Supplemental to Asset Management Plan

(Prepared December 2024)

This report is a supplemental document to the Asset Management Plan (AMP) dated May 28, 2014 prepared by Wills and TCL. The purpose of this report is for compliance of Ontario Regulation 588/17 (O. Reg. 588/17) Asset Management Planning for Municipal Infrastructure and update the costing and performance of assets.

This supplemental document was prepared in house.

A Strategic Asset Management Policy (Policy 8.09) was created after the approved Asset Management Plan. The purpose of this policy is to: align the Township's asset management with its current/future social and economic goals, create consistent guidelines and standards for the management of municipal assets, and meet the requirements of O. Reg. 588/17.

Please refer to Asset Management Plan (May 28, 2014) for Executive Summary, Introduction, Best Practices, Levels of Service and Strategies. This report will have undated expenditures, asset conditions, financial strategies, lifecycle activities and proposed levels of service.

Current Levels of Status (July 2021 and July 2023 compliance)

Current Performance of Each Asset Category

The main asset categories for the township are: Roads, Bridges, Buildings and Equipment. See a Summary of Assets and Conditions in Appendix A.

The township was able to partner with the Municipalities of Powassan and East Ferris to collaborate on hiring engineers to put together a Road Needs Study for roads, both hard surfaced and gravel. This report was completed by WSP Canada Inc. (March 2023)

According to the Road Needs study, the overall average of condition of each road surface type is as follows:

- Hot Mix Asphalt – Poor
- Surface Treatment – Excellent
- Gravel – Good

For perspective, if the goal was to get all roads to an excellent condition a total investment of 8.1 million dollars would be needed from 2023 to 2032.

HP Engineering has been retained to complete the OSIM Bridge and Large Culvert report every other year. The most recent report was received November 2024.

According to the Bridge Study, 14 out of the 19 Bridge and Large Culvert Inventory are in a good condition index. The other 5 structures are listed as fair condition. At this time, there are no poor rated bridges. The township has been able to replace two bridges in the last 5 years.

The estimated replacement value of the bridge and culvert inventory is 9.56 million dollars. The replacement value of all structures if reconstructed to current geometric standards would be approximately 13.23 million dollars.

There are only two main buildings in the township, the combined Municipal Office and Fire Hall and the Public Works Shop. The municipal office and firehall had a major renovation in 1989 and the Public Works shop was erected in 1979. There was a building review of the municipal office and fire hall in about 2009. There has been no current structural review of any of the buildings within the township. There was an addition put on the public works shop in 2023 and all windows in the Office and Fire Hall were replaced in 2023. See Table 1.7 in AMP for summary of Building Inventory. Since the AMP was complete, there was a Pavillion added at the Beach with an approximate value of $40,000 and the Beach Recreational Cabin was demolished. More work will have to be put into the buildings for conditioning in the near future.

Equipment performance is a staff opinion. The Operations Superintendent will look after equipment in Public Works and the Fire Chief is responsible for equipment in the Fire Department.

Public works has been working with a 10 year capital budget for replacement of aging equipment. Overall condition average of equipment is good. The township has replaced a dump truck/plow in 2023 and a backhoe in 2021. Total replacement value of the Public Works fleet would be approximately $2,500,000.

Fire Department Equipment conditioning will be lower than Public Works for a couple of reasons. For the number of calls and the size of the township, it does not make sense to buy brand new trucks. The fire department is also held to certain replacement types of vehicles due to the size of the fire hall. The overall average condition is fair to good. Total replacement value (brand new) of the Fire Department fleet plus Self Contained Breathing Apparatus (SCBA) would be about $2 million dollars.

Life Cycle Activities

Ontario Regulation 588/17 requires municipalities to implement comprehensive asset management plans (AMPs) for public infrastructure, including roads, bridges, buildings, and vehicles. The life cycle activities for these assets ensure they are managed and maintained throughout their useful life, addressing their condition, performance, and service levels.
Here's a breakdown of **life cycle activities** for each of these asset categories:

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1. Roads
Life Cycle Activities:

- **Planning & Design:**
    - **Needs Assessment:** Identifying traffic volumes, types of vehicles, and community needs.

    - **Design:** Road materials, surface type, and alignment are determined based on the needs assessment and regulatory standards.
- **Construction:**
    - **Build:** New roads or road segments are constructed, considering factors like base material, drainage systems, and pavement type.
- **Operations & Maintenance:**
    - **Routine Maintenance:** Includes tasks like pothole repairs, crack sealing, adding gravel and regular inspections.
    - **Preventive Maintenance:** Regular resurfacing (e.g., chip sealing, slurry sealing) to extend road life and grading gravel roads to keep gravel on travelled portion of road.
    - **Snow & Ice Control:** In colder climates, winter maintenance (e.g., salting and plowing) is vital to keep roads functional.
- **Rehabilitation & Repairs:**
    - **Reconstruction/Resurfacing:** After years of use, roads may need to be repaved or reconstructed if the surface is severely deteriorated.
    - **Bridge Deck Replacement:** If the road includes bridge structures, they may need deck replacement or upgrades.
- **Replacement & Disposal:**
    - **End of Life:** When roads have exceeded their useful life or have become too costly to maintain, full replacement is considered.
    - **Recycling Materials:** Materials like asphalt and concrete can be recycled for reuse in road construction or resurfacing.

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2. Bridges

Life Cycle Activities:

- **Planning & Design:**
    - **Needs Assessment & Planning:** Analyze traffic loads, environmental conditions, and potential risks (e.g., floods or earthquakes).
    - **Design:** Engineering design includes structural components, materials, load capacity, and alignment with road networks.
- **Construction:**
    - **Build:** The bridge is constructed, ensuring it meets safety and design standards.
- **Operations & Maintenance:**
    - **Routine Inspections:** Bridges are inspected for visible damage, corrosion, or structural wear (typically annually).
    - **Minor Repairs:** Includes cleaning drains, painting (to prevent corrosion), and small repairs to the deck, joints, or superstructure.
    - **Preventive Maintenance:** Regular preventive measures like sealing cracks or reinforcing supports to extend the bridge's life.
- **Rehabilitation & Repairs:**
    - **Rehabilitation:** Bridges may need partial reconstruction or reinforcement of supports and beams, especially as they approach their mid-life (30-50 years).
    - **Deck Replacement:** If the bridge deck deteriorates, it may be replaced while maintaining the substructure.

- **Replacement & Disposal:**
    - **Full Replacement:** When the bridge is no longer safe or cost-effective to maintain, it must be replaced entirely.
    - **Disposal/Salvage:** After demolition, materials (e.g., steel, concrete) can be recycled.

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3. Buildings

Life Cycle Activities:

- **Planning & Design:**
    - **Needs Assessment:** The municipality determines building requirements based on functionality (e.g., municipal office, fire hall).
    - **Design:** Architectural and engineering plans are developed, considering structural integrity, safety standards, and energy efficiency.
- **Construction:**
    - **Build:** Construction involves following design plans, building codes, and safety standards.
    - **Commissioning:** After construction, systems (HVAC, electrical, plumbing) are tested to ensure they function as intended.
- **Operations & Maintenance:**
    - **Routine Maintenance:** Includes cleaning, landscaping, HVAC system maintenance, and minor repairs to fixtures or finishes.
    - **Preventive Maintenance:** Regular checks of roofs, windows, doors, and systems to prevent major breakdowns (e.g., replacing filters, checking plumbing for leaks).
    - **Energy Efficiency Improvements:** Routine upgrades to lighting or insulation for better energy efficiency.
- **Rehabilitation & Repairs:**
    - **Major Repairs:** Replacing roofing, updating electrical systems, or addressing foundation issues as the building ages.
    - **Renovations:** Updating building interiors, ADA compliance, and other major changes for improved functionality or accessibility.
- **Replacement & Disposal:**
    - **End of Life:** If the building becomes too costly to repair or inefficient to operate, it may be demolished and replaced.
    - **Recycling:** Salvaging building materials (e.g., metal, wood) and recycling them.

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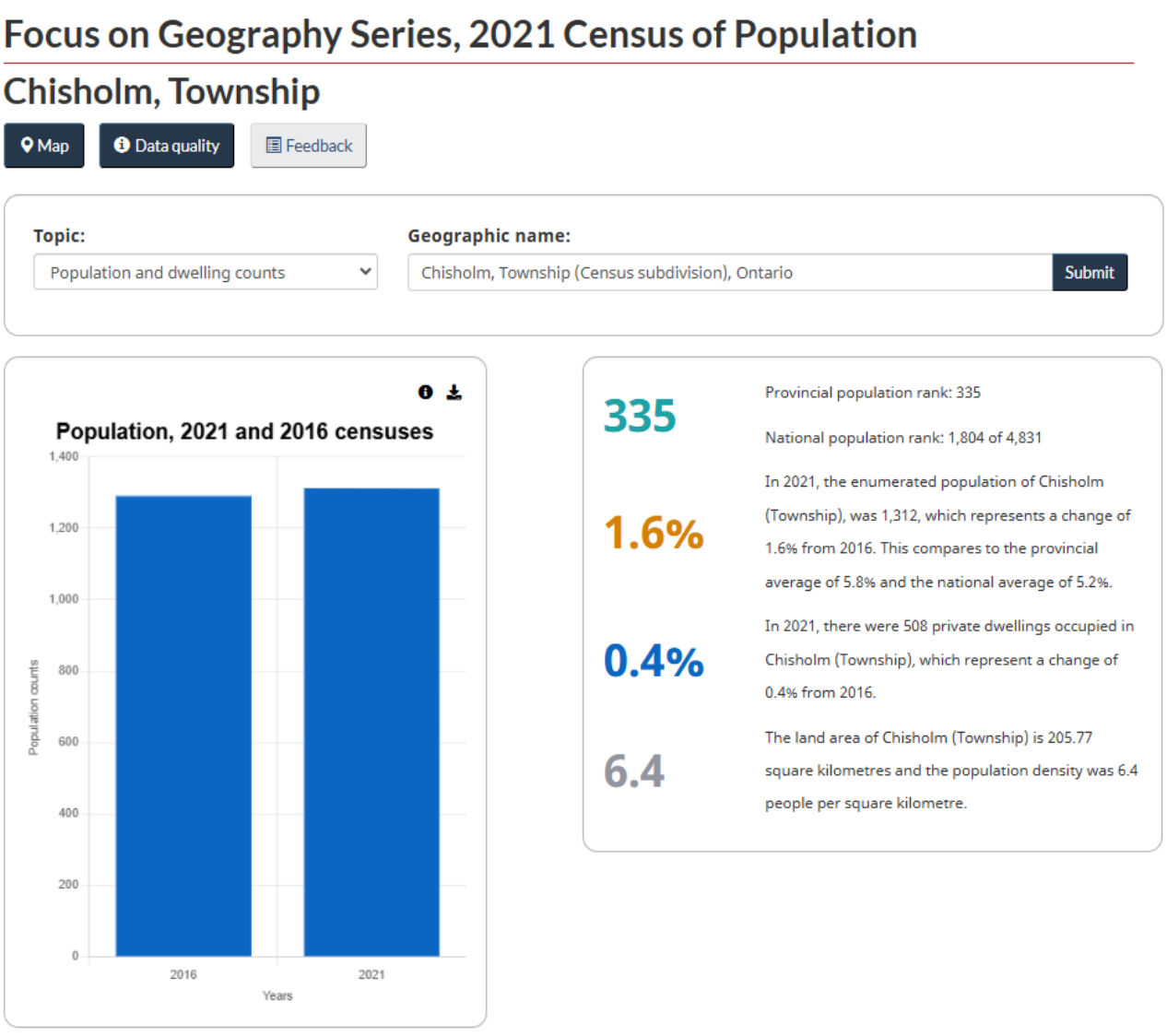
4. Vehicles

Life Cycle Activities:

- **Planning & Acquisition:**
    - **Needs Assessment:** Determine vehicle requirements based on service needs (e.g., fire trucks, snowplows).
    - **Procurement:** Purchasing new vehicles, considering factors like durability, fuel efficiency, and capacity.
- **Operations & Maintenance:**
    - **Routine Maintenance:** Includes oil changes, tire rotations, brake inspections, and general upkeep.

    - **Preventive Maintenance:** Scheduled maintenance based on usage (e.g., replacing fluids, changing filters, or inspecting exhaust systems).
    - **Winterization:** In northern climates, vehicles are prepared for winter with checks to antifreeze levels, battery health, and tires.
- **Repairs:**
    - **Repairs as Needed:** Fixing mechanical failures or damage (e.g., engine repair, transmission issues, or body repairs).
- **Rehabilitation:**
    - **Upgrades:** Major upgrades like engine overhauls or new tires can extend vehicle life.
- **Replacement & Disposal:**
    - **Replacement:** When vehicles are no longer reliable or efficient to repair, they are replaced with new or used vehicles.
    - **Disposal:** Old vehicles may be sold for scrap, auctioned, or recycled for parts.

Statistic Canada Census



Proposed Levels of Service (July 2024 compliance)

Proposed level of service for Each Asset Category

Level of Service in the context of O. Reg. 588/17 represents the performance expectations for municipal infrastructure, which must be defined, measured, and managed within a framework of long-term sustainability and community engagement.

The township can accommodate growth with the existing levels of service.

For the asset category of roads, Council would like the proposed level of service to be what the current level of service is. With a slow and steady growth, it is reasonable to maintain the same kms of hardsurfaced and gravel roads. Council would consider hardsurfacing additional gravel roads if additional funding became available.

For vehicles, Council has done a good job of rotating and replacing vehicles. One of the largest vehicle assets is the three plow trucks in Public Works. The condition of the 3 trucks is usually as follows; one in excellent condition, one as good and one as fair. For the size of the township, it is not economical to have 3 trucks in excellent condition. The second largest vehicle assets are the fire trucks. Though the township runs older models of a tanker, pumper, and rescue van, they are well cared for and do not have daily wear and tear. The condition of these trucks is fair to good and the goal would be to maintain a good condition as the township replaces with used "new to us" trucks.

In the next 10 years, there is no plan to increase or significantly change the building envelope.

Proposed performance of Each Asset Category

Realistically based on financial capacity, it is the goal of Council to achieve an overall average of good for all assets. Using the rating of Poor, Fair, Good and Excellent, it could be reasonable for the township to try and maintain a 'good' rating of assets and not financially feasible to strive for an excellent rating.

Please see chart on the next page that state the current Level of Service and Proposed Level of Service with the lifecycle activities and costs to maintain the assets at the proposed level of service.

Asset Category	Technical LOS (Description)	Current LOS	Proposed LOS	Lifecycle Activities to Meet Proposed LOS	Costs to Maintain Proposed LOS
Roads	For paved roads in the municipality, the average pavement condition index value (O. Reg. 588/17).	80	75	Rehabilitation and Maintenance	$50,000 per year for rehabiliation and $5000 per year for maintenance
	For unpaved roads in the municipality, the average surface condition (O. Reg. 588/17) (e.g. excellent, good, fair or poor).	60	75	Rehabilitation and Maintenance	$300,000 per year for rehabilitation and $10,000 for maintenance
Bridges and Culverts	Percentage of bridges in the municipality with loading or dimensional restrictions (O. Reg. 588/17).	0%	0%	Replacement and Maintenance	$50,000 per year for replacement and $10,000 per year for maintenance
	For bridges in the municipality, the average bridge condition index value (O. Reg. 588/17).	72	70	Replacement and Maintenance	

Asset Category	Technical LOS (Description)	Current LOS	Proposed LOS	Lifecycle Activities to Meet Proposed LOS	Costs to Maintain Proposed LOS
Facilities	Average Facility Condition Index (or General Condition)	Good	Good	Maintenance	$5,000 per year for maintenance
Fleet	Average Weighted Condition Assessment	Good	Good	Replacement	$50,000 per year for vehicle replacement
	Annual Maintenance Costs	Good	Good	Maintenance	$70,000 per year for maintenance
Parks	Frequency of routine maintenance of parks	Good	Good	Maintenance	$5,000 per year in regular maintenance

Life Cycle Management and Financial Strategy

Life Cycle Management (LCM) for Ontario Regulation 588/17 refers to the process of managing the various assets (like roads, bridges, buildings, and vehicles) over their entire life span, from planning and design through to maintenance, replacement, and disposal. This process ensures the assets are maintained in a way that maximizes their service life, performance, and cost-effectiveness.

Municipalities must budget for both short-term and long-term asset management. Ontario Regulation 588/17 requires municipalities to plan for the replacement and renewal of infrastructure assets to avoid sudden cost spikes.

The municipality may need to prioritize asset replacement or upgrades depending on available funds.

For a small rural municipality, life cycle management must consider unique factors like:

- Climate: Harsh winters can accelerate wear on roads and vehicles. Ensure that roads and vehicles are planned for winter maintenance and that road resurfacing accounts for freeze-thaw cycles.
- Geography: Remote areas may require longer or more frequent vehicle trips, increasing wear and maintenance needs.
- Limited budgets: Rural municipalities often face tighter budgets. Asset management strategies must prioritize critical infrastructure and explore shared services or funding opportunities with neighboring municipalities.

The municipality makes decisions that are based on cost and risk. Though Council and staff would like to have every asset in good or better condition that is not financially realistic. Staff look at assets from a liability standpoint and recommend to Council to put resources into assets that cause the most risk.

The township relies on a quantitative measurement of risk by looking at both the probability and consequence of failure. See chart below. Asset replacement or repairs based on both the risk and the available budget. This might require a strategy to address critical infrastructure needs while managing costs.

Probability of Failure	Consequence of Failure	Risk Rating
Rare	Insignificant	Lowest Risk
Unlikely	Minor	Low Risk
Possible	Moderate	Medium Risk
Likely	Major	High Risk
Almost Certain	Severe	Highest Risk

Like many other Ontario municipalities, the Township of Chisholm is running a deficit for renewal and replacement of assets. As per chart on next page, the township would be at just under a $5,000,000 deficit at the end of 10 years. Strategies to battle this deficit could include:

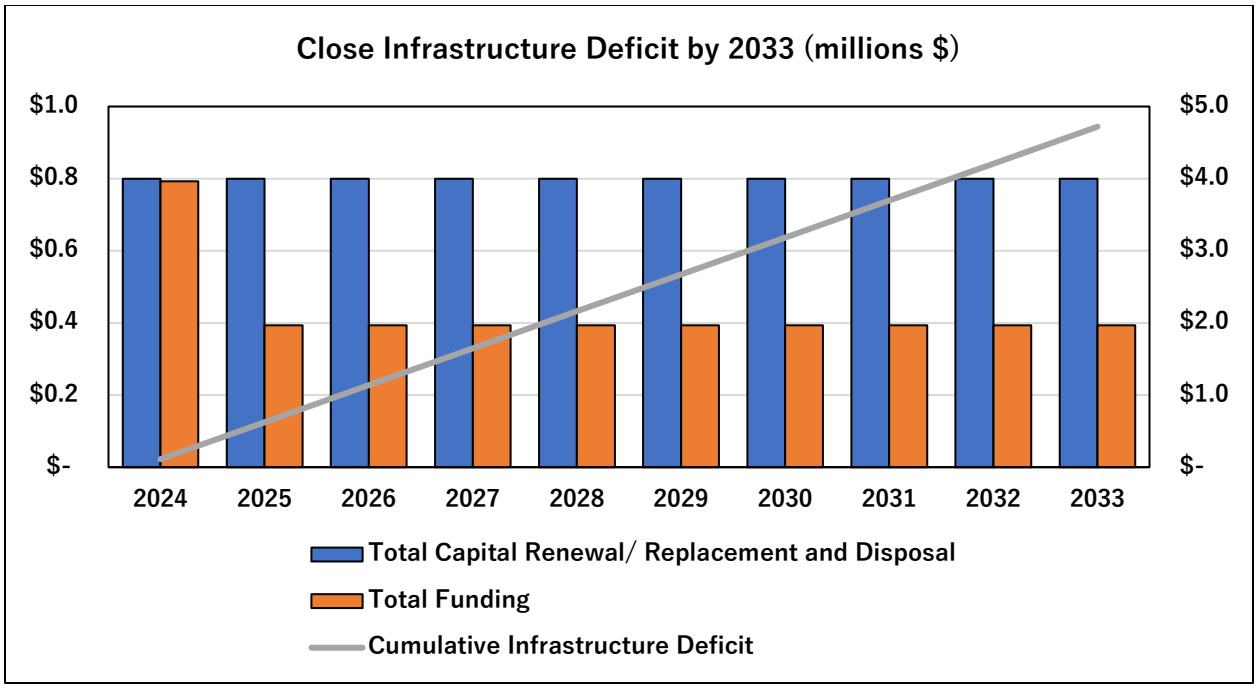
- Keeping vehicle assets longer
- Applying for all infrastructure grants available to the township
- Utilizing the Canada Community Building Fund and Ontario Community Infrastructure Fund in the most efficient way
- Consider returning hard surface roads to gravel (not the current goal of Council)
- Adding more money into Maintenance to prolong acceptable asset conditions
- Prioritizing growth in property assessment values without indirectly creating conditions of assets to worsen at a faster pace

Cumulative Infrastructure Deficit by 2033

Legend	1. Lifecycle Costs								
Year	Non-Infrastructure Solutions	Operations & Maintenance (Existing Assets)	Operations & Maintenance (Expansion Assets)	Total Operations & Maintenance	Renewal (Roads, Buildings, Bridges/Culverts)	Replacement (All Assets)	Total Capital Renewal/ Replacement and Disposal	Expansion Activities (Annual Provision for Replacement)	Total Lifecycle Costs
2024	$ -	$ 105,000	$ -	$ 105,000	$ 300,000	$ 500,000	$ 800,000	$ -	$ 905,000
2025	$ -	$ 105,000	$ -	$ 105,000	$ 300,000	$ 500,000	$ 800,000	$ -	$ 905,000
2026	$ -	$ 105,000	$ -	$ 105,000	$ 300,000	$ 500,000	$ 800,000	$ -	$ 905,000
2027	$ -	$ 105,000	$ -	$ 105,000	$ 300,000	$ 500,000	$ 800,000	$ -	$ 905,000
2028	$ -	$ 105,000	$ -	$ 105,000	$ 300,000	$ 500,000	$ 800,000	$ -	$ 905,000
2029	$ -	$ 105,000	$ -	$ 105,000	$ 300,000	$ 500,000	$ 800,000	$ -	$ 905,000
2030	$ -	$ 105,000	$ -	$ 105,000	$ 300,000	$ 500,000	$ 800,000	$ -	$ 905,000
2031	$ -	$ 105,000	$ -	$ 105,000	$ 300,000	$ 500,000	$ 800,000	$ -	$ 905,000
2032	$ -	$ 105,000	$ -	$ 105,000	$ 300,000	$ 500,000	$ 800,000	$ -	$ 905,000
2033	$ -	$ 105,000	$ -	$ 105,000	$ 300,000	$ 500,000	$ 800,000	$ -	$ 905,000
Total	$ -			$ 1,050,000			$ 8,000,000	$ -	$ 9,050,000

Legend	2. Forecast of Revenues							
Year	O&M from Taxation	Capital from Taxation (Including Transfers to Reserves)	Yearly Increase in Tax Funding ($)	Yearly Increase in Tax Funding (%)	Canada Community Building Fund CCBF	Other Grants	Less: Existing Reserves
2024	$ 105,000	$ 100,000			$ 88,000	$ 100,000	$ 400,000
2025	$ 105,000	$ 100,000	$ 40,000	40.0%	$ 88,000	$ 100,000	
2026	$ 105,000	$ 100,000	$ 40,000	40.0%	$ 88,000	$ 100,000	
2027	$ 105,000	$ 100,000	$ 40,000	40.0%	$ 88,000	$ 100,000	
2028	$ 105,000	$ 100,000	$ 40,000	40.0%	$ 88,000	$ 100,000	
2029	$ 105,000	$ 100,000	$ 40,000	40.0%	$ 88,000	$ 100,000	
2030	$ 105,000	$ 100,000	$ 40,000	40.0%	$ 88,000	$ 100,000	
2031	$ 105,000	$ 100,000	$ 40,000	40.0%	$ 88,000	$ 100,000	
2032	$ 105,000	$ 100,000	$ 40,000	40.0%	$ 88,000	$ 100,000	
2033	$ 105,000	$ 100,000	$ 40,000	40.0%	$ 88,000	$ 100,000	
Total	$ 1,050,000	$ 1,000,000			$ 880,000	$ 1,000,000	$ 400,000

Legend	3. Funding Gap Calculation		
Year	Total Funding	Annual Funding Gap	Cumulative Infrastructure Deficit
2024	$ 793,000	$ 112,000	$ 112,000
2025	$ 393,000	$ 512,000	$ 624,000
2026	$ 393,000	$ 512,000	$ 1,136,000
2027	$ 393,000	$ 512,000	$ 1,648,000
2028	$ 393,000	$ 512,000	$ 2,160,000
2029	$ 393,000	$ 512,000	$ 2,672,000
2030	$ 393,000	$ 512,000	$ 3,184,000
2031	$ 393,000	$ 512,000	$ 3,696,000
2032	$ 393,000	$ 512,000	$ 4,208,000
2033	$ 393,000	$ 512,000	$ 4,720,000
Total	$ 4,330,000		


Close Infrastructure Deficit by 2033 (millions $)
$1.0
$0.8
$0.6
$0.4
$0.2
$-
$5.0
$4.0
$3.0
$2.0
$1.0
$-
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
Total Capital Renewal/ Replacement and Disposal
Total Funding
Cumulative Infrastructure Deficit

Roads (Gravel) – Council has a 6 year gravel application program. Prior to the application to new gravel, the Operations Superintendent will make base repairs, brush, ditch, etc. as resources are available. For low roads and to help with flood mitigation, a gravel lift will be built into the gravel program for certain.

Roads (Hardsurfaced) – Once a road has been rehabilitated with a double layer of chip and tar, a single layer will be added to the road every 5- 8 years for 2 to 3 occurrences. Once the road condition gets to poor, a single layer will not be added and the road will have to be rehabilitated with a double layer of chip and tar.

Roads (Hot mix) – Cold patch will be used to patch holes on an annual as needed basis. Once the road is past poor condition, Council will consider hot mix again or revert to chip and tar. There is only one segment of road (approx. 2 km) and a few intersections that are hot mix.

Bridges – according to the most current bridge study, staff will look for funding to replace a bridge in the poorest condition. Staff will also work on minor repairs to extend life of the structure. The most common repair is replacing the bridge decking or wear layer.

Buildings – repairs, efficiencies, replacements and improvements as needed.

Equipment – Lifecycle strategies include rust control treatments, regular maintenance, greasing and oil changes and repairs as they come up. There are annual mandatory inspections to identify any foreseen problems.