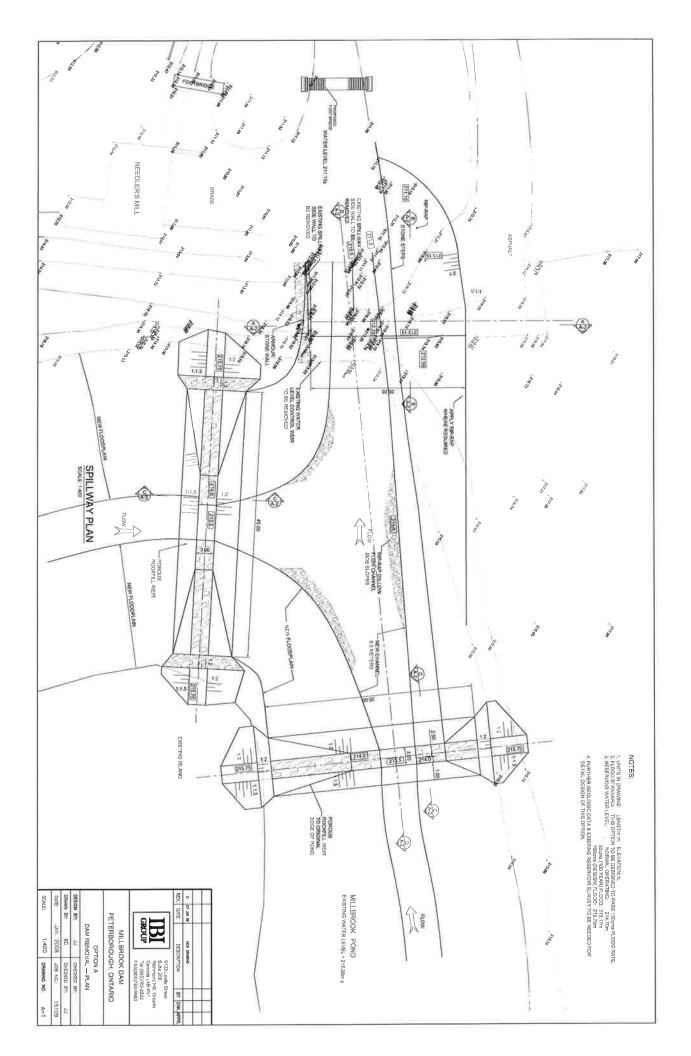
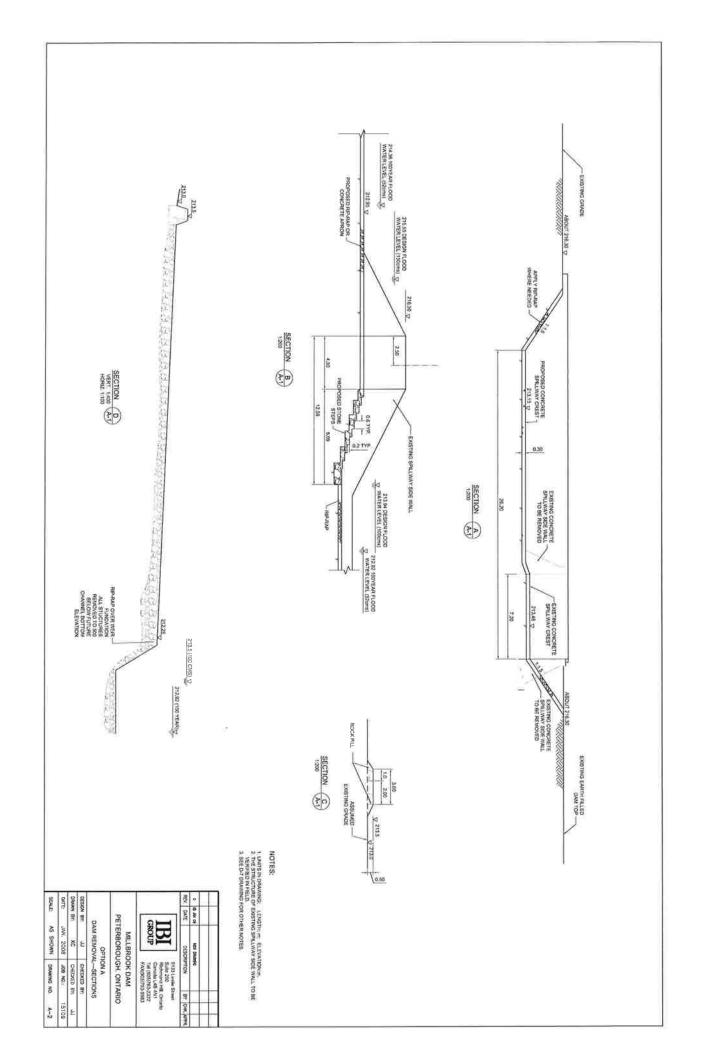
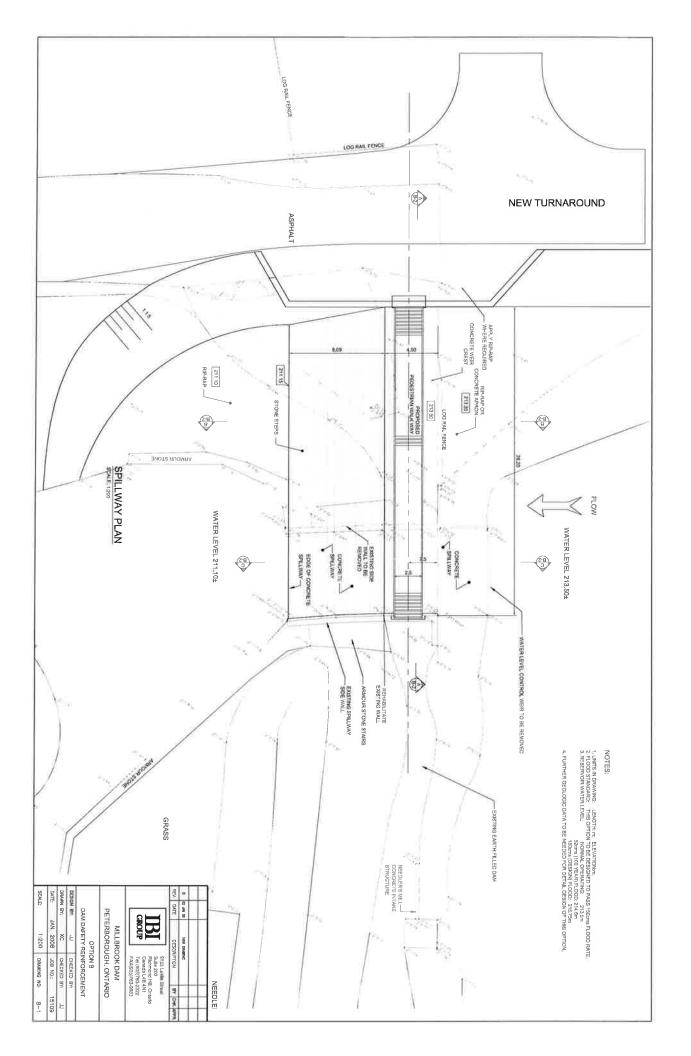
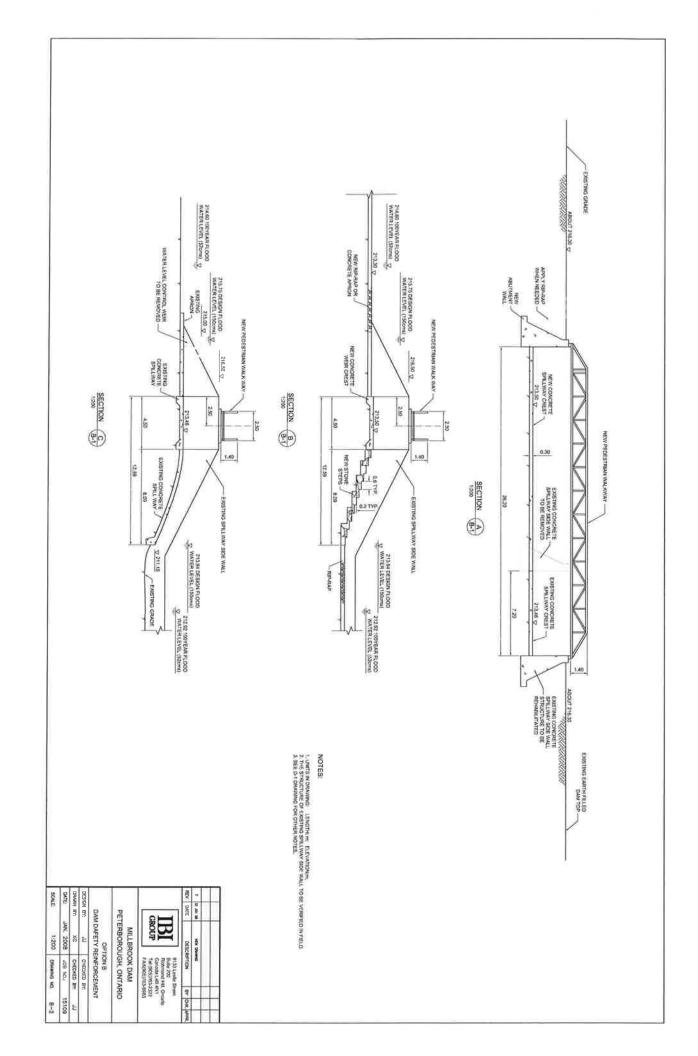
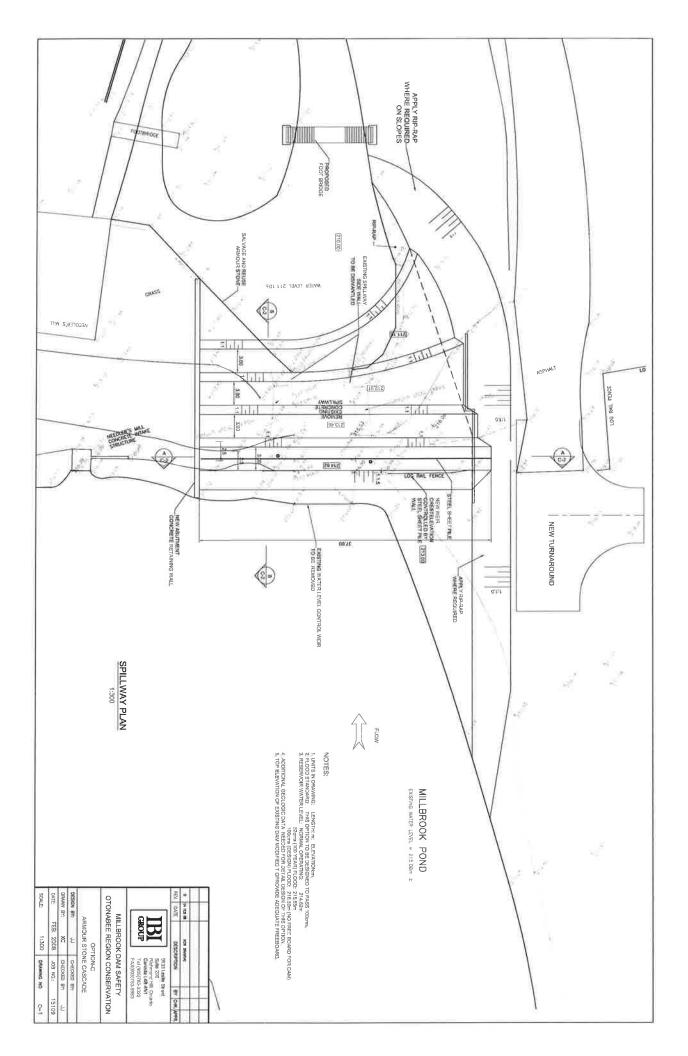
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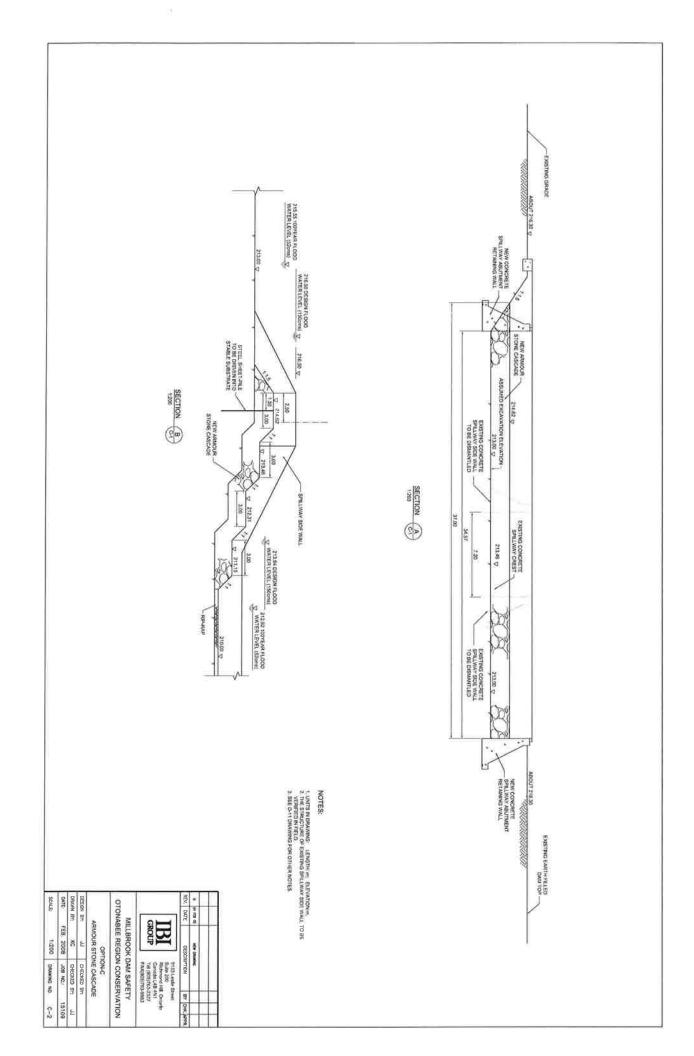


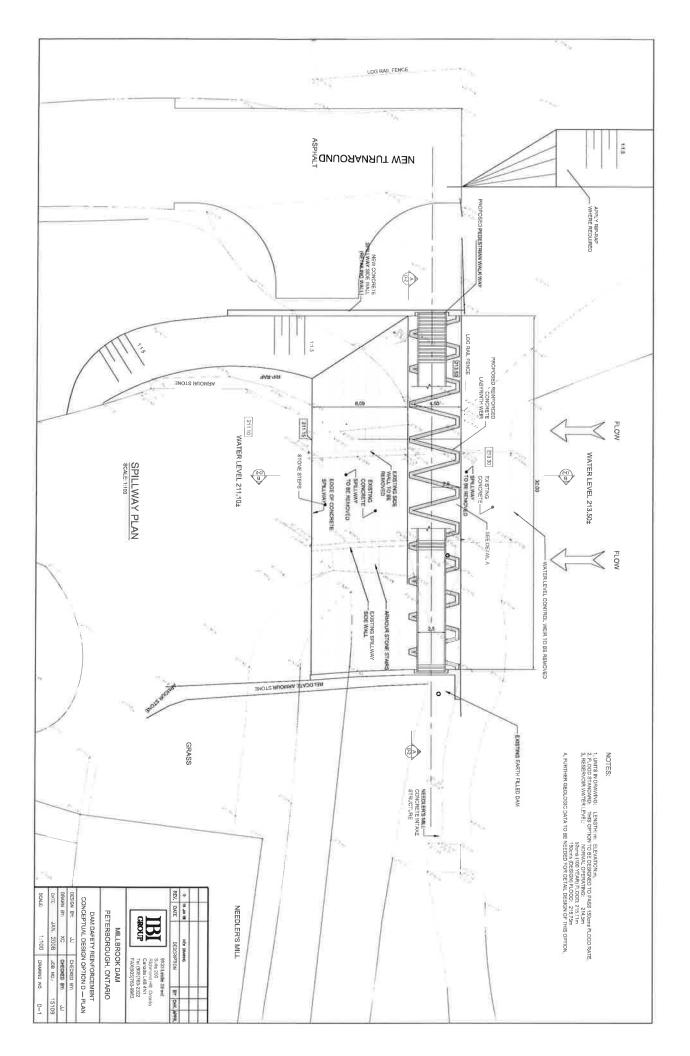


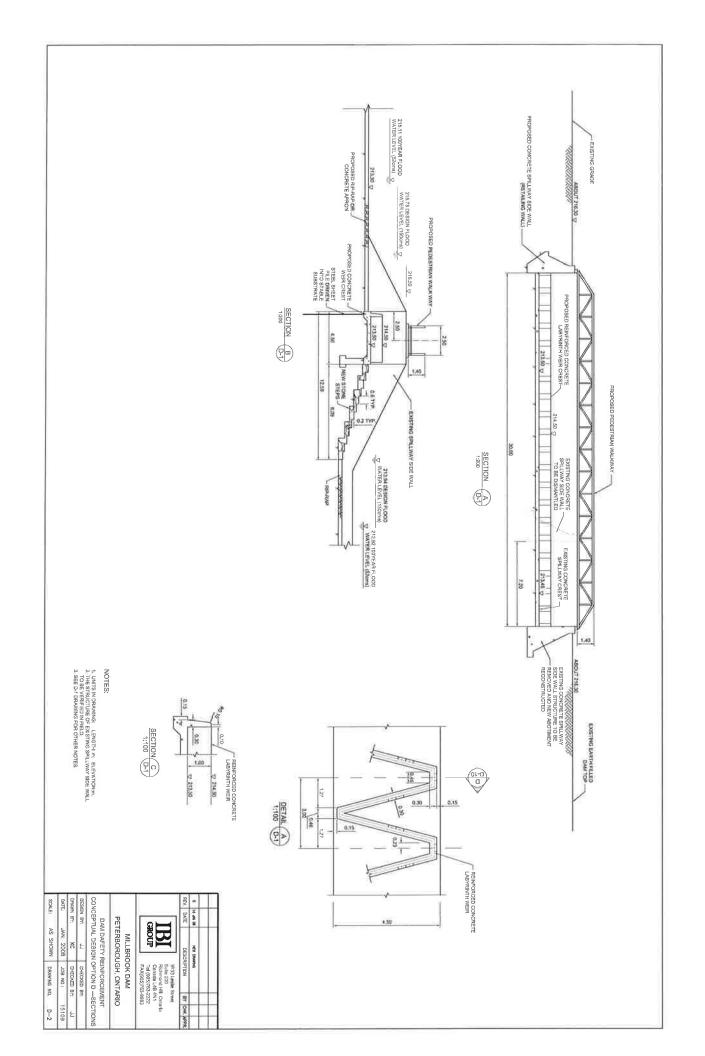












APPENDIX B PUBLISHED NOTICES

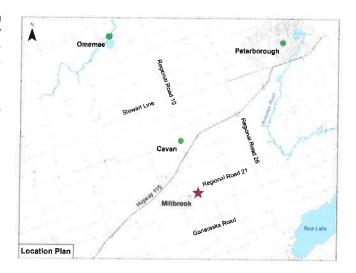
NOTICE OF INTENT

MILLBROOK DAM CLASS ENVIRONMENTAL ASSESSMENT

The Otonabee Region Conservation Authority (ORCA) has commenced a study regarding the Millbrook Dam, which is located on Baxter Creek within the Millbrook Ward of the Township of Cavan Monaghan.

This study is subject to the Class Environmental Assessment for Remedial Flood and Erosion Control Projects (Class EA), and is being completed by the MMM Group Ltd.

Recent engineering studies and reports identified serious hydraulic and structural deficiencies that could lead to failure of the Millbrook Dam, which in turn, could result in flooding causing loss of human life, property damage and environmental harm. As a result, it is necessary to undertake this study to identify a preferred remedial flood control project.



The ORCA is now assembling a **Community Liaison Committee** to assist in Class EA study. The Committee will represent a cross section of community interests and positions will be available for two (2) members of the public at large. Applications are now being accepted by the ORCA at the address below. Those wishing to participate are encouraged to apply. Applications will be received within 15 working days of publication of this notice.

If you wish to be a member of the **Community Liaison Committee**, wish to be added to the notification list or wish to receive direct notification of study events, please contact:

or

Mr. Allan Seabrooke Chief Administrative Officer / Secretary-Treasurer Otonabee Region Conservation Authority 250 Milroy Drive, Peterborough, Ontario, K9H 7M9

Tel: (705)745-5791 Fax: (705) 745-7488,

Email: <u>otonbeeca@otonabee.com</u> Website: www.otonabee.com Mr. Jim Bertulli MES, MCIP Senior Environmental Planner MMM Group Ltd. 100 Commerce Valley Drive West Thornhill, Ontario L3T 0A1

Tel: 905.882.4211 Fax: 905.882.0055 Email: bertullij@mmm.ca

For those wishing continued participation in the EA process, two additional opportunities will be offered. The first will be a **Public Open House**, and the second will occur when the Class EA report is released for public review. The public will be informed of these opportunities via notifications published in the local press and by direct delivery to those members of the Contact Group.

All comments and opinions received by the ORCA with respect to the Millbrook Dam Class EA will be kept on file and may be included in study documentation that is provided for public review. Personal information provided will be treated in accordance with the *Freedom of Information and Protection of Privacy Act* (FIPPA). For further information regarding the FIPPA, please contact Denyse Sanderson, Manager of Corporate Services, Otonabee Region Conservation Authority, Tel: 705-745-5791.

This Notice is issued on June 07 2012









REMEDIAL FLOOD CONTROL WORKS – MILLBROOK DAM NOTICE OF PUBLIC MEETING CLASS ENVIRONMENTAL ASSESSMENT

The Otonabee Region Conservation Authority (ORCA) has initiated an **Environmental Assessment for Remedial Flood Control Works Millbrook Dam** to address: 1) inadequate factors of safety to prevent the earth embankment dam from sliding and failing; and, 2) inadequate spillway capacity to prevent the earth embankment dam from overtopping and failing.

In the event of dam failure, the sudden release of water moving downstream could cause an incremental increase to potential loss of human life, damage to property, and disruption of social and economic activity in the Millbrook Ward of the Township of Cavan Monaghan. Thus, the purpose of this project is to identify, investigate and evaluate the physical, biological, cultural, socioeconomic and engineering/technical impacts of a reasonable range of options to solving the problem, and from this process establish a preferred solution for the required remedial flood control works. The project is being planned in accordance with the *Conservation Ontario Class Environmental Assessment for Remedial Flood and Erosion Control Projects*.

To provide information to all interested parties and answer questions about the project, a Public Information Meeting is planned. Representatives of ORCA and the consultant, MMM Group Limited, will present an evaluation of alternative solutions and the preferred solution. They will also be available to address any questions. The Public Information Meeting will be held at:

Place: Township of Cavan Monaghan (Gymnasium)

988 County Road 10, Millbrook, Ontario LOA 1G0

Date: Tuesday, March 26, 2013 Time: 7:00 PM to 9:00 PM

Following the Public Information Meeting, the consultant will review the comments received at the Public Information Meeting and will proceed with publishing the Environmental Study Report, giving full consideration to the public comments.

YOUR INPUT TO OUR PLANNING PROCESS IS IMPORTANT

Please attend the Public Information Meeting to become informed and make your comments known to the project team. If you are unable to attend, provide your comments in writing to the attention of Mr. James Bertulli of MMM Group Limited within 2 weeks of the meeting date.

Otonabee Region Conservation Authority

Mr. Allan Seabrooke Chief Administrative Officer 250 Milroy Drive Peterborough, ON K9H 7M9

Tel.: 705-745-5791

Fax.: 705-745-7488

E-mail: aseabrooke@otonabee.com

MMM Group Limited

Mr. James Bertulli Senior Environmental Planner/ Project Manager 100 Commerce Valley Drive West Thornhill, ON L3T 0A1

Tel.: 905-882-4211, ext. 6827

Fax.: 905-882-7276 E-mail: bertullij@mmm.ca



NOTICE OF FILING (COMPLETION) OF ENVIRONMENTAL STUDY REPORT

Class Environmental Assessment
Remedial Flood Control Works - Millbrook Dam

The Otonabee Region Conservation Authority, through its consultant MMM Group, has completed the Class Environmental Assessment, Environmental Study Report - Remedial Flood Control Works, Millbrook Dam. The purpose of the Environmental Assessment study was to identify, investigate and evaluate a reasonable range of options to solving the problem of dam failure resulting in incremental flooding causing property damage, social and economic disruption, environmental harm and potential loss of life, and from this process establish a preferred option of "how best" to remediate the incremental flood hazard, and thereby, control the

risk to public health, and property and environmental safety.



The study was undertaken in compliance with requirements of the Conservation Ontario Class Environmental Assessment for Remedial Flood and Erosion Control Projects (2009).

As detailed in the Environmental Study Report the preferred option is to replace the existing weir and spillway with a larger, new, permanent, concrete, fixed level retention structure (weir) that includes a notch/step. As well, the preferred option includes installation of a public walkway over the weir, an impermeable barrier along the upstream face of the earth embankment dam to address seepage/leakage through the earth embankment, placement of berms at the toe of the earth embankment dam to further stabilize the structure, lowering of the headpond water level to reduce hydrostatic pressure, and removal of sediment accumulations in the headpond to help retain social, cultural and economic features.

The Environmental Study Report is available for public review at the following locations and websites: Otonabee Region Conservation Authority -

Administration Centre, 250 Milroy Drive, Peterborough, ON Tel: 705-745-5791 www.otonabee.com

Municipality of Cavan Monaghan -

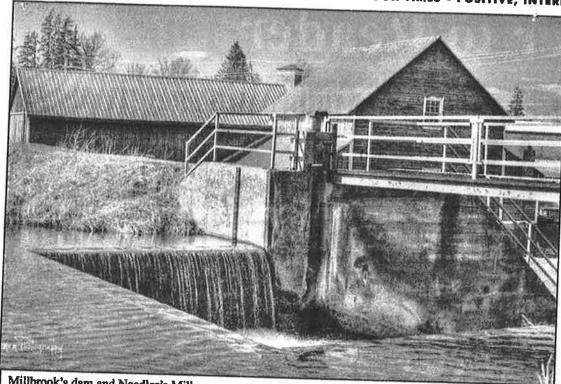
Municipal Office, 988 County Road 10, Millbrook, ON Tel: 705-932-2929 www.cavanmonaghan.net Library- Millbrook Branch, 1 Dufferin St., Millbrook, ON Tel: 705-932-2919 Library- Bruce Johnston Library, 2199 Davis Rd., Cavan Monaghan, ON Tel: 705-741-1253

Interested persons should provide written comments to the Chief Administrative Officer of the Otonabee Region Conservation Authority within 30 calendar days from the date of this Notice.

Mr. Allan K. Seabrooke, Chief Administrative Officer Otonabee Region Conservation Authority 250 Milroy Drive, Peterborough, ON K9H 7M9

This Notice is issued October 3, 2013

APPENDIX C NEWSPAPER ARTICLES



Millbrook's dam and Needler's Mill

Photo by Marjorie McDonald

Keeping the Mill in Millbrook

A group of concerned residents is organizing a campaign to protect Millbrook's pond, dam and Needler's Mill. The 'Save the Dam Mill Pond' group is part of the Millbrook and Cavan Historical Society. Group members have been busy creating a website and communication materials, and talking to people throughout the township.

Group member Robert Jackson explains, "ORCA and the Township of Cavan Monaghan have organized an environmental assessment (EA) about the safety and future of the dam, mill, and pond. This means an engineering firm is doing a study about the different options and will recommend one, whether it will be to replace, repair or remove the dam and mill. Right now we're trying to

collect information and names from people in our community who want to protect these valuable pieces of our culture and history."

It may be another year before the EA is complete, says Mr. Jackson, but the group is mobilizing now to: make sure the wishes of the community are heard. "Obviously we don't know what the outcome of the EA will be, but we've always known that getting rid of the spillway and dam was an option, along with tearing down or relocating the mill. I think it's really important that people know this so that they can take part in the public consultation part of the Environmental Assessment. A 2009 survey showed that 98 per cent of township residents believe that the pond, mill, and dam are

integral to our community, and we've all got to work together to make sure they are around for future generations."

Celia Hunter, President of the Historical Society agrees. "There has been a pond, mill and dam in Millbrook for almost 200 years. It's a huge part of our identity, history and culture. Right now both the mill and the dam need major repairs and we need to be ready to help save these important pieces of our community."

If you would like more information about the Save the Dam Mill Group, to volunteer, or to make a donation, please visit www.savethedammillpond.com or email admin@savethedammillpond.com.

Save the Dam Mill Pond Group Says Thanks

Thank you to everyone who attended last Tuesday's Public Meeting regarding the Class Environmental Assessment of the Dam and Millpond. As you heard Allan Seabrooke, ORCA's CAO, say, "...in all his years of experience, this is the best turn-out ever for an EA". It was so important to let ORCA and the MMM Group know that our community is paying attention and is engaged in this very important matter. While the recommendation of the EA points towards replacing the dam, we feel that the outcome of this process is far from over.

There are 30 days from the public meeting date (March 26) for

the public to submit feedback. THE DEADLINE IS APRIL 25th.

Whether you were able to attend or not your feedback is important!

The Save The Dam Mill Pond Committee would like to share with the community some of its opinions, concerns and next steps with regards to working towards the best possible solution for our community dam, mill and pond.

1. The proposed "Option C" - replace the dam, is too vague. We are worried that by agreeing to "Option C" we will still end up with a 37 m wide concrete dam (more than 7 times the size of the current dam). We are concerned this could very well be dictated to

us by engineers consulted or contracted by ORCA during the subsequent design phase scheduled to be complete in 2014.

2. The three options that were presented to the Community Liaison Committee on December 4. 2012 were still the same three options that were presented to the community at large last Tuesday night. This is despite the fact that Community the Liaison Committee soundly rejected all three options and asked the MMM Group to "go back to the drawing board" with new ideas for the rehabilitation of the dam and the pond. Quite simply, we feel that not all reasonable considerations for designs have yet been consid-

3. We would like second opinions on the initial numbers and calculations done to determine the flows that determine the necessary size of the dam (as part of Option 3). ORCA tells us that the current weir can only handle a maximum of 27 cubic metres of water per As a Committee, we second. have sought other professional opinions and the fact is that the existing weir may be able to handle close to triple the amount of water ORCA says it can handle. We are in the process of hiring a licensed engineer to verify these exact volumes, as the design hangs on these numbers, and we believe they need to be verified. In fact, there is a possibility that the dam may not need to be replaced at all if these numbers are off. As the numbers that ORCA and the MMM Group are working from are now almost 10 years old, it seems logical to verify these and it is our opinion that this should have been done as part of the Class EA process.

4. We are also concerned that the \$2.6 million dollar estimated price tag in the end is to eliminate the liability for a small incremental flood gap that may occur if the dam fails. We were told publicly on Tuesday night that in the event of one of these storms, Millbrook will still flood, but ORCA won't be liable. Is it worth asking the Ministry of Natural Resources for

a special exemption in the case of the Millbrook dam, given that in the event of a "100 year flood" Millbrook will be under water regardless of the size of the dam or failure of a dam?

The Save the Dam Mill Pond Committee is asking everyone to please let ORCA and the MMM Group know what you think! Any comments, questions or concerns become an important part of the EA documentation. The final report submitted by the MMM Group at the end of the EA process should reflect what transpired during the public consultation. It is important to have your say now, in hopes that it may have some effect on design and engineering decisions in the future.

If you have any questions about any of the information provided at Tuesday's meeting, or want more details about what the Save the Dam Mill Pond Group has learned that was not presented, please contact the committee at admin@savethedammill.com.

Thank you again, The Millbrook Save The Dam Mill Pond Committee

CONTACT DETAILS:
Allan Seabrooke,
CAO, Secretary-Treasurer,
Otonabee Region Conservation

Email:aseabrooke@otonabee.com 250 Milroy Drive

Authority

Peterborough, ON K9H 7M9

Jim Bertulli
Project Manager,
The MMM Group Limited
Email: bertullii@mmm.ca
100 Commerce Valley Drive
West

The next issue of T will be published with delivery for mo Deadline for next issue:

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Canada Publications Mail Registration #7894
Canada Post Agreement #1631586
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Karen Graham: Celia Hunter: Publisher / Advertising Sales Editor

d up and dressed for our cline together out on the ice. it. It will probably be a hot



Opinion

a prompt Millbrook memories

how much a's letter in 1: Children Pond]. It memories. he kids in summer. I lywogs and home, get and watch It made our o take them wish them most happy was fishing, eason to go

down to the pond.

Skating on the pond, man, it was cold. You had to put on your skates sitting on logs and they would be freezing just carrying them from home to the pond. The bigger guys would clean the ice and Sunday, that was the place to be. The big guys would park their cars close to the edge of the banks. The banks were different then. They would turn on their car radios real loud and that is the music we skated to. Yes, some times it was bumpy so you had to be careful. The older ones always kept an eye on us to make sure we didn't go near the far edge as sometimes under the hanging tree branches it would get soft. Skating on one side and a hockey game on the other. What fun! There was no island then and in summer you could play in the pond as long as you kept to the edge. We all knew if you went in over your ankles the bottom was soft and had many weeds .

When the island was put in they used to have canoe races around the island. I was a mom to four kids then. I remember a friend and I in a canoe (half of Millbrook was there) and neither of us had When we ever canoed before. reached shore some of the guys helping pull us ashore dumped us in the water but all in fun.

The pond was certainly the best part of my childhood. There used to be a playground where Voyageur Canoe is now. It had a huge bandshell and big sand pits to play in. They had it supervised. We were always given a nickel from our parents. When we were finished playing we could go to the Ice Cream Shop that was on the corner where the Millbrook Times now have their office. We would get an ice cream cone for the walk home. This ice cream was made in that building. It was a Creamery plus they had lockers in back and people would rent them to freeze meat for the winter. If someone lost their nickel in the sand or swinging on the huge swings the poor supervisors would have crying kids on their hands. We usually gave our nickels to her and she would keep a list and give them back when we were leaving.

The ball diamond where the Fair is held was the other big attraction. You had to get there early or all the seats would be taken and no parking left for late cars coming. What fond memories I have of growing up in Millbrook. I wish the same for Ben and Laura.

and Pond RE: Pebruary 7, 2013 issue,

Letter re Dam

'Future of Dam Draws Crowd'

I write to comment on Mr. Allan Seabrooke's address to the community meeting of January 29th ORCA CAO wherein the addressed the audience's concerns and objections to all three of the consultants' proposed 'solutions' to the dam issue.

Your reportage reads as follows: "In his view, the study could recommend a less specific alternative to replacing the existing dam structure and leave the engineering details of that option to a later date. This was good news for the audience."

Unfortunately I believe that leaving the engineering details of how to solve the problem to a later date does not resolve the problem but only delays it. It may make all of us feel that we have won the battle, as the pond for the moment would survive, but perhaps only for the moment.

The devil is in the details', and the community must continue to be involved and be fully informed so as to appreciate the details of the proposed solution as opposed to 'leaving' the engineering details to a later date". It is only by knowing the details of any 'solution' that we will conclude that the pond will continue to be a valued asset of our community.

> George Flak, Cavan

Heartfelt Th

Seldom does on good customer servic However, following my father, my family absolutely exceller service from Benso Home in Millbrook. help think that othe could learn many s from Benson's.

My Dad, at age 9 liative care and his becoming imminen planner and organize wanted to prepare a r depicting his long an life for his "Celebra service. I had an pictures but lacked skill to formulate a tation with music. gested that funera accustomed to doing would be a good 1 That's how I met P of Benson's Fune Millbrook.

His profession response to my requ me immediately. I was 'the one' I woul the time came and very shortly after o ing.

Patrick's service w standing and nothi much to ask of hi admit that I had his about what I wan quite a lot of him. appoint on any le exceeded my eve: His staff was profe cont. p. ing -

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Voice of the Community

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Special thanks this week to Andy Harjula and sent in articles and information of communi

The next issue of The Millbrook Times will be publ Thursday, February 28 with delivery for most on Friday, M Deadline for next issue:

Gail Smith



THE MILLBROOK TIMES - SERVING CAVAN-MONAGHAN AND SURROUNDING COMMUNITIES SINCE 1987

Preserving Local Heritage

One week into the job and lessons are being learned. First off, no weather-Some issues don't melt away, but have the potential to drain away if we don't take notice. Currently the subject of an Environmental Assessment, Milbrook's dam and its millpond might well disappear if the consultants undertaking the study are not made aware that there is significant public support for the pond to be preserved, and indeed reclaimed. Not long ago a separate report jointly paid for by the Otonabee Region Conservation Authority and the township concluded that there was overwhelming support for the preservation of Needler's Mill, the pond and the rebuilding of the dam in a way that fits into the overall heritage landscape. However, it appears that a related stories. Last week there were two, all about snow. Enough said,

In the first go-round of presentations, the current consultants have proposed options that could see the dam removed or partially removed, and the pond filled in or reconfigured into one or two smaller ponds. It's all a bit muddy, However, a citizens' group going by the name of the Save the DamMillPond Group, will be presenting a clear view of what the proposals are, and then asking for your opinion, at an Information Night to be held at the Millbrook

Whether it's for the view, the heritage, the recreation, or another reason alto-Sother, the Save the DamMillPond Group invites you to come and voice your

Celia Hunter





Audience members wait at the municipal gym befor the presentation March 26.

Standing room only crowd has many questions

continued from page 1 when grant funding becomes available. No funding opportunities are expected this fiscal year.

Asked how the project will proceed if the majority of the ORCA Board, representing the City of Peterborough, do not support the project, Mr. Seabrooke said, "I mink, at the end of the day, they'll do the right thing".

Mr. Seabrooke also announced that the Community Laiason Committee, which is made up of aomeowners living next to the pond and individuals in the community representing various interst groups and organizations, will continue to meet and consult with the MMM Group and ORCA on final recomendations. Asked the CLC could include additionate members with more technical skills and engineering background, Mr. Seabrooke gave a positive response.

Following the presentation, there were questions and some comments from the audience that filled the rest of the scheduled two-hour meeting, and beyond. There was considerable discussion of the size of the dam and the threat of the 10 year storm event and the regional (Timmins) flood event, flow rates, and the perceived threat of loss of human life in the event of a dam failure.

While the audience seemed to be overwhelmingly in favour of repairing the dam and retaining the pond, there were two voices that expressed alternate views. One was not in favour of any further expenditures, particularly in light of recent news of tax increases over the next three years, and preferred that the dam be removed and the pond drained. The other voice expressed interest in Option #2 that restores the stream bed on the east side of the island and cre-

ates a smaller pond on the west side.

Janet Honsberger, representing the Millbrook and Cavan Society's Mill Historical Committee and co-chair of the Save the DamMillPond Group, said after the meeting, "I was encouraged to hear that ORCA will continue to maintain and fund the ongoing maintenance and the preservation of safety and management of risk of the structure. We must have this commitment from ORCA and out township officials to continue to protect this gem in our community".

CLC member Jackie Franco was encouraged by the progress. "I'm quite happy with the way things are going," she stated. "We will still be involved and can still influence the style of the new dam".

MARCH 28, 2013

Dam Presentation draws standing room only crowd

by Celia Hunter

There was standing room only as close to 200 people gathered to hear the preferred option proposed by consultants conducting a Class Environmental Assessment (EA) on the Millbrook Dam. Addressing the waiting crowd, Allan Seabrooke, CAO of the Otonabee Region Conservation Authority (ORCA) said that in all his years of experience, "this is the best turn-out ever for an EA".

The lead consultant for the MMM Group, James Bertulli, went straight to the option being recommended rather than taking the audience through the process and analysis before arriving at the conclusion. Acknowledging the signs being held up by several audience members, he was quick to announce that, of the three options considered, the preferred one is to retain the pond and replace the dam.

Mr. Bertulli made it clear that the many comments that had been received and the input from the Community Liaison Committee

had indicated that the social value of the pond and dam were the most important factors to be considered. Describing the dam and pond area as "the heart of Millbrook" he noted that it is used on a daily basis by walkers and hikers, and is the location for a number of community gathering such as the annual fishing derby.

The preferred option (#3) does retain the pond. The structure that MMM Group recommends replace the dam is not specifically identified. That, said Mr. Bertulli, would be the work of an engineer, acting on the study's findings and taking into account the public input. The option originally suggested a 37 m wide dam to replace the current 7 m wide structure.

The cost estimate given was \$2.2 - 2.6 million for the work required.

Mr. Seabrooke explained that once the recommendations from the EA have been approved, the design phase should take place so that the project is ready continued page 5



with the majority of opinions expressed at the Public Meeting held at the Township gym George Flak from the northern part of Cavan Ward holds up his sign that corresponds March 26.

Oh dam! That's good news THE THE OF ME HELY THE VALUE WHILE VILLE



Taylor LePage and Jimmy Woodcroft hang out on the Millbrook dam while out from a stroll on Wednesday (March 27) afternoon. A recommendation to reconstruct the dam and dredge the mill pond was released at a public meeting on Tuesday night. **SEE STORY, PAGE 5.**

LANCE ANDERSON | THIS WEEK

APPENDIX D OPEN HOUSE PANELS

ENVIRONMENTAL ASSESSMENT: MILLBROOK DAM

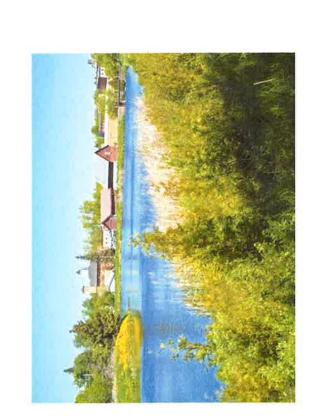
Otonabee Conservation and the Township of Cavan Monaghan Welcome You to the

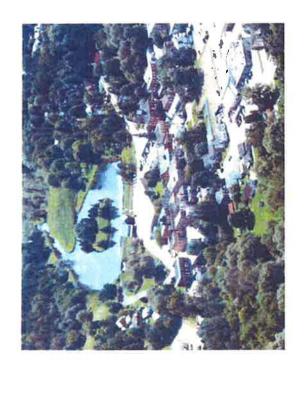
OPEN HOUSE

for the

MILLBROOK DAM

ENVIRONMENTAL ASSESSMENT







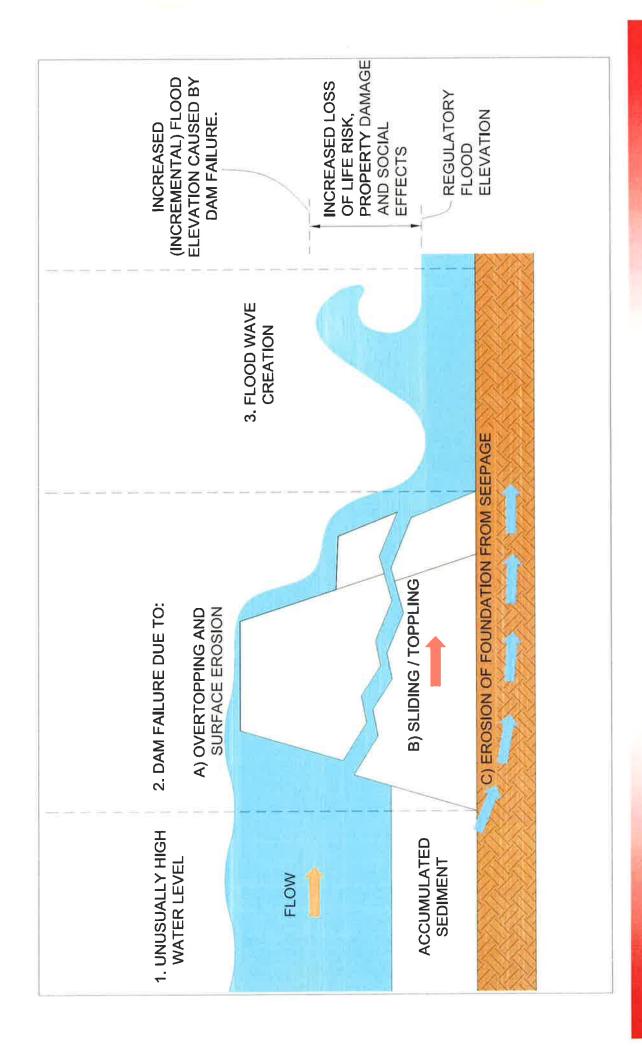








The Dam Failure Problem



ENVIRONMENTAL ASSESSMENT: MILLBROOK DAM

Purpose of the E.A.

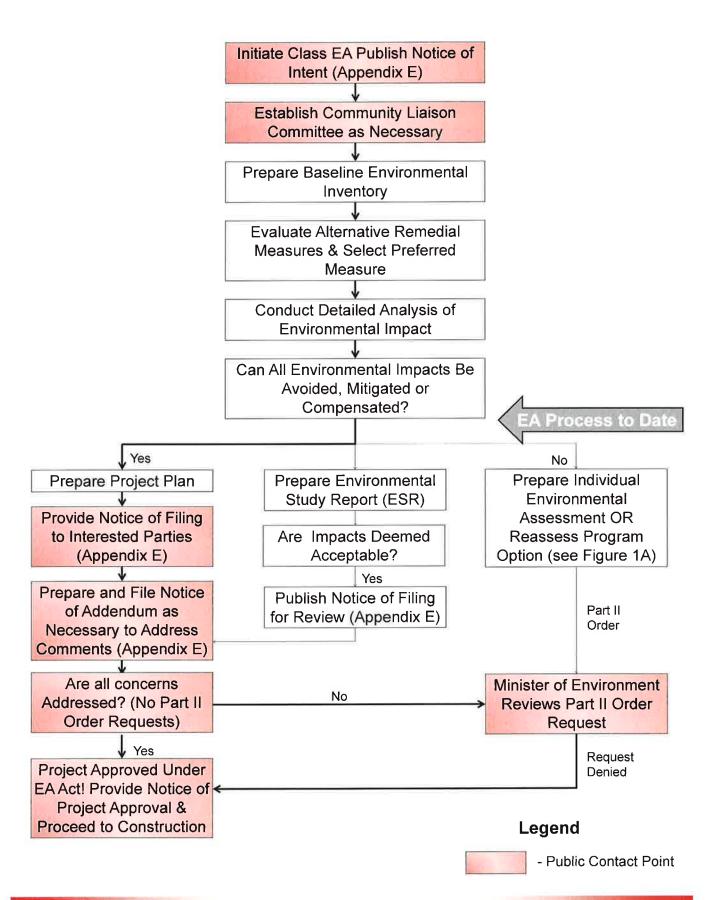
"To remediate the potential risk to human life, property and the environment in the event that the Millbrook dam fails"

By

- Identifying and evaluating all relevant environmental factors (engineering, natural and social systems)
- Providing remedial concepts for technical and public review
- i) Selecting a preferred remedial option
- Identifying and mitigating all adverse environmental effects <u>(≥</u>
- Recognizing and considering important social values of the study area

ENVIRONMENTAL ASSESSMENT PROCESS

Conservation Ontario (2002, Amended 2009)



RECENT TRENDS:DAM CONVERSIONS BY THE MINISTRY OF NATURAL RESOURCES

Current Ontario policy requires cost reduction by:

- i) Dam removal (if warranted)
- ii) Operational charges(ex. conversion of control dams to inoperable weirs, reducing frequency of operation)
- iii) Good design/construction to reduce maintenance costs

Naiscoot Lake Dam

Control dam replacement with non-operable fixed crest weir with "V" notch for base flow provision.



BEFORE

Healy Lake Dam

Control dam replacement with fixed crest weir.



Distress Dam

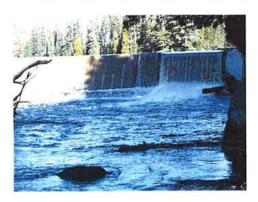
Partial dam reconstruction



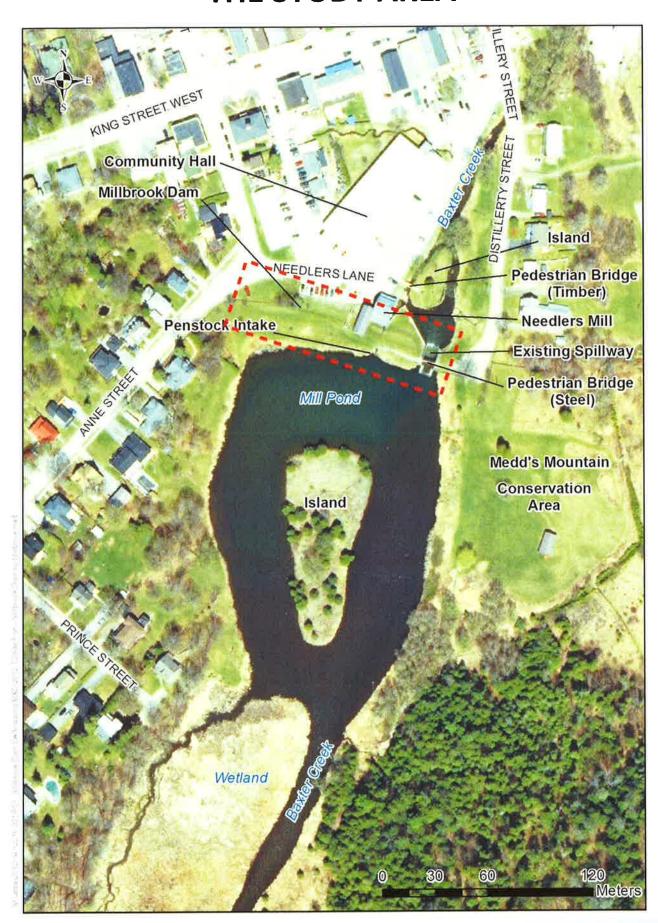
AFTER







THE STUDY AREA



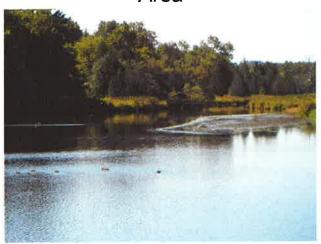
STUDY AREA FEATURES



Medd's Mountain Conservation Area



Headpond



Sediment Accumulation (Upper Headpond)



Shallow Headpond Water



Up-Stream Wetland



Plunge Pool Below Spillway



ENVIRONMENTAL ASSESSMENT: MILLBROOK DAM

DAM FEATURES



U-Shaped Weir



Spillway



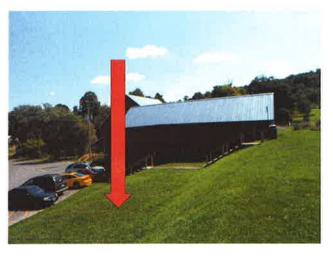
Steel Pedestrian Bridge



Penstock Intake(To Needler's Mill)

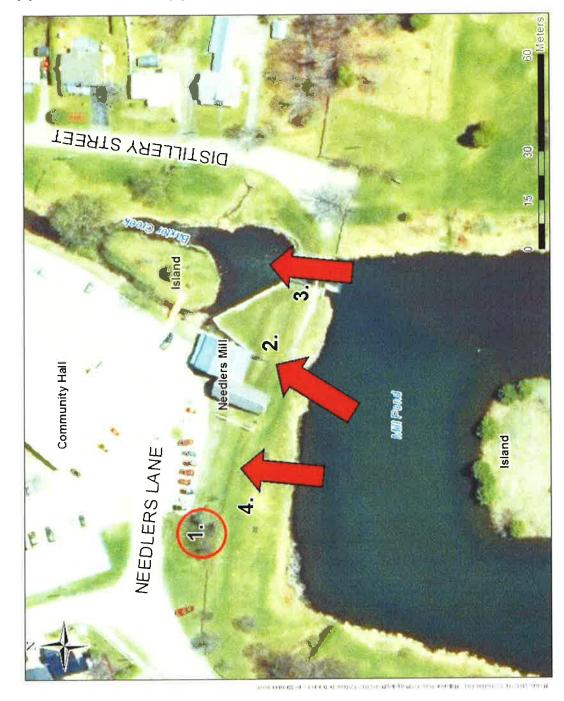


Upstream Dam Face

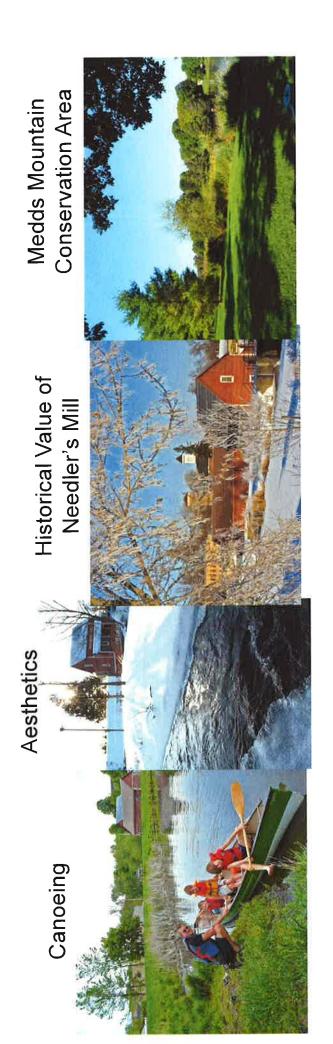


Reinforcement: Secondary Earthen Embankment

STRUCTURAL DEFICIENCIES – MILLBROOK DAM



- West End Secondary reinforcement and seepage protection absent
- 2. Seepage Affecting
 Needler's Mill- Seepage
 through the earthen
 section of the dam
 resulting in freeze/thaw
 damage to mill
 foundation
- Active Undermining of spillway
- General Seepage/
 Foundation ErosionEarthen section of dam



COMPELLING SOCIAL VALUES



ENVIRONMENTAL ASSESSMENT: MILLBROOK DAM

REVIEW OF PREVIOUS ENGINEERING STUDIES

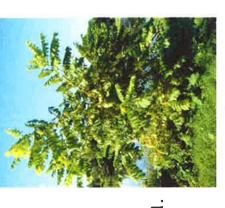
- The incremental "Loss Of Life" risk can be eliminated by either removal of the existing dam or by construction of a new dam/ spillway with increased flow capacity.
- To eliminate the incremental "Loss Of Life" risk (while retaining the use of the existing earth dam), the elevation of a new weir crest must not exceed 214.6m.
- A new weir crest at elevation 214.6m would be 0.5 below the existing headpond level.
- limiting existing water depth to about 0.5m. Removal of sediments Large volumes of sediment have accumulated in the headbond is required.

2

Additional engineering is required to prepare "Final Design" construction drawings.

Ecology Studies

- Aquatic and Terrestrial habitat identification is complete (5 site visits)
- Terrestrial Studies
- Habitat Suitability for Species-At-Risk
- Butternuts found were hybrids
- Barn Swallow seen at site
- Limited mammal movement throughout the study area.
- No Provincially Significant wetlands



Hybrid Butternut

- Aquatic Studies
- Creek is a cold-water/Brook Trout stream
- stickleback caught; large school of young-of-the-year observed on Trapping and netting -juvenile snapping turtle, crayfish and one west side
- Pond habitat aquatic vegetation on west side: east side open, semi-organic bottom
- Water depths are generally shallow (45cm, 18")
- Conclusion There are limited ecological constraints to construction.



Captured Crayfish

Geomorphology Studies

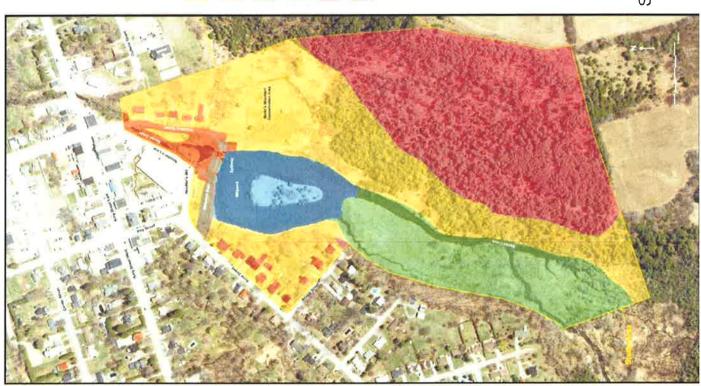
- and spot checks at four additional locations including 150m upstream Field reconnaissance included the pond, two downstream reaches, from the pond.
- to the presence of the dam. There are no significant areas of erosion widened. Downstream sediment supply has been cut off by the dam. Downstream, Baxter Creek is stable and the system is well adjusted or deposition. Some, localized erosion and deposition areas exist. The creek appears to have been historically straightened and
- Immediately upstream of the pond, Baxter Creek has become silted stable. Further upstream the channel follows a more natural in and has been widened. Banks are well vegetated and planform.



Upstream Baxter Creek Channel



Downstream Channel Modifications



Archaeological Potential

LEGEND

Archaeological potential: Stage 2 shovel testing required Deeply buried archaeological potential: Archaeological monitoring

No archaeological potential: permanently wet

No archaeological potential: dredged

No archaeological potential: steeply sloped

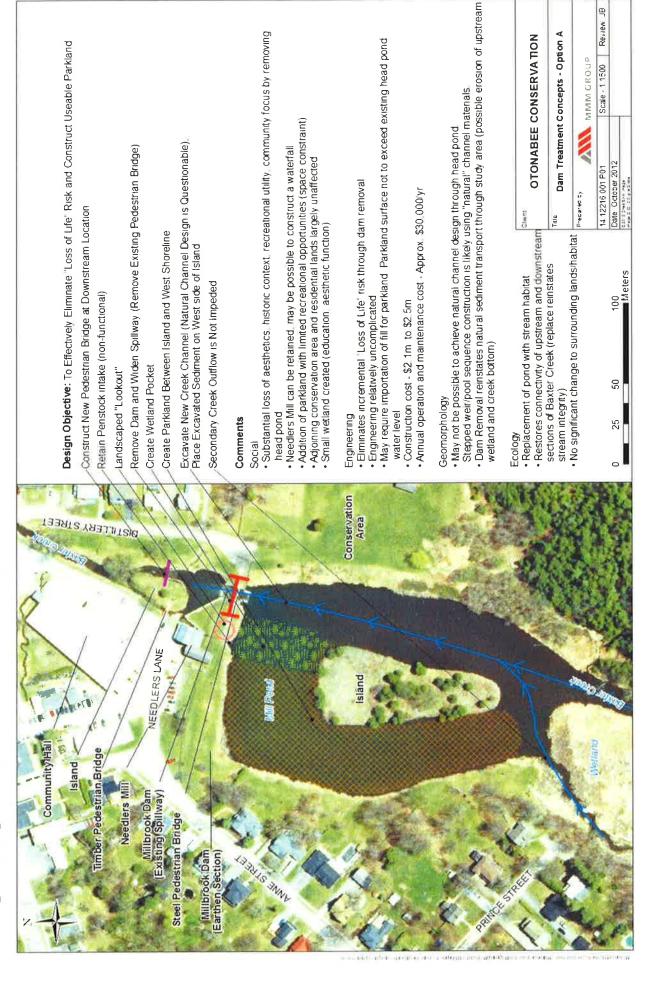
No archaeological potential: disturbed by construction

Recommendations

- disturbed, additional (Stage II) studies are needed If areas with archaeological potential are to be
 - i) Monitor excavation of dam/spillway during construction
- iii) Avoid damage to Needler's Mill

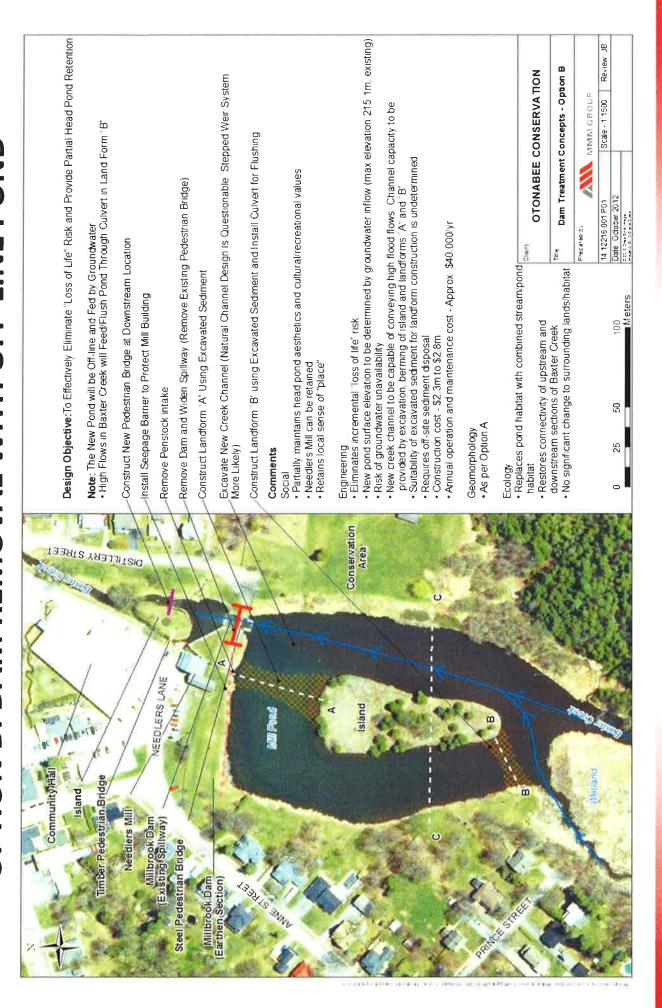
Source: Past Recovery Archaeological Services (2012)

OPTION A: DAM REMOVAL AND CHANNEL RESTORATION

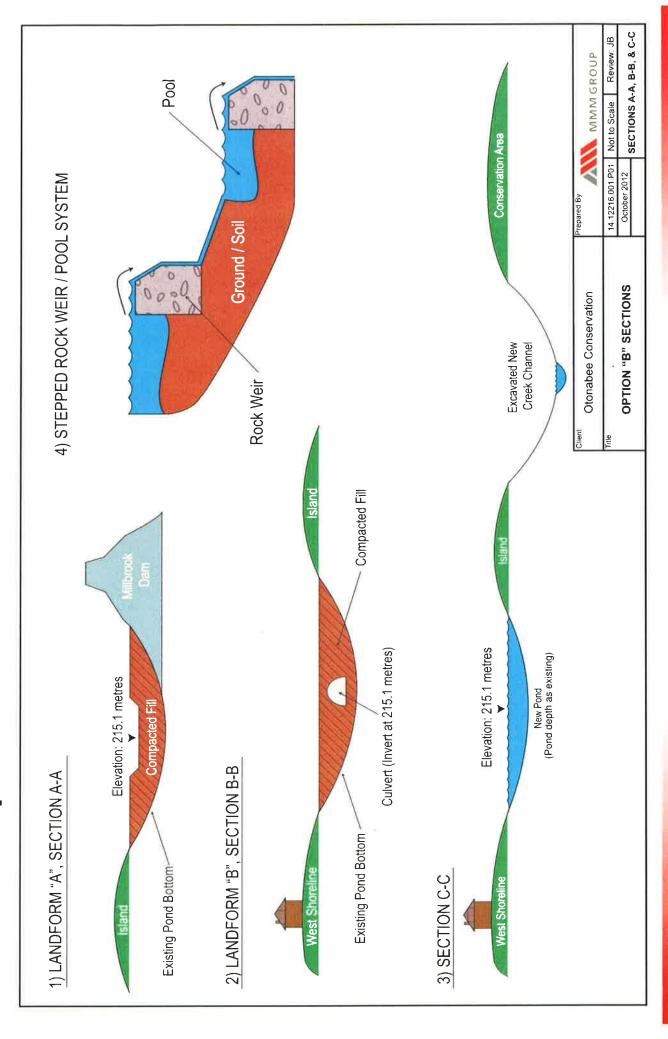


ENVIRONMENTAL ASSESSMENT: MILLBROOK DAM

OPTION B: DAM REMOVAL WITH OFF-LINE POND

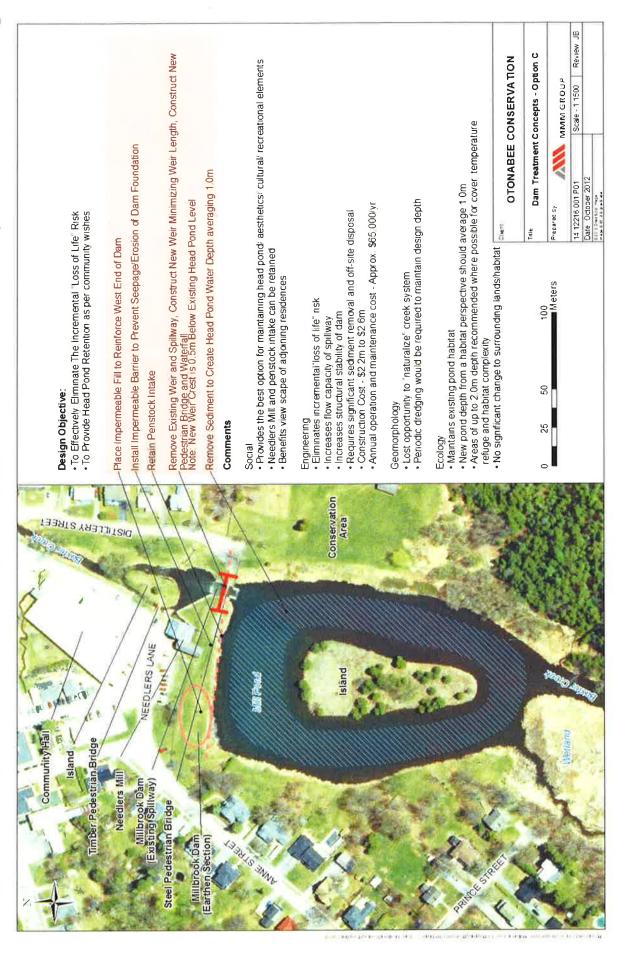


Option B Cross Sections

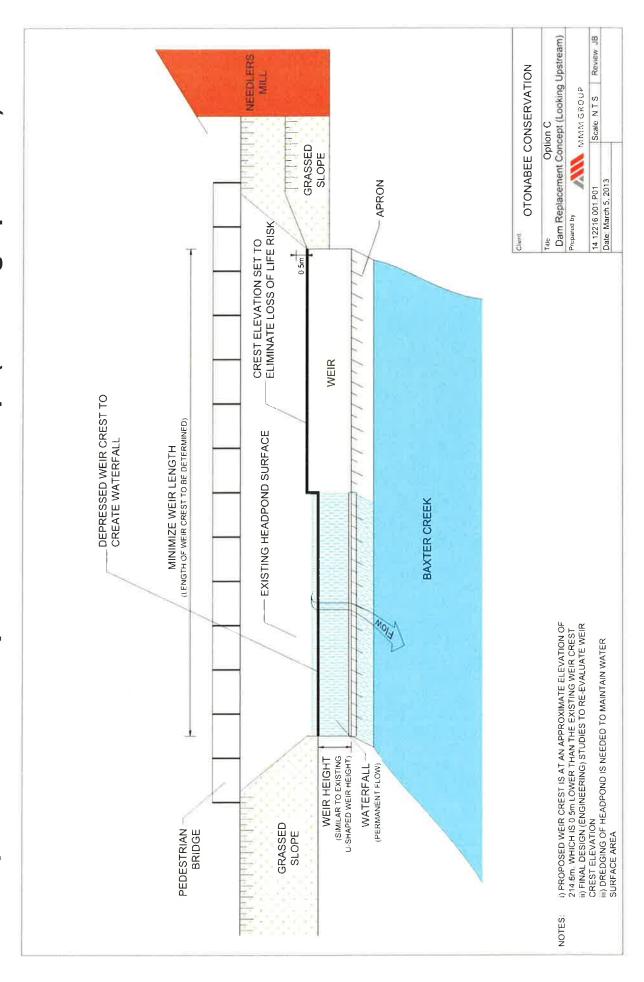


ENVIRONMENTAL ASSESSMENT: MILLBROOK DAM

OPTION C: DAM RECONSTRUCTION WITH HEADPOND RETENTION THE RECOMMENDED OPTION

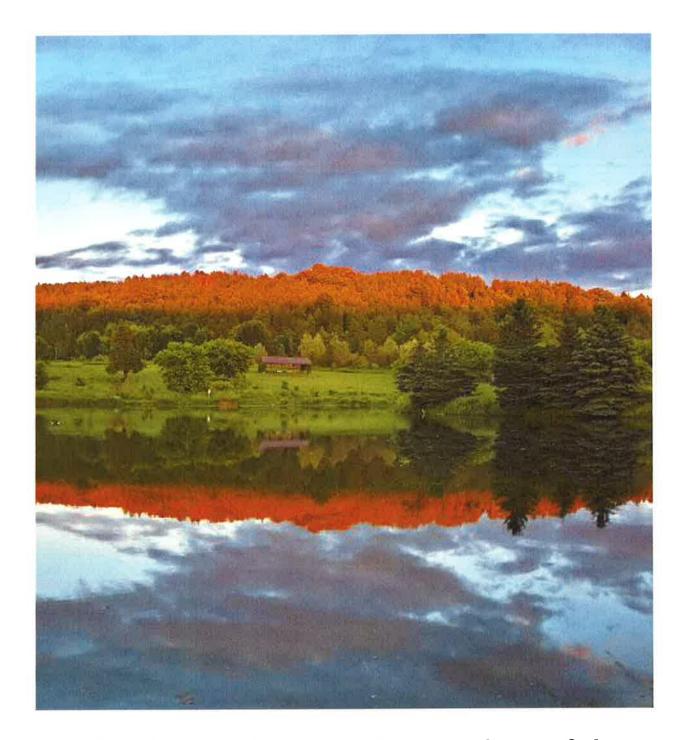


Option C: Dam Replacement Concept (Looking Upstream)



Interim Flood Protection Measures

- Potential serious flooding could occur during the period between approval of this environmental assessment and construction of the preferred remedial option
- Plan to address conditions where flooding or dam ORCA will prepare an Emergency Preparedness failure may occur



A Special Thank You to the members of the Community Liaison Committee for their time, their knowledgeable opinions and contributions of project materials.

PROJECT CONTACTS

Should you have any questions or wish to forward comments please contact:

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THANK YOU FOR ATTENDING

The ORCA will receive public comments up to and including April 26, 2013