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AWARD OF CONTRACT FOR SPECIALIZED SCHEDULING AND COST CONTROL FOR WARDEN AVENUE FROM 16TH AVENUE TO MAJOR MACKENZIE DRIVE TOWN OF MARKHAM

The Transportation Services Committee recommends the adoption of the recommendation contained in the following report dated March 27, 2012, from the Commissioner of Transportation and Community Planning.

1. RECOMMENDATION

It is recommended that:

1. Regional Council approve the increased scope of work required to provide specialized scheduling and cost control services related to the reconstruction of Warden Avenue from 16th Avenue to Major Mackenzie Drive in the Town of Markham, thereby increasing the assignment to Revay and Associates Limited from \$37,879 to \$202,879, excluding taxes.

2. PURPOSE

This report informs Council that Warden Avenue, between 16th Avenue and Major Mackenzie Drive, will be closed for eight months for road reconstruction and seeks authorization to increase the value of the assignment to Revay and Associates Limited to include the provision of specialized scheduling and cost control services to mitigate the significant risks associated with an extended closure of the road.

The Region's Purchasing By-law requires Regional Council authorization to increase the value of a purchase order in excess of 15% for contingencies and 20% for additional scope activities. As the additional fees being requested will exceed the staff authorities provided for in the Purchasing By-law, Regional Council approval is required for this increase.

A context plan and location plan showing the project area are appended to this report (*See Attachments 1 and 2*).

3. BACKGROUND

The widening of Warden Avenue, between 16th Avenue and Major Mackenzie Drive, is scheduled to start in the fall of 2012

Warden Avenue, between 16th Avenue and Major Mackenzie Drive, is a two-lane rural road with narrow shoulders and open ditches. Warden Avenue is to be widened to four lanes to address network connectivity and capacity deficiencies as detailed in the approved Environmental Assessment, and the York Region Transportation Master Plan (TMP).

The design for this road widening project is complete, and staff are currently working to finalize the tender documents. All property needed for the widening has been acquired and utility relocations are complete.

Staff plan to tender the project this summer, subject to obtaining an Endangered Species Act permit from the Ministry of Natural Resources. The construction award is planned for September 2012 and construction is expected to commence shortly thereafter.

This is a complex road widening; closing Warden Avenue to traffic for eight months is the most practical and cost-effective approach to construction

While construction staging options that maintained traffic on Warden Avenue were explored, all of these options stretched construction over multiple years and added more than \$1.5 million in additional staging costs to the project. As a result, staff identified a temporary full road closure as the preferred option. Staging options for the project were presented to the Town of Markham Development Services Committee on June 1, 2010, and support was provided for the full closure of Warden Avenue since it was in the best interest of all stakeholders, including area residents and commuters.

Significant engineering challenges, environmental protection measures and residential access requirements are driving the construction staging

Carlton Creek and Berczy Creek currently cross Warden Avenue through three small culverts located within one kilometre of each other. As part of the widening and urbanization of the road, existing culverts are being replaced with three large bridges ranging from 19 to 25 metre spans. Construction of the bridges will require that Warden Avenue be completely closed to traffic for a period of eight months (April 2013 to November 2013) between 16th Avenue and Major Mackenzie Drive.

Dewatering will be required at all three crossing locations and extensive environmental protection measures and creek rehabilitation works are included at all three locations. The bridge works are further constrained by the requirements of the Toronto Region

Conservation Authority (TRCA) and Ministry of Natural Resources (MNR) which limit the timing for “in-water” and “near water” construction.

A further complication is that in order to maintain access to an existing residence and allow for ongoing construction access, the Carlton Creek structure needs to be built in stages over two construction seasons.

The existing residence and watercourse crossings of Warden Avenue are shown in Attachment 2.

An enhanced stakeholder communication plan will be developed and implemented due to the length of the Warden Avenue closure

This busy section of Warden Avenue primarily accommodates long distance commuters from outside of Markham. The eight-month closure will put additional pressure on parallel routes to accommodate displaced traffic.

The Region will undertake an enhanced communication plan in advance of the closure to allow commuters to plan accordingly. The closure is planned to begin in the spring of 2013. The plan will include, but will not be limited to, advance notification to residents, agencies, emergency services and school boards. Communication to residents will include hand-delivered notices, newspaper advertising, social media and roadway signage. The plan may also include updates and presentations to local municipalities and Regional Council.

4. ANALYSIS AND OPTIONS

Revay and Associates Limited was engaged to complete a constructability review and risk analysis

With multiple bridges and sensitive watercourses, this is one of the most technically complex major road reconstruction projects the Region has undertaken. As a result, staff have undertaken due diligence work to better understand how the project can be built and the risks involved with it.

Revay and Associates Limited (Revay) were retained to undertake a constructability review and risk analysis of the overall project, with a particular emphasis on the construction of the three bridges.

While this is the first time this kind of review has been undertaken for a road project in the Region, the Environmental Services Department is successfully using Revay to provide similar services for a number of complex construction projects at the Duffin Creek Water Pollution Control Plant.

Expertise in scheduling and cost control will be critical to ensure the Warden Avenue closure does not extend into another construction season

While the constructability review concluded that the construction staging is feasible, the magnitude of constraints and impacts to the Regional road network requires careful planning and execution by the contractor. The nature of the environmental constraints mean that any structural work extending beyond eight months will extend the closure by at least an additional four months until work is again permitted in or near the watercourses.

Utilizing the services of a specialized consulting firm to help monitor and control the project will significantly increase our ability to complete the work on time and on budget, and mitigate the risk of extending the full road closure.

Revay is a firm that specializes in the provision of project management support services

Revay is a very specialized consulting firm that provides expert project management support services, mainly to owners of large complex construction projects. These services include schedule development and monitoring, cost control work, and construction claim analysis. The Revay project manager for this assignment is an experienced project management and earned value analysis specialist, with additional support coming from staff with many years of experience in construction.

Revay has been providing similar types of services to the Environmental Services Department at the Region for several years including cost and schedule control work at the Duffin Creek Water Pollution Control Plant.

Extension of Revay's current assignment to provide the required scheduling and cost control services will benefit the project

As Revay has previously completed the constructability review and risk analysis for this project, they are very familiar with the project constraints, technical complexities, and the design.

Revay has a proven track record of providing these types of services for the Region, and staff are confident that utilizing Revay will benefit the Region by reducing project risks and increasing the probability that the bridges will be completed on schedule and the road reopened as planned.

The quote is reasonable and represents value for money to the Region given the magnitude of the project risks

Revay has provided a quote of \$164,850 to provide these additional services, with work commencing during the final preparation of the tender documents and extending for the duration of the construction.

The quote represents only a small percentage (approximately 0.7%) of the \$23 million estimated cost of the construction contract. This cost represents good value for money to the Region in terms of the risk avoidance for an extended full closure of Warden Avenue.

5. FINANCIAL IMPLICATIONS

The quoted cost of \$164,850 is associated with a defined work scope for these necessary services and can be accommodated within the approved budget for the project.

6. LOCAL MUNICIPAL IMPACT

Reconstruction of Warden Avenue from 16th Avenue to Major Mackenzie Drive includes multi-use paths, sidewalks, and street lighting for the Town of Markham.

As indicated, the Town of Markham concurs with the project team's recommendation to close Warden Avenue during construction.

While the completion of the widening project will improve the traffic flow in the area, both on Regional and local roads, there will be impacts during construction mainly with respect to the eight month closure of Warden Avenue. Local access will be maintained at all times to all properties during the closure.

7. CONCLUSION

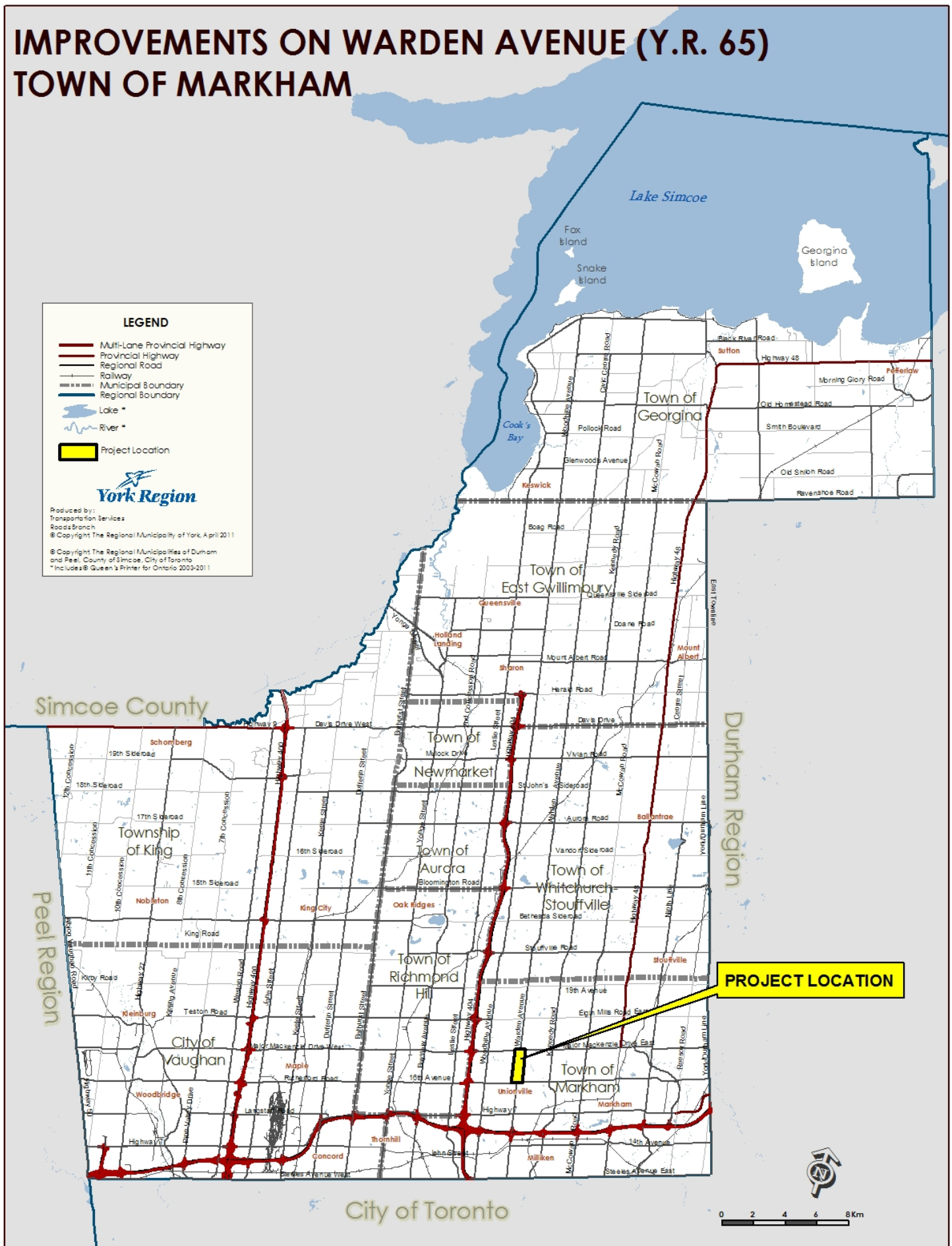
Extending the assignment of Revay and Associates Limited to provide specialized scheduling and construction cost control services for the Warden Avenue widening will assist the Region in mitigating the significant risks associated with an extended closure of Warden Avenue.

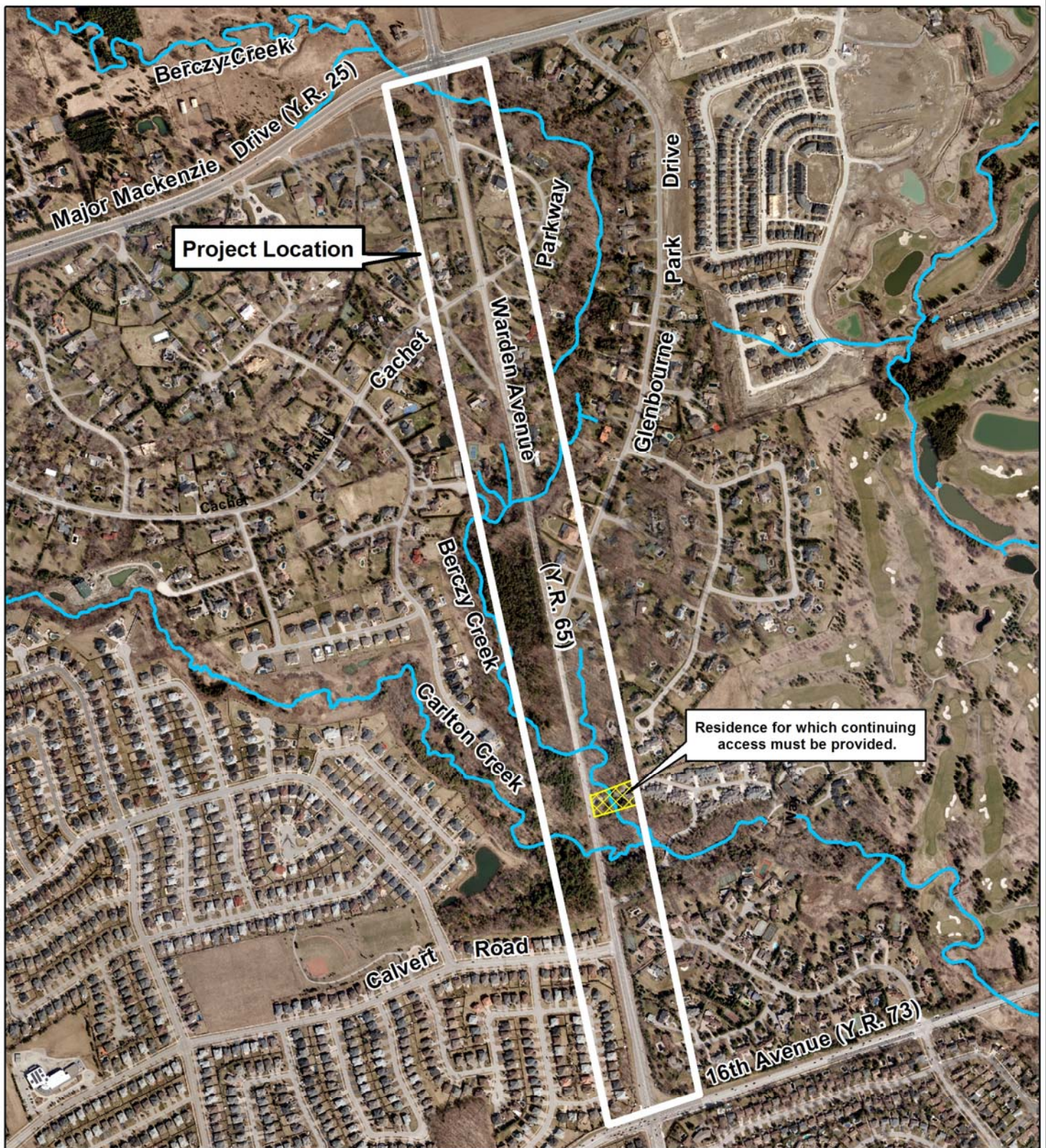
Staff are recommending that the scope and fee of the Revay and Associates Limited assignment be increased to undertake the additional work.

For more information on this report, please contact Brian Titherington, Director, Roads at extension 5901.

The Senior Management Group has reviewed this report.

(The two attachments referred to in this clause are attached to this report.)





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LOCATION PLAN

Project No. 98670

Warden Avenue (Y.R. 65) from 16th Avenue to Major Mackenzie Drive

Town of Markham



400 200 0 400 Meters

ROADS BRANCH - CAPITAL DELIVERY

