

September 27, 2013

**BY MAIL AND BY EMAIL**

Mr. Michael Crough  
 City of Burlington  
 426 Brant Street  
 Burlington, ON  
 L7R 3Z6

Dear Mr. Crough:

**Re: Eagle Heights Proposed Subdivision, Official Plan and Zoning Amendments  
 City of Burlington  
 Part of Lots 7, 8 and 9, Concession II (East Flamborough) and Part of the Unopened  
 Road Allowance between Lots 7 and 8 (Paletta Lands)  
 Part of Lot 7, Concession I (East Flamborough) Taylor Lands  
 Files: 505-12/04, 510-06/04, 520-23/04, 24T-04006B (Paletta Lands)  
 Files: 505-13/04, 520-24/04, 510-07/04, 24T-04007B (Taylor Lands)**

Conservation Halton staff have reviewed the documents listed below submitted in support of the combined applications, commonly referred to as the “Eagle Heights” Subdivision. Unless otherwise noted, the proceeding comments address the whole of the subject properties (referred to as the “property”).

- *Metropolitan Consulting Inc.’s “Paletta International Limited Functional Servicing and Stormwater Management Report: Eagle Heights & Taylor Property, City of Burlington” dated updated June 2010, Addendum Revised Section 7 to Address Region of Halton Comments, March 2013.*
- *Savanta’s “Eagle Heights and Taylor Lands – Environmental Impact Assessment” dated March 5, 2013.*
- *Stable top of Bank Assessment Eagle Heights and Taylor Properties, Waterdown Road, Burlington, Ontario, for Paletta International Corporation, prepared by Peto MacCallum Ltd. Consulting Engineers, dated July 2006*
- *Eagle Heights Erosion Assessment, Burlington, Ontario, Prepared by Parish Geomorphic, Dated May 26, 2010.*
- *Paletta International Limited, Functional Servicing and Stormwater Management Report, Eagle Heights & Taylor Property, City of Burlington, Prepared by Metropolitan Consulting Inc., Updated June 2010.*
- *Paletta International Limited, Functional Servicing and Stormwater Management Report, Eagle Heights & Taylor Property, City of Burlington, Updated June 2010, Addendum, Revised Section 7 to Address Region of Halton Comments March 2013.*

Conservation Halton staff previously provided a letter dated July 11, 2011 (*attached as Appendix D*) outlining the planning documents and agreements the Eagle Heights submission would be reviewed under and presented preliminary information based on the information received at that time.

The conclusion (*Section G*) of that letter stated that staff believed the applicant had not demonstrated conformity with the PPS, Greenbelt Plan, NAIR, the regional and local OP or Ontario Regulation 162/06. Through a review of the above noted documents, Conservation Halton staff continues to have that opinion.

The July 11, 2011 letter, *Appendix I – Technical Comments* requested that;

“in addition to having the following documents addressed through revised versions of the above mentioned reports, a response letter be provided with the next submission that identifies how each of the following comments were addressed.”

Staff note that upon the submission of the above noted documents the applicant did not include a response letter itemizing Conservation Halton’s comments, and therefore all of Conservation Halton’s previous comments in the July 11, 2011 letter, will apply, unless otherwise noted as a ‘modified comment’ or ‘new comment’ and the same numbering scheme will be used.

#### **E Ontario Regulation 162/06 (*modified comments*)**

As previously noted, pursuant to Conservation Halton’s current Regulation, Grindstone Creek and all of its associated tributaries are identified by Conservation Halton as a major valley feature and thus a 15 metre adjacent allowance is provided to valleylands, the Regulatory Storm floodplain (greater of 1:00 year or Regional Storm floodplain) and meander belt widths. Wetlands that are Provincially Significant or greater than or equal to 2 ha in size have an adjacent allowance of 120 metres, while wetlands less than 2 ha in size that are not Provincially Significant have a 30 metre adjacent allowance.

Therefore, based on the text of the Regulation, portions of both properties are regulated by Conservation Halton pursuant to Ontario Regulation 162/06. Ontario Regulation 162/06 requires that a Permit be obtained from Conservation Halton prior to development, interference with wetlands or alterations to shorelines and watercourses. Additionally, Conservation Halton Board approved policies do not permit any new development within 15 metres of the greater of the existing physical top of bank (as staked by CH), or the long term stable top of slope for confined watercourses, regulatory storm flood plain or meander belt. Development within 15 metres of wetlands less than 2 ha (and not Provincially Significant) and within 30 metres of wetlands greater than 2ha or Provincially Significant Wetlands, is also not permitted. As per Provincial Policy, development is not permitted within the Regulatory Storm Floodplain, Erosion hazard or within Provincially Significant Wetlands (PSW).

Subsequent to Conservation Halton’s July 11, 2011 letter, staff were permitted access to the property on three separate occasions (April 16, July 17 and August 20, 2013). Staff note that the August 20, 2013 site visit was an additional visit scheduled to accommodate the abridged July 17, 2013 site visit which was a result of extreme weather conditions (*Environment Canada issued an extreme heat alert*).

In staff's previous letter it was stated that additional regulated lands may be identified through "field inspections and classifications of the wet ponded area and unnamed tributary on the Taylor property". Additionally, access to the site would verify the status of the valley systems as confined vs. unconfined. Consequently, staff provide the following:

- The unnamed tributary on the Taylor Lands (*see Appendix II – Regulated Feature Map*) has been reviewed and deemed to not be considered a regulated feature.
- Staff note that the wetland (MAS2-1/Pond) on the Taylor property (*see Appendix II*) is a regulated wetland under Ontario Regulation 162/06, thereby affording it protection pursuant to Conservation Halton's Policies, Procedures and Guidelines for the Administration of Ontario Regulation 162/06 and Land Use Planning Policy Document (August 11, 2011). This wetland is less than 2 hectares in size, which gives it a 30m regulation limit. Currently development is proposed immediately adjacent and potentially within this wetland. Staff will require that development be removed from the wetland and its regulated limit. At this time, as no discussions have been provided regarding the need to maintain the hydrologic function of this wetland, staff are unable to support development within the regulated limit. Staff will require that this discussion be provided should development continue to be proposed within the 15-30m developable distance from the wetland. Please be advised, that the required 15m no touch setback from the wetland is in place, as per Conservation Halton Policy 3.39. Revisions to the submitted draft plan will be required to reflect this regulation limit and associated setback. The limit of the wetland will need to be established in the field with Conservation Halton staff and the applicant's Ontario Land Surveyor, during the appropriate time of year (i.e., May – September). Please be advised that in recognition of the dynamic nature of wetlands, the limits of the wetland staked by Conservation Halton staff will be recognized as accurate for a period of two (2) years from the date of the staking.
- On the July 17, 2013 site visit, staff were provided a figure titled *Dwg. Eagle Heights Draft Plan of Subdivision of Part of Lots 7, 8, 9, Concession 2 and Part of the Unopened Road Allowance Between Lots 7 and 8, Formerly in the Township of East Flamborough, now in the City of Burlington, Regional Municipality of Halton*, dated Feb., 2007, illustrating the location of the top of bank stakes and associated stake numbers. Based on a careful review of this plan, the following additional areas require top of bank staking:
  - Along the valley associated with the regulated tributary extending through Block O (adjacent to the Flatt Road Extension)
  - Taylor Lands
  - Small tributary to east branch of Tributary 5.
  - Feature Associated with Block Y and Block Z, within the northern limits of the parcel
  - Feature associated with Block FF – (as the staking numbers and transitions appear to be unclear).
- During site visits on July 17 and August 20 of 2013, staff were able to review the staked location of the long term top of bank stations associated with Sub-areas 7 and 8 and a portion of Sub-area 6. Several changes to the staking were made where erosion had impacted the location of the long term top of bank, or to more accurately capture the location of the long term top of bank. Bank staking in agricultural portions of the property were generally not adjusted. The following top of bank stakes were relocated/added in the field (Note – stakes with a decimal identify new stakes added to better capture topographic features):

503.5	613	225.5
502.5	405	216
502	402.5	758.5
603.5	402	754.5
305	214.5	753
607	214	708
607.5	212	707
610	211.5	703
610.5	224	701

- Staff have determined from being on site that Tributary 4 transitions from an unconfined valley system north of Flatt Road to a confined valley system south of Flatt Road (*see Appendix II – Regulated Feature Map*), and therefore the regulation limit associated with Tributary 4 would be based on the greater of the floodplain and/or meander belt plus an associated 15 metre setback for areas north of Flatt Road, or greater of the long term stable top of bank or floodplain, plus 15 metre regulated setback for areas south of Flatt Road.
- Staff have also determined that portions of the west branch of Tributary 5 are unconfined, and therefore the greater of the meander belt erosion hazard or floodplain, plus the associated 15 metre regulated setback would apply.

Due to the size of the property, and the vegetation conditions on site, staff have not had sufficient time to confirm the location of the top of bank stakings across the entire property. An additional 10 days of site work would be required to confirm the location of the remaining stakes, and stake top of bank and wetland areas not previously staked in the field.

Staff have concerns regarding portions of the proposal as it relates to Ontario Regulation 162/06. The following points are carried forward from Conservation Halton’s July 11, 2011 letter as they remain unaddressed.

1. The development boundaries established through the 1996 draft plan approval do not reflect Conservation Halton’s current regulated limit. As a result, the draft plan shows development and the creation of new lots within Conservation Halton’s regulated limit, contrary to our policies. Conservation Halton’s policies do not support the creation of new lots or other development (e.g. filling, grading and structures) within the regulated area and associated allowance. At present the draft plans do not respect the regulation limit associated with the Main Grindstone Creek, Tributaries 4, 5, and 6 and the wetlands on the property.
2. Staff are not supportive of the revisions to the erosion hazard and flooding limits as currently presented in Peto MacCallum’s July 2006 “Stable Top of Bank Assessment, Eagle Heights and Taylor Properties” and Metropolitan Consulting Inc.’s Updated June 2010 “Functional Servicing and Stormwater Management Report – Eagle Heights & Taylor Property” reports, as these reports are not consistent with the MNR Natural Hazards Technical Guidelines. See Appendix 1 for detailed comments.
3. The need to adjust lot lines to remove development from within the regulated areas of the Main Grindstone Creek Valley, Tributaries 4, 5 and 6 could have an impact on the Horning Road re-alignment, Horning Road, and virtually all lots and blocks within the Eagle Heights Subdivision. Key issues that may result in the elimination as opposed to the adjustment of lots are summarized below.

- a. Tributary 4 through the Eagle Heights Subdivision is a regulated watercourse (floodplain and meander belt erosion hazard +15m) and will have substantial impacts on the draft plan, unless the elimination or realignment is supported by a current subwatershed study.
- b. Street X from Flatt Road and through the Hydro One lands and the Horning Road Extension both appear to be located within the 100 year erosion hazard, and may need to be relocated to ensure safe access and egress.
- c. Block H (SWM pond 4B) and Block O (SWM pond 6B) are proposed within a confined valley, which is contrary to Conservation Halton policies.
- d. No longer applicable.

As previously stated in Conservation Halton's July 11, 2011 letter, to date, the applicant has not provided sufficient information to determine the limit of the natural hazards and as such, staff cannot determine if development is proposed to be located within areas regulated by Conservation Halton.

### **Appendix 1 of Conservation Halton's July 11, 2011 Letter**

The following comments reflect 'new' or 'modified' comments from Conservation Halton's July 11, 2011 letter. For clarity, staff have made a notation at the end of each comment that indicates Conservation Halton's review responsibility – as previously provided. Staff would ask that you refer to the attached July 11, 2011 letter for the comments that have not changed.

#### **I) Comments Specific to all Technical Studies, Plans and Submissions**

1. All watercourses are regulated by Conservation Halton and references to drainage draws, swales etc., should be replaced with the term "watercourse". (O. Reg 162/06) (*modified comment*)
2. Remains applicable.
3. Remains applicable.
4. Conservation Halton staff need an additional ten (10) days of site work (at the appropriate time of year) to confirm the location of the remaining stakes, and stake top of bank and wetland area not previously staked in the field. (O. Reg 162/06) (*new comment*)
5. Remains applicable.
6. Remains applicable.
7. Remains applicable.
8. Remains applicable.

#### **II Grindstone Creek Subwatershed Study Update Requirements (GCSS)**

First Paragraph – reference to the unnamed tributary on the Taylor lands can be removed as it is not a regulated watercourse. (*modified comment*)

Fifth Paragraph – Staff recommend that a Terms of Reference be prepared by the applicant in consultation with the Region, City and Conservation Halton to ensure that the study is correctly scoped. Areas recommended for study include (but are not limited to):

- a) Natural Heritage
  - i. Wildlife (including endangered and threatened species)

- ii. Vegetation
- iii. Aquatic resources/fish assessment
- iv. Ecological linkages
- b) Hydrology
- c) Fluvial Geomorphology (erosion assessment)
- d) Hydraulics
- e) Recommended and Current Best Management practices related to Stormwater Management Approaches
- f) Groundwater/Hydrogeology
- g) Monitoring

(O. Reg 162/06, Halton MOU) (*modified comment*)

**III Eagle Heights and Taylor Lands Environmental Impact Assessment, prepared by Savanta, dated December 17, 2010 (EIA) and Eagle Heights and Taylor Lands, EIA, prepared by Savanta, dated March 5, 2013**

1. Remains applicable.
2. Remains applicable.

**Executive Summary**

3. Partially addressed, however the executive summary should be revised to reflect the updated Section 3.2.1, Table 1. (O. Reg 162/06, Halton MOU) (*modified comment*)

**Section 1.2 Summary of the Proposed Development**

4. Within this section it is indicated that the 2006 plan provides a comprehensive trails plan, however this has not been included in the EIA, therefore staff are unable to comment on this trails plan. Given that Conservation Halton is an adjacent land owner of this property, staff are concerned with any new trails proposed for this area and how these may impact Conservation Halton property. For example, trail systems (unauthorized and authorized), dumping, vandalism, the spread of invasive species, etc. As raised in our July 11, 2011 letter, given that the density of housing has doubled from that of the original proposal, staff are concerned with the associated effects of an increase in visitation of the natural areas on site and on adjacent property. Staff request that this 2006 plan outlining recreational opportunities and trail access for the property be provided for review and comment. (Halton MOU) (*modified comment*)
5. Further, in this section it stated that this development creates a “residential community that takes advantage of the extensive ecological resources of the area”. As previously stated in our 2011 correspondence, staff are of the opinion that in-keeping with the principles of the North Aldershot Inter-Agency Review (NAIR), current policy, legislation and Provincial direction, ecological areas should be protected in the long-term. Please clarify what is meant by this statement and how this is in keeping current practices. (Halton MOU) (*modified comment*)
6. Remains applicable.
7. The EIA highlights that emphasis has been placed on “retaining any significant trees and significant vegetation...” however preservation of these

features is not reflected in the draft plan and during the July 2013 site visit it was observed that additional vegetation removal had occurred within areas identified as significant. In addition, this section identifies that the plan proposes to preserve important existing landscape features within the development area, remnant specimen trees, and local landforms such as knolls and drainage channels. During the site visits of the summer of 2013, it was observed that the vegetated knoll associated with the Area of Natural and Scientific Interest (ANSI) was removed. Please demonstrate how the proposed plan will fulfill the commitment in the EIA and remain in line with the recommendations of the NAIR.

We note that the 2010 EIA included the retention of localized hedgerows as “important existing landscape features”, which has now been removed from this report. Staff question why this “important feature” has now been removed from the document. (Halton MOU) (*modified comment*)

8. No longer applicable.
9. This section states that the dripline associated with the valley was staked and confirmed by Metropolitan Consulting, however it is not clear if the Region of Halton was also involved in staking of the Environmentally Sensitive Area (ESA) limit. As raised previously, staff do not consider this survey to be complete until such time that the Region has confirmed this limit in the field. Once this dripline has been established, then the Region of Halton would be the appropriate agency to determine the buffer distances required from these features. We do note that a portion of the property is located within the Greenbelt Plan Natural Heritage System (NHS), therefore larger buffer distances to features within that area may be warranted as per the Plan. (Halton MOU) (*modified comment*)
10. No longer applicable.
11. In keeping with wildlife movement corridors and linkages, the NAIR stresses that the inter-relationships between open field and successional areas and forested areas in terms of maintaining biodiversity of and providing for the persistence of the landscape and long-term protection of ecological areas is required through an environmental appraisal. Staff notes that several birds present in the area require open field and successional habitat however this does not appear to be considered in the current plan. (Halton MOU) (*modified comment*)
  - As discussed in the 2011 letter, Staff supports the consideration of wildlife corridors and linkages. Have studies been completed to identify wildlife movement corridors? Please include a discussion about wildlife corridors and linkages within the subject lands and surrounding landscape and how wildlife passage will be incorporated into development, so that the development is in keeping with the Provincial Policy Statement, Policies 2.1.2 and 2.2.1(e). Ecopassages should be also included as part of the discussion where appropriate. (Halton MOU) (*new comment*)
  - Although the report indicates some aspects of the NAIR Planning Principles and Evaluation Criteria were given particular emphasis, the two aspects of significance not mentioned include “Minimize impacts of stormwater runoff” and “Do not negatively impact Grindstone Creek fisheries”. Stormwater management facilities often result in negative impacts to the receiving watercourses, including change in thermal regime, erosion, loss of natural flow patterns/inputs and loss of infiltration. Staff therefore have significant concerns with the proposed development and the

expected impacts to the Grindstone Creek fisheries given the proposed stormwater management. (O. Reg 162/06, DFO Level II, Halton MOU) *(new comment)*

### **Section 1.3 Purpose of the Study**

- It should be noted that a portion of the Grindstone Creek Valley Area of Natural and Scientific Interest is present on the Eagle Heights lands as well as Significant Woodlands, which are not reflected in this section. Please revise. (Halton MOU) *(new comment)*
- The Region of Halton EIS guidelines are noted in this section; however it is unclear if these were used to develop this study. Please confirm. (Halton MOU) *(new comment)*

### **Section 2.1 Background Information**

- Within the list of technical reports used, the Hamilton Natural Areas Inventory (NAI) is listed, however as this proposed development is located within the Region of Halton, it would be pertinent to use the Halton NAI (2006). Staff recommend that the Halton NAI be referred to for local species status and background information on adjacent lands. (Halton MOU) *(new comment)*
- Staff question why the Halton and Conservation Halton EIS guidelines were not referenced given that this report is prepared for a property within the jurisdiction of these agencies? We would also expect that the Natural Heritage Reference Manual (2010) and the Significant Wildlife Habitat Technical Guide (2000) and associated appendices and/or schedules be used for this study. Staff request confirmation that the most current pieces supporting documentation were used in the development of this study. (Halton MOU) *(new comment)*

### **Section 2.2 Field Investigations**

- Please include original photocopies and electronic versions of all field data sheets (e.g. ELC and vegetation inventories, breeding bird surveys, amphibian surveys, etc.) as part of the submission. Without these, staff are unable to assess the comprehensiveness of the biological baseline conditions, and as such the submission of the data sheets is crucial. In addition to the requested field data sheets, we recommend that a table be included in the EIA that clearly outlines the date, time, weather conditions, staff and intention for all field work completed as part of this EIA. We note that the table provided in Appendix A does not include all of these points. (Halton MOU) *(new comment)*
- Staff note additional field sampling was conducted to provide updated and more current data for terrestrial components only. Staff reiterate the need for updated aquatic habitat and benthic data to appropriately characterize the existing habitat and water quality within the watercourses on the subject property. (O. Reg 162/06, DFO Level II) *(new comment)*

### **Section 3.1.1 Hydrology**

- The report refers to Figures 7, Stream and Fish Habitat Classification, for watercourses on the subject lands. Staff note Figure 7 is incomplete and does not accurately delineate all existing regulated watercourses, hydrologic connections and fish habitat. Per Conservation Halton staff mapping and field observations, additional watercourses are noted on the property. Staff note that the figure does not show two tributaries of Tributary 6, multiple tributaries associated with Tributary 5, and the appropriate length associated with Tributary 4. Please address. (O. Reg 162/06, DFO Level II) *(new comment)*



### Section 3.1.2 Soils and Physiography

- This section reported there was no evidence of recent erosion in Grindstone Creek (from the 2006 report). Tributary 5 was reported to possess a few relatively inactive erosion scars on the toe of slope and weathered shale bedrock in the stream channel. Additionally, small areas of seepage were reported in Tributary 5 near Flatt Road. The Erosion Assessment submitted by Parish Geomorphic (May 2010) indicates numerous reaches within the study area are degrading. Staff note numerous erosion gullies and erosion scars were observed within the valleys during the site walks and therefore request the erosion assessments recognize the active erosion ongoing throughout the property as part of their analysis. (O. Reg 162/06, Halton MOU) (*new comment*)

### Section 3.2

12. See comment under Section 3.3.5.
13. See comments under Section 2.2 Field Investigations.
14. See comments under Appendix A – Figure 4
15. Addressed
16. Addressed
17. See Section 3.2.4

### Section 3.2.1 Vegetation Communities

- The EIA states that “a list of all vascular plants recorded on the Subject Lands in 1991 and 1994 is provided in Appendix C”. Staff questions if the vascular plants observed in the 2007, 2012 and 2013 surveys are also included in this list? Should these species not be present, staff request that these species be added and the list updated to reflect the full component of species present. (Halton MOU) (*new comment*)
- Staff reiterate that the wetland located on the Taylor property is a regulated wetland feature. (O. Reg 162/06) (*new comment*)

### Section 3.2.2 Vascular Plant and Significant Species

- The EIA alludes to the fact that field surveys for vascular plants were completed in 1991, 1994 and 2003 however Appendix B Table of Natural Heritage Fieldwork Dates details a variety of other botanical surveys completed in 2007, 2009 and 2012. Were plant species not recorded during these later field surveys and if yes, were these included in the report? If not, staff questions why this was not completed. There is also some clarification warranted on this issue, given that Section 3.2.1 suggests that only the 1991 and 1994 species are provided. (Halton MOU) (*new comment*)
- Please be advised the eastern flowering dogwood was observed by Conservation Halton staff during the site visit on July 17, 2013 within the valley associated with tributary 5. Discussion on these observations on the property is needed and the Ministry of Natural Resources (MNR) should be consulted for additional information. (Halton MOU) (*new comment*)
- It should be noted that butternut (*Juglans cinera*) is listed as Endangered in Ontario. The EIA states that it is Endangered but not regulated, which is terminology no longer used with the current *Endangered Species Act*. Please update. (Halton MOU) (*new comment*)
- Table 2 indicates that Oldham (1993) was used for local rarity. It is unclear to staff why Oldham (1993) was used, given that the Hamilton NAI was referenced in Section 2.1. This report is 20 years old and as such, staff would recommend using a more current report to assess the local status of species. We also note that Appendix C indicates that Crin (2006) and Varga et al. (2000) was used. Please be advised that

in order to complete a comprehensive review of the local rarity on site, the Halton NAI should be used. (Halton MOU) (*new comment*)

- Staff have reviewed the species list of Table 2 and those listed on page 14, in relation to the Halton NAI and note the following species are of local significance:

Common Name	Botanical Name	Local Significance
Broad-glumed brome	<i>Bromus latiglumis</i>	Rare
Drooping sedge	<i>Carex prasina</i>	Uncommon
Grove meadow grass	<i>Poa alsodes</i>	Uncommon
Marsh vetchling	<i>Lathyrus palustris</i>	No record – please provide further details on this observation
Pennsylvania bitter-cress	<i>Cardamine pensylvanica</i>	Uncommon
Sassafras	<i>Sassafras albidum</i>	Uncommon
Skunk cabbage	<i>Symplocarpus foetidus</i>	Uncommon
Smooth blue aster	<i>Aster laevis var laevis</i>	Uncommon
Straw coloured umbrella sedge	<i>Cyperus strigosus</i>	Rare
Summer grape	<i>Vitis aestivalis</i>	Uncommon
Swamp thistle	<i>Cirsium muticum</i>	No record – please provide further details on this observation
Troublesome sedge	<i>Carex molesta</i>	Uncommon
Wood germander	<i>Teucrium canadense ssp. canadense</i>	Rare
Yellow pimpernel	<i>Taenidia integerrima</i>	Rare

(Halton MOU) (*new comment*)

### Section 3.2.3 Wildlife

18. No longer applicable. (Breeding Birds, 1<sup>st</sup> bullet)
19. No longer applicable. (Breeding Birds, 2<sup>nd</sup> bullet)
20. No longer applicable.

### Bird Surveys

21. Addressed.

### Breeding Birds

- In the initial discussion regarding the breeding bird field work completed in 1991 and 1994, it is indicated that the results from these surveys is found in Appendix C. Appendix D contains the breeding bird results but only those from the 2007, 2011 and 2012 surveys. Please provide the results of the earlier surveys. (Halton MOU) (*new comment*)
- It is stated that four species at risk birds were observed on the site, bobolink, eastern meadowlark, chimney swift and barn swallow, however Appendix D also includes eastern wood-pewee (Special Concern species at a federal level), bank swallow (Threatened at the federal level) and wood thrush (Threatened species at a federal level). Please revise this section and Appendix D to reflect the current status of species observed on the property and provide discussion as to the impacts this development may have on these additional species. (Halton MOU) (*new comment*)

- No discussion regarding local rarity is provided. Staff have reviewed those species listed in Appendix D and note the following species are considered either rare or uncommon according to the Halton NAI:
  - Wild turkey – uncommon
  - Chimney swift – rare
  - Red-bellied woodpecker – uncommon
  - Eastern bluebird – uncommon
  - Blue-winged warbler – uncommon
  - Magnolia warbler – rare
  - Eastern towhee – uncommon
  - Baltimore oriole – rare

Discussion with regards to Significant Wildlife Habitat, specifically Habitats of Species of Conservation Concern as it relates to “species that are rare within the planning area, even though they may not be provincially rare” should be added to the text. Staff would expect that this discussion will include Appendix G and Q of the Significant Wildlife Habitat Technical Guide (2000) where applicable. (Halton MOU) *(new comment)*

- Figure 4, Breeding Bird Survey Stations and Calling Amphibian Monitoring Stations: Staff question why more bird point count locations were not situated within the woodland? Given that development is proposed immediately adjacent to the wooded areas, it would seem imperative to staff that these areas also be studied so that appropriate setback are established should they be required. Staff suggest that additional point count locations be added to the current locations so as to capture a more complete and accurate assessment of the bird species present. This is important given that the current survey results have indicated low forest bird species present, without using the Forest Bird Monitoring Protocol or without siting point count locations within the continuous forest along Sub-Area 7. (Halton MOU) *(new comment)*

### **Amphibians and Reptiles**

- During the April 2013 site visit a western chorus frog was found in the wetland located on the Taylor property. Please update the EIA to reflect this observation.

### **Section 3.2.4 Aquatic Ecology**

22. Remains applicable.
23. The report indicates that both the GCSS and FSSR provide extensive background information on the Grindstone Creek and associated tributaries on the Subject Lands. However, the GCSS provides information for the watercourse from 17 years ago (1995) and the FSSR does not provide any background information on the tributaries as it relates to fish habitat. This section also states that aquatic surveys were conducted 19 years ago (1992) for the Natural Environmental Inventory Report. Staff have concerns with the aquatic assessments occurring 17 and 19 years ago as this likely does not reflect the current conditions of the watercourses and therefore accurate assessments of development impacts on the adjacent features cannot be appropriately evaluated. (Halton MOU, DFO Level II) *(modified comment)*
24. According to the Region of Halton EIA Guidelines, the Biophysical Inventory should include fish species and fisheries habitat including related watercourse flow, channel and riparian characteristics. Under Section 34 of the Fisheries Act, “fish habitat” is defined as “spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes.” Habitat assessments and stream morphology assessments according to the Ontario Stream Assessment Protocol (OSAP) should be completed. Water quality as it relates to fish habitat should also be provided in accordance with the Ontario Benthos Biomonitoring

- Network (OBBN) protocol or OSAP (Section 2) for invertebrate sampling. (Halton MOU, DFO Level II) (*modified comment*)
25. Staff note a discussion of the existing composition and spatial distribution of benthic communities was not provided as part of the EIA with regard to existing habitat quality. Staff acknowledge benthic sampling was completed as part of the GCSS in 1994 however, this data is outdated. As indicated later in *Section 6.1.3 (Fish Habitat)* under *Section 6.0 Potential Impacts, Effects, Mitigation and Net Effects*, potential impacts include changes in base flow and surface flow, increase in sedimentation and contamination during and post construction resulting in degradation of water quality, and change in temperature regime of downstream systems. While mitigation measures are proposed to offset these impacts (e.g. bottom-draw outlets, pond shading, ESC controls during construction) all residual and cumulative impacts may not be eliminated by these measures. Updated multi-year baseline benthic data will be necessary to determine the natural annual fluctuations in species composition and community and water quality as per OSAP Section 2 (or OBBN), is essential to enable suitable pre-to post-construction comparisons to adequately assess impacts. (Halton MOU, DFO Level II) (*modified comment*).
26. Remains applicable.
- Staff also note that Appendix B indicates an Aquatic Habitat Assessment utilizing the CVC/TRCA guidelines for the “Evaluation, Classification, and Management of Headwater Drainage Features” was completed on September 4, 2009. The descriptions of the watercourses provided in the EIA are not reflective of the classifications discussed in the headwater drainage guidelines. Additionally, the classifications don’t appear to be utilized in determining the appropriate management options (e.g. replicating on-site flows and maintaining external flows at the top of the system). However, staff believe utilization of the Headwater Drainage Features guidelines in describing existing habitat within the watercourses on the subject property is not appropriate as the features on the subject property should be considered watercourses and not headwater drainage features (with the potential exception of Tributary 4 upstream of Flatt Road). To adequately assess existing habitat and provide a standard means of assessing the impacts to the habitat, staff believe OSAP (2013) should be utilized for habitat assessments (minimally Sections 1, 2, 4 and 5). These assessments should be incorporated into the EIA to provide sufficient background data to enable suitable pre- to post-construction comparisons to adequately assess impacts (O. Reg 162/06, Halton MOU, DFO Level II) (*new comment*)
  - Staff disagree with the characterization of Tributary 4 developing “as a cultivated depression in the agricultural lands in the southern half of the Eagle Heights Lands” and “serving only to convey flows that are generated from runoff from Waterdown Road”. Based on field observations, staff identified a small drainage feature entering the property along the northern boundary and crossing a cultural woodland through a small diameter culvert before continuing southerly to confluence with drainage from Waterdown Road. This upstream catchment represents a much larger areal contribution than the contributing drainage area from Waterdown Road. It is acknowledged that Tributary 4 is indirect fish habitat and has a limited drainage area, which includes a small portion of Waterdown Road, however, despite being plowed through in the upper reaches, the tributary has sufficient stream power to form defined bed and banks through much of the property. It drains external areas north of the Eagle Heights property that must be addressed through the design of the subdivision. The NAIR Final Report Landuse Concept Figure illustrates Tributary 4 as “Environmental Protection” area across the Eagle Heights lands extending from Flatt Road north to Waterdown Road (approximately 510 m north of Flatt Road). (O. Reg 162/06, Halton MOU, DFO Level II) (*new comment*)

- Staff note the NAIR Final Report Landuse Concept Figure also illustrates a hydrologic connection draining into Tributary 4 that is identified as “Environmental Protection” however the need to protect this feature is not discussed in the report. Please address. (O. Reg 162/06, Halton MOU, DFO Level II) *(new comment)*
- Similarly, the small tributary identified as regulated during the August 20, 2013 site visit, that flows from the west into the East Branch of Tributary 5, partially included in Block SS (cluster housing) appears to be included under “Environmental Protection” in the NAIR report. Appropriate setbacks pursuant to Ontario Regulation 162/06 must be applied. (O. Reg 162/06, Halton MOU, DFO Level II)
- Staff note that the classification of the flow regime of Tributary 5 is inconsistent with previous reports. The flow regime of the branches of Tributary 5 upstream of Flatt Road are described as intermittent while the east branch upstream of Flatt Road was described as “likely expresses intermittent flow conditions”. Please note the Grindstone Creek Subwatershed Study reports that “water flow was detected in this reach during all the field reconnaissance. The flow was minimal in the summer periods”. The report also indicates that “despite the lack of fish, this reach is classified as warmwater baitfish habitat due to the well-defined stream channel, potential for fish utilization if the barriers to fish migration were removed and permanent, albeit minimal, flow during the summer period.” Further, the EIA reports that observations completed on September 3, 2009 demonstrated minor flows. The east branch was flowing during all site visits conducted by Conservation Halton staff (April 13, July 17 and August 20, 2013). As flow was observed during a week of extreme heat events and during all previously recorded inspections, staff require additional information to warrant the intermittent classification. (O. Reg 162/06, Halton MOU, DFO Level II) *(modified comment 17, from Section 3.2 of previous letter)*
- From the Grindstone Creek Subwatershed Study, the East Branch of Tributary 5 was classified as warmwater baitfish habitat from approximately 705 m upstream of Flatt Road and from approximately 270 m upstream on the West Branch. These classifications should be incorporated into the EIA report. Should the Grindstone Creek Subwatershed Study classifications be indicative of existing conditions, 15 m buffers adjacent to the warmwater baitfish habitat should be applied as per downstream of Flatt Road and within accordance with Conservation Halton Policy 3.6, (Riparian Buffers and Fish Habitat). According to Appendix D of the Halton Region EIS Guidelines, impact analysis should include the alteration of the quantity, quality, timing (hydroperiod) or direction of flow, of surface or groundwater within or contiguous to an element of the natural heritage system. Updated habitat assessments and data sheets are required to clarify the current extent of direct and indirect fish habitat and periodicity of the watercourses on the subject property to accurately determine any expected impacts and appropriate mitigation for the proposed development. (O. Reg 162/06, Halton MOU, DFO Level II) *(modified comment 17, from Section 3.2 of previous letter)*

### **Section 3.3 Consideration of Natural Heritage Components of the PPS**

- This section outlines the various Natural Heritage (NH) components of the PPS that were assessed as part of this EIA. It does not include all relevant parts that should have been included in the report such as:
  - 2.1.1 Natural features and areas shall be protected for the long term.
  - 2.1.2 The diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features.

- 2.1.6 Development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.3, 2.1.4 and 2.1.5 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.

As such, staff do not consider the EIA as having addressed all of the applicable NH components of the PPS. In addition to the above outstanding policies, there are relevant NH policies located in the Water Policy (2.2) of the PPS which should be addressed, specifically:

- 2.2.1 Planning authorities shall protect, improve or restore the quality and quantity of water by:
  - c) identifying surface water features, ground water features, hydrologic functions and natural heritage features and areas which are necessary for the ecological and hydrological integrity of the watershed.
  - e) maintaining linkages and related functions among surface water features, ground water features, hydrologic functions and natural heritage features and areas.
 (Halton MOU) *(new comment)*
- Further, no discussion of the Greenbelt Plan (2005) has been provided in the EIA even though a portion of the Eagle Heights property is designated as Greenbelt Natural Heritage System. Discussion on the Greenbelt Plan, specifically Key Natural Heritage Features and Key Hydrologic Features Policies that are found on the site should be included in the EIA. These Key Natural Heritage Features include:
  - Significant habitat of endangered species, threatened species and special concern species;
  - Fish habitat;
  - Wetlands;
  - Life Science Areas of Natural and Scientific Interest (ANSIs);
  - Significant valleylands;
  - Significant woodlands; and,
  - Significant wildlife habitat;

While the Key Hydrologic Features include:

- Permanent and intermittent streams;
- Seepage areas and springs; and,
- Wetlands

Included in this discussion should be the appropriate buffers to these features as based on the direction and policies of the Greenbelt Plan developed through consultation with the appropriate review agencies. (Halton MOU) *(new comment)*

### **Section 3.3.1 Significant Portions of Habitat of Endangered and Threatened Species**

- As currently titled as per the PPS, Section 2.1.3 (a), please note that the actual wording of this title should be “Significant Habitat of Endangered and Threatened Species”, rather than “portions of habitat”. (Halton MOU) *(new comment)*
- While staff agree that discussions regarding the listed SAR on the should be addressed under the provisions of the *Endangered Species Act*, we also note that in order to ensure compliance with the PPS, Significant Habitat as it relates to the PPS must be maintained. The PPS defines this as:

*“in regard to the habitat of endangered species and threatened species, means the habitat, as approved by the Ontario Ministry of Natural Resources, that is necessary for the maintenance, survival, and/or the recovery of naturally occurring or reintroduced*

*populations of endangered species or threatened species, and where those areas of occurrence are occupied or habitually occupied by the species during all or any part(s) of its life cycle”;*

Please clearly indicate within the EIA if the proposed development adheres to the Section 2.1.3 (a) of the PPS. Currently, it is staff’s opinion that this has not been accomplished. (Halton MOU) *(new comment)*

- During the site visit on July 17, 2013, eastern flowering dogwood was observed by Conservation Halton and Savanta on the property. This should be discussed in the EIA as well as the direction from the MNR on this issue.

### **Section 3.3.2 Fish Habitat**

27. Staff note Tributary 6 is classified as not fish habitat. Given the channel characteristics described by Parish Geomorphic Ltd, and due to the provisions of flow and allochthonous inputs through the piped section downstream of the study area, staff believe this channel should be considered as providing indirect fish habitat. Although existing conditions are not providing direct fish habitat, any future land use applications on the downstream property may provide an opportunity to daylight the piped portions of the existing watercourse and remove online ponds to improve aquatic habitat throughout the reach. (Halton MOU, DFO Level II) *(modified comment)*

28. Remains applicable.

### **Section 3.3.2 Significant Woodlands** *(Staff note the section number repeated in the EIA)*

Comments numbered 29, 30, 31, and 32 are replaced by the comments listed below in this section.

- Staff are concerned with the criteria used to determine the presence or absence of Significant Woodland for the subject lands, given that the Region of Halton Official Plan (OP) has clear policies in place that should have been used to assess the woodlands on the site. Given that the PPS clearly states that “criteria for determining significance for the resources identified in sections (c)-(g) are recommended by the Province, but municipal approaches that achieve or exceed the same objective may also be used”, staff question why the consulting team did not use the Regional OP? Please revise this section to adhere to the Regional OP requirements when determining Significant Woodlands. (Halton MOU) *(modified comment)*
- We note that Figure 10 has excluded the plantations from the Significant Woodland feature. According to the Regional OP definition of a woodland, unless these plantations have been certified by the Region, they should be considered as woodlands and then assessed as a continuous woodland to determine their significance. Moreover, the Natural Heritage Reference Manual also directs that plantations are recognized as investments made with the objective of forest restoration and can be considered to be woodlands (page 72). For this reason, staff request that Figure 10 be updated to reflect current Regional and Provincial direction as it pertains to woodlands and Significant Woodlands. (Halton MOU) *(new comment)*
- Further, Figure 10 illustrates those features found on the site that would meet the criteria outlined in the main report, however there are inconsistencies throughout this mapping. For example, meadow marshes have been included when they do not meet any of the criteria and cultural plantations that should be included have not been. Given that the Regional criteria were not used and only certain aspects of the Natural Heritage Reference Manual were used, staff request that this figure be revised to show the actual limits of the Significant Woodlands on the site. Appropriate setbacks to the Significant

Woodland also need to be included on this figure and the text of the report revised to include these setbacks. We defer development of these setbacks to the Region. (Halton MOU) *(new comment)*

- During the site visits of 2013, it was noted that a number of areas previously flagged for protection have now been removed, i.e., through extensive tree removal. Staff are concerned that the protected areas are not being respected from the original OMB decision, while the current studies are being completed to assess any additional areas that warrant protection. It was clarified during the July site visit that the current dripline as shown on the mapping (yellow outline) is reflecting the conditions after the tree removal occurred. Staff request that a map be prepared that illustrates the original dripline and also includes this new dripline so that the full impact of this vegetation removal can be assessed. (Halton MOU) *(new comment)*
- As discussed above, adjacent lands to this feature need to be commented on and the appropriate buffer to this feature based on the Greenbelt Plan needs to be included where applicable and maintained. It should be noted that the Greenbelt Plan direction indicates that a minimum 30m vegetation protection zone adjacent to Significant Woodlands is required. In locations outside of the Greenbelt Plan Area where Significant Woodlands exist, direction on these buffers should be obtained from the Region. (Halton MOU) *(new comment)*
- Ultimately, as Significant Woodlands are a Regional designation and the Region is the Planning Authority, Conservation Halton defers to the Region for acceptance and approval as well as appropriate setback distances for these features. (Halton MOU) *(new comment)*

### **Section 3.3.3 Significant Valleylands**

33. Previous comments noted that this Section of the EIA stated “The proposed plan will result in some minor, unavoidable refinements to the valley boundary in the south corner of Sub-Area 7”. Conservation Halton staff noted at that time that the extent of the valley is not a negotiable physical feature and cannot be refined. Staff now note the EIA states, “The proposed Plans of Subdivision...respect these valley areas with a minor intrusion in the south corner of Sub-Area 7”. Staff wish to reiterate that Conservation Halton’s regulation limit is 15 metres from the greater of the greater of the appropriate erosion hazard - top of bank as staked by Conservation Halton or the stable top of bank associated with Grindstone Creek. As such, the draft plan will have to be redesigned to respect the appropriate setbacks from the top of bank as staked by Conservation Halton or determined long term stable top of bank. (O. Reg 162/06) *(new comment)*

While Conservation Halton recognizes that Official Plan Amendment (OPA) 197 is the current Policy in effect for the Eagle Heights Subdivision and only requires the dedication of all creeks, associated valley lands and 7.5 metre buffers to the City of Burlington (1996), the current application is being reviewed under current standards and policies at the time it was submitted (2010). As such Conservation Halton’s Ontario Regulation 162/06 applies and we will recommend the full dedication of all creeks, valleylands and associated 15 metre regulated setbacks to the City of Burlington. (Halton MOU) *(new comment)*

34. See Section 3.3.4.

### **Section 3.3.4 Significant Areas of Natural and Scientific Interest *(the EIA is incorrectly titled)***

35. See comments listed below in this section.
- It is staff’s understanding that in 2005 the Ministry of Natural Resources (MNR) refined the Grindstone Creek Area of Natural and Scientific Interest (ANSI) limits, which now



extend onto the subject property. The ANSI limit is correctly illustrated on Figure 2 of the EIA, however Figure 11 does not include this refinement. Please revise Figure 11 to present the actual ANSI limit as determined by the MNR. (Halton MOU) *(new comment)*

- We note that during the July 2013 site visit, it was evident that a portion of the ANSI in the CUW1-5 was removed. (Halton MOU) *(new comment)*
- As discussed above, adjacent lands to this feature need to be commented on and the appropriate buffer to this feature based on the Greenbelt Plan needs to be included where applicable and maintained. (Halton MOU) *(new comment)*

### **Section 3.3.5 Significant Wildlife Habitat** *(the EIA is missing this in the Table of Contents)*

36. Replaced by comment below.

- Rare or Specialized Habitat - In this section, it is noted that there is ‘non-woodland’ breeding habitat present on the Taylor lands within the pond, according to the Provincial Significant Wildlife Habitat Eco-region 7E Criterion Schedule (MNR 2012). Upon review of this criterion, it is staff’s opinion that the type of Significant Wildlife Habitat present is the amphibian breeding habitat (woodland) given that the pond is located within 120m of a woodland (FOD3-1). The criterion also indicates that when this type of amphibian breeding habitat is present, Amphibian Movement Corridors must also be considered. We note that a number of the defining criteria are met for an Amphibian Movement Corridor, such as corridors consisting of native vegetation and while we recognize that this corridor is less than 200m wide, the Criterion does indicate that shorter corridors are more significant than longer corridors, provided amphibians must be able to get to and from their summer and breeding habitat, which staff believe is achievable in this location. For these reasons, we support that Significant Wildlife Habitat is present in the pond, we believe it to be of a slightly different type than presented, specifically Amphibian Breeding Habitat (Woodland) and Amphibian Movement Corridors. (Halton MOU) *(new comment)*
- Given that at this time the draft plan proposes a road and SWM pond within and/or immediately adjacent to this wetland, staff are concerned that there will be an impact the Significant Wildlife Habitat and its associated adjacent lands, which does not comply with the PPS or O. Reg. 162/06. For this reason, staff are unable to support the proposed layout in this area. (O. Reg 162/06, Halton MOU) *(new comment)*
- Species of Conservation Concern - During the April 2013 site visit, a western chorus frog was observed by Conservation Halton and Savanta staff, however this species was not identified during the amphibian breeding surveys. Western chorus frog is listed as Threatened at the Federal level, however it is not listed under the Ontario Endangered Species Act, which if its habitat was observed on site, it could be deemed Significant Wildlife Habitat. Given the uncertainty around potential habitat of western chorus frog on the site, staff recommend that a spring survey be undertaken specifically for the confirmation of western chorus frog during its breeding season. Western chorus frog is an early breeder and so the survey would have to be timed in such a manner to capture the potential observance of the species. Staff would be happy to discuss this further with the appropriate field staff. (Halton MOU) *(new comment)*
- It should be noted that there are additional species that should be discussed further in this section, specifically bank swallow and western chorus frog, which are both federally Threatened species. Please provide a discussion on their presence in relation to the applicable policies of the PPS. (Halton MOU) *(new comment)*
- Animal Movement Corridors - As discussed above, when amphibian breeding habitat (woodland) Significant Wildlife Habitat is identified then Animal Movement Corridors associated with this habitat must also be assessed. Staff are of the opinion that a corridor

- is present in the surrounding areas of the wetland as these areas meet the criteria set out in the Significant Wildlife Habitat Criterion Schedule. (Halton MOU) *(new comment)*
- Consideration should be given to the corridors identified in the North Aldershot Agency Review (NAIR) report, for example “At the Escarpment brow the Grindstone Creek valley connects to the east-west geologic feature and the plant and animal communities it supports” (page 19). Please provide a discussion on these corridors. (Halton MOU) *(new comment)*
  - Adjacent lands to the identified Significant Wildlife Habitat also require consideration as it pertains to the PPS Policy 2.1.6 and should be discussed within the EIA. (Halton MOU) *(new comment)*
  - Summary of Significant Wildlife Habitat Present on the Subject Lands – Please provide a map of all the identified Significant Wildlife Habitat present on the site as well as lands that would be considered adjacent to the site, i.e. using the provincial direction of 120m as adjacent. This is essential so that staff can assess whether the development will impact the Significant Wildlife Habitat present and ensure conformity with the PPS. (Halton MOU) *(new comment)*

#### **Section 3.4**

37. Please refer to Section 3.3.5 Animal Movement Corridors, Section 3.3 Consideration of the Natural Heritage Components of the PPS, and comment #11 in this letter.

#### **Section 4.1 Development Plans**

- It was confirmed during the August 2013 that there is a discrepancy between the proposed development plans illustrated on the Savanta figures versus those prepared by Metropolitan Consulting. Please ensure that all figures within the EIA contain the same development plan area. (O. Reg 162/06, Halton MOU) *(new comment)*
- The Eagle Heights property section is unclear as to what is presented in the table as reference to the 1996, 2006, 2010 and 2012 plans are provided when discussing this table. Please clearly indicate which plan is being used as the comparison point and ensure all applicable figures include this plan. (O. Reg 162/06, Halton MOU) *(new comment)*

#### **Section 4.2 Road Standards**

- This section states that with respect to future drainage from Waterdown Road “...drainage will continue along the road rather than exit onto the field at Tributary 4. The review of this area should be carried out in the context of future widening or realignment proposed for Waterdown Road.” Please clarify how the context of future widening impacted the review of Tributary 4. To ensure a consistent understanding of future conditions, staff note that per Dillon Consulting Ltd.’s April 2012 “Waterdown Road Corridor Class Environmental Assessment Environmental Study Report” minor system flows (up to the 1:5 year return event) from a portion of Waterdown Road extending to approximately 250m south of Flatt Road will bypass current outlets to Tributary 4 across the Eagle Heights lands and outlet to Tributary 4 through a regulated watercourse on the Taylor lands. The majority of the Tributary 4 catchment area will continue to drain through the Eagle Heights property under all storm events, given that the drainage design for the minor system will convey less than half of the Tributary 4 catchment during frequent flows. Under intense storm events, the Waterdown Road drainage system will carry a much smaller proportion of the flow from the contributing drainage area. (O. Reg 162/06) *(new comment)*

### **Section 5.0 1994 EIA Recommendations**

38. It should be noted that the 1994 EIA Recommendations were based on policy approved at that time. Given that this is being considered a new application and therefore current policy is being applied to it, staff question the validity of including this discussion within the report as it is not in keeping, for the majority, with the policy of today. For example, there are servicing corridors proposed well into Significant Woodlands, encroachment proposed within a regulated wetland, and as maps of Significant Wildlife Habitat have not been provided, there is potential that development may also be proposed in those areas. Staff advise that this section be removed as it is no longer applicable to the development and the current policies applied to the site. (O. Reg 162/06, Halton MOU) *(new comment)*
39. Please ensure all lot setbacks adhere to current policy and legislation as outlined in various sections of this letter.
40. Staff cannot locate lots 290-309 on the Draft Plan, however if the setback is from a regulated valley feature, the setbacks are 15 metres from the hazard limit. If the buffer is in relation to the dripline setback beyond Conservation Halton's regulation limit, staff defer to the Region of Halton for appropriate widths. (O. Reg 162/06, Halton MOU) *(modified comment)*

### **Section 6.0 Potential Impacts, Effects, Mitigation and Net Effects**

#### **Section 6.1 Summary of Key Impacts and Mitigation Measures**

- As raised above, there are a number of different draft plans referred to or provided in the text and on figures. Please ensure that the correct draft plan is applied to all figures and the correct date is used in discussions. For example, Figure 11 does not have the same plan as Figure 5-2 of the FSR. (O. Reg 162/06, Halton MOU) *(new comment)*
- While staff acknowledge that in 1996 a development plan was supported by Conservation Halton, as previously raised the current plan proposed is considered a new application and therefore current legislation and policy must be used to delineate the limit of the proposed development. As this draft plan is not adhering to current policy and legislation, staff do not feel that this section addresses the need to be compliant with the PPS, the Greenbelt Plan, Conservation Halton's Ontario Regulation 162/06 and associated policies, and the Region of Halton's Official Plan and associated policies. While discussion is provided on potential impacts, staff question their merit given that they are not in keeping with current direction for buffers, legislation requirements and are therefore not fully addressing the impacts of the development. Staff recommend that this section be updated to reflect the requirements and direction of the previously noted policy and legislation. (Halton MOU) *(new comment)*
- Please include an expanded discussion on the potential impacts from servicing on the site. Currently reference is given to the FSR for further details, however no information on the environmental impacts are included in the report. Staff request that a figure be prepared that overlays the proposed servicing for the site with the environmental constraints with a current air photo. (O. Reg 162/06, Halton MOU) *(new comment)*

#### **Section 6.1.3 Fish Habitat**

- This section makes reference to Ontario Regulation 162/02 with regard to required setbacks for fish habitat. Please note the appropriate reference should be to Section 3.6.1 of Conservation Halton's Policies, Procedures and Guidelines for the Administration of Ontario Regulation 162/06. Further, the policy document indicates an allowance may also be required from the long term migration of the watercourse further to Policy 3.5 (O. Reg 162/06) *(new comment)*

- Paragraph 2 references development will not be permitted within a 7.5 m setback from the long term stable top of slope associated with Tributaries 5 and 6. Conservation Halton policies define all tributary and valley systems associated with Grindstone Creek (including tributaries 4, 5 and 6) as Major Valley systems, and therefore, development will not be permitted within a 15 m setback from the erosion hazard (i.e. the long term stable top of bank or meander belt width). (O. Reg 162/06) *(new comment)*
- Staff clarify that Tributary 4 transitions from an unconfined valley system north of Flatt Road to a confined valley system south of Flatt Road, and therefore the regulation limit associated with Tributary 4 would be based on the greater of the floodplain or meander belt plus an associated 15 m setback for areas north of Flatt Road, or the greater of the long term stable top of bank or floodplain, plus 15 m regulated setback for areas south of Flatt Road. Please refer to **APPENDIX II** for details. (O. Reg 162/06) *(new comment)*
- Staff have offered several comments on the stormwater management plan under comments on the Functional Servicing Report prepared by Metropolitan Consulting. Appropriate portions of the EIS should be updated to reflect any changes to the design as a result of addressing Conservation Halton's comments *(new comment)*
- The Sanitary Sewer Construction discussion under Section 6.1.3 states that there are several options for routing of the sewer main, which are discussed in the Functional Servicing and Stormwater Management report. Further, it is stated that the preferred alternatives will use trenchless construction, which will mitigate direct impacts on habitat from the drilling and installation of the pipe. An analysis of hydrogeological impacts from the proposed servicing should be included within the EIA. Additional details are also required within the EIA to discuss the potential impacts of the proposed techniques on riparian habitat (e.g. location of bell holes for punch and bore installations). (O. Reg 162/06, DFO Level II) *(new comment)*
- The Watercourse Crossings section under Section 6.1.3 lists the potential impacts that may occur from the widening and improvement of Flatt Road along the southern boundary of the Eagle Heights lands. The FSSR discusses grade changes proposed along Flatt Road but does not discuss the widening of Flatt Road. Please clarify if widening of Flatt Road is proposed. (O. Reg 162/06, Halton MOU, DFO Level II) *(comment from Section 6.1.4 of previous letter)*

#### **Section 6.1.4 Extended Detention Ponds**

41. The Extended Detention Pond section under Fish Habitat, states that although no SWM ponds outlet directly into the Grindstone Creek valley, two extended detention wet ponds are proposed within swales which lead to the onsite tributaries that join with the Grindstone Creek downstream of the Subject Lands. Staff note that the outlets of 4 ponds (Ponds 4A, 4B, 5A and 6B) outlet directly into watercourses that are regulated by Conservation Halton. Pond 6A appears to outlet to the ditch that flows directly into Tributary 6. Therefore all SWM ponds are directly connected to the tributaries that join Grindstone Creek downstream. Studies will need to demonstrate that thermal impacts and erosion will not affect the tributaries on the subject lands and/or the coldwater tributary downstream. (O. Reg 162/06, Halton MOU, DFO Level II) *(modified comment)*.
42. See comment 41 above.
43. Watercourse Crossing – Street X is proposed to run adjacent to a regulated branch of Tributary 4 on the Taylor lands. The potential impacts to the adjacent watercourses and fish habitat are not provided. Please revise the document to include a discussion of impacts to the tributary as a result of the location of Street X (Halton MOU, DFO Level 11) *(modified comment)*
44. Remains applicable.

- 45. Replaced by comments in Section 6.1.
- 46. Remains applicable.
- 47. Now under Section 6.1.3. Please see above.
- 48. Remains applicable.
- 49. Remains applicable.

### **Section 6.1.5 Significant Valleylands**

- As all tributaries to Grindstone Creek are deemed major valley systems under CH's policies, therefore, a 15 m development setback from the greatest hazard (long term stable top of bank, meander belt or the floodplain) will be required along Tributaries 4, 5 and 6, as well as along Grindstone Creek. (O. Reg 162/06) *(new comment)*
- Staff require additional detail on the noted 'minor intrusion' into the valley lands associated with the south corner of Sub-Area 7. Our policies generally exclude development intrusions into regulated valleylands. (O. Reg 162/06) *(new comment)*

## **Appendix A**

### **Figure 2**

- It should be noted that Figure 2 illustrates the correct ANSI boundary as updated by the MNR. Please ensure that the EIA report document is updated to reflect this current boundary. (Halton MOU) *(new comment)*

### **Figure 3**

- Figure 3 identifies a number of cultural plantations in the north of the property, however during the site visits these areas appeared to be more natural in their structure. Given that the original ELC mapping was completed in 2003 and only one day in 2012 was assigned to verify and update these boundaries for the entire site, staff question if these areas would be better classified as mixed forest or coniferous forest? It appears that from the site visits and in looking at air photos that this area has not been maintained as a plantation and so these communities have naturalized. We also question the CUP3-3/CUS classification as there does not appear to be a cultural savannah present any longer in this area. Please provide further details on these areas. (Halton MOU) *(new comment)*

### **Figure 4**

- It is unclear to staff how the locations of the amphibian monitoring were selected. For example, as the Marsh Monitoring Program protocols were used, we question why sites that were not wetlands were selected for monitoring. For example, stations A, B, C, D, J, M and N. Given that a number of the sites were located in non-wetland areas, staff are concerned with the validity of the results presented in the report. (Halton MOU) *(new comment)*
- In addition, no point call locations were situated in the well-established forest (FOD5-3) along the main Grindstone Creek valley. This is concerning as a number of assumptions regarding the bird community of the site have been made, however they are based on data that is incomplete for the site. Please refer to our comments on Section 3.2.3 Wildlife - Breeding Birds. Staff request clarification on the site selection for both surveys and note that should sufficient justification on the location of the surveys not be provided, additional surveys may be warranted in order to fully capture the amphibian and breeding bird populations of the site. (Halton MOU) *(new comment)*
- Further, please provide the location of all previous breeding bird and amphibian surveys completed for the site. We note that this figure only includes the 2009 and 2012 locations, while the natural heritage fieldwork dates table Appendix B includes all of the

surveys. A historic fieldwork figure should be supplied to illustrate these locations. (Halton MOU) *(new comment)*

#### **Figure 5**

- This figure should be updated to include the location of the western chorus frog observed in the wetland on the Taylor lands. (Halton MOU) *(new comment)*
- As raised above, it appears that the proposed draft plan presented on Figure 8 is not the same as the plan on Figure 5-2 of the FSR. Please ensure that the same plan is located on all drawings. (O. Reg 162/06, Halton MOU)

#### **Figure 9**

- Staff have a number of concerns with this figure, as discussed above, as it is not adhering to any current policy or legislation. For example, there are a number of areas where intrusion and removal of a portion of a Significant Woodland are proposed, there is intrusion into area that contain Endangered species, the regulated wetland on the Taylor property is encroached within, as well as numerous other instances that staff would not be able to support based on current practices. Please revise the figure to reflect the issues presented above and to correspond with current standards. (Halton MOU) *(new comment)*

#### **Figure 10**

- This figure presents an Analysis of Significance for the NHS as per the Natural Heritage Reference Manual, however we question the Significant Woodland designation layer. As raised previously, the Regional criteria for evaluating Significant Woodlands should be used. Additionally, if cultural communities meet the stem count requirements for designation as a woodland, then these should also be included in the Significant Woodland designation. Staff question the current methodology used for this site as wetlands and cultural thickets are included in the Significant Woodland layer, in areas that would not meet the stem count requirement. This figure should also include all other NHS designations for the site, such as Significant Wildlife Habitat, Regulated features, Habitat of Endangered or Threatened Species, ANSI, ESA, Wildlife Corridors, etc. (Halton MOU) *(new comment)*

#### **Figure 11**

- It is unclear what policies have directed the development of Figure 11, Buffers and Mitigation Measures. Staff assume this figure is based on the OMB decision and not on current legislation and policy. As outlined above, staff are not supportive of this approach and we continue to recommend that all aspects of the PPS, Greenbelt Plan, Endangered Species Act, Ontario Regulation 162/06 and relevant Official Plans be used to direct the proposed draft plan. Until such time that the report has been updated to reflect current standards, staff are unable to support the proposed development. (O. Reg 162/06, Halton MOU) *(new comment)*

#### **General Comment on Figures**

- EIS Figures 6, 8, 9, and 11 show Tributary 5 being located within the 7.5 m buffer block XY opposite lot 95, as opposed to within Valleyland Block YY. The block fabric in this area will need to be adjusted to maintain the tributary within the valleyland block and have the appropriate setbacks of 15 metres from the limit of the greatest hazard, as discussed earlier in this letter. (O. Reg 162/06) *(new comment)*

#### **Appendix B**

- As raised above, please include the time of the surveys completed as well as the weather conditions during the surveys. This is important as many survey protocols have specific requirements pertaining to weather and time of completion. Without this information, staff are unable to determine if the fieldwork completed to date is appropriate. (Halton MOU) *(new comment)*
- On December 14, 2012, woodland density sampling occurred however the results of this assessment are not discussed within the text of the report. Given that there are a number of cultural woodlands within the study area that may warrant a Significant Woodland designation, staff request that information be provided. (Halton MOU) *(new comment)*

#### **Appendix C**

- It should be noted that Table 2 on page 15 of the EIA does not include all of the locally rare species included in the plant list. Please revise the table to reflect the uncommon and rare plants present on the site so that a holistic assessment of the rare plants present on the site can occur. (Halton MOU) *(new comment)*

#### **Appendix D**

- Please update this appendix to reflect the current status of the birds observed on the site. For example, eastern wood-pewee is listed as Special Concern by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), bank swallow is listed as Threatened by COSEWIC and wood thrush is listed as Threatened by COSEWIC. (Halton MOU) *(new comment)*
- A local rarity column should be added to the table, please refer to the Halton Natural Areas Inventory for local status. (Halton MOU) *(new comment)*

#### **Appendix F (Eagle Heights and Taylor Lands EIA, Dec. 17/10)**

Comments 50 through 55 are all replaced by the Appendices A, B, C & D comments noted above.

#### **IV Eagle Heights Erosion Assessment, Burlington, Ontario, Prepared by Parish Geomorphic, dated May 26, 2010**

While all comments regarding this document in Conservation Halton's July 11, 2011 letter remain applicable (see Appendix I), the following new comments are also to be addressed.

5. Staff are not supportive of the potential localized erosive impacts of directing uncontrolled flows into the into the watercourses on site, and providing over-control within a downstream stormwater management facility. Best efforts must be made to address potential flow changes prior to discharge to the watercourses, however the potential change in the hydrologic regime must be incorporated into the meander belt width and stable top of bank assessments. (O. Reg 162/06, Prov. MOU) *(modified comment)*
- Page 13 of the report discusses channel re-alignments to Tributaries 5 and 6 in the vicinity of Flatt Road to minimize crossing requirements, address downstream erosion, and provide greater separation between the creek and existing retaining wall (supporting Flatt Road at Tributary 6). These works must be supported through a Subwatershed Study, Environmental Assessment (should Flatt Road widening be completed by the Municipality) or similarly comprehensive review. (O. Reg 162/06, Halton MOU)

As part of any re-submitted design, please:

- demonstrate that the erosion threshold calculated represents the most sensitive of the bed or bank threshold, including supporting calculations, etc., (O. Reg 162/06, Halton MOU)
- detail observed field conditions and document how observed field conditions supported the results of the geomorphic assessment (O. Reg 162/06, Halton MOU); and
- provide summary calculations of cumulative effective shear stress/effective work and a sample hydrograph supporting the pre and post development exceedance analysis. (O. Reg 162/06, Halton MOU)

**V Paletta International Limited, Functional Servicing and Stormwater Management Report: Eagle Heights & Taylor Property, City of Burlington” dated updated June 2010, Addendum Revised Section 7 to Address Region of Halton Comments, March 2013.**

While all comments regarding this document in Conservation Halton’s July 11, 2011 letter remain applicable (see Appendix 1) as the revised FSR submitted was to address the Region of Halton Comments, the following comments are new or modified from the original letter.

- Given the number of environmental constraints associated with the subject properties, staff request that a figure be prepared and included in both the FSR and the EIA that clearly outlines the required buffers and servicing requirements. (O. Reg 162/06, Halton MOU)

**Section 5.0**

9. The FSSR indicated the external storm drainage area 4E on Figure 5.2 was to be directed along Waterdown Road to a downstream on-line dry pond facility. Please note that this information does not appear to be consistent with the drainage scheme currently being considered as part of the on-going Waterdown Road Environmental Assessment (EA). Under the EA, Conservation Halton has request that treatment of stormwater flows from the road be incorporated into the development scheme of adjacent lands. Should evaluation of grades identify that directing road drainage into Pond 4A (by crossing Tributary 4 at Flatt Road) or into the proposed on-site storage within the institutional block is not feasible, staff still recommend that accommodation for all drainage from catchment 4E with the exception of the paved lanes for Waterdown Road itself, be directed through the Sub-Area 2 lands. This will ensure that the drainage area has been accounted for as Waterdown Road is be reconstructed with an urban cross section. As discussed previously, staff also recommend incorporation of an additional pond to treat this drainage area in conjunction with catchment 4C, 4D, 4E and 4G. (O. Reg 162/06, Halton MOU) (*modified comment*)
- 13.c) Not only is Conservation Halton supportive of the use of rural cross sections, due to the water quality, erosion, and infiltration benefits it will provide, the NAIR document states, “...roadside swales and ditches should be employed to conduct runoff to SWM facilities”. Should an urban cross section be considered, this needs to be modeled at this stage to ensure that the SWM pond blocks are appropriately sized. (O. Reg 162/06, Halton MOU) (*modified comment*)
20. Staff request all that SWM outlets discharge at the greatest distance feasible from the watercourse to reduce the need for additional erosion protection within watercourses. The outfalls requiring a channel outlet must be situated such that the discharge flows are in the same direction as the flow in the main creek (i.e. not perpendicular to the main flow) to decrease the potential for erosion on the bed and banks. Staff will also require



- the profile of the location of the outlet pipe in relation to the watercourse ordinary high water mark/bankfull channel, and details of any proposed bank treatment/protection. (O. Reg 162/06, Halton MOU, DFO Level II, Detailed Design) (*modified comment*)
24. Section 6.3 (Post Development Conditions Flatt Road Crossings) of the FSSR indicates the existing 550mm CSP on Tributary 4 under Flatt Road is to be upgraded to a 675 mm concrete pipe. The Erosion Assessment reports the maximum bankfull channel width in Reach 4-4 to be 1.58m. Staff request that the proposed concrete pipe be upgraded to a concrete box culver, to be countersunk a minimum of 10% to maintain natural substrate through the culvert. Minimally, staff request a CSP culvert is preferred over a smooth walled concrete pipe. Culverts should be sized appropriately to allow for a minimum of 10% countersinking, while maintaining appropriate hydraulic capacity. Staff recommends sizing the culverts according to recommendations of a fluvial Geomorphologist. (O. Reg 162/06, Halton MOU, DFO Level II) (*modified comment*)
- Section 7.6 identifies the need to construct a new reservoir to service the Eagle Heights subdivision. The location of the proposed Horning Road extension and Potential Reservoir locations are shown on Figure 7.13. Staff note that the proposed location of Horning Road as well as reservoir location 2 both fall within Conservation Halton's approximate regulation limit, and potentially the erosion hazard associated with the natural valley processes of the Grindstone Creek Valley. Staff are unable to determine whether reservoir location 1 falls within or outside of the approximate regulation limit. Staff will be unable to permit the proposed road construction without the completion of a detailed study to confirm the long term stable top of bank associated with the Grindstone Creek valley and the refinement of the regulated hazards. Per Conservation Halton Policy 3.51 new utility and transportation corridors are required to locate outside of the hazard and associated regulated tableland. Without further study, staff cannot confirm the acceptability of the proposed location for the Horning Road extension or potential water reservoir and zone B5A pumping station at locations 1 and 2. ((O. Reg 162/06)
  - Staff note a 400mm trunk watermain, a Zone B3A watermain and a sanitary main are proposed to cross all tributaries along Flatt Road. Please discuss the consideration/design measures to minimize the number of utility crossings. (O. Reg 162/06, Halton MOU)

#### **Draft Plan of Subdivision Drawing**

- It appears from the Draft Plan Drawing that the west branch of Tributary 5 is not contained within the proposed channel block and runs through the buffer area adjacent to Lot 95 (adjacent to Block XX). Please note staff are not supportive of a channel realignment unless supported by a subwatershed study or similar level study to fully evaluate the impact and consider other appropriate alternatives. (O. Reg 162/06)

#### **VI Planning Justification Report, prepared by Walker, Nott, Dragicevic, July 2002**

Previous comments still applicable.

#### **VII Eagle Heights Planning Justification & Environmental Analysis, prepared by Scott Burns Planning Consultants & ENVision, January 2001**

Previous comments still applicable.

#### **VIII Stable Top of Bank Assessment, prepared by Peto MacCallum, July 2006**

Staff received a copy of Peto MacCallum Ltd.'s 2006 "Stable Top of Bank Assessment Eagle Heights and Taylor Properties, Waterdown Road, Burlington, Ontario dated July 2006 on July 20,

2011. As the report was received after the preparation of our first submission comments, the following represent new comments under Ontario Regulation 162/06.

Staff have reviewed the 2006 PML report and are unable to support the location of long term stable top of slope at this time. Further clarification and justifications are required. We offer the following preliminary comments:

- The report and analysis appear to have been largely based on topographic information referenced as “Plan produced from an untitled and undated site plan, drawn and provided by Metropolitan Consulting Inc. in an e-mail dated June 22, 2006.” In several instances the approved top of bank line (assumed to be top of bank as staked by Conservation Halton Staff) is not consistent with the topographic information provided on the plans. Additionally the surface elevations identified for several of the boreholes do not appear to be consistent with the topographic information on the detailed plans. Please provide detailed reference information on the plans for the topographic survey, staked top of bank and borehole information, and reconfirm that the three surveys (staked top of bank, borehole and detailed topographic) were appropriately geospatially referenced. Please note that staff require a detailed topographic survey of the property, and that use of topographic information from local base mapping will not be sufficient to identify the hazards. As both the staked top of bank and topographic analysis are dated, in order to confirm the location of Conservation Halton’s Regulated Limit and the long term stable top of slope, staff will require:
  - A site visit with a licensed surveyor to re-stake and re-survey the top of bank features across both properties, and either
  - The provision of a written confirmation from the Geotechnical Engineer that based on a site inspection of all valley slopes and watercourses across the Eagle Heights and Taylor properties, that the topographic information currently presented and used in the 2006 report and any updated analysis of the long term stable slope crest is still accurate with respect to the watercourse location, toe of slope, top of slope, and slope inclination, or
  - The completion of a new topographical survey for the properties.

Please refer to *Section E Ontario Regulation 162/06* with regards to Conservation Halton’s outstanding requirements for staking on site for valleylands (and wetlands).

Staff may also be supportive of the completion of a partial topographic survey in the areas identified to have experienced change relative to the previous topographic survey, provided the partial survey data was able to consistently tie into historic survey data. Please note that Conservation Halton will only be able to accept a written confirmation of the topographic information or completion of a partial topographic survey if the analysis presented in the 2006 report was based on a site specific detailed topographic survey, completed by an Ontario Land Surveyor or Licensed Professional Engineer. Regardless of whether a new topographic survey is completed or if a statement confirming the accuracy of the slope is provided, staff will require an updated geotechnical assessment be completed to address the comments below.

While the report indicates that the limit equilibrium method of analysis was completed to determine the stable inclination, no calculations or summary of the values used in the calculation were provided within the report. Per the MNR technical Guidelines, Conservation Halton requires development to be setback relative to the long term stable

slope crest [which staff have defined as having a minimum factor of safety of 1.5 under long term conditions and 1.3 under temporary conditions (i.e. seasonally high groundwater table, etc.)]. Please provide summary output from the calculations to confirm that the selected stable slope inclination of 2:1 in soil is applicable for all cross section locations under both long-term and temporary site conditions. The output should show that the limit equilibrium analysis considered 20 to 30 slices (consisting of analysis of multiple centres of rotation each with multiple slip surfaces of various radii focused at the same center of rotation), and summarize the key inputs included in the computerized analysis. Staff also note that the identified stable inclination of 2:1 in soil differs from the previous analysis of the area completed by Terraprobe as part of Cosburn Patterson Wardman Ltd.'s 1995 "Grindstone Creek Subwatershed Study." Per the 1995 subwatershed study, a stable inclination of 2.5:1 was identified for clayey silt till. If the proposed stable slope inclination recommendation remains steeper than 2.5:1, please highlight how the Peto MacCallum's analysis differs from the analysis by Terraprobe as part of the Grindstone Creek Subwatershed Study. (Note – due to the age of the previous study and the potential for advances in the field of geotechnical engineering to modify previous findings, staff are not able to simply accept the previously approved value for use on the property, and will require a detailed geotechnical investigation be completed.)

- Staff are unable to accept the identified stable shale bedrock inclination of 1.25:1 without the completion of detailed studies of the rock competency. A geotechnical peer review (at the expense of the applicant) of the detailed rock studies will be required for staff to accept a stable slope inclination of less than 1.4:1 in shale.
- While the toe erosion component of the long term stable slope inclination for the Grindstone Creek lies within the recommended range of values presented in Table 3 of the MNR's Technical Guide: River and Stream System Erosion Hazard Limit" staff request additional justification as to why the lower spectrum of typical values for systems under active erosion was selected. Staff further note that the 1995 Grindstone Creek Subwatershed Study identified a toe erosion component of 5 m for shale and 8 m for clayey silts under active erosion, and 2 metres for shale and 4 metres for clayey silts where no identification of active erosion had been found. These values relate specifically to the table land creeks and not the Main Grindstone Valley. Staff believe that this section of the main Grindstone Creek to be highly susceptible to toe erosion, as Grindstone Creek gains substantial erosive potential dropping over the escarpment face immediately upstream of the property. Approximately 100m north of Horning Mill Road, the Creek goes over the escarpment face, and the base of the valley is at an average gradient of approximately 11%. Although the base of the valley flattens considerably and the gradient is reduced to approximately 1.6% through the mid portion of the Eagle Heights property, the channel still exhibits a relatively steep gradient. Given the relative size of the Grindstone Creek's drainage area at the property, approximately 7,200ha, and the steep gradient of the system, staff believe that the Grindstone Creek at this location is not representative of a 'typical' Ontario stream, and request that a detailed toe erosion assessment be completed to confirm an appropriate value for toe erosion.
- Staff are unable to accept the proposed toe erosion component of 50% of the value for the Main Grindstone Creek for the 'ravine creeks' without further justification. Although it is acknowledged that the ravine creeks have a smaller contributing drainage area, these systems have a steeper inclination along the base of the valley as compared to the Main Grindstone through the property, and will be subject to a changing flow regime due to the development. Additionally these systems are less likely to be founded in shale or bedrock, are deeply incised, and typically less vegetated as compared to the main Grindstone valley. In the absence of a geomorphic analysis to set the 100 year toe

erosion rate of these creeks, staff recommend consideration of conservative toe erosion rates provided in Table 3 of the MNR's Technical Guidelines for actively eroding systems. Staff note that the values in the MNR Technical Guidelines are consistent with the values identified in the 1995 Grindstone Creek Subwatershed Study prepared by Cosburn Patterson Wardman Ltd.

- As the topographic information did not appear to be accurate, staff could not confirm that the cross sections analyzed to determine the long term stable top of slope were representative of the critical cross sections. Please ensure that the revised report presents factor of safety analysis of the most critical cross sections under long term and temporary slope conditions. The revised report must also include photographs of the slope and indicate the length of validity associated with the analysis or confirmation, and be signed and sealed by a licensed professional engineer.
- Please note that for confined valley systems associated with Grindstone Creek and all other major valley systems, Conservation Halton's Regulated limit extends 15m from the greater of: top of bank as staked by Conservation Halton, the long term stable top of slope as calculated by an approved signed and sealed geotechnical investigation, or the regulatory floodplain. Please revise the buffer areas shown on the plans accordingly.

#### **IX Plans of Subdivision – Figure 2-1 and Figure 2-2**

1. Remains applicable.
2. Remains applicable.
3. Remains applicable. Please refer back to *Section E Ontario Regulation 162/06* for areas outstanding that require additional staking (both valleylands and wetlands).
4. At the present the extent of the flooding and erosion hazard limit associated with the Main Grindstone Creek, and tributaries 4, 5 and 6 have not been properly identified (O. Reg 162/06) (*modified comment*)
5. Staff are not supportive of the revisions to the flooding and erosion hazard limits as currently presented in Peto MacCallum's July 2006 "Stable Top of Bank Assessment, Eagle Heights and Taylor Properties" and Metropolitan Consulting Inc.'s Updated June 2010 "Functional Servicing and Stormwater Management Report – Eagle Heights & Taylor Property" reports, as these reports are not consistent with the technical guidelines provided by the MNR for the evaluation of natural hazards. For any identified unconfined reaches, an erosion assessment (meander belt width + 100 year erosion rate) signed and sealed by a fluvial geomorphologist licensed by the Association of Professional Geoscientists of Ontario, or by a licensed Professional Engineer must be submitted to CH for review and approval to confirm a revised erosion hazard limit. (O. Reg 162/06, Prov. MOU) (*modified comment*)
6. No longer applicable.
7. The proposed draft plan for Eagle Heights does not include a corridor for Tributary 4, as the channel's current alignment lies within Blocks PP, OO and residential lots fronting Waterdown Road and Street E. Per the EIA and FSSR, the drainage functions of this feature are to be provided through a ditch along Street E. Based on CH's current mapping, Tributary 4 is considered to be a regulated watercourse for a distance of approximately 635 m upstream of Flatt Road (*See Appendix I*). Therefore, a subwatershed study or similar level of study must be completed to support the relocation or removal of this feature. Alternatively, the flooding and erosion hazard limits may be calculated as per the MNR's Technical Guidelines on Natural Hazards and the development plans adjusted to eliminate any development within the regulated hazard and associated 15 m setback. (O. Reg 162/06, Prov. MOU)

8. Remains applicable. However, based on a site visit, Conservation Halton does not have concerns with the stability of Street X provided it is outside of the erosion hazard associated with Tributary 4. (O. Reg 162/06, Prov. MOU)
9. Remains applicable.
10. Please note that Conservation Halton has a specific policy related to the development of stormwater management ponds within the Regulated Limit. Please note however that based on the topographic data shown on the plan, staff anticipate that a significant portion of Block H appears to be within the 15 metre regulation limit associated with a valley and potentially the wetland MAS2-1 Pond3-1 and its associated setbacks, as such, contrary to CH's policies. Therefore, development of even a temporary stormwater management pond will likely not be supported at the present location. Similarly, staff note that Block O, SWM Pond 6B is also located within a valley, therefore the placement of this block is not supported. (O. Reg 162/06, Halton MOU)
11. Remains applicable.
12. Wetland- All development (including any proposed grading changes) within the 30 metre associated allowance of a wetland must be supported through the completion of a hydrologic evaluation confirming that the development would not have a negative impact on the hydrologic functions of the wetland. Given the nature of the surrounding development, the hydrologic evaluation must include a hydrogeologic component. (O. Reg 162/06) (*modified comment*)
13. Remains applicable.
14. Remains applicable.
15. Remains applicable.

## **X Overall Subdivision Plan Comments**

The following comments in this new section have been generated by the most recent submission.

- Staff require that Tributary 4 and the west branch of Tributary 5 be vegetated to the satisfaction of Conservation Halton staff in the reach currently crossing through agricultural fields to create a riparian buffer. The Remedial Action Plan for Hamilton Harbour, Urbanization and Land Management component, long term target for Riparian Buffers is to have “all rural watercourses within the Hamilton Harbour watershed be buffered by a 15 metre vegetative riparian buffer adjacent to warmwater fish habitat and a 30 metre vegetative buffer adjacent to coldwater fish habitat” by 2015. Further, there is a recommendation to “establish appropriate riparian buffering in urban watersheds”. Environment Canada’s How Much Habitat is Enough? (Third Edition, 2013) indicates, “both sides of streams should have a minimum 30 metre wide naturally vegetated riparian area to provide and protect aquatic habitat. The provision of highly functional wildlife habitat may require total vegetated riparian widths greater than 30 metres.” (O. Reg 162/06, Halton MOU)
- Staff recommends the recommendations and targets within the Hamilton Harbour Remedial Action Plan (RAP) be adhered to during subdivision design and development. (Hamilton Harbour RAP Agreement)
- The RAP Stage 1 & 2 Reports identified suspended solids/sediments as issues related to the streams entering Hamilton Harbour. The report indicates that one of the most beneficial focus for additional suspended solids reductions should come from watershed and urban runoff best management practices. Reducing total phosphorus loading to the Harbour is the single most important means to reduce algae and increase water clarity. The RAP target is to reduce total phosphorous loads to 23 µg/L. To assist in achieving

this, a detailed phasing plan for development should be established to minimize bare soil conditions and employ a treatment train approach and strict site monitoring for Erosion and Sediment Control implementation to reduce erosion and runoff during and post construction.

- Section 3.1 Road Standards of The North Aldershot Inter-Agency Review (NAIR) Final Report provides guidance on Stormwater Management. The report outlines various design guidelines for managing stormwater (e.g. runoff should be minimized and detained on site; runoff shall be detained within each development node to address water quality and erosion; outletting of water should not impact natural features; design of facilities to harmonize with abutting natural features; and roadside swales and ditches shall be employed to conduct runoff to SWM facilities etc.). Staff request additional discussion on how these guidelines have been incorporated into the design.
- The NAIR Report indicates any disturbed or degraded environments must be rehabilitated. Please note Conservation Halton's Landscaping and Tree Preservation Guidelines should be reviewed for details on restoration of any disturbed areas and for any proposed watercourse realignments (only where supported through a SWS).

We trust the above is of assistance and provides the guidance required to address the issues outstanding pursuant to Ontario Regulation 162/06, our Halton MOU, DFO Level II Agreement, Provincial MOU and the Hamilton Harbour Remedial Action Plan Agreement.