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STAFF REPORT #T2021-xx
Standing Committee 10/4/2021
Council 10/18/2021
Amendments: no

Submitted to: Strategic Initiatives Standing Committee | Council

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Monica Quinlan, Treasurer

Subject: Asset Management Plan – Update Part 2

PURPOSE

The purpose of this report is to provide an update on the status of the Asset Management Plan (AMP) with respect to the requirements of the 2022 Budget for Core Assets.

RECOMMENDATION

THAT Staff Report T2021-xx, Asset Management Plan Status be received;

AND Further that staff be directed to include the AMP findings in the 2022 Budget process.

AMENDMENTS

None.

1. BACKGROUND

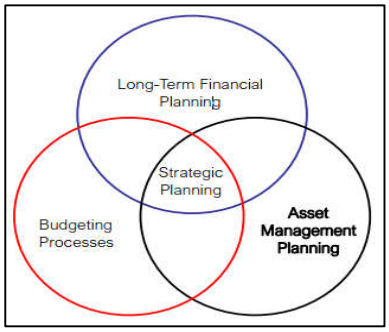
"Asset Management Planning is part of a strategic planning process that is integrated with budgeting processes and long-term financial planning. Good asset management planning helps municipalities make well-informed and evidence-based decisions about their infrastructure assets[1]."

[1] Ministry of Infrastructure presentation September 19, 2018.

A primary accountability of the Town is the oversight and care of the assets that provide the services taxpayers need and rely on. In turn, the ultimate goal of asset management planning is to ensure and be able to demonstrate the financial sustainability of all those assets.

There are four key components of an asset management plan:

1. Asset Inventory
2. Levels of Service
3. Asset Management strategy
4. Financial Strategy



Asset management encompasses the renewal/maintenance/rehabilitation of assets the Town **owns at this time** and doesn't take into consideration the growth or expansion of a community. Growth is covered through separate financial plans such as development charge studies.

Asset Management planning differs from the financial audits and reporting that governments carry out under Public Sector Accounting Board (PSAB) standards and are shown in Annual Audited Financial Statements.

These statements show the cost of acquisition or construction of an asset spread over the asset's estimated useful life, generally using a straight-line depreciation. While these accounting assumptions are mandatory and are useful to help understand the general financial valuation of an entity and its income tax assessments, they do not consider many of the factors that Asset Management does to develop realistic investment plans, such as the actual condition, changing rates of deterioration over the life cycle, the different treatments available and their benefits depending upon when they are applied (e.g. crack sealing vs. shave and pave vs. rebuild), life expectancy and future plans (replacement or other) of each specific asset, and the coordination of work with other department (e.g. updating sanitary sewers, stormwater and the road pavement together).

Asset management is intended to aid the owners of multiple assets to:

- Think about the capital investments needed in these assets over their full life cycle, so that sufficient funding is available when it is needed, and
- Consider how these assets contribute (or not) to the desired outcomes of their owners.

Ontario regulation 588/17 was passed in 2017 which made it mandatory for municipalities to develop and adopt AMPs. The following are the key deadlines that the Town must adhere to:

1. Phase I would be to address core infrastructure assets (i.e. roads, bridges, culverts, wastewater, water, and stormwater) and would be required to be completed by July 1st, 2022.
    a. Requires an asset inventory(registry), including replacement cost, age, and condition;
    b. Current level of service and performance metrics;

c. Estimated lifecycle costs by asset category to maintain current levels of service for 10 years;
d. For municipalities with populations over 25,000: Population and employment forecasts (from Growth Plans, official plans, etc.), and the lifecycle costs required to maintain current levels of service in order to accommodate projected increases in demand caused by growth.

2. Phase II would expand on Phase I by including all infrastructure assets in the plan by July 1, 2024
3. Phase III would require further details to be provided for all infrastructure assets by July 1, 2025.

Since staff's last report to Council in May 2021 on the status of the Town's AMP, staff have continued to update and refine the models and data required. There has been significant progress made with respect to core linear assets with a thorough review of treatment types, matching of projects across asset types, current levels of service and the initial preparation of creating the report that is required to meet the regulations. There have been some unexpected delays with respect to the facility condition assessments, and these reports are expected later in the fall or early winter.

What follows is a comprehensive review of the Town's core assets[2] so as to provide an update on meeting the 588/17 regulations but also so as to provide some context for the 2022 Budget process. Note that the facilities included are aged-based evaluations, until the state of the buildings are known through the Facility Assessment Condition report.

2. INPUT FROM OTHER SOURCES

The information included in this document has been reviewed by the AMP team.

3. APPLICABLE POLICY OR LEGISLATION

O.Reg 588/17

[2] Core Assets defined as Roads, Bridges, Stormwater, Water Treatments, and Wastewater Treatment assets.

4. ANALYSIS

Roads

State of Infrastructure/Level of Service (LOS)

Collingwood's roads on average are in good to very good condition which has been demonstrated consistently in the completed road condition assessment studies; the Town has conducted 4 assessments in the last 8 years, with the most recent being completed in 2020.

The results are shown below:

Asset Class	Class Description	# of KMs	Average PCI	Replacement Cost
HCB-H-R	HCB, low volume, rural/SU	28.65	83.40	$ 34,285,260
HCB-H-U	HCB High Volume Urban	20.79	87.96	48,809,979
HCB-L-R	Low volume rural/semi-urban	65.46	78.74	66,730,468
HCB-L-U	HCB, Low Volume, Urban	30.92	82.71	42,608,010
HCB4-U	Urban HCB-Collector/Local	0.74	56.72	729,753
	Grand Total Road Network	146.56	81.90	$ 193,163,470

*PCI = Pavement Condition Index; ** HCB = High Class Bituminous/Asphalt

Road Condition assessment studies look at many different variables when assessing a road's condition, however, the overall condition of a road segment is summarized with one number known as the Pavement Condition Index (PCI). This overall rating is a useful tool for tracking road conditions over time and so this is the primary metric that staff are using for a roads level of service policy. However, not all roads are the same and staff propose that in addition, tracking PCI condition by road asset class be adopted as a LOS metric. In other words, a PCI of 60 (out of 100) for an Urban arterial road would have a different response in terms of refurbishment or renewal then the same score on a non-Urban local road. This is because additional factors such as road volume and financial return on investment would differ greatly by these asset classes. This concept has been applied to the strategy being reviewed.

The roads have been maintained in good to very good condition on average due primarily to the following factors:

- Growth:
  - Older roads have been reconstructed/rehabilitated (earlier) when they were expanded to accommodate growth.
- Grant Funding:
  - Collingwood has been successful over the past 5 years in securing grant funding;
  - Consistent Federal Gas Tax and OCIF grant funding programs have contributed towards road resurfacing and reconstruction. This is a key factor in the overall funding model for asset management.
- Lifecycle Capital Reserve Fund:
  - Beginning in 2014 with a contribution of $1.6M (now > $2M in 2021 Budget), Collingwood has consistently increased contributions to this reserve fund each year.
- Ongoing Capital Budget programs:
  - Sanitary Reconstruction Program:

- While this ongoing annual program is intended to address ageing linear sanitary infrastructure, it has also contributed to road reconstruction.

- Annual asphalt resurfacing program:
  - The town has consistently conducted a resurfacing program of critical roads as part of the annual capital budget.

Over the last several months staff have been focused on developing the appropriate treatments and reconstruction cycles to ensure the longevity of roads while maintaining the level of service as well as matching the life cycle of the underground works. Based on the staff developed plan there are 3 types of treatment applied at optimal times to maintain the condition of the road, they are as follows:

1) Crack Sealing; 2) Resurfacing – 50 mm; and 3) Resurfacing – 100 mm.

This equates to roads lasting approximately 80 years and provides for a deterioration curve as follows:

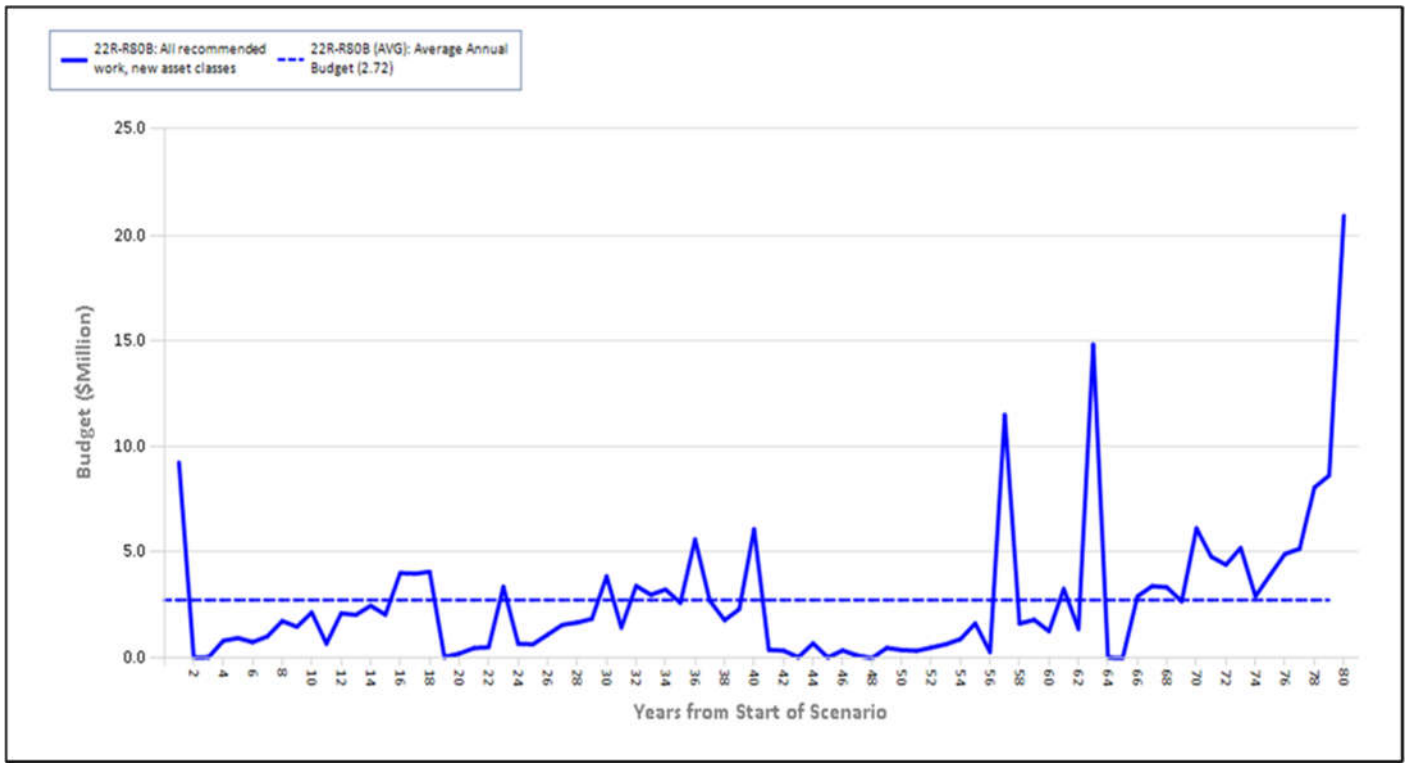
A key factor of true asset management is understanding how an asset performs and what type of treatments provide for the most optimal life span, and lower costs since reconstruction is delayed significantly. The graph above depicts how this class of assets (HCBL-R – Low volume Semi-Urban = 44% of our roads) will perform over the life by applying the treatments recommended, if we do not follow these optimal treatments it results in much lower levels of service and almost 40 years less in asset life. This means that reconstruction will occur much earlier resulting in greater costs over the asset life and depleted levels of service.

At this time staff have modeled the asset performance to do the "right things at the right time" which means that the LOS for the different classes are maintained at above 70 PCI over the next 60 years. This model also provides for a return on investment (Asset Value at the end of the planning period vs. Asset value if nothing is done) of $86M. Additionally, it means a savings of $181M – this translates to savings by doing the right treatments versus doing nothing at all.

As an aside, it is of interest that the above analysis shows the cost per km over time is about $19,344 per year for the class of road shown, which provides a motivation for a compact development pattern that balances not only new infrastructure initial costs, but also its ongoing life cycle Asset Management needs.

Financing

Staff have continued to review and refine the data in the Roads inventory (and all core assets) with a more concerted effort in the past year and half so as to meet the targets of the Ontario regulations 588/17. While the focus of the AMP has been to plan and work through the details of the next 10 years **it is imperative that as a municipality we are concentrating on the overall life span of each asset, to meet the goal of full asset management**.
The graph below shows the investment in today's dollars over the 80 year lifecycle:



You will note that the average investment over 80 years equates to $2.72M per year and is broken down in the table below.

Improvement	Lifespan Average
Crack Sealing	$ 40,032
R1 - 50MM	421,004
R2 - 100MM	831,261
Reconstruction	1,423,786
Grand Total	$ 2,716,082

You can see that there is a significant backlog showing in 2022 based on the current results, this however will be spread over the next several years to ensure the Town is achieving its' asset management goals while planning for an appropriate average spend. Additionally, some

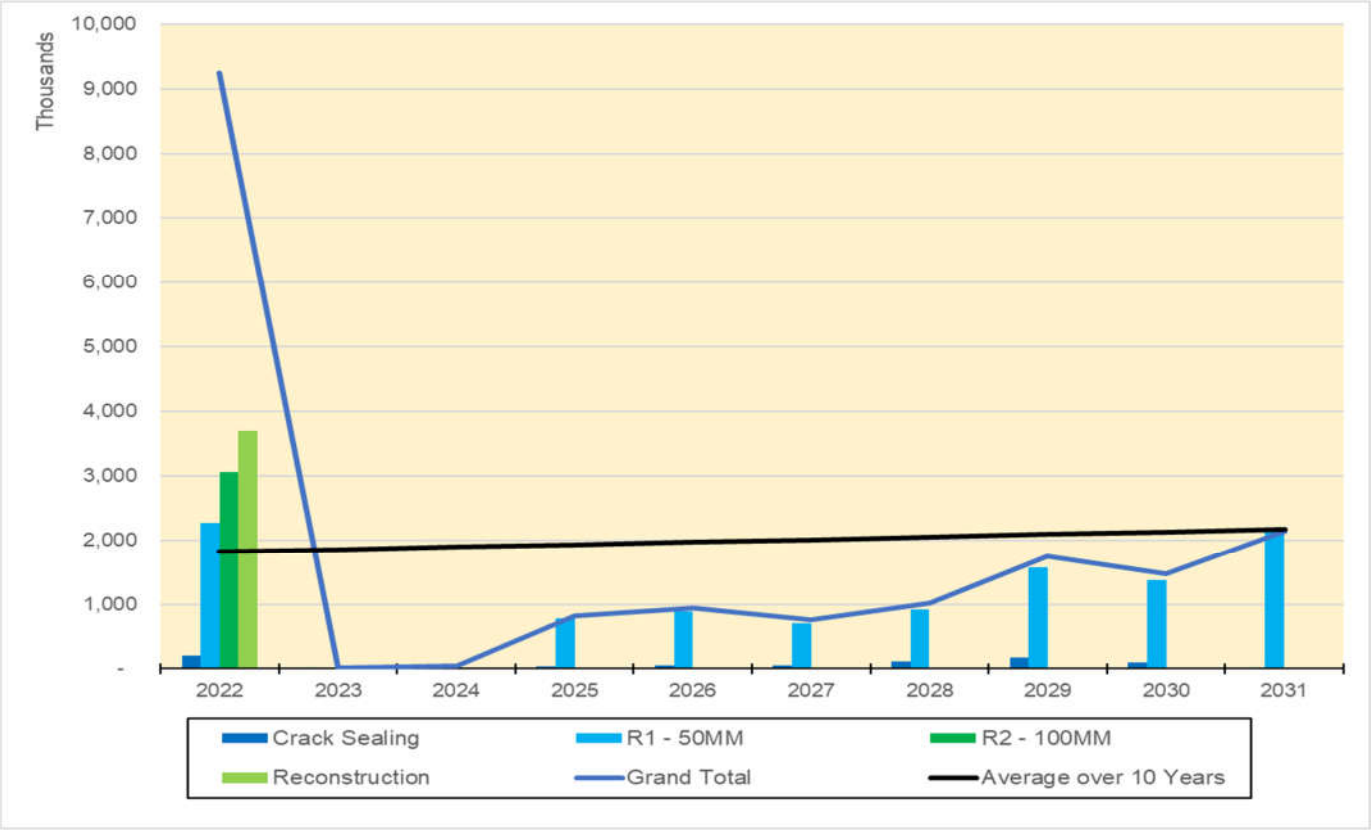
projects that are identified within 2022 can and will be delayed due to other development occurring that will directly affect timing of the rehabilitation.

It is important to note that this amount is presented using today's dollars with no inflationary measure, if we add inflationary amounts at 2.0% per year over the next 10 years the results are as follows:

Improvement	Lifespan Average	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Crack Sealing	$ 40,032	$ 40,832	$ 41,649	$ 42,482	$ 43,332	$ 44,198	$ 45,082	$ 45,984	$ 46,904	$ 47,842	$ 48,798	$ 49,774
R1 - 50MM	421,004	429,424	438,012	446,773	455,708	464,822	474,119	483,601	493,273	503,139	513,201	523,465
R2 - 100MM	831,261	847,886	864,844	882,141	899,783	917,779	936,135	954,857	973,955	993,434	1,013,302	1,033,568
Reconstruction	1,423,786	1,452,261	1,481,307	1,510,933	1,541,151	1,571,974	1,603,414	1,635,482	1,668,192	1,701,556	1,735,587	1,770,299
Grand Total	$ 2,716,082	$2,770,404	$2,825,812	$2,882,328	$2,939,975	$2,998,774	$3,058,750	$3,119,925	$3,182,323	$3,245,970	$3,310,889	$3,377,107

The initial $2.7M is a great start, however we still have to be concerned with inflationary increases. These may be partly offset by appropriate investments with respect to the reserve funds, new treatments and gained efficiencies, however staff want to stress the importance of inflation. As new infrastructure is added due to growth, over time it will also be added to the portfolio being renewed and its lifecycle costs will also affect the annual totals.

10 Year Work Plan



While the 10 Year Plan costs are reasonable (at ~ $2.0M/year) as shown above and within the means of our current reserves and funding model, it is key that we do start now to ensure our

reserves are sufficient for future needs. With a good investment policy and program, the financial impact of **consistent contributions now will ensure financial sustainability is achieved for the full lifecycle of the road assets in the future**.

The modelling results have stayed consistent with an estimated annual investment requirement of just under $2M annually over the next 10 year (see 10 Year Work Plan Graph). This is also consistent with staff's expectations and is in-line with current average spending on road refurbishment and reconstruction in the Town's operating and 10 year capital budgets.

Finally, note that the average amount over 10 years has been **inflated by 2% per year, which means that by the end of 2031 the average value has increased to $2.2M.**

Bridges

State of Infrastructure/Level of Service (LOS)

The Town owns and maintains 25 bridges and has a legislative requirement to conduct bridge studies every 2 years to assess the condition and renewal or rehabilitation needs. Bridges are complex multi faceted structures with different elements requiring maintenance and renewal programs (deck, concrete, beams) and are assessed according to their own assessment criteria under Ontario Structure Inspection Manual (OSIM).

The level of service for bridges is defined by the results of the town's OSIM reports which also produces a 10-year plan for rehabilitation and renewal.

Financing

According to the 2020 OSIM report the town's bridges will require $8.6M in improvements. This equates to $860K /year. The town has relied heavily on grant funding in the past as the costs exceed the means of our lifecycle reserve funding. One replacement is identified (Ontario Street) and staff will be endeavoring to secure grant funding for this. The chart following provides the details of the work plan.

Additional simplified analysis indicated that a full life cycle analysis for all structures would end up in with a similar amount per year in needs over the longer term.

Name	Replacement Cost	Average Condition	Average Age	10 Year Capital Plan
Pretty River Bridge - Bridge 1	$ 3,030,500	72	50	$ 456,000
Hume Street Bridge	2,122,500	84	61	-
Highway 26 Bridge	947,500	100	61	-
Ontario Street Bridge	4,772,500	36	81	4,772,500
Huron Street Bridge over Station Creek	812,500	73	91	-
Hurontario Street Bridge	1,067,500	75	15	-
First Street Bridge over Oak Street Canal	5,869,500	70	51	415,000
Second Street Bridge over Oak Street Canal	576,500	67	55	202,000
Third Street Bridge over Oak Street Canal	981,500	67	61	247,000
Fourth Street Bridge over Oak Street Canal	962,500	97	7	-
Fifth Street Bridge over Oak Street Canal	1,022,500	97	6	-
Sixth Street Bridge over Oak Street Canal	801,500	72	50	219,000
First Street Bridge over Hickory Street	766,500	88	12	-
Mountain Road Bridge over Black Ash Creek	1,818,500	72	43	1,106,500
Highway 26 Bridge over Black Ash Creek	3,196,500	75	25	-
Sixth Street Bridge over Underwood Creek	1,326,500	73	21	238,500
Mountain Road Bridge over Silver Creek	1,088,500	66	38	342,000
Highway 26 West Bridge over Silver Creek	1,806,500	70	37	229,000
Highway 26 West Bridge over Silver Creek Ext.	1,268,500	74	31	284,000
Hwy 26 Cranberry - bridge 23	906,500	74	61	130,000
Hume St at Minnesota - bridge 25	597,500	98	6	-
Grand Total	$ 35,742,500	76	41	$ 8,641,500

Environmental Services

Water – Linear

State of Infrastructure/Level of Service (LOS)

With underground linear infrastructure it can be challenging to properly assess the condition and thus AMP plans are often based on the age of the assets. However, there are more factors that can help with the assessment of mains, such as material types, soil conditions or depth of installation, as well as the number of breaks experienced. Taking these additional factors into consideration the water department has developed a water priority weighting tool which assigns a weighted value score to asset segments based on age, number of breaks per 100 meters, main depth, and pressure issues in order to identify the most critical renewal requirements. Using this tool helps to address the level of service we are trying to achieve.

The table below illustrates the conditions as well as the age and replacement costs of each asset class. Over 70% of the town's inventory is 28 years or less and has an average condition rating of between 65/100 and 81/100 (fair to very good).

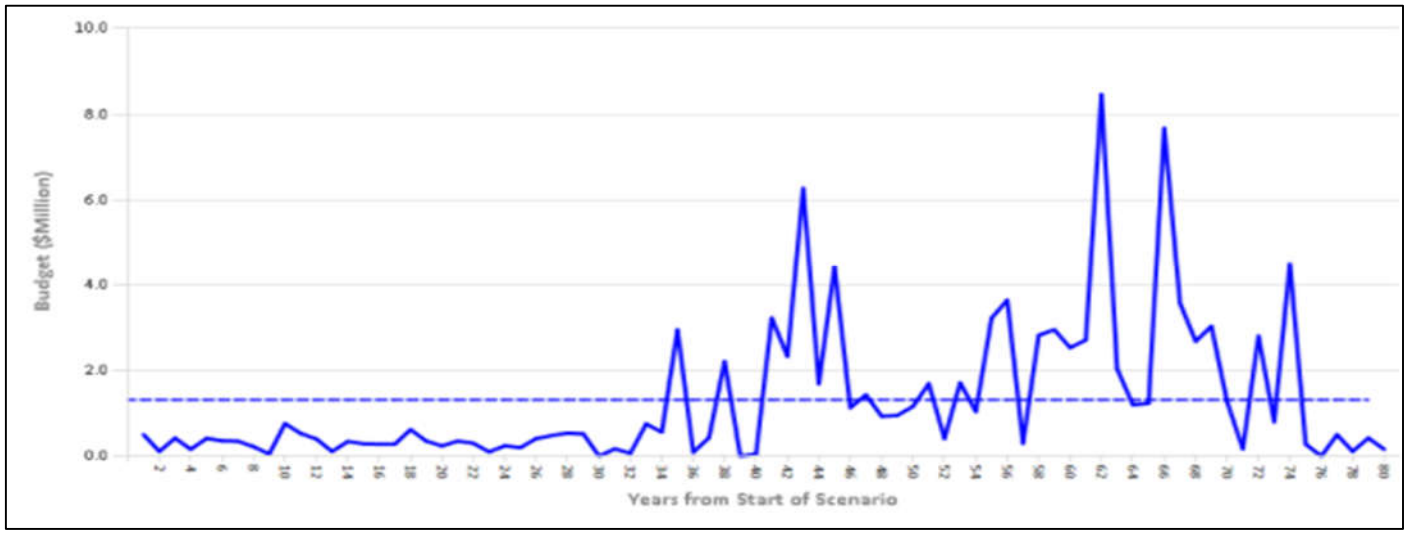
Asset ID	Length in Meters	Average Condition	Replacement Cost	Average of age
WM-CI-250	2,942	14.6	$ 1,672,672	65.5
WM-CI-400	604	26.0	481,694	59.2
WM-CI-150	25,522	24.9	12,464,731	56.9
WM-CI-300	11,531	27.0	7,106,929	56.0
WM-CI-200	4,357	26.3	2,190,980	55.7
WM-CON-400	3,040	31.0	3,967,753	54.2
WM-CON-450	893	33.8	1,502,044	53.0
WM-PVC-300	107	64.6	48,986	28.3
WM-DI-300	25,241	66.0	15,624,211	26.9
WM-DI-250	2,393	67.3	1,385,654	25.8
WM-CON-600	4,885	68.8	9,279,545	25.0
WM-DI-150	56,986	69.4	27,821,901	24.3
WM-DI-200	19,739	72.7	9,865,244	21.4
WM-DI-400	7,064	74.5	5,667,405	20.4
WM-CU-50	531	70.9	9,920	19.3
WM-PVC-150	1,453	77.6	709,515	17.9
WM-DI-500	3,290	81.6	3,621,445	14.8
Grand Total	170,578	59.3	$ 103,420,629	31.7

*WM = Watermain, CON = concrete, CU copper, DI ductile iron, PVC Plastic

In addition, the water department coordinates with the public works sanitary program to match main replacements that correspond with sanitary priorities.

Financing Strategy

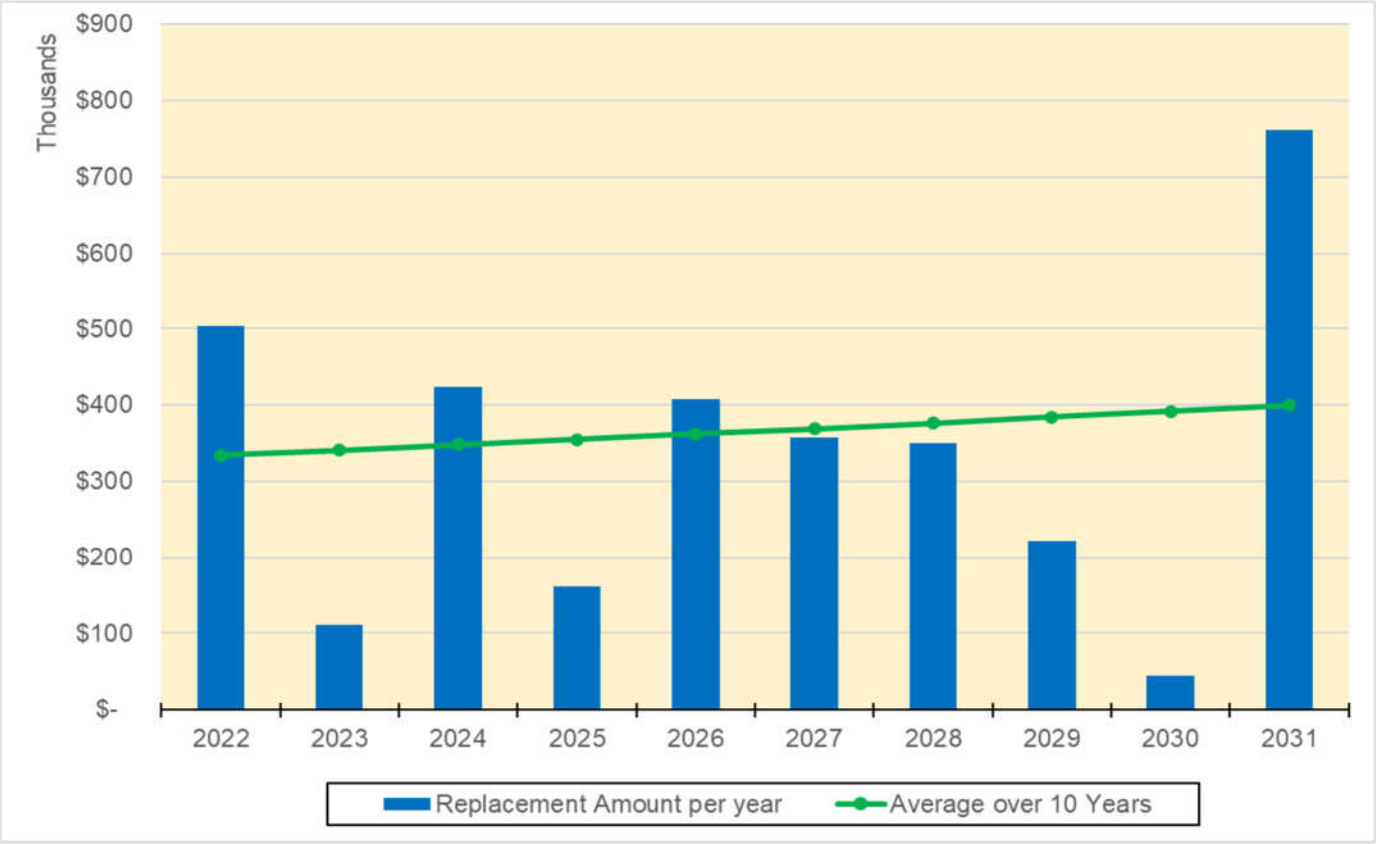
Over a full lifecycle view, the annual investment requirements have also been consistent with further revisions and refinement of the AMP at approximately $1.34M/year as illustrated in the graph below, in today's dollars.



The same concerns for inflationary factors apply here as discussed under the roads section. Adding a 2% inflationary factor over the next 10 years results in the following:

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Average over 10 Years - inflated	$1,341,510	$1,368,340	$1,395,707	$1,423,621	$1,452,094	$1,481,135	$1,510,758	$1,540,973	$1,571,793	$1,603,229

However, in spite of known specific issues break tracking, (again based on depth, break and pressure history) the watermain system has a relatively lower short term (10 years) annual investment need of approximately $0.3M annually which is a significant change from previous AMP update reports. As mentioned above, this is also due to water staff being able to assess some older mains thought to be due for replacement and found them to be in good condition. The 10 Year Work plan is illustrated below and includes an inflationary factor each year in the amount of 2%.



As mentioned previously in the roads financing strategy, it is critical that we start making consistent contributions to the reserve funds for those future growing liability as assets reach their end of useful life. As early as the next update of this AMP, ongoing amounts should be considered for the significant needs emerging in the longer term (30 years or more).

Water - Vertical

The Water Treatment Plant facility, as well as associated reservoirs and booster stations has a current estimated replacement cost (without expansion – note that the expansion will be included upon the next update to the AMP) of $36.9M. At this time a town-wide facility condition assessment is being conducted and until this is completed (late Fall 2021), the amount determined for the lifecycle portion has been based solely on age and useful life of the facilities.

Based on the current replacement costs and useful life of the asset as detailed below the average amount that will need to be maintained is $1.06M/year, when a 2% inflationary factor is included this amount grows to $1.26M/year by 2031. As members of council may be aware all water contributions for lifecycle amounts are collected through water rates and form part of the rates studies that occur periodically.

Asset	Average Age	Average Service Life	Replacement Value 2021 $	Annual investment Required
Georgian Meadows Booster Station	18	47	$ 483,905	$ 10,369
Osler Bluff Booster Station	21	47	486,331	10,421
South End Reservoir	13	40	4,350,297	108,757
Water Filtration Plant - Facility	24	100	3,668,000	36,680
Water Filtration Plant - Intake Pipe	71	125	2,341,808	18,734
Water Filtration Plant - Vertical Works	24	23	16,752,512	723,404
Water Tower	91	150	3,170,247	21,135
West End Reservoir	30	45	5,721,968	127,155
Grand Total	**26**	**40**	**$ 36,975,069**	**$ 1,056,656**

Sanitary - Linear

State of Infrastructure/Level of Service (LOS)

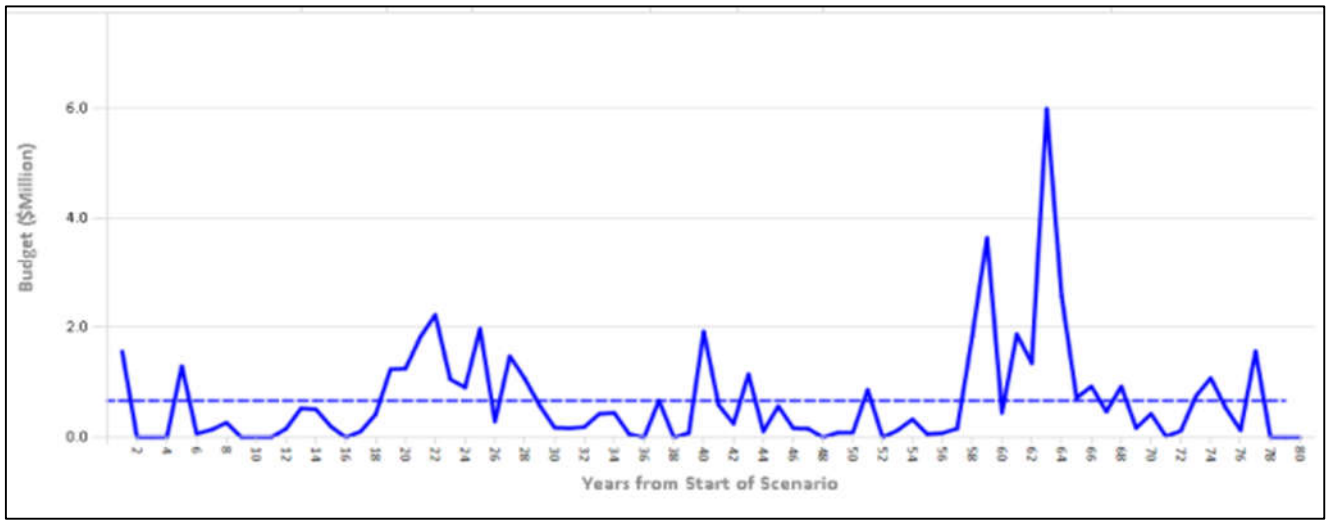
The sanitary inventory layer has benefited from extensive review and updating thanks to the hard work of the GIS staff and updates[3] from the Master Servicing Plan being conducted by Public Works. That said, the additional updates have not yielded any surprises and the estimated needs of the system have stayed consistent with earlier estimates. The system has also benefited from the commitment of the ongoing Sanitary renewal capital program (10+ years now) which has addressed the most critical needs. At this point in time the average condition of the sanitary sewers is 75/100 which means the system is relatively young, these conditions are based solely on age at this time and Public Works has identified the possible need to conduct another video scope condition assessment as the last one was completed in 2009.

[3] Over 20,000 meters of updates added to system since 2019. The linear inventory is now > 117,000 meters.

Sanitary Mains	Meters	Average Condition	Average age	Replacement Cost - 2021$
SAN-150	1,151	88.9	21.5	$ 507,158
SAN-200	37,443	80.4	29.5	14,133,914
SAN-250	30,669	69.2	41.7	15,479,200
SAN-300	11,384	74.3	36.0	6,077,214
SAN-375	9,912	76.1	33.3	5,501,710
SAN-450	16,440	77.0	33.0	10,686,027
SAN-525	3,556	67.7	46.0	2,658,134
SAN-600	783	75.6	37.3	687,082
SAN-675	540	88.4	19.4	561,338
SAN-750	5,202	72.0	40.5	6,424,488
Grand Total	117,080	75.4	35.1	$ 62,716,265

Financing Strategy

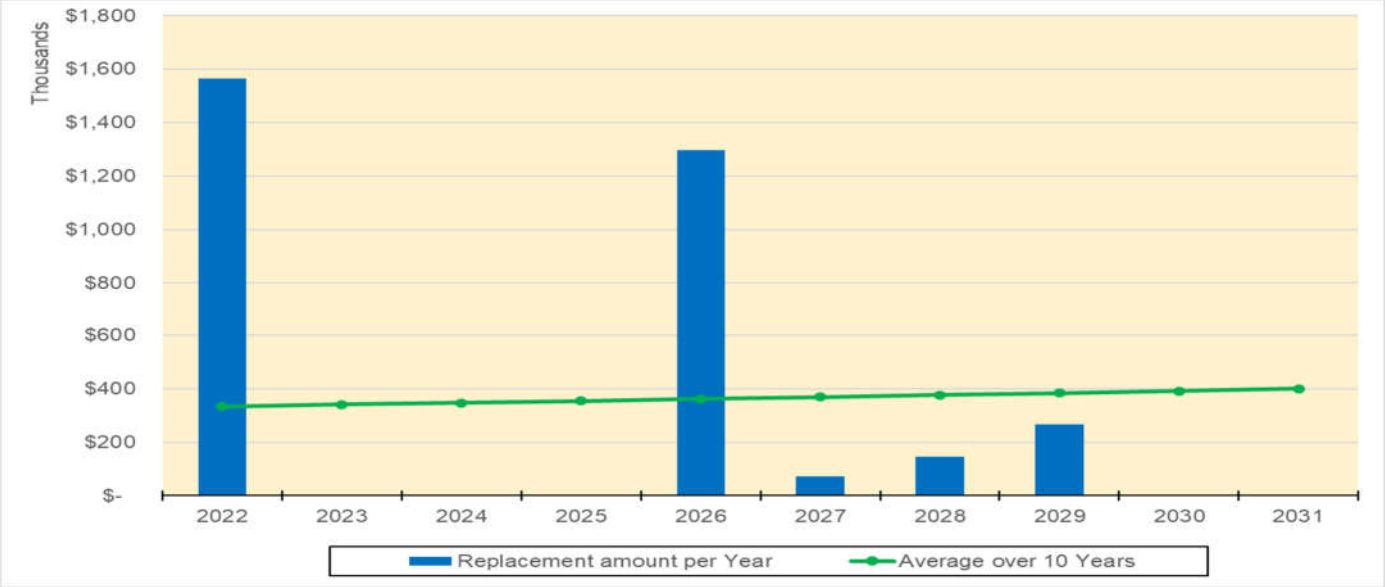
The review and updates to the inventory of the sanitary system as a result of the master servicing plan have resulted in a marginal decrease in the average annual cost to maintain the system in 2021 dollars is just under $700k down from the $850k/year (2019). The graph below illustrates over the lifecycle of these assets (80 years) the amounts required.



The same concerns for inflationary factors apply here and adding a 2% inflationary factor over the next 10 years results in the following:

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
10 Year Average - inflated	$ 671,787	$ 685,223	$ 698,927	$ 712,906	$ 727,164	$ 741,707	$ 756,542	$ 771,672	$ 787,106	$ 802,848

As discussed previously a concerted effort has been placed on reviewing and understanding the projects over the next 10 years and will continue to be the focus for planning of projects, to ensure optimal capital expenditures. The chart below details the work required over the next 10 years and provides an average amount of $335k/year.



Sanitary - Vertical

Much of the wastewater treatment facilities are nearing the end of their original estimated useful life; however these facilities are being impacted more so by growth with a major expansion project already being planned to start in 2026 with an estimated cost of $67.8M (largely covered by development charges). Similar to the Water Treatment Plant, the greater cost of the plant is the equipment with relatively shorter service lives then the facility itself (20-30 years) and therefore is critical in terms of a financing strategy to ensure adequate reserve funds. Once again as we await the condition assessments for town facilities, the amount determined for the lifecycle portion has been based solely on age and useful life.

Based on the current replacement costs and useful life of the asset as detailed below the average amount that will need to be maintained is $2.18M/year ($220k/year for pumping stations + $1.96M/year for the WWTP), when a 2% inflationary factor is included this amount grows to $2.6M/year by 2031. As members of council may be aware all wastewater contributions for lifecycle amounts are collected through wastewater rates and form part of the rates studies that occur periodically.

Asset	Asset item	Average Age	Average Service Life	Replacement Value $2021	Annual Investment Required
Black Ash Creek SPS	Electrical (incl. generator)	37	20	$ 230,720	$ 11,536
	Forcemain	6	75	230,720	3,076
	Pumps, Piping and Mechanical	37	20	230,720	11,536
	Structural	37	75	385,280	5,137
	Variable Frequency Drive	8	20	38,080	1,904
Cranberry Trail SPS	Electrical	5	20	164,640	8,232
	Forcemain (PVC)	5	75	339,360	4,525
	Pumps, Piping and Mechanical	5	20	180,320	9,016
	Structural and Architectural	5	75	203,840	2,718
Minnesota St. SPS	Electrical (incl. generator)	29	20	230,720	11,536
	Forcemain	4	75	200,480	2,673
	Pumps, Piping and Mechanical	40	20	308,000	15,400
	Structural	60	75	385,280	5,137
	Variable Frequency Drives	9	20	77,280	3,864
Paterson St. SPS	Electrical	14	20	113,120	5,656
	Forcemain (PVC)	4	75	132,160	1,762
	Pumps, Piping and Mechanical	14	20	218,400	10,920
	Structural	14	75	278,880	3,718
St.Clair St. SPS	Electrical/Scada	4	20	846,720	42,336
	Forcemain (HDPE)	4	75	1,182,720	15,770
	Pumps, Piping and Mechanical	4	20	703,360	35,168
	Structural	4	75	648,480	8,646
Grand Total		16	45	$ 7,329,280	$ 220,267

Asset	Asset item	Average Age	Average Service Life	Replacement Value $2021	Annual Investment Required
Water Pollution CP	Electrical	22	20	$ 11,558,400	$ 577,920
	Mechanical	22	30	30,822,400	1,027,413
	Structural	27	75	34,675,200	462,336
Grand Total		23	39	$ 77,056,000	$ 1,961,425

Storm Water

State of Infrastructure/Level of Service (LOS)

The storm water system has had the most dramatic amount of updates due to the Master Servicing Plan review and the efforts of our GIS staff (In 2019, we didn't have sufficient data to do reasonable analysis). Much of the storm network has been built over the years on an ad hoc basis and can often be as simple as a corrugated pipe in a culvert and as a result the full network and its current status may not have been fully understood and so not surprisingly, it also has the highest annual estimated cost for renewal and refurbishment of all the linear assets with a significant amount of "immediate needs" catch up work. However, as Collingwood grows and becomes increasingly urbanized, the importance of this system is becoming more obvious. This asset class has not benefited as much from the higher profile ongoing sanitary renewal capital program which has addressed many critical sanitary, water and roads needs already. And, as was recently demonstrated with the emergency Minnesota Storm sewer repair project, these projects can be significantly expensive. [4]

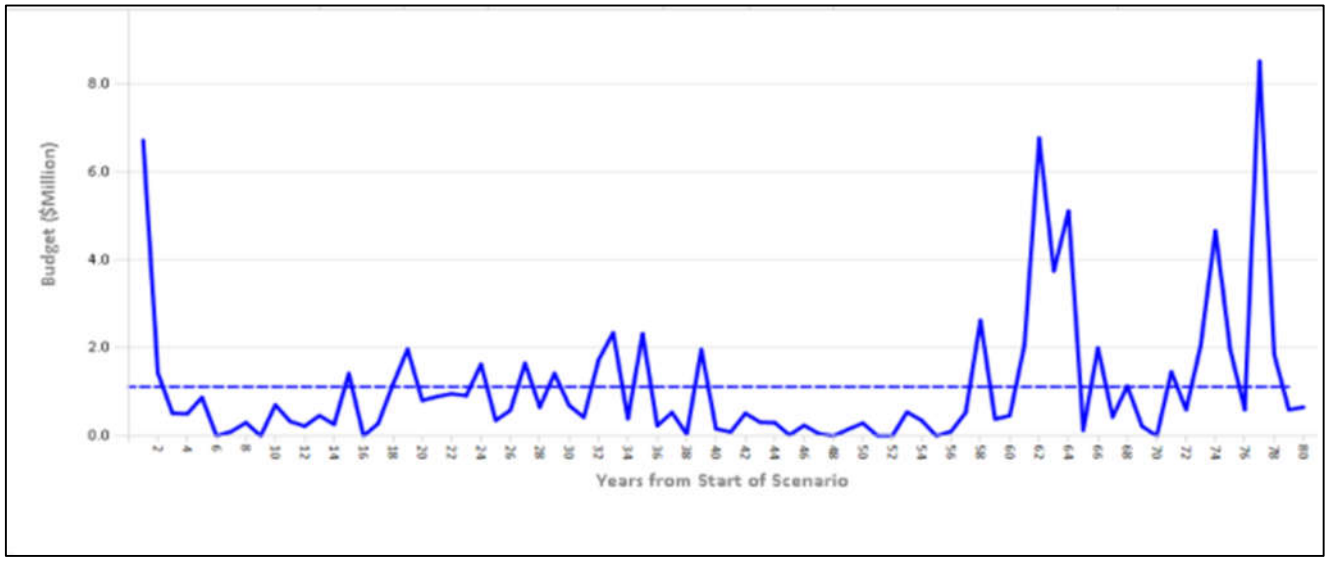
[4] 2014 Town of Collingwood replacement cost of Storm sewer network was $25M.

The condition of these assets are based solely on age and the town is benefitting from a fairly young system. The table below details the average conditions/age and replacement value.

Asset	Number of Segments	Average Condition	Replacement Cost - 2021$	Average Age	Length in Meters
STS-1050	38	75	$ 5,556,368	38	2,728
STS-1050-CSP	3	1	208,880	57	103
STS-1200	12	85	2,174,094	22	862
STS-1350	32	81	5,981,137	28	2,103
STS-1500	7	52	2,199,899	57	672
STS-1500-CSP	4	24	1,995,841	40	610
STS-300	619	86	12,359,987	23	13,055
STS-300-CSP	239	17	4,252,063	46	4,885
STS-375	168	88	6,502,750	21	6,324
STS-375-CSP	109	16	4,943,091	47	4,906
STS-450	159	89	7,809,078	19	7,335
STS-450-CSP	165	20	6,857,865	45	6,520
STS-525	127	83	6,922,913	28	6,295
STS-525-CSP	10	6	356,392	51	324
STS-600	161	85	10,986,719	24	8,520
STS-600-CSP	27	27	1,356,942	38	1,052
STS-750	134	79	10,862,638	29	7,222
STS-750-CSP	11	50	824,852	26	548
STS-900	79	82	7,196,676	26	4,391
STS-900-CSP	11	43	1,059,309	29	643
STS-975	6	92	407,554	16	228
Grand Total	2,121	67	$ 100,815,048	30	79,323

Financing Strategy

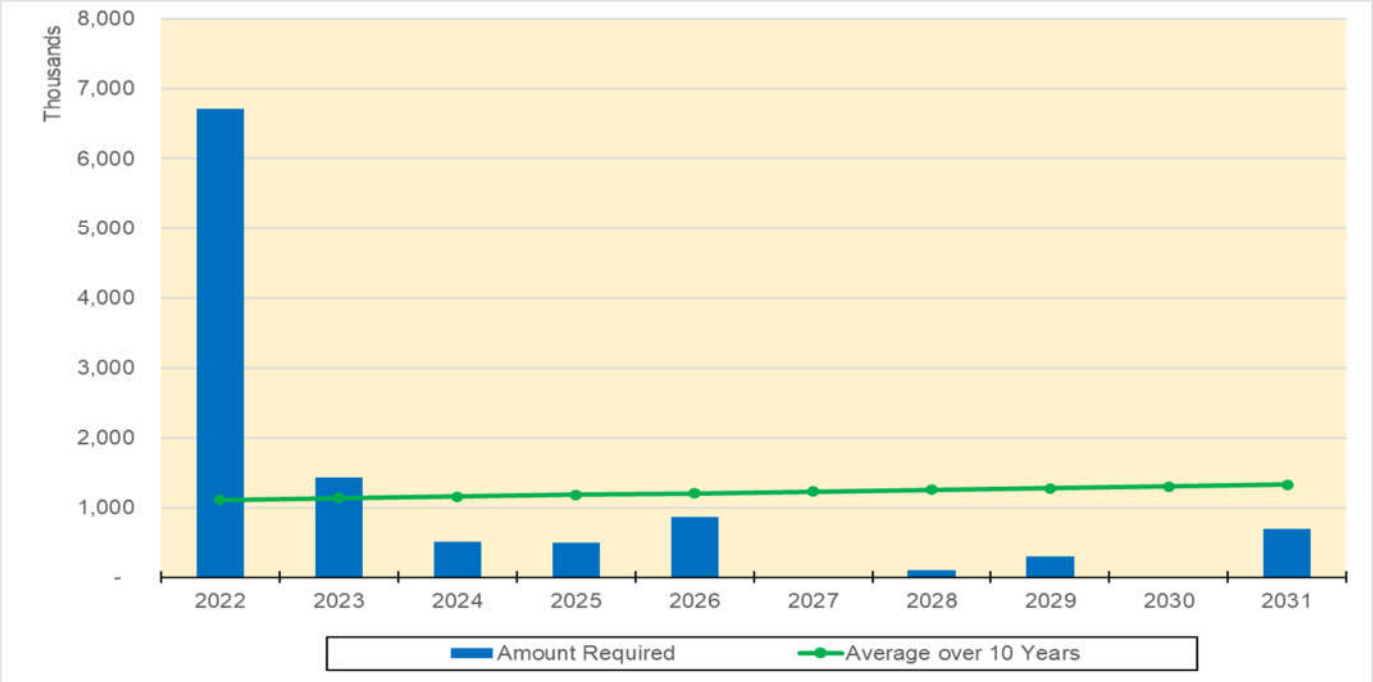
The stormwater network has the highest annual average estimated cost of any of the underground linear systems at $1.1M. The graph below illustrates the average amount as well as the high contributory years. You will note that the 2022 amount is quite high and reflects a backlog of works, however the projects will continue to be monitored and the focus should be on the total lifecycle of works, rather than a particular year.



Once again inflationary factors apply here and adding a 2% inflationary factor over the next 10 years results in the following:

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
10 Year Average Inflated	$ 1,114,235	$ 1,136,520	$ 1,159,250	$ 1,182,435	$ 1,206,084	$ 1,230,205	$ 1,254,809	$ 1,279,906	$ 1,305,504	$ 1,331,614

The 10 Year Work Plan is provided below, note again that because of the backlog showing in 2022 there is not a great difference between the required amounts here versus the 80 year full lifecycle.



Overall Summary – Total Core Assets – Financing Strategy

As we have reviewed each individual asset category on its own the final step of understanding the needs of the AMP is to combine the information and review the different available financing options. The chart below summarizes the discussions held above, and totals nearly $10M.

Asset Group	Annual Lifecycle Amount - 2021$
Roads	$ 2,716,082
Bridges	864,150
Water - Linear/Vertical	2,398,166
Wastewater - Linear/Vertical	2,853,479
Stormwater	1,114,235
Grand Total	**$ 9,946,112**

Although $10M is a large amount of funds to manage and comprehend, it is crucial that we recognize the multiple sources of funding and then clearly define the gap between what is

needed and what we currently spend/generate each year. There are multiple sources of funding and they include:

- Reserves/Reserve Funds
- Grants
- Debt Financing – both internal and external
- Tax Levy
- User Fees

Roads/Bridges and Stormwater (Tax-supported assets)

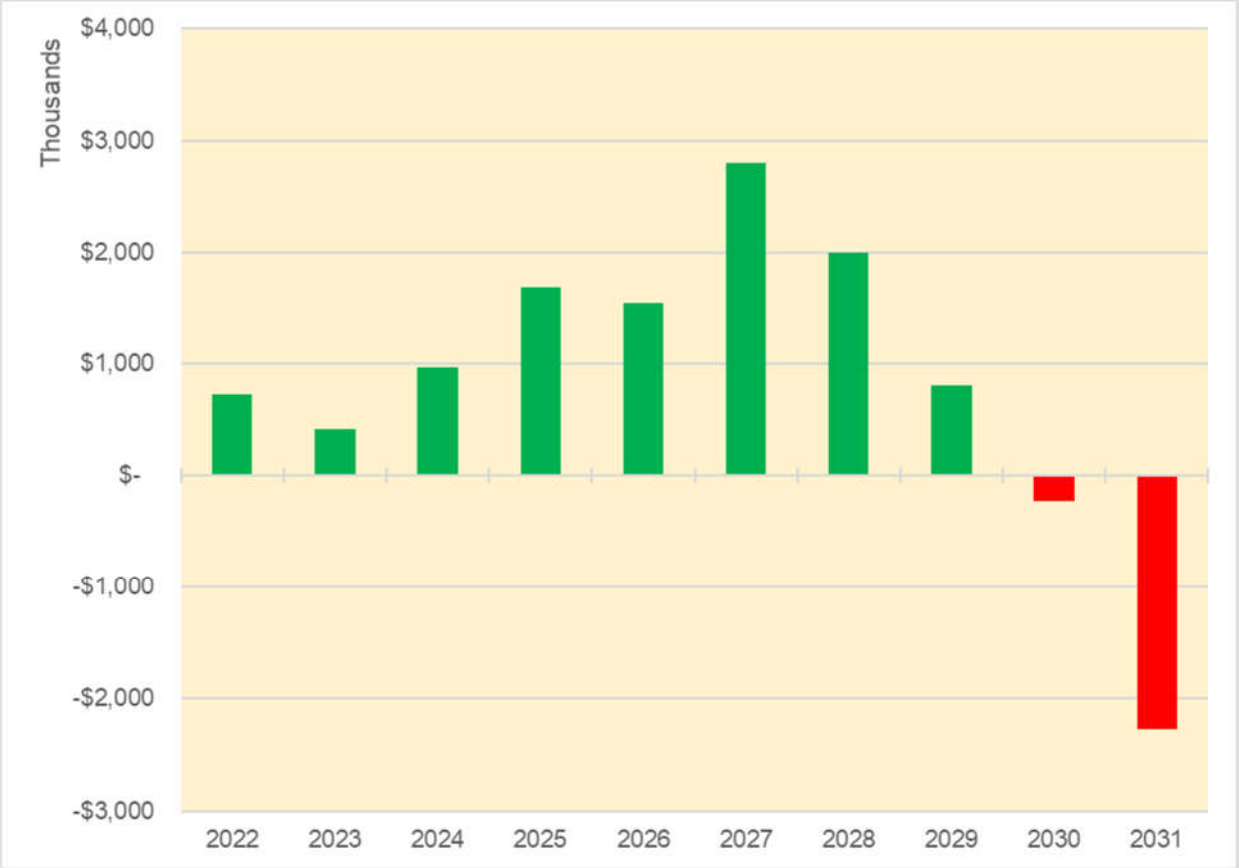
The town has primarily used contributions to reserves, grants, debt financing and the tax levy to fund or support capital projects. The total required for these assets equates to $4,694,467, the current reserve funds that are applicable to this include: the Special Capital Levy and Lifecycle Replacement Reserve Fund. On an annual basis the amounts that are added to both of these funds (on average over the last 2 years) is $2.2 M, additionally the town has used both the OCIF fund and the Federal Gas Tax to supplement and finally there are funds within the operational budget such as paving and asphalt spray and patch that contribute as well. The chart below details the net funding gap for these assets, note however this is based on the $2.2M continuing for reserve funding each year:

Roads/Bridges/Stormwater	Amount
Annual Lifecycle Amount - 2021$	$ 4,694,467
Less:	
Reserve Contribution per year	2,200,000
OCIF Funding	900,000
Federal Gas Tax (50%)	315,000
Amounts in Operational Budget	356,785
Financing Gap	**$ 922,682**

Once again this amount is excluding inflation and is reported in 2021 dollars. Using this information and holding the current contributions as detailed above, below is a table showing the forecast of our reserve funds for the next 10 years:

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Beginning Balance	$ 5,214,765	$ 728,698	$ 410,421	$ 968,078	$ 1,689,402	$ 1,536,859	$ 2,795,187	$ 2,001,877	$ 806,570	-$ 224,377
Add Contributions: Grants/Reserve	3,771,785	3,771,785	3,771,785	3,771,785	3,771,785	3,771,785	3,771,785	3,771,785	3,771,785	3,771,785
Add Interest	52,148	7,287	4,104	9,681	16,894	15,369	27,952	20,019	8,066	- 2,244
Less Expenditures + Inflation	8,310,000	4,097,349	3,218,232	3,060,142	3,941,222	2,528,825	4,593,047	4,987,111	4,810,798	5,816,506
Closing balance	$ 728,698	$ 410,421	$ 968,078	$ 1,689,402	$ 1,536,859	$ 2,795,187	$ 2,001,877	$ 806,570	-$ 224,377	-$ 2,271,342

You will note that beginning in year 2030 if we do not increase the contributions (and exclude debt) we begin to see a deficit in the reserves. A graphical demonstration is below:



The town is fortunate that there have been sound financial decisions over the last several years and have been able to build a balance in the reserve funds to begin the AMP program, however as can be seen these amounts can become quickly depleted if we do not increase the contributions. Additionally, there is some element of risk as grants are not guaranteed and may at some time either go away altogether or decrease significantly. Note again that this does not include any debt being issued, however for simplicity purposes they have been excluded.

Given all the information and the understanding of how vitally important it is that we continue to invest today to protect the future sustainability of the town. It is also important to understand that there are ways to assist in closing the gap of $922K going forward to ensure that it is not overly burdensome to the taxpayer for example:

1) Add small increases to the Special Capital Levy over the next 5 – 10 years:

	2021	2022	2023	2024	2025	2026	2027	Difference from 2021
Rate as % of Tax Rate	0.75%	0.79%	0.83%	0.87%	0.91%	0.96%	1.01%	
Amount	$ 264,000	$ 277,200	$ 291,060	$ 305,613	$ 320,894	$ 336,938	$ 353,785	
Estimated Change Amount		$ 13,200	$ 13,860	$ 14,553	$ 15,281	$ 16,045	$ 16,847	$ 89,785
Estimated Change %		5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	34.0%

2) As old debt expires use the tax levy component to create a future Debt Reserve (to assist in Asset Management). More details will come forward as the Debt Policy is reviewed however to provide some context – the current debt levy requirement is approximately $1.5M over time this will deteriorate by about 15% per year which would mean the following:

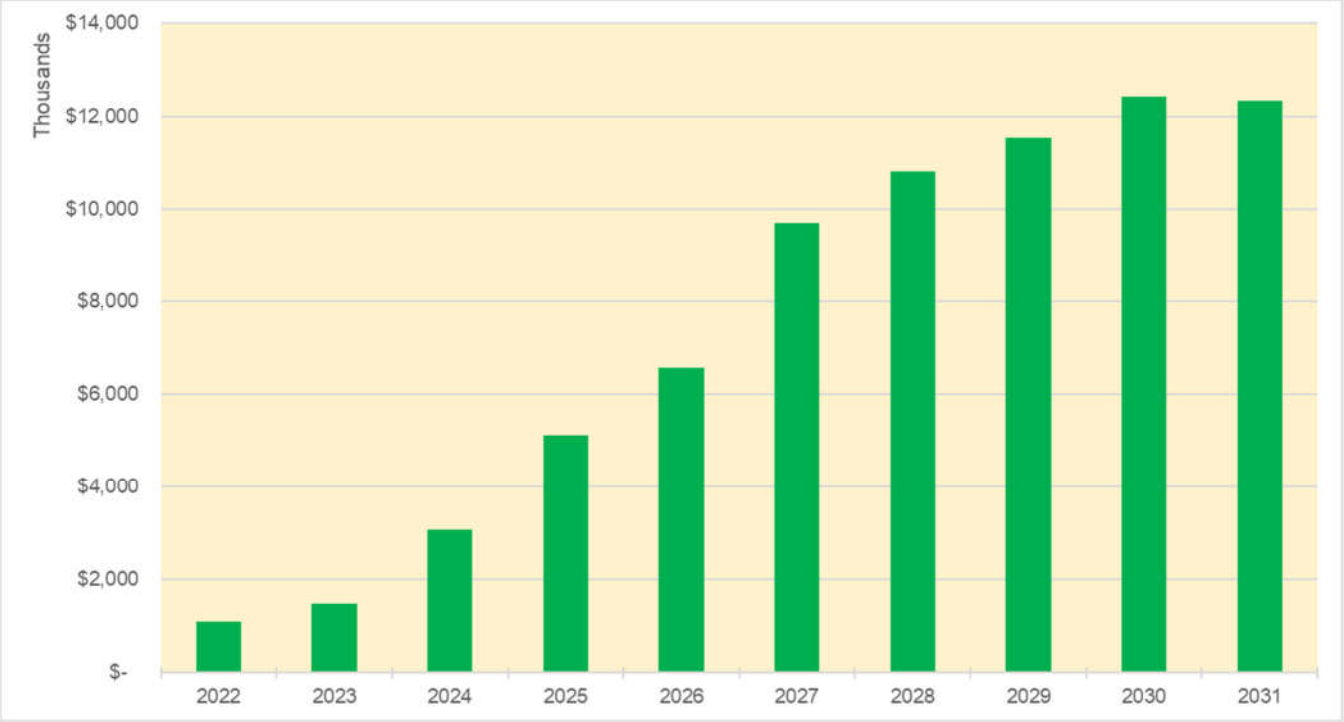
	2021	2022	2023	2024	2025	2026	2027	Difference from 2021
Amount	$ 1,500,000	$ 1,275,000	$ 1,083,750	$ 921,188	$ 783,009	$ 665,558	$ 565,724	
Estimated Change Amount		-$ 225,000	-$ 191,250	-$ 162,563	-$ 138,178	-$ 117,451	-$ 99,834	-$ 934,276

This of course assumes that no new debt is issued however, even if 50% was available it would bring the Town to approximately $500K available for Asset Management. Moreover, given that the internal debt requirements have been completed through the Asset Sale Proceeds this frees up an additional $150K per year previously included in the tax levy.

3) Slowly raise the contribution to Reserve Funds over time. Today 1% point increase of the tax rate equates to approximately $350K, if we exclude growth and we increase the reserve contribution by 5% over the next 6 years this would mean a total tax rate impact of approximately 2%. However, if we include growth as part of the contribution, it is possible that the tax rate is not impacted. The table below shows the values of the contribution over time.

	2021	2022	2023	2024	2025	2026	2027	Difference from 2021
Amount	$ 2,000,000	$ 2,100,000	$ 2,205,000	$ 2,315,250	$ 2,431,013	$ 2,552,563	$ 2,680,191	
Change Amount		$ 100,000	$ 105,000	$ 110,250	$ 115,763	$ 121,551	$ 127,628	$ 680,191
Est. Impact on Tax Rate (excluding Growth)		0.28%	0.30%	0.31%	0.33%	0.35%	0.36%	1.94%

These examples demonstrate that small changes each year can accumulate to large payoffs in the future. Using all three methods described above would have an enormous impact as illustrated in the graph below.



Water/Wastewater (User Fee supported assets)

Similar to tax-supported assets the town has used a combination of contributions to reserves (through user-fees), grants and debt financing to fund or support capital projects. The total required for these assets equates to $5,251,645, the current reserve funds that are applicable to this include: the Water and Wastewater Reserve Funds. On an annual basis the amounts that are added to both of these funds (on average over the last 2 years) is $4.1 M, additionally the town has used grant funding to support this as well. The chart below details the net funding gap for these assets, note however this is based on the $4.1M continuing for reserve funding each year:

Water/Wastewater Assets	Amount
Annual Lifecycle Amount - 2021$	$ 5,251,645
Less:	
Reserve Contribution per year (average)	4,184,682
Federal Gas Tax (50%)	315,000
Financing Gap	**$ 751,964**

You will note that the reserves continue to build over the next 10 years which is positive, since spending for these areas really builds in the next 20 – 30 years where amounts required increase dramatically. However, again given that the average gap is $751K, it is in the later years (2050 and beyond) where financial sustainability would be difficult to maintain. Increasing the total amount contributed slightly over the next 5-10 years through user fee increases will help establish financial stability greatly in the future.

5. EFFECT ON TOWN FINANCES

The amounts included in this report will be considered as part of the Draft 2022 Municipal Budget.

6. CONSIDERATIONS

Community Based Strategic Plan:	☐ N/A or ☒ Explain: Progresses towards achieving CBSP Goal
Climate Change / Sustainability:	☒ N/A or ☐ Explain: Choose an item.
Accessibility:	☒ N/A or ☐ Explain: Choose an item.
Communication / Engagement:	☒ N/A or ☐ Explain: Choose an item.
Accountability / Transparency:	☒ N/A or ☒ Explain: Enhances Accountability and Transparency

7. APPENDICES & OTHER RESOURCES

Appendix A	https://collingwood.civicweb.net/document/41598/Asset%20Management%20Plan%20Update%2020191209.pdf?handle=AC42753569DD48C0A81B7862B4B93864
Appendix B	T2019-14 Strategic Asset Management Policy
Appendix C	MFOA Asset Management Framework

SIGNATURES

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