



Calgary



Prepared for: City of Calgary - Water Resources

Confederation Park Regional Drainage Study

Final Report



**Associated
Engineering**

*GLOBAL PERSPECTIVE,
LOCAL FOCUS.*

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March 7, 2019



REPORT

Appendix B - Correspondence

October 9, 2018

Our file No.: 7414

Water Resources – The City of Calgary
P.O. Box 2100, Station M
Calgary, AB T2P 2M5

To who it may concern:

RE: HIGHLAND GOLD COURSE / CONFEDERATION CREEK

This letter serves to inform any interested party as to the current official status of Crown ownership of bed and shore of the watercourse, which runs through and underneath the former Highlands Park Golf Course, Confederation Park, in the City of Calgary, referred to as "Confederation Creek."

Our Water Boundaries Unit received an inquiry requesting an assessment of said watercourse in November/2017. The results of the November/2017 assessment indicated that the watercourse meets the criteria for Crown ownership under Section 3 of the Public Lands Act. The parties who requested our assessment were subsequently notified of our determination.

Upon further investigation, while preparing a response to a follow-up email, it was discovered that a previous Water Boundary file dated April/2005 had examined Confederation Creek for a Licence of Occupation application. Due to the observed alterations in the watercourse since the early 1960's, resulting in some portions of the watercourse being heavily ditched or re-directed underground in concrete storm pipes, the permanence of the bed and shore was deemed inconclusive and therefore the decision in 2005 was not to claim Crown ownership of the watercourse's bed and shore.

The Water Boundary Unit always attempts to maintain consistency in our determinations and as such, our current position is that our most recent assessment dated November/2017 is nullified by the prior April/2005 decision regarding claimability of the bed and shore of Confederation Creek under Section 3 of the Public Lands Act.

Yours truly,



David McKenna
Director Provincial Wetlands and Remediation Section
Provincial Program Branch
Operations Division, Environment and Parks



MEETING SUMMARY

Meeting: Confederation Park Regional Drainage Study - AEP Meeting

Attendees: Brad Larson (City of Calgary, CoC), Pablo Lopez Hernandez (CoC), Andrew Rushworth (Associated Engineering, AE), Nadeer Lalji (AE), Javid Iqbal (Alberta Environment & Parks, AEP), Lewis Chung (AEP), Muhammad Riaz (AEP)

Regrets:

Minutes: Andrew Rushworth – AE

Location: 9820 106 St NW, Edmonton, AB T5K 2J6

Date: October 11, 2018

Time: 1:00pm–3:00pm

Item	Discussion	Action(s) By	Required Date
Standing Items			
1.	<p>Introductions and Background</p> <ul style="list-style-type: none"> ▪ JI provided safety orientation ▪ PL discussed the project’s study area including: overall drainage patterns; the three roadway embankments and the discharge location on Nose Creek. ▪ AR discussed how Confederation Creek conveys runoff through Confederation Park and the Lower Confederation Trunk conveys runoff via the minor system to Nose Creek. The Confederation Valley conveys major system runoff when the capacity of the Lower Confederation Trunk is exceeded. ▪ PL stated that the meeting objective was to understand the potential for classifying existing and potential future structures as dams and what those classifications may be. 		
2.	<p>Dam Safety Presentation</p> <ul style="list-style-type: none"> ▪ AR discussed the three regional issues within the study area <ul style="list-style-type: none"> ▪ Nose Creek’s Capability to Receive Additional Flow ▪ Increased Rainfall and Runoff Due to Climate Change ▪ Flooding within the Watershed 		

MEETING SUMMARY

<p>3.</p>	<p>Dam Safety Presentation Continued</p> <ul style="list-style-type: none"> ▪ AR discussed the four options presented within the Draft Confederation Park Regional Drainage Study. He explained how all the options do not address the regional issues and the magnitude of storage required for the west and east storage locations. <ul style="list-style-type: none"> ▪ Option 1 – No Improvements ▪ Option 2 – West Storage & Increased Flow to Nose Creek ▪ Option 3 – West Storage & Diversion to Bow River ▪ Option 4 – West Storage & East Storage ▪ JI asked for details on how runoff would be stored upstream of the three roadway embankments. <ul style="list-style-type: none"> ▪ AR indicated that the pedestrian walkways would be closed with a gate and that the culverts would be constricted. ▪ JI asked if AE had considered the impacts of a dam failure at 14 Street NW. AR explained that AE conducted a dam breach analysis. <ul style="list-style-type: none"> ▪ MR asked which model was used. AR explained that the model was a coupled Mike 21, Mike 11, Mike Urban, Mike Flood model. ▪ JI & MR noted that, in general, the analysis seemed to meet expectations. ▪ JI noted that the standards and modelling procedures are not prescribed by AEP. ▪ JI asked what failure scenarios AE evaluated. ▪ AR explained that AE considered failure during the Probable Maximum Precipitation, PMP, rainfall event. 14 Street NW was failed when the upstream depth was at a maximum. 10 Street NW was failed when the resultant wave arrived. Similarly, Centre Street N was failed when the resultant wave arrived. ▪ AR explained that AE conducted a loss of life analysis using the results of the dam breach analysis. The loss of life analysis was conducted using the, United States Bureau of Reclamation, USBR, methods. <ul style="list-style-type: none"> ▪ JI noted that most people use the Canadian Dam Association, CDA, methodology but AEP did not prescribe standards. ▪ JI asked what scenarios AE considered for the loss of life analysis. ▪ AR explained that AE analyzed a scenario for: warning, no warning, daytime Population at Risk, PAR, and nighttime PAR. ▪ JI noted that a sunny day failure scenario could be more critical because there would be no warning for the downstream PAR. ▪ AR explained that, although AE did not undertake a sunny day failure scenario, AE and The City believed that the no warning scenario was most likely due to the PAR's proximity to the dams and the urban nature of the study area. 		
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MEETING SUMMARY

Item	Discussion	Action(s) By	Required Date
New Business			
4.	<p>Dam Safety Presentation Continued</p> <ul style="list-style-type: none"> ▪ AR explained how the dam breach analysis and loss of life analysis has led AE to believe that the proposed dams would be classified as “very high”. ▪ JI noted that the economic losses were significant enough that the high classification would not be applicable. ▪ JI noted that qualitative assessment of the economic and environmental losses would be sufficient for an application. ▪ JI indicated that, in general, AE’s analysis completed to date would support an application. ▪ JI noted that the duration of storage is irrelevant, and that the intent of storage defines whether the structure is classified as a dam. Therefore, the existing 14th St NW, 10th St NW and Centre St N would likely not be considered regulated dams. ▪ JI noted that future legislation will not include the depth and volume criteria that are referenced within current legislation. ▪ JI noted that proposed dams would have to meet dam requirements including: <ul style="list-style-type: none"> ▪ Safe conveyance of the dam design event over the dam and not necessarily through culvert structures. ▪ Safe storage and safe conveyance of the design storm to a downstream waterbody. ▪ JI noted that future questions can go to JI or LC. 		

Please advise Brad Larson of errors in these meeting notes. Thank you.