DATE: October 19, 2020

TO: MAYOR AND COUNCIL

NAME AND TITLE: Adam Homes, Director of Infrastructure Services

SUBJECT: Asset Management Average Annual Re-investment

ATTACHMENT(S): None

RECOMMENDATION(S):

That Council RECEIVES FOR INFORMATION the report dated October 19, 2020 from the Director of Infrastructure Services titled "Asset Management Average Annual Re-investment".

PURPOSE:

To provide an update on the City's estimated Average Annual Re-investment (AAR) values.

BACKGROUND:

The City has been calculating the AAR values for its major asset categories since 2011. AAR values assist the City in determining the annual investment necessary to ensure the ongoing operation and maintenance of our infrastructure; when our annual expenditure falls short of that recommended level of re-investment, we document that amount as an Infrastructure Funding Gap. Since 2011, the AAR has grown to $45.8M. Over the last 5 years, about $30 million, on average, was funded annually in infrastructure re-investment.

AAR's provide the funding level required annually to keep our infrastructure in good condition to reduce the risk of infrastructure failures and/or large unexpected investments in the future. AAR estimates how much the City should be spending to renew or replace the infrastructure assets that provide service to the community such as; water, sewer, and roads. The total replacement value of City owned assets is now reaching $3.7 billion. The average age of these assets is 43 years old.

There are two predictive modeling tools used to assist in planning long-term capital asset renewal and replacements. The City's linear assets, such as water pipes and roads, use PowerPlan (formerly called RIVA) while the City's vertical assets (buildings) use BUILDER Sustainment Management System. These tools calculate replacement values and AAR values for City-owned infrastructure based on historical work, contract unit pricing, and consultants' estimates. The recommendations from these two tools, assist in determining when assets need to be replaced and at what cost.

STRATEGIC PRIORITIES:

This work assists with two of Council's Focus areas:
- Prioritize infrastructure re-investment and renewal to ensure the delivery of critical recreation, emergency, transportation, and utility services;

- maintain fiscal sustainability, balance service levels with the affordability of the City's services, facilities, and operations.

CALCULATING APPROPRIATE VALUES

The City gets the most value from our predictive modelling tools when they use up-to-date information. For example, the City has recently updated the inflation rate from 2% to 5% to more accurately reflect rising construction-related costs in our community/region. During these times, inflation for certain materials are much higher that 5%, but overall provides a good starting point. Work order costs are also reviewed and applied to the modelling software. Over the last few years, the City has conducted, for the first time, a series of condition assessments for every civic building. This information has also been incorporated into our modelling software. These are examples of how we are working to improve our planning for what infrastructure re-investment needs to occur and how much it is likely to cost.

This new information was used to calculate the annual infrastructure re-investment that should occur in 2020. The table below indicates the increasing cost relative to last year's results.

Table 1: AAR Comparison

Asset Category	2019 AAR ($ in millions)	2020 AAR ($ in millions)	Difference (%)
Roads	$6.2	$6.9	10%
Water	$7.2	$8.4	14%
Sanitary Sewer	$6.3	$6.5	3%
Storm Drainage	$3.7	$4.3	14%
Civic Facilities	$7.9	$10.3	23%
Sidewalks & Walkways	$0.9	$1.4	36%
Parks & Trails	$0.9	$0.9	0%
Bridges	$0.7	$0.8	13%
Fleet	$4.1	$4.3	5%
District Energy	$0.3	$0.3	0%
Street Lights	$0.4	$1.7	76%
Totals	**$38.6**	**$45.8**	**16%**

Note that the increase for streetlights is the result of now including the projected costs related to the underground wiring that services these lights; previously only the poles and bulbs were included. This also demonstrates how infrastructure re-investment priorities are now being more appropriately budgeted.

Table 2 includes the estimated AAR, 5-year average approved budget for re-investment projects, and the City's major asset categories' resulting funding gap. It also includes a history of those values at the bottom of the table. Several factors influence these values, including improved asset inventory data, inflation rates, and the amount of re-investment projects approved.

Table 2: Infrastructure Funding Gap Annual Summary

Asset Category	2020 Approx Replacement Value	Average Annual Re-Investment Requirements (AAR)	Annual Average Capital Re-Investment Budget 2015-2019 (Renewal/Replacement)	Annual Infrastructure Funding Gap
	($ in millions)	($ in millions)	($ in millions)	($ in millions)
Roads	$1,130	$6.9	$6.0	$0.90
Water	$630	$8.4	$3.3	$5.12
Sanitary Sewer	$576	$6.5	$2.9	$3.58
Storm Drainage	$300	$4.3	$2.5	$1.82
Civic Facilities	$616	$10.3	$7.3	$3.00
Sidewalks & Walkways	$163	$1.4	$0.6	$0.85
Parks & Trails	$68	$0.9	$1.4	-$0.50
Bridges	$59	$0.8	$0.1	$0.69
Fleet	$39	$4.3	$4.6	-$0.30
District Energy	$22	$0.3	$0.03	$0.27
Street Lights	$107	$1.7	$0.2	$1.50
Totals	**$3,710**	**$45.8**	**$28.9**	**$16.9**
Totals 2011	$2,192M	$16.9M	$4.5M	$12.3M
Totals 2013	$2,291M	$34.8M	$14.4M	$20.5M
Totals 2017	$2,982M	$37.2M	$18.5M	$18.7M
Totals 2019	$3,209M	$38.6M	$26.5M	$12.1M
Totals 2020	$3,710M	$45.8M	$28.9M	$16.9M

With updated AAR values, the City can gain a better picture of its Infrastructure Funding Gap. This gap is calculated using an average of how much budget was approved over the last five years for infrastructure re-investment projects compared to the AAR. For example, the budget for renewal/replacement projects for the City's water network over the last five years was, on average, $3.3M per year. The estimated AAR for the water network is $8.4M. This leaves an annual funding gap of $5.1M for re-investments not currently funded.

Figure 1 shows the trend lines for the AAR, the 5-year average approved budget, and the resulting Infrastructure Funding Gap for all of the major asset categories combined.
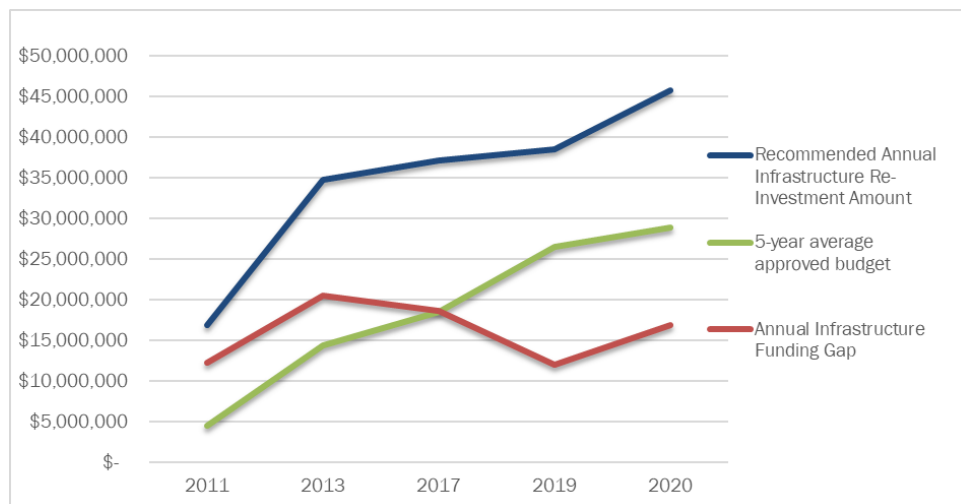

Figure 1: Re-Investment Trends

Council has certainly been allocating additional funds to infrastructure re-investment. Nevertheless, because our infrastructure is aging, the annual re-investment costs are also rising. This is resulting in a funding gap that is growing.

SUMMARY AND CONCLUSION:

The updates to the AAR values allow the City to calculate, at a high level, an appropriate level of annual investment in order to make sure our infrastructure is in good working condition. It is a local government's responsibility to keep assets in good working order, providing services, through these assets, for the community. An increased focus on renewals and replacements of existing infrastructure is essential to continue providing services to the community, now and into the future.

RESPECTFULLY SUBMITTED:

Adam Homes, Director of Infrastructure Services

PREPARED BY: Kristy Bobbie, Asset Manager

APPROVED:

Walter Babicz, Acting City Manager

Meeting Date: October 19, 2020