



STEERING COMMITTEE MEETING REPORT #1

Municipal Engineering Services	DATE: October 29, 2010	PROJECT NO.: 10257	
Transportation & Hydraulic Structures	LOCATION: Township of Uxbridge	PROJECT NAME:	Uxbridge Downtown Flood Reduction Class EA
Class Environmental Assessments			
Transportation Engineering			
Modern Roundabout Design	PRESENT: Township of Uxbridge		- Ben Kester
Geomorphic & Environmental Sciences	Region of Durham		- David Dunn
	UWAC		- Tom Fowle
Water Resources Engineering	Ministry of Environment		- Dorothy Moszynski
	LSRCA		- Kelly Fisher
	Ward 5 Councillor		- Mike Walters
	SRM Associates		- Gord Highet
			- Dale Dionne
			- Jennifer Haslett
			- Andrea Keeping

ACTION BY

1. SRM provided an update on project tasks, and an overview of the project schedule. Summaries of the various background studies were also provided. Next steps will focus on development and evaluation of alternative solutions.
2. MOE staff inquired about groundwater issues, pertaining to porosity of the culvert materials and potential interaction between groundwater and watercourse base flow at the culvert location. LSRCA indicated that the culvert area was not likely an area of groundwater discharge. SRM agreed to inquire with other staff at the MOE re: potential groundwater issues at the site. SRM Associates
3. LSRCA staff indicated that Source Water Protection reports are available, and may contain information useful for the Phase 1 Environmental Site Assessment. SRM to follow-up with LSRCA to obtain copies of these reports. SRM Associates
4. MOE requested four (4) weeks for review of the draft Environmental Study Report.
5. Various strategies for advertisement of the PIC were discussed. It was agreed that the Notice would be published as an advertisement in the Uxbridge Times Journal, and a press release would be issued to all local papers. SRM to draft a press release for review by the Township and the Region. LSRCA agreed to have staff present at PIC #1. SRM Associates
LSRCA
6. MOE staff noted that questions pertaining to potential contaminants at the subject site should be directed to Dave Fumerton. SRM to follow-up when the ESA study is underway. SRM Associates
7. Next Steering Committee meeting will be scheduled prior to PIC #2.

NOTE: If the information in this report does not agree with your record of this meeting or if there are any omissions, will you kindly advise this office immediately, otherwise we shall assume its contents to be correct.

JH/br

Distribution: All Present



STEERING COMMITTEE MEETING REPORT #2

DATE: October 4, 2011 **PROJECT NO.:** 10257

LOCATION: Township of Uxbridge

PROJECT NAME: Uxbridge Downtown Flood Reduction Class EA Study

ATTENDEES:

NAME	COMPANY	E-MAIL
Ben Kester	Township of Uxbridge	bkester@town.uxbridge.on.ca
Dave Dunn	Region of Durham	david.dunn@durham.ca
Tom Fowle	Uxbridge Watershed Advisory Council	tomfowle@hotmail.com
Rob Baldwin	LSRCA	r.baldwin@lsrca.on.ca
Dale Dionne	SRM Associates	ddionne@srmassociates.org
Jen Haslett	SRM Associates	jhaslett@srmassociates.org

PURPOSE OF MEETING:

Review the Phase 2 alternative solutions

		<u>ACTION BY</u>
1.	<p>SRM gave an overview of the work that has been done since the last Steering Committee meeting.</p> <ul style="list-style-type: none">• Scope of the EA is to examine options for reducing the flood elevation in the downtown area of Uxbridge.• First step was to examine the 1983 study to determine what work could be brought forward into the current study.• Some of the 1983 options remain valid at the conceptual level, but the modelling data required updating (inclusion of the Toronto Street crossing, etc).• It was confirmed that the LSRCA's most up-to-date Regulatory Flood Model (v. 5) is being used as the base for this assignment.• Two problems became apparent: the existing culvert is under-sized, and downstream restrictions are creating a tailwater condition at the Brock Street culvert. <p>SRM explained that at Phase 2 of the Class EA process, the goal is to examine a broad range of potential approaches that can be taken to reduce flooding in the downtown. SRM presented the 5 alternative solutions being considered, with brief discussion on the technical aspects of each:</p> <ol style="list-style-type: none">i. Replace Existing Culvert with a Larger Culvertii. Remove the Existing Culvert and Install Bridges at Brock Street and Centennial Driveiii. Maintain the Existing Culvert Capacity and Create an Overland Flow Route for Flood Waters	



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		<u>ACTION BY</u>
	<p>iv. Maintain the Existing Culvert Capacity and Use an Overflow Pipe at Bascom Street for Flood Waters</p> <p>v. Maintain the Existing Culvert Capacity and Use Channel Improvements Downstream of Brock Street to Reduce the Tailwater Effect</p>	
2.	<p>SRM explained that each approach was evaluated in isolation to be able to determine the relative potential contribution to flood reduction. It is acknowledged that the preferred solution will require a combination of approaches, to address the two problems identified above.</p> <p>SRM proposes that a combination of approaches (i) and (v) be carried forward to the public as the preferred alternative (reduction of tailwater combined with a larger culvert at Brock Street). The design iterations of this combination would be examined during the next phase of the Class EA study.</p>	
3.	<p>The Steering Committee discussed various components of the alternatives. Tom Fowle inquired as to whether there was merit in opening the channel on the south side of Brock Street, even if some portion of the culvert will remain or be replaced. Given the narrow and deep cross-section required for an engineered channel in the existing space south of Brock Street, there would likely be minimal social or environmental benefit to the undertaking. It was decided that an illustration of an open channel cross-section would be helpful for the Public Information Centre displays.</p> <p>A number of suggestions were made for clarifying the concepts on the display panels. SRM will make edits, and provide a full set of PIC panels for review prior to the PIC.</p> <p>LSRCA suggested that the team review a presentation pertaining to the recent flooding events in Vermont. The flooding was similar in magnitude to what would be expected during a Regulatory flood event in Uxbridge. LSRCA also has EMS flooding illustrations that may be useful for the public displays.</p>	<p>SRM Associates</p> <p>SRM Associates</p> <p>LSRCA</p>
4.	<p>SRM is continuing to work on a photoshop image of the downtown area under a flood condition. This image and the Regulatory floodline image is to be provided to Tom Fowle for the Watershed Walk prior to October 14.</p> <p>Tom Fowle also suggested a press briefing prior to the PIC to enhance interest in the project.</p>	SRM Associates

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JH/br

Distribution: All Present



STEERING COMMITTEE MEETING REPORT #3

DATE: April 18, 2012 **PROJECT NO.:** 10257

LOCATION: Township of Uxbridge

PROJECT NAME: Uxbridge Downtown Flood Reduction Class EA Study

ATTENDEES:

NAME	COMPANY	E-MAIL
Ben Kester	Township of Uxbridge	bkester@town.uxbridge.on.ca
Dave Dunn	Region of Durham	david.dunn@durham.ca
Tom Fowle	Uxbridge Watershed Advisory Council	tomfowle@hotmail.com
Tom Hogenbirk	LSRCA	t.hogenbirk@lsrca.on.ca
Dorothy Moszynski	Ministry of the Environment	Dorothy.Moszynski@ontario.ca
Jennifer Haslett	SRM Associates	jhaslett@srmassociates.org

PURPOSE OF MEETING:

Review the evaluation of design alternatives and the preliminary preferred solution. An information package was provided to Steering Committee members (attached to this report).

1.	<p>SRM provided a brief review of the Preferred Alternative that was presented at PIC #2:</p> <ul style="list-style-type: none">• Culvert replacement is required to address deteriorating conditions of some segments, and to provide additional flow capacity.• Downstream improvements were to be investigated to determine the potential benefit that could be achieved through reduction of the tailwater at the Brock Street culvert.• Opportunities for opening a portion of the watercourse were to be investigated.
2.	<p>SRM reviewed the table of design options that were considered. The key points are as follows:</p> <ul style="list-style-type: none">• A range of culvert sizes and configurations is represented along the top row of the table, coinciding with a disturbance footprint on a building-by-building basis.• Various combinations of engineering solutions are represented down the left column of the table, whereby each row builds upon the previous row by adding another flood reduction component to the solution.• The numerical values in the data cells of the table represent the resulting modelled flood elevation at Brock Street and associated construction cost for each combination of options.• The coloured lines on the floodline map correspond with the coloured columns of the table.• At the outset of this project, the goal was to identify a solution that would bring the Regional storm flood elevation at Brock Street below the elevation of the existing basements (~263.3m). Examination of the analysis table shows that only two design combinations can achieve this (bottom right cells), for a cost of approximately \$19 million, and affecting many businesses, buildings, and landowners.



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- Discussion among the project team, Township staff, Region staff, and LSRCA resulted in a decision to revise the project goal. It was determined that a better balance of impacts could be achieved by aiming to bring the Regional storm flood elevation below the first floor elevation of the buildings on Brock Street (~265.9m).
 - With a revised flood reduction target, there is a much greater variety of design options that would achieve this goal. Specifically, any design option in the last three columns on the right side of the table would be feasible. On the floodline map, this is represented by the green, purple and blue lines, showing that flood waters would not rise up and over Brock Street to flood the downtown.
 - From an economic and social impact point of view, it makes most sense to select a design option that limits the number of buildings and businesses affected. Therefore, the decision was made to choose a solution from the green column, affecting only 3 buildings/businesses.
 - Within the green column, there are multiple 'layers' of flood reduction that can be achieved, beginning with culvert replacement only (top cell of the column), and progressively adding a variety of downstream improvements. However, even with the most aggressive approach to downstream flood improvements (bottom cell of the column), the elevation of the flood water in basements would only be reduced by an additional 30 cm beyond what the culvert replacement alone could accomplish. Thus, it was decided that minor reductions in water elevation within basements that would already be flooded, did not justify the social and economic costs of this approach.
 - The top two cells in the green column (shaded in tan colour) represent the best reasonable solutions to flood reduction in the downtown area. Either solution could be recommended; the resulting flood elevations and construction costs are similar. The design option in the second cell however, includes an opportunity to open approximately 60m of the watercourse, which has significant environmental and social benefits. For this reason, it was selected as the preferred solution for this project.
3. SRM provided an overview of the design elements in the preliminary plan, profile and cross-sections. Key components are:
- Two culverts with a total span of 15m. West culvert is 135m long, aligned with watercourse to carry base flows, open bottom to provide natural substrate and fish passage, ending about 40m north of Brock Street to allow for creation of an open watercourse channel. East culvert is 195m long with concrete bottom to limit down-cutting and accumulation of debris, functioning during larger storm events but remaining dry otherwise.
 - The open channel will have steep slopes ranging from 4.5 to 6.0m high due to the depth of the culvert in relation to the existing ground elevation. The steepness and height of these slopes requires a hard engineering solution to maintain stability. Vegetation will however be incorporated wherever possible to improve habitat conditions and aesthetics.
 - Creation of an open channel will result in the loss of approximately 12 parking spaces.
 - The existing section of culvert under #34 Brock Street will remain, as only minor repairs are required, and it can be used to maintain stream flows during construction.
 - The building at #30/32 Brock Street will require demolition for installation of the culvert. At the time of construction, a decision can be made as to whether another building is constructed, or the land is used as additional parking to offset the losses from creation of an open channel.



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	<ul style="list-style-type: none">• Construction of the new culverts will require additional pieces of property for easement and/or acquisition.
4.	<p>Upcoming key dates:</p> <ul style="list-style-type: none">• SRM will present the preferred solution to Township of Uxbridge Council on May 7, 2012. <p>Public Information Centre #3 will be held at the Township Offices on May 16, 2012. Public Notices to be circulated the week of May 5.</p>

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JH/br

Distribution: All members of the Steering Committee

