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ROAD GRADER PURCHASE

The Transportation and Works Committee recommends the adoption of the recommendation contained in the following report, April 11, 2008, from the Commissioner of Transportation Services:

1. RECOMMENDATION

It is recommended that:

1. Regional staff be authorized to purchase a new 2008 model Caterpillar 140M road grader at an estimated cost of $80,000 using funds from the Vehicle Replacement Reserve.

2. PURPOSE

This report seeks approval for the purchase of a new 2008 Caterpillar 140M road grader not previously identified in the 2008 Transportation Services Budget.

3. BACKGROUND

Regional Road Maintenance staff has been leasing a 2002 road grader since 2002. The road grader is used for the grading of gravel roads and shoulders during the summer months, and for the removal of snow in the winter months. The grader is used for winter maintenance, assisting in the clearing of road surfaces and pushing higher snow banks back along rural roads that truck ploughs can no longer handle. The road grader also clears urban road sections with limited snow storage capacity during snow removal operations.

The current five-year old vehicle has been used for 4,950 hours with minimal downtime and repairs. The grader has performed well and met the needs of the Roads Maintenance section.

On October 31, 2007, the Region finalized the purchase of the grader with Caterpillar Financial Services Limited. The existing 2002 Caterpillar road grader was originally leased for a five-year period with purchase options at lease termination; an option to purchase for $1.00 or an option to trade the grader for a new grader. The current lease expired at the end of September 2007.

In the fall of 2007, staff notified Toromont CAT, the supplier, that the Region would exercise the option to purchase the unit for the stipulated sum of $1.00 at lease end. Staff intended to keep the machine for an additional ten years, until the grader had completed the 15 year in-service life cycle.

Subsequently, Toromont CAT indicated that the trade-in of the existing grader was estimated at $135,000, a value of over 60% of the original cost. Upon receipt of this offer, staff conducted a review and cost analysis to determine which option would serve the Region best.

4. ANALYSIS AND OPTIONS

Option 1, The 10 year lifecycle costs for the existing grader are $260,000.

If the existing grader was kept for its 15 year life cycle, i.e. an additional 10 years, it is estimated that the cost would be in the order of $260,671, considering the time value of money. This takes into account average annual maintenance costs ranging from $22,235 to $28,000 over the 10 year life. In conformance with industry practices, the costs also include major component overhaul costs in years 5, 7 and 8 which correspond to machine life years 10, 12, and 13. In year 5, age 10 a hydraulic pump overhaul is estimated at $9,000 and a similar cost of $9,000 associated with the potential gearbox rebuild at year 8 age 13. The most significant of these is a planned drive train rebuild and overhaul valued at an estimated $63,000 in year 7 age 12. Lastly this estimate also reflects an estimated residual value of $30,000 at the end of the 10th year age 15. Since the warranty is expired, all maintenance and repair costs would be the responsibility of the Region

Option 2, The 10 year lifecycle costs for a new grader are $205,000.

The cost of a new, 2008 model 140M road grader is estimated at $212,277. The trade-in value of the existing road grader is $135,000, the difference being $77,277. The total cost for a new grader over the same 10 year period has also been established, considering the time value of money. This includes the capital purchase cost and the estimated average annual maintenance cost ranging from $13,694 to $22,235. A five-year preventative maintenance contract comes with the new grader and is based on an upset number of 5,000 operating hours over that period. It covers all preventative maintenance and servicing thereby, reducing the average annual maintenance cost for which the Region would be responsible. Most significantly as this option considers the first ten year cost for a new grader, the costs do not include major overhaul or rebuild costs identified beyond year 10, other than the potential hydraulic pump rebuild identified in year 10 at $9,000. The residual value at the end of the tenth year is estimated to be $52,314. The total 10 year costs for the new grader are estimated at $205,292.

The purchase of a new road grader was not identified in the proposed 2008 Transportation Services Budget. Under this option, additional funding in the amount of $77,277, plus taxes would be required from the Vehicle Replacement Reserve. The day rate for the existing grader has paid $73,000 into the Vehicle Replacement Reserve.

The Fleet program has two components made up of a day rate and an hourly operating rate. The day rate is utilized for the contributions to the Vehicle Replacement Reserve, and the operating rate is utilized for maintenance and fuel. Over the last five-years, Roads Maintenance has contributed in the order of $73,000, plus interest to the Vehicle Replacement Reserve through day rate contributions.

All values are estimates based on the current value of the U.S. dollar and will be made firm if this option is approved. Taxes have not been included.

Benefits of purchasing a new grader include updated controls for increased safety and advanced technology to meet environmental standards

Since 2002, improvements and updates have been made to road graders, including a full redesign of the operator’s cab and controls to reduce operator fatigue and enhance operator safety. In the older model, the operator used a steering wheel mounted on a centre tower console with multiple hand levers. On the new model, the controls have been replaced with joystick hydraulic controls and power steering providing fulltime hands-on controls. In addition the elimination of the steering wheel and centre tower console now provides the operator with an unobstructed forward view and improved forward vision of the grader blade.

The new Advanced Combustion Emissions Reduction Technology (ACERT) engine developed by Caterpillar, available with the 2008 grader engine, will reduce engine emissions.

The Region’s Corporate Clean Air initiatives support the renewal of vehicles and equipment whenever possible, to ensure newer technologies available are incorporated into new purchases.

In addition, all of the attachments currently used on the 2002 grader will fit the 2008 model replacement unit. They include a rear wing and tower, front harness/snow plow and rear windrow eliminator. These optional attachments will be removed from the existing machine and mounted on the new replacement grader by Toromont CAT, at no additional cost to the Region.

4.1 RELATIONSHIP TO VISION 2026

Vision 2026 goals include infrastructure for a growing Region and will focus on developing an integrated transportation network. The recommendations of this report are consistent with the intent of this goal.

5. FINANCIAL IMPLICATIONS

The estimated capital cost of the new grader is $77,277 plus taxes. Funds are available in the Vehicle Replacement Reserve. There are no tax levy implications with this purchase.

The regular maintenance and operating costs are included in the Transportation Services operating budgets.

The evaluation carried out for the replacement of the grader is unique. Consideration was given to the high trade-in value of the existing grader and the potential overhaul/rebuild costs if the existing grader was retained. In addition operating and maintenance costs of a new grader were considered to complete the evaluation.
As opportunities arise on other high capital cost equipment, similar evaluations will be carried out to ensure the Region is optimizing its capital investments.

6. LOCAL MUNICIPAL IMPACT

There are no local municipal implications associated with this report

7. CONCLUSION

The existing road grader has reached the end of the current lease. This lease has the option of purchasing the road grader or trading in the road grader for a new model. The analysis has shown that trading in the road grader for a new model has savings over 10 years which amount to $55,000. It is therefore recommended that staff be authorized to proceed with the purchase with funding from the Vehicle Replacement Reserve.

For more information on this report, contact Brian Harrison, Director, Operations, Roads Branch at extension 5205 in the Transportation Services Department.

The Senior Management Group has reviewed this report.