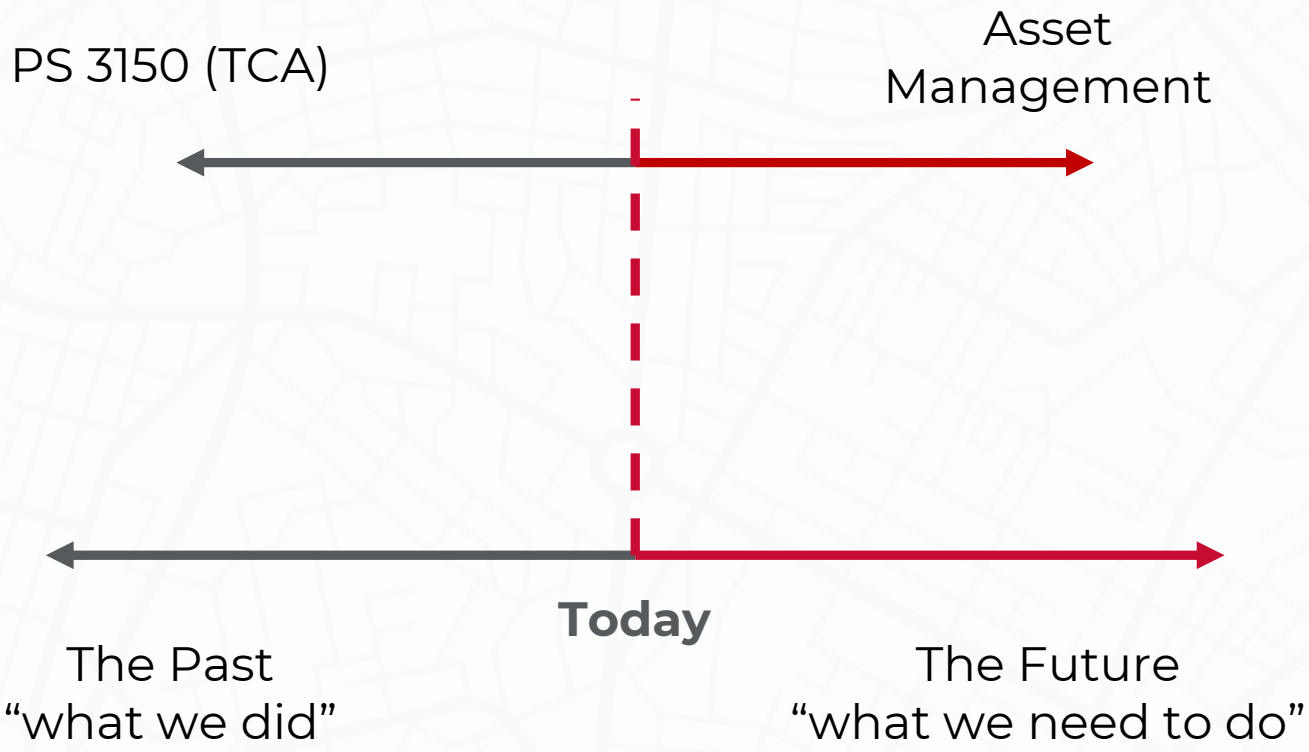
What is **replacement value**?

- The cost to replace the asset as it is, in 2020 dollars.

Asset Replacement Forecast

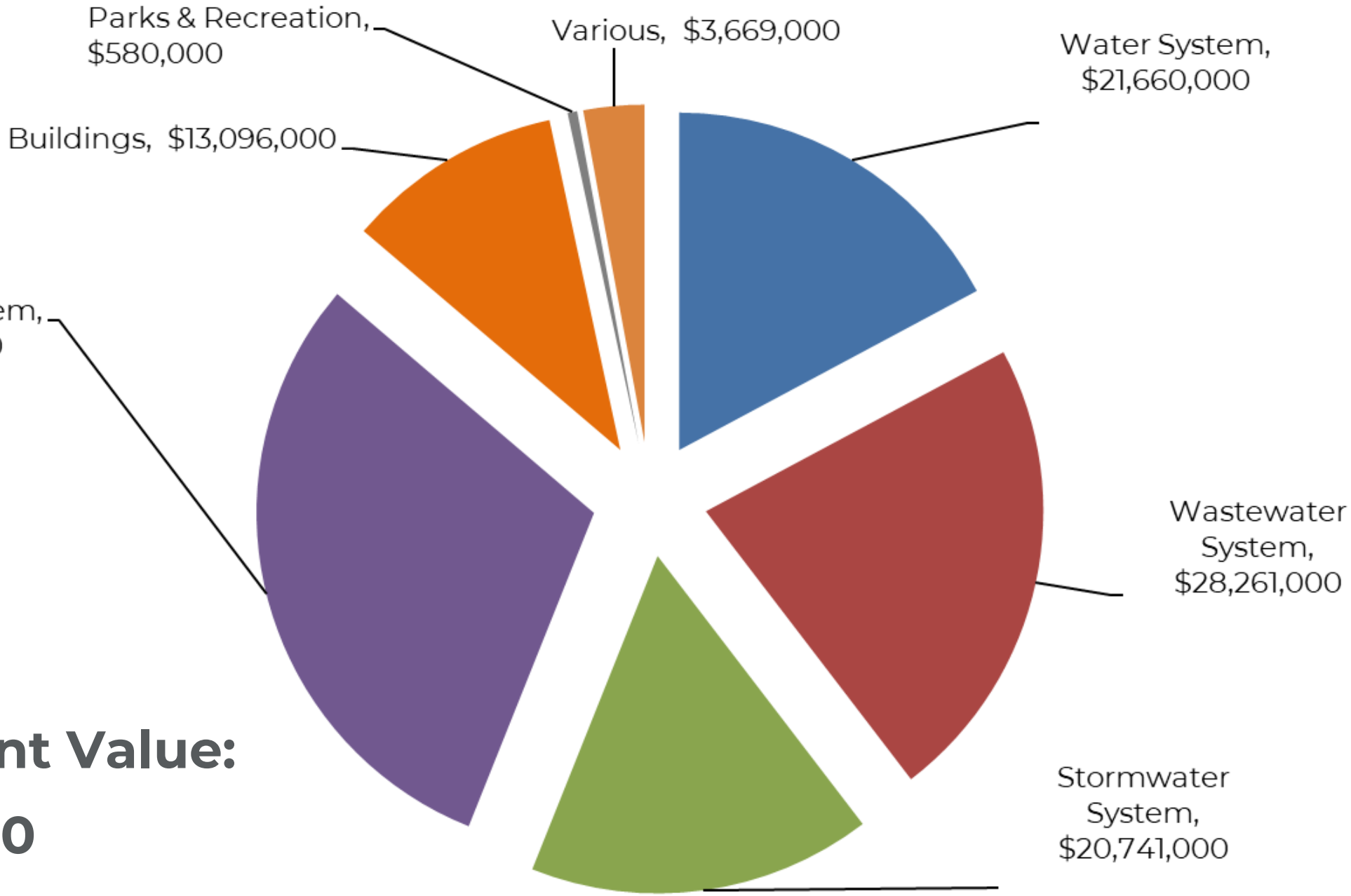
How is the A.R.F different from your TCA?

- TCA shows historical cost (what you paid when you bought it), A.R.F outlines the cost required to replace the asset today



ARF - Variable levels of details for different users

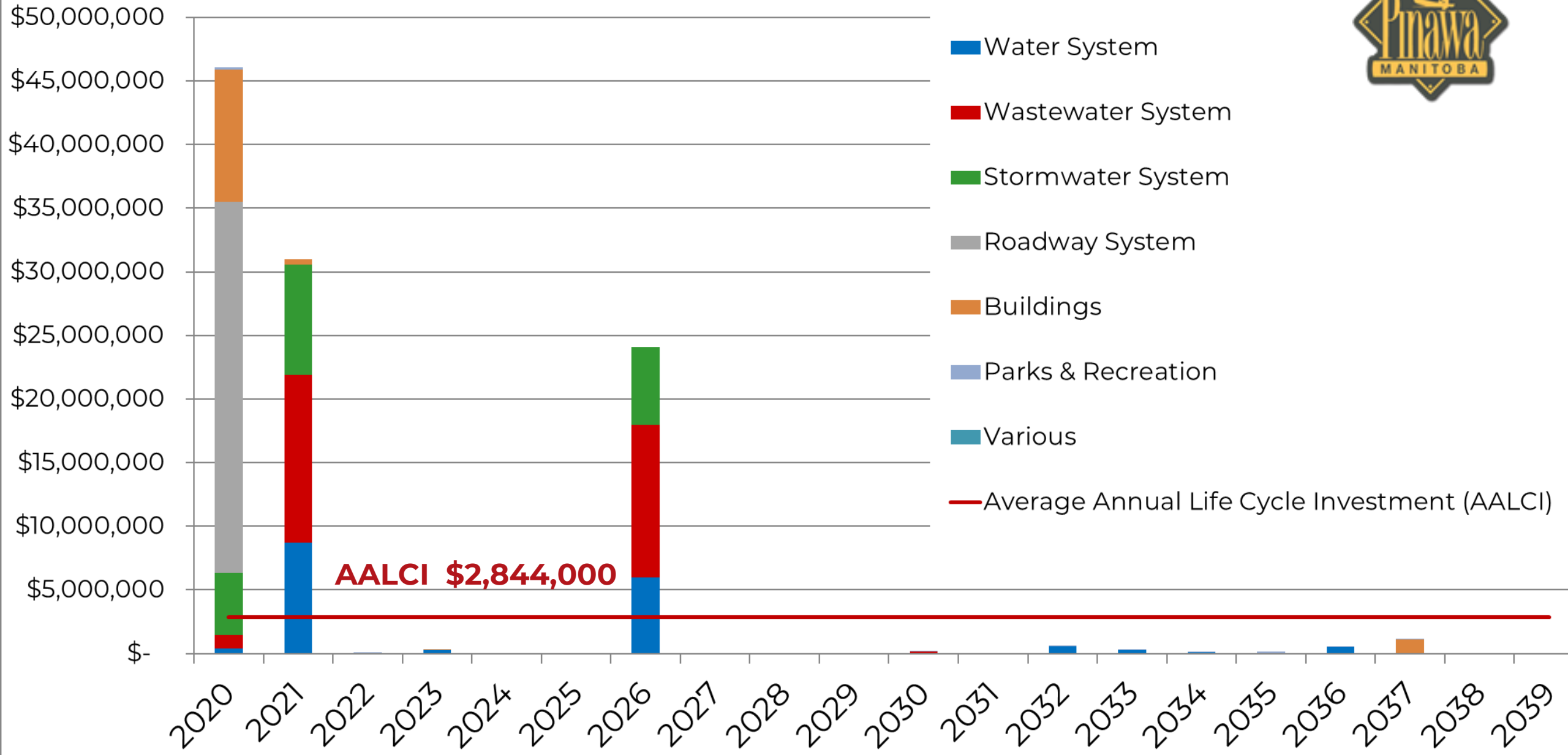
- Level 2: most detailed – used by technical staff and senior staff
  - Each asset type has a tab
  - Individual assets are listed with their unique I.D.
- Level 1: summary – used by council and senior staff
  - Overview of all assets grouped based on their type and service
  - AALCI
- Charts and Tables
- Input tables and costs



Total Asset Replacement Value:

$126,057,000

Asset Replacement Forecast - 20 Year Horizon



ARF Level 1 Summary - Water System

Asset Types	Quantity	Replacement Value	Expected Remaining Life
Water Mains	~18.8 km	$19.2 M	21 %
Valves	134	$0.4 M	14 %
Hydrants	153	$1.0 M	39 %
PRV	1	$0.04 M	0 %
Water Meters		$0.5 M	60 %
Facilities		$0.5 M	40 %
TOTAL		**$21.6 M**	**23 %**

ARF Level 1 Summary – Wastewater System

Asset Types	Quantity	Replacement Value	Expected Remaining Life
Forcemain	~1.8 km	$2.5 M	2 %
Gravity Main	~17.0 km	$22.8 M	6 %
Manholes	246	$1.0 M	0 %
Lift Station	1	$0.1 M	0 %
Lagoon	1	$1.9 M	94 %
TOTAL		**$28.3 M**	**11 %**

ARF Level 1 Summary – Stormwater System

Asset Types	Quantity	Replacement Value	Expected Remaining Life
Gravity Main	~13.0 km	$18.4 M	4 %
Catchbasins	296	$1.1 M	30 %
Manholes	181	$1.2 M	0 %
Culverts	*TBD*		
TOTAL		**$20.7 M**	**5 %**

ARF Level 1 Summary – Roadway System

Asset Types	Quantity	Replacement Value	Expected Remaining Life
Roads	~25.6 km	$37.8 M	11 %
Sidewalks	*TBD*		
Curbs	1.3 km	$0.2 M	97 %
TOTAL		**$38.1 M**	**12 %**

ARF Level 1 Summary – Buildings

Asset Types	Replacement Value	Expected Remaining Life
Recreational	$3.0 M	6 %
Administrative	$0.9 M	69 %
Public Works	$8.2 M	5 %
Other	$0.9 M	68 %
TOTAL	**$13.1 M**	**15 %**

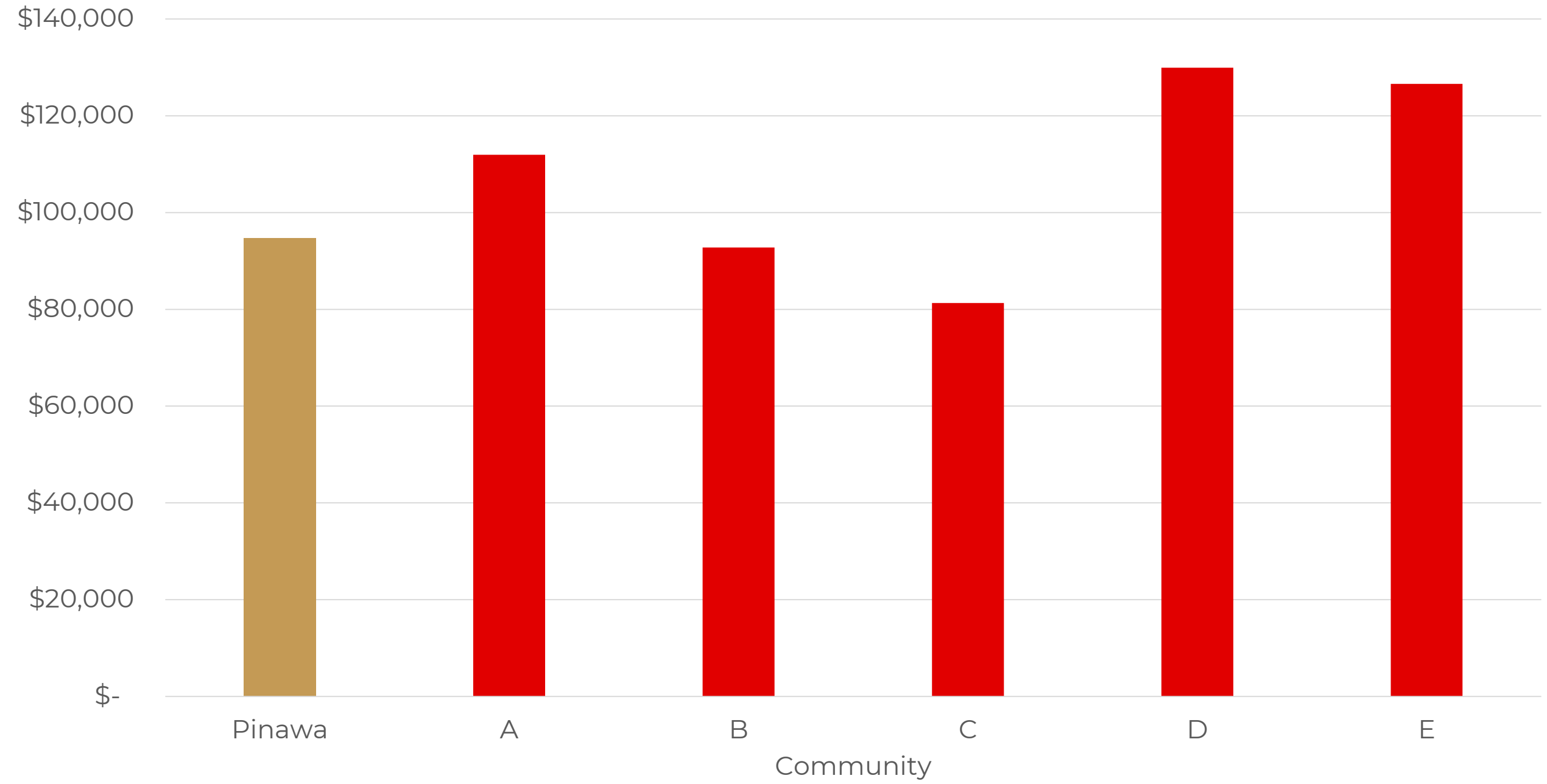
ARF Level 1 Summary – Parks and Trail Systems

Asset Types	Replacement Value	Expected Remaining Life
Parks	$0.5 M	48 %
Trails	$0.08 M	74 %
TOTAL	**$0.6 M**	**51 %**

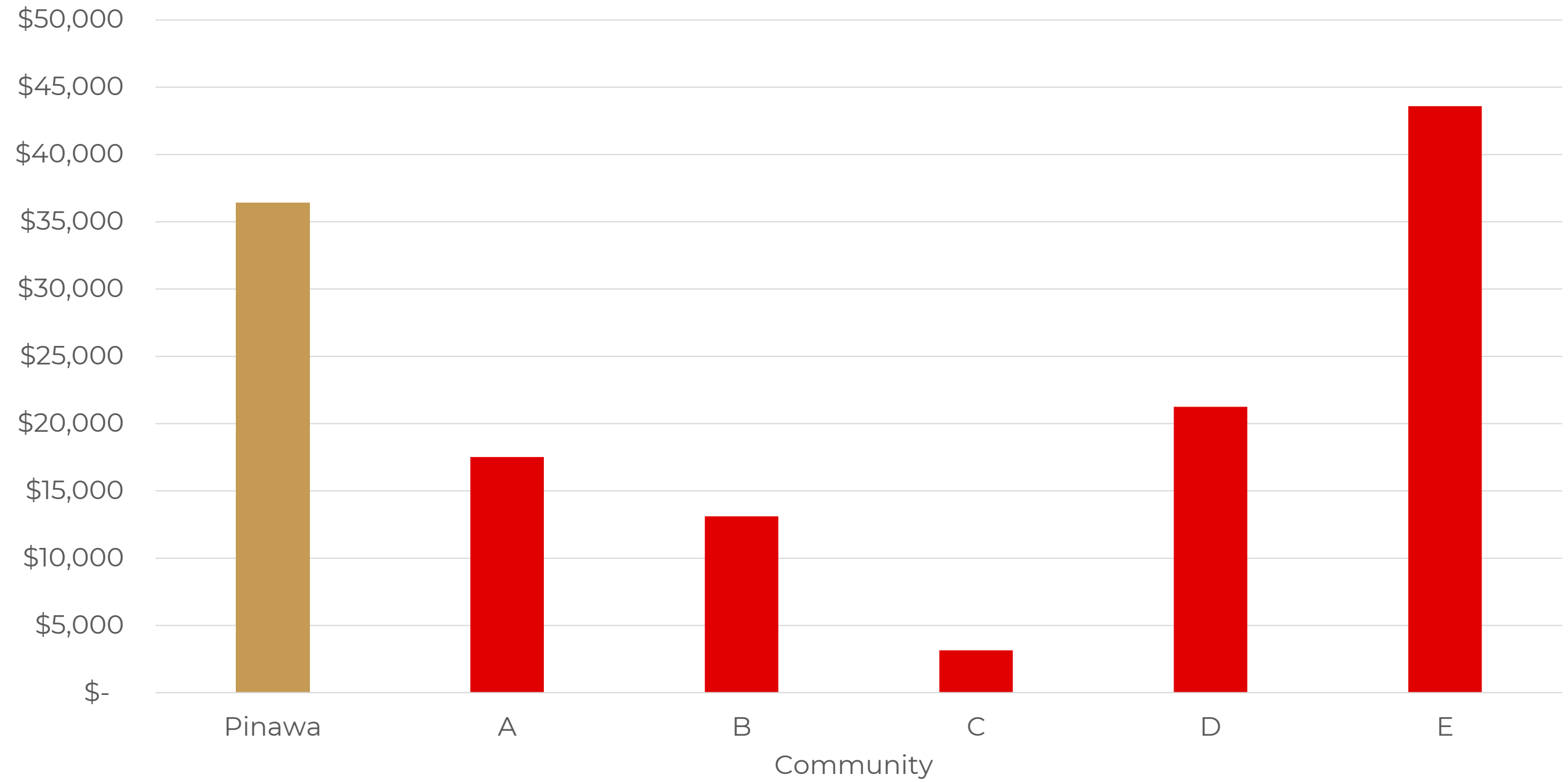
ARF Level 1 Summary – Various

Asset Types	Replacement Value	Expected Remaining Life
Equipment	$2.1 M	13 %
Vehicles	$1.3 M	7 %
Other	$0.3 M	37 %
TOTAL	**$3.7 M**	**13 %**

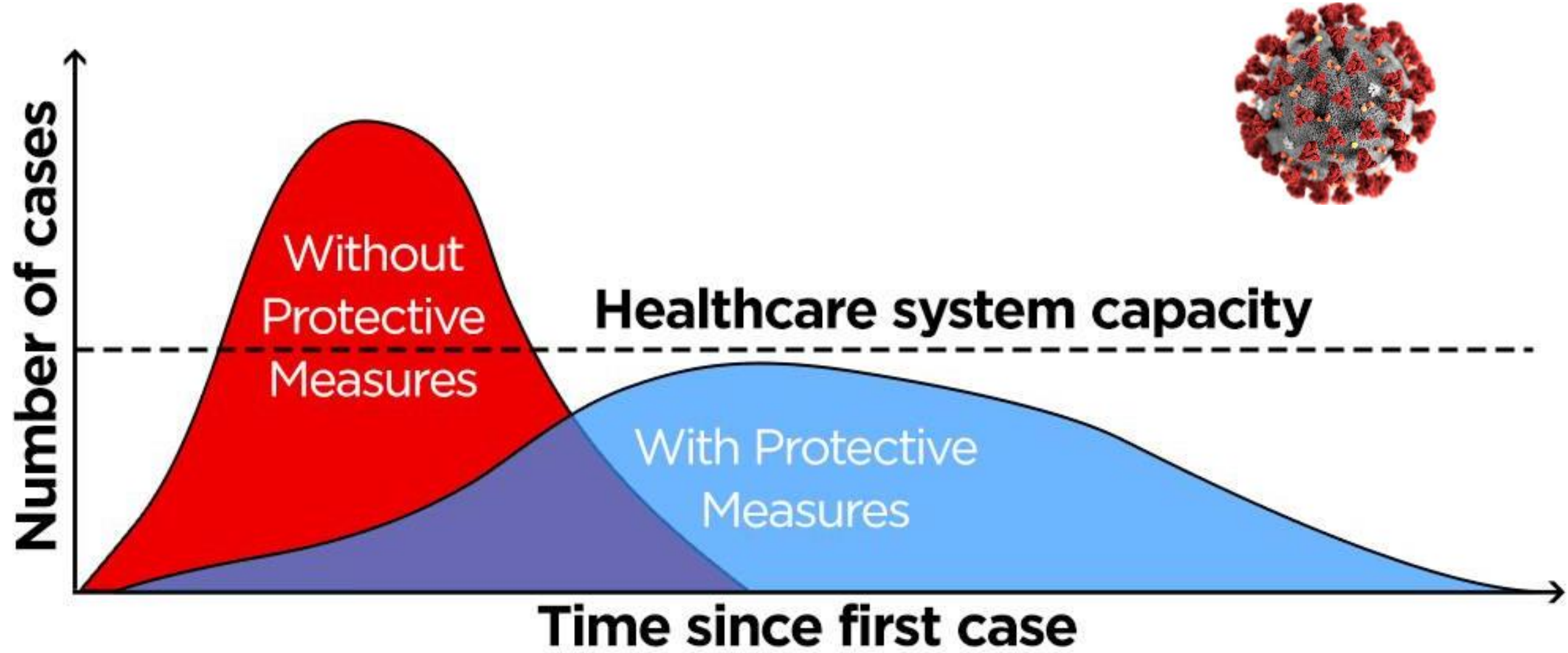
Total Replacement Value of Infrastructure per Capita



Backlog per Capita

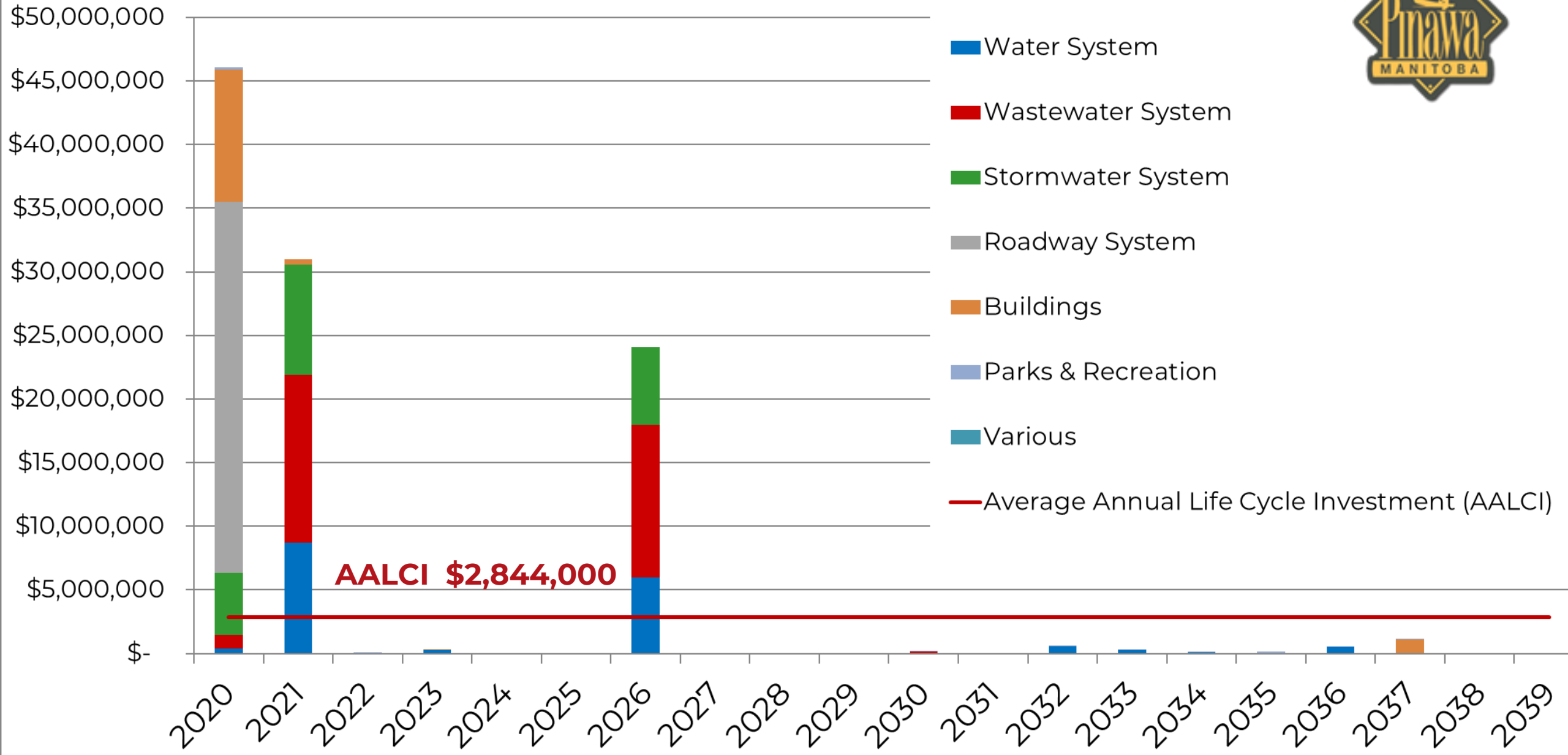



Expected Remaining Life
60%
50%
40%
30%
20%
10%
0%
Pinawa
A
B
C
D
E
Community

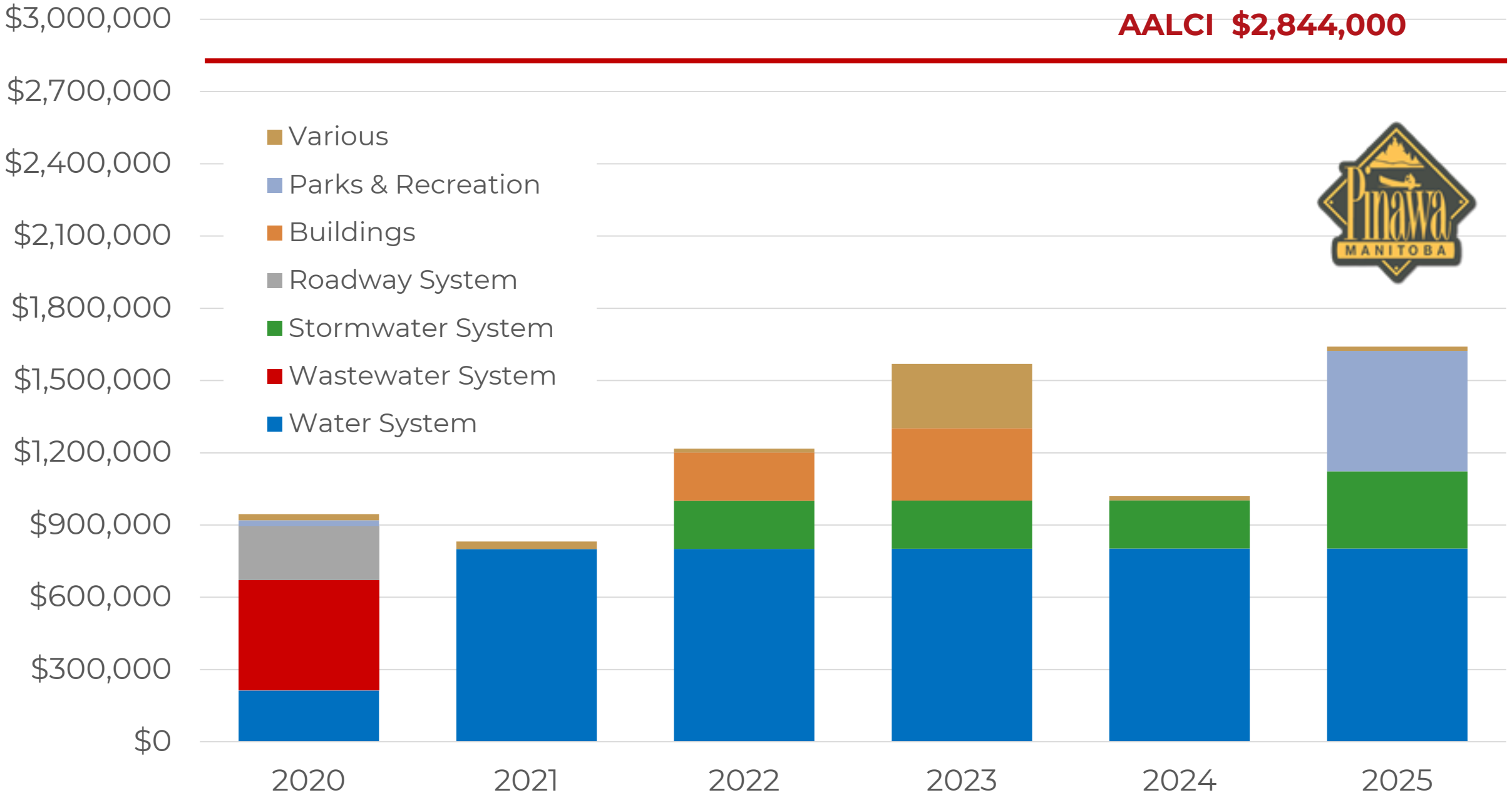


Adapted from CDC / The Economist

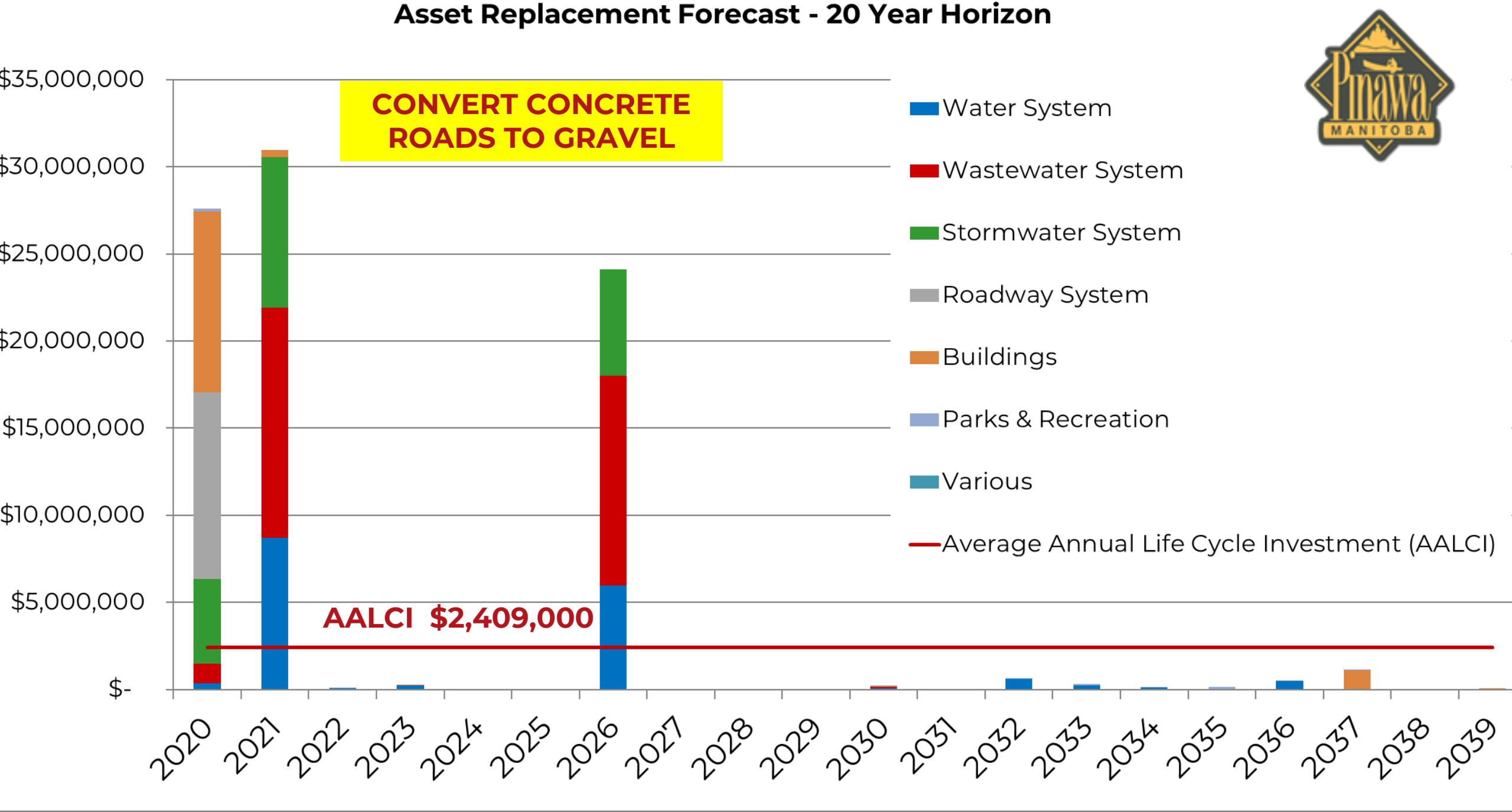
Asset Replacement Forecast - 20 Year Horizon



Pinawa Capital Plan - 2020-2025



Asset Replacement Forecast - 20 Year Horizon

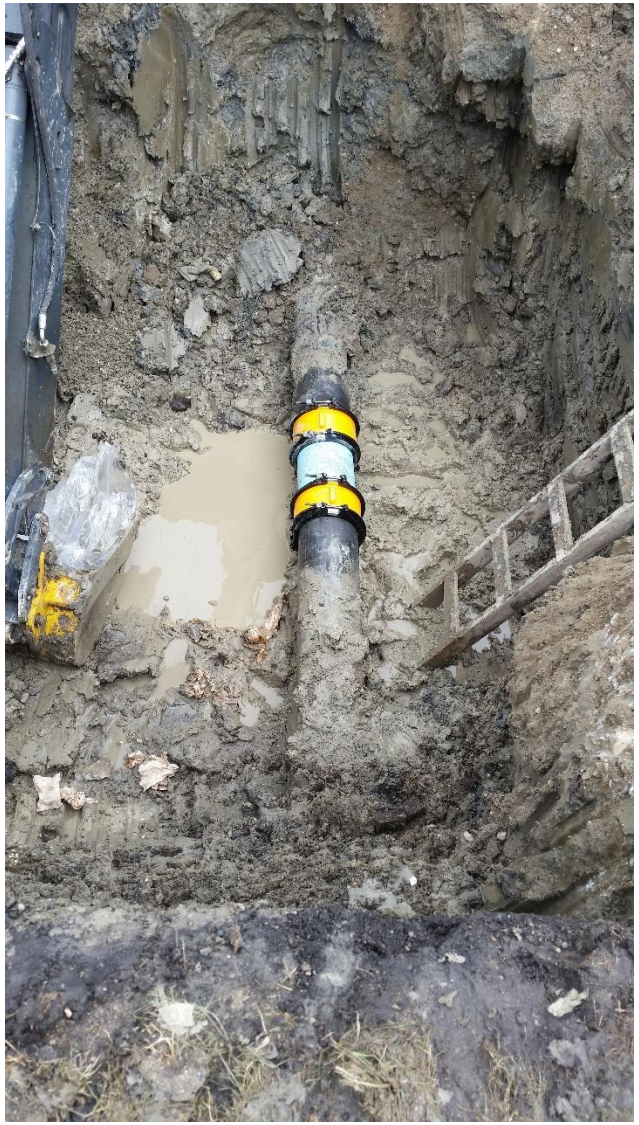


ASSET RISKS

RISKS FROM WORKSHOP #1

Event Description and Root Cause	Overall Risk Rating	Required Actions to Mitigate Risk	Risk Trend (Based on Do Nothing)
1. Storm Sewers Collapsing Under the Roads	6	Replacement of storm sewer which would require removal of concrete road	Increasing; potential road collapse, property damage, public safety
2. Pool building	4	In need of serious repair or a new building	Increasing
3. Playgrounds	2	Need to remove old equipment and replace with new	Increasing
4. Forest Fires	2-4	Wildfire Prevention Plan & Evacuation Plan, restrict ATV travel and remove deadfall	Varies as a function of the weather / season.
5. Beach Platform & Circulating Pump	3	Permitting and inspections	Increasing
6. Suspension Bridge	1	Regular inspections, maintenance, signage	Increasing

OTHER RISKS – SERVICES IN COMMON TRENCH



BREAK OUT GROUPS

QUESTIONS. DISCUSSION. FEEDBACK.

20-30 MINS

ASSET MANAGEMENT PLAN

ASSET MANAGEMENT FROM 30,000 FEET

AM Policy

The principles and guidelines formulated or adopted by an organization to reach its long-term goals

AM Plan

A tactical plan for managing an organization's infrastructure and other assets to deliver an agreed level of service

Asset Replacement Forecast

An overview of all assets owned and their attributes and replacement costs

AM PLAN OVERVIEW

Glossary

Executive Summary

Introduction and Background

Inventory and Asset Valuation

Asset Replacement Forecast

Strategic Risk Assessment

Costs and Funding

Asset Management Practices

Gaps in Data

Communications and Updates

Moving Forward

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AM POLICY

Policy as a record of how you worked together on this, that provides guidance and commitment to future councils

Your policy documents how you have these conversations as an organization. Policy sections will correspond as follows:

- Purpose
- Objectives
- Principles
- Responsibilities

THANK YOU

QUESTIONS OR COMMENTS?