Update to the Roads 5 year plan

March 5,2024

Background

The City undertakes a Roads Needs assessment of its road network every five years. The terms of reference for the study were as summarized below

- The assessment and review of the condition of the 2,703 km's of road network within the City;
- To provide unit costs for improvements to the road sections;
- To prioritize rehabilitation and replacement needs as "Now", "1-5 year" and "6-10 year";
- To provide a life cycle costing analysis, identifying road sections for preventative maintenance that would extend the overall life of the road network; and
- To update GIS roads database with the collected information.

RNS Methodology

- MTO Inventory Manual for Municipal Roads (1991)
- Visual inspection of entire 2,704 km road network
- Holistic approach vs. just surface condition
  - Road base*
  - Surface condition
  - Surface widths*
  - Surface type*
  - Drainage
  - Alignment
  - Maintenance demand
- ***Critical Deficiencies identified**
  - (**Now**, 1-5, 6-10 years)
- Overall Condition Rating assigned for each road

Royal Oak Road
(Rural Local class Hi-float road)

Cedar Tree road
Rural Local class
gravel road

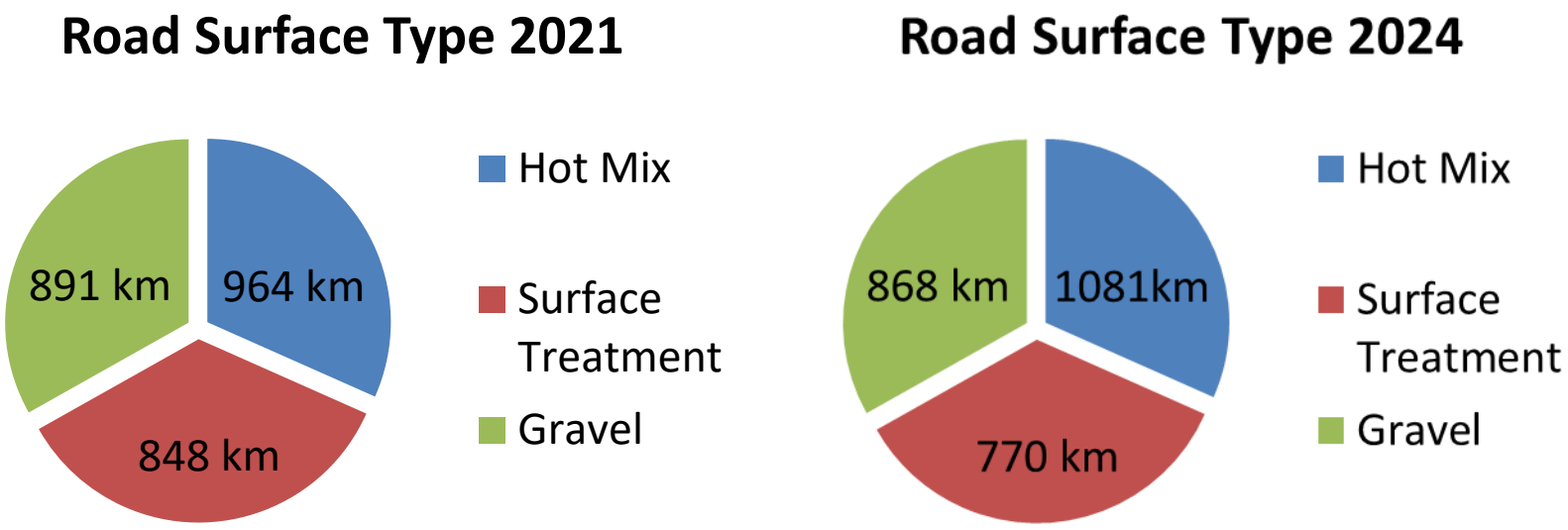
RNS Methodology Cont'd

- Roads classified by:
  - Roadside Environment:
    - Rural,
    - Semi-Urban,
    - Urban
  - Class
    - Local
    - Collector
    - Arterial
- Roads prioritized based on Condition Rating and Volume.
- Updated Traffic Volumes from previous study based on an assumed growth rate

CKL 10 ,Rural /Arterial with Paved shoulder

Kent St, Urban/ Arterial

Summary of Road Network Surface



[Hyber link to road network map of surface types https://www.google.com/maps/d/edit?mid=1rvNRGofr_xyry5WnjKB1WjHP0uspygg&usp=sharing]

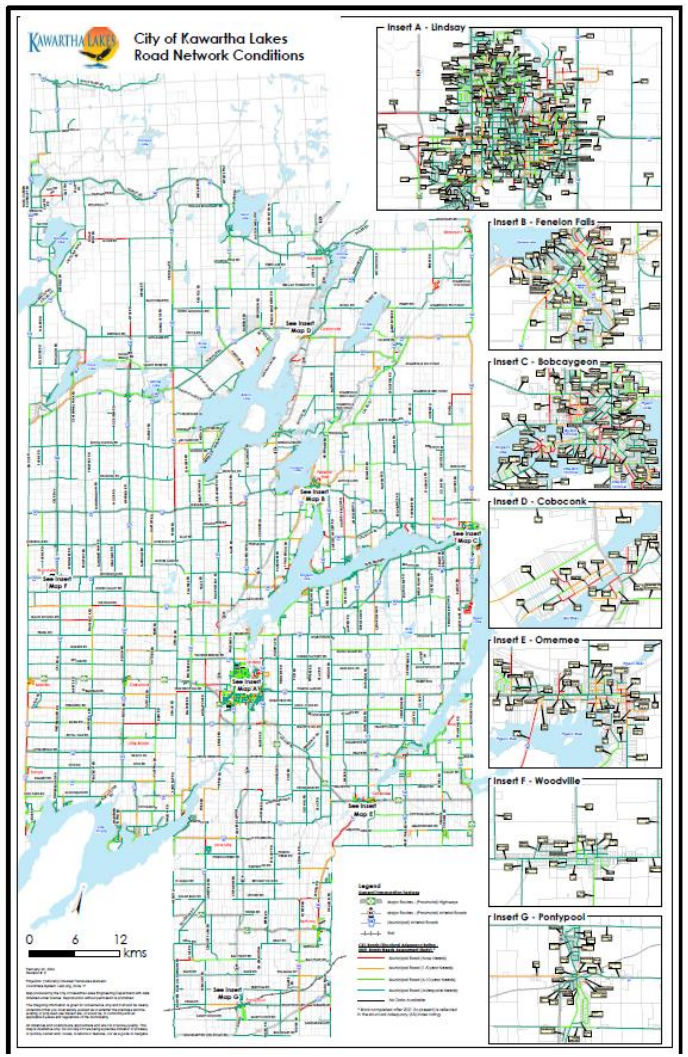
Road Network condition

- Two (2) primary indicators of the relative health of a road are the structural adequacy and surface condition ratings. The average structural adequacy rating for the City's road network in 2021 was 14.3/20, slightly better than 2016's 13.5/20. The surface condition rating for the City's road network in 2021 was 7.6/10, which is equal to 2016's 7.6/10.

- For a network the size of the City's it was recommended through the roads needs study that the adequacy rating be maintained or improved to an overall 72% adequacy rating based on the funding targets set forth in the plan

- Since the start of this current plan in 2023 the City has budgeted $44,795,190 through the capital programs Urban/Rural reconstruction, Urban/Arterial resurfacing , Rural Resurfacing and Life cycle to address the previously identified Now needs / 1-5 year need/ 6-10 year needs

Road Network Deficiency Map



The updated Road network deficiencies for "Now', "1-5" and "6-10" as ID in the 2021 Roads needs study and now updated to 2023 completed works, have been map for visual purposes and provided to Council .

Below is link where they can be viewed.

https://www.google.com/maps/d/edit?mid=1jS1l_4xLrjyLwrJuodjCMYEoy2DiYHg&usp=sharing

Roads 5 Year Plan 2023-2027

The approach to developing the proposed 5-year plan took the same steps that has been done since 2011. The Roads needs study was used as a guideline for developing the five-year plan based on the identified Now, 1-5 and 6-10 year needs as to be addressed in the yearly capital programs of Urban/Rural Reconstruction, Urban/Arterial resurfacing and Rural Resurfacing. This plan does not deal with the resurfacing needs of gravel roads. Those needs are addressed in the current 10-year Gravel capital plan

This Plan utilized past criteria from the previous roads Five Year Capital Plan. They are as follows.

- Projects taking into consideration the road section and priority of underground infrastructure coordination (water waste water) underground infrastructure and recommendations through EA studies and Master plans;
- Life cycle initiatives for prolonging the operating life of a road section;
- Resolving operational and maintenance demands within a road section;
- Boundary road sections in keeping with established agreements;
- Existing Council resolutions and priorities for various road sections
- Carryover road segments from previous plan; and
- Tracked condition complaints from residents.

Roads 5 Year Plan 2023-2027

The purpose of the plan is to present to Council a roadmap for the next 5 years for the resurfacing and reconstruction of road sections prioritized and updated in appendix C of report ENG2024-003
The previous plan, and all updates will reside at hyper link location below on the City Website.
https://www.kawarthalakes.ca/en/living-here/construction-roadwork-and-closures.aspx

based upon sustained annual program funding of approximately $5 – 9.5 million per year for Urban/Rural reconstruction, $6–7.5 million for Urban/Arterial resurfacing and $5- 6.5 million for Rural resurfacing. Over the 5-year period the costs are estimated to be within these ranges and to total approximately $116 million worth of the Now needs, and 1 - 5 year needs identified in 2022 Roads needs study.
This document is intended as a guide for Council and staff for coordination and setting priorities over the next 5 years as well as to inform the Asset Management Plan and the Sustainability Plan.

Current plan program spending

Table 1 Program spending				
	2023 (targeted)	2023 (budgeted)	2024 (targeted)	2024 (budgeted)
Urban / Rural Reconstruction	$ 4,862,000.00	$ 4,904,000.00	$ 7,408,000.00	$ 7,783,000.00
Urban / Arterial Resurfacing	$ 6,425,000.00	$ 6,710,190.00	$ 7,474,000.00	$ 8,490,000.00
Rural Resurfacing	$ 5,343,000.00	$ 6,100,000.00	$ 6,264,555.00	$ 6,439,000.00
Lifecycle Management	$ 2,033,000.00	$ 2,033,000.00	$ 2,033,000.00	$ 2,335,000.00
Totals	$18,663,000.00	$19,747,190.00	$ 23,179,555.00	$ 25,047,000.00

- As outlined in report ENG2024-003 the City has exceeded its targeted goals in the plan for 2023 and 2024
- This is due to the inclusion of additional funds to the programs in year 1 and 2 of the plan
- The specific additions are outlined in the report
- Based on the current funding the City is currently on target to meet or exceed the goal of maintaining a overall road network adequacy rating of 72%

Contingencies and process(es) for re-prioritizing road work:

- The Plan is viewed as a living document which is reviewed each year as a whole in order to ensure priorities are current and in line with the City's overall financial plan.
- Through this review the City can encounter road segments that have been identified in the Plan but require advancement in the Plan due to increased maintenance demands and costs.
- In addition to this, the City will adjust timing of reconstruction projects from time to time to better correspond with completion of design, relocation of utilities, coordination of development, alignment with grants and development of the yearly capital budget.
- In the situation where a road segment is deemed as unmaintainable by staff, the road segment can be re-evaluated and prioritized into an upcoming capital budget.

Contingencies and process(es) for re-prioritizing road work:

In the scenario where there is a need to address the surface condition of a road segment prior to the budgeting for full resurfacing the City can proceed by:

1. Pulverizing the existing surface of the road and maintaining the road segment as a gravel road for a period of 1-2 years before prioritizing in a capital budget for resurfacing. (this would only be done on lower volume hard topped roads);
2. Perform localized asphalt overlays on roads to extend their life until the segments can be resurfaced or reconstructed; or
3. An emergency procurement could occur in response to unplanned and unforeseen circumstances (i.e. Floods, accidents).

Contingencies and process(es) for re-prioritizing road work:

The City's yearly capital program of Life Cycle extension addresses roads within Options 1 and 2, above. On a yearly basis the department of Engineering and Corporate Assets meets with Public Works to review its current year list for priority projects under this program for:

- Asphalt overlays
- Crack sealing of roads
- Slurry sealing of roads

Once a list is compiled, staff then report back to Council on an annual basis with the recommended works to be completed under this program.

Recommendations regarding climate change, new technology:

Within the goals as identified in the City's Strategic plan the is a need for the City to have a healthy transportation network as well as to have sustainable environmentally conscious development.

Although not specifically identified in the roads plan, detailed scoping of works for all programs takes into account the methodology of how the work is performed as well as utilizing new technologies in order to find efficiencies in the building and resurfacing of roads.

With the use of alternative methods and technologies it creates efficiencies which equates to a lesser amount of inputs to a project and impact to the environment.

Other uses include preservation techniques that can extend the life of the network there by reducing the frequency needed for resurfacing, which would also limit the overall impact of the future need of the road network on the local environment.

Recommendations regarding climate change, new technology:

Kawartha Lakes
Jump In

Current examples of this being used by the City as it relates to the City's current Strategic plan:

- A Healthy Environment

Through low impact development (LID) options when designing for reconstruction

- A Vibrant and Growing Economy

  Through the creation of Master plans, like the Transportation Master plan which informs on recommendations and policies that effect the 5 Year Roads Plan

- Good Government

  Through the creation of sustainable improvement plans like the Roads 5 Year Plan

  Through Paving methods like "Cold in place paving", which uses the existing asphalt layer in the resurfacing process (recycling it in place) cutting down the inputs as well as timing to complete projects

  The use of preservation methods such as slurry seals, and micro-sealing to "keep our good roads good" increasing the timeframe of when a road needs to be resurfaced

Links to transit and active transportation:

Master plans such as the Transportation Master Plan and Active Transportation plan will contain specific recommendations for links to transit and active transportation.

When the City completes such plans the identified projects and recommendations are brought forward sometimes through the Provincial Environmental Assessment process into the detailed design of a road. Once the design is completed the overall project is identified within the Roads 5-year Plan or the long-term financial plan.

The City is currently completing its update to its Transportation Master Plan, this can be viewed through the link below.

https://jumpinkawarthalakes.ca/transportation-master-plan

The Transportation Master plan is inclusive in its policies and network improvement reconditions of other City adopted plans and strategies like the active transportation master plan and the parking strategy. By doing so it collectively informs on recommendations and strategies when detailed projects are being developed for inclusion into plans like the roads 5-year plan and the City's long term financial plan.

Through this process the City works within the goals of a vibrant and growing economy and Good Government by coordinating these plans as well as balancing the affordability of them.

Questions ?