

## **Background**

At the March 30<sup>th</sup> Finance and Administration Committee meeting, a report was requested that would outline the priority roads capital projects that could be undertaken using debt financing. Additionally, the report was to demonstrate where financing has been secured and provide a broader look at how debt financing would accelerate the City's road program.

## **Debt Financing of Roads Projects**

Staff concurs that some roads projects can be funded by debt in accordance with the City's Debt Management Policy. The Debt Management Policy, which is attached as appendix "A", outlines several principles that should be present when debt financing is being contemplated for a project. They are:

- New, non-recurring infrastructure requirements
- Programs and facilities which are self supporting, and
- Projects where the cost of deferring expenditures exceeds debt servicing costs

The latter bullet is particularly relevant to the case for roads projects. Circumstances that apply to financing a roads project with debt under this principle include but are not limited to the following:

- a) Expected inflation that exceeds the prevailing interest rate on debt.
- b) Costs of risk and liability can be avoided or eliminated.
- c) Avoidance of maintenance costs on an increasingly deteriorating asset.

Additionally, there are some qualitative benefits to the community that a new asset will yield. Such benefits could include increased active transportation infrastructure (cycling lanes), reduced congestion/travel time, enhanced business environment, and less wear and tear on vehicles.

## **Roads Program**

The City's roads are managed in three broad categories. These three groups are arterial, collector and local roads. Roads are slotted into one of these categories based on number of lanes, traffic volumes, speed and other considerations. Chart 1 below outlines the category and the lane kilometers of each category within the City of Greater Sudbury's road network.

| CHART 1         |                                                                                                                                                                                                                                            |                                                                  |                 |                         |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|-----------------|-------------------------|
| Category        | Characteristics                                                                                                                                                                                                                            | Example                                                          | Lane kilometres | % of Total Road Network |
| Arterial Roads  | <ul style="list-style-type: none"> <li>• Moderate to high traffic volumes</li> <li>• Medium to high speed</li> <li>• Two to six lanes</li> <li>• Limited to no on-street parking</li> <li>• Limited or controlled direct access</li> </ul> | Paris Street<br>Falconbridge Road<br>Barry Downe Road            | 741             | 20.8%                   |
| Collector Roads | <ul style="list-style-type: none"> <li>• Low to moderate traffic volumes</li> <li>• Medium speed</li> <li>• Two to four lanes</li> <li>• Controlled on-street parking</li> <li>• Direct access (normally controlled)</li> </ul>            | Errington St.<br>(Chelmsford)<br>Southview Drive<br>Auger Avenue | 616             | 17.3%                   |
| Local Roads     | <ul style="list-style-type: none"> <li>• Low traffic volumes</li> <li>• Low speed</li> <li>• Two lanes</li> <li>• On-street parking</li> <li>• Uncontrolled direct access</li> </ul>                                                       | Baker Street<br>Laura Avenue<br>Michael Street                   | 2,204           | 61.9%                   |
| <b>Total</b>    |                                                                                                                                                                                                                                            |                                                                  | <b>3,561</b>    | <b>100%</b>             |

Roads are further delineated by the state or condition of a road. Since 2000, the City of Greater Sudbury has defined the condition of a road using the Pavement Condition Index (P.C.I.), which ranks roads based on four factors – structural cracking, non-structural cracking, rutting and roughness. Chart 2 below depicts that P.C.I. scoring methodology.

| CHART 2   |           |                                                                                                                                                                                |
|-----------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Category  | PCI Score | Description                                                                                                                                                                    |
| Excellent | 85-100    | Sound pavement with few defects perceived by drivers                                                                                                                           |
| Good      | 60-84     | Slight rutting/cracking/roughness that is noticeable to drivers                                                                                                                |
| Fair      | 40-59     | Multiple cracks and/or rutting and/or roughness are apparent that may necessitate drivers to make minor steering adjustments                                                   |
| Poor      | 25-39     | Significant cracks and/or rutting that pulls at the vehicle and/or roughness is uncomfortable for occupants. Drivers may need to correct to avoid defects                      |
| Very Poor | 0-24      | Significant cracks with potholes and/or rutting that pulls at the vehicle and/or roughness that is uncomfortable for occupants. Drivers will need to correct to avoid defects. |

### Financial Planning for Roads

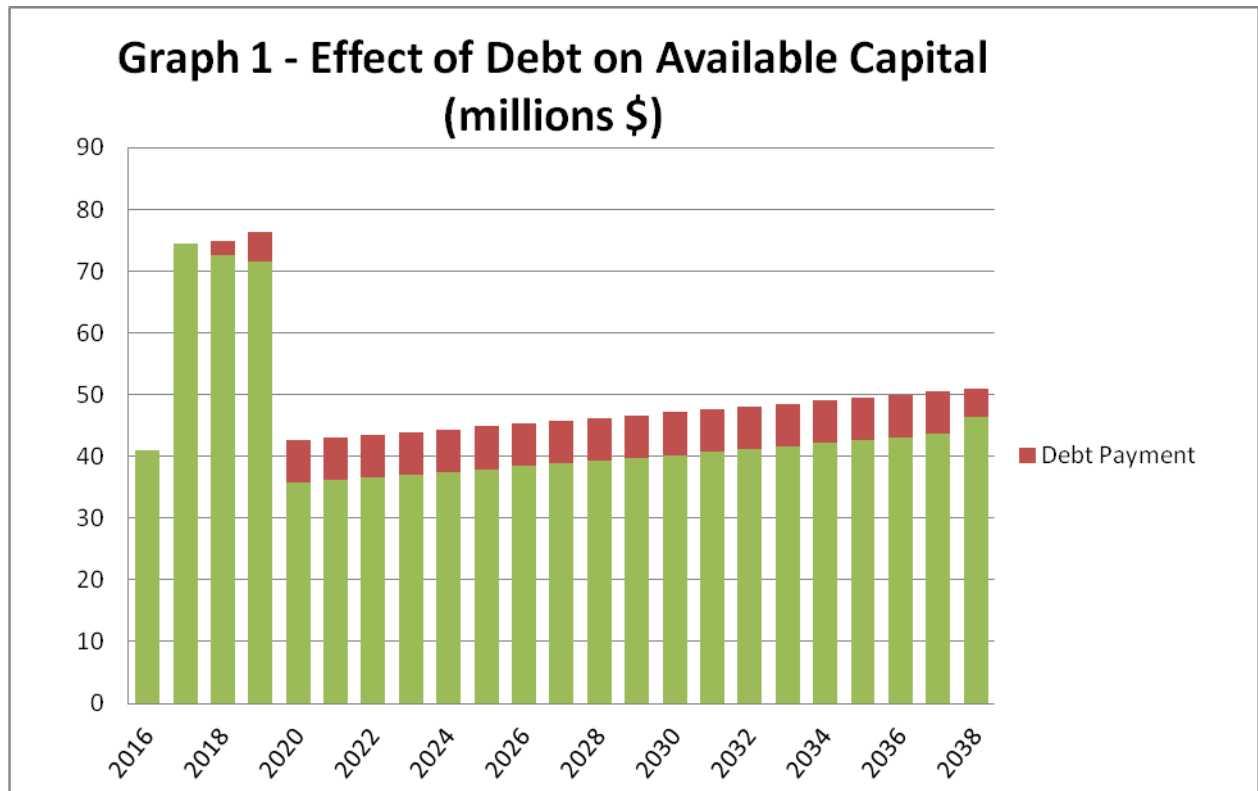
In 2012, KPMG completed a financial plan for Roads. The plan assessed the City's road network using the PCI data for the complete 3,600 lane kilometers of roadway throughout the city.

This assessment of the City's roads indicated that approximately 54% of the lane kilometers are in a good or above condition, whereas 38% is in fair condition and the remaining 8% is in poor or less condition. Categorically, arterial roads were in the best condition and received the most attention due to the high traffic volumes, speed and in an attempt to avoid the risk that these conditions present. Conversely, lower risk roads such as collectors and local roads have not received as much attention and are typically in a lower PCI category. These values will have declined over the 4 years since this study was performed, as investments in roads have not been to the level that the plan envisioned.

In order to address the capital and operational requirements, the plan recommended capital expenditures increase from the 2012 amount of \$35 million to \$75 million and an additional \$4 million for summer maintenance. If the plan was implemented it was expected that the average life cycle of a road would decrease accordingly from 80 years to approximately 40 years. The plan is attached as Appendix "B".

### Debt Financing and effect on City's Roads Program

As indicated in the report dated March 14<sup>th</sup>, 2016 from the Acting Chief Financial Officer/City Treasurer, the City of Greater Sudbury has considerable capacity to absorb debt. This same report indicates that \$100 Million in debt can be supported with an approximate \$6.9M debt payment. Financing the debt payment directly from the roads and drainage capital budget of approximately \$41M would yield a large spike in funding upon receipt of the debt, followed by a smaller pool of available capital funds. Graph 1 below depicts the borrowing of \$100M over 3 years and the corresponding debt repayment. As can be seen the capital available for projects will decrease by the amount of the debt payment. For example in 2020, the total Capital budget will be approximately \$42M (assuming inflationary increases), yet the funds available for capital projects will only be approximately \$35M as the \$6.9M debt payment is absorbed into the budget.



This reduction in available capital will have a negative longer term effect as the pavement condition on the road network continues to decline without funding to mitigate this.

## Delivery of a Debt Financed Capital Roads Program

As alluded to in Graph 1, the delivery of an additional \$100M in capital projects will not be achievable in one year. The delivery of a program of this magnitude will have to be completed over a number of years. Additionally, resources to support this size of capital program such as project management, design and inspection will need to be acquired for the term implementation. Typically, costs associated with capital project delivery amount to 10-20% of total capital costs. This is dependent on the complexity of the project undertaken.

An example of a type of program that \$100M could produce would be similar to the following:

| Project                     | Cost (millions \$) |
|-----------------------------|--------------------|
| MR 35 four lanes            | \$28.5             |
| St. Annes Ring Road         | \$28.5             |
| Lorne Street Reconstruction | \$34.5             |
| Local Roads                 | \$8.5              |
| <b>Total</b>                | <b>\$100</b>       |

\*estimates will be updated prior to budget approval

The above represents an example of a program that encompasses a variety of road types. Included are arterial roads (MR 35 four lanes, Lorne reconstruction), a growth project for a collector road (St. Annes Ring Road) and local roads. Costs for project design, management and inspection have been included in these costs.

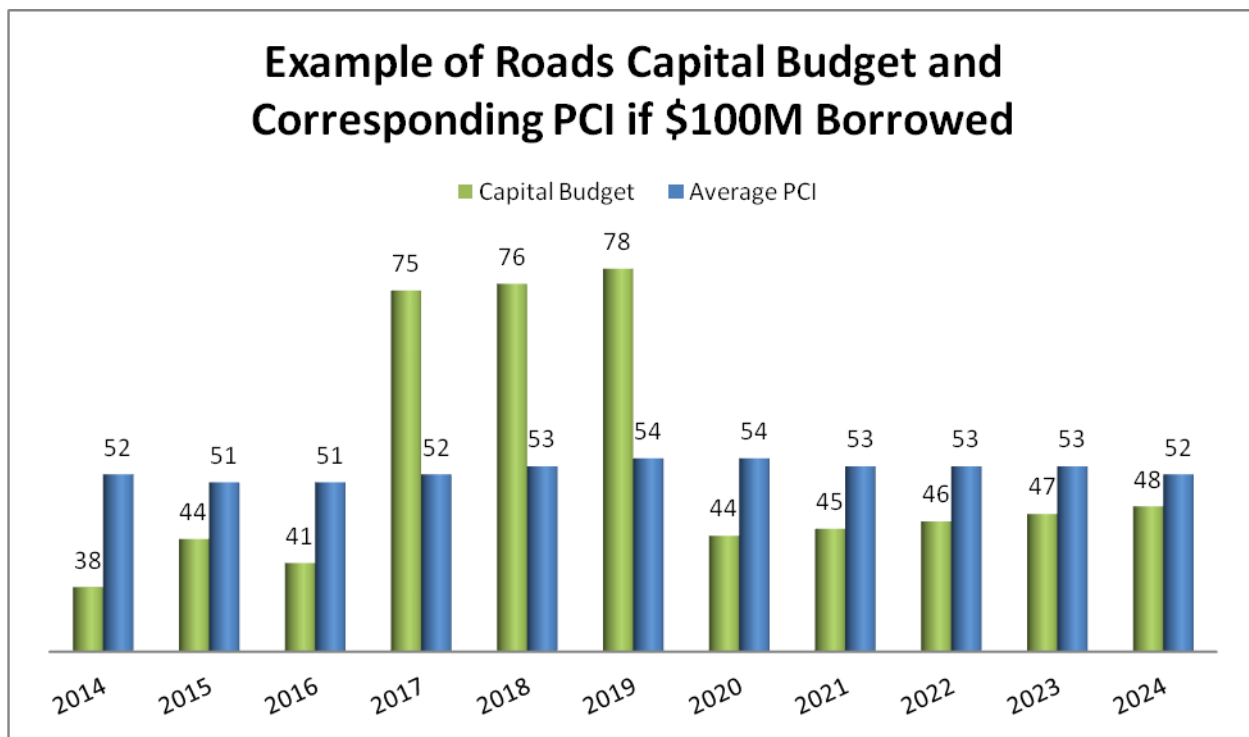
## Priority Capital Projects

Each year staff prepares the capital budget for Council approval. There is also an additional four years worth of projects outlined for planning purposes. These projects outlined in the capital budget and planning period are deemed to be the priority projects based on a positive cost/benefit analysis. These projects are listed in appendix "C" attached.

Graph 2 below, was created to provide Council with an understanding of the effect of a \$100M injection would have on the road network. Specifically it depicts the effect of the \$100M as it relates to the P.C.I. of the City of Greater Sudbury's road network. Graph 2 is for illustrative purpose and could change slightly depending on the types of projects and costs per lane kilometer incurred to complete them. In general terms the PCI would see an immediate increase as road construction is completed. This would be in the range of approximately 2-3 points. Subsequent to completion and a return to normalized

funding levels, the P.C.I. of the road network would decline and would continue on that downhill path until the next injection of large capital dollars.

**GRAPH 2**



## Conclusion

The City has the financial capacity to absorb further debt financing. The City's Debt Management Policy (appendix "A") articulates several key principles required in order to apply debt financing to a project. Road reconstruction/rehabilitation projects are consistent with the principles outlined in the Debt Management Policy and would be suitable candidates for debt financing.

Debt financing of roads projects will provide a short term increase in the pavement condition index of the City's road network. However, long term sustainability of the road network requires adequate and consistent funding levels. The Roads Financial Plan as developed by KPMG is attached as appendix "B" and provides insight into the funding requirements for the road network.

Priority road projects are attached as appendix “C” and are the culmination of the identified projects from 2017-2020 outlook as presented in the 2016 capital budget. These recommendations are based on a cost/benefit analysis and are deemed to be the most advantageous projects for the well being of the road network given the current funding environment.