

Transportation Report to  
Priorities and Finance Committee  
2020 May 05

ISC: UNRESTRICTED  
PFC2020-0510

## **Douglasdale McKenzie Lake Slope Stability Update**

### **EXECUTIVE SUMMARY**

This report provides an update on TT2015-0816 Douglasdale/ McKenzie Lake Slope Stability and pathway project, as requested by Council in an Administrative Inquiry from the 2019 November 18 Council Meeting.

The value of the work that has been done to date is \$21.6M and the estimated cost at completion is \$28M.

Slope stability and pathway work in the high priority zones is underway and is nearly complete. The two high priority zones are located along a section of regional pathway adjacent to Mt Alberta View (zone 7) and along a section of regional pathway north of 130 Avenue SE (zone 2). Extra work that was not anticipated was undertaken in both high priority zones due to slope movement and conditions.

As the work in the high priority zone is nearing completion (summer 2020), Administration recommends that confidential portions of the TT2015-0816 be released to the public.

#### **ADMINISTRATION RECOMMENDATION:**

That the Priorities and Finance Committee direct:

1. That Attachment 2 and Attachment 3, containing materials pertaining to TT2015-0816, Douglasdale McKenzie Slope Report, considered at the 2015 December 14 meeting of Council; remain confidential pursuant to Section 24 (1)(a) and (g) of the *Freedom of Information and Protection of Privacy Act*; and
2. That Council release Attachment 2 and Attachment 3 as a public document once Report PFC2020-0510 is adopted.

#### **RECOMMENDATION OF THE PRIORITIES AND FINANCE COMMITTEE, 2020 MAY 05:**

That Council adopt the Administration Recommendations contained in Report PFC2020-0510.

### **PREVIOUS COUNCIL DIRECTION / POLICY**

On 2019 November 18, Council approved a \$3M increase in funding and made the following Administrative Inquiry:

#### **ADMINISTRATIVE INQUIRY RE: Douglasdale – McKenzie Slopes Project Update**

In attachment 5a of our 2020 budget adjustment documents there is a line item representing a \$3M transfer to the Douglasdale/McKenzie Slopes project.

1. What is the value of the work that has been done to date and estimated cost at completion of the work?
2. Can Administration return to Council no later than Q1, 2020 to provide an in-camera update of the project authorized by Council in the Douglasdale McKenzie Slope Report

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(TT2015-0816) with consideration and recommendations as to what of the 2015 report or attachments can be made public immediately following the project update?

On 2015 December 14, Council adopted recommendations and approved funding for the purpose of slope stabilization and repair of The City's regional pathway system infrastructure. An excerpt from the minutes of the regular meeting of Council is included in Attachment 1.

### **BACKGROUND**

Since the flood of 2005, slope movements on the escarpment east of the Bow River adjacent to the communities of Douglasdale and McKenzie Lake have damaged The City's primary pathway along a 3.5 km section.

The City has worked with Golder Associates (Golder) and Tetra Tech EBA (Tetra Tech) to monitor, investigate and develop remediation options in accordance with the Slope Stability Management Framework. In 2015 August, Golder completed a report entitled *Feasibility Study Bow River Regional Pathway Douglasdale/ McKenzie Lake, Calgary AB, (Feasibility Study)*. The Feasibility Study presents recommendations and cost estimates for the long-term stabilization of sections of the slope and remediation of the pathway. The Feasibility Study presents conceptual designs and cost estimates and was attached to report TT2015-0816 which was presented in a Closed Meeting to Council on 2015 December 14. Council adopted recommendations and approved funding for the purpose of slope stabilization and repair of The City's regional pathway system infrastructure.

### **Project Update**

The Feasibility Study divided the pathway into nine (9) zones and categorized them into low, medium, and high priority. A map showing the zones is included in Attachment 4. The most damaged section of pathway was adjacent to Mt. Alberta View SE (zone 7) and was identified as a high priority zone in the feasibility study. Following heavy rains in July 2016, slope failure regressed further and encroached up on and beyond the pathway. The pathway was extensively damaged, and the pathway was closed for safety. Photographs of the site are included in Attachment 5.

Emergency response for slope monitoring and temporary remedial stabilization was initiated. Over 90 shoring piles and 340 micropiles were installed which mitigated regression of the slope failure, provided temporary ground stabilization and facilitated mobilization of construction equipment for the long-term scope of work.

Considering the nature of slope movements in this area (zone 7), the planning, engineering analyses, and construction for long-term stabilization for the entire subject site was undertaken at the earliest opportunity. In 2017 September, final executed agreements were obtained from the homeowners and in 2017 October all easements were registered. Construction for the long-term stabilization commenced in 2017 December. The slope stabilization and associated work consists of over 230 anchored piles, 200 micropiles, retaining wall, habitat restoration and pathway. The work is substantially complete, and the pathway was opened on 2019 September 17. Photographs of the site during and post construction are included in Attachment 6.

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The next high priority zone is the zone located north of 130 Avenue (zone 2). Designs for the slope stabilization were completed and the necessary Water Act Approval was received on 2019 February. Construction commenced in 2019 June.

During the course of construction at north of 130 Avenue SE (zone 2), areas with signs of soil movement/cracks and groundwater seepage were observed at the site. Considering the slope movements and groundwater seepage impacts, the design of the slope stabilization was upgraded. Construction is on-going, and the construction completion and reopening of the pathway is anticipated for summer 2020. Photographs of the site are included in Attachment 7.

As part of the ongoing slope monitoring program, all other zones of the pathway will continue to be monitored for slope movement as part of the ongoing slope monitoring program. Future work may be required to address other sections of the pathway if there is further regression of the slope and damage to the pathway.

### **INVESTIGATION: ALTERNATIVES AND ANALYSIS**

N/A

### **Stakeholder Engagement, Research and Communication**

Transportation Infrastructure has been in communication with property owners adjacent to high priority zones during detailed design and construction. Transportation Infrastructure held information sessions and delivered information notices to the residents of Mt Alberta View, Mt Douglas Close and Douglasdale Point. Information is also updated on the project website.

### **Strategic Alignment**

N/A

### **Social, Environmental, Economic (External)**

#### **Financial Capacity**

##### ***Current and Future Operating Budget:***

N/A

##### ***Current and Future Capital Budget:***

On 2019 November 18, Council approved a \$3M increase in funding to the project to complete the high priority work on the slope. The work in the high priority zones were impacted due to the changes in the slope conditions at both Mt. Alberta View (zone 7) and north of 130 Avenue SE (zone 2).

The estimated cost at completion for the stabilization and pathway work is \$28 million. The costs to date for the work completed is \$21.6 million.

Future budget may be required to address other sections of the pathway if there is further regression of the slope and damaged pathway. At this time, it is anticipated this would be funded through a hill slides program budget that is set aside to do this work. Small slope

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stabilization projects are undertaken with available funding and large projects are presented in front of Council for approval.

### **Risk Assessment**

N/A

#### **REASONS FOR RECOMMENDATIONS:**

1. Administration is providing an update on the slope stabilization and associated work for the high priority zones along a 3.5 km stretch of the regional pathway system east of the Bow River adjacent to the communities of Douglasdale and McKenzie Lake. Construction in the high priority zones is anticipated to be substantially complete in 2020.
2. As substantial completion for the high priority zones is nearing completion, Administration recommends releasing Confidential Attachments to execute release of confidential materials pertaining to TT2015-0816, Douglasdale McKenzie Slope Report, considered at the 2015 December 14 meeting of Council and detailed as follows:
  - a. Attachment 2 - TT2015-0816 Attachment 1 – Feasibility Study Bow River Regional Pathway Douglasdale McKenzie Lake, Calgary AB
  - b. Attachment 3 - TT2015-0816 Attachment 3 – Feasibility Study Boundary, Timeline of Closures and Slope Failures

#### **ATTACHMENT(S)**

Attachment 1 – Excerpt from the Minutes of Regular Meeting of Council Held 2015 December 14

Attachment 2 – TT2015-0816 Attachment 1 – Feasibility Study Bow River Regional Pathway Douglasdale McKenzie Lake, Calgary AB (Confidential)

Attachment 3 – TT2015-0816 Attachment 3 – Feasibility Study Boundary, Timeline of Closures and Slope Failures (Confidential)

Attachment 4 – Map of Regional Pathway Showing Zones and Priority

Attachment 5 – Photographs of Site – Mt Alberta View (Zone 7) 2016 Emergency Response

Attachment 6 – Photographs of Site – Mt Alberta View (Zone 7) Slope Stabilization Construction

Attachment 7 – Photographs of Site – North of 130 Avenue (Zone 2) Slope Stabilization Construction