

WOOD BUFFALO RECOVERY COMMITTEE REPORT

Meeting Date: May 17, 2017

Subject: 2017 Capital Budget Amendment - Waterways Slope Stability**APPROVALS:**Erin O'Neill, Operations Manager
Dana Woodworth, Team Leader**Recommendations:**

THAT it be recommended to Council:

1. THAT the Municipality proceed with acquisition, at pre-fire value, and mitigation of the following properties identified in the Waterways Slope Stability Assessment Report dated March 10, 2017:
 - All 15 properties located within Zone 3A;
 - One privately held lot in Zone 4 (being 7119 Cliff Avenue); and
 - Five selected properties within Zone 3 (being 7308, 7310 and 7312 High Avenue; 7211 and 7213 Cliff Avenue); and
2. THAT the 2017 Capital Budget be amended as outlined in Attachment 3 (Capital Budget Amendment – Waterways Slope Stability Land Acquisition and Regrading, dated May 11, 2017) be approved.

Summary:

The Waterways Area Slope Stability Assessment report determined the relative stability of the slope after the May 2016 wildfire and provided guidelines and constraints to redevelopment within the study area. The report indicates that rebuilding in Zone 3A presents a high risk and thus proposes that these properties be acquired to mitigate slope stability concerns. While Zone 3 includes some existing mitigation measures; five lots within this area remain unprotected from a geotechnical perspective; as such it is recommended that these specific properties also be acquired by the Municipality. The report further indicates that no development should occur in Zone 4 as such the one privately held lot within this zone should also be acquired by the Municipality. Acquisition of the 21 properties is recommended using a pre-disaster valuation as the existing policy for land acquisition, ADM-250, does not contemplate a sudden drop in value due to a disaster.

Background:

On September 27, 2016 Council directed Administration to complete an overall geotechnical assessment for the Waterways area. The Recovery Task Force awarded the work to Thurber Engineering with a scope to determine the relative stability of the slope after the May 2016 Wildfire and assess the potential of a slope failure that would impact public and private properties. In addition, the assessment was intended to provide general guidelines for the

redevelopment of the Waterways area and identify any constraints to redevelopment within the study area.

Between November 2016 and January 2017, Thurber Engineering monitored the slope and submitted the Waterways Area Slope Stability Assessment to the Municipality in February 2017. Based on their analysis, Thurber divided the survey area into 5 zones (Attachment 1) and provided engineering analysis for each zone.

Zones 1, 2 and 2A

Property owners in Zone 1 were advised that rebuilding can proceed immediately, following the Municipality's standard guidelines from a geotechnical perspective.

Property owners in Zone 2 were advised that rebuilding can proceed following the submission of a lot level geotechnical report to determine appropriate setbacks from the edge of the slope.

Zone 2A was identified as not suitable for development; however no development existed in this area prior to the fire.

Zone 3A

Property owners in Zone 3A were informed that there exists a high risk of ground movement that could affect development in this zone and as well as adjacent properties, if adequate stabilization measures are not implemented.

As such, the report proposes three mitigation options for Zone 3A (Attachment 2):

1. Warn and Restrict. Property owners were warned of the associated risks of rebuilding in this area and would be responsible for their own lot-level mitigation.
2. Community-level structural mitigation. The Municipality would perform a geotechnical investigation specific to this area and construct a series of retaining walls to mitigate the risk.
3. Acquire, restrict for development and mitigate. The Municipality would acquire these lots, rezone to restrict from development and recontour the slope to mitigate stability risks.

Zone 3A contains 18 lots (8 that had houses prior to the fire, 6 vacant lots, 3 municipally owned lots, and 1 standing home). The Recovery Task Force discussed the options with all 15 property owners, some of who were delegates at the Wood Buffalo Recovery Committee meeting on March 8, 2017. The Zone 3A residents told the Committee that they preferred the acquisition option due to the risk associated with relying on their own mitigation efforts or the cost associated with structural mitigation for such a small number of lots. Residents also expressed the desire to have their properties acquired as this would reduce slope concerns for their neighbours located in the adjacent zones.

A site specific geotechnical report for Zone 3A will be required if a decision to acquire the lots is made. This would determine the specific mitigation efforts required to protect this area from

slope failure. It is expected that the recommendation would include re-contouring the slope to ensure that water does not pool, installing erosion matting, and seeding the area.

Zone 3

Property owners in Zone 3 were advised of risks to building in this area due to slope movements and that careful planning, construction and maintenance would be required.

Through ongoing public engagement, residents from Zone 3 indicated that they do not believe they are well positioned to make an informed decision about their rebuild until certainty is provided with respect to Zones 3A and 4, and a clear understanding of the interdependency between all the zones is provided.

In order to address these concerns, the Recovery Task Force met with Thurber Engineering and representatives from Engineering, Planning & Development, and Communications & Stakeholder Relations on March 17, 2017. The information from this meeting was subsequently presented by Thurber in a public technical briefing to the Wood Buffalo Recovery Committee on April 19, 2017. The presentation provided a better understanding of the interdependency between zones and answered many questions that were raised in the public engagement process. In summary, an interdependency between zones exists. Activities upslope of a property (such as weighting the slope or removing vegetation) have a direct impact on the property; likewise, activities downslope (such as excavation) increase the risk of slope failure. That being said, the acquisition of properties and mitigation of Zone 3A would reduce the risks to property owners within other zones, such as Zone 3.

Zone 3 consists of 19 lots (all privately owned with no standing homes). Of these, 6 are stabilized by the existing Cliff Avenue retaining wall (shown in green on Figure 1), and 8 other lots abut Zone 2 which decreases their risk due to the Zone 2 soil structure.

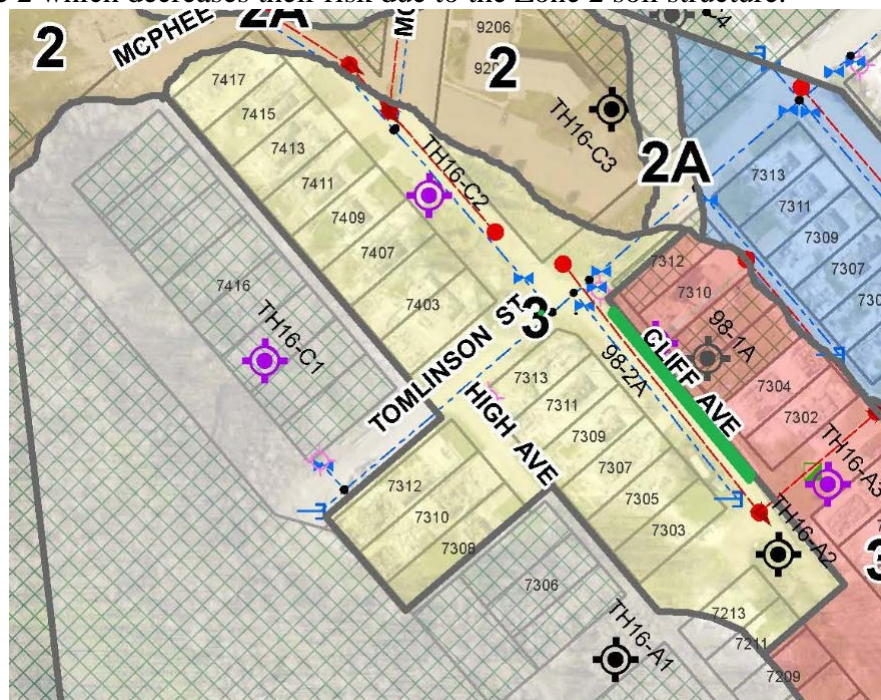


Figure 1: Zone 3

Of the remaining 5 lots within this Zone; 3 properties along High Avenue (7308, 7310 and 7312 High Avenue) and 2 properties along Cliff Avenue (7211 and 7213 Cliff Avenue) are less protected. Thurber Engineering indicated that the acquisition and mitigation of these specific properties will further reduce the overall slope risk. As such it is recommended that lots 7308, 7310 and 7312 of High Avenue, and lots 7211 and 7213 of Cliff Avenue be acquired.

If the decision is made to acquire the properties above, they should be included in the geotechnical report required for Zone 3A to determine the best mitigation solution.

Zone 4

Zone 4 was identified as not suitable for development. While this area has never been developed, there is one privately held lot (7119 Cliff Avenue) which is proposed for acquisition and all other lands are owned by the Municipality. The report indicates that there should be no clearing of trees in this area and re-vegetation of the area should be promoted to improve the floor cover. However, based on FireSmart principles, fallen trees present a fire risk due to the amount of fuel in this area. As such, the geotechnical report, for the mitigation of Zone 3A and the portions proposed to be acquired in Zone 3, will be extended to Zone 4 to determine the best approach to reduce the fuel in the area and protect the slope.

Letter to the Insurance Bureau of Canada (IBC)

Most insurance policies include a ‘build in place’ requirement. Initial discussions with IBC indicate that the insurers are willing to waive this requirement if the Municipality decides to acquire these properties. On March 23, 2017 the Recovery Task Force sent a letter to the Insurance Bureau of Canada. IBC advised that they are prepared to facilitate discussions with insurers with respect to all aspects of the re-building process including surveying insurers to determine their respective individual positions with respect to same site policy term waivers in Waterways. Given the recommendation to acquire the 21 properties specified above (15 in Zone 3A, 5 in Zone 3 and 1 in Zone 4), the Recovery Task Force will follow up with IBC to request that the ‘build in place’ requirement be waived for these residents.

Alternatives:

Zone 3A

The two alternatives identified for property owners in Zone 3A are: to warn and restrict development, making residents responsible for their own lot-level mitigation, or provide community-level structural mitigation in the form of an engineered retaining wall. Neither of these options are recommended due to the significant cost a resident would incur to achieve lot level mitigation coupled with the significant cost to the Municipality to construct a retaining wall. Furthermore, the alternatives do not assist in protecting the remaining zones and present a potential risk to the Municipality in the future if slope failure occurs.

Should redevelopment of Zone 3A occur, infrastructure and lane upgrades to Lower Cliff Alley are required. To facilitate two-way traffic along Lower Cliff Alley, potential acquisition of 1 to 2

metres of land from each property owner would be required, thus reducing their building footprint. A study of the Lower Cliff Alley would be required to determine the type of infrastructure upgrades and the amount of land required to facilitate the upgrades to Lower Cliff Alley.

Zone 3

The alternative for Zone 3 is that the 5 property owners proceed with their rebuild subject to their lot level geotechnical reports; however those individuals will likely experience much higher rebuild costs than the adjacent properties in Zone 3, given there is no existing mitigation in place for those 5 lots.

Zone 4

The one privately held lot in Zone 4 has never been developed and while it could remain vacant and privately held, all of the other land surrounding this lot would be owned and controlled by the Municipality thus protecting the area from slope stability concerns.

Budget/Financial Implications:

The Recovery Task Force has contracted a third party independent appraiser to conduct lot specific appraisals for all lots in Zone 3A and Zone 3. The appraisal provides both pre-fire values for the land and current market values for the land, and in the case of the standing home it provides the appraised value of the home and the land.

While the existing Land Acquisition Policy ADM-250 states that land is acquired at market value, the policy does not contemplate a scenario where there is a sudden and immediate change in land value due to a natural disaster. As such, the Recovery Task Force recommends that all property owners be compensated at the pre-fire value of the land or pre-fire value of the home and land in the case of the standing home. The pre-fire acquisition price for the 21 properties is not expected to exceed \$5 million where the approximate difference between the pre-fire value and the current market value is approximately \$1.5 million.

In the case where residents are willing to sell their property to the Municipality, a normal purchase process would be followed. However, if residents are unwilling to sell the property or disagree with the appraisal value, the Municipality would proceed with expropriation of these properties as directed in ADM-250. Under the *Expropriation Act*, the Municipality is responsible for all costs to the land owner and compensation is determined based on an appraisal and ultimate review by the Land Compensation Board. As such, the true value of the acquisition cannot be determined until the potential expropriation process is complete.

The geotechnical report required to determine mitigation options for Zone 3A, the portion of Zone 3 that is proposed to be acquired and Zone 4 is estimated to be \$25,000. The cost of demolishing the standing home and recontouring the slope to mitigate the area should not exceed \$1.5 million. Thus the total acquisition and mitigation cost is estimated to be \$6,525,000.

Disaster Recovery Program (DRP)

The Recovery Task Force has been in discussions with the Government of Alberta regarding DRP eligibility or compensation under a separate provision of the Emergency Management Act. In its simplest form, rebuilding would not be occurring in this area had the May 2016 Wildfire not occurred. As such, the need to address the slope stability and the potential acquisition of affected properties is a direct cause of the fire. The Recovery Task Force has submitted a formal letter to the Alberta Emergency Management Agency requesting funding of any associated acquisition and mitigation costs.

Rationale for Recommendations:

The Waterways Area Slope Stability Assessment indicates that development within Zone 3A, a portion of Zone 3 and Zone 4 presents a risk from a geotechnical perspective. The cost to individual property owners or a community level structural mitigation is not reasonable nor will it mitigate the risk to the larger Waterways community. As such, the Recovery Task Force recommends that the 21 properties be acquired by the Municipality.

Strategic Plan Linkages:

Pillar 4 – Building an Effective Land Strategy

Campaign Plan Linkages:

Rebuild Pillar – Understand and address the full extent of wildfire damage across the RMWB
Mitigate Pillar – Consider transformative opportunities through land use planning that better positions the RMWB from both public safety and future growth perspectives

Attachments:

1. Waterways Slope Stability Map
2. Summary of the Options
3. Capital Budget Amendment Worksheet

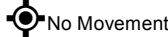


Waterways Report

Proposed Land Acquisitions

Legend

Test Hole (Inclinometer)



Creep Movement



Sanitary Sewer

Active, Sanitary Sewer Pipe

Abandoned, Sanitary Sewer Pipe

Sanitary Manholes

Active, Manhole

Storm Sewer

Active, Catch Basin Lead

Active, Storm Sewer Pipe

Storm Appurtenance

CB Manhole

Catch Basin

Manhole

Outfall

Water Mains

Abandoned

Active

Zone

1-Alluvial Flood Plain

2-Alluvial Terrace

2A-Slide Slope of Alluvial Terrace

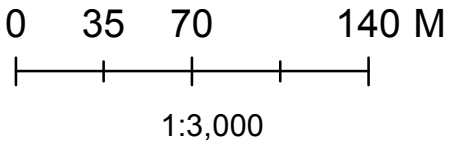
3-Previously Developed Colluvium Slope

3A-Previously Developed Colluvium Slope

4-Colluvium Slope and Uplands

Proposed for Acquisition

Municipal Land



THE DATA CONTAINED ON THIS
DRAWING IS NOT TO BE MODIFIED
OR USED FOR RESALE.

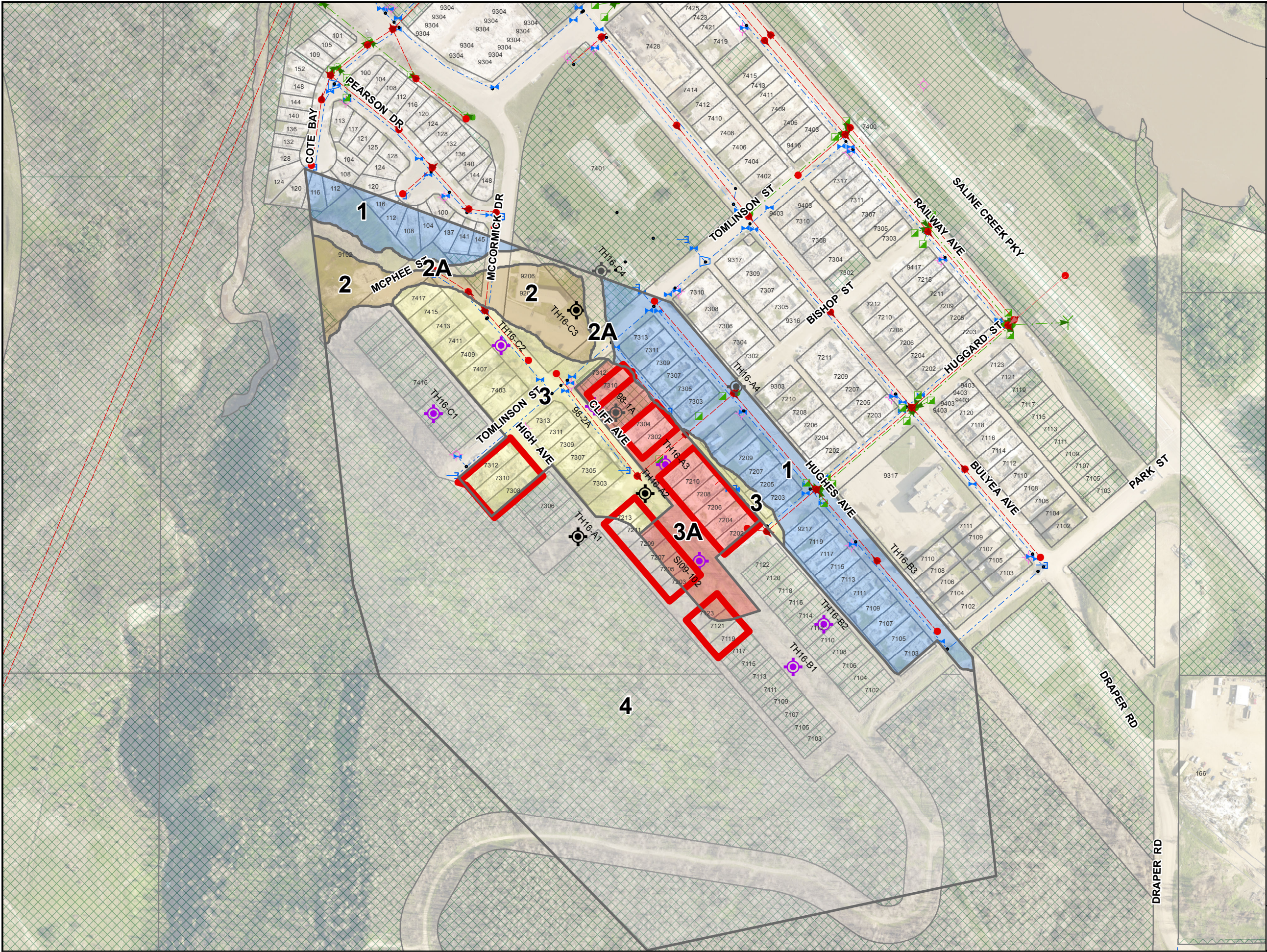
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SHOULD NOT BE RELIED UPON AND
SHOULD BE VERIFIED ON SITE.

THE MUNICIPALITY OF WOOD BUFFALO
WILL NOT BE HELD RESPONSIBLE FOR
ANY ERRORS OR OMISSIONS.

Map updated by the Geographic
Information Systems Branch
on 5/11/2017

DRAWING NO
ENG0212



	Impact to Rebuild Timeline	Cost to Municipality	Cost to Resident	Effect on Slope Stability	Insurance Risk
Option 1: Warn and restrict	Subject to individual lot geotechnical study, rebuild can proceed as soon as possible	No immediate cost Risk: Potential future liability if any slope failure occurred	Lot level geotechnical + cost of piled foundation walls	Lot by Lot basis. Does not provide any improvement of the slope stability for other zones	Residents may not be covered for additional costs as coverage is typically based on the date of loss rather than date of rebuild
Option 2: Structural mitigation – series of retaining walls	Potential year delay of rebuild – comprehensive geotechnical study followed by construction of structural mitigation	Comprehensive Pre-design study \$30,000 to \$40,000 Detailed Design \$40,000 to \$100,000 Construction cost \$8 to \$16 million (which will be confirmed by the study) Total: \$8.07 million to \$16.14 million + ongoing operating costs	Additional Living Expenses due to the timing associated with construction of the structural mitigation	Only protects affected lots within Zone 3A. Does not provide any improvement of slope stability for other zones	Formal letter to Insurance Industry requesting waiver on two year rebuild requirement
Option 3: Acquire and mitigate	Rebuild would not occur in this area providing immediate certainty to the resident	Acquisition Cost: not expected to exceed \$5 million Geotechnical Cost: \$25,000 Demolition/Regrading Cost: \$1.5 million Total: not expected to exceed \$6.5 million	Resident may incur cost based on relocating	Regrading and embankment construction likely improves slope stability for Zones 1 and 3	Formal letter to Insurance Industry requesting waiver on build in place requirement



CAPITAL BUDGET AMENDMENT

Council

CURRENT PROJECT NAME: Waterways Slope Stability Land Acquisition and Regrading

AMENDED PROJECT NAME:

Group I/O

Revenue I/O

Expense I/O

New Project

ORDER CODES (if assigned):

CURRENT PROJECT BUDGET

Year	Annual Cost	Fed Grants	Prov Grants	Reserves	Other Sources	Debtenture Financed
2016 & Prior	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2017	-	-	-	-	-	-
2018	-	-	-	-	-	-
2019	-	-	-	-	-	-
Thereafter	-	-	-	-	-	-
TOTAL	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

CURRENT COST AND COMMITMENT

As at	Current Budget	Actual to Date	Commitments	Available
	\$ -	\$ -	\$ -	\$ -

DESCRIPTION/RATIONALE FOR BUDGET AMENDMENT

The Waterways Area Slope Stability Assessment report determined that rebuilding within a portion of Waterways presents a geotechnical risk. To mitigate the risk, community level structural mitigation could be constructed, but would impose costs to individual property owners and would not mitigate the risk to the larger Waterways community. As such, the Recovery Task Force recommends that 21 properties be acquired by the Municipality. Following the acquisition, a site specific geotechnical report will be required to determine mitigation in this area to protect it from future slope failure. Those resulting mitigation efforts are also included as part of this project.

AMENDED PROJECT BUDGET

Year	Annual Cost	Fed Grants	Prov Grants	Reserves	Other Sources	Debtenture Financed
2016 & prior	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2017	6,252,000	-	-	6,525,000	-	-
2018	-	-	-	-	-	-
2019	-	-	-	-	-	-
Thereafter	-	-	-	-	-	-
TOTAL	\$ 6,252,000	\$ -	\$ -	\$ 6,525,000	\$ -	\$ -

Budget Change

TOTAL	\$ 6,525,000	\$ -	\$ -	\$ 6,525,000	\$ -	\$ -
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FISCAL RESPONSIBILITY POLICY CRITERIA:

Will the change result in an efficient administrative and project delivery process?

n/a

Will the change result in an addition or cancellation of a capital project?

Yes

Will the underlying scope change alter the nature and type of capital project?

n/a

Where additional funding is required, are the funds from a combination of savings from fully tendered projects, other uncommitted sources such as grants and offsite levies, and cash flow management with other capital projects?

Yes

Will the change result in Council set debt and debt service limits being exceeded?

No