

Reconstruction of Mature Neighbourhoods Using “Roll-faced” Curb and Gutter Construction Techniques (J. Batty)

Recommendation:

That the May 1, 2013, Transportation Services report 2013TS8205, be received for information.

Report Summary

This report provides information regarding the use of roll-faced curb and gutter in neighbourhood reconstruction.

Previous Council/Committee Action

At the January 23, 2013, City Council meeting, Councillor J. Batty made the following inquiry:

Would Administration please review and report back to Council why "roll-faced" curb and gutter construction techniques are being applied to reconstruction of mature neighbourhoods instead of applying the "straight-faced" curb and gutter standard that is currently in place, an example being the North Glenora neighbourhood:

When did the standard change from "straight-faced" curb and gutter to "roll-faced" curb and gutter?

Where has the "roll-faced" curb and gutter technique been applied versus

application of the "straight-faced" curb and gutter standard in mature neighbourhoods with the reconstruction program?

What is the technical rationale for the change?

Is the "roll-faced" curb and gutter technique being applied informally in the neighbourhood, and if not, why not?

What are the cost implications for "straight-faced" versus "roll-faced" curb and gutter application?

Assess the suitability of applying the "straight-faced" curb and gutter standard in mature neighbourhoods in order to protect treed boulevards.

Assess the suitability of applying the "straight-faced" curb and gutter standard in mature neighbourhoods in order to maintain the purposes of the Mature Neighbourhood Overlay, one key element being the discouragement of front access driveways.

The report to return to the appropriate Standing Committee.

Report

Roll face curb and gutter is a City of Edmonton design standard that has been used extensively in new and reconstructed neighbourhoods. The use of roll-faced curb and gutter within a neighbourhood is defined based on design constraints and existing conditions. Typically for reconstruction neighbourhoods, all local roads utilize a roll-face curb and gutter regardless of separated boulevard or curb line sidewalks.

The straight-face curb and gutter is used on collector roads, transit routes and adjacent to park/school sites. Straight-

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face curb and gutter provides better delineation for pedestrians from the road, and discourages vehicles from parking and/or turning over the curb. However, there are circumstances where roll-face curb and gutter can be used in these conditions

Using roll-face curb and gutter offers a number of advantages during neighbourhood reconstruction conditions. Implementation of active transportation opportunities are an important component with all neighbourhood reconstruction projects. The current design profile of roll-face curb and gutter is significantly less challenging to cross from a mobility perspective. The roll-face curb and gutter has a vertical elevation of 80mm as opposed to the 150mm of the straight-face curb and gutter.

The lower profile roll-face curb and gutter also offers significant benefits in terms of cost and schedule for reconstruction in mature areas. When rehabilitating the roads, two construction methods are typically used; full depth reclamation and reconstruction of the road base. Full depth reclamation mixes the existing road base with a foamed asphalt application to create a new base material which is then overlaid with new asphalt. Reconstruction of the road requires the existing material to be removed and replaced with imported material and overlaid with new asphalt. Existing road bases in mature neighbourhoods are typically insufficient and the roll-face curb and gutter profile allows the design to adjust the road elevation maximizing the ability to use full depth reclamation rather than reconstruct. Full depth reclamation is

significantly more cost effective as the existing base is recycled in place and there is no material imported.

The other concerns are associated with the time for reconstructing the road base versus full depth reclamation. For a comparable block length, full depth reclamation would take approximately two weeks with the residents provided the ability to drive on a surface in four days while the reconstruction process could take up to one month with a significant section inaccessible during reconstruction and open to additional delays based on weather.

Attachment 1 provides responses to specific questions raised related to the North Glenora Neighbourhood Reconstruction project.

Corporate Outcomes

Neighbourhood Renewal provides the opportunity for Edmonton to have sustainable infrastructure that fosters and supports civic and community needs.

Attachments

1. North Glenora Neighbourhood Reconstruction Responses

North Glenora Neighbourhood Reconstruction Responses

When did the standard change from "straight-faced" curb and gutter to "roll-faced" curb and gutter?

- As part of the Building Great Neighbourhoods Consultation the locations for roll-face curb and gutter replacing existing straight-face curb and gutter was presented to North Glenora residents at both public meetings in September 2012 and February 2013.

Where has the "roll-faced" curb and gutter technique been applied versus application of the "straight-faced" curb and gutter standard in mature neighbourhoods with the reconstruction program?

- In North Glenora straight-face curb and gutter is used on 135 Street (Collector Road), 109 Avenue (Collector Road, adjacent to school/park) and portions of 139 Street (adjacent to school/park).

What is the technical rationale for the change?

- Roll-face curb and gutter offers enhanced mobility access and significant cost and schedule savings associated with the reconstruction.

Is the "roll-faced" curb and gutter technique being applied informally in the neighbourhood, and if not, why not?

- As noted above the roll-face curb and gutter is applied on all local roads in North Glenora with the exception of those roads adjacent to the school/park.
- Straight-face curb and gutter is used to better delineate pedestrians from the road, reduce vehicles from parking and/or turning over roll-face curb and gutter and to allow low floor buses (pedestrians) easier accessibility.

What are the cost implications for "straight-faced" versus "roll-faced" curb and gutter application?

- Roll-face curb and gutter offer significant cost savings associated with road rehabilitation and construction efficiencies because of the continuous operation of roll-face curb and gutter operations. This does contribute to a reduced local improvement levy assessed to individual property owners.

Assess the suitability of applying the "straight-faced" curb and gutter standard in mature neighbourhoods in order to protect treed boulevards.

- With a higher vertical profile the straight-face curb and gutter does provide better protection to treed boulevards; however, the roll-face curb and gutter does provide an acceptable vertical delineation from the road and the boulevard.

Assess the suitability of applying the "straight-faced" curb and gutter standard in mature neighbourhoods in order to maintain the purposes of the Mature Neighbourhood Overlay, one key element being the discouragement of front access driveways.

- The Mature Neighbourhood Overlay identifies:
 - “There shall be no vehicular access from the front or flanking public roadway where an abutting Lane exists, and
 - a.) a Treed Landscaped Boulevard is present along the roadway adjacent to the property line; or
 - b.) the Site Width is less than 15.5 m.” The use of roll-face curb and gutter does not result in a relaxation of the above clause and therefore does not permit a deviation from the intention of the Mature Neighbourhood Overlay.