Memo

To: Steve Burke, Town of Halton Hills

From: Abhijeet Patel/Aaron Farrell, Wood

Date: January 10, 2019

File: TPB188001

cc: Steve Grace, Town of Halton Hills
Dirk Janas, Palmer Environmental Consulting Group Inc.

Re: **Review of Watercourse Constraint Ranking for Watercourse Reaches 'C-1' and 'C-2', Vision Georgetown Secondary Plan Area, Town of Halton Hills**

1. INTRODUCTION

As requested (ref. e-mail correspondence Burke-Farrell, July 24, 2018), Wood has completed a review of the constraint ranking established in the Vision Georgetown Subwatershed Study (AECOM, May 2017) for Watercourse Reaches 'C1' and 'C2', located toward the terminus of Tributary 'C', specifically to confirm whether the "Low" constraint ranking for the Water Resources Criteria (i.e. "Flooding/Conveyance") of the feature. The following has been prepared to summarize the findings based upon our review of the information provided in the May 2017 Subwatershed Study and to provide Wood's professional opinion in this regard, based upon our prior experience on similar studies in Conservation Halton's jurisdiction.

2. BACKGROUND

The subject watercourse reaches 'C1' and 'C2' are located toward the terminus of Tributary 'C', and immediately upstream of Eighth Line. Tributary 'C' is the second tributary in the study area that is within the Sixteen Mile Creek watershed, conveying flows across Eighth Line. It confluences with Tributary 'A' approximately 500m downstream of Eighth Line and then crosses Side Road 10. As part of the May 2017 Subwatershed Study, Tributary 'C' has been subdivided into six (6) stream reaches for the watercourse constraint ranking (ref. Figure 5.9.1 attached).

The information provided within the May 2017 Subwatershed Study indicates that the constraint rankings associated with the flooding and conveyance characteristics of the watercourse reaches have generally been based upon contributing drainage area to determine whether or not the feature would be regulated by Conservation Halton based upon flooding hazard. This approach is noted to be consistent with conventional practice applied by Wood in other settings within

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Conservation Halton's jurisdiction. Drainage features with contributing drainage areas greater than 50 ha would generally be regulated by Conservation Halton based upon flooding hazard and thus be classified as "Medium" or "High", and drainage features with contributing drainage areas less than 50 ha, would generally not be regulated by Conservation Halton and would thus be classified as a "Low" constraint.

The information provided within the May 2017 Subwatershed Study indicates that the contributing drainage area to reach 'C1' measures 70.6 ha at the downstream limit at Eighth Line. A review of the contour mapping provided within the Subwatershed Study indicates that the size of the contributing drainage area is due to the confluence of the downstream limit of the watercourse with roadside ditches west of Eight Line. Immediately upstream of this confluence, the contributing drainage area would be reduced to 56.1 ha at the upstream limit of watercourse reach 'C1'.

The contributing drainage area to the upstream limit of reach 'C2' is 40.7 ha as specified in the May 2017 Subwatershed Study. The contributing drainage area to the upstream limit of reach 'C2' is noted to be less than the 50 ha limit generally applied as the threshold between "Low" and "Medium" constraint watercourses.

Additional information provided within the Subwatershed Study indicates that the subject watercourse reaches are located within a grassed area adjacent to an existing residence and that the vegetation is subject to frequent maintenance (i.e. mowing) (ref. AECOM May 2017, Appendix I).

3. DISCUSSION AND CONCLUSION

The information provided within the May 2017 Subwatershed Study indicates that contributing drainage areas to watercourse reaches 'C1' and 'C2' would be at or near the 50 ha threshold generally applied by Conservation Halton to establish regulated features based upon flooding hazard. As such, based upon the criteria presented in the Subwatershed Study and conventional practice, the contributing drainage areas to the watercourse features would be sufficient to classify watercourse reaches 'C1' and 'C2' as "Medium" constraint for flooding and conveyance criteria.

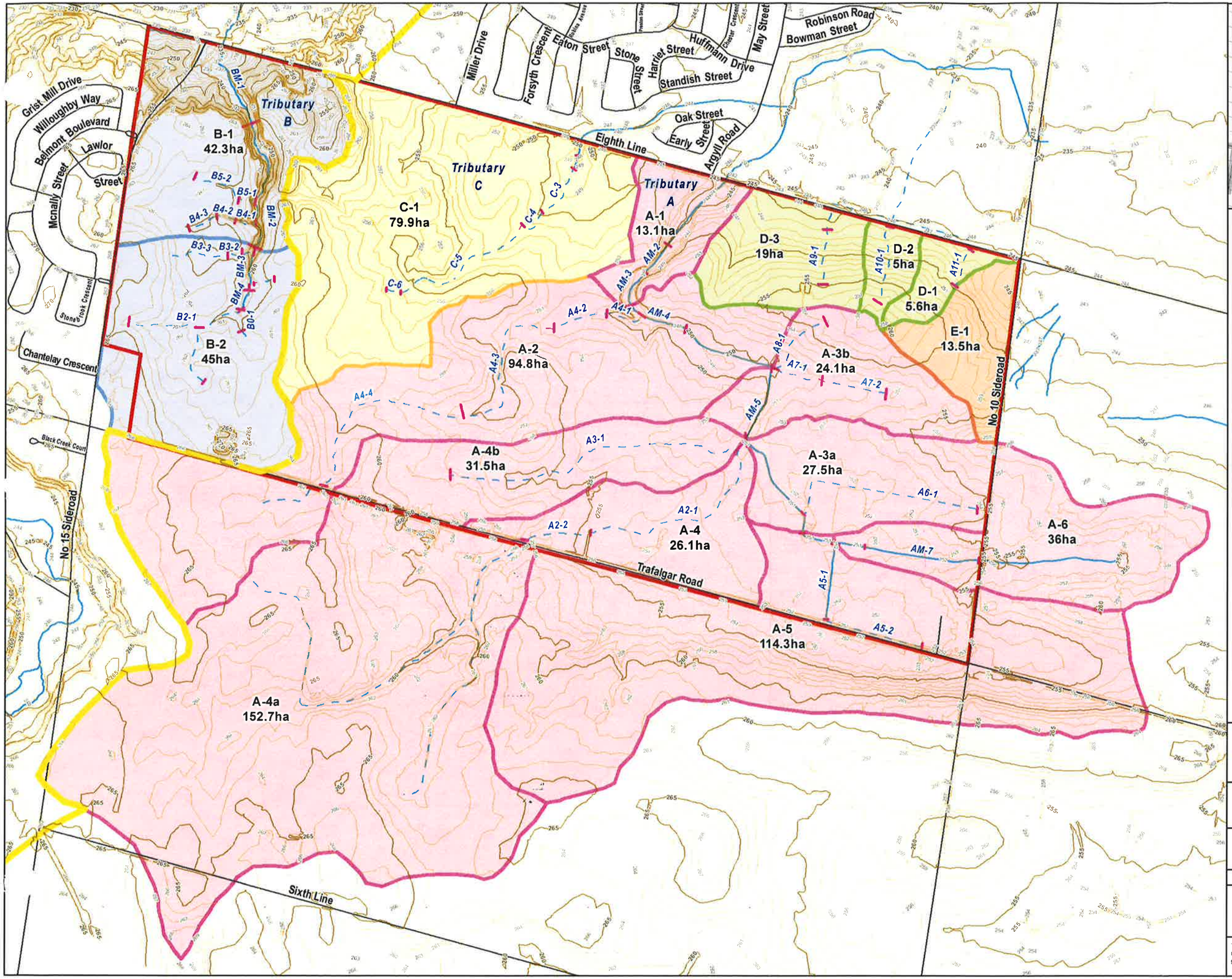
However, recognizing that the features are located within a lawn that is frequently maintained (ref. AECOM 2017, Appendix I), watercourse reaches 'C1' and 'C2' are considered to be subject to frequent disturbance as part of the routine lawn maintenance by the property owner. Furthermore, the 100m total reach length of watercourse reaches 'C1' and 'C2' are noted to be relatively small and further represent a low portion of Tributary 'C' which has been classified as a "Low" constraint watercourse, hence is considered to provide limited benefit to the flooding and conveyance system of the Vision Georgetown Area and the contributing drainage areas to the reach. In this regard, it is noteworthy that a similar situation was identified during the watercourse

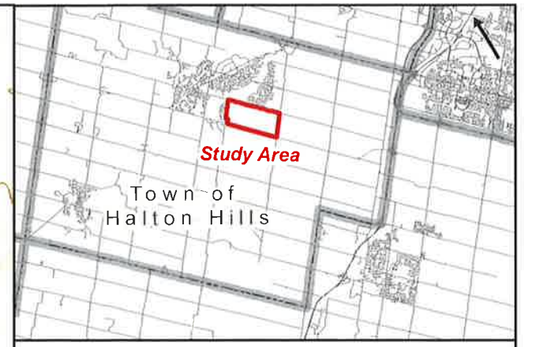
constraint ranking completed for the Boyne Survey Area in the Town of Milton as part of the Sixteen Mile Creek Subwatershed Update Study (ref. Amec et. al., November 2015). In that instance, it was ultimately agreed that a "Low" constraint ranking was appropriate for the full length of the subject watercourse (ref. Boyne Survey Area watercourse SE-2-D-1) upstream of Britannia Road and was applied accordingly.

Given the relatively small drainage area to the watercourse reaches, the frequent disruption of the feature due to lawn maintenance of the property, and the limited benefit derived from protecting the reach as an open feature for flooding and conveyance, we concur with the "Low" constraint ranking for the surface water component of watercourse reaches 'C1' and 'C2', as advanced in the May 2017 Subwatershed Study for the Vision Georgetown Area.

We trust that the foregoing satisfies your current requirements in this regard. Feel free to contact our office should you have any questions or require anything further.

AF/AP/ap/af





Legend

General Features

- Identified Reaches
- Reach Breaks
- Conservation Authority Boundary*
- Major Contours
- Roads
- Study Area
- Road

Drainage Catchments

- Tributary A
- Tributary B
- Tributary C
- Tributary D
- Tributary E

N

Notes
*Division between Credit Valley Conservation and Conservation Halton Jurisdiction

Topographic information provided by the Town of Halton Hills (2011)

0 100 200 400 600 800
Meters

Southwest Georgetown Integrated Planning Project

Drainage Catchments

March 2017	1:12,500	Datum: NAD 83, Zone 17 Source: Chapman and Putnam, 2007, Ontario Geological Survey, MRD 228 Conservation Halton
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AECOM

Figure 4.6.1

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Legend

Watercourse Characterization

- Low
- Medium
- High
- High-Rehabilitation Needed
- Enhance In Current Location
- Potential Medium

General Features

- Intermittent Watercourses
- Permanent Watercourses
- Roads
- Study Area
- Conservation Authority Boundary*

N

Note
*Division between Credit Valley Conservation and Conservation Halton Jurisdiction

0 100 200 400 600
Meters

Southwest Georgetown Integrated Planning Project

Watercourse Characterization for Management

June 2016	1:10,000	Datum: NAD 83, Zone 17 Source: Chapman and Putnam, 2007. Ontario Geological Survey, MRD 228, LIO
P#: 60297831	V#: 005	

AECOM

Figure 5.9.1

Map location: P:\60297831 SW Georgetown900\CAD-GIS\920 GIS-Graphics\Design\Groundwater Report Figures