



NIAGARA PENINSULA CONSERVATION AUTHORITY
FULL AUTHORITY

BALL'S FALLS

AGENDA

JANUARY 18, 2012 – 7:15 P.M.

ROLL CALL

DECLARATION OF CONFLICT OF INTEREST

BUSINESS:

(1) MINUTES FULL AUTHORITY MEETING – DECEMBER 14, 2011

Attached are the Minutes of the Full Authority Meeting held December 14, 2011.

(2) BUSINESS ARISING FROM MINUTES

(3) CHAIRMAN'S REMARKS

(4) CAO'S REMARKS

(5) DELEGATION

Representatives from the Hamilton Airport will attend to discuss the PFOS issue.

(6) DELEGATION

Representatives from the District School Board of Niagara will update the Board on the Woodend Living Campus Project.

(7) BINBROOK RESERVOIR PFOS UPDATE – REPORT NO. 01-12

Attached is Report No. 01-12 regarding this matter.

(8) WOODEND LIVING CAMPUS PROJECT – REPORT NO. 02-12

Attached is Report No. 01-12 regarding the Woodend Project.

(9) PRELIMINARY 2012 BUDGET – CITY OF HAMILTON – REPORT NO. 03-12

Attached is Report No. 03-12 regarding this matter.

(10) 2011 MEETING SCHEDULE – REPORT NO. 04-12

Attached is Report No. 04-12 regarding the 2012 Meeting Schedule.

(11) **CENTRAL WELLAND RIVER, 100 YEAR FLOODPLAIN MAPPING STATUS UPDATE
– REPORT NO. 05-12**

Attached is Report No. 05-12 with respect to this matter as well as a copy of the Draft Interim Policy for the Welland River.

(12) **FINAL REPORT – UPPER WELLAND RIVER WATERSHED PLAN – REPORT NO.
06-12**

Attached is Report No. 06-12 regarding this matter, as well as a copy of the Executive Summary.

(13) **OTHER BUSINESS**

ADJOURNMENT



TO: The Chairman and Members of the Authority

DATE: January 11, 2012

SUBJECT: Binbrook Reservoir PFOS (update) – Report No. 01-12

In late December, the NPCA website was updated to include information about the ice fishing program at the Binbrook Conservation Area. Staff took that opportunity to make several other changes to the website that make it easier for the public to access information about PFOS and the Binbrook Reservoir.

Staff continued discussions with the City of Hamilton and the operators at the Hamilton International Airport. A representative from the Airport will attend the Board Meeting to discuss their plans to contain the source of PFOS and remediate the airport site.

The NPCA has not received a response from our November letter to the Minister of the Environment.

RECOMMENDATION:

That Report No. 01-12 regarding Binbrook Reservoir PFOS be received;

Prepared by: Darcy B. Baker, Director-Land Management

Respectfully Submitted by: _____
Tony D'Amario, CAO/Secretary-Treasurer



TO: The Chairman and Members of the Authority

DATE: June 14, 2011

SUBJECT: Woodend Living Campus Project – Report No. 02-12

Background:

In April 2010, the NPCA Board endorsed a proposal from the District School Board of Niagara to upgrade the facilities at the Woodend Conservation Area. The original proposal recommended demolishing two aging structures at the site and replacing them with two new buildings to accommodate administration and classroom instruction. In June 2011, the School Board returned to the Conservation Authority with a revised proposal that combined all activities into a single, new building. The Conservation Authority Board passed a motion confirming their support for the project and requesting that detailed designs be brought to the Conservation Authority for final approval. The Board also directed staff to update the Master Plan for the Woodend Conservation Area.

The project is now at a point where architects and engineers will be starting detailed designs for the building and services. At this time, the design is being put forward for final approval by the NPCA Board. The building plan has been attached to this report.

Discussion:

Over the past several months, Authority staff met with the Ministry of Natural Resources to discuss the process for updating the Master Plan. Although the Master Plan supports outdoor education in this location, the scope of the Living Campus Project is greater than the facilities proposed. After reviewing the policies under the Niagara Escarpment Parks and Open Space System, it became clear that the timelines for the plan update would not keep pace with the schedule proposed by the DSBN. The Master Plan update will require significant public consultation, background studies and input from local agencies. The DSBN project has an ambitious target to begin construction in 2012.

Based on the above, the Ministry of Natural Resources and the Niagara Escarpment Commission (NEC) agreed to consider the Living Campus Project under the Development Permit Process of the NEC. The project will be reviewed on its own merit and will require supporting plans and studies, including an Environmental Impact Study (EIS).

Conservation Authority staff have significant experience with the NEC Permit Process both as a review agency and as an applicant. The Centre for Conservation at Ball's Falls went through a similar process before receiving approval for construction. In this case the site was selected to ensure minimum impact to the natural environment and supported by an EIS.

In early December, Conservation Authority staff attended a preliminary meeting with the DSBN, their architects, the NEC and the Town of Niagara-on-the-Lake to discuss the project timelines and to identify issues for consideration. This was one of the first opportunities to review the proposed building location with information from a survey, showing the location of existing trees on the property. Although it is standard practice to complete an EIS or tree survey prior to locating a building, the Living Campus facility evolved as a concept. When information on the

natural features of the site was added, it became clear that a number of trees would be impacted if a structure was built where the concept building was originally located. A plan showing the building in relation to existing trees has been attached to this report.

Authority staff are concerned that the proposed location does not take into consideration the existing natural heritage of the site. The building footprint impacts 5 trees, 2 of which are oaks that are 80 – 100 years old and in good health. One of the other trees is a memorial tulip tree, planted in 2006. While there may be an opportunity to relocate the memorial tree, the large oak trees are significant, healthy and worth protecting. The survey shows a considerable amount of space, south of the concept building that can easily accommodate the development.

Conclusion:

Authority staff believe that the Living Campus Project is a good fit with the Woodend Conservation Area. The Master Plan supports outdoor education activities and the proposed building will provide much needed facilities that will improve the student experience. The design of the building incorporates natural materials and Green Building technologies that help to reduce the ecological footprint of the structure.

As mentioned above, this project will require approvals through the NEC Development Permit Process, and the Ministry of Natural Resources through the Niagara Escarpment Parks and Open Space System. During that review, agencies will be looking at the siting of the building with a view to minimizing the impact on the natural environment. Authority staff believe that an EIS will support relocating the building to the south, in order to preserve the large oak trees. This can easily be accommodated without significant change to the building design or the Living Campus Project.

Additional Internet Resources:

<http://www.dsbn.edu.on.ca/Woodend/>

<http://www.facebook.com/pages/DSBN-Woodend-The-Living-Campus/164830240221779>

RECOMMENDATION:

That Report No. 02-12 regarding the Woodend Living Campus be received;

That the Conservation Authority Board approve the proposed building design; and,

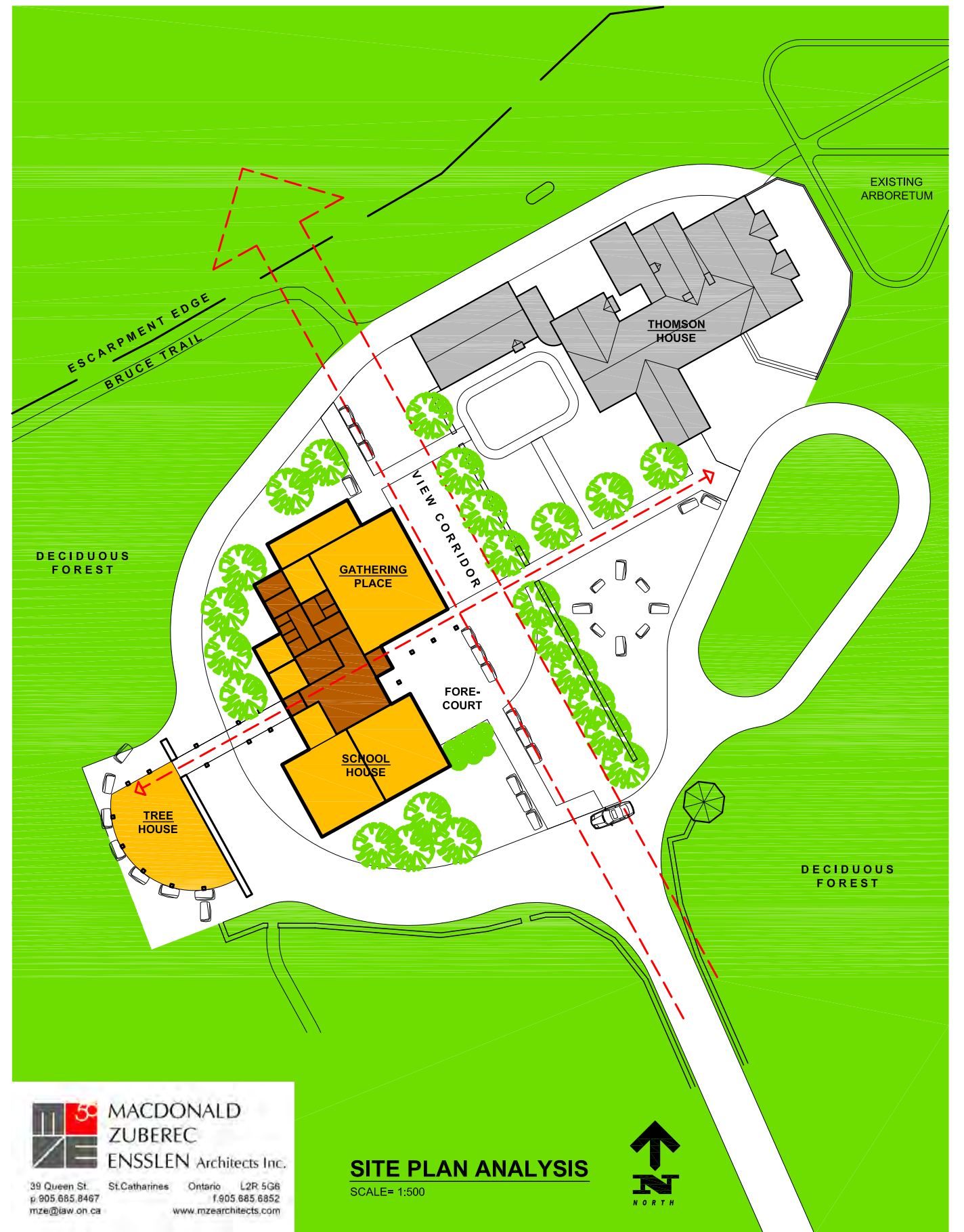
That the final location of the building be determined by an Environmental Impact Study.

Prepared by: Darcy B. Baker, Director-Land Management

Respectfully Submitted by: _____
Tony D’Amario, CAO/Secretary-Treasurer



EX. AERIAL PHOTO
SCALE= 1:500




**MACDONALD
ZUBEREC
ENSSLEN Architects Inc.**
 39 Queen St. St. Catharines Ontario L2R 5G8
 p. 905 685 8467 f. 905 685 8852
 mze@iaw.on.ca www.mzeearchitects.com

SITE PLAN ANALYSIS
SCALE= 1:500

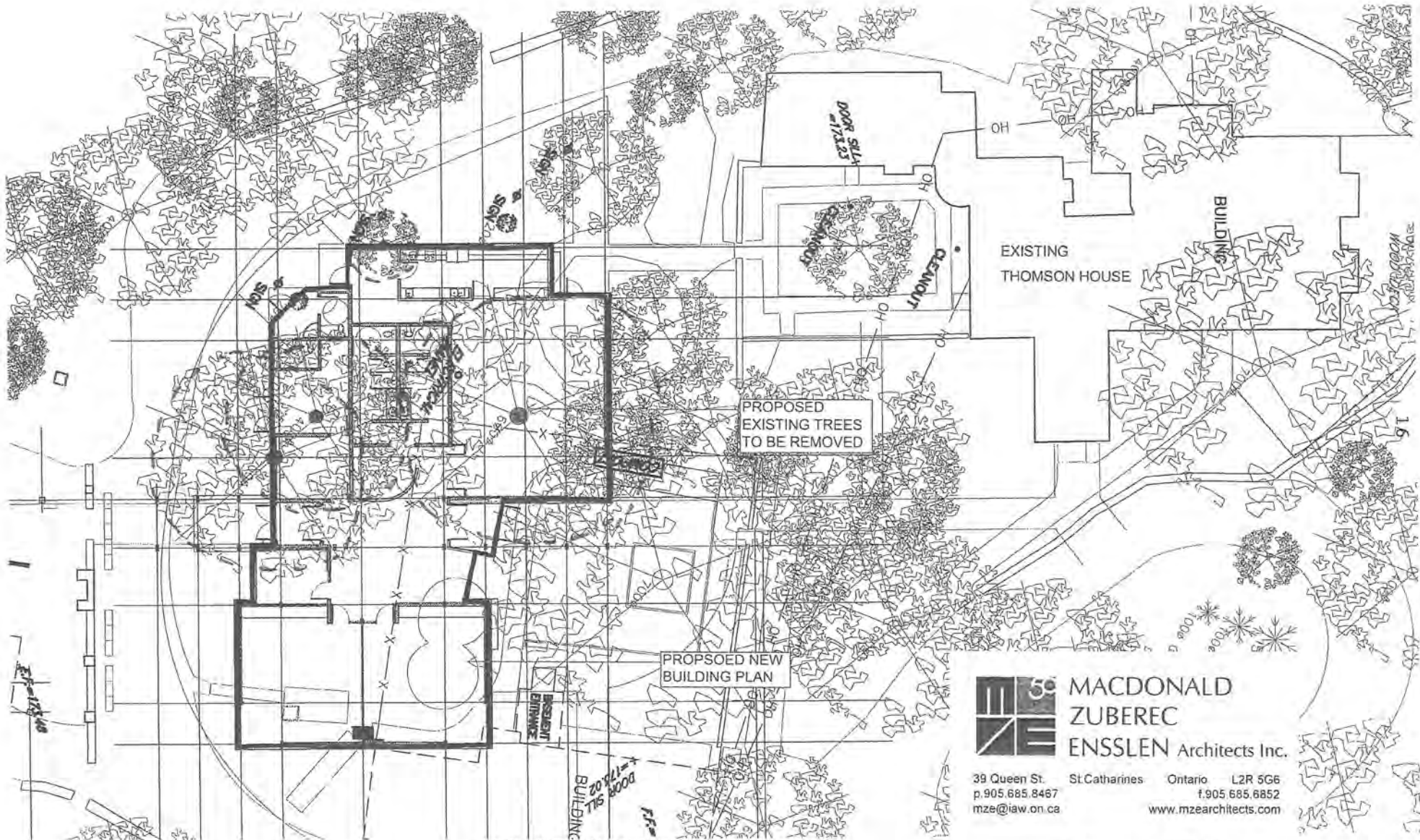


Proposed:
WOODEND LIVING CAMPUS
District School Board of Niagara

MACDONALD
ZUBEREC
ENSTEIN Architects Inc.







11-25 DSBN - WOODEND LIVING CAMPUS

Dec. 1, 2011



**MACDONALD
ZUBEREC
ENSSLEN Architects Inc.**

39 Queen St. St. Catharines Ontario L2R 5G6
 p. 905.685.8467 f. 905.685.8852
 mze@iaw.on.ca www.mzearchitects.com

SCALE = 1/200



TO: The Chairman and Members of the Authority

DATE: January 10, 2012

SUBJECT: Preliminary 2012 Budget – City of Hamilton - Report No. 03-12

Subsequent to the Board adoption of the preliminary 2012 Budget in August of 2011, the NPCA received the attached correspondence from the City of Hamilton requesting all Boards and Agencies to submit their respective 2012 Budgets based on a 0% increase, and that any increase be forwarded for consideration with appropriate explanation.

Historically, the NPCA has attempted to follow the guidance requested by member municipalities in our budget deliberations. Due to the advance timing of the 2012 budget information for the Niagara Region, the NPCA set out its budget and levy apportionments prior to receiving guidance from the City of Hamilton. The preliminary 2012 NPCA Budget as adopted by the Board resulted in an increase of 1.11% to the City of Hamilton over the 2011 budget. The 0% request from the City of Hamilton results in an increase differential of \$5,694.

The attached Historical Levy Apportionment table outlines the NPCA levy amounts as compared to the requested guidance since 2009. In all cases, the NPCA has been able to maintain its levy amount to the City equal to or less than the guidance.

Staff recommend that NPCA Board accept the recommendation from the City of Hamilton and reduce the 2012 levy allocation by \$5,694, through the following means.

The 2012 Hamilton Conservation Areas (Binbrook Conservation Area and Binbrook Tract) Operating Levy to the City of Hamilton is 44.6% of the gross operating costs of the areas with generated revenue making up the difference. As the business at Binbrook has done well over the last several years staff believe the levy funding ratio can be reduced to accommodate the reduction request. The \$5, 694 would result would be a net levy of 42.8% of the operating costs. Should revenues at Binbrook be substantially less than anticipated for 2012, the Authority could utilize its operations reserves.

RECOMMENDATION:

That Report No. 03-12, regarding the Preliminary 2012 Budget for the City of Hamilton be received and that the 2012 Preliminary Budget levy apportionment for the City of Hamilton be reduced by \$5,694 to reflect a 0% increase over 2011.

Respectfully Submitted By: _____
Tony D'Amario, P. Eng. CAO/ Secretary-Treasurer

CITY OF HAMILTON HISTORICAL LEVY APPORTIONMENT						
Year	Levy Amount Operating	Levy Amount Capital	Total Levy	Guideline as set out By City of Hamilton	NPCA Increase	Levy Difference Between Guideline and NPCA Increase
2009	\$205,938	\$291,779	\$497,717	2%	2%	\$0
2010	\$210,265	\$296,929	\$507,194	2%	1.9%	-\$498
2011	\$212,677	\$300,796	\$513,473	inflation (1.8%)	1.24%	-\$2,850
2012 preliminary	\$229,958	\$289,209	\$519,167	0%	1.11%	\$5,694



TO: The Chairman and Members of the Authority

DATE: January 10, 2012

SUBJECT: 2012 MEETING SCHEDULE - Report No. 04-12

Below is the proposed schedule for the Authority meetings in 2012, including the current annual and regular meeting of January 18, 2012. As in the past, meetings are proposed for the 3rd Wednesday of each month, excluding July or August where no meeting is scheduled. Meeting times have typically been set for 7:00 p.m. with location at the NPCA administrative offices in Welland and occasionally at Balls Falls.

For 2012, there is a need to have a Source Protection Authority board meeting in July to get endorsement of the Source Protection Plan which must be submitted to MOE by early August 2012. As such it is recommended that for 2012, a meeting not be held in August to accommodate the above.

January 18 – Annual Meeting and Regular Meeting

February 15

March 21

April 18

May 16

June 20

July 18

September 19

October 17

November 21

December 19

RECOMMENDATION:

That the 2012 Authority Meeting Schedule as outlined in Report No. 04-12 be approved.

Respectfully Submitted By: _____

Tony D'Amario, P. Eng.
Chief Administrative Officer/Secretary-Treasurer



To: Chairman and Members of the Authority

Date: January 10, 2012

**Subject: Central Welland River, 100 Year Floodplain Mapping Status Update;
Report No. 05-12**

The purpose of this report is to advise the Board of recent developments regarding the subject project and to recommend a revised implementation schedule for updating the regulatory flood levels for the Welland River.

Floodplain mapping for the Welland River was last completed over a quarter century ago in 1985. In 2010, as part of its ongoing floodplain mapping updates, the Authority began the process of reanalyzing and remapping the floodplain. Due to the complexity of the system the work was outsourced to a consulting engineering firm with specialized expertise in modelling tools used for non standard systems. The first section of remapping to be completed was that extending from the new siphon in the City of Welland to Port Davidson in West Lincoln, referred to as the "central" reach. These new levels were available in the spring of 2011 and included in NPCA's online public GIS tool, that was released in March of 2011. Completion of the mapping for the river extending upstream from Port Davidson to the Niagara/Hamilton boundary at Westbrook Road (referred to as the "upper" reach), remains behind schedule, for reasons discussed below.

In November of 2011 staff brought forward Report No 61-11 which recommended a number of public meetings be held upon completion of the mapping for the upper Welland River. Although there is no statutory requirement to hold public meetings when updating flood lines and indeed, this has not typically been done by NPCA, in light of the significance of the revisions to what are long established flood lines, staff felt that it would be beneficial to undertake enhanced public outreach. In anticipating the concerns staff typically hear from proponents when new floodplains are implemented, staff also, recommended that a one year transitional policy be adopted to allow most works to occur in the floodplain "expansion area", subject to certain technical requirements including flood proofing. While the Agency has a responsibility to regulate to the "best" information available and to direct new development away from known flood hazards, the reality is that watershed residents that have projects underway or near commencement in the expansion areas, would face undue hardship with immediate "prohibitions". As such, staff were recommending a one year transitional policy, that in considering the development potential for the area, would mitigate some hardship, without resulting in mass floodplain storage loss.

In December of 2012, staff had planned to bring forward the finalized transitional policy for adoption by the Board and a copy of the draft policy is appended. Nonetheless, at that time the Chief Administrative Officer was contacted by some residents that briefly put, felt the NPCA should not proceed further without considering public input. While staff would advise that determining a flood level is a technical exercise for engineering professionals and not affected by public input, public understanding of the results can only result in more acceptance and

better implementation. Therefore, at the request of the residents, the policy report was deferred.

Alternatively, in an effort to better understand the residents concerns and to explain the differences between the old and new levels, Senior staff met with residents representatives in late December. After meeting with these individuals and considering their comments, staff undertook additional review of the modelling and discovered anomalies on some tributaries near the confluence of the main river. While staff believe we have determined the reason for these anomalies, and we do not believe that levels on the main Welland River are significantly affected, we are recommending that for the time being, the status of the new levels for the Central Welland River project area be downgraded to that of "tentative" at this time.

In this regard, staff has recently met with the prime engineering consultant and asked that they conduct alternate simplified analyses on certain areas of the system. This additional work should validate the existing and complex dynamic model that has been developed. We believe that given the extent of the variances from the old to new levels, and the concerns expressed by residents, that this additional check is warranted before moving forward with implementation.

Based on our discussions with the consultant, this additional analysis of the Central Welland River will not be completed until the beginning of April. This in turn will delay finalizing the Upper Welland River until June of 2012.

In the interim, staff recommend that individuals wishing to construct in the now tentative floodplain expansion area be advised of the pending levels and that they should consider undertaking flood proofing measures in accordance with the appended draft policy. From a public safety perspective, requiring all building in the tentative expansion area to undertake flood proofing would be preferable, however, staff do not believe NPCA has the mandate to compel this until the lines are "final". This approach, addresses NPCA's responsibility to advise the public of the potential risk, while recognizing fact that the modeling is being "verified" and that this will take some time.

Staff will also use this time to pursue dialogue with residents representatives before the more formal public meeting process begins. Residents have indicated that among other things, they would like to meet with NPCA to explore potential options to lower flood levels. While flood levels can often be mitigated to a certain degree by modification on manmade barriers (i.e. removal of a bridge constraint, etc.), staff believe there are few practical solutions for the Welland River and in any case, this is outside the NPCA's control. Nevertheless, reduction of flood risk is a key mandate of the NPCA and therefore, staff believe we should pursue this dialogue.

After the validation modelling is complete for the Central Welland River project area an updated staff report including a revised public contact process will be prepared for the Boards consideration. It is expected that the engineering consultant working on the Lower Welland River project area will also be nearing completion by April and as such, a comprehensive implementation will be considered.

Financial Implications

Staff have not yet received the final cost estimate for the additional validation work, however the costs will be funded from unexpended 2011 capital engineering funds and if necessary the 2012 floodplain mapping capital budget.

Attachments:

1) Draft Interim Policy for the Welland River

RECOMMENDATION:

That Report No. 05-12 be received for information and the recommendations therein be approved.

Prepared by: John Kukalis, C.E.T.; Director, Water Management

Respectfully Submitted By: _____
Tony D'Amario, P. Eng.
Chief Administrative Officer/Secretary-Treasurer

DRAFT

Central and Upper Welland River Floodplain - Interim Transitional Policy

Introduction

In 2011 the NPCA received updated floodplain mapping for the Welland River Watershed from the siphon under the new Welland Canal in the City of Welland to the Port Davidson weir in West Lincoln and extending from Port Davidson to the Niagara/Hamilton boundary at Westbrook Road. The updated flood levels represent a significant increase in many areas from those generated previously and used by the NPCA since 1985.

The reason for this variance stems from a combination of physical and hydrologic/rainfall intensities that have occurred over the past quarter of a century as well as, the availability of more sophisticated modeling tools that can more accurately simulate flow responses in the very complex Welland River basin.

The NPCA acknowledges the potential for hardship to those with works currently planned in the expanded area of regulatory floodplain. Therefore, to facilitate the transition to the updated flood lines, the Authority will consider a more permissive approach to development in the expanded floodplain areas for a set period of time.

What this means is that works normally prohibited will be considered, on a case by case basis and permits may be issued by NPCA provided NPCA is satisfied that the works can be suitably flood proofed and will not pose a hazard to adjacent lands or the natural environment. This policy will only apply to construction activities on existing lots of record and all works in the floodplain will require a formal permit from NPCA.

1) General

i) The following provisions are in effect from ~~December 15, 2011 until February 1, 2013~~ in order to facilitate a transition to the updated 100 year Regulatory Floodplain levels for the Welland River.

ii) These provisions apply to the lands located within the 100 year floodplain of the Central and Upper Welland River which also lay between the flood lines, as shown on the floodplain mapping prepared for the NPCA by Aquifer Beech Limited in 2011 and the previous floodplain mapping prepared by Dillon Consultants in 1985.

iii) These provisions are intended to facilitate works on **existing lots of record**, where no Planning Act approvals are required.

iv) Where there are other features on the property regulated by the NPCA, existing policies continue to apply (e.g. watercourses, valleys, wetlands).

v) For a new development or site alteration to be eligible for approval it must be demonstrated, to the satisfaction of the NPCA, that there is no feasible alternative location on the property outside of the floodplain.

vi) Vehicle access should be upgraded as required to contemporary flood proofing guidelines to achieve the maximum level of flood protection determined to be feasible and practical based on location of existing infrastructure (e.g. municipal road) and surrounding topography.

vii) Flootation prevention measures must be incorporated into new development, in as far as practically feasibly.

viii) Proposed flood proofing measures for new development must be designed to minimize potential impacts on flood levels to adjacent properties. A combination of both fill placement and structural measures will be considered for approval as flood proofing measures in the area to which these transitional provisions apply.

2) New development and site alteration may be allowed subject to the proponent obtaining a permit pursuant to Ontario Regulation 155/06 and provided the new development and/or site alteration is not:

- a) an institutional use associated with hospitals, nursing homes, pre-school, nurseries, day care or schools, where there is a threat to the safe evacuation of the sick, the elderly, persons with disabilities or the young,
- b) an essential emergency service such as fire, police, ambulance or electrical substation,
- c) associated with the disposal, manufacture, treatment, transfer or storage of hazardous substances and/or inert fill, including outdoor storage of material including, but not limited to soil.

3) New habitable additions; may be permitted provided they are flood proofed to the level of the updated 100 year Flood. If 100 year flood protection is not practically feasible, a lower level of flood risk protection may be allowed and must be provided to the maximum extent feasible, as determined on the basis of site specific evaluation to the satisfaction of NPCA.

4) New habitable structures; (i.e. residential dwellings, commercial space) may be permitted provided they are flood proofed to the level of the updated 100 year Flood. To achieve this, a suitable building envelope above the updated 100 year Flood level, must be established using a combination of both clean suitable fill and structural measures. No building openings will be allowed below the 100 year Flood elevation.

5) New non-habitable accessory buildings and structures; (i.e. garages, sheds, decks) may be permitted provided they are flood proofed to the level of the updated 100 Year Flood wherever possible. If 100 year flood protection is not practically feasible, a lower level of flood risk protection may be allowed and must be provided to the maximum extent feasible as determined on the basis of site-specific evaluation to the satisfaction of NPCA.

6) New agriculture buildings and facilities; may be permitted provided they are flood proofed to the level of the updated 100 year Flood. If 100 year flood protection is not practically feasible, a lower level of flood risk protection may be allowed and must be provided to the maximum extent feasible, as determined on the basis of site specific evaluation to the satisfaction of NPCA.



To: Chairman and Members of the Authority

Date: January 13, 2012

Subject: **Final Report – Upper Welland River Watershed Plan – Report No. 06-12**

The Upper Welland River Watershed Plan Terms of Reference (Report No. 42-09) was reviewed and approved by the Board in June 2009. Attached is the Executive Summary of the final Watershed Plan which provides an overview of the study and its recommended project implementation schedule and associated costs. The Watershed Plan was completed in March of 2011. In this regard, it should be noted that this Watershed Plan was not brought forward in 2011, due to an administrative oversight.

By way of background, in 2004 the Authority began completing Watershed Plan's for its' designated Watershed Planning Areas (WPA's). To date, plans had been completed for 11 of the 17 WPA's but during the 2010 budget process, the decision was made to abandon completion of plans for the remaining WPA's due both to budget constraints and concerns respecting the relevancy of plans in 4 of the more urbanized WPA's.

Each Watershed Plan was developed under the guidance of a Steering Committee composed of diverse local representatives. The process put significant effort into obtaining public input through open houses and workshops. Currently, the NPCA's Restoration Division has targeted programs in 5 WPA's implementing various cooperative projects, including those identified in previously adopted Watershed Plans.

The Watershed Plan Reports attempt to quantify and categorize the environmental health of a WPA at a high level, relative to generally accepted matrices. From this it develops a list of proposed enhancements including projects and develops a corresponding budget, should the NPCA wish to undertake a future targeted implementation program. Nevertheless, the adoption of a Watershed Plan by the NPCA does not obligate this agency, nor any other agency, group or municipal body to actually do or expend funds on anything. A Watershed Plan can be considered a fundamental tool to guide natural habitat and environmental stewardship efforts.

Authority staff would also like to express thanks to the many organizations and members of the public who played a valuable role in guiding the preparation of the watershed plan.

Attachment

1) Executive Summary

RECOMMENDATION:

That Report No. 06-12 regarding the Upper Welland River Watershed Plan be received and;

That the recommended Conservation Authority restoration works be approved for implementation over a multi-year time frame subject to annual budget approvals.

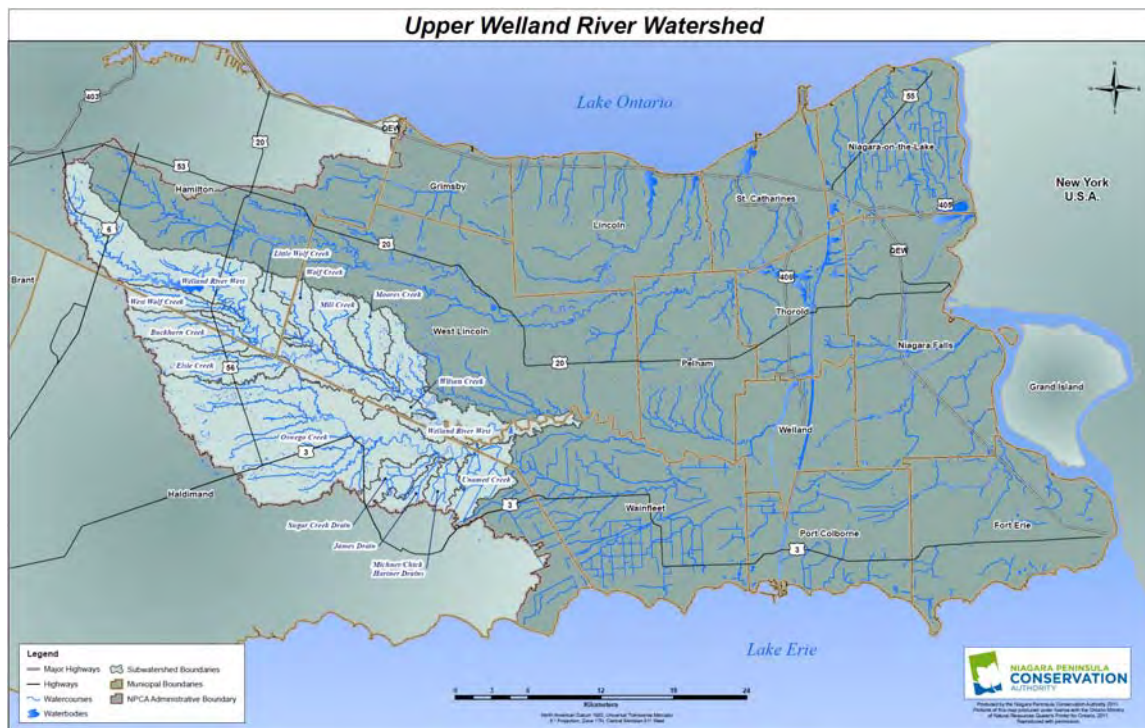
Prepared by: John Kukalis, Director, Water Management

Respectfully Submitted by: _____
Tony D'Amario, P.Eng, CAO/Secretary-Treasurer

Executive Summary

The Welland River watershed is the largest watershed within the Niagara Peninsula Conservation Authority's jurisdiction and encompasses over 80 percent of the Canadian Niagara River Area of Concern (AOC). The Welland River has been the focus of much rehabilitation with over 200 restoration projects being completed by the NPCA and partnering agencies. The Upper Welland River Watershed Plan study area is comprised of 40 percent of the total Canadian Niagara River AOC and includes the upper region of the Welland River; upstream of Wellandport with its respective tributaries. This study area supports a unique environmental character and subsequent set of watershed issues. Contributing to the distinctiveness of this watershed are, for example, the Binbrook reservoir, the unique development pressures, such as for example, the Airport Employment Growth District in the upper watershed, and the predominantly rural nature of the watershed.

The Upper Welland River watershed is also rich in ecological diversity with one Carolinian Canada signature site; the Caistor-Canborough Slough Forest, and several provincially and locally significant Areas of Natural and Scientific Interest. The study area also boasts 18 federally listed Species at Risk by the Committee on the Status of Endangered Wildlife in Canada, 12 provincially rare species, and numerous provincially significant wetlands and natural areas which can be found throughout the watershed.



The Upper Welland River Watershed Plan study area encompasses approximately 480 square kilometres of land and includes nearly 3000 kilometres of watercourse. The study area includes Local Management Areas 2.1, 2.2, 2.3, 2.4, and 2.5 as identified in the *NWS* (RMN 2006a) and falls within the municipal boundaries of the Township of Wainfleet and Township of West Lincoln and extends into the boundaries of the City of Hamilton and Haldimand County (Figure 1). The subwatersheds that form the Upper Welland River Watershed Plan study area include Welland River West, West Wolf Creek, Little Wolf Creek, Wolf Creek, Buckhorn Creek, Elsie Creek,

Oswego Creek, Mill Creek, Moores Creek, Wilson Creek, Sugar Creek Drain, James Drain, Michner Drain, Chick Hartner Drain, and Unamed Creek. Individual restoration strategies have been prepared for each of the main subwatersheds to protect the unique characteristics of each system.

Land use in the Upper Welland River watershed is characterized mainly by agriculture with a focus on poultry and egg production, and grain and oilseed. There is one major concentration of urban land uses (residential, commercial, industrial) within the Airport Economic Growth District in the City of Hamilton. Smaller urban areas include Mount Hope and Binbrook, also within the City of Hamilton.

The Upper Welland River watershed offers numerous recreational opportunities throughout the watershed with 7 conservation areas that offer passive recreational opportunities; Binbrook Conservation Area, Canborough Conservation Area, Chippawa Conservation Area, Hedley Forest Conservation Area, Port Davidson Conservation Area, Oswego Creek Conservation Area and Ruigrok Tract Conservation Area. The Welland River also offers ample of recreational opportunities for fishing, boating and nature observation.

In addition, there are 3 golf courses in the watershed; Southern Pines Golf and Country Club in Mt. Hope, Southbrook Golf and Country Club in Binbrook, and Caistorville Golf Club.

Upland forest covers 15 percent of the watershed, wetlands another 22 percent and approximately 55 percent of the watercourses have some riparian habitat. Guidelines set by Environment Canada (2004) suggest minimum upland forest cover in a watershed should be 30 percent, wetlands 10 percent *or to historic value*, and at least 75 percent of the watercourses in the watershed should have riparian habitat with a 30 meter buffer on both sides being ideal. Therefore, measures to create new upland areas and establish riparian habitat, as well as protect existing upland and wetland areas should be implemented to ensure adequate upland, wetland and riparian habitat to sustain minimum viable wildlife populations and maintain ecosystem functions and attributes.

As mentioned, 18 *Species at Risk* as designated by the *Committee on the Status of Endangered Wildlife in Canada* fall within the study area boundaries. Five of these species are *endangered*, meaning that they are facing imminent extinction or extirpation in Canada; 2 of these species are *threatened* species, which means they are at risk of becoming endangered; and 10 of the species are of *special concern* which simply means that they have characteristics that make them sensitive to human activities or natural events. In addition, there are 24 provincially rare flora and fauna found within the Upper Welland River watershed.

The unique environmental character of the subwatersheds has resulted in an assortment of issues related to water resources, fish and aquatic habitat, natural heritage resources, urban development, and communication. The watershed issues, which were derived from extensive public input and past studies, were used to form a set of watershed objectives that guided the development of subwatershed restoration strategies and an implementation plan.

The subwatershed strategies include sites for riparian, wetland and upland habitat restoration that have been derived from detailed restoration suitability mapping in conjunction with Regional Niagara's Core Natural Heritage Mapping and Carolinian Cores 'Big Picture' mapping. In addition, project opportunities have been identified, in part through the NPCA Geomorphic Assessment, on private and public lands, such as erosion control, and shading to reduce water temperatures in the headwaters. Special studies including funding programs and urban water

conservation programs have also been proposed. The implementation plan identifies responsible stakeholders for each recommended management action.

The recommended management actions and associated budget have been outlined and include riparian, wetland and upland restoration and creation to enhance water quality and fish habitat; specific policy tools including municipal and regional official plan amendments; outreach and communication for various aspects of water resources management; and research and monitoring programs to obtain additional data from which the Upper Welland River Watershed Plan can be updated and revised.

Overall, it is estimated that an additional \$1.65 million over a 10 year period above existing Conservation Authority program funding is required to implement the recommended management actions in the Upper Welland River Watershed Plan. A general budget outlining recommended management actions and associated project costs has been provided. A detailed breakdown of each watershed plan objective, recommended action and associated funding (existing and required) as well as a time frame of implementation (e.g. long term, short term) has also been provided in the Watershed Plan.

Budget for the Upper Welland River Watershed Plan Recommended Management Actions: NPCA Project Budget

Category	Recommended Management Action	\$ Cost	\$ Total (1 year)	\$ Total (10 year)
Restoration and Natural Heritage Resources	Upland Reforestation and Corridor Creation Program	(\$1,500/acre) (11 acres/year) x 10	16,500	165,000
	Riparian Buffer Planting	(\$5,000/250m) (1375m/year) x 10	27,500	275,000
	Wetland Enhancement	(\$1,000/project) x 10	1,000	10,000
	Nutrient Management	50,000/yr	50,000	500,000
Aquatic Resources				
	In-stream Aquatic Improvements(fish barriers, debris removal)	6000 x 5	3,000	30,000
	Fisheries Assessments	\$4000 per assessment-biannually	2,000	20,000
	Continue to Monitor Water Quality to achieve PWQO**	14 Stations: 8 covered by City of Hamilton in- kind support 6 stations /yr for 8 samples	10,000	100,000
Education				
	Outreach	10,000 x 10	10,000	100,000
NPCA Restoration Budget			120,000	1,200,000
Special Studies	Continue comprehensive biological inventory and map of natural heritage areas including wetlands	45,000 x 10 (student wage)	45,000	450,000
Total Watershed Plan Implementation Budget			165,000	1,650,000

Includes materials and NPCA salaries