



THE CORPORATION OF THE CITY OF VERNON

**INTERNAL M E M O R A N D U M**

**TO:** Mayor and Council

**FILE:** 1700-50

**PC:** Leon Gous, Chief Administrative Office  
Kevin Bertles Manager Finance  
Shirley Koenig, Manager Operations  
Kim Flick, Manager Planning and Building

**DATE:** Jan 28, 2011

**FROM:** Rob Dickinson, Manager Engineering & GIS

**SUBJECT:** *15 YEAR CAPITAL PLAN*

---

A recent request for information from a member of the public brought to our attention that the 15 year capital plan has never been formally presented to Council. Therefore, prior to providing the plan to the public, please accept this memo and the attached "Complete Infrastructure Long term Financial Plan of 2009 Dayton and Knight Ltd. (DKL) as the 15 year capital plan.

In March of 2009 DKL completed a long term financial plan for The City of Vernon infrastructure as per the Public Sector Accounting Board (PSAB) Section 3150 – Tangible Capital Assets. The report by DKL utilised PSAB for guidance as well as infrastructure condition and construction costs provided by the City to determine asset worth, replacement costs and thereby annual investment requirements. The DKL report was a fairly simple financial review and City staff have further reviewed asset management in the context of current City investment patterns and first hand knowledge of the condition of the assets and provide the following summary.

Overall the report states the City will need to invest \$13 million per year over the next 15 years (2009 – 2023) to deliver and maintain the existing service standards over the long term. Excluding the annual \$2.2 million allocation for buildings this is a \$10.8 million per year commitment to linear infrastructure for 15 years. Based on available infrastructure assessments and current values we generally agree with their conclusions but further recommend the commitment be \$13.0 million just for linear infrastructure. A review of the DKL conclusions and our further recommendations are summarised in this memo.

**Sanitary Sewer Collection System**

The report concludes that \$1.5 million per year needs to be spent on replacement and expansion of the sanitary collection system which excludes the treatment plant as it is considered a building but the \$1.5 million does include all piping/appurtenances and lift stations. DKL stated that the reclaimed water distribution system is not expected to

require any replacement in the next 15 years and therefore the report does not consider its long term cost.

Our assessment of the collection system indicates the City will need to replace 2100 meters of sewer pipe and ancillary works, including lift stations, to maintain the system at a cost of \$1.7 million annually. This however does not allow allocation of the \$1.0 million for future growth that is required to support the DCC program and other improvements to the system. Therefore our total annual commitment should be \$2.7 million.

### **Storm Sewer Collection System**

The report concludes that \$1.2 million per year needs to be spent on replacement of the stormwater collection system. Based on the age and materials of the existing system being comparable to the sanitary system and the emergency callouts related to main breaks and flooding issues we anticipate the \$1.2 million to be adequate. This amount should ensure storm sewers are replaced in conjunction with sanitary sewers and full road replacements where warranted to ensure cost effective replacement. The allocated \$1.2 million would need to be budgeted from general revenue and includes \$500,000 for future growth which includes our annual contribution to DCC eligible projects.

The results of historically underfunding this utility can already be seen by the frequent flooding that occurs in many areas of the City. The deferral of adequate funding results in higher costs at a later date which includes the potential for property damage and increased liability for the City. The estimate does not include stormwater quality improvements that may be required by Senior levels of Government which will be outlined in the Liquid Waste Management Plan that is currently being updated.

### **Water**

Though the water distribution system in the City is not currently managed by the City is assumed through historical knowledge of the system that it also requires significant annual investment. This system replacement when coordinated with the replacement of roads, sanitary and storm mains will reduce the overall costs.

### **Roads**

The report concludes that \$8 million per year needs to be spent on replacement and overlay of the existing roadway, as well as replacement/installation of curb & gutter, street lights and sidewalks. The annual commitment has been determined by the Pavement Management System, sidewalk inventory and street light inventory maintained by staff. The curb & gutter costs are a significant component of the overall road asset. These replacement costs form a considerable part of the overall costs.

It is important to note that there is currently a significant backlog of deficient road works in the City due to historic underfunding of the road maintenance and replacement program. The report correctly concludes that insufficient road maintenance, such as crack sealing and overlays, has resulted in a drastically reduced service life of the City's roads and significantly increased life cycle costs. We are now realizing the long term cost implications of neglecting road maintenance with current road repair costs being

much higher than can possibly be funded through taxation alone. Alternate infrastructure funding methods or long term borrowing at a significant cost to future tax payers will likely be necessary to rectify the infrastructure condition. A majority of the deficient roads in the City now require complete reconstruction to bring them up to a safe rehabilitated condition.

Through discussions with geotechnical Engineers it is our opinion that the report wrongly assumes a road can last indefinitely through a 35 year cycle of overlaying every 20 years and milling and re-asphalting every subsequent 15 years. This assumption in the report is based on an interpretation of a national Guide to Amortizing Tangible Capital Assets which recommends a life expectancy of 30 to 40 years for Urban roads that assumes the life expectancy refers to re-asphalting and not full reconstruction including the base and sub-base gravels. The reality of our local soils are such that the current design life of our roads is 15 years or less requiring re-asphalting every 5 to 10 years and full road reconstruction every 15.

Through proposed revisions to our subdivision and development servicing bylaw we intend on extending the roads design life to 25 years. This would require overlay after 15 years, and either full reconstruction or re-asphalting after 25 years. Due to the soil conditions a design life longer than that is cost prohibitive over the life cycle costing of the roads. Previous revisions included a reduction to the width of local roads from 8.5 meters to 7 meters. Which reduce the asphalt area by 18% as a means of reducing long term asset replacement costs. Further changes to Bylaw standards are being reviewed to address the shortfall in long term funding for road replacement bringing the standards more in line with City funding. Opportunities for implementation are however limited to new development and entire road rehabilitation projects where existing curb & gutter is being reconstructed.

Our analysis indicates that section 4.4.1 of the report is the more accurate assumption which increases the annual overlay and rehabilitation amount from \$2.3 million to \$3.4 million and therefore the overall roads to \$9.1 million a year. This is nearly double what we have historically allocated to rehabilitation as much of the road works monies have been spent on capacity upgrades such as 48<sup>th</sup> Avenue, Middleton Way and 25<sup>th</sup> Avenue. Though these projects replaced failing roads they also created a significant increase in infrastructure and long term maintenance costs through greater areas of asphalt and provision of new curb & gutter and sidewalk.

The \$9.1 million per year commitment includes \$2 million annually for future growth which includes capacity improvements, TDM and the City's annual contribution to DCC eligible projects.

In summary it is recommended that the City budget for an annual commitment of \$13.0 million for linear asset management with a detailed review of the sanitary sewer rates to consider both rehabilitation and DCC contributions.

Sincerely,



Rob Dickinson, P.Eng.  
Manager Engineering & GIS Services