COUNTY OF WELLINGTON

Annual State of Infrastructure

2022

(Based on actuals to December 31, 2021)

2021 County Assets Summary

The data contained in this Annual State of Infrastructure Report represents the status of County assets as of December 31, 2021. The purpose of annual reporting is to ensure the asset management practices outlined in the Asset Management Plan (AMP) are being continually monitored and updated to ensure that the County delivers the best possible services to the community.

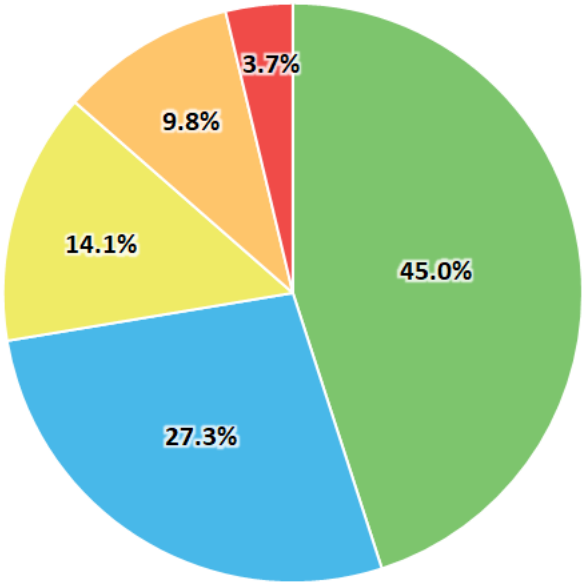
The asset groups contained within this annual report include the County's core infrastructure assets as reported on in the AMP, as well as select other asset groups (*) which are new inclusions in County asset reporting. Additional details about core assets can be found within the AMP. Key details about the new asset groups are included within this report, with full details being included in the next version of the AMP (upcoming in 2024).

Condition

The County assesses the condition of its assets on a regular basis in order to evaluate regulatory and service level requirements, to inform short- and long-term funding decisions, and provide an overview on the current state of infrastructure. The chart and table below provide a summary of condition across all County assets (shown as percent of each asset group), and also includes the total replacement cost of assets that fall within each condition rating.

Average condition

Good



	Very Good	Good	Fair	Poor	Very Poor
Roads	30.5%	18.6%	31.2%	18.3%	1.4%
Bridges & Culverts	17.3%	48.0%	21.1%	10.5%	3.1%
Stormwater Network	63.0%	13.0%	5.5%	8.1%	10.4%
Roadside Elements*	54.5%	43.2%	2.3%	0.0%	0.0%
Vehicles & Equipment*	59.9%	13.9%	10.4%	12.0%	3.9%
ALL ASSETS	**45.0%**	**27.3%**	**14.1%**	**9.8%**	**3.7%**
REPLACEMENT COST	**$ 224,395,282**	**$ 255,315,693**	**$ 144,204,604**	**$ 87,600,969**	**$ 33,119,624**

2021 County Assets Summary (cont'd)

Risk

Risk assessments allow the County to evaluate how likely an asset is to fail and what the impact of that failure would be. The factors used to assess probability and consequence of failure vary for each asset group, as reported on in the AMP. The table below provides a summary of risk ratings across all County assets (shown as percent of each asset group), and also includes the total replacement cost of assets that fall within each risk rating.

	Very Low	Low	Moderate	High	Very High
Roads	30.6%	41.1%	18.1%	10.2%	0.0%
Bridges & Culverts	18.3%	31.3%	17.5%	27.3%	5.6%
Stormwater Network	80.0%	11.2%	4.3%	3.0%	1.4%
Roadside Elements*	54.5%	43.2%	0.0%	2.3%	0.0%
Vehicles & Equipment*	85.0%	11.9%	1.0%	1.8%	0.3%
ALL ASSETS	**53.7%**	**27.7%**	**8.2%**	**8.9%**	**1.5%**
REPLACEMENT COST	**$239,631,258**	**$216,442,442**	**$132,020,032**	**$138,018,772**	**$18,523,668**

Funding Needs

These measures outline the County's funding needs and provide a guideline for departments to prioritize needs over wants. They are also used to identify any funding gaps between the capital needs and the 10-year capital budget forecast. As more data is collected, these measures will eventually inform the budget forecasts.

Total Replacement Cost for County Assets

$ 744,644,572

Ten-Year Average Capital Needs

$ 38,159,598

= Scheduled and backlog replacement cost
+ Scheduled capital lifecycle activities cost

Note: Includes a 2% allocation (of budget costs) annually for the lifecycle events associated with the future Roads facilities. This is in addition to the Ten-Year Average Capital Needs identified within the Infrastructure Summary pages.

Ten-Year Average Operating Needs

$ 215,359

= Scheduled operating lifecycle activities cost

Note: Currently includes Roadside Elements only.

2021 County Assets Summary (cont'd)

Financial Indicators

The following ratios are used to assess the ongoing financial health of the County's capital assets. The capital reserves as percentage of amortization ratio compares the existing capital reserves available in relation to the accumulated amortization which reflects the amount of depreciation on the assets. Ideally, the ratio should be 100% or greater, meaning that the amount available in reserves, at any time, is equal to the amount of depreciation on the assets. This ratio is well below 100% and can indicate a significant infrastructure gap and be a useful gauge to the potential reserve requirements. The actual reserve requirements however, should be based on sound asset management practices. The majority of the capital reserves balance is dedicated to the replacement and renewal of capital assets but may include funds being saved for new assets such as the Continuum of Care project (2021 balance = $5.4 million). The asset consumption ratio provides an estimate of the useful life remaining in the County's capital assets. It shows the value of the tangible capital assets that have been consumed and seeks to highlight the aged condition of the assets and the potential asset replacement needs. The Ministry of Municipal Affairs and Housing (MMAH) considers a ratio of 25% or less to be relatively new, 26%-50% to be moderately new, 51%-75% to be moderately old, and greater than 75% to be old.

Capital Reserves as a Percentage of Amortization

$$= \frac{\text{Capital reserves}}{\text{Accumulated amortization}}$$

Five-year Average = 16.3%

	2021	2020	2019	2018	2017
Capital reserves balance	$ 67,743,970	$ 56,652,635	$ 49,053,009	$ 49,850,878	$ 45,873,114
Accumulated amortization expense	$ 369,635,496	$ 350,173,355	$ 327,968,776	$ 309,788,245	$ 291,765,983
Capital Reserves as % of Amortization	**18.3%**	**16.2%**	**15.0%**	**16.1%**	**15.7%**

Asset Consumption Ratio

$$= \frac{\text{Total accumulated amortization}}{\text{Total gross costs of assets}}$$

	2021	2020	2019	2018	2017
Asset Consumption Ratio	46.5%	45.1%	44.0%	42.9%	42.6%

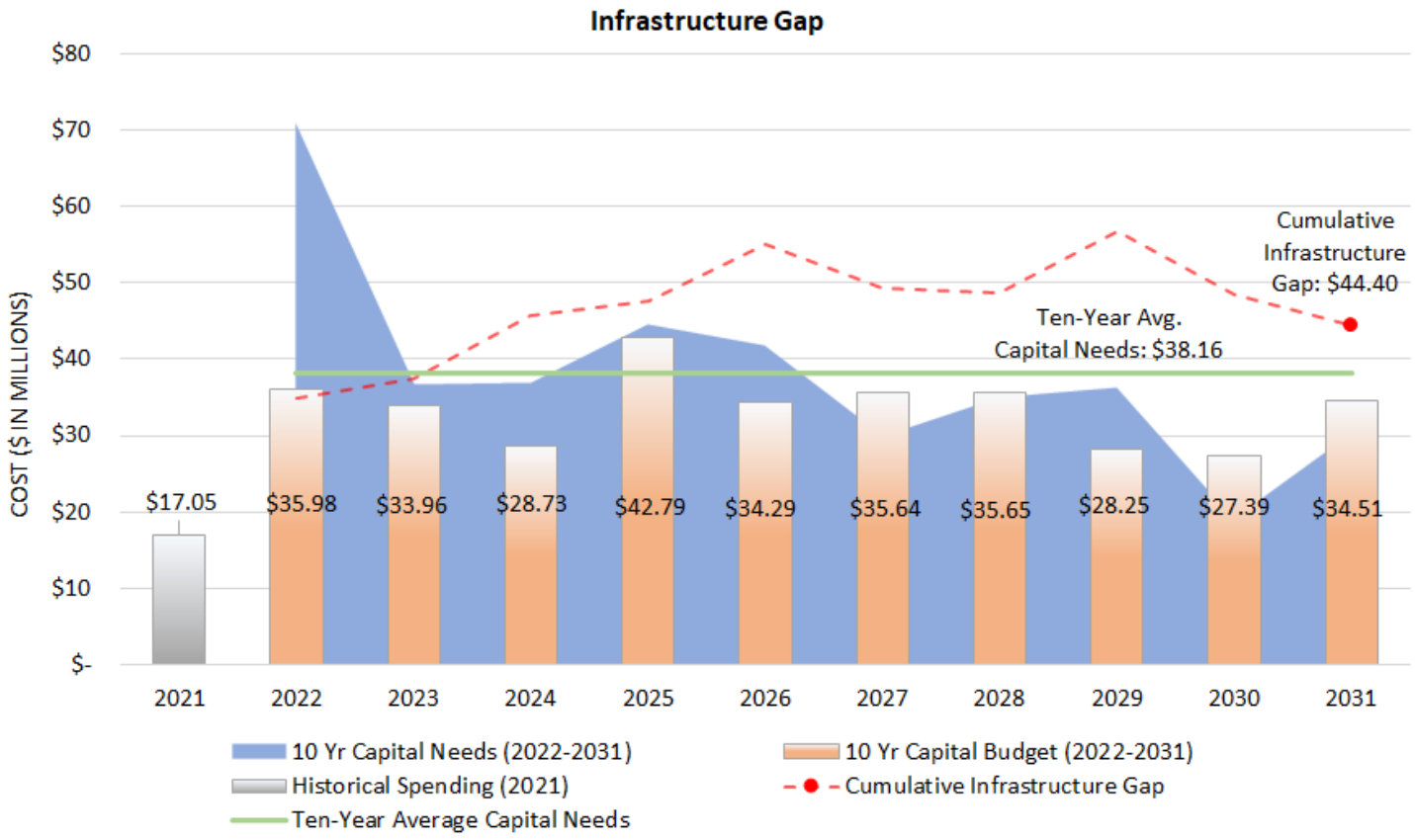
Infrastructure Gap

The graph below measures the difference between what the County plans to invest (ten-year capital budget for 2022-2031) and what needs to be invested (ten-year capital needs for 2022-2031) in order to sustain the current levels of service and overall condition. The infrastructure gap continues to decrease over the ten year period reaching a cumulative gap of $44.4M by 2031. If the County were to invest an additional $4.4M per year, the gap would close within the same timeframe for the asset groups contained in this report.

The 2022 budget was inflated by 3.5% across all years as approved by Council. An inflation rate of 15% and 5% has been applied to the projected capital needs in 2023 and 2024, respectively. A 3.5% inflation rate has been applied for the remaining years.

Both measures include the following asset groups: roads, bridges and culverts, storm water network, roadside elements, and vehicles and equipment. Roads facilities and priority intersections have been incorporated into the infrastructure gap at a high level, and will be discussed in more depth during future versions of the AMP. Information from the 'Review of Roads Garages' completed by KPMG was used to determine the capital needs for the County's roads facilities and provision of 2% of budget was applied to account for the ongoing operation of the future garage facilities. The 'Road Master Action Plan' completed by Dillon Consulting in December 2021, was used to determine the capital needs for the County's priority intersections.

Certain expenditures have also been excluded from available funding such as: condition studies, warranty works, and municipal recoveries where assets would not be owned by the County.



Continuous Improvement

While the AMP documents how a group of assets are to be managed over a period of time, the purpose of the Annual State of Infrastructure Report is to ensure those practices and procedures are being monitored and updated to ensure the County continues to deliver the best possible services to the community.

Each section in the Annual State of Infrastructure Report contains a Highlights and Comments section as well as a Data Quality indicator as follows:

2021 Highlights and Comments
This section summarizes the key changes, assumptions and improvements to data modeling and analysis from the previous year.

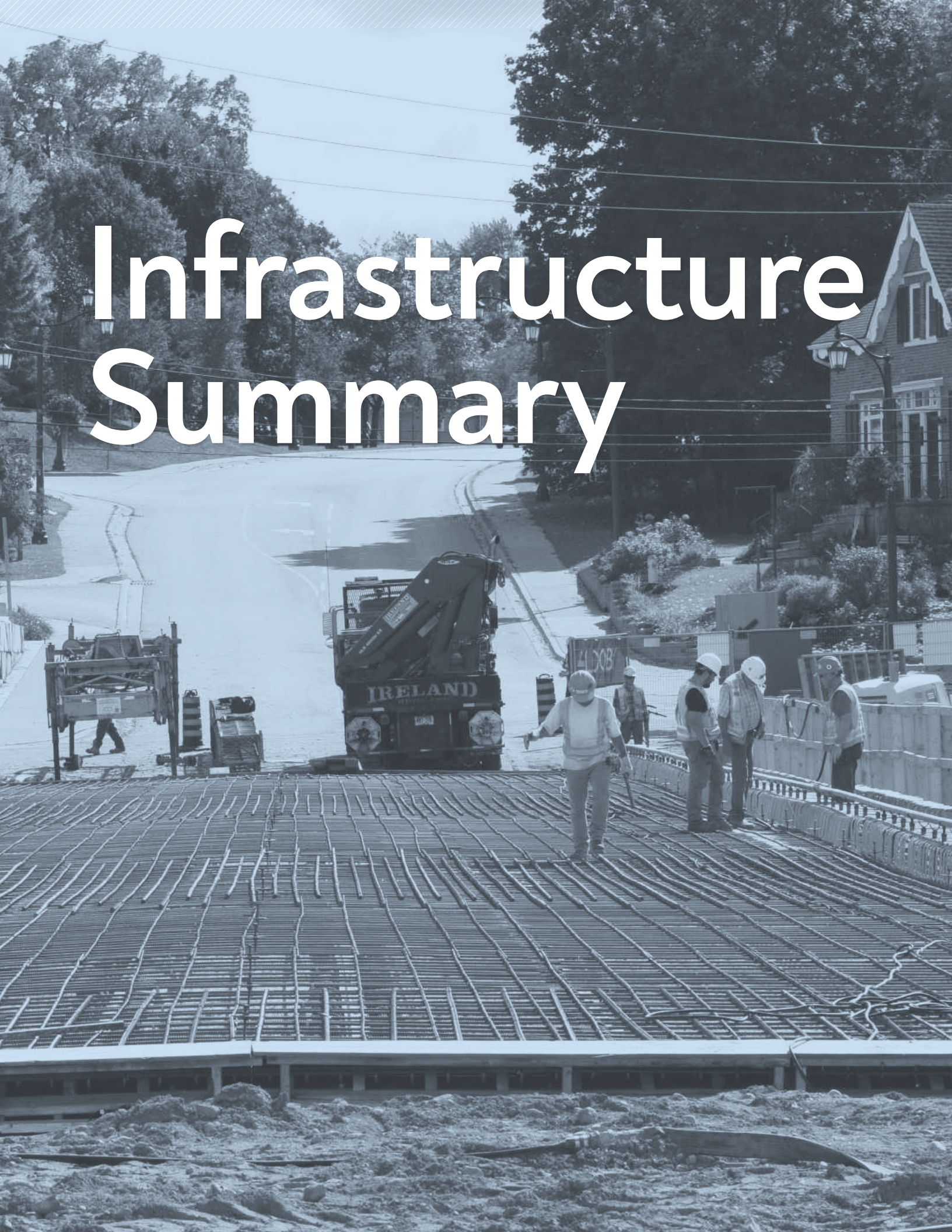
Data Quality Indicator
Six parameters are evaluated when rating the data quality of County assets. These parameters are consistent with the AMP and include: inventory, condition, risk, lifecycle strategy, financial sustainability strategy, and levels of service. The result provides an overall level of confidence in the available asset data.

In order to guide the continuous improvement of the Corporate Asset Management Programme, the following short and long term goals have been identified along with their status in 2021:

Short Term Improvement Goals	**Status in 2021**
Ensure compliance with Provincial Asset Management Regulation (O. Reg. 588/17)	
Define replicable methodology for calculating replacement costs for core and other assets	
Develop preliminary risk matrices for all asset groups	
Build data collection templates for all County assets to better align with CityWide AM software	
Define standard operating procedures for the AM software	
Upload and review other asset (non-core) data to ensure accuracy and completeness	
Incorporate operating budget costs (i.e. lifecycle costs) into the funding models for core assets	
Long Term Improvement Goals	**Status in 2021**
Integrate growth projections and master plans (e.g. Roadmap), the Development Charge Study and the Climate Change Mitigation Plan into the AM Plan	
Define target levels of service for core assets	
Improve integration of the ten-year budget forecast with the AM Plan. This may include re-aligning the budget to better reflect asset categories	
Continue to collaborate with Member Municipalities	

Legend: In progress  Complete 

Infrastructure Summary



ROADS

CORE ASSETS

2021 Highlights and Comments

- Roundabouts have been updated and included within the roads profile group. Future versions will continue to report on roundabouts and roads together as one asset group.
- AADT was included in the risk analysis for roundabouts. AADT values have also been updated for road segments.
- Replacement cost was added as a consequence of failure to the roads risk analysis.
- The road network was assessed by GM Blue Plan and condition ratings have been updated.
- Condition is now weighted based on quantity instead of replacement cost to better reflect the distribution of the road segment dependent on their length. Each asset is assigned a quantity of the road's length in kilometres.
- Completed capital projects have been captured in the capital lifecycle strategy for the affected assets.
- Replacement cost and lifecycle event cost for roundabouts are calculated based on the number of lane kilometres for each roundabout. These costs only account for road work and do not include landscaping, curbing and signage.

Inventory and Key Levels of Service

Total length of Road Network	707.25 centerline-km 1,433.69 lane-km

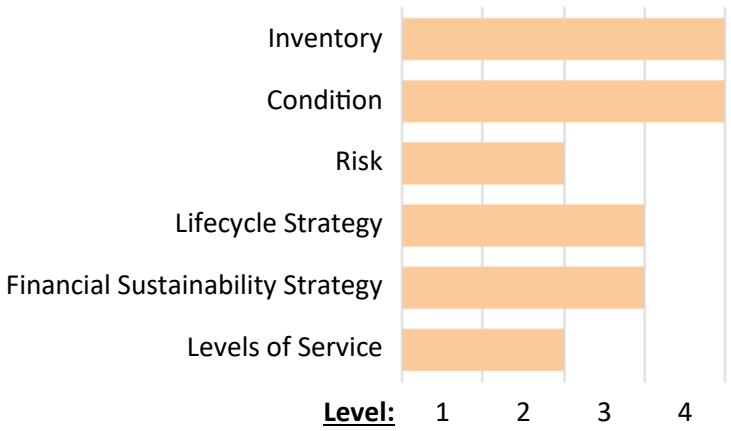
Length of Roads:

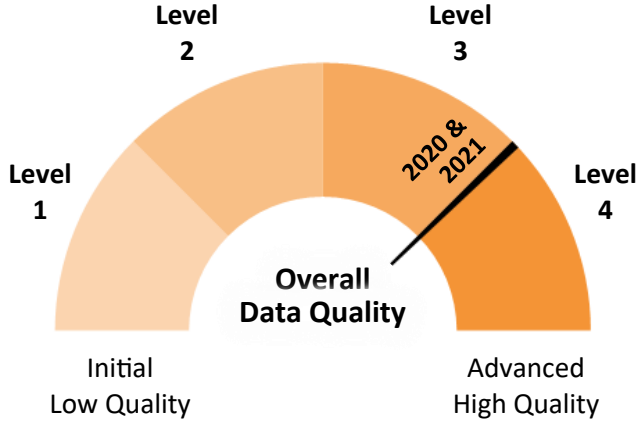
MMS Class 1 and 2	373.42 lane-km
MMS Class 3 and 4	1,055.03 lane-km
MMS Class 5 and 6	5.24 lane-km

Number of controlled intersections (roundabout or traffic signal)	54
Number of road closures and average duration	8 planned, 120 days 0 unplanned, 0 days
Estimated network replacement value	$ 223,608,700
Operating and maintenance costs per lane-km	$ 7,124
Winter control costs per lane-km	$ 745

Data Quality Indicator

Data Quality Parameters:





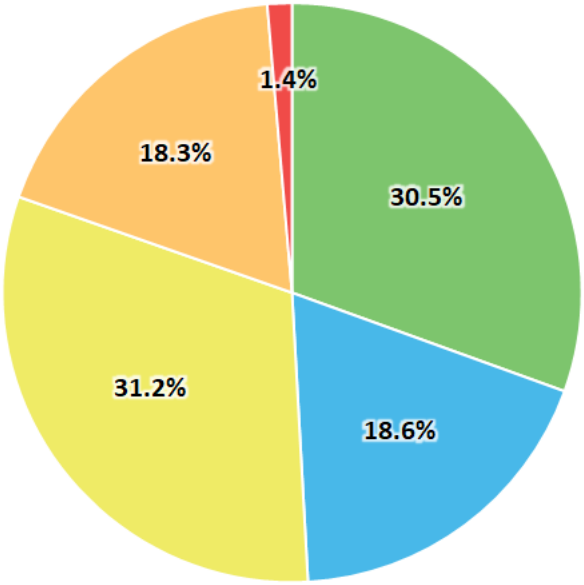
ROADS (CONT'D)

CORE ASSETS

Condition

Very Good	Good	Fair	Poor	Very Poor
215.90 km of Roads	131.53 km of Roads	220.99 km of Roads	129.16 km of Roads	9.67 km of Roads
$ 75,813,583	$ 39,846,571	$ 66,298,441	$ 38,747,905	$ 2,902,200

Average condition
Good



Risk

Very Low	Low	Moderate	High	Very High
134 Assets	128 Assets	50 Assets	22 Assets	0 Assets
216.65 km of Roads	290.38 km of Roads	128.16 km of Roads	72.07 km of Roads	-
$ 68,795,268	$ 93,109,760	$ 40,083,824	$ 21,619,848	-

Funding Needs

Ten-Year Average Capital Needs

$ 14,963,931

Bridges & Culverts

Core Assets

2021 Highlights and Comments

- Bridges and culverts were assessed by WSP Canada Group Ltd and condition ratings have been updated.
- Completed capital lifecycle events have been captured in the strategy for each affected asset, using information from the capital projects.
- Condition is now weighted based on quantity instead of replacement cost to give each asset an equal distribution despite the size and the cost of the structure. Each asset is assigned a quantity of one.

Inventory and Key Levels of Service

Total number of bridges	**103**
Concrete bridges	88
Steel truss bridges	15

Total number of culverts	**95**
Concrete culverts	72
CSP arch culverts	23

Percentage of bridges with loading or dimensional restrictions	6.8%
Condition assessment cycle	2 years
Operating and maintenance costs for bridges and culverts per m^2	$ 93.59

Estimated replacement value:

Bridges	$ 278,496,573
Culverts	$ 72,878,806
Network total	**$ 351,375,379**

Data Quality Indicator

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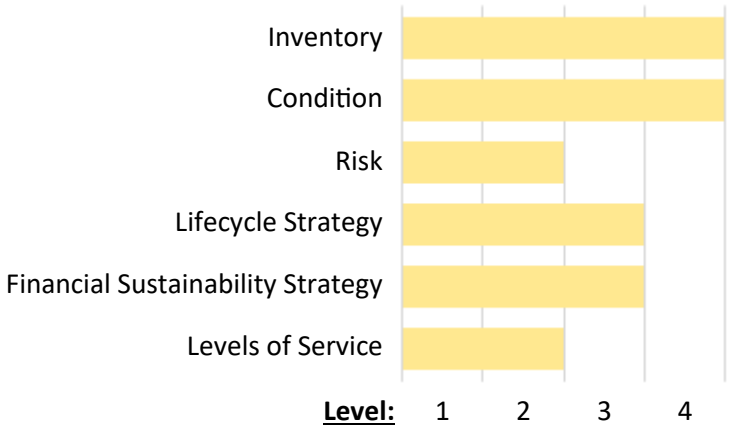
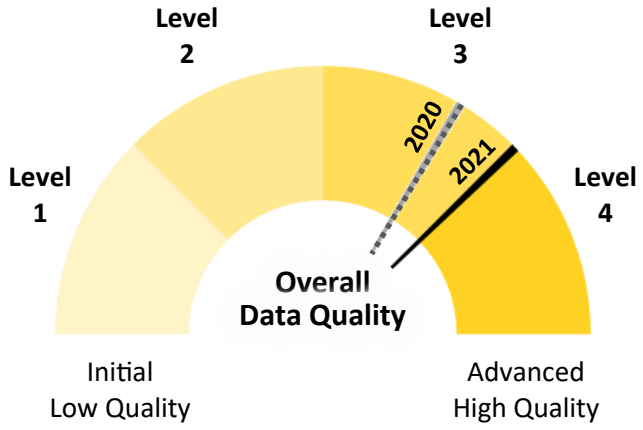


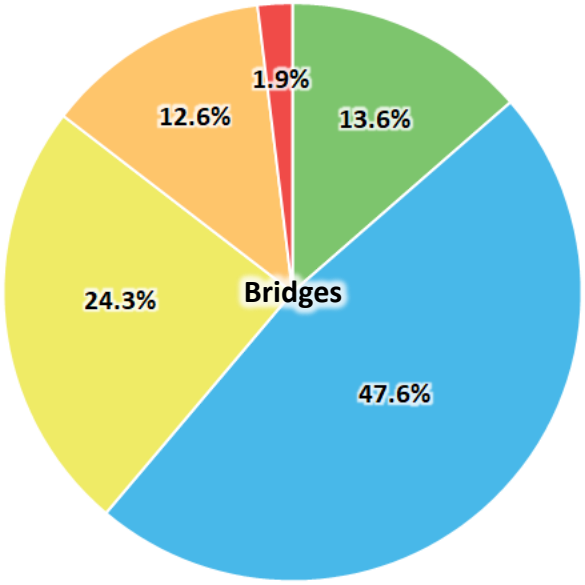


Bridges & Culverts (cont'd)

Core Assets

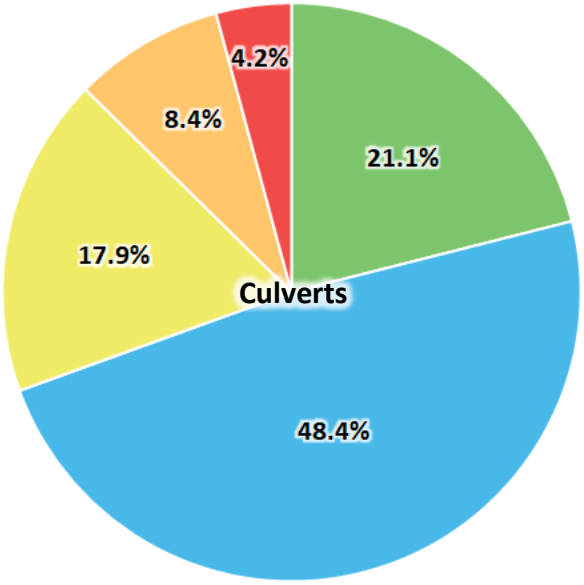
Condition

Very Good	Good	Fair	Poor	Very Poor
14 Bridges	49 Bridges	25 Bridges	13 Bridges	2 Bridges
$ 50,716,573	$ 153,010,000	$ 52,650,000	$ 20,020,000	$ 2,100,000
20 Culverts	46 Culverts	17 Culverts	8 Culverts	4 Culverts
$ 13,148,806	$ 38,810,000	$ 12,460,000	$ 5,730,000	$ 2,730,000
$ 63,865,379 Total	$ 191,820,000 Total	$ 65,110,000 Total	$ 25,750,000 Total	$ 4,830,000 Total



Average condition

Good



Risk

Very Low	Low	Moderate	High	Very High
36 Assets	62 Assets	35 Assets	54 Assets	11 Assets
15 Bridges	33 Bridges	22 Bridges	28 Bridges	5 Bridges
$ 50,696,573	$ 63,640,000	$ 68,330,000	$ 84,910,000	$ 10,920,000
21 Culverts	29 Culverts	13 Culverts	26 Culverts	6 Culverts
$ 12,998,806	$ 22,200,000	$ 10,120,000	$ 22,350,000	$ 5,210,000
$ 63,695,379 Total	$ 85,840,000 Total	$ 78,450,000 Total	$ 107,260,000 Total	$ 16,130,000 Total

Funding Needs

Ten-Year Average Capital Needs

$ 7,732,016

Stormwater Network

Core Assets

2021 Highlights and Comments

- The stormwater network was assessed by GM Blue Plan and condition ratings have been updated for pipes that were accessible. GM Blueplan will continue to collect data for the inaccessible pipes in the summer of 2022.
- The condition for stormwater structures continue to be rated based solely on age.
- Condition is now weighted based on quantity instead of replacement cost to better reflect the distribution of the pipes dependent on their length. Each pipe asset has been assigned a quantity of it's length in metres. Additionally, this gives an equal weight to each structure as they have been assigned a quantity of one.

Inventory and Key Levels of Service

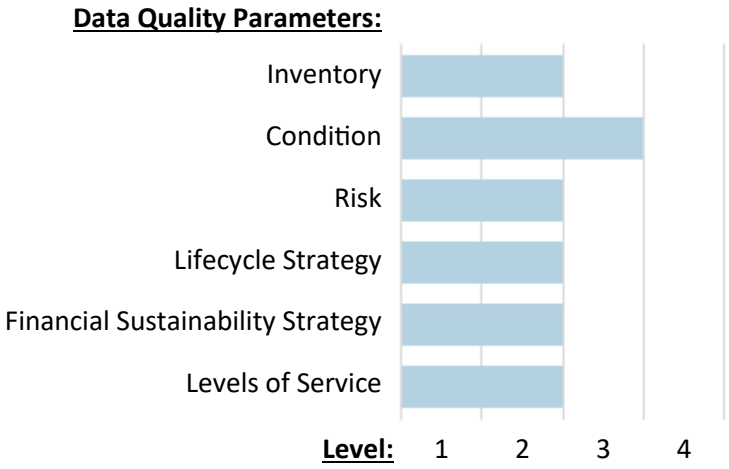
Length of Stormwater Pipes	36,452 m
Number of Stormwater Structures	1440
Condition assessment cycle	4 years

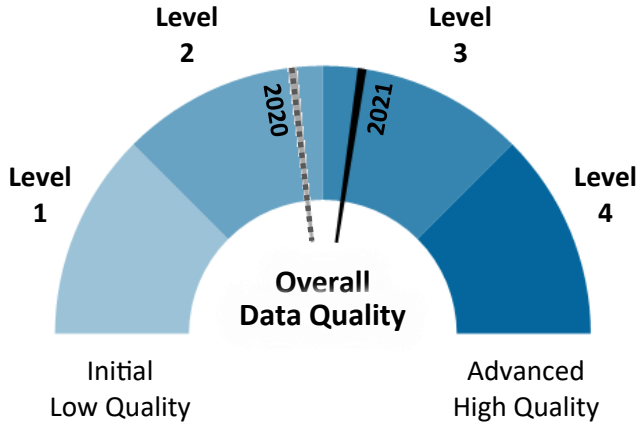
Percentage of the stormwater network that is resilient to a 100-year storm	92.1%
Percentage of the road network that is resilient to a 100-year storm	94.0%

Estimated replacement value:

Stormwater pipes	$ 133,761,893
Stormwater structures	$ 7,200,000
Network total	**$ 140,961,893**

Data Quality Indicator



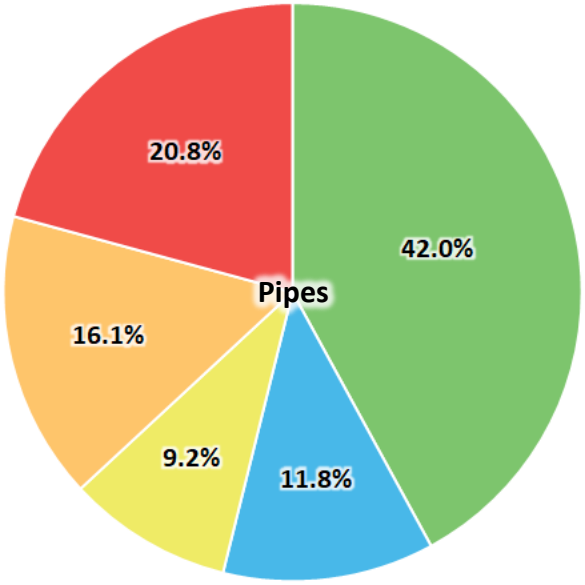


Stormwater Network (cont'd)

Core Assets

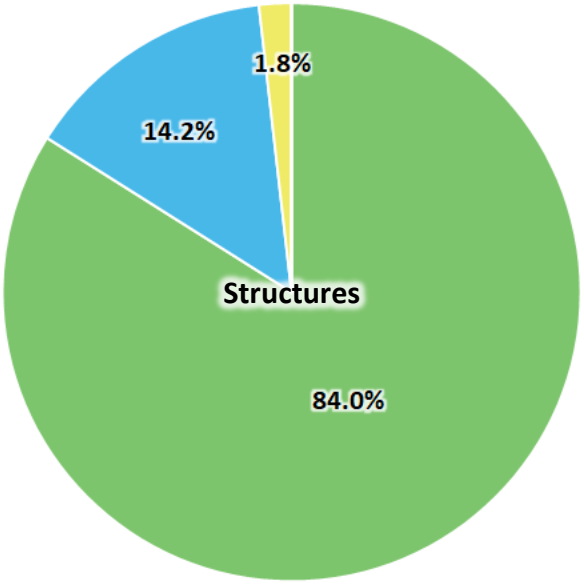
Condition

Very Good	Good	Fair	Poor	Very Poor
15,327 m of Pipes	4,310 m of Pipes	3,365 m of Pipes	5,877 m of Pipes	7,572 m of Pipes
$ 56,127,920	$ 18,111,322	$ 12,047,463	$ 22,691,263	$ 24,783,924
1,209 Structures	205 Structures	26 Structures	0 Structures	0 Structures
$ 6,045,000	$ 1,025,000	$ 130,000	-	-
$ 62,172,920 Total	$ 19,136,322 Total	$ 12,177,463 Total	$ 22,691,263 Total	$ 24,783,924 Total



Average condition

Good



Risk

Very Low	Low	Moderate	High	Very High
2,396 Assets	260 Assets	75 Assets	63 Assets	27 Assets
22,051 m of Pipes	7,992 m of Pipes	3,171 m of Pipes	2,213 m of Pipes	1,025 m of Pipes
$ 86,157,311	$ 25,121,482	$ 13,098,008	$ 7,229,324	$ 2,155,768
1,433 Structures	7 Structures	-	-	-
$ 7,165,000	$ 35,000	-	-	-
$ 93,322,311 Total	$ 25,156,482 Total	$ 13,098,008 Total	$ 7,229,324 Total	$ 2,155,768 Total

Funding Needs

Ten-Year Average Capital Needs

$ 1,267,521

Roadside Elements*

Other Assets

2021 Highlights and Comments

- Roadside Elements is a new profile group that was not previously reported on in the AMP. Only traffic signals have been included for this update – other Roadside Elements will be added in future updates (eg. Traffic Signs, Posts, and Guide Rails). Full details on this profile group will be reported in the next version of the AMP.
- AADT has been included for each intersection with a traffic signal and is used as a parameter in the risk analysis.
- A formal condition scale hasn't been developed for this asset group yet. Currently the condition solely reflects the age of the asset on a 35 year lifecycle.
- Traffic signals are maintained to a high standard due to a very high consequence of failure and the need to remain compliant with regulations. At a minimum, they are maintained to keep their condition good or very good.
- Annual inspections are completed on all traffic signals and the cost to maintain each signal's components fall within the operating budget.
- Operating lifecycle events have been generated at a high level based on an average work completed over the past 6 years. The events have been set up to have no impact on the condition of the asset, instead they're used to capture annual operating costs.

Inventory and Key Levels of Service

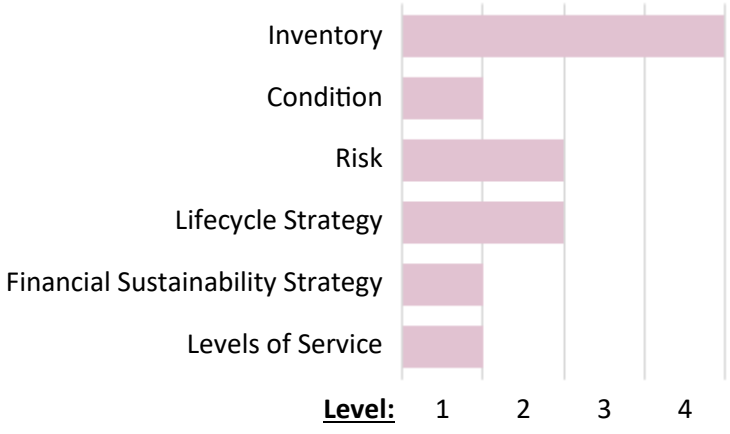
Total number of Traffic Signals	**44**
Traffic signals at road intersections	36
Midblock (crosswalk) traffic signals	5
Temporary traffic signals	3

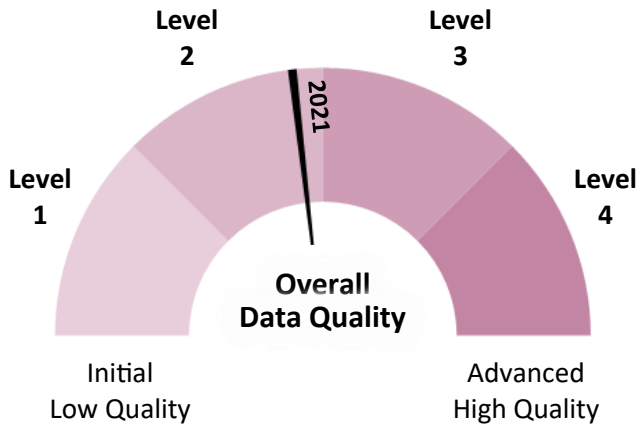
Average annual daily traffic expected to travel through traffic signals	12,427
Average percentage of daily truck traffic	5.7%

Estimated replacement value	$ 4,150,000

Data Quality Indicator

Data Quality Parameters:





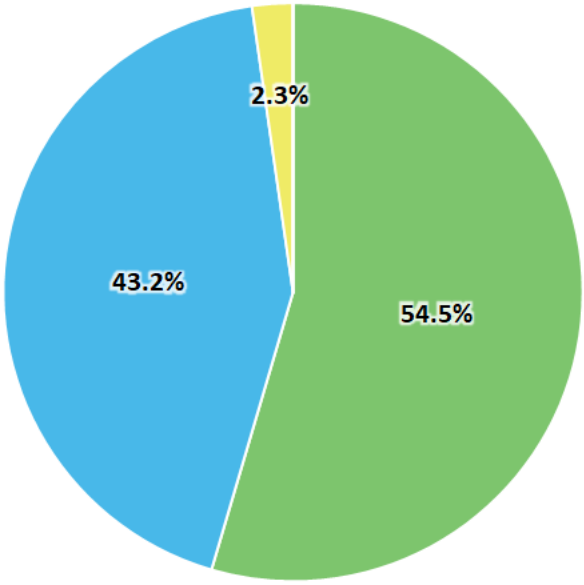
ROADSIDE ELEMENTS* (CONT'D)

OTHER ASSETS

Condition

Very Good	Good	Fair	Poor	Very Poor
24 Traffic Signals	19 Traffic Signals	1 Traffic Signal	0 Traffic Signals	0 Traffic Signals
$ 2,350,000	$ 1,700,000	$ 100,000	-	-

Average condition **Very Good**



Risk

Very Low	Low	Moderate	High	Very High
24 Assets	19 Assets	0 Assets	1 Asset	0 Assets
24 Traffic Signals	19 Traffic Signals	-	1 Traffic Signal	-
$2,350,000	$1,700,000	-	$100,000	-

Funding Needs

Ten-Year Average Operating Needs $ 215,359

Vehicles and Equipment*

Other Assets

2021 Highlights and Comments

- Vehicles and equipment is a new asset group that was not previously reported on the AMP. This group includes licensed and unlicensed vehicles, and large equipment used throughout the County.
- A formal condition scale hasn't been developed for this asset group. Currently the condition solely reflects the age of the asset. These assets are maintained to a high standard due to very high consequence of failure and the need to remain compliant with regulations. At a minimum, they are maintained at a condition of good or very good.
- Replacement cost was calculated based on an inflated average of recent purchases for each class of vehicles and equipment.
- Vehicles are on a set replacement cycle, therefore most lifecycle costs for maintaining these vehicles fall within the operating budget.

Inventory and Key Levels of Service

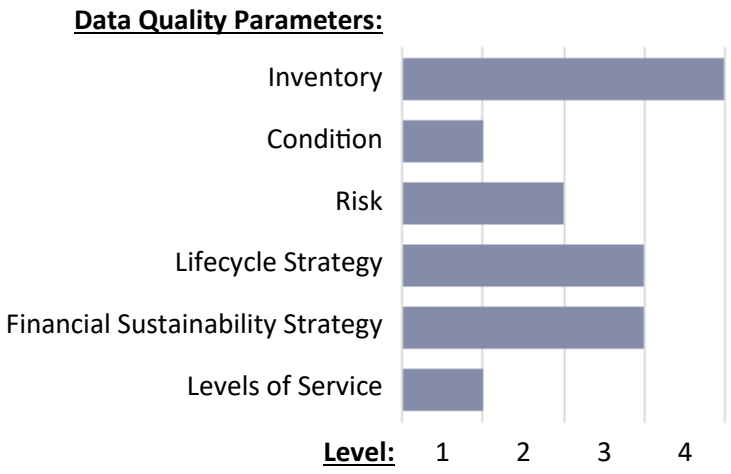
Total number of Vehicles	**168**
Licensed vehicles	111
Unlicensed vehicles	57

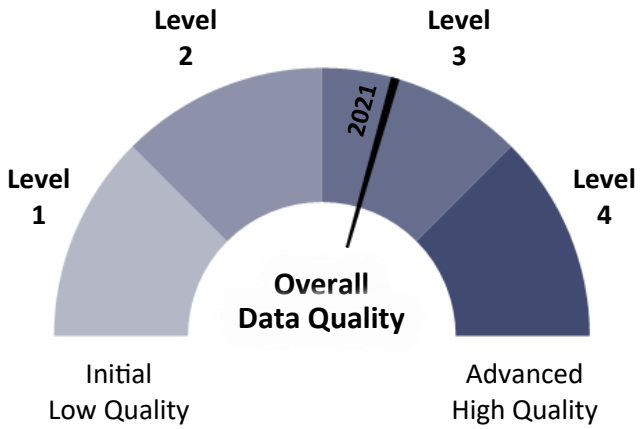
Average number of fleet maintenance WOs completed per month	122
Average number of vehicles seen by fleet mechanics per month	48

Total number of Equipment	**131**
Electronic vehicle chargers	3
Solar panels	15
Generators	9

Operating and maintenance costs per vehicle	$ 14,256
<u>Estimated replacement value:</u>	
Vehicles	$ 20,153,600
Equipment	$ 4,386,600
Network total	**$ 24,540,200**

Data Quality Indicator

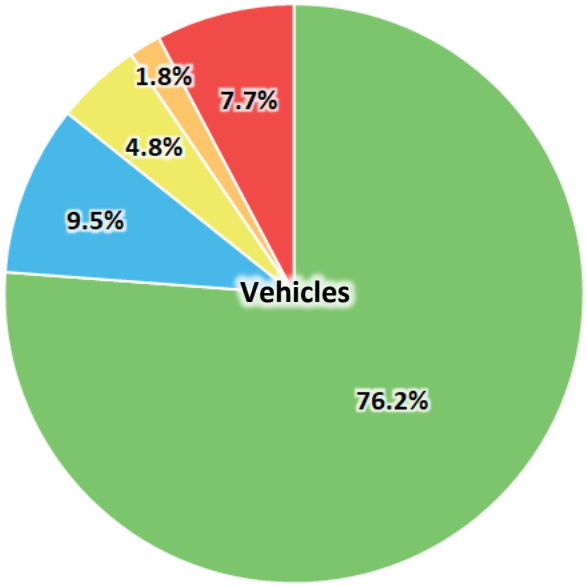




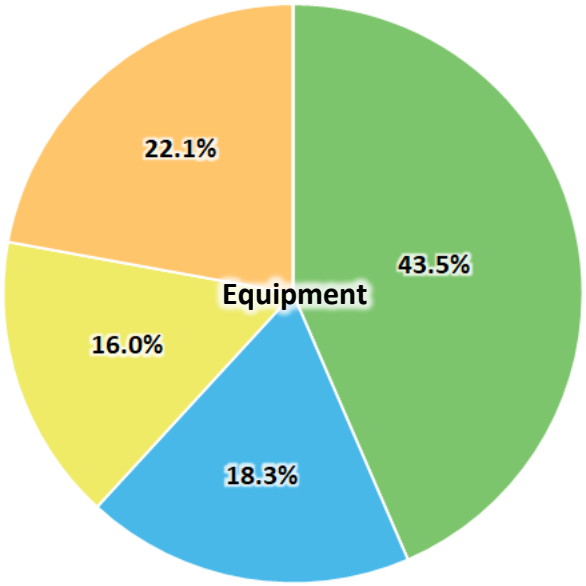
Vehicles and Equipment* (cont'd)

Condition

Very Good	Good	Fair	Poor	Very Poor
128 Vehicles	16 Vehicles	8 Vehicles	3 Vehicles	13 Vehicles
$ 16,554,800	$ 2,523,300	$ 329,400	$ 142,600	$ 603,500
57 Equipment	24 Equipment	21 Equipment	29 Equipment	0 Equipment
$ 3,638,600	$ 289,500	$ 189,300	$ 269,200	-
$ 20,193,400 Total	$ 2,812,800 Total	$ 518,700 Total	$ 411,800 Total	$ 603,500 Total



Average condition **Good**



Risk

Very Low	Low	Moderate	High	Very High
249 Assets	40 Assets	3 Assets	6 Assets	1 Asset
119 Vehicles	40 Vehicles	2 Vehicles	6 Vehicles	1 Vehicle
$7,135,300	$10,636,200	$334,600	$1,809,600	$237,900
130 Equipment	-	1 Equipment	-	-
$4,333,000	-	$53,600	-	-
$11,468,300	$10,636,200	$388,200	$1,809,600	$237,900

Funding Needs

Ten-Year Average Capital Needs

$ 3,872,468