



COUNCIL REPORT  
Engineering / Public Works  
For the January 14, 2020 Council Meeting

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DATE: January 7, 2020  
TO: Paul Gipps, CAO  
FROM: Steven Gubbels, Design and Inspection Technologist  
RE: Glenrosa Road Improvements and Associated Projects Design Update

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**RECOMMENDED MOTION:**

**THAT** Council direct staff to complete the design of the Glenrosa Road Improvements as shown in the conceptual plans and present the plans to the public at an Open House.

**RATIONALE:**

Allnorth Consultants Limited have developed a road improvement design for Glenrosa Road that best suits the neighbourhood and achieves the key improvements of an arterial road section given the site constraints. The next step is to complete an Open House to retain feedback from the community and prepare a tender package for the improvements that incorporates public input.

**BACKGROUND:**

Council was presented the Glenrosa Road Improvements at the December 16, 2019 Council meeting. At that meeting Council supported the 2020 Capital Budget, which included the Glenrosa Road Improvements and several other improvement projects that are planned to be tendered as one large project. The projects include:

- Glenrosa Road Improvements;
- McIver Road Pedestrian Improvements;
- McTaggart Road Drainage Improvements;
- McIver and Gorman Watermain;
- Glenrosa Road Erosion Protection; and
- Glenrosa Sidewalk – Glen Abby to Webber.

At the December 16<sup>th</sup> meeting Council requested staff to provide further clarity on the need for sidewalks on both sides of Glenrosa Road and to provide more information on the proposed pedestrian improvements for McIver Road.

**Glenrosa Road Improvements – Glen Abbey to McGinnis**

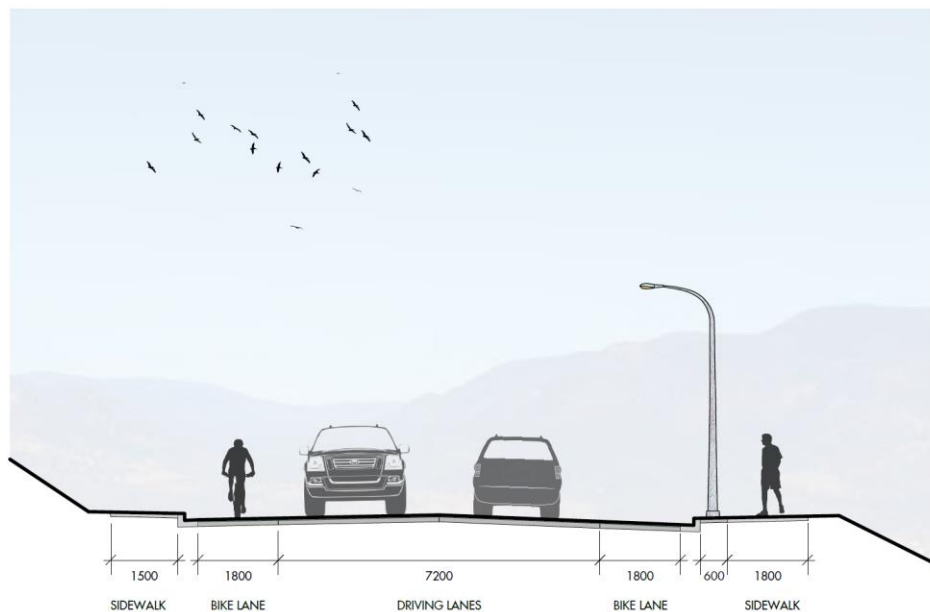
Allnorth Consultants Limited was awarded the contract for design of the Glenrosa Road improvements between Glen Abbey Place and McGinnis Road at the April 23, 2019 Council meeting. Using the City's Urban Arterial cross section as a starting point, Allnorth developed a design that provides an improved road section complete with pedestrian facilities, cycling facilities, and road safety improvements that includes the realignment of the Glenrosa McIver intersection.

Topography constraints in the corridor require retaining walls in several sections due to widening the corridor and grade changes. In an effort to reduce retaining, tie in existing steep accesses, and reduce project costs, a variable cross section is proposed. In addition, street lighting will be located on one side of the road to reduce boulevards throughout the corridor. Providing a design that best utilizes the corridor topography allows the roadway to include all key facilities of the arterial section while providing the required safety improvements of the road design. The landscape plans are provided in **Attachment 1 – Conceptual Landscape Drawings**.

Allnorth retained Watt Consulting Group to provide transportation engineering services, and to provide review and analysis of the traffic challenges for the project. Refer to **Attachment 2 - Glenrosa Road Improvements Transportation Review** for Watt's analysis. The section of Glenrosa Road within the project area currently has no pedestrian or cycling facilities. It is in an area with single-family development on both sides of the section, and the southern end of the project is in close proximity to Glenrosa Middle School. Improvements to arterial roads should consider the safety of all road users, including vulnerable road users such as pedestrians.

The Allnorth design includes sidewalk on both sides of Glenrosa Road, which provides a high level of mobility for pedestrians which is typical of the arterial cross section. In order to reduce costs and make better use of the constrained corridor, the proposed sidewalk on the east side was reduced to 1.8 metres from the 2.0 metres specified in the Works and Services Bylaw. On the west side, the proposed sidewalk has been further reduced to 1.5 metres (refer to left side of Figure 1 below).

Figure 1 – Glenrosa Road Cross Section



**SECTION B - B'**

FULL WIDTH LEFT-HAND SIDE & REDUCED WIDTH ON RIGHT-HAND SIDE ; 1.8m SIDEWALK, NO BOULEVARD  
SCALE 1:75

Providing the sidewalk on the west side will provide needed space for pedestrians who will still choose to walk on the west side of the roadway despite there being a sidewalk on the other side.

This will prevent pedestrians from obstructing the southbound bike lane. Sidewalk on both sides also supports connections between the west side transit stop and the adjacent neighbourhood on the west side of Glenrosa Road.

An important safety consideration for sidewalk on the west side is that it will limit midblock crossings of pedestrians coming from the developed areas accessed from Country Pines Gate and Ashley Court, providing a safe route for pedestrians to travel to a controlled crossing point at McIver Road. Overall, constructing sidewalk on both sides of Glenrosa will link the otherwise disconnected street networks on the west side of Glenrosa Road with illuminated sidewalk, meeting Crime Prevention through Environmental Design (CPTED) guidelines.

The Watt June 2019 report indicated that a 200m segment of sidewalk on the west side could be omitted between McIver Road and Morningstar Road only if needed. This section otherwise supports pedestrian connectivity through low volume local roads, although an illuminated west side sidewalk would be preferable from a safety standpoint.

### **McIver Road Pedestrian Improvements**

The 2020 Pedestrian Improvement program includes the design of sidewalks on Westlake Road from West Kelowna Road to Parkinson Road and the construction of sidewalk on McIver Road from Glenrosa Road to McTaggart Road. The two projects are the highest prioritized projects in the Updated Project Priority List that Council supported at the November 26, 2019 Council meeting. Previously, improvement projects have been completed as prioritized in the 10 Year Sidewalk Recommendations that were adopted by Council on January 24, 2017. The McIver Road pedestrian improvements were prioritized to be completed in 2020 on both priority lists. Allnorth Consultants Limited have advanced the design of the McIver pedestrian improvements in conjunction of the design of Glenrosa Road, Refer to **Attachment 3 – McIver Road Sidewalk Drawings**. As both projects were scheduled to be constructed in similar timeframes, the consultant was directed to complete the designs for one tender package that would limit the disturbance to the neighbourhood and to get the best possible pricing for the project.

The existing road is narrow with an approximate 7m paved width, no bike lanes, and minimal gravel shoulders. There are steep slopes on either side of the road with steep driveways, and an open ditch on the east side of the road. The topography has brought challenges to the design team of which side of the road to place the sidewalk, maintaining the steep accesses, and providing an underground drainage system that conveys storm drainage to McTaggart Road Drainage Improvements. Due to the site constraints, the 1.5m sidewalk will be on the east side of the road with a 0.30m curb and gutter, which is narrower than the typical 0.45m curb. Cyclists will share the road with vehicles and street lighting is included at the outside edge of the sidewalk.

### **McTaggart Road Drainage Improvements**

The underground stormwater system that is installed as part of the sidewalk project will convey storm water underground along McIver Road from Glenrosa Road to McTaggart Road. It will connect to the McTaggart Drainage Improvements that include a large diameter underground storm main that daylight to the existing open ditch network.

### **McIver and Gorman Watermain**

Also included in the project is the watermain replacement on Glenrosa Road from Glen Abbey Place to McIver and on McIver from Glenrosa to the walkway to Gorman Road. The main will replace approximately 300 metres of 200mm diameter Asbestos-Cement watermain with a 250mm diameter main. The Water Utility Master Plan recommends the replacement of this main as it does not provide adequate fire flow during maximum day demands and due to its age.

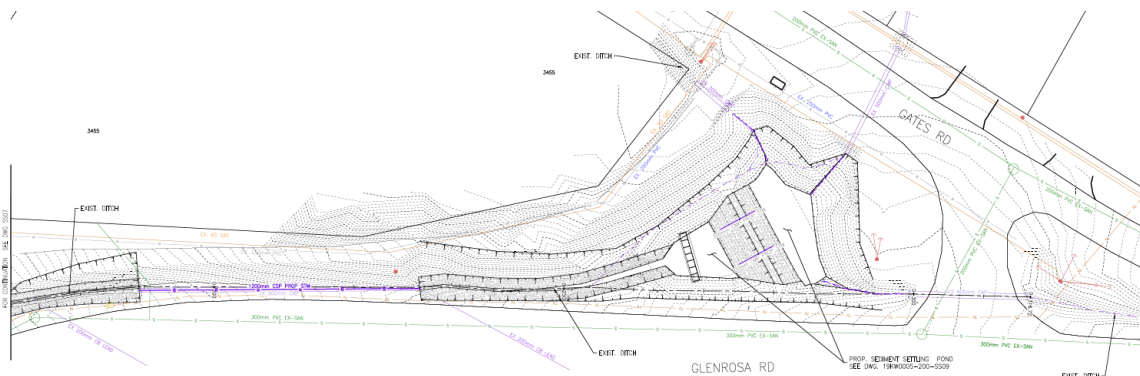
## Glenrosa Road Erosion Protection

The area of Glenrosa Road between Gates and Ranch Roads has historically had an issue with drainage where the ditch system has overflowed and required significant operational resources and funding to maintain the system on an emergency basis. If not corrected, the erosive conditions in the open channel sections will continue and could lead to instability and sediment deposition in downstream sections.

Figure 2 – Street View of existing Gates Drainage Collection Point



Figure 3 – Proposed Gates Drainage Design



Allnorth has proposed a design that will collect drainage from the existing ditch in a new settling pond. The settling pond will catch debris that collects in the ditch, and will dissipate the energy of the water and slow it down (refer to Figure 3). This will ensure that there is a controlled release of drainage through the system. In addition, the downstream ditches in the system will be improved and lined with rip rap to protect the channel against the effects of erosion. Undersized culverts will be replaced, and the freeboard at each inlet will be increased to improve the capacity of the culverts and to prevent drainage from backing up and overflowing the system.

### **Glenrosa Sidewalk – Glen Abby to Webber**

At the December 16<sup>th</sup> meeting Council directed staff to proceed with the design and construction of a sidewalk connection along Glenrosa Road between Glen Abbey Road and Webber Road. This sidewalk construction was outside of the original project scope of the Glenrosa Road Improvements project, but including this link will mean a complete sidewalk along the Glenrosa corridor for a total of 1.6 km between McGinnis Road and the Webber Road roundabout.

### **NEXT STEPS:**

City staff will continue to work with Allnorth to prepare a tender-ready design. Staff will work with Communications to schedule an open house to meet with Glenrosa residents and to get public input on the design. If any changes are required after public consultation the design will be updated and the intent would be to tender the project to keep it on schedule to have the works started in the spring. The target would be to complete the works in 2020.

### **COUNCIL REPORT/RESOLUTION HISTORY:**

Date	Report Topic/Resolution	Resolution No.
April 23, 2019	<b>THAT</b> Council authorize the Mayor and Corporate Officer to execute an agreement with Allnorth Consultants Limited for consulting services for the design of Glenrosa Road and McIver pedestrian Improvements in the amount of Two Hundred and Seventy Three Thousand, Six Hundred and Ninety Nine Dollars (\$273,699).	C176/19

### **FINANCIAL IMPLICATIONS:**

The projects that will be combined with the Glenrosa Road Improvements project were budget early approval items that were approved in December 2019. Please refer to Table 1 below for a summary of the approved budget items and the funding source for the components of this project.

*Table 1 – Glenrosa Road Improvements and Associated Projects Cost Summary*

<b>Works</b>	<b>Source</b>	<b>2019 Funding</b>	<b>2020 Funding</b>	<b>Total</b>
Glenrosa Rd Construction – McGinnis to Glen Abbey	Capital DCC Roads	\$ 200,000	\$ 2,299,404 \$ 4,200,596	\$ 6,700,000
2020 Pedestrian Improvements - McIver Road	Gas Tax	\$ 100,000	\$ 1,100,000	\$1,200,000
McTaggart Road Drainage Improvements	Capital	\$ 175,000	\$ 100,000	\$ 100,000
Water Main – McIver and Gorman	PC Water		\$ 250,000	\$ 250,000
Glenrosa Road Erosion Protection	Capital DCC Storm		\$ 187,500 \$ 62,500	\$ 250,000
Glenrosa Sidewalk – Glen Abbey to Webber	Gas Tax		\$ 600,000	\$ 600,000
	<b>Subtotal</b>	<b>\$ 475,000</b>	<b>\$ 8,800,000</b>	<b>\$ 9,275,000</b>

The City will also apply for additional funding through various grant applications. Examples include BC Active Transportation Grant, BC Hydro Re-Greening Program, ICBC Road Safety Improvement Program.

REVIEWED AND APPROVED BY:

Allen Fillion, Director of Engineering & PW  
Warren Everton, Director of Finance/CFO  
Tracey Batten, Deputy CAO/Corporate Officer  
Paul Gipps, CAO

Powerpoint: Yes ☒ No ☐

Attachments:

Attachment 1 – Conceptual Landscape Drawings  
Attachment 2 - Glenrosa Road Improvements Transportation Review  
Attachment 3 – McIver Road Sidewalk Drawings