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PROJECT SCOPE CHANGE – PROJECT 98600 MAJOR MACKENZIE DRIVE, TOWN OF MARKHAM

The Transportation Services Committee recommends the adoption of the recommendation contained in the following report dated November 20, 2009, from the Commissioner of Transportation Services.

1. RECOMMENDATION

It is recommended that:

1. Regional Council authorize a budget increase for Project No. 98600 in the amount of \$1,249,281 under the 2009 Roads Capital Budget, of which \$820,000 is the net increase to be funded by York Region, for the completion of construction activities related to the reconstruction and widening of Major Mackenzie Drive (Y.R. 25) between Woodbine Avenue (Y.R. 8) and Kennedy Road (Y.R. 3).

2. PURPOSE

This report seeks Regional Council authorization to adjust the 2009 Capital Budget for Roads Project No. 98600.

Contracts are in place for construction and engineering services for this project. Extensions to these contracts are required; however, such adjustments are within the Purchasing By-law authority levels delegated to staff. It is the adjustment to the 2009 Capital Budget for this project that is the subject of this report.

3. BACKGROUND

In 2007, a contract for the installation of a Regional watermain and the widening and reconstruction of Major Mackenzie Drive was awarded to KAPP Contracting Inc. \$17.2M

In 2007, KAPP Contracting Inc. (KAPP) was awarded Contract 07-03, for the widening and reconstruction of Major Mackenzie Drive from Woodbine Avenue to Kennedy Road, including a new Regional watermain. The work was to be completed in accordance with the conditions and specifications outlined in the contract documents and a Blanket Purchase Order (BPO) was prepared and issued to KAPP.

Work under this contract included the following key road and water infrastructure construction:

- Widening and urbanization of Major Mackenzie Drive from Woodbine Avenue to Warden Avenue and from Angus Glen Boulevard to Kennedy Road.
- Construction of a new Regional watermain between Woodbine Avenue and Kennedy Road.
- New bridge over the Bruce Creek tributary, east of Warden Avenue.
- Widening of an existing bridge over the Bruce Creek, west of Kennedy Road.
- Town of Markham sidewalks, multi use path and illumination along Major Mackenzie Drive.

Funding for the work under KAPP's contract is shared between the Environmental Services Department and the Transportation Services Department

Based on the tendered prices for the work, the watermain portion of the KAPP contract, to be funded from the Environmental Services capital budget, is \$7,361,609.

Based on the tendered prices for the work, the roadworks portion of the KAPP contract, to be funded from the Transportation Services capital budget, is \$9,858,361.50.

Prior to 2009 all Environmental Services construction and a portion of the Transportation Services construction was complete

During 2008, significant progress was made on the contract. By the end of 2008, KAPP had completed all of the work on the Regional watermain, the Environmental Services work. The roadworks were complete to base course asphalt and four lanes were open to traffic.

The 2009 capital budget is \$1.53M

At the time of preparing the 2009 Capital Budget, it was estimated that the remaining work under this project for 2009 would be approximately \$1,531,000.

The 2009 Capital Budget was approved for \$1,531,000.

Benefits to the community will also be realized as part of this project with landscaping and noise mitigation to be constructed in 2010

Following the completion of the work under Contract 07-03, Major Mackenzie Drive is scheduled to receive a level of streetscaping pursuant to the Region's streetscape policy.

In addition, certain locations were identified for noise mitigation, including a noise barrier at one residential and vegetative screening along several sections of the corridor.

These activities are scheduled for implementation in 2010. Funding for this work in 2010 has been included in the draft 2010 Transportation Services Capital Budget under Project No. 98600 in the amount of \$500,000. Council approval of the 2010 Capital Budget is expected in December 2009.

4. ANALYSIS AND OPTIONS

Extra work and scope changes on the Transportation Services portion of the project were required during construction to address a variety of changed conditions and new project requirements

During construction, the total value of the Transportation Services portion of the contract increased as a result of extra work and scope changes. This increase in cost is attributable to extra work, change of scope and unforeseen conditions. As the construction project is finalized and closed out, the projected final cost for the project may vary slightly from the current projected final cost estimate.

Certain additions to Contract 07-03 were necessary such as unexpected ground conditions and changing requirements from the Toronto and Region Conservation Authority (TRCA).

The major activities/issues outlined below resulted in additional work being added to the original contract or allowed pursuant to the terms and conditions of the contract. All changes to the contract were reviewed in detail by the Contract Administrator and approved by York Region staff as needed. The major activities/issues resulting in additions to the contract are outlined below.

Changes in field conditions required an extension of the retaining wall along the south side of Major Mackenzie Drive west of Bruce Creek resulting in additional costs of \$155,000

As noted above, a retaining wall was necessary on the south side of Major Mackenzie Drive west of Bruce Creek to support the widening of Major Mackenzie Drive without impacting the existing watercourse/adjacent to the Bruce Creek, west of Kennedy Road.

During the course of construction, it was determined that the designed length of the retaining wall was insufficient because Bruce Creek had meandered significantly since the time the pre-engineering survey and design was completed in 2004. This shift in the location of the watercourse necessitated an extension to the length of the retaining wall in order to properly support the widened roadway embankment from impacting the now closer creek location.

The adjustment to the retaining wall was carried out in early 2009 as an extra to the contract on a time and material basis. The incremental cost to the project for the extended retaining wall is approximately \$155,000.

This work is funded by York Region and requires a project budget adjustment.

The Region, on behalf of the developers south of Major Mackenzie Drive opposite Angus Glen Community Centre, constructed the south leg of the intersection for an incremental cost of \$165,000, which has been funded by the developers

The limits for Contract 07-03 extended from Woodbine Avenue to Kennedy Road. However, the road widening from Warden Avenue to the Angus Glen Community Centre was previously completed under a separate contract in 2002. Through these limits the only work proposed under Contract 07-03 was a multiuse path on the south side of Major Mackenzie Drive.

During construction of the road widening, the developers on the south side of Major Mackenzie Drive opposite the Angus Glen Community Centre secured Town of Markham and York Region approval to construct a south leg on the existing intersection at Angus Glen Boulevard.

The developers for the subdivision were prepared to carry out the work in York Region's right-of-way; however, they were advised that they would need to wait until KAPP had completed all their work in this area. This was to avoid exposing York Region to increased liability under the Occupational Health and Safety Act associated with multiple contractors working in the same area at the same time.

Since timely completion of the intersection was critical to the developers, they asked York Region if KAPP could do the work under Contract 07-03. It was noted that the developers would be responsible for the full cost of constructing the intersection works. KAPP submitted a quotation to complete the construction of the new Angus Glen Boulevard intersection in the amount of \$165,000. This quotation was accepted by the developers and they in turn submitted securities to York Region for funding the work. York Region then authorized KAPP to proceed with the work as an extra to the Contract 07-03 in 2009.

Although funding for this work has already been provided by the Angus Glen developers and is fully recoverable, a gross budget adjustment to York Region's project budget is required to recognize the expenditure for the funding already in place.

Roads contracts allow for adjustments to the unit price of asphalt products based on the Ministry of Transportation (Ontario) Asphalt Cement Price Index, which resulted in an incremental cost of \$330,000

Due to fluctuating oil prices that directly influence the cost of hot mix asphalt road paving materials, the Region's contracts, like most other Ontario municipalities, allows for changes to the contract tendered price for asphalt depending on the change in the price of asphalt cement. This measure is in place to ensure fairness to both the contractor and the municipality and eliminates risk associated with the unpredictable cost of oil dependent materials.

Cost adjustments per tonne of new asphalt cement are established each month in which paving occurs. Where the price index, which is monitored and established by the Ministry of Transportation, varies by more than 5% between the price index in which tenders were opened for the contract and the actual date paving was performed, an adjustment to the contract price is made. This may result as either a credit to the municipality or an additional payment due to the contractor, depending on oil prices at the time.

Given the significantly large quantity of asphalt paving that was carried out on the project in 2009 and the change in the price of asphalt cement since the opening of the tender in July 2007, the cost adjustment per tonne of asphalt has resulted in an additional cost of approximately \$330,000 or a 15% increase for the paving of Major Mackenzie Drive over the initial bid price.

This additional cost is funded by York Region and requires a project budget adjustment.

Revisions to the roadside drainage along the north side of Major Mackenzie Drive east of Jennings Gate increased the construction cost by \$85,000

Prior to the road improvement, Major Mackenzie Drive was a rural road section with large roadside ditches. With the widening and urbanization of the roadway, the roadside ditches were either eliminated or repositioned to suit the road widening. In most cases, the ditches were made smaller due to the bulk of the roadway drainage that would be carried by the construction of a new storm sewer along Major Mackenzie Drive.

A section of the roadside drainage facility east of Jennings Gate was required to be modified in the fall of 2009 since the constructed ditch was located at a slightly higher elevation than the previous ditch. The new ditch, although still lower than the adjacent residential lands, was modified to address a prevailing groundwater elevation that seems to be impacting the adjacent residential properties. The modification was not only carried out as a goodwill gesture, but more importantly, to return the roadside setting to the pre-construction condition and to eliminate any potential cause of action against the Region.

The modifications to the roadside drainage were carried out by KAPP at a cost of \$85,000. Staff concurred that this was the best approach to avoid exposing York Region to any legal action that may have been taken by the area residents against the Region for changing the setting near their properties.

This work is funded by York Region and requires a project budget adjustment.

Extra work was required for Town of Markham funded infrastructure, such as sidewalks, illumination and watermain, that resulted in an incremental cost of \$264,281

During the planning of the Major Mackenzie Drive project and co-ordination with the Town of Markham, the Region was requested by the Town to carry out certain works on behalf of the local municipality under Contract 07-03 and on a cost recoverable basis.

In 2007, a cost estimate in the amount of \$1,115,751 was prepared for the Town work. By letter dated March 20, 2007, the Town confirmed acceptance of the estimate and authorized the Region to proceed with the work. Accordingly, project budgets were prepared on the basis of Town funding for the recoverable work that would be carried out on the project.

Subsequent to the above, the Town requested during construction that extra work be carried in addition to the initial agreement. Field Change Orders were issued to KAPP to accommodate certain Town operational improvements to their existing watermain infrastructure, including an additional feed for a loop system into the Hazelton Subdivision.

The Town work has now been finalized for project close out in 2009, actual billing to the Town is based on actual field measurements, and contract unit bid rates, in the amount of \$1,380,032, which is a cost overrun of the tender by \$264,281.

Although this work is funded by the Town of Markham, York Region undertakes the work and initially funds the expenditure with a subsequent invoice being sent to the Town of Markham for recovery of the funds.

Unexpected utility conflicts, additional engineering and detailed design and incremental contract administration and inspection activities resulted in additional costs of \$125,000

Throughout the construction phase significant effort was expended to update design drawings to reflect the changed conditions, most notably with respect to the Bruce Creek stream diversion and the extension of the retaining wall. The resulting effect was an increase in the extent of the utility relocations, detailed design, contract administration and inspection effort that was not provided for in the 2009 budget.

The quantum of the increases is \$125,000.

This work is funded by York Region and requires a project budget adjustment.

Other project costs and contingencies in the amount \$125,000

Project staff for York Region and KAPP are undertaking to reconcile the final quantities for all items under the contract prior to processing the final payment certificate. This process may result in additional monies being owed by York Region if there was an underpayment on the progress payments. Conversely, there may be a credit owing to York Region in the event an overpayment was made on the progress payments.

This work is funded by York Region and requires a project budget adjustment.

5. FINANCIAL IMPLICATIONS

The additional costs above the 2009 budget are summarized as follows:

Retaining Wall Extension	\$155,000
Angus Glen Boulevard Intersection	\$165,000
Hot Mix Asphalt Cost Adjustment	\$330,000
Modifications to Roadside Drainage	\$85,000
Town of Markham Works	\$264,281
Utility conflicts, Engineering, CA and Inspection	\$125,000
Other Project Costs and Contingencies	<u>\$125,000</u>
TOTAL	\$1,249,281

York Region is responsible for funding only \$820,000 of the additional budget requirement

Although the above components amount to \$1,249,281, York Region is responsible for funding only \$820,000. The balance, \$429,281, will be funded by the Angus Glen subdivision developers and the Town of Markham

This project has been funded at the rate of 88% from Development Charges and 12% from Tax Levy. The portion York Region is responsible for funding will also be at the rate of 88% Development Charges and 12% Tax Levy.

There is sufficient DC and tax levy funding to accommodate the additional increase of the \$1,249,281 payment from deferred projects within the existing 2009 Capital budget. As a result, these deferred projects will be rebudgeted in the 2010 10-Year Capital Plan.

Of the approximately 125 active 2009 Major Capital Roads projects, this is one of two projects which requires Council approval to adjust the 2009 Capital Budget.

6. LOCAL MUNICIPAL IMPACT

The Town of Markham will benefit significantly from the road improvements on Major Mackenzie Drive. These improvements will provide additional capacity within the adjacent Regional corridors and will enhance connectivity to Highway 404 and employment lands within the municipality.

7. CONCLUSION

Additional costs to project 98600 in 2009 have resulted in the need for additional budget authorization in the amount of \$1,249,281.

Of this amount, York Region is responsible for approximately \$820,000, and the balance, \$429,281, will be funded by the Angus Glen developers and the Town of Markham. The necessary funds have been received from the Angus Glen developers and an invoice will be sent to the Town of Markham in December 2009.

The expenditures York Region is responsible for will be funded 88% from Development charges and 12% from Tax Levy.

Accordingly, it is recommended that the 2009 Roads Capital Budget be increased by \$1,249,281, excluding GST, to fund the necessary additions to Contract 07-03 and project expenditures.

For more information on this report, contact Paul Jankowski, General Manager, Roads at extension 5901.

The Senior Management Group has reviewed this report.