



Corporate Report

Report from Transportation and Environmental Services, Engineering and Construction

Date of Report: July 28, 2014

Date of Meeting: August 11, 2014

Report Number: TES-222-2014

File: 18.45.252, 68.81.9

Subject: Impacts of Expanding Roadwork on Riverview Boulevard,
Project No. P14-080 - Resurfacing Program Part 1

Recommendation

That Council receive for information the report from the Transportation and Environmental Services Department, dated July 28, 2014, regarding Impacts of Expanding Roadwork on Riverview Boulevard – Project No. P14-080 – Resurfacing Program Part 1; and

That staff direct the contractor to proceed with the resurfacing of Riverview Boulevard as soon as possible.

Summary

The Region recently undertook the replacement of their trunk watermain from a point south of Lockhart Drive, along the entire length of Windermere Road and Riverview Boulevard from Windermere Road to the north limit of Hillside Drive. The Region's work included a combination of complete road reconstruction and partial road reconstruction on portions of Riverview Boulevard. Following the Region's construction, the City has undertaken to resurface Windermere Road, Riverview Boulevard and Hillside Drive. During the works, some residents have expressed concern that the remaining curb and roadways were not fully reconstructed and instead resurfaced. The final paving of these sections has been stopped until Council could review the proposed works and impacts of expanding the existing contract to include more work in these areas.

Background

At its meeting of April 28, 2014, Council awarded the tender for P14-080 - 2014 Resurfacing Program Part 1, to the low bidder Norjohn Contracting and Paving Limited, in the amount of \$778,380.77 plus HST. This project included the resurfacing of:

- Hillcrest Avenue: Glenridge Avenue – Wychwood Road
- Hillside Drive: Riverview Blvd – North Limit
- Riverview Boulevard: Windermere Road – Glenridge Avenue
- Windermere Road: Lockhart Drive – Riverview Boulevard

Various underground works were completed on these streets in 2012 and 2013.

At its meeting of July 21, 2014, Council directed staff to “prepare a report on the potential impacts of expanding the scope of works for road resurfacing to include full curb replacement, including changes in timelines and project costs for Council’s consideration”. At this meeting, Council also received a presentation from the resident at 108 Riverview Boulevard expressing concerns about the construction.

Report

Prior to recent construction activity, the section of Riverview Boulevard from Windermere Road to Glenridge Avenue was a concrete and asphalt on concrete road in varying condition. Most sections of the road were in fair condition however, the section of Riverview Boulevard from approximately 300m north of Oakridge Avenue to Hillside Drive was in generally poor condition. Staff were aware of the desire of the Regional Municipality of Niagara to replace their trunk watermain that were located along Riverview Boulevard and coordinated some of the required road work as part of their contract. The intent was that the City would include the placement of the top course of asphalt and any other required resurfacing works as part of one of our resurfacing contracts after the Region’s works were completed.

Regional Niagara – Riverview Trunk Watermain Replacement

As part of Regional Niagara Contract RN11-06 - Riverview Trunk Watermain Replacement, the Region replaced two 600mm cast iron trunk watermain with a new 900mm diameter PVC trunk watermain from a point south of Lockhart Drive, along the entire length of Windermere Road and Riverview Boulevard from Windermere Road to the north limit of Hillside Drive. (Refer to Appendix 1).

When the Region undertook the design, City Staff requested that the contract include the reconstruction of a section of Riverview Boulevard from approximately 300m north of Oakridge Avenue to Hillside Drive as part of their project, given the poor condition of this section of the existing concrete roadway. At that time the remaining sections of roadway were in better condition and good candidates for resurfacing.

At the design and tender stages the expectation was that given the size of the excavation required, half of the existing concrete roadways would be removed in order to install the Region’s new watermain. With the exception of the section of roadway mentioned above, the Region would reinstate the trench by effectively reconstructing one side of the road where the trunk watermain trench was proposed. The City would resurface the affected roads in the future under one of the City’s annual resurfacing contracts.

A Public Information Centre was held by the Region with the residents on May 16, 2012 to show the plans and receive comments. Residents representing approximately 33 properties attended the meeting. The Region’s project commenced construction on June 25, 2012 and was substantially completed on August 31, 2013.

During construction of the trunk watermain, the condition of the undisturbed side of the road on some sections deteriorated to an extent that the originally planned milling and resurfacing was no longer practical. These road sections included Windermere from Lockhart Drive to Riverview Boulevard and Riverview Boulevard from approximately 150m south of Oakridge Avenue to approximately 300m north of Oakridge Avenue. The main reason for the deterioration of these concrete road sections was cracking and displacement of the existing concrete due to construction traffic.

At the conclusion of the Region's project last year, Riverview Boulevard had been fully reconstructed from Hillside Drive to approximately 150m south of Oakridge Avenue, with the remaining section from 150m south of Oakridge Avenue to Windermere Road having half of the road reconstructed where Region's watermain trench was reinstated (Appendix 1 provides a general overview).

In the areas where only half of the road was reconstructed, the Region's contractor placed new concrete curb and gutter in the reconstructed portion – the other half of the road has a concrete curb that is integral with the remaining concrete road, which is typical of concrete roads of this vintage.

City Resurfacing Project

When developing the 2014 Road Program, staff reviewed the condition of the remaining sections of Riverview Boulevard that had not been reconstructed and determined that those sections would be suitable candidates for resurfacing. Consideration was given to reconstructing the remaining portions of Riverview Boulevard, however given the limited resources and consideration of the asset management goals for the entire road network, staff proceeded with budgeting for the work on this section of road as a resurfacing project.

Historically, concrete roads of this vintage were constructed with a curb poured integral with the concrete road. By contrast, an asphalt roadway usually has a separate concrete curb poured with a gutter. Resurfacing of a concrete road typically involves spot repairs to the existing curb, milling the entire concrete road surface to the edge of the curb, paving a 25mm scratch or leveling course of asphalt to improve the drainage and crossfall of the roadway, placing a pavement reinforcement system to delay the propagation of cracks from the concrete and placing a 50mm course of asphalt to the final elevation. Staff have found that this technique of milling to the curb edge best allows the contractor to correct drainage problems, and reduces opportunities for water penetration below the concrete roadway, which can result in shortened service life.

At its meeting of March 3, 2014, Council approved the 2014 Construction Program which included the 2014 Road and Drainage Improvement Program. That program included the resurfacing of this section of Riverview Boulevard.

At its meeting of April 28, 2014, Council awarded the tender for P14-080 - 2014 Resurfacing Program Part 1, to the low bidder Norjohn Contracting and Paving Limited, in the amount of \$778,380.77 plus HST.

Notices were hand delivered to the abutting property owners on May 15 and 16, 2014 advising that the contract was awarded. Shortly thereafter, the contractor commenced work with spot repairs to the existing curbs.

During this project and on other resurfacing projects, a few residents will enquire about the possibility of having larger sections of curb replaced in front of their property so that the entire curb matches. For resurfacing projects curb repairs are only carried out on broken sections of curb or in areas where there are drainage issues – this typically results in approximately 5% of the existing curbs being replaced as part of a resurfacing project. Curbs are not typically replaced for aesthetic purposes.

On Monday July 14, 2014, once the roadway was milled, the resident at 108 Riverview Boulevard called with concerns about the look of the transition between the curb and gutter and a barrier curb located at approximately the centre of his property where a section of reconstructed roadway meets the original concrete roadway to be resurfaced.

Staff met on site with the property owner in the afternoon on Monday July 14, 2014. On Wednesday July 16, 2014 the contractor was directed to delay the paving of the remaining sections of Riverview Boulevard that were not reconstructed under the Region's trunk watermain project, with an understanding that Council would request a staff report to outline the impacts of expanding the existing roadwork on Riverview Boulevard. At this time all sections of defective curbing have been repaired, the roadway has been milled, a 50mm thick scratch (leveling) course of asphalt and the pavement reinforcing system has been applied to the concrete road section.

Options for Completion of Paving

There are essentially three areas on Riverview Boulevard where the roadway was not reconstructed:

- East side - #95-103 (approximately 145m)
- West side - #108-122 (approximately 130m)
- West side – Glendale Avenue to #176 (approximately 405m)

The areas have been reviewed and cost estimates developed for both the reconstruction of the remaining sections as well as only the replacement of the remaining existing curb. Assuming that all three locations would be dealt with in a consistent manner, there are essentially three options.

Option 1 – Resurfacing as per the Tender

This option would have the Contractor return to the site as soon as possible and place the top course asphalt. Once the contractor returns the paving should take a couple of days followed by reinstatement of the grassed areas.

Staff recognize that this option leaves sections of existing curb in place with other areas having curb and gutter, however staff believe that this would be the most prudent and cost-effective course of action. The cost to place the top asphalt in the remaining

sections of road that haven't been reconstructed is approximately \$45,000. This option will not require any additional funds as the work was included in the original tender, however there may be delays in completing the project as the contractor has moved onto other projects. It would be reasonable to expect this road to last 10-15 years under this option before more resurfacing is required. Crack sealing would likely be required in 2-5 years.

Option 2 – Reconstruction of the Remaining Road Sections

Reconstruction of the remaining sections of roadway would involve the full depth removal of the existing roadway (now concrete with a thin layer of asphalt), removal of the existing curbs, including sections already repaired, installation of a sub drain, pouring new curbs and placement of a granular base followed by installing a lift of base course asphalt and surface course asphalt. The works will also require the removal and patching of sections of driveways and boulevards where the curbs are installed and will take several weeks to complete. The estimated additional cost for these works is \$420,000. This would be in addition to the cost of \$45,000 to place the top asphalt in these areas. The estimated costs of the works already installed that would have to be removed under this option are approximately \$42,000.

This option will result in a fully reconstructed road and it would be reasonable to expect this road to last 25-40 years before more resurfacing is required. Crack sealing would likely be required in 5-7 years.

Although the resulting road sections may last longer than the resurfaced road sections proposed in Option 1, staff believe that the cost differential exceeds the benefit of the extended life span.

Option 3 – Removal of the Remaining Curb and Resurfacing

This option would involve the removal of the existing curbs and approximately 1.3m of the existing roadway to allow for the installation, pouring new concrete curbs and gutters, installing a sub drain. The contractor would then repair the area between the new curbs and concrete roadway with granular base and base asphalt. Final surface course asphalt would then be installed across the roadway. The works will also require the removal and patching of sections of driveways and boulevards where the curbs are installed and will take several weeks to complete. The estimated costs of these works are \$200,000. The estimated costs of the works already installed that would have to be removed under this option are approximately \$13,000.

Cutting into the concrete base along the entire length of curb will provide a more consistent look but will leave a floating slab of concrete under the roadway as it will no longer be tied to the curb. Additional heavy construction traffic associated with the removal and replacement of the curbing also creates a risk of further damaging the remaining concrete road base should the road be subjected to wet weather during the work.

This option will result in a less structurally sound road and it would be reasonable to expect another resurfacing to be required within 8 -10 years. Crack sealing would likely be required in 2-5 years.

Financial Implications

Due to an under run on some of the quantities placed to date and the contingency not being used there is approximately \$65,000 available within the tendered project to do additional work.

Should Council wish to proceed with Option 2 an additional \$355,000 is required.

Option 3 would require an additional \$135,000 but given the increased cost and the impacts to the roadway Option 3 is not recommended

Conclusion

Portions of Riverview Boulevard were fully reconstructed as part of the Region of Niagara's replacement of their trunk watermain in 2012 and 2013. Other portions of Riverview Boulevard were partially reconstructed (half of the road) as part of the trench reinstatement for their project.

The City tendered a resurfacing contract to place the top asphalt on the reconstructed sections and to resurface the adjacent sections of Riverview Boulevard that were affected by the Region's work. Although this will result in some sections of Riverview Boulevard having curb and gutter on half of the street and existing curb on the other half, staff believe that this would be the most prudent and cost-effective course of action.

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