



CITY OF HAMILTON

PLANNING AND ECONOMIC DEVELOPMENT DEPARTMENT
Growth Management Division

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| TO: Chair and Members Planning Committee | WARD(S) AFFECTED: WARD 15 |
| COMMITTEE DATE: May 15, 2012 | |
| SUBJECT/REPORT NO: Waterdown North Master Drainage Plan Addendum and Borer's Creek Capacity Assessment (PED12084) (Ward 15) | |
| SUBMITTED BY: Tim McCabe General Manager Planning and Economic Development Department | PREPARED BY: Monir Moniruzzaman 905-546-2424 Ext. 1078 Melanie Jajko 905-546-2424 Ext. 6412 |
| SIGNATURE: | |

RECOMMENDATIONS

- (a) That the General Manager, Planning and Economic Development Department, be authorized and directed to file the Waterdown North Master Drainage Plan Addendum and Borer's Creek Capacity Assessment, Municipal Class Environmental Assessment (EA), Project File Report, with the Municipal Clerk for a minimum thirty day public review period;
- (b) That upon completion of the minimum thirty day public review period, the General Manager, Planning and Economic Development Department, be authorized and directed to proceed with implementation of the preferred alternatives as outlined in Report PED12084, subject to funding approval through the Capital Budget process.

EXECUTIVE SUMMARY

The City of Hamilton has initiated a Schedule B (Phase 1 & 2) Municipal Class EA process for the Waterdown North Master Drainage Plan Addendum and Borer's Creek Capacity Assessment (see Appendix "A" – Location Map) as numerous planning and design issues have arisen which have brought forward the need to update the Master Drainage Plan by way of an Addendum. The Addendum is being coordinated with the

Borer's Creek Capacity Assessment in order to maintain consistency between the two companion initiatives, along with recommended measures for flood protection.

Based on the results of the hydrologic and hydraulic analyses which have been completed in support of the Addendum to the Master Drainage Plan and the results for the Borer's Creek Capacity Assessment Update, the recommendations include providing flood control through storage upstream of the Future East-West Roadway and revegetate downstream "high" and "medium" roughness zones to achieve a mixture of floodplain vegetation.

Alternatives for Consideration – See Page 11

FINANCIAL / STAFFING / LEGAL IMPLICATIONS (for Recommendation(s) only)

Financial: Cost for a temporary flood control structure will be the responsibility of the benefiting developers in the North Waterdown Secondary Plan. At some point in the future when this structure becomes permanent and incorporated into the final East-West Corridor roadway, the cost sharing for this flood control structure will be in accordance with the City's current Development Charge Background Study and financial policies for development. This will be coordinated through the Growth Management Division and will be subject to Capital Budget funding approval.

EA and Study related costs have been funded to date from 2006 Capital Account #5180655640. This project has been funded from Development Charge revenues and is \$157,000 unspent as of April 1, 2012.

Staffing: N/A

Legal: Municipal undertakings such as road improvements, water and wastewater and transit projects are subject to Ontario's Environmental Assessment Act. The Act allows for the approval of Class EAs and the municipality has the option of following the planning process set out in the Municipal Engineers Association Class EA (October 2000, as amended in 2007). The Class EA process has been followed.

HISTORICAL BACKGROUND (Chronology of events)

Official Plan Amendment No. 28

The Waterdown North area is part of an Urban Expansion that was initiated in 1991 by the Town of Flamborough, and is generally referred to as OPA 28 (Official Plan Amendment No. 28, to the Flamborough Official Plan). This expansion was referred to the Ontario Municipal Board (OMB), and in March 1997, a decision by the Joint Board was issued to bring the subject lands into the urban area with a number of conditions

attached. This decision was subsequently appealed to the Cabinet in 1997. After a lengthy course of action, the Executive Council of the Provincial Government of Ontario approved OPA 28 on June 19, 2002, on the basis of a written memorandum of Agreement.

Waterdown North Secondary Plan, Urban Design Guidelines, Water/Wastewater Master Servicing Plan, Master Drainage Plan and Collector Road Master Plan

One of the conditions of the Memorandum of Agreement was that a Secondary Plan be completed for the Waterdown North Area. The City of Hamilton undertook an Integrated Land Use Study which included a Water/Wastewater Servicing Class EA, Master Drainage Plan and Collector Road Master Plan. The recommendations were approved by Council in March 2007.

Waterdown North Master Drainage Plan (2007)

The Waterdown North Master Drainage Plan was required to mitigate the impacts associated with stormwater from the proposed development of the Waterdown North lands. The recommendations advanced from the Master Drainage Plan included a strategy to provide stormwater quality control, erosion control, and flood control, as well as a functional plan that would serve as the basis for the next steps of planning and design of the development area. The process included consultation with a stakeholder committee, which consisted of representatives from various departments within the City of Hamilton, as well as the Hamilton Conservation Authority.

Waterdown North Master Drainage Plan Addendum and Borer's Creek Capacity Assessment

Following the release of the Waterdown North Master Drainage Plan (2007), numerous planning and design factors have arisen which have brought forward the need to update the Master Drainage Plan by way of an Addendum, such as the Waterdown / Aldershot Transportation Master Plan: East-West Road Class EA, and advancement of local area plans by developers. The objectives of this Addendum are to:

- Update the hydrologic analyses for the future land use conditions based upon the higher density development currently proposed under the various Plans of Subdivision provided subsequent to the completion of the original Master Drainage Plan.
- Update the drainage boundary and land use plan based upon the currently proposed east-west transportation corridor alignment and associated grading.

- Evaluate the requirements for the watercourse crossings within the limits of the Waterdown North development area; specifically related to the east-west transportation corridor.
- Based on the setback requirements for the Environmentally Significant Areas and the Provincially Significant Wetland, determine the available lands for development within the lands east of the Borer's Creek and north of the proposed east-west corridor, as well, verify the appropriate stormwater management approach for these lands.
- Develop a preliminary planning corridor for the realignment of the tributary watercourse at the northeast limit of the Secondary Planning area, based upon hydraulic design criteria, and identify any additional information required in order to establish an ultimate planning corridor for the tributary watercourse.
- Review the constraints associated with the design of the outlet for Pond 2 (i.e. grading, environmental features, etc.) located at the north development outlet, east of the Borer's Creek.
- Establish hydraulic design criteria for the proposed pedestrian bridge crossing of the Borer's Creek, mid-block between Parkside Drive and the east-west roadway.
- Evaluate the stormwater management opportunities for the future urbanization of Parkside Drive; based on local grading constraints and stormwater management proposed in the adjacent development area.
- Review the recommendations provided in the original Master Drainage Plan for groundwater investigations to be completed as part of future studies, and update as required.
- Update the hydraulic analyses for the Borer's Creek downstream of Parkside Drive, and verify the results of the original capacity assessment completed under the original Master Drainage Plan, as well as subsequent studies to provide appropriate flood protection for the community.

Borer's Creek Capacity Assessment

The hydraulic analyses which were completed as part of the Master Drainage Plan included an assessment of the impacts of the proposed development with respect to the capacity of the Borer's Creek downstream of Parkside Drive. Subsequent to this assessment, concerns were identified with respect to the capacity of the Borer's Creek due to extensive vegetation growth, lack of maintenance, and issues related to the as-constructed geometry of the channel and its crossings. The City of Hamilton initiated a further investigation to update the hydraulic modelling and capacity analysis for the

Borer's Creek downstream of the Waterdown North lands. This capacity assessment update has been integrated into the Master Drainage Plan Addendum, in order to maintain consistency between the two companion initiatives.

POLICY IMPLICATIONS

The proposed recommendations for Waterdown North Master Drainage Plan Addendum and Borer's Creek Capacity Assessment conform to the City of Hamilton Strategic Plan, in a number of focus areas: Financial Sustainability, Effective Inter-Governmental Relations and Environmental Stewardship.

Financial Sustainability

The City of Hamilton Strategic Plan, Focus Area 2, Financial Sustainability would be achieved by undertaking the stormwater management and flood control recommendations because the potential for future flooding would be reduced, thereby addressing possible infrastructure deficiencies and unfunded liabilities. In addition, the cost of the creek crossing structure for the proposed east-west road corridor will be reduced.

Effective Inter-Governmental Relations

The Waterdown North Master Drainage Plan Addendum and Borer's Creek Capacity Assessment complies with City of Hamilton Strategic Plan, Focus Area 3, Effective Inter-Governmental Relations because throughout the planning process effective relationships with public agencies were maintained. The project team consistently included staff from the Hamilton Conservation Authority and Ministry of Natural Resources to understand viable options for improvement and their input was utilized in the decision making for the preferred alternatives.

Environmental Stewardship

The City of Hamilton Strategic Plan, Focus Area 6, Environmental Stewardship is accomplished through the Waterdown North Master Drainage Plan and Borer's Creek Capacity Assessment because natural resources are protected and enhanced. Although there would be some reduction in tree cover adjacent to the watercourse and minor reduction in canopy throughout the reach, the overall environment would be improved. There would be replanting outside of the floodplain, with the vegetation to be implemented consistent with typical floodplain/flood fringe conditions and the removal of invasive species. There would also be improved fish passage through the removal of multi-stemmed trees.

RELEVANT CONSULTATION

As required under the Municipal Class EA, affected public agencies were consulted throughout the planning process. A list of regulatory agencies, thought to be possibly affected or interested in the project was compiled including First Nations, provincial ministries, federal departments, the local conservation authority, and various utility companies (see Appendix “B” – Agency Consultation List).

City of Hamilton staff was circulated during various stages of the Environmental Assessment process. During the start-up of the study a list of internal staff in a variety of departments with a potential interest (see Appendix “C” – Internal Staff Consultation List) was developed. Internal staff were circulated the Notice of Public Information Centre and where appropriate draft reports for review and input.

In addition, the Financial Planning and Policy Division has been consulted on the financial implications of this study and has provided input into Report PED12084.

The Waterdown North Master Drainage Plan Addendum has proceeded with input from representatives from the City of Hamilton and Hamilton Conservation Authority. In addition to the involvement of the City and Hamilton Conservation Authority staff, the study has also received input from area residents and the general public by way of a Public Information Centre (PIC). Direct consultation was also held with the area developers regarding the refined management strategies affecting the planned development in Waterdown North.

A notice requesting public input and invitation to the Public Information Centre were advertised twice in the Hamilton Spectator (At Your Service Section), on July 16 and 23, 2010, and the Flamborough Review on July 15 and 22, 2010. This notice was also mailed to local residents, agencies and First Nations.

In addition to the notice, residential properties in the study area that were identified as potentially being affected by a severe storm event, were sent an additional letter providing an overview of the study and an invitation to the Public Information Centre.

A Public Information Centre (PIC) was held on July 29, 2010 at St. Thomas the Apostle Parish Hall located at 715 Centre Road, Waterdown. There were approximately 25 – 30 people in attendance. The PIC featured display boards providing information on the project background, maps of the study area, existing conditions, an evaluation of alternatives, and the preliminary preferred alternative.

In summary, the following general comments and concerns were received:

- Concerns about the creek's ecological and aesthetic value; and,

- The management of the vegetation in the creek corridor would reduce or eliminate the value of the creek corridor.

The feedback that was being received indicated that a misunderstanding of the proposed recommendations had occurred amongst some of the public. In order to clarify the study objectives, an Update/Clarification of Borer's Creek Corridor Management for Flood Protection newsletter was mailed to local residents (see Appendix "D" – Update/Clarification of Borer's Creek Corridor Management for Flood Protection newsletter).

A commitment was made to have additional consultation during the development of the Borer's Creek Corridor Management Plan. A Public Information Centre will be held to obtain input and to provide details of the proposed plan for Borer's Creek.

All comments received from public and agencies were fully reviewed and responded to where appropriate, by the City of Hamilton Project Team, and were considered when determining the final alternative.

A Notice of Filing of Addendum will be sent to affected public agencies, property owners directly affected by the proposed work, and others that requested to be on the study mailing list advising them of the filing of the Project File Report Addendum for the works to be completed.

ANALYSIS / RATIONALE FOR RECOMMENDATION

(include Performance Measurement/Benchmarking Data, if applicable)

Municipal Class Environmental Assessment Process

The Class EA study follows the planning and design process of the Municipal Engineers Association (MEA) Municipal Class Environmental Assessment, October 2000, as amended in 2007. The City is completing this study in accordance with the planning process applicable to Schedule 'B' projects under the Municipal Class EA. These projects are approved under the Environmental Assessment Act once the required two phase process is complete and subject to a public review period.

Based on the hydrologic and hydraulic analyses completed in support of the Addendum to the Master Drainage Plan, the following findings have been demonstrated:

- The previously recommended stormwater management strategy for the Waterdown North development area would continue to satisfy the criteria for stormwater quality, flood and erosion control along the Borer's Creek for the currently proposed development areas, despite the higher levels of imperviousness.

- Stormwater quality is required for portions of the proposed development areas fronting Parkside Drive. Opportunities for stormwater quality control include the installation of an oil/grit separator for the 3.0 ha parcel, as per the recommendations provided within the original Master Drainage Plan.
- The currently proposed hydraulic structures for the East-West corridor along the north limit of the Waterdown North development area would satisfy the current criteria for freeboard and clearance, and would not be overtopped during the Regional Storm event.
- The Regional Storm floodplain within the Borer's Creek downstream of the Waterdown North development area would not be significantly altered compared to existing conditions, as a result of the currently proposed development and stormwater management system (<5cm).

The results for the Borer's Creek Capacity Assessment Update have demonstrated the following:

- The capacity of the Borer's Creek downstream of Parkside Drive has been reduced compared to the approved condition represented in the approved HEC-RAS hydraulic models which were provided by the Hamilton Conservation Authority for the original Master Drainage Plan, due to the dense vegetation which has grown unmanaged within the watercourse corridor.
- The 100 year floodplain within the Borer's Creek downstream of the Waterdown North development area would be contained within the valley system under the proposed land use conditions with stormwater management, despite the presence of the denser vegetation within the corridor.
- The Regional Storm water surface elevation within the Borer's Creek downstream of the Waterdown North development area currently extends beyond the limits of the designated corridor and onto private property; no private dwellings would be flooded during the Regional Storm event.
- The proposed development within the Waterdown North development area would not increase the number of private properties flooded during the Regional Storm event, nor would any private dwellings be flooded during the Regional Storm event under proposed ultimate land use conditions with stormwater management.

Alternatives and Preferred Alternative for Borer's Creek Flood Remediation

The following alternatives for Borer's Creek Flood Remediation were identified and evaluated:

Alternative 1 Do Nothing

- Alternative 2** Provide flood control through storage upstream of the Future East-West Roadway
- Alternative 3** Provide flood control through storage upstream of the Future East-West Roadway and revegetate downstream “High” roughness zones to achieve “Medium” roughness (brush and grass)
- Alternative 4** Provide flood control through storage upstream of the Future East-West Roadway and revegetate downstream “High” and “Medium” roughness zones to achieve “Low” roughness (grass)
- Alternative 5** Provide flood control through storage upstream of the Future East-West Roadway and revegetate downstream “High” and “Medium” roughness zones to achieve mixture of floodplain vegetation
- Alternative 6** Flood proof affected properties through earthen berms

Table 1 provides a summary of the conclusions drawn from the evaluation.

Table 1 - Summary of the Evaluation of Alternatives

| ALTERNATIVE | CONCLUSION |
|---|---|
| Alternative 1 Do Nothing | Existing flood risk during Regional Storm event would continue. No capital costs. No operation and maintenance cost for creek. Not Recommended |
| Alternative 2 Provide flood control through storage upstream of the Future East-West Roadway | Existing flood risk during Regional Storm event would be mitigated. Higher operation and maintenance for Borer’s Creek anticipated due to dense vegetation and presence of invasive species. Not Recommended |
| Alternative 3 Provide flood control through storage upstream of the Future East-West Roadway and revegetate downstream “High” roughness zones to achieve “Medium” roughness (brush and grass) | Existing flood risk during Regional Storm event would be mitigated. Potential reduction in aesthetic value to Borer’s Creek within existing high density vegetation zones due to removal of trees. Not Recommended |

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| <p>Alternative 4 Provide flood control through storage upstream of the Future East-West Roadway and revegetate downstream “High” and “Medium” roughness zones to achieve “Low” roughness (grass)</p> | <p>Existing flood risk during Regional Storm event would be mitigated. Significant reduction in tree cover and brush cover throughout reach. Reduction in aesthetic value to Borer’s within existing high and medium density vegetation zone due to removal of trees and brush. Not Recommended</p> |
| <p>Alternative 5 Provide flood control through storage upstream of the Future East-West Roadway and revegetate downstream “High” and “Medium” roughness zones to achieve mixture of floodplain vegetation</p> | <p>Existing flood risk during Regional Storm event would be mitigated. Potential improvement to the aesthetic value of the Borer’s Creek through landscape design and removal of invasive species. Lower capital costs for the construction of the flood control structure compared to the original sizing identified by the East/West Road Corridor Class EA. High capital costs for the extensive replanting and landscaping of Borer’s Creek. Extensive requirements associated with Regional flood control structure and more extensive portion of Borer’s Creek downstream of Parkside Drive. Recommended</p> |
| <p>Alternative 6 Flood proof affected properties through earthen berms</p> | <p>Due to majority of work on private lands or at public/private interface, it will be challenging and impactful to construct. Not Recommended</p> |

The preferred Alternative for Borer’s Creek Flood Remediation is Alternative 5 – Provide flood control through storage upstream of the Future East-West Roadway and revegetate downstream “High” and “Medium” roughness zones to achieve mixture of floodplain vegetation. This is the preferred alternative because:

- Regional Storm Flood Protection is provided
- Invasive vegetation species removed from creek block
- Improved fish passage through Borer’s Creek
- Reduced density of vegetation facilitates access for future maintenance of corridor.

ALTERNATIVES FOR CONSIDERATION

(include Financial, Staffing, Legal and Policy Implications and pros and cons for each alternative)

The preferred alternative solutions have been identified using an evaluation and screening process that fulfils the requirements of the Municipal Engineers Association (MEA) Municipal Class EA document for Schedule B projects. Municipal projects processed under the Schedule B provisions are considered to be approved under the Environmental Assessment Act provided the projects follow the appropriate planning and design process outlined in the MEA Municipal Class EA document.

The MEA Municipal Class EA document was approved under the Environmental Assessment Act. If the City does not follow the process outlined in the Municipal Class EA document, the City would be in violation of the document and as a result would have contravened the EA Act. The Minister of the Environment could revisit the approval of a project or take away the City's right to use the Municipal Class EA document.

The preferred alternative solution(s) is not normally reconsidered at the end of the process unless there is an issue that is proven to affect the outcome of the evaluation process.

Council may choose not to file the Waterdown North Master Drainage Plan Addendum and Borer's Creek Capacity Assessment, Municipal Class Environmental Assessment Schedule B Project File Report with the City Clerk for a minimum thirty day public review period and, as a consequence, not proceed with implementation.

However, should Council not wish to approve the filing of the Waterdown North Master Drainage Plan Addendum and Borer's Creek Capacity Assessment, Municipal Class Environmental Assessment, Project File Report, the Municipal Class EA process would be considered by the provincial government as incomplete and the City will not have approval under provincial environmental legislation to implement the improvements required for stormwater management for Waterdown North and flood control for Borer's Creek. This will not preclude the removal of the "high" and "medium" roughness zones within the Borer's Creek channel downstream of Parkside Drive. The outcome would result in the inability to provide stormwater quality control, erosion control, and flood control for the Waterdown North development area. Eventually the City would have to repeat the Class EA process, which would likely result in the same recommendations.

CORPORATE STRATEGIC PLAN (Linkage to Desired End Results)

Focus Areas: 1. Skilled, Innovative and Respectful Organization, 2. Financial Sustainability, 3. Intergovernmental Relationships, 4. Growing Our Economy, 5. Social Development, 6. Environmental Stewardship, 7. Healthy Community

Financial Sustainability

- ◆ Address infrastructure deficiencies and unfunded liabilities. Providing stormwater quality control, erosion control, and flood control is a proactive approach to help achieve financial sustainability for the City of Hamilton.

Intergovernmental Relationships

- ◆ Maintain effective relationships with other public agencies. Corresponding with public agencies throughout the study helped in making better decisions while maintaining intergovernmental relationships.

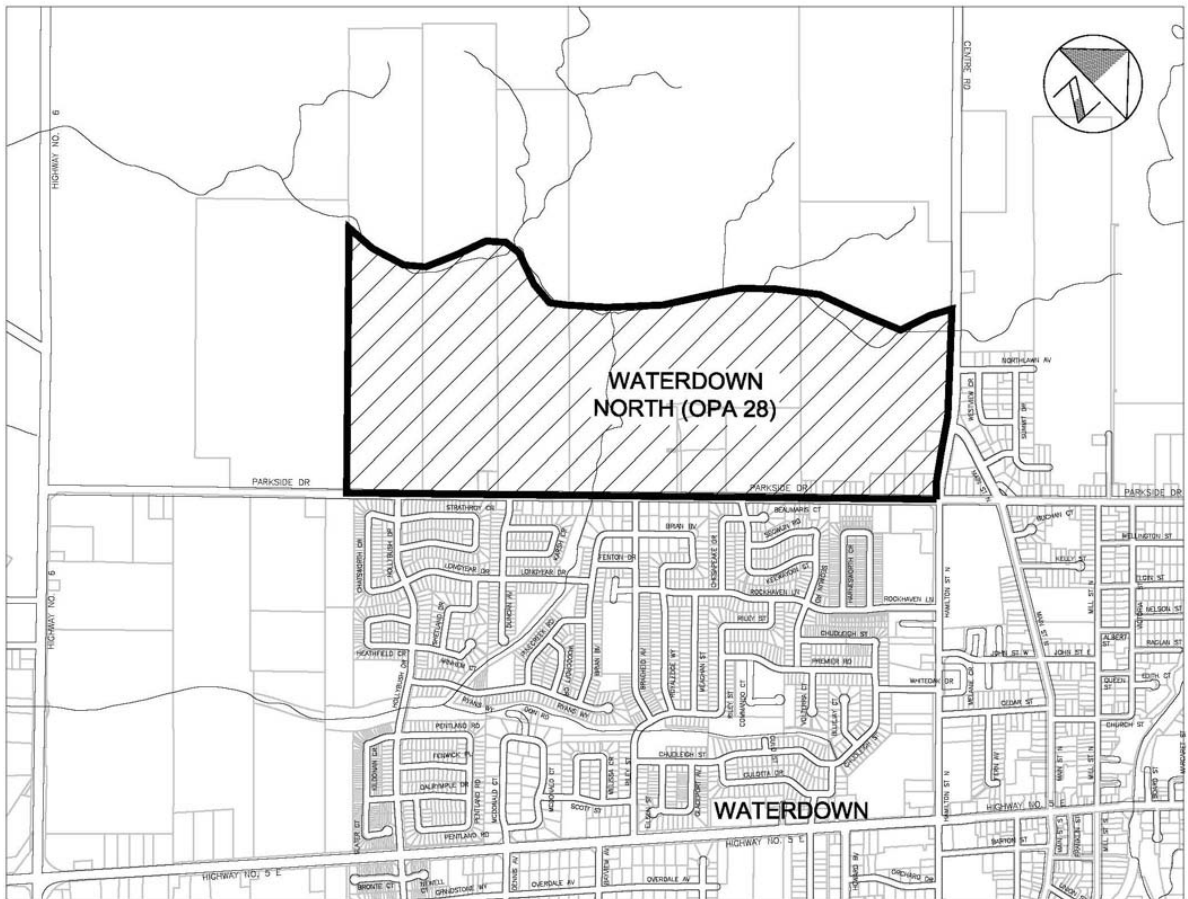
Environmental Stewardship

- ◆ Natural resources are protected and enhanced. The mitigation approach to providing stormwater quality control, erosion control and flood control will help in maintaining environmental stewardship as a result of proposed development.

APPENDICES / SCHEDULES

Appendix "A" to Report PED12084 – Location Map
Appendix "B" to Report PED12084 – Agency Consultation List
Appendix "C" to Report PED12084 – Internal Staff Consultation List
Appendix "D" to Report PED12084 – Update/Clarification of Borer's Creek Corridor Management for Flood Protection

MJ:ra
Attachs. (4)



Agency Consultation List

The following Provincial Agencies were contacted for this project:

- Ministry of Transportation
- Ministry of the Environment
- Ministry of Natural Resources
- Ministry of Culture
- Ministry of Aboriginal Affairs
- Ministry of Attorney General

The following Federal Agencies were contacted for this project:

- Environment Canada
- Department of Fisheries and Oceans
- Department of Indian and Northern Affairs Canada

The following First Nations were contacted for this project:

- Assembly of First Nations
- Huron Wendat First Nation
- Six Nations Lands and Resources
- The Metis Nation of Ontario
- Council of Ontario Chiefs
- Patent and Trademark Agents
- Association of Iroquois and Allied Indians
- Six Nations
- Six Nations Eco-Centre
- Huron Wendat First Nation
- Six Nations of the Grand River Territory
- Metis Women’s Circle
- Haudenosaunee Resource Centre
- Mississaugas of the New Credit First Nation
- Cultural Explorers
- Canadian Geographical Names Database
- Hamilton Regional Indian Centre
- Aboriginal Coalition
- Hamilton Executive Directors' Aboriginal Coalition Inc. (HEDAC)

The following Utility Agencies were contacted for this project:

- TransCanada Pipelines
- Sun Canadian Pipeline
- Horizon Utilities Corporation

The following Other Key Stakeholders were contacted for this project:

- Hamilton Conservation Authority
- Niagara Escarpment Commission
- Area Developers

Internal Staff Consultation List

The following City of Hamilton Departments/Offices were contacted for this project:

- Mayor's Office
- Ward 15 Councillor
- Planning and Economic Development
- Public Works
- Hamilton Public Library
- Corporate Services
- City Manager's Office

**UPDATE/CLARIFICATION OF BORER’S CREEK
CORRIDOR MANAGEMENT FOR FLOOD PROTECTION**

Recent e-mails received from concerned citizens in the vicinity of the Borer’s Creek downstream of Parkside Drive in Waterdown, have raised issues about the current recommendations to provide flood protection to this creek reach and surrounding flood-prone areas. Most of the comments from residents focus on the reach’s ecological and aesthetic value, and the concern that the proposal to manage the vegetation in the creek corridor (in combination with the upstream flood control) will reduce or eliminate the value of the creek corridor.

In order to provide some direct clarity on this matter, the current proposal would involve the following:

- a) Removal of invasive species
- b) Strategic removal of multi-stem vegetation
- c) Replanting with native single stem trees and native grasses and wildflowers.

Pending approval of the Class Environmental Assessment Addendum by Council and acceptance by the Public and Agencies, the process to implement the above recommendation would involve the following steps:

1. Detailed Field Assessment of Vegetation and Wildlife by qualified specialist.
2. Preparation of a detailed plan identifying proposed removals and plantings.
3. Presentation to affected Public and Hamilton Conservation Authority to receive input/comment.
4. Update plan to incorporate required amendments.
5. Tender Contract to qualified contractor to implement the preferred plan.

It is worth noting the following:

- a) There is no grading proposed in the creek corridor, meaning that there will be no blasting, no lining with concrete or any other hardened material – in fact no work would be proposed in the creek.
- b) No work would be conducted without first presenting the details of the plan to area residents.
- c) No work can proceed without Council approval.

Hopefully this brief provides clarification on the key concerns cited by some of the area’s residents. Should you have any additional questions, please contact the undersigned.

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