L-5 Consultation with Public Advisory Committee
Public Advisory Committee (PAC)
A group of local stakeholders, community groups, agencies, various levels of government were invited to participate in the Public Advisory Committee (PAC), they included
- Chamber of Commerce
- City of Cambridge
- City of Waterloo
- Citizen Committee – Environmental Committee
- Neighborhood Associations
- Ontario Federation of Agriculture
- Ontario Ministry of Environment and Climate Change
- REEP
- Transition KW
- University of Waterloo – Water Institute
- Waterloo Region Homebuilders Association (WRHA)
- Waterloo Region Public School Board
- Waterloo Region Catholic School Board

As a PAC member, each participant was asked to:
- Consider any matters, issues, or information referred to them by the Project Team relating to the Comprehensive SWM Master Plan, and provide advice and recommendations as requested.
- Liaise with the organization/group they represent (if applicable) and bring forward advice, issues, or comment from their organization to the PAC.
- Strive to operate in a consensus mode, where participants openly share views and opinions, and seek to develop common ground and narrow areas of disagreement to the best of their ability.
- Confirm that the comments provided by PAC members are accurately recorded in the project records, or in additional reports that members may determine are needed.

As a member of the PAC, members were notified and given access to project documents, provided regular Electronic Newsletters which summarized the study progress to date and the associated documents and asked to provide comments and feedback through the various stages of the study process. Four (4) Cyber- Public Advisory Committee (C-PAC) newsletters and one (1) PAC Workshop were completed:
  - C-PAC Newsletter No.1 (January 16, 2015) was comprised of an invitation to participate in the PAC.
  - C-PAC Newsletter No. 2 (June 9, 2015) was comprised of a summary of the study progress and three (3) project documents:
    - Existing Conditions Report (Draft April 2015)
• Residential Market Research Summary Report (April 2015)
• Leading Jurisdiction Report (May 12, 2015)

  o C- PAC Newsletter No.3 (October 9, 2015) was comprised of summary of the study progress and two (2) project documents:
  • Draft SWM Approaches being considered as part of this study

  o C- PAC Newsletter No. 4 (March 28, 2016) was comprised of summary of the study progress and notification of the availability of six (6) project documents as well as comment summary of comment received and the responses to date:
  • Draft End-of-pipe SWM Facility Opportunities Report with Appendices
  • Draft Municipal ROW (Conveyance Control) Retrofit Assessment Opportunities Report (separate Appendices)
  • Draft Infiltration Policy Recommendations
  • Draft Stormwater Management Facilities Catchment Report
  • Draft Sediment Analysis Memo: SWM Facilities and OGS Units
  • Draft Erosion Assessment Report

  o Public Advisory Committee (PAC) Workshop – April 21, 2015
January 16, 2015

Re: Public Advisory Committee (PAC) Cyber Committee
Electronic Newsletter No. 1

CLASS ENVIRONMENTAL ASSESSMENT
CITY OF KITCHENER COMPREHENSIVE STORMWATER MANAGEMENT MASTER PLAN

Dear Sir/Madam;

The City of Kitchener through Aquafor Beech Ltd. has initiated the City of Kitchener Comprehensive Stormwater Management (SWM) Master Plan study. The Comprehensive SWM Master Plan will update the City of Kitchener 2001 SWM Policy Study and will serve as a decision support tool as well as a methodology for the prioritization of works. The Master Plan will also serve as a transparent community process by which the City can establish stormwater management guidelines and policies for the next 15 years. The study area (refer to inset map, next page) will focus on all lands within the City of Kitchener municipal boundaries. Additional information regarding the study can be found at the following website as it becomes available: www.kitchener.ca/stormwatermasterplan.

As an invited member of the Public Advisory Committee (PAC), we have enclosed for your information a copy of Public Advisory Committee (PAC) Cyber Committee, Electronic Newsletter No. 1. If your Agency/Organization/Office has any comments or input regarding this project, we invite you to complete and return the attached Response Form by February 16, 2015. If no response is received by that date it will be assumed you do not wish to participate on the PAC. Responses should be sent to nick.gollan@kitchener.ca.

For further information or if you wish to provide input regarding the project, please contact myself or the project coordinator Chris Denich at 519-224-3744 or via email at denich.c@aquaforbeech.com.

Yours truly,

Nick Gollan, C.E.T.
Manager, Stormwater Utility

Encl: Public Advisory Committee Newsletter #1 and Response Form
CLASS ENVIRONMENTAL ASSESSMENT
CITY OF KITCHENER COMPREHENSIVE STORMWATER MANAGEMENT MASTER PLAN

Study Background
The City of Kitchener through Aquafor Beech Ltd. has commenced the City of Kitchener Comprehensive Stormwater Management (SWM) Master Plan study. The Comprehensive SWM Master Plan will update the City of Kitchener 2001 SWM Policy Study and will serve as a decision support tool as well as a methodology for the prioritization of works. The Master Plan will also serve as a transparent community process by which the City can establish stormwater management guidelines and policies for the next 15 years. The study area (refer to inset map) will focus on all lands within the City of Kitchener municipal boundaries.

Overall Study Process
The Study is being conducted in accordance with the requirements for Master Plans under Section 4, Approach #2 of the Municipal Engineers Association Municipal Class Environmental Assessment Act (October 2000, as amended in 2007 & 2011), which is an approved process under the Ontario Environmental Assessment Act. As part of the Class EA process evaluation of alternatives, assessment of the potential environmental effects and identification of mitigation measures for potential adverse impacts will be conducted and presented through public and agency consultations.

The intent of the Master Plan is to fulfill all of the Class EA requirements for Schedule B projects and identify any Schedule C projects for future studies.

Upon completion of this study, an Environmental Study Report (ESR) documenting the Class EA process will be submitted to the Ontario Ministry of the Environment and Climate Change (MOECC) and will be available for public review for a period of 30 calendar days.

Key Study Tasks
The City of Kitchener’s Comprehensive SWM Master Plan study will include six (6) major tasks:
- Task 1 – Study Area Characterization
- Task 2 – Analysis and Assessment of SWM System
- Task 3 – Evaluation of Alternatives
- Task 4 – Preferred SWM Strategy
- Task 5 – Implementation Plan
- Task 6 - SWM Master Plan Report
Specific project sub-tasks will include, but are not limited to:

- A review of existing SWM guidance, policy and legislation
- Establishment of the existing watershed conditions for the fourteen (14) watersheds within the City
- Storm sewer systems monitoring, model development and Climate Change impact assessment
- Assessment of future development areas, infill and redevelopment areas within the City
- Identification of SWM retrofit opportunities
- City wide stream erosion assessment
- Policy review and recommendations including:
  - Review of the existing cash-in-lieu (CiL) policy
  - Review and recommendation for program enhancements relating to the existing City of Kitchener Storm Water Charges By-law and Credit Policy (2010-113, as amended by 2011-153, as amended by 2012-036)
- Development of an Implementation Plan including but not limited to:
  - Social market research and market transformation strategies to encourage community uptake
  - Monitoring framework development
  - Future studies
  - Establishment of infrastructure and environmental SWM targets
  - Prioritization of identified works
  - Cost estimates
  - Update and enhancement of the City’s Asset Management Plan (2013)
  - Operation and maintenance considerations

**Potential SWM Alternatives**

As part of the City of Kitchener Comprehensive SWM Master Plan Class EA study, a long list of alternatives will be developed and evaluated in order to select the preferred approach. The long list of alternatives will include the evaluation of innovative SWM techniques collectively referred to as Low Impact Development (LID) and/or Green Infrastructure (GI). Examples of the type of practices within each of the six (6) main categories are presented below.

<table>
<thead>
<tr>
<th>General Alt.</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source controls</td>
<td>Spills controls, Downspout disconnections, Lot grading, Catch basin restrictor/inlet controls, Porous pavements, Soakaways, infiltration trenches and chambers, Vegetated swales, Bioretention areas, Green roofs, Roof top storage, Vegetated filters trips, Stream buffers, Urban forests (tree clusters), Oil and grit separators (OGS), Rainwater Harvesting (water re-use) and Soil amendments.</td>
</tr>
<tr>
<td>Conveyance controls</td>
<td>Sewer rehabilitation (lining technologies internal grouting) and replacement, Manhole rehabilitation (non-structural), Stream corridor measures, Channel modification, Superpipes, Roadside ditches, Grassed swales, Bioswales (also known as dry swales) Pervious pipe systems, Pervious curb and gutter systems, and Pervious catch basins.</td>
</tr>
<tr>
<td>End-of-pipe (EOP) controls</td>
<td>New facilities - wet ponds, dry ponds, wetlands &amp; hybrid ponds, Retrofit and/or modification existing facilities - wet ponds, dry ponds, wetlands &amp; hybrid (wet pond/ wetland combination), Sediment management, Subsurface storage/infiltration controls, Filters.</td>
</tr>
<tr>
<td>Pollution Prevention</td>
<td>Control of road deicers, fertilizer and pesticides, Enforcement of anti-litter and Discharge by-laws, Water conservation, Hazardous households material disposal, Material storage controls (municipal and commercial), Vehicle use reduction, and Pool drainage.</td>
</tr>
<tr>
<td>----------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Operation and maintenance</td>
<td>Infrastructure optimization (storm sewer flushing, catch basin cleaning), Street cleaning and leaf clearing and removal, Erosion and sediment controls for construction, public education, business education and awareness.</td>
</tr>
<tr>
<td>Environmental Restoration</td>
<td>In stream practices, outfall restoration, riparian plantings, open space re-vegetation and open space applications.</td>
</tr>
</tbody>
</table>

**Cyber PAC Membership**

The intent of having a PAC is to include broad community representation in the Class EA process. Accordingly, it is suggested that membership on the PAC would include representatives from the following community “sectors” which are consistent with interest expressed during the implementation of the Stormwater Utility in 2010/2011:

- Chamber of Commerce
- City of Cambridge
- City of Waterloo
- Citizen Committee – Environmental Committee
- Neighborhood Associations
- Ontario Federation of Agriculture
- Ontario Ministry of Environment and Climate Change – Innovations Branch
- REEP
- Transition KW
- University of Waterloo – Water Institute
- Waterloo Region Homebuilders Association
- Waterloo Region Public School Board
- Waterloo Region Catholic School Board

In addition, it is recommended that two (2) City of Kitchener Councillors be involved to provide a link between the PAC and City Council. City staff, other municipal and agency staff, project and consultant team members would also be resources to the committee as required.

The PAC is intended to primarily be an online cyber committee, however meetings will be held with specific members or as a group if determined to be necessary. This is the first of three (3) anticipated newsletters that will be shared with the PAC with requests for feedback. Future newsletters may also include various progress reports as attachments or posted to the City website for review and comment.

**Roles and Responsibilities**

As a Cyber PAC member, each participant will:

- Consider any matters, issues, or information referred to them by the Project Team relating to the Comprehensive SWM Master Plan, and provide advice and recommendations as requested.
- Liaise with the organization/group they represent (if applicable) and bring forward advice, issues, or comment from their organization to the PAC.
- Strive to operate in a consensus mode, where participants openly share views and opinions, and seek to develop common ground and narrow areas of disagreement to the best of their ability.
- Confirm that the comments provided by PAC members are accurately recorded in the project records, or in additional reports that members may determine are needed.

Project Team members will:

- Strive to provide accurate, understandable information to PAC members, such that they can contribute informed advice and recommendations.
- Ensure that appropriate City staff (or other resource people) are present at any potential discussions on specific issues or components of the environmental assessment process.
Ensure that the advice, recommendations, and consensus positions from the PAC are fully considered as part of the environmental assessment process.

Be open, receptive, and give careful consideration to advice and ideas received from PAC members, and strive to reflect consensus positions in the final environmental study report for the Comprehensive SWM Master Plan.

**Reporting Relationship**

The PAC is acting in an advisory capacity to the Project Team, and through the Project Team to City Council. All meeting records and recommendations from the Committee to the Project Team will be posted on the City’s web site for review by Council and the public.

By participating as members in this committee, PAC members are not expected to waive their rights to the democratic process, and may continue to avail themselves of participation opportunities through delegation to committees of Council, and/or providing written briefs. Any positions taken by individual members are without prejudice.

**Public Consultation**

Public consultation is vital to the Class EA process. The City wishes to make certain that anyone with an interest in this study has the opportunity to get involved and share their ideas and input before any decisions are made on a preferred approach(s). With the exception of personal information, all comments will become part of the public record.

As part of this study, two (2) Public Information Centres (PICs) are planned to explore a new stormwater management vision for the City and to ensure that community and stakeholders have the opportunity to contribute to its creation. The first PIC is tentatively scheduled for late spring 2015. The PIC will provide the opportunity for the community and stakeholders to consider the project scope and objectives and to share their opinions and suggestions. Notification of the PIC will be provided at the appropriate time by means of a similar Electronic Newsletter as well as advertisement in the local newspaper. We invite you to attend the PICs, share your vision and provide feedback to the City and the consultant team.

**Comments**

As part of your invitation to be part of the Comprehensive Stormwater Management (SWM) Master Plan Class EA study process as a member of the Public Advisory Committee (PAC), we ask that you provide written comment using that attached response form no later than February 16, 2015.

To provide your comments or to request additional information concerning this project, please contact either of the following Project Team members:

- **Nick Gollan, C.E.T.**  
  Manager, Stormwater Utility  
  City of Kitchener  
  Engineering Services  
  200 King Street West, P.O. Box 1118  
  Kitchener, Ontario N2G 4G7  
  Tel.: (519) 741-2200 ext. 7422  
  TTY: 1-866-969-9994  
  Fax: (519) 741-2230  
  E-mail: nick.gollan@kitchener.ca

- **Chris Denich, M.Sc., P.Eng**  
  Project Coordinator  
  Aquafor Beech Ltd  
  55 Regal Road, Unit 3  
  Guelph, Ontario  
  Tel.: (519) 224-3744  
  Fax: (519) 224-3750  
  E-mail: denich.c@aquaforbeech.com

This Notice was issued on January 16, 2015.
Response Form
City of Kitchener

CLASS ENVIRONMENTAL ASSESSMENT
CITY OF KITCHENER COMPREHENSIVE STORMWATER MANAGEMENT MASTER PLAN

1. Contact Name: ____________________________________________________________

2. Agency/ Organization/ Office: ______________________________________________

3. Address: ________________________________________________________________
   Postal Code: __________________________
   Phone No: ________________________________
   Email: ________________________________

4. Please note specific comments and/or concerns (please attach additional sheets if necessary):
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

5. Do you wish to be notified for continued involvement in the project process, up to and including the release of the final study documentation? Yes__________ No_________

Signature_________________________ Date_________________________

Please return this form by **February 16, 2015** to:

Nick Gollan
Manager, Stormwater Utility
City of Kitchener
200 King St. W.
Kitchener, Ontario
N2G 4G7

Tel.: (519) 741-2200 x7422
Fax: (519) 741-2230
E-mail: nick.gollan@kitchener.ca

Thank you for your participation in this study!
The following organizations have provided comments in regards to CPAC Newsletter No.1. In addition, the following organization confirmed their willingness to participate, but did not provide specific comments: Ontario Ministry of the Environment and Climate Change – Innovations Branch, Safe Drinking Water Branch and Guelph District Office; as well as the Waterloo Catholic District School Board.

<table>
<thead>
<tr>
<th>Organization</th>
<th>Comment</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waterloo Region Homebuilders Associations (WRHBA)</td>
<td>• GRCA, Region of Waterloo and surrounding townships are not identified as PAC members. Assume they will be circulated/involved? Please confirm.</td>
<td>• The GRCA, Region of Waterloo and the surrounding municipalities are part of the Project Team and have been involved throughout the process.</td>
</tr>
<tr>
<td>Trout Unlimited</td>
<td>• TUC’s mission is to conserve, protect and restore freshwater ecosystems and preserve coldwater fisheries. In our urban environment, like the City of Kitchener we are interested in promoting innovative rainwater/stormwater management practices to protect existing coldwater creeks like Strasburg, Doon South, Blair and Hidden Valley. One of our flagship education programs, Yellow Fish Road, has proven to be a huge success in getting Canada’s youth involved in coldwater conservation. Yellow Fish Road™ volunteers paint yellow fish symbols next to storm drains and distribute fish-shaped brochures to nearby households, to remind people that anything that enters the storm drain system ends up in the local waterbody — affecting fish and fish habitat.</td>
<td>• Thank-you. The project team is recommending innovative rainwater/stormwater management practices to protect existing coldwater creeks. • Thank-you for highlighting the Yellow Fish Road program.</td>
</tr>
<tr>
<td>Green Belt Neighborhood Association</td>
<td>• Green Belt has a concern that management reflect protection of existing mature trees, especially abutting Glasgow Street and Maple Hills.</td>
<td>• The City is committed to maintaining and enhancing tree canopy in the City of Kitchener in keeping with the City of Kitchener’s Strategic Plan which identified managing and enhancing urban forest as one of the top priorities through 2018. Street trees are also a focus of the Right-of-way (ROW) strategy.</td>
</tr>
<tr>
<td>REEP Green Solutions</td>
<td>• RAIN Program Manager is happy to provide feedback where required.</td>
<td>• Thank-you.</td>
</tr>
<tr>
<td>Ontario Federation of Agriculture (OFA)</td>
<td>• OFA will also attempt to find an OFA member that farms land within the city limits to participate.</td>
<td>• Thank-you.</td>
</tr>
<tr>
<td>Transition KW</td>
<td>• Will provide feedback as a citizen of Kitchener and member of Transition KW.</td>
<td>• Thank-you.</td>
</tr>
</tbody>
</table>
| Kitchener Environmental Committee                  | **Existing Conditions Report (Draft April 2015)**                                                                                                                                                | 1. Thank-you. This will be added to goal fourteen in the subsequent draft.  
2. The project team will review the possibility of adding text around “restoration” where possible, as this is a key component of specific study elements.  
   a. The City will be requiring the use of Low Impact Development and or |
integrated approach is critically important. In the fourteenth goal on “improving the ecosystem health...”, I would add “protect and enhance the quantity and quality of water supply sources.

2. In the study objectives in sec. 1.3.1 really like the frequent use of the phrases such as “improve”, “enhance”, and “re-establish.” This focus on needing to make up for the damage we have already caused is very important.
   a. In the third infrastructure objective, the word “encourage” is used. This is not strong enough. It should say “encourage and require” low-impact-development and green infrastructure. This should also be strengthened by saying that these should not just be “part of the development,” but that these should be “core” components of the infrastructure system.
   b. In the policy and implementation objective, the first objective says that we should “reflect” the acts, policies etc. We should go beyond that to saying that Kitchener should work to have the province improve their requirements and funding programs to require and encourage more LID and GI. Often the city is limited by the extent to which they can require proper development on private property because the provincial programs don’t require those types of actions.

3. In section 3.0 on the study area descriptions, I particularly like the highlighting of planned intensification of urban development. We must make sure that we stress GI and LID in these intensified developments.

4. In section 3.11, on stormwater management infrastructure, I like the integration of purposes that we are trying to achieve through the stormwater infrastructure being repeated here from the objectives and goals above.

5. The existing conditions report does not put enough emphasis on showing the pressures that are being put on the stormwater infrastructure. For example:
   i. The amount of impervious human-created surfaces in each study area; i.e., the amount of land taken up by impervious roads, parking lots, roof-run-off to sewers, Green Infrastructure practices as part of the Minimum Volume Targets which are under development and per the Draft Infiltration Policy Recommendations and Draft Municipal ROW (Conveyance Control) Retrofit Assessment Opportunities Report.

b. The Ministry of the Environment and Climate Change (MOECC) released in February 2015 an Interpretation Bulletin – Expectations Re: Stormwater Management which detailed the Ministry’s position, specifically that the natural hydrologic cycle should be maintained to the greatest extent possible, that Low Impact Development (LID) is relevant for all forms of development, including urban intensification and retrofit and that going forward the Ministry expects that stormwater management plans will reflect the findings of the watershed, subwatershed, and environmental management plans, and will employ LID in order to maintain the natural hydrologic cycle to the greatest extent possible. The Interpretation Bulletin was a precursor to the release of the terms-of-reference for the development of the Ministry of the Environment and Climate Change (MOECC) Low Impact Development Planning and Design Guide, a companion document to the 2003 MOE Stormwater Planning and Design Guidance Manual (SWMPG). The pending LID Planning and Design Guide is anticipated of release in 2017 and will contain minimum “volume targets” and is expected to mandate the use of LID approaches for new development, infill and redevelopment as well as linear projects. The City is being proactive in including interim minimum volume targets ahead of the Provincial Manual release.

3. LID and GI will be a key strategy for SWM control in areas of intensification and will be mandated by the application of the City’s minimum volume targets.

4. Thank-you.

5. The stresses on existing infrastructure is a key component of the study and has been investigated as part of the development of a Info-Works stormwater trunk sewer model which investigated 5 scenarios:
   a. Scenario 1 - Existing Conditions
   b. Scenario 2 - Climate Change on Existing Conditions
   c. Scenario 3 - LID Volume Control on Existing Conditions
   d. Scenario 4 - Climate Change & LID Volume Control
   e. Scenario 5 – Intensification
   Areas of flooding and climate change impacts and mitigation were investigated. Results of this analysis will be included in the pending Draft report for review by the Steering Committee and PAC.

6. Thank-you for the suggestions. The leading jurisdictions report was developed
and other heavily compacted surfaces.

ii. Areas susceptible to flash floods, a problem already increasing with climate change.

**Leading Jurisdiction Report (May 12, 2015)**

6. This is excellent. Really interesting examples in the detailed descriptions by municipality. Two suggestions so we can get the full benefit out of the report:

i. The report is a bit too insider in the way it is written. For example, in the intro need a sentence or two explaining what you mean by Stormwater Utility Programs.

ii. The water reuse and stormwater regulations and Green infrastructure tables in section 3 have a lot of really exciting programs and actions in them that I hope we could get people thinking about here and could include in the stormwater plan. That section needs a summary of the leading Jurisdictions just as you did in 2.0 for people who may not make their way through the detailed table. That will make it stand out. Also the two summaries should be up front with both detailed tables put in as appendices.


7. Very interesting.

as a review for background context and as such it is unlikely that the report will be part of the Master Plan document, but rather as an Appendix to the Master Plan. Should revision be undertaken to the document prior to the Master Plan finalization, we will incorporate your comments to the extent possible.

7. Thank-you.
Response Form
City of Kitchener

CLASS ENVIRONMENTAL ASSESSMENT
CITY OF KITCHENER COMPREHENSIVE STORMWATER MANAGEMENT MASTER PLAN

1. Contact Name: MARIA KYPERIS

2. Agency/ Organization/ Office: STANTEC CONSULTING but acting for WEHBA liaison

3. Address: 49 Frederick Street, Kitchener, ON
   Postal Code: N2H 6N7
   Phone No: 519-585-7263
   Email: maria.kyperis@stantec.com

4. Please note specific comments and/or concerns (please attach additional sheets if necessary):

   o GECA, Region of Wilmot and surrounding townships not identified on OAC member list. Assume they will be circulated involved? pls confirm.
   o Wish to forward to providing further comments as more details become available

5. Do you wish to be notified for continued involvement in the project process, up to and including the release of the final study documentation? Yes ______ No ______

   Signature ___________________________ Date __Feb. 13, 2015__

Please return this form by February 16, 2015 to:

Nick Gollan
Manager, Stormwater Utility
City of Kitchener
200 King St. W.
Kitchener, Ontario
N2G 4G7

Tel.: (519) 741-2200 x7422
Fax: (519) 741-2230
E-mail: nick.gollan@kitchener.ca

Thank you for your participation in this study!
Response Form
City of Kitchener

CLASS ENVIRONMENTAL ASSESSMENT
CITY OF KITCHENER COMPREHENSIVE STORMWATER MANAGEMENT MASTER PLAN

1. Contact Name: Mark Harvey

2. Agency/Organization/Office: Trust Unlimited Canada - Middle Grand Chapter

3. Address: 1411 West Villa Road

   Postal Code: N1R 5S5

   Phone No: 519-212-9317

   Email: middlegrand.chapter.tuc@gmail.com

4. Please note specific comments and/or concerns (please attach additional sheets if necessary):
   TUC's mission is to conserve, protect and restore productive ecosystems and their watershed resources. In an urban environment like the City of Kitchener, we are particularly interested in promoting innovative rainwater/stormwater management practices to protect existing stormwater creeks and streams like those found at South, Blair and Hidden Valley.

5. Do you wish to be notified for continued involvement in the project process, up to and including the release of the final study documentation? Yes [X] No

Signature: [Signature]  Date: Feb 12, 2015

Please return this form by February 16, 2015 to:

Nick Gollan
Manager, Stormwater Utility
City of Kitchener
200 King St. W.
Kitchener, Ontario
N2G 4G7

Tel.: (519) 741-2200 x7422
Fax: (519) 741-2230
E-mail: nick.gollan@kitchener.ca

Thank you for your participation in this study!
Response Form
City of Kitchener

CLASS ENVIRONMENTAL ASSESSMENT
CITY OF KITCHENER COMPREHENSIVE STORMWATER MANAGEMENT MASTER PLAN

1. Contact Name: Judy Anne Chapman, PhD
2. Agency/Organization/Office: Green Belt Neighbourhood Association
3. Address: 11 Dayman Court
   Postal Code: N2M 3A1
   Phone No: 519-579-2976
   Email: jchapman@aol.com
4. Please note specific comments and/or concerns (please attach additional sheets if necessary):
   "Thank you for the opportunity to respond about the Class Environmental Assessment concerning the Kitchener Stormwater Management Plan. Green Belt has a concern that management reflect protection of existing mature trees, especially the forest abutting Glasgow St. and Maple Hills."
5. Do you wish to be notified for continued involvement in the project process, up to and including the release of the final study documentation? Yes [ ] No [ ]

Signature: Judy Anne Chapman  Date: January 29, 2015

Please return this form by February 16, 2015 to:

Nick Gollan
Manager, Stormwater Utility
City of Kitchener
200 King St. W.
Kitchener, Ontario
N2G 4G7

Tel.: (519) 741-2200 x7422
Fax: (519) 741-2230
E-mail: nick.gollan@kitchener.ca

Thank you for your participation in this study!
Response Form

City of Kitchener

CLASS ENVIRONMENTAL ASSESSMENT
CITY OF KITCHENER COMPREHENSIVE STORMWATER MANAGEMENT MASTER PLAN

1. Contact Name: Cheryl Evans
2. Agency/Organization/Office: REEP Green Solutions
3. Address: 222 Frederick St, Kitchener
   Postal Code: N2H 2M8
   Phone No: 519-744-6583 x224
   Email: cevans@reepgreen.ca
4. Please note specific comments and/or concerns (please attach additional sheets if necessary):
   RAIN Program Manager - happy to provide feedback where required

5. Do you wish to be notified for continued involvement in the project process, up to and including the release of the final study documentation? Yes  No

Signature  Cheryl Evans  Date  Jan 27/15

Please return this form by February 16, 2015 to:

Nick Gollan
Manager, Stormwater Utility
City of Kitchener
200 King St. W.
Kitchener, Ontario
N2G 4G7

Tel.: (519) 741-2200 x7422
Fax: (519) 741-2230
E-mail: nick.gollan@kitchener.ca

Thank you for your participation in this study!
Response Form
City of Kitchener

CLASS ENVIRONMENTAL ASSESSMENT
CITY OF KITCHENER COMPREHENSIVE STORMWATER MANAGEMENT MASTER PLAN

1. Contact Name: **Sylvie Sproakman**

2. Agency/Organization/Office: **Transition KW**

3. Address: **406-11 Margaret Avenue**
   Postal Code: **N2H 6H4**
   Phone No.: **226-792-1734**
   Email: **Sylvie.Sproakman@gmail.com**

4. Please note specific comments and/or concerns (please attach additional sheets if necessary):
   I volunteer with Transition KW, but am employed with Conestoga-Rovers and Associates Ltd. I will be providing feedback as a citizen of Kitchener and member of Transition KW.

5. Do you wish to be notified for continued involvement in the project process, up to and including the release of the final study documentation? **Yes** [X]  **No**

   Signature: **Sproakman**
   Date: **Jan 21, 2015**

Please return this form by **February 16, 2015** to:

Nick Gollan
Manager, Stormwater Utility
City of Kitchener
200 King St. W.
Kitchener, Ontario
N2G 4G7

Tel.: (519) 741-2200 x7422
Fax: (519) 741-2230
E-mail: nick.gollan@kitchener.ca

Thank you for your participation in this study!
Response Form
City of Kitchener

CLASS ENVIRONMENTAL ASSESSMENT
CITY OF KITCHENER COMPREHENSIVE STORMWATER MANAGEMENT MASTER PLAN

1. Contact Name: Aaron Law


3. Address: 40 St Clair Ave. W, 14th Floor

Postal Code: M4V 1M7

Phone No: 416-325-6481

Email: aaron.law@ontario.ca

4. Please note specific comments and/or concerns (please attach additional sheets if necessary):

5. Do you wish to be notified for continued involvement in the project process, up to and including the release of the final study documentation? Yes X No

Signature: Aaron Law

Date: January 29, 2015

Please return this form by February 16, 2015 to:

Nick Gollan
Manager, Stormwater Utility
City of Kitchener
200 King St. W.
Kitchener, Ontario
N2G 4G7

Tel.: (519) 741-2200 x7422
Fax: (519) 741-2230
E-mail: nick.gollan@kitchener.ca

Thank you for your participation in this study!
Response Form

City of Kitchener

CLASS ENVIRONMENTAL ASSESSMENT
CITY OF KITCHENER COMPREHENSIVE STORMWATER MANAGEMENT MASTER PLAN

1. Contact Name: Corinne Taylor


3. Address: 1 Stone Rd W 4th Floor, Guelph
   Postal Code: N1G 4Y2
   Phone No: 519-824-4782
   Email: Corinne.Taylor@ontario.ca

4. Please note specific comments and/or concerns (please attach additional sheets if necessary):

5. Do you wish to be notified for continued involvement in the project process, up to and including the release of the final study documentation? Yes ☑ No

Signature: [Signature] Date: Jan 28, 2015

Please return this form by February 16, 2015 to:

Nick Gollan
Manager, Stormwater Utility
City of Kitchener
200 King St. W.
Kitchener, Ontario
N2G 4G7

Tel.: (519) 741-2200 x7422
Fax: (519) 741-2230
E-mail: nick.gollan@kitchener.ca

Thank you for your participation in this study!
Response Form
City of Kitchener

CLASS ENVIRONMENTAL ASSESSMENT
CITY OF KITCHENER COMPREHENSIVE STORMWATER MANAGEMENT MASTER PLAN

1. Contact Name: Virina Elgawy

2. Agency/ Organization/ Office: Waterloo Catholic District School Board

3. Address: 480utton Drive, Waterloo
   Postal Code: N2L 4C6
   Phone No: (519) 578-3660 ext. 2359
   Email: virina.elgawy@wcdsb.ca

4. Please note specific comments and/or concerns (please attach additional sheets if necessary):

   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

5. Do you wish to be notified for continued involvement in the project process, up to and including the release of the final study documentation? Yes ❑ No ❑

Signature: Virina Elgawy Date: January 26, 2015

Please return this form by February 16, 2015 to:

Nick Gollan
Manager, Stormwater Utility
City of Kitchener
200 King St. W.
Kitchener, Ontario
N2G 4G7

Tel.: (519) 741-2200 x7422
Fax: (519) 741-2230
E-mail: nick.gollan@kitchener.ca

Thank you for your participation in this study!
Hi Nick,

I accept your offer to participate on the Cyber PAC for Kitchener’s SWM.

I will also attempt to find an OFA member that farms land within the city limits to participate.

Gord

Good Afternoon:

Background:

The City of Kitchener through Aquafor Beech Ltd. has commenced the City of Kitchener Comprehensive Stormwater Management (SWM) Master Plan study as a Schedule B Class Environmental Assessment (EA). The Comprehensive SWM Master Plan will update the City of Kitchener 2001 SWM Policy Study and will serve as a decision support tool as well as a methodology for the prioritization of works. The Master Plan will also serve as a transparent community process by which the City can establish stormwater management guidelines and policies for the next 15 years.

We are seeking your participation on the Cyber Public Advisory Committee and the Steering Committee for this complex Schedule B Class EA. **We request that the names of those that will be participating be returned by February 16 on the attached feedback form.**

Cyber Public Advisory Committee (PAC):

Community stakeholders have been identified as potential participants in the PAC primarily due their expressed interest during the implementation of the Stormwater Utility, these include:

- Chamber of Commerce
- City of Cambridge
- City of Waterloo
- Citizen Committee – Environmental Committee
- Neighborhood Associations
- Ontario Federation of Agriculture
PAC Roles and Responsibilities:

As a Cyber PAC member, each participant will:

- Consider any matters, issues, or information referred to them by the Project Team relating to the Comprehensive SWM Master Plan, and provide advice and recommendations as requested.
- Liaise with the organization/group they represent (if applicable) and bring forward advice, issues, or comment from their organization to the PAC.
- Strive to operate in a consensus mode, where participants openly share views and opinions, and seek to develop common ground and narrow areas of disagreement to the best of their ability.
- Confirm that the comments provided by PAC members are accurately recorded in the project records, or in additional reports that members may determine are needed.

The PAC is intended to primarily be an online cyber committee, however meetings will be held with specific members or as a group if determined to be necessary. This is the first of 3 anticipated newsletters that will be shared with the PAC with requests for feedback. Future newsletters may also include various progress reports as attachments or posted to the City website for review and comment.

Regards,

**Nick Gollan, C.E.T.**

Manager, Stormwater Utility | Engineering Division | City of Kitchener
519-741-2200 x 7422 | TTY 1-866-969-9994 | nick.gollan@kitchener.ca
June 9, 2015

Re: Public Advisory Committee (PAC) Cyber Committee
Electronic Newsletter No. 2

CLASS ENVIRONMENTAL ASSESSMENT
CITY OF KITCHENER INTEGRATED STORMWATER MANAGEMENT MASTER PLAN

Dear Sir/Madam;

The City of Kitchener through Aquafor Beech Ltd. is continuing with the development of a city-wide Integrated Stormwater Management Master Plan (ISWM-MP) to update the City’s 2001 SWM Policy Study. The ISWM-MP will serve as a decision support tool, a methodology for the prioritization of works as well as a transparent community process by which the City can establish stormwater management guidelines and policies for the next 15 years.

As an invited member of the Public Advisory Committee (PAC), we have enclosed for your information a copy of Public Advisory Committee (PAC) Cyber Committee, Electronic Newsletter No. 2 which summarizes the work completed to date, next steps and outlines upcoming events. To date the study team has completed Task 1 – Study Area Characterization and are working towards the completion of Task 2 – Analysis and Assessment of SWM System. Study documents available for review include:

- Existing Conditions Report (Draft April 2015)
- Leading Jurisdiction Report (May 12, 2015)

Full versions of the above documents can be viewed at: www.kitchener.ca/stormwatermasterplan.

The City will be hosting its first Public Information Center (PIC) on June 24, 2015 at City Hall in the Conestoga Room from 6 pm to 8:00pm with a presentation at 6:30pm. We are seeking input on the draft PIC boards and you are also welcome to attend this event. A download link will be sent to each PAC member to permit access to the Draft PIC boards.

If your Agency/ Organization/ Office has any comments or input regarding the above noted documents and or this project, we invite you to complete and return the attached Comment Response Forms by the dates indicated in the newsletter. For further information or if you wish to provide input regarding the project, please contact myself (nick.gollan@kitchener.ca) or the project coordinator Chris Denich at 519-224-3744 or via email at denich.c@aquaforbeech.com.

Yours truly,

Nick Gollan, C.E.T.
Manager, Stormwater Utility

Encl: Public Advisory Committee Newsletter #2 and Comment Response Forms 1 and 2
CLASS ENVIRONMENTAL ASSESSMENT (EA)  
CITY OF KITCHENER INTEGRATED STORMWATER MANAGEMENT MASTER PLAN

Study Update
The City of Kitchener through Aquafor Beech Ltd. is continuing with the development of an Integrated Stormwater Management (SWM) Master Plan for the City of Kitchener to update the City’s 2001 SWM Policy Study. The City of Kitchener’s Integrated SWM Master Plan study includes six (6) major tasks:

Task 1 – Study Area Characterization
Task 2 – Analysis and Assessment of SWM System
Task 3 – Evaluation of Alternatives
Task 4 – Preferred SWM Strategy
Task 5 – Implementation Plan
Task 6 - SWM Master Plan Report

To date the study team has completed Task 1 – Study Area Characterization and are working towards the completion of Task 2 – Analysis and Assessment of SWM System. Specific project sub-tasks completed and or underway are detailed below:

Task 1 – Study Area Characterization (completed)
- A review of existing SWM guidance, policy and legislation
- Establishment of the existing watershed conditions for the twenty (20) subwatersheds within the City

Task 2 – Analysis and Assessment of SWM System (underway)
- Storm sewer systems monitoring and preliminary model development
- City wide stream erosion assessment
- Residential social market research and market transformation strategies development

The findings from the completed Task 1 and elements of Task 2 currently underway can be found in the following documents. A summary is provided in the subsequent sections of this electronic newsletter:

- Existing Conditions Report (Draft April 2015)
- Leading Jurisdiction Report (May 12, 2015)

Full versions of the above documents can be viewed at: www.kitchener.ca/stormwatermasterplan. If your Agency/ Organization/ Office has any comments or input regarding the above noted documents we invite you to complete and return the attached Comment Response Form 2 by July 24, 2015.
**Upcoming Public Consultation**

Public consultation is vital to the Class EA process. The project’s first Public Information Centre (PIC) is planned for:

**June 24, 2015**

**Conestoga Room, Kitchener City Hall, 200 King Street West**

6:00pm – 8:00pm

The PIC will present the findings from the **Task 1** and **Task 2** (as available) and will explore a new stormwater management vision for the City and to ensure that community and stakeholders have the opportunity to contribute to its creation. The PIC will provide the opportunity for the community and stakeholders to consider the project scope and objectives and to share their opinions and suggestions. We invite to CPAC members to attend the PIC to share your vision and provide feedback to the City and the consultant team.

In advance of the PIC on June 24, 2015, the project team invites you to review and provide comments on the Draft PIC boards. A download link will be sent to each CPAC member to permit access to the Draft PIC boards.

If your Agency/ Organization/ Office has any comments or input regarding the Draft PIC Boards we invite you to complete and return the attached Comment Response Form 1 by June 19, 2015.

**Comments**

As part of your invitation to be part of the Integrated Stormwater Management (SWM) Master Plan Class EA study process as a member of the Public Advisory Committee (PAC), we ask that you provide written comment using the attached Comment Response Forms per the dates below:

<table>
<thead>
<tr>
<th>Project Element</th>
<th>Comment Form</th>
<th>CPAC Comment Response Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIC No. 1 Draft Boards</td>
<td>Response Form 1</td>
<td>No later than <strong>June 19, 2015</strong></td>
</tr>
<tr>
<td>Existing Conditions Report (Draft April 2015)</td>
<td>Response Form 2</td>
<td>No later than <strong>July 24, 2015</strong> (30 days following PIC No. 1)</td>
</tr>
<tr>
<td>Leading Jurisdiction Report (May 12, 2015)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

To provide your comments or to request additional information concerning this project, please contact either of the following Project Team members:

Nick Gollan, C.E.T.  
Manager, Stormwater Utility  
City of Kitchener  
Engineering Services  
200 King Street West, P.O. Box 1118  
Kitchener, Ontario N2G 4G7  
Tel.: (519) 741-2200 ext. 7422  
TTY: 1-866-969-9994  
Fax: (519) 741-2230  
E-mail: nick.gollan@kitchener.ca

Chris Denich, M.Sc., P.Eng  
Project Coordinator  
Aquafor Beech Ltd  
55 Regal Road, Unit 3  
Guelph, Ontario N1K 1B6  
Tel.: (519) 224-3744  
Fax: (519) 224-3750  
E-mail: denich.c@aquaforbeech.com  
www.aquaforbeech.com

This Notice was issued on June 9, 2015.
Existing Conditions Report (Draft April 2015)

As part of Task 1- Study Area Characterization, a Draft Existing Conditions Report has been prepared. The Existing Conditions Report summarizes thirty (33) relevant background documents and existing information and provides a landscape level framework for stormwater management within the City of Kitchener with all relevant mapping and figures.

Key aspects of the Existing Conditions Report include:

- An introduction to the study, the study purpose, goals, objectives as well as an overview of the Class Environmental Assessment Process.
- Summary of the existing environmental conditions for each major study discipline and stormwater assets within the City of Kitchener based on available information extracted from background reports, GIS mapping and databases. Major disciplines include:
  - Land-use
  - Physiography
  - Geology
  - Surficial soils and Infiltration Potential
  - Hydrogeology
  - Hydrology
  - Fluvial Geomorphology
  - Aquatic Ecology
  - Natural Heritage
  - Stormwater Management Infrastructure
  - Water Supply
  - Wastewater
- Synthesis of subwatershed based summaries for each of the twenty (20) subwatersheds in the City of Kitchener based on various characteristics including surficial geology, hydrogeology and hydrology, aquatic ecology, water quality, and terrestrial ecology.
- Summary of the identified data gaps for each of the major disciplines
- Summarizes key federal, provincial, Regional and local legislations, policies, and guidelines as they related to management of water resources and stormwater management.

The full documents can be viewed at: www.kitchener.ca/stormwatermasterplan.

Study Goals

The goals of City of Kitchener ISWM-MP have been developed in keeping with the goals and objectives of the key guiding documents and in compliance with existing guidance, acts and regulations. The study goals include:

- Direct infill and redevelopment requirements in regard to stormwater management criteria tied to the recommended Master Plan approaches,
- Fill gaps in existing subwatershed studies and stormwater master plans,
- Holistically integrate erosion and stream restoration requirements with areas identified as Ecological Restoration Areas (ERAs) in the City’s Draft OP,
- Maintain existing funding and forecast future funding requirements to implement the preferred stormwater BMPs
• Enhance existing incentive programs, increase the uptake rate of credit applications, and examine the monetary value of potential rebates and the method by which the credits are given.
• Improve community stormwater management education resources and programs
• Develop an integrated city-wide approach for water quality, water quantity, erosion control, preservation of hydrologic process through water budgets as well as the preservation and enhancement of the natural environment
• Aid in the development of a ‘level-of-service’ (LOS) for stormwater management with the City
• Inventory and address stormwater infrastructure issues as part of the City’s overall asset management program.
• Direct future acquisition of lands, easements, “rights-to-enter”, and maintenance agreements for stream corridors and other functional elements of the drainage system in recognition of the existing Natural Lands Acquisition Policy.
• Direct future SWM monitoring in compliance with the plan’s goals, targets and objectives which acknowledges the adaptive environmental management (AEM) process
• Evaluate the current Cash-in-lieu (CiL) program
• Develop new SWM policies for the City
• Develop and implementation plan to direct the safe and effective management of stormwater runoff from the City’s urban areas while improving the ecosystem health and ecological sustainability of the receiving watersheds. The implementation plan is designed to direct future actions, identify responsible parties, outline costs and environmental benefits and clearly define the operation and maintenance requirements and costs.
• Improve stormwater management governance and stewardship within the City and the Grand River Watershed

Study Objectives

The City of Kitchener ISWM-MP considers flood and erosion control, groundwater and surface water quality management, natural heritage environment management and infrastructure, all in an integrated manner as part of an overall water resource sustainability plan. In addition, the ISWM-MP integrates existing policies, regulations, acts and guidelines and where appropriate develops new policies to aid in implementation and does so within a water resource sustainability (WRS) context. The objectives of the City of Kitchener ISWM-MP include the following:

Water Quality
• Maintain or improve surface water and groundwater quality.
• Minimize sediment loading to surface water and groundwater.
• Maintain or enhance the quality of drinking water sources.
• Maintain existing thermal watercourse regimes and enhance cool/coldwater regimes where possible.

Water Quantity
• Preserve and re-establish the natural hydrologic process to protect, restore and replenish surface water and groundwater resources.
• Minimize the threat to life and property from flooding.
• Maintain or enhance groundwater supplies through infiltration while minimizing the risks from future land uses and activities.

Erosion Control
• Maintain existing erosion rates and where possible reduce the impacts of excessive erosion on aquatic and terrestrial habitat and property.
Integrate stream erosion within a master planning process.

Natural Environment
- Protect, enhance and restore natural features and functions such as wetlands, riparian and ecological corridors as well as identified linkages.
- Improve warmwater, coolwater and coldwater fisheries if appropriate.
- Control or reduce invasive species.

Water Resource Sustainability
- Holistically integrate goals, objectives and targets for water resources (water, sanitary and storm).
- Improve stormwater infrastructure resiliency and adaptation in the context of climate change.

Infrastructure
- Provide a level of service for stormwater management which is consistent with municipal and agency standards.
- Continue to ensure stormwater infrastructure function effectively per municipal, agency and industry standards.
- Encourage the implementation of innovative solutions including Low Impact Development (LID) and Green Infrastructure (GI) to mitigate stormwater runoff as part of the development of sustainable infrastructure solutions.

Policy and Implementation
- Reflect the acts, policies and regulation developed or amended after 2001.
- Integration of Asset Management Plans for Stormwater which includes long-range forecast and planning direction for many of the specific policy items and recommendations (i.e. ponds, OGS and stream rehabilitation).
- Fundamentally integrate the Level of Service (LOS) model as detailed within the existing Asset Management Report.

Summary: Study Ares Description & Existing Conditions

A summary is provided below of the main body of the Existing Conditions Report (Draft April 2015). Although not intended to be comprehensive summary, key findings are highlighted as appropriate.

General
The City of Kitchener is located in the center of the Grand River Watershed, and is bounded by the middle reaches Grand River itself along a significant portion of the eastern municipal boundary. Located in the Region of Waterloo, the City of Kitchener covers 139 square kilometers of land and has a population of 233,700 with an expectation to increase by more than 70,000 residents to 304,600 by the year 2013.

Land-use
The City of Kitchener is characterized by a mixture of land-uses, with a majority classified as residential. Generally, the lands in the south-west of the city are the only remaining agricultural lands. The City has five (5) major areas of employment lands and four (4) major residential settlement areas.

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1 Region of Waterloo, April, 2014.
2 Region of Waterloo, 2008.
Physiography

The study area is situated within the Waterloo Hills physiographic region of southern Ontario (Chapman and Putnam 1984:136-137) which occupies about 775 km², lying primarily in the Regional Municipality of Waterloo, and is dominated by sandy hills with outwash sands occupying the intervening hollows. The Waterloo Moraine is located within the central area of the Grand River watershed and is is the dominant topographic feature in the area. The crest of the Waterloo Moraine generally follows the municipal boundary between the urban areas of Kitchener-Waterloo.

Geology, Surficial Soils and Infiltration Potential

The primary moraine structure within the City of Kitchener is the Waterloo Moraine. The areas of highest recharge tend to coincide with the moraine features within the watershed. In regards to the City of Kitchener soils, this primarily applies to the Waterloo Moraines in the central portion of the watershed. This represents very significant recharge zones for the watershed’s major aquifers.

Hydrogeology

Groundwater interacts with surface water through recharge and discharge. In general, rainwater infiltrates and is stored underground in sand and gravel deposits, called aquifers, which may supply drinking water to local wells or supply baseflow to adjacent streams. Localized groundwater discharge areas have been reported in previous studies relating to the Kolb Subwatershed (Kolb Creek), Strasburg/Upper Strasburg Subwatershed (Strasburg Creek) and Lower Schneider, Balzer and Lower Montgomery Subwatershed (headwaters of Montgomery and portions of the middle reaches of Schneider Creek).

Hydrology

The City is composed of 20 subwatersheds, 16 primary watersheds and 4 secondary (unnamed) watersheds with more than 120km of watercourses. The sixteen (16) primary subwatersheds are:

1. Alder Creek
2. Blair, Bechtel & Bauman
3. Cedar Creek
4. Detweiler
5. Doon South
6. East Side
7. Henry Sturm
8. Idlewood
9. Kolb
10. Laurel
11. Lower Schneider, Balzer & Lower Montgomery
12. Melitzer
13. Middle Schneider
14. Strasburg & Upper Strasburg
15. Upper Schneider
16. Upper Voisin & Upper Borden

Fluvial Geomorphology

The fluvial geomorphology of creek systems, in a study such as a Master Plan, provides an understanding of the channel conditions and processes at a range of spatial scales, from:

Watershed (Grand River) ➔ subwatershed ➔ watercourse ➔ reach ➔ site scales

The City has completed previous creek assessments in 2005 and 2009 as part of the City Wide Stormwater Audit, in which many of the City’s creeks have been walked and inventoried. In regards to this study, the geomorphic analysis is intended to provide a context for erosion and channel adjustments within the City, with the primary deliverable of a comprehensive inventory of erosion where each segment or issue is well documented at both the site and reach context. As such, each site will be prioritized applying a transparent and reproducible ranking scheme consistent with a Master Planning approach and previous City-Wide Stream Assessments (2005 & 2009). A summary of stream type lengths has been compiled from the available data, and presented in Table 1 below.
Table 1 - Summary of Stream Type and Lengths

<table>
<thead>
<tr>
<th>Subwatershed</th>
<th>Natural / Mixed</th>
<th>Rehabilitated</th>
<th>Channelized</th>
<th>Concrete</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLAIR, BECHTEL, AND BAUMAN CREEKS</td>
<td>6688</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DETWEILER</td>
<td>2037</td>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOON SOUTH CREEK</td>
<td>4170</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HENRY STURM</td>
<td>1166</td>
<td>2011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IDLEWOOD CREEK</td>
<td>5156</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KOLB CREEK</td>
<td>5339</td>
<td>1148</td>
<td>1256</td>
<td></td>
</tr>
<tr>
<td>LAUREL CREEK</td>
<td>1672</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOWER SCHNEIDER/BALZER/MONTGOMERY CREEKS</td>
<td>10463</td>
<td></td>
<td>1763</td>
<td></td>
</tr>
<tr>
<td>MIDDLE SCHNEIDER CREEK</td>
<td>457</td>
<td></td>
<td>1742</td>
<td></td>
</tr>
<tr>
<td>UPPER SCHNEIDER CREEK</td>
<td>1820</td>
<td>2473</td>
<td>6919</td>
<td>5390</td>
</tr>
<tr>
<td>MELITZER CREEK</td>
<td>861</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STRASBURG/UPPER STRASBURG CREEK</td>
<td>16238</td>
<td>152</td>
<td>256</td>
<td>220</td>
</tr>
<tr>
<td>UPPER VOISIN, UPPER BORDEN</td>
<td></td>
<td></td>
<td>631</td>
<td></td>
</tr>
</tbody>
</table>

Aquatic Ecology

The City of Kitchener falls within the Grand River Watershed. The Grand River watershed is incredibly diverse, and is home to 80 confirmed and 18 possible/probable fish species, which comprises 62% of all fish species found in Ontario. The main branch of the Grand River within the City of Kitchener contains a diverse warmwater fish community dominated by top predators (Walleye, Smallmouth Bass and Pike).

Major impacts to water quality and quantity are through urban land use practices (excess nutrients, sediment inputs, water treatment plan effluents, and stormwater discharge) (GRFMPIC, 2005). Impacts to fish habitat include land use activities and loss of natural habitat due to channelization and stream bank hardening. The fish community of the Grand River within the City of Kitchener is constrained by the water quality and health of its tributaries (GRFMPIC, 2005).

In general, water quality of the 16 primary subwatersheds in the City of Kitchener varies significantly, ranging from very poor to excellent (Table 2) and aquatic habitat ranges from warmwater to coldwater. In reviewing the assembled data preliminary water quality scores have been assigned to key locations within each subwatershed for each watercourse to develop an overall 2015 water quality score for both wet and dry weather events.

Table 2 – Summary of 2015 Subwatershed Water Quality Score

<table>
<thead>
<tr>
<th>Subwatershed</th>
<th>Monitoring Sites</th>
<th>2015 Water Quality Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Henry Sturm Greenway</td>
<td>Hs3</td>
<td>Dry: Good, Wet: Marginal</td>
</tr>
<tr>
<td>Idlewood Creek</td>
<td>lw1, lw3</td>
<td>Dry: Good, Wet: Fair</td>
</tr>
<tr>
<td>Kolb Creek</td>
<td>KD1, KD2, KD4</td>
<td>Dry: Marginal, Wet: Poor</td>
</tr>
<tr>
<td>Lower Schneider, Balzer,</td>
<td>Lower Schneider Creek: SC1, SC2, SC4, SC5</td>
<td>Dry: Fair, Wet: Marginal</td>
</tr>
<tr>
<td>Lower Montgomery Creeks</td>
<td>Lower Montgomery Creek: MG1</td>
<td>Dry: Fair, Wet: Marginal</td>
</tr>
<tr>
<td>Middle Schneider Creek</td>
<td>Sc5 (Just downstream of Middle Schneider Creek)</td>
<td>Dry: Fair, Wet: Poor</td>
</tr>
<tr>
<td>Strasburg/Upper Strasburg Creek</td>
<td>Strasburg: SB1, SB2, SB3, SB7, SB8</td>
<td>Dry: Fair, Wet: Marginal</td>
</tr>
<tr>
<td></td>
<td>Upper Strasburg: SB11, SB13</td>
<td>Dry: Fair, Wet: Marginal</td>
</tr>
<tr>
<td></td>
<td>Upper Strasburg EMC: SB13a</td>
<td>Dry: Marginal, Wet: Marginal</td>
</tr>
<tr>
<td>Upper Schneider Creek</td>
<td>Henry Sturm Greenway: H51</td>
<td>Dry: Fair, Wet: Marginal</td>
</tr>
<tr>
<td></td>
<td>Sandrock Greenway: SR2</td>
<td>Dry: Fair, Wet: Marginal</td>
</tr>
<tr>
<td></td>
<td>Shoemaker Creek: SM1</td>
<td>Dry: Fair, Wet: Poor</td>
</tr>
<tr>
<td></td>
<td>Voisin Greenway: VS1</td>
<td>Dry: N/A, Wet: Fair</td>
</tr>
<tr>
<td>Upper Voisin, Upper Borden</td>
<td>Upper Voisin Greenway: VS4</td>
<td>Dry: Poor, Wet: Poor</td>
</tr>
<tr>
<td>Upper Blair Creek</td>
<td>At Reidel Drive:2414061</td>
<td>Dry: Fair, Wet: Good</td>
</tr>
<tr>
<td></td>
<td>At Reichert Drive:2414044</td>
<td>Dry: Fair, Wet: Fair</td>
</tr>
</tbody>
</table>
**Natural Heritage**

A key objective of the City of Kitchener’s Natural Heritage System (NHS) is to provide a framework to guide the development of lands so that ecological processes, functions and significant natural features are protected, maintained, restored, and enhanced. The components of the City of Kitchener’s Natural Heritage System include: Aquatic Natural Heritage Resources, Terrestrial Natural Heritage Resources, Woodlands, Wetlands, Valleylands, Important Wildlife Areas, Areas of Natural and Scientific Interest (ANSIs), Significant Recharge Areas, Environmentally Sensitive Policy Areas and Ecological Restoration Areas.

Many of the individual components and of the City of Kitchener’s Natural Heritage System and the overall ecological processes and functions are directly related to the appropriate management of water resources. Where applicable, the preferred SWM approach developed as part of this study will integrate and support the broader NHS including the previously identified Ecological Restoration Areas.

**Stormwater Management Infrastructure**

Municipal stormwater management (SWM) infrastructure includes all SWM facilities (dry ponds, wet ponds, wetlands, and hybrid facilities), oil & grit separators (OGS) and holding tanks, exfiltration systems, and storm pipe networks and associated manholes, catch basins, leads, and outfalls responsible for the capture, conveyance, and control (water quality and quantity) of stormwater runoff. Stream reaches are also highly important elements of a stormwater management system.

The Existing Conditions Report summarizes the following:

- Existing stormwater management infrastructure within the City of Kitchener and its status.
- Planned infrastructure (both new development and retrofits) implemented since the completion of the previous SWM Policy Development (2001) and those which are outstanding.
- The progress of the City’s recently established Stormwater Credit program including the number and type of credits as well as their distribution.
- Data gaps to be fulfilled as part of the Integrated Stormwater Management Master Plan.

Key findings include:

- The City of Kitchener has 140 existing SWM facilities including: 10 quality facilities, 32 quantity facilities, 56 quality/quantity facilities and 42 of unknown status. A total of 26.5% of the urban areas are controlled by SWM facilities.
- Within the City of Kitchener there are 160 existing Oil and Grit Separator (OGS) units including: 54 OGS and 6 holding tanks owned and operated by the City, 86 OGS owned and operated privately, 7 owned and operated by the Region. A total of 3.9% of of the urban areas are controlled by OGS units.
- The City of Kitchener has approximately 61,100 linear meters of storm sewers including 16,000 storm manholes and 12,000 catch basins. The majority of all storm pipe inspected to date are in “reasonably good” condition.
- New and previously planned SWM facilities within the City of Kitchener include, 22 previously planned locations/areas per the 2001 Policy Study and annual SWM Audits, 2 new locations identified within GIS Database.
- SWM facilities retrofits (conversion of quantity only facilities to quality/quantity) within the City of Kitchener include, 18 recommended retrofits in addition to the 2 facilities identified as not feasible, 10 Implemented (including Wards and Brigadoon ponds) and 8 pending.
- Previously planned OGS infrastructure in the City of Kitchener include 53 OGS units originally recommended in the 2001 Policy Study. The list was subsequently revised to 49 with an additional 92 recommended as part of road works through the annual SWM Audits. Eleven (11) previously
planned OGS locations were identified as not feasible and a total of 11 OGS unit have been installed.

**Water Supply**

There are 47 municipal groundwater supply systems within the Grand River watershed that rely on groundwater as a drinking water source. This includes twenty-four (24) in the Regional Municipality of Waterloo. The City of Kitchener is served primarily by a combination of 24 groundwater wells predominantly within the Waterloo moraine, and the production from the Manheim recharge facility as well as the surface water is intake at the Grand River (Hidden Valley Intake).

Issues relating to drinking water quality were identified for the following municipal wells in the City of Kitchener and an associated Issue Contributing Area (ICA) was established for each.

- The Manhiem well Field for nitrate
- The Greenbrook well field for Chloride
- Strange Street well K10A for Chloride
- The Parkway well field for Sodium and Chloride
- The Wilmot Centre well field for Nitrate

If an Issue is identified for an intake, all threats within the Issue Contributing Area that can potentially release the same chemical are automatically considered significant threats. The ICA must be considered in future SWM approaches within the City of Kitchener.

**Wastewater**

The Region of Waterloo (ROW) is responsible for treating all wastewater in the Region. The three (3) largest wastewater treatment plants (WWTP) in the Region of Waterloo are Kitchener, Waterloo and Hespeler. As the Grand River flows through the Region of Waterloo and into the City of Kitchener, water quality is greatly influenced by the five (5) upstream wastewater treatment plants – Elmira, Alt-Heidelberg, St. Jacobs, Conestogo and Waterloo.

The City of Kitchener has one wastewater treatment plant located at 368 Mill Park Drive.

A research session with homeowners in Kitchener was held on March 11th of this year to identify opportunities and constraints for uptake of at-source stormwater management (SWM) practices in the residential sector. The research sample of 32 homeowners reflected the demographics of single, detached and semi-detached homeowners throughout the City of Kitchener.

Each homeowner completed over 80 closed- and open-ended questions using a facilitated inquiry method. Respondents provided written answers to verbally asked questions within a limited timeframe, ensuring top-of-mind (non-rationalized) and unbiased responses reflecting homeowners’ intrinsically held beliefs and perceptions. Intrinsic beliefs are the driving force behind the choices and actions of all individuals. Homeowners’ understanding of specific terms and programs pertaining to SWM were also measured.

Upon completion of the research sessions, the homeowners’ verbatim (word-for-word) questionnaire responses were entered into a database, compiled, and grouped. Responses were then quantified (percentage frequency distribution) and qualified (idea, subject, theme, meaning, etc.) allowing for an unbiased analysis of the results. It is important to note that because many questions asked were open-ended; multiple answers, resulting in total percentage frequencies greater than 100% for any given question, are common.

Research Findings

The research data that resulted from the research session is rich in detail, emotion and meaning. With an overall sample size of thirty-two and a representative mix of demographic variables, the overall percentage frequency distributions can be interpreted as representative of Kitchener homeowners.

Living in Kitchener

Participants were asked: “What does the City of Kitchener mean to you?” Eighty-two percent of the responses say the City of Kitchener means “home, work and family”. “Friendly neighbourhoods”, modern infrastructure and good housing make Kitchener a “great place to raise a family.” Friends, neighbours, family, community and home are repeating themes throughout the research. “Safe” neighbourhoods are also a significant motivation for these homeowners in making the decision about where to live.

Home and Landscape

Respondents’ homes are the centre of their family and social lives, and, in most cases, their largest financial investment. For these homeowners, their home is a “safe haven” for their family and provides a feeling of security (physically and financially) and comfort. People are “proud” of their homes and “love” being there.
The single most important motivation for homeowners regarding their home’s surrounding landscape is its “appearance, curb appeal, and beauty.” Respondents were asked to rate the importance of their home and various aspects of their landscape. Figure 1 summarizes their responses.

Respondents were asked to provide reasons for the ratings they provided for their neighborhood, home and landscape (and related aspects). The reasons given by homeowners for the rating illustrated in Figure 1 are summarized and compared in Table 1 below.

Table 1: Homeowners’ Reasons for Ratings

<table>
<thead>
<tr>
<th>Neighbourhood</th>
<th>Home</th>
<th>Landscape</th>
<th>Design</th>
<th>Maintenance</th>
<th>Lawn</th>
<th>Trees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Love it (38%)</td>
<td>Love home (31%)</td>
<td>Beauty (50%)</td>
<td>Curb appeal (31%)</td>
<td>Curb appeal (59%)</td>
<td>Looks (88%)</td>
<td>Beauty (47%)</td>
</tr>
<tr>
<td>Neighbours (28%)</td>
<td>Family (25%)</td>
<td>Pride (31%)</td>
<td>Important (25%)</td>
<td>Pride (19%)</td>
<td>Enjoy (13%)</td>
<td>Shade (47%)</td>
</tr>
<tr>
<td>Safe (28%)</td>
<td>Investment (25%)</td>
<td>Enjoy (16%)</td>
<td>Improve (22%)</td>
<td>Value (19%)</td>
<td>Not Important (9%)</td>
<td>Environment (37%)</td>
</tr>
</tbody>
</table>

Aesthetics; “beauty”, “looks” and “curb appeal” are by far the most common responses for ratings aspects related to home and landscape by respondents.

Homeowner respondents were asked to draw an “ideal” landscape and an “ideal Naturescape” landscape for their home and to answer a number of questions about their drawings.

---

3 “Naturescape” is the name of the water efficient landscaping program offered by the Region of Waterloo
Drawings fell into categories based on themes, colours and features. Lawn, flowers, and colour (primarily from flowers) were dominant aspects of respondents' ideal home landscape while water, rocks and “wild” grasses were the dominant elements in their drawings of an ideal Naturescape home landscape.

Respondents were asked reasons why the elements or aspects they identified were important for the ideal home and ideal Naturescape landscape drawings by homeowners. “Curb appeal”, which includes “beauty” or “appearance”, is the most important reason for both landscapes; however, it is significantly more important for the ideal landscape at 76% of respondents while only 44% of respondents identified as an important aspect of Naturescape landscape.

Homeowners were asked “what constraints or reasons might prevent you from having an ideal front yard landscape or naturescape. Lack of money is the main constraint for both types of landscapes, while lack of time and energy are significant constraints for an ideal landscape.

Respondents were provided with three (3) sets of photos: four (4) front yard landscapes, four (4) flower/rain gardens, and four (4) drainage options (research photos are included in Section 5.6, 5.7, and 5.8 of the Report). They were asked to consider the images in the photos and then to rank them on a scale of 1 to 10, with 1 being low and 10 being high. They were subsequently asked to provide reasons for the lowest and highest ratings they gave for each set of photos (Table 2).

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Clean (50%)</td>
<td>Messy (53%)</td>
<td>Clean (25%)</td>
<td>Busy/messy (59%)</td>
<td>Clean (44%)</td>
<td>Ugly (16%)</td>
</tr>
<tr>
<td>2</td>
<td>Design (50%)</td>
<td>Plain (28%)</td>
<td>Design (34%)</td>
<td>Dull (28%)</td>
<td>Design (13%)</td>
<td>Cheap (16%)</td>
</tr>
<tr>
<td>3</td>
<td>Nature (16%)</td>
<td>Ugly (13%)</td>
<td>Nature (6%)</td>
<td>Empty (13%)</td>
<td>Nature (9%)</td>
<td>Boring (13%)</td>
</tr>
<tr>
<td>4</td>
<td>Colour (22%)</td>
<td>Hides house (9%)</td>
<td>Colour (22%)</td>
<td>Maintenance (9%)</td>
<td>Reuse water (47%)</td>
<td>Water waste (13%)</td>
</tr>
<tr>
<td>5</td>
<td>Appeal (13%)</td>
<td>Maintenance (6%)</td>
<td>Appeal (16%)</td>
<td></td>
<td></td>
<td>Obtrusive (13%)</td>
</tr>
<tr>
<td>6</td>
<td>Grass (13%)</td>
<td>Variety (28%)</td>
<td></td>
<td></td>
<td></td>
<td>Too close (13%)</td>
</tr>
</tbody>
</table>

The pattern in the responses is clear. The highest rated pictures are “clean with appealing designs.” The lower rated pictures are “messy, ugly, dull and boring.”

A number stormwater related terms (watershed, City of Kitchener Stormwater Utility, REEP Green Solutions, RAIN Home Visit, and rain garden) were presented to the homeowners and they were asked what the terms meant to them. Most of the terms were not known by the homeowners, and the most frequent response was “no answer”.

Summary

The insights gained through the research with single-family homeowners in Kitchener will be analysed in combination with the results of research being conducted with key informants in the industrial and commercial sectors and in service provider businesses operating in the residential and industrial and commercial sectors. The findings will inform the development of a market-based strategy to enhance uptake of at-source stormwater management practices amongst property owners in all sectors.
**Leading Jurisdiction Report (May 12, 2015)**

Aquafor Beech and Freeman and Associated have prepared the following scan of Leading Jurisdictions relating to:

- Stormwater Utility Programs
- Water Reuse and Stormwater Regulations

The leading jurisdictions scan is intended to provide context in regards to:

- Best in class policies,
- Programming and
- Initiatives for uptake of at-source stormwater control by property owners in both the residential and the Industrial, Commercial and Institutional (ICI) sectors.

The leading jurisdictions scan document is a component of the Market Research study tasks and is intended to serve as a background review to inform future study tasks including but not limited to the evaluation and development of SWM Credit Program Enhancements.

**Funding Comparison Approach**

Using the City of Kitchener’s 2015 Stormwater Rate Schedule, a single detached residential home with 259m² of impervious surface would fall into the “Residential Single Detached-Large” Stormwater Classification code which is assigned to detached homes with a building footprint size of 237 m² or more. Monthly stormwater charges assigned to this property would be $13.77. To determine how this monthly charges compares to other municipalities, Kitchener’s Single Family Unit (SFU) was used to determine the monthly stormwater charges in other municipalities in Ontario, Canada and the United States.

**Overall Comparison Results**

The owners of an average residential property (SFU) in the City of Kitchener currently pay a monthly charge of $13.77. This is close to the three-municipality Ontario average of $13.39 /month. Based on the sample of municipalities compared in this analysis, Ontario municipalities that have stormwater utilities or tiered fee systems for stormwater are better able to fund stormwater projects than those that charge a single family or residential flat rate.

When compared to municipalities in other regions of Canada, the monthly charge in Kitchener is higher than both Regina ($12.30 /month) and Edmonton ($8.00 /month). The City of Kitchener’s fee system is also higher than two of the four American municipalities surveyed (all US jurisdictions reported as US dollars). However, the size of the respective municipalities, the number and sensitivity of the watercourses within the municipal boundary, the age of infrastructure and the level of service (LOS) cannot be directly compared and likely contribute to the associated fee.

However, the City of Kitchener’s fee system is significantly lower than leading SWM jurisdictions including the City of North Vancouver, British Columbia ($25.00/month), Seattle, Washington ($19.57/month) and Portland, Oregon ($25.72/month). These jurisdictions are considered the leaders in SWM fees systems and SWM implementation and are considered the benchmark for Canadian municipalities in establishing effective SWM systems.
Response Form 1: PIC No. 1 Draft Boards
City of Kitchener

CLASS ENVIRONMENTAL ASSESSMENT
CITY OF KITCHENER INTEGRATED STORMWATER MANAGEMENT MASTER PLAN

1. Contact Name: _________________________________

2. Agency/ Organization/ Office: _________________________________

3. Address: ________________________________________________
   Postal Code: __________________
   Phone No: ____________________________
   Email: _____________________________

4. Please note specific comments and/or concerns in regards to the Draft PIC No.1 Boards. Please indicate board numbers or title in regards to the specific comments. (please attach additional sheets if necessary or provide scanned mark-ups):

   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________
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   ____________________________________________________________
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   ____________________________________________________________
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   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________

Signature ___________________________ Date ______________________

Please return to this form by **June 19, 2015** to:

Nick Gollan
Manager, Stormwater Utility
City of Kitchener
200 King St. W.
Kitchener, Ontario
N2G 4G7

Tel.: (519) 741-2200 x7422
Fax: (519) 741-2230
E-mail: nick.gollan@kitchener.ca

Thank you for your participation in this study!
Response Form 2: General Response Form

City of Kitchener

CLASS ENVIRONMENTAL ASSESSMENT
CITY OF KITCHENER INTEGRATED STORMWATER MANAGEMENT MASTER PLAN

1. Contact Name: ___________________________________________________________

2. Agency/ Organization/ Office: _____________________________________________

3. Address: _____________________________________________________________
   Postal Code: ______________
   Phone No: ____________________
   Email: _______________________

4. Existing Conditions Report (Draft April 2015) - Please indicate page numbers or section title in regards to the specific comments (please attach additional sheets if necessary):

   __________________________________________
   __________________________________________
   __________________________________________
   __________________________________________
   __________________________________________
   __________________________________________
   __________________________________________
   __________________________________________
   __________________________________________
   __________________________________________
   __________________________________________
   __________________________________________

Thank you for your participation in this study!
5. **Leading Jurisdiction Report (May 12, 2015)** - Please indicate page numbers or section title in regards to the specific comments (please attach additional sheets if necessary):

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

6. **Residential Market Research Summary Report (April, 2015)** - Please indicate page numbers or section title in regards to the specific comments (please attach additional sheets if necessary):

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

7. Do you wish to be notified for continued involvement in the project process, up to and including the release of the final study documentation? **Yes**_______ **No**________

Signature____________________________________ Date______________________________

Please return to this form by **July 24, 2015** to:

Nick Gollan  
Manager, Stormwater Utility  
City of Kitchener  
200 King St. W.  
Kitchener, Ontario  
N2G 4G7  
Tel.: (519) 741-2200 x7422  
Fax: (519) 741-2230  
E-mail: nick.gollan@kitchener.ca

Thank you for your participation in this study!
**CPAC Newsletter No. 2**

The following organizations have provided comments in regards to CPAC Newsletter No.2.

<table>
<thead>
<tr>
<th>Organization</th>
<th>Comment</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waterloo Catholic District School Board</td>
<td>• Although WCDSB staff do not have specific comments on these three reports; we want to reiterate that school boards are exempt from paying stormwater management fees under the Education Act. Specific sections that may have referred to this charge in this report are on pages 118 (section 3.11.3 Source Control Facilities) and 264 (section 1.1.4.10 City of Kitchener Storm Water Charges By-law (2011-153)).</td>
<td>• A letter was received from the Ministry of Education on November 20th, 2013, advising the City of Kitchener of the Ministry of Education’s position regarding the authority of municipalities to levy a stormwater management (SWM) user fee on school boards. While we acknowledge the Ministry of Education’s position on this matter, the city respectfully disagrees with it although we will abide by it. We are pleased that the letter indicated the province’s support of our SWM cost recovery initiative which is in line with provincial policy and regulations. As has been noted, this user fee is fair, equitable and encourages increased sustainability and protection of our water resources. Given the significant success of this program to date, we believe that as more municipalities implement SWM utility models based on Kitchener and Waterloo’s model, the province will need to revisit its current position on this matter. The cities also reserve their right to revisit this matter at some time in the future, if it is deemed necessary.</td>
</tr>
</tbody>
</table>


Response Form 2: General Response Form

City of Kitchener

CLASS ENVIRONMENTAL ASSESSMENT
CITY OF KITCHENER INTEGRATED STORMWATER MANAGEMENT MASTER PLAN

1. Contact Name: Virina Elgawly

2. Agency/ Organization/ Office: Waterloo Catholic District School Board

3. Address: 480 Dutton Drive, Waterloo
   Postal Code: N2L 4C6
   Phone No: 519-578-3660 ext. 2359
   Email: virina.elgawly@wcdsb.ca

4. Existing Conditions Report (Draft April 2015) - Please indicate page numbers or section title in regards to the specific comments (please attach additional sheets if necessary):

   Although WCDSB staff do not have specific comments on these three reports, we want to reiterate that school boards are exempt from paying stormwater management fees under the Education Act.

   Specific sections that may have referred to this charge in this report are on pages 118 (section 3.11.3 Source Control Facilities) and 264 (section 1.1.4.10 City of Kitchener Storm Water Charges By-law (2011-153)).

Thank you for your participation in this study!
5. **Leading Jurisdiction Report (May 12, 2015)** - Please indicate page numbers or section title in regards to the specific comments (please attach additional sheets if necessary):

<table>
<thead>
<tr>
<th>A specific section that may have referred to this charge in this report is on page 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Non-residential properties).</td>
</tr>
</tbody>
</table>

______________________________

6. **Residential Market Research Summary Report (April, 2015)** - Please indicate page numbers or section title in regards to the specific comments (please attach additional sheets if necessary):

<table>
<thead>
<tr>
<th>A specific section that may have referred to this charge in this report is on page 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1.1 Background and Context).</td>
</tr>
</tbody>
</table>

______________________________

7. Do you wish to be notified for continued involvement in the project process, up to and including the release of the final study documentation? Yes [X] No

Signature: [Signature]
Date: July 15, 2015

Please return this form by **July 24, 2015** to:

Nick Gollan  
Manager, Stormwater Utility  
City of Kitchener  
200 King St. W.  
Kitchener, Ontario  
N2G 4G7  
Tel.: (519) 741-2200 x7422  
Fax: (519) 741-2230  
E-mail: nick.gollan@kitchener.ca

Thank you for your participation in this study!
Will Cowlin

From: Nick.Gollan@kitchener.ca
Sent: March-29-16 11:10 AM
To: denich.c@aquaforbeech.com
Subject: RE: CPAC Comments No. 2

The response:

A letter was received from the Ministry of Education on November 20th, 2013, advising the City of Kitchener of the Ministry of Education’s position regarding the authority of municipalities to levy a stormwater management (SWM) user fee on school boards. While we acknowledge the Ministry of Education’s position on this matter, the city respectfully disagrees with it although we will abide by it.

We are pleased that the letter indicated the province’s support of our SWM cost recovery initiative which is in line with provincial policy and regulations. As has been noted, this user fee is fair, equitable and encourages increased sustainability and protection of our water resources. Given the significant success of this program to date, we believe that as more municipalities implement SWM utility models based on Kitchener and Waterloo’s model, the province will need to revisit its current position on this matter. The cities also reserve their right to revisit this matter at some time in the future, if it is deemed necessary.

Thanks
Nick

---

From: Chris Denich [mailto:denich.c@aquaforbeech.com]
Sent: Tuesday, March 29, 2016 10:59 AM
To: Nick Gollan
Subject: CPAC Comments No. 2

Hi Nick,

Below is the WCDSB.

Although WCDSB staff do not have specific comments on these three reports; we want to reiterate that school boards are exempt from paying stormwater management fees under the Education Act. Specific sections that may have referred to this charge in this report are on pages 118 (section 3.11.3 Source Control Facilities) and 264 (section 1,1.4.10 City of Kitchener Storm Water Charges By-law (2011-153)).

How do you want to respond to this? Please advise.

Thanks,
Chris Denich M.Sc., P.Eng
Aquafor Beech Ltd.
55 Regal Road, Unit 3
Guelph, ON
N1G 1B6
Ph:519-224-3744
Fax: 519-224-3750
www.aquaforbeech.com
October 9, 2015

Re: Public Advisory Committee (PAC) Cyber Committee
Electronic Newsletter No. 3

CLASS ENVIRONMENTAL ASSESSMENT
CITY OF KITCHENER INTEGRATED STORMWATER MANAGEMENT MASTER PLAN

Dear Sir/Madam;

The City of Kitchener through Aquafor Beech Ltd. is continuing with the development of an Integrated Stormwater Management (SWM) Master Plan for the City of Kitchener to update the City’s 2001 SWM Policy Study. The Integrated Stormwater Management (SWM) Master Plan will serve as a decision support tool, a methodology for the prioritization of works and will serve as a transparent community process by which the City can establish stormwater management guidelines and policies for the next 15 years.

As an invited member of the Public Advisory Committee (PAC), we have enclosed for your information a copy of Public Advisory Committee (PAC) Cyber Committee, Electronic Newsletter No. 3 which is intended to share with you the:

- Draft SWM Approaches being considered as part of this study

The full version of the Draft Market-Based Strategy report will be available after October 13th, 2015 and can be accessed at: www.kitchener.ca/stormwaterrmasterplan. Prior to the finalization of the Draft Market-Based Strategy report and the finalization of the Draft SWM Approaches, we the project team invite the PAC to review and provide comments using the Comment Response Forms provided by October 31, 2015.

If your Agency/ Organization/ Office have any comments or input regarding the above noted document and or this project, we invite you to complete and return the attached Comment Response Forms. For further information or if you wish to provide input regarding the project, please contact myself (nick.gollan@kitchener.ca.) or the project coordinator Chris Denich at 519-224-3744 or via email at denich.c@aquaforbeech.com.

Yours truly,

Nick Gollan, C.E.T.
Manager, Stormwater Utility

Encl: Public Advisory Committee Newsletter #3 and Comment Response Forms 1 and 2
CLASS ENVIRONMENTAL ASSESSMENT
CITY OF KITCHENER INTEGRATED STORMWATER MANAGEMENT MASTER PLAN

Study Update
The City of Kitchener through Aquafor Beech Ltd. is continuing with the development of an Integrated Stormwater Management (SWM) Master Plan for the City of Kitchener to update the City’s 2001 SWM Policy Study. The City of Kitchener’s Integrated SWM Master Plan study includes six (6) major tasks:

- **Task 1** – Study Area Characterization
- **Task 2** – Analysis & Assessment of SWM System
- **Task 3** – Evaluation of Alternatives
- **Task 4** – Preferred SWM Strategy
- **Task 5** – Implementation Plan
- **Task 6** - SWM Master Plan Report

To date the study team has completed Task 1 – Study Area Characterization, continue to work towards the completion of Task 2 – Analysis and Assessment of SWM System and have begun Task 3 – Evaluation of Alternatives. Specific project sub-tasks completed and or underway are detailed below:

**Task 1 & Task 2** – Study Area Characterization and Analysis & Assessment of SWM System
- Summarized in the PAC Newsletter No. 2 (June 9, 2015)

**Task 3 - Evaluation of Alternatives**
- Development of Retrofit Scenarios
- End-of-Pipe (i.e. ponds) Retrofit Assessments
- SWM Credit Program Enhancement – includes the development of a Market-Based Strategy for Residential and Industrial/ Commercial/ Institutional (ICI) land uses.
- Development of Draft SWM Approaches

The Draft Market-Based Strategy report will be available after October 13th, 2015 and can be accessed at: [www.kitchener.ca/stormwatermasterplan](http://www.kitchener.ca/stormwatermasterplan). If your Agency/ Organization/ Office have any comments or input regarding the above noted document we invite you to complete and return the attached Comment Response Form 1 by October 31, 2015

The following sections provide additional detail on the Draft Market-Based Strategy report and the Draft SWM Approaches.
Comments
As part of your invitation to be part of the Integrated Stormwater Management (SWM) Master Plan Class EA study process as a member of the Public Advisory Committee (PAC), we ask that you provide written comment using the attached Comment Response Forms per the dates below:

<table>
<thead>
<tr>
<th>Project Element</th>
<th>Comment Form</th>
<th>CPAC Comment Response Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Draft SWM Approaches</td>
<td>Response Form 2</td>
<td>No later than October 31, 2015</td>
</tr>
</tbody>
</table>

To provide your comments or to request additional information concerning this project, please contact either of the following Project Team members:

Nick Gollan, C.E.T.  
Manager, Stormwater Utility  
City of Kitchener  
Engineering Services  
200 King Street West, P.O. Box 1118  
Kitchener, Ontario N2G 4G7  
Tel.: (519) 741-2200 ext. 7422  
TTY: 1-866-969-9994  
Fax: (519) 741-2230  
E-mail: nick.gollan@kitchener.ca

Chris Denich, M.Sc., P.Eng  
Project Coordinator  
Aquafor Beech Ltd  
55 Regal Road, Unit 3  
Guelph, Ontario N1K 1B6  
Tel.: (519) 224-3744  
Fax: (519) 224-3750  
E-mail: denich.c@aquaforbeech.com

This Notice was issued on October 9, 2015.
Draft Market-Based Strategy (October 2015)

Securing at-source control of stormwater and pollution prevention requires the participation of private property owners in the residential and business sectors. Toward this end the City established a stormwater utility fee based on actual contributions or load to the stormwater system and a credit program of up to 45% of the fee to encourage land-owners to implement on-site stormwater mitigation and pollution prevention measures.

To support landowners implementing stormwater mitigation measures such as rain gardens, bioswales, redirecting downspouts, etc., the City of Kitchener in partnership with Residential Energy Efficiency Project (REEP Green Solutions) provides information, resources and direct expert guidance to residential and industrial, commercial and institutional (ICI) property owners.

programs and initiatives to secure uptake of stormwater mitigation measures by property owners are reaching saturation.. To address the leveling of uptake of SWM best practices by private property owners and to capitalize on opportunities across sectors, City staff have directed market and leading jurisdictions research in the development of the ISWM-MP. Primary research with property owners, business developers and service providers, and secondary research into leading jurisdictions in SWM, relevant City policies and programs and REEP Green Solutions has been undertaken to determine mechanisms and approaches to drive uptake of on-site stormwater management measures.

In meeting the City’s ISWM-MP objectives, two primary considerations will inform the strategic direction of municipal actions to drive uptake of at-source SWM and pollution prevention by private property owners, specifically:

1. The creation of drivers for at-source actions by private landowners and new construction through the development or modification of City policies and practices via enhanced integrated decision-making and programming across City departments and portfolios.
2. The strategic engagement of the marketplace to drive uptake of at-source actions by property owners and builders/developers and create the impetus for market transformation.

The research and findings contained within the Draft Market-Based Strategy report are summarized herein. The Draft Market-Based Strategy report will be available after October 13th, 2015 and can be accessed at: www.kitchener.ca/stormwatermasterplan.

Project Description

To increase uptake of SWM and pollution prevention practices by property owners and builders/developers, market-based research was undertaken to determine viable alternatives to current SWM programming. Market-based research involves market segmentation and analysis to determine constraints and opportunities in each market segment and across market segments or sectors.

Single-family homeowners, industrial and commercial property owners/ managers, builders/developers and key service providers in the landscaping, roofing and porous paving were the target sectors for the primary market research.

Research Methodology

Primary research was undertaken to identify and explore constraints and opportunities for uptake of on-site SWM measures amongst property owners in the target sectors – homeowners, industrial/commercial property owners, and builders/developers and to determine the potential influence of service providers (landscaping, roofing/building sciences, and porous/permeable surfacing) on the target sectors.
Secondary research involving an extensive web-based search and on-line literature review was carried out to identify best practices employed by leading jurisdictions in SWM and sustainability (water and energy conservation, green building, pollution prevention, alternative energy, etc.). See Sections 4.1 and 5.1 of the Draft Market-Based Strategy report. The results of this secondary research are captured in the Leading Jurisdiction Report (May 12, 2015) and were summarized in the PAC Newsletter No. 2 (June 9, 2015).

Research Goal and Objectives
Research objectives were based on the overall goal of determining constraints and opportunities to drive uptake of SWM and pollution prevention practices by single-family homeowners, business property owners/managers, and builders/developers.

Objectives specific to each area of research – single-family homeowners, industrial/commercial property owners, builders/developers and service providers – were developed to ensure the research was targeted and necessary insights and data would be captured. (See Section 3.3 of the Draft Market-Based Strategy report).

Business Sector Research
A combination of twenty-five industrial and commercial businesses, and builders/developers were randomly selected from a business listing compiled using a combination of Statistics Canada Business Listings for Kitchener, the City’s Economic Development business database, the City’s business listing of those companies that had applied for or inquired about the stormwater utility credit, and REEP’s Business Visits listing. Through a process of cross-referencing of the business listings and on-line research of the businesses, the list was culled to 20 industrial and commercial companies and builders/developers. Service providers were selected via professional or business associations to ensure those selected had industry recognized credentials.

Guiding questions were developed for the key informant interviews with industrial/commercial property owners/managers, builders/developers and service providers. (See Appendix 1 of the Draft Market-Based Strategy report).

Business Sector Research Findings
Consistencies or themes in responses from key informants were identified and categorized as a constraint or opportunity. The most common constraint or hurdle to the uptake of at-source SWM practices identified by key informants across all groups was the long payback period associated with such investments.

The most significant opportunity identified through interviews with key informants is the willingness to address and/or promote at-source SWM and pollution prevention provided their efforts not involve significant investments with poor returns, undermined competiveness, create delays (builders/developers), or long term maintenance costs/efforts. Research highlighted that roofing contractors are not in a position to influence decisions about roof drainage, rain water capture or “green roofs”, as these are design considerations and the purview of building owners with guidance from architects/building sciences specialists.

Thematic constraints and opportunities identified through this business sector research are consistent with findings from other similar municipal and national research studies involving key informants in the business sector and are detailed below.

Themes – Constraints – Industrial & Commercial Sector
1. The payback period on SWM investment is well beyond the typical 2.5 to 3 year horizon required by most businesses.
2. The stormwater utility fee credit is not sufficient to reduce the cost of most SWM and pollution prevention investments to an acceptable payback period.
3. Keeping operational costs in check is a priority, thus at-source SWM is “not on the radar”.
4. For manufacturing, it’s about managing unit costs of production so savings in energy, for example, reduce processing costs and resulting unit costs – SWM doesn’t.

Themes – Constraints – Builders / Developers
1. Costs of land, building (labour, materials, energy), and approvals are all going up. Must recover those costs through sales/occupancy rents and fees but there is a limit to what the market will accept. Important to be cost competitive – therefore, do what is required for SWM but going beyond requirements for SWM is costly and does not offer a competitive advantage.
2. New practices or technologies can often delay further an already long approval process.
3. Require multiple department/agency approvals, therefore new or “out-of-the-box” applications or technologies for SWM can create problems securing approval from one or more reviewers who isn’t familiar or lacks expertise to evaluate.
4. Buyers/customers want “granite countertops” - beyond compliance, the market dictates design.

Themes – Constraints – Service Providers
1. For many clients, price is the deciding factor so any SWM modifications to design or installation that increase costs would be excluded.
2. Roofing:
   • Decisions regarding industrial/commercial roof design, rain water capture, roof drainage system, etc., are made at the design stage for new buildings and major renovations – roofing contractors just follow approved blue prints.
   • Very cost conscious business and most industrial/commercial clients want the best roof at the lowest possible costs.
   • Residential roofing is a highly competitive business and almost exclusively cost driven.
   • Residential installers don’t necessarily have the know-how to address drainage issues.
3. Landscaping:
   • Municipal programs that provide landscape assessments and recommendations are not well regarded by the landscaping industry due to the limited expertise of the “student” advisors. In some cases the municipal landscape assessments are viewed as in direct competition with landscaping companies offering consultation-design services.
   • Can suggest ideas but it’s the client that decides; “If the client wants a pool and flagstone in concrete, then that’s what we design”.
   • Most industrial/commercial clients want properties that are readily maintained and at a minimum cost.
   • A few in the landscaping business are very familiar with SWM designs and installations, but it’s still relatively new and most in industry aren’t trained. Somewhat of a supply-demand issue as clients are not requesting SWM designs unless they have flooding or drainage problems.
   • Large number of “back-of-truck” operators who often lack credentials and operate on a cash and/or lowest price basis with little if any consideration as to quality, drainage, and on-site retention and infiltration of stormwater.
4. **Porous paving:**
   - Product cost versus other traditional surfacing materials such as asphalt.
   - Lack of expertise in the industry – some very good installers of porous pavers but most lack understanding/expertise.
   - Still new and not widely accepted.

**Themes – Opportunities – Industrial & Commercial**
1. Reducing operational costs is a key driver for the majority of industrial and commercial facilities and this is particularly true for manufacturing facilities and property management.
2. Open to making the necessary investments in at-source SWM and pollution prevention with a reasonable payback of 2 to 3 years.
3. Have energy conservation initiatives in place and investing in energy saving retrofits and upgrades due to reasonable payback periods (2 to 3 years)

**Themes – Opportunities – Builders/Developers**
1. Open to design and installation of enhanced/innovative SWM and pollution prevention measures provided these have a net benefit in terms of Return on Investment (ROI) or represent a reasonable investment.
2. Reduction in approvals time universally identified as a potentially strong incentive for enhanced/innovative SWM enhancements.
3. Recognize the potential of LID to eliminate or significantly reduce size of SWM ponds allowing for additional detached/semi-detached units – a net financial benefit that potentially outweighs cost of LID systems.

**Themes – Opportunities – Service Provider**
1. Landscaping:
   - Recognize the trend toward sustainable landscaping and continually moving their businesses and services in this direction.
   - Most open to working co-operatively with municipalities provided the landscaping industry is the service provider, not the municipality.
   - Customer incentives for measures such as rain gardens or porous paving would make these SWM measures more marketable to clients.
2. Porous paving:
   - Good experience working with municipalities and conservation authorities.
   - Industry making significant efforts to train installers and educate end-users on value of porous paving.
   - Industry experiencing growing success in US market which should translate to increases in supplies/suppliers thereby bringing costs of product down over time.

**Residential Sector Research**
As discussed, uptake of stormwater mitigation measures by property owners in the residential sector is plateauing. To identify opportunities and constraints for on-site SWM and pollution prevention on residential properties, a research session was held on March 11, 2015 with a demographically representative sample of single-family homeowners in the City.

The results of the residential research were presented in the **Residential Market Research Summary Report** (April, 2015) and were summarized in the PAC Newsletter No. 2 (June 9, 2015).

The Residential Market Research Summary Report has been integrated into the **Draft Market-Based Strategy**. The thematic constraints and opportunities identified through this residential research have been summarized in the table below for context.
### Constraint & Opportunity Themes: Single-Family Homeowners

#### THEMES

<table>
<thead>
<tr>
<th>CONSTRAINTS</th>
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<tbody>
<tr>
<td>Residential information- and education-based outreach has not resonated with</td>
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<tr>
<td>homeowners.</td>
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<tr>
<td>Homeowners have a deeply held aesthetic of a beautiful home landscape that</td>
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<tr>
<td>is entrenched and does not include rain gardens, permeable driveways, cisterns</td>
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<td>or rain barrels.</td>
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<tr>
<td>Investment in landscaping improvement projects is limited to projects under</td>
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<td>$5,000 with only 2/32 homeowners investing more than that amount in the past</td>
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<td>five years.</td>
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<tr>
<td>Region of Waterloo’s “Naturescape” water efficient landscaping program is not</td>
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<td>recognized by homeowners in Kitchener.</td>
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<tr>
<td>Although homeowners hold a positive view of a Naturescape landscape, their</td>
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<td>view runs contrary to the intent of the program.</td>
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<tr>
<td>Homeowner respondents have a little or no understanding of the term “watershed”.</td>
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<tr>
<td>The majority of homeowner respondents have no knowledge or understanding of</td>
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<td>“REEP Green Solutions” or the “RAIN Home Visit”.</td>
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<td>Eighty-seven percent (87%) of respondents could not accurately answer the</td>
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<td>question; “What is a rain garden?”</td>
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<td>Images (rain gardens) and wording used on City and REEP Green Solutions web</td>
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<tr>
<td>sites to communicate information about SWM to residents do not resonate with</td>
<td></td>
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<tr>
<td>the intended audience.</td>
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</table>

#### THEMES

<table>
<thead>
<tr>
<th>OPPORTUNITIES</th>
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<tbody>
<tr>
<td>The City of Kitchener and the community it represents and homeowners’</td>
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<tr>
<td>neighbourhoods are very important to respondents.</td>
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<tr>
<td>Homeowners are highly motivated to have beautiful landscapes and are willing</td>
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<tr>
<td>in them.</td>
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<tr>
<td>Homeowners seek and trust advice about their landscape design from “friends”</td>
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<td>and “family” (56%), professionals and nurseries (41%), and the Internet (25)%</td>
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<tr>
<td>Majority of homeowners purchase plants from garden centres and nurseries (65%)</td>
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<td>Most (65%) of the homeowner respondents’ drawings of their “ideal” front</td>
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<tr>
<td>yard landscape, although traditional in design, indicate opportunities for</td>
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<td>incorporating rain gardens (within the context of those traditional designs).</td>
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<tr>
<td>The front yard image and garden image rated the highest by homeowners, although</td>
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<tr>
<td>traditional in their design, include the potential for rain gardens and measures to</td>
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<tr>
<td>enhance the infiltration of stormwater.</td>
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<tr>
<td>The top two rated downspout/drainage images by homeowner respondents depict</td>
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<tr>
<td>dry river bed garden and a rain barrel mostly concealed by garden.</td>
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</table>

#### Recommendations - Market-Based Strategy

Creating a “made in Kitchener” market-strategy to generate uptake of at-source SWM and pollution prevention practices and measures by residential and industrial/commercial property owners, and enhanced SWM best practices in new development and re-development projects was a goal of the market research. Governance, programming, policy, economic, joint venture, and metrics and reporting recommendations have been developed based on the findings from the research and an analysis of potential options applicable to the City stormwater utility model and the achievement of the City’s ambitious ISWM-MP objectives.

For ease of reference, recommendations are divided into the following three (3) categories:

1. Governance & Administration,
2. Municipal Functions & Operations, and

The table below summarizes the recommendations. See Appendix 7.0 of the Draft Market-Based Strategy report for a more comprehensive discussion of the recommendations.
<table>
<thead>
<tr>
<th>INITIATIVE</th>
<th>RECOMMENDATION</th>
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</table>
| **INTEGRATED WATER MANAGEMENT PLAN (IWM) PLANNING** | As SWM program staff move forward with the ISWM-MP, it is recommended that the City undertake a future IWM planning process to develop implementation plans.  
- Employing an IWM model ensures that SWM measures and their implications are considered across water management portfolios and divisions. The rationale for this holistic approach is to provide for the sustainability of all water systems in the aggregate and to capitalize on synergies for greater efficiency and impact. |
| **MARKET-BASED APPROACH** | It is recommended that the City apply a market-based approach to planning and decision-making processes pertaining to, or impacting, SWM practices by private property owners.  
- A market-based approach employs or stimulates the marketplace to deliver/support SWM initiatives with the ultimate goal of generating transformative, sustained change.  
- Two key elements of a market-based approach to municipal SWM are the use of external market drivers and development of strategic joint venture opportunities. Examples of such external drivers would include, grants, financing and subsidy programs, promotional initiatives, recognition/award programs, etc.  
- Identifying potential synergies with external organizations and business and developing joint venture agreements for delivery of complementary programs is an effective means of securing higher uptake and leveraging of resources. |
| **IWM STEERING COMMITTEE** | It is recommended the City, in conjunction with the Region of Waterloo and the Grand River Conservation Authority (GRCA), establish an IWM Steering Committee (i.e. Water Manager’s Working Group or other).  
- The opportunities are the potential synergies of the various water management programs and projects and the guiding principles of source water protection, maintenance of drinking water quality, and the long term sustainability of the ground and surface waters in Kitchener-Waterloo. |
| **WATER INNOVATION HUB** | It is recommended that a Water Innovation Hub be established.  
- Innovation hubs bring together business leaders, academics, non-government organization specialists, and government experts to identify, vet, and foster innovation. |
| **STORMWATER UTILITY FEE STRUCTURE** | It is recommended that the City review the current stormwater utility fee structure and evaluate the potential to modify the structure for non-residential property owners.  
- Potential modifications include, having a fixed portion to cover required SWM capital and asset management costs and a refundable portion based on the current tiered fixed rate model with a potential credit of 100% could, if apportioned correctly, serve as an incentive to non-residential property owners to implement SWM measures, as well as an approach that is proving effective in jurisdictions with such SWM utility “feebates”. |
| **AGGREGATING PROPERTIES INCENTIVE** | It is recommended the City establish an incentive & administrative mechanisms to enable the aggregation of non-residential privately-owned properties for a SWM utility credit.  
- A grant or low/no-interest financing initiative in conjunction with credit banking or exchange would encourage non-residential property owners/managers to develop and implement SWM practices to address multiple properties in a drainage area.  
- Allowing for the aggregation of properties/Grid Low Impact Development (Grid LID) has the potential to bring payback periods down to justifiable investment levels for business property owners. |
| **EXPEDITED REVIEW & APPROVAL PROCESS** | It is recommended that the City consider adopting an expedited review and approval process for development projects that employ SWM measures beyond required site plan approval levels.  
- This recommendation is intended to address the most significant barriers to the use of enhanced and innovative SWM measures by builders/developers are the costs associated with these measures and the difficulty in securing timely review and approvals. |
**DENSITY & FLOOR AREA RATIO BONUS**

It is recommended that the City evaluate modifying Section 5 of the City of Kitchener Zoning By-law (85-1) to allow for density and Floor Area Ratio (FAR) bonuses.

- The cost of enhanced SWM measures such as rain gardens, bioswales, exfiltration systems, eco-/green roofs, rain water harvesting, porous paving, etc., results in their limited application in new development.
- In leading SWM jurisdictions, increases in allotment of single-family homes, increases in building height or the floor area ratio are the types of density bonuses made available to builders/developers.
- In leading jurisdictions the green building requirements for density bonus qualification are stringent and in law.
- Formalizing density and FAR bonuses for SWM enhancements within the zoning by-law will encourage builders/developers to incorporate such enhancements in their projects.

**RIGHT-OF-WAY SWM INFRASTRUCTURE POLICY & PROGRAM**

It is recommended the City establish a SWM infrastructure right-of-way policy and program.

- Requires incorporation of Low Impact Development (LID) facilities into all City-funded projects

**PERFORMANCE INDICATORS & SCORECARD**

It is recommended the City implement a SWM reporting framework involving a performance indicators and scorecard management mechanism.

- The SWM reporting framework would provide City staff with a process by which to evaluate performance of the Market Based Approach both technically from a SWM perspective and from a Market Impact perspective, troubleshoot and adjust programming and projects as needed to mitigate problems or capitalize on opportunities.

<table>
<thead>
<tr>
<th>INITIATIVE</th>
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<tbody>
<tr>
<td><strong>STRATEGIC JOINT VENTURES</strong></td>
<td>It is recommended that City staff responsible for SWM investigate the opportunity for strategic joint ventures with the Region and energy utilities to deliver a comprehensive energy-water-stormwater Demand Side Management (DSM) program.</td>
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<td></td>
<td>- Strategic joint ventures are recommended to address both the long payback period for investments in on-site SWM measures and the challenge of securing SWM consultation or RAIN business visits.</td>
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<tr>
<td><strong>SERVICE PROVIDER INCENTIVE</strong></td>
<td>It is recommended the City establish a service provider incentive program for landscape design and/or installation contractors.</td>
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<td></td>
<td>- Incentivizing the landscaping service industry to design and install transitional landscapes that incorporate rain gardens and enhanced permeable areas, and require little or no supplemental irrigation would be the most effective mechanism for driving uptake of on-site SWM landscaping practices and lowering peak water demand amongst single-family and industrial/commercial property owners. Landscaping service companies would have to complete training and certification through Landscape Ontario (LO), the professional and industry recognized association of the landscaping industry.</td>
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<tr>
<td><strong>MARKET POSITIONING</strong></td>
<td>It is recommended that the City undertake a targeted promotional initiative to re-position SWM and SWM-related programming in the marketplace.</td>
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<td>- Target marketing and promotion is a key component of market-based programming and a cost-effective means of re-positioning SWM in the marketplace.</td>
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<td>- This approach allows customization of messages and materials, targeted use of demonstration projects and outreach initiatives, focuses resources where they are most needed, and enables program tracking and measurement.</td>
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<tr>
<td><strong>TARGETED HOMEOWNER CAMPAIGN</strong></td>
<td>It is recommended that City SWM staff undertake a marketing and promotional initiative targeting single-family homeowners and focused on transitional landscapes for lot-level SWM.</td>
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<tr>
<td></td>
<td>- Targeted marketing must focus on the beauty of transitional SWM landscapes – it’s about creating a new landscape paradigm based on a composite of lot-level best practices that homeowners will desire and seek to obtain.</td>
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</tbody>
</table>
SUMMARY

Primary market research with single-family homeowners, industrial and commercial property owners/managers, builders/developers and service providers was undertaken to determine the constraints and opportunities for the uptake of lot-level SWM practices. This research was informed and augmented by research into leading jurisdiction best SWM practices.

As the ISWM-MP progresses and the evaluation of alternatives generate preferred options, this strategy and the recommendations set out herein will undergo an alignment review. This alignment review will inform the implementation priority of the recommendations.

The City of Kitchener has taken a progressive approach to SWM programming. This strategy continues this progressive approach and positions the City as a leader and innovator.

Draft SWM Approaches

In working towards the development of an Integrated Stormwater Management (SWM) Master Plan for the City of Kitchener, a series of seven (7) Draft Stormwater Management (SWM) Approaches have been developed to address components or issues associated with the overall SWM approach and the City’s current SWM infrastructure and assets. The seven (7) approaches include:

1. Urban Flood Management (Table 1)
2. Erosion and Stream System Understanding (Table 2)
3. End-of-Pipe Controls (Table 3)
4. Conveyance Controls (Table 4)
5. Source (Lot level) Controls
   a. Residential Source (Lot level) Controls (Table 5a)
   b. ICI Source (Lot level) Controls (Table 5b)
6. Pollution Prevention (Table 6)
7. New Development (Table 7)

The Seven (7) Draft Stormwater Management (SWM) Approaches:

- Focus on a Treatment Train approach to stormwater management which uses a combination of source, conveyance and end-of-pipe controls, consistent with the Ministry of the Environment and Climate Changes’ approach to stormwater management. The treatment train first and foremost treats runoff (precipitation) at its source and as it flows over the ground surface, as a resource to be managed and protected rather than a waste. In this regard, the emphasis in managing runoff is to maintain the existing infiltration of water into the ground, provide opportunities for capture and reuse as well as to enhance evapotranspiration using best management practices (BMPs).
- Acknowledges existing City policy, programs and initiatives.
- Builds on the recommendations of the Draft Market-Based Strategy report, as well as the:
Recognizes the importance of the local surface and groundwater features and functions, the inventory of existing and planned SWM infrastructure and assets, as well as the opportunities and constraints of the study area, as detailed in the Existing Conditions Report (Draft April 2015).

As an invited member of the Public Advisory Committee (PAC), we have enclosed for your information Table 1 to Table 7, which provide additional detail on each of the Draft SWM Approaches. The intent of presenting the Draft SWM Approaches to the PAC is to receive comments and feedback from the PAC (as well as all project team members and stakeholder) in order to:

1. Eliminate any alternatives that are not feasible; and
2. Refine the Draft SWM Alternatives and carry them forward to the evaluation stage.
<table>
<thead>
<tr>
<th>SWM Approaches</th>
<th>Description</th>
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<tbody>
<tr>
<td>i. Do Nothing</td>
<td>The do-nothing approach would entail no action or funding allocation to urban flood management approaches in the City of Kitchener. This approach would result in no changes in the drainage systems. Under this condition the target level of service set by the City for the storm system would not be met.</td>
</tr>
<tr>
<td>ii. Local Remedial</td>
<td>Undertake local remedial measures for individual properties at risk as a result of urban flooding due to storm sewer capacity issues.</td>
</tr>
<tr>
<td>Measures</td>
<td>• These measures if properly implemented, provide the highest level of protection for individual properties and isolated cases of basement flooding. Implementation of these measures will further reduce flooding risk to a property if installed and maintained properly. Techniques may include:</td>
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<td></td>
<td>o Backflow Prevention with or without Sump Pump</td>
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<td></td>
<td>o Sump Pump for Foundation Drains</td>
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<td></td>
<td>o Lot Regrading</td>
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<td></td>
<td>o Overland Flow Diversion and Outlets</td>
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<td></td>
<td>o Use of Low Impact Development (LID) source and conveyance controls</td>
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<tr>
<td>iii. System Storage</td>
<td>Institute system storage practices in the form of in-line/off-line sewers.</td>
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<tr>
<td>(in-line/off-line</td>
<td>• Effective in regulating/moderating peak flows at locations where the capacity of a sewer is inadequate.</td>
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<td>sewers)</td>
<td>• Costs can vary significantly depending on sewer depth and the presence of bedrock. Land/space requirements can limit the application of the in-line/off-line storage.</td>
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<td>• Most effective if the downstream sewer system does not have adequate capacity to convey the peak flow.</td>
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<tr>
<td>iv. Pipe Upgrade</td>
<td>Subsurface pipe upgrade in form of pipe replacement or twinning to increase conveyance capacity and reduce urban flooding risks.</td>
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<tr>
<td>(pipe replacement/</td>
<td>• Provides reduction/ elimination of sewer surcharge capacity for future growth.</td>
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<tr>
<td>twinning)</td>
<td>• Very disruptive construction due to length of upgrades.</td>
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<td>• Anywhere where other utilities do not impose constraints.</td>
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<tr>
<td>v. Internal Diversion</td>
<td>Internal diversions of the subsurface pipe network to utilize spare capacity in other parts of system to accommodate more intensive storms</td>
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<td>• The internal diversion approach balances flow in existing systems with minimal construction and can be implemented where system loadings vary substantially between areas and if receiving system can accommodate influx.</td>
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<tr>
<td>vi. Inlet Control</td>
<td>Implementation of inlet control device (ICD) to regulate/moderate peak flows at locations where the capacity of a sewer is inadequate.</td>
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<tr>
<td>Devices</td>
<td>• Applied in situations where head and space in the street are available and typically requires an established overland flow route (major system) to be in place and functioning. Most effective if the downstream sewer system does not have adequate capacity to convey the peak flow</td>
</tr>
<tr>
<td>SWM Approaches</td>
<td>Description</td>
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<td>----------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
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</tbody>
</table>
| i. Do Nothing                          | The do-nothing approach to erosion sites involves no action or funding allocation to in-stream erosion mitigation or stream restoration by the City of Kitchener  
  • This alternative may be appropriate for low-risk erosion sites, particularly where negative impacts to aquatic habitat are minimal. |
| ii. Selective Works                    | The selective works approach to erosion sites involves undertaking works at strategic locations in the reaches with isolated erosion issues.  
  • This alternative aims to address localized erosion concerns where risks can be alleviated with relatively low costs and high benefits. This alternative may also be necessary where reach-based solutions are not feasible or favorable. This alternative typically does not provide long term solutions, therefore continued monitoring and future maintenance should be expected. Local erosion protection works can include improvements to riparian and terrestrial habitats, as well as improvements to aquatic habitat and fish passage (i.e., fish barrier removal). |
| iii. Geomorphic Referenced River  
  Engineering (GRRE)                  | The GRRE alternative to erosion sites involves complete restoration and/or realignment of the channel based on environmental sensitive geomorphic features, but the channel location and materials are engineered to essentially remain in place.  
  • This alternative generally uses natural restoration materials such as round river stone and vegetative plantings; however oversized stone and bio-engineering methods are be used to minimize channel migration. Hardened structures using armourstone may be used strategically to fix the channel alignment and to ensure that existing infrastructure and property are not impacted. Significant improvements to riparian, terrestrial and aquatic habitat can be made using GRRE, particularly where stream reaches are seriously degraded. Use of coarse oversized bed materials still allows for increased geomorphic diversity of aquatic habitat and improved fish passage. |
| iv. Natural Channel Design (NCD)       | The NCD alternative to erosion sites involves realigning the stream channel such that it follows a natural alignment and channel form (planform, profile, cross-section) and is dynamic allowing for movement of channel materials.  
  • This alternative uses natural restoration materials such as round river stone and vegetative plantings, whereby stone sizing and bank materials are specified to allow for natural rates of sediment transport and bank erosion within a naturalized stream corridor. Complete NCD is rarely feasible, but designs may include more naturalized sections as compared to GRRE. |
### Table 3 - End-of-Pipe Control Approaches

<table>
<thead>
<tr>
<th>SWM Approaches</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>v. Do Nothing</td>
<td>The do-nothing approach would entail no action or funding allocation to End-of-Pipe controls in the City of Kitchener</td>
</tr>
</tbody>
</table>
| vi. Retrofit of Publicly owned Facilities | Undertake retrofits of existing publically owned EOP stormwater management facilities.  
• Practices would include wet ponds, dry ponds, hybrid facilities and subsurface storage and infiltration facilities.  
• Would include the conversion of on-line SWM facilities to off-line SWM facilities and require watercourse relocations, modification and/or or reconstruction using elements of natural channel design.                                                                                   |
| vii. Construction of New Publically Owned Facilities | Construction of new publically owned EOP stormwater management facilities within the existing urban core.  
• Practices would include wet ponds, dry ponds, hybrid facilities and subsurface storage and infiltration facilities.  
• Construction location would be limited to publically owned lands, including conservation lands and utility corridors.                                                                                                                                                    |
| viii. Construction of New Privately Owned Facilities | Construction of new publically owned EOP stormwater management facilities within the existing urban core.  
• Practices would include wet ponds, dry ponds, hybrid facilities and subsurface storage and infiltration facilities.  
• Construction location would include publically owned lands, including conservation lands and utility corridors as well as privately owned lands (agricultural and ICI lands).  
• Requires legally binding agreements and/or financial compensation (i.e. long-term leases or rental agreements)                                                                                                                                                                                                 |
<table>
<thead>
<tr>
<th>SWM Approaches</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. <strong>Do Nothing</strong></td>
<td>The do-nothing approach would entail no action or funding allocation to conveyance controls in the City of Kitchener</td>
</tr>
</tbody>
</table>
| ii. **Subsurface conveyance with Grey SWM treatment** | Inclusion of Grey SWM treatment (hydrodynamic separators (OGS) or SWM Filters) within municipal ROW construction, reconstruction and rehabilitation projects.  
- An established policy whereby Municipal roadway reconstruction and rehabilitation projects would be required to implement SWM treatment, either by retrofitting controls into existing subsurface conveyance networks or as part of subsurface conveyance network construction/reconstructions.  
- Previously identified retrofit location (OGS retrofits) would be integrated as a key component of this approach. |
| iii. **Targeted ROW Retrofits - Existing Urban Core** | Targeted ROW Retrofits using Grey SWM treatment & Low Impact Development (LD) controls for priority areas (priority watershed or sewersheds) within the existing urban core  
- An established policy whereby Municipal roadway reconstruction and rehabilitation projects within priority watershed or sewersheds within the existing urban core would be required to implement SWM treatment. Practices would include, but not limited to:  
  - Grey SWM treatment - hydrodynamic separators (OGS) or SWM Filters  
  - LID - bioswales, boulevard bioretention, bioretention bump-outs & planters, perforated pipes and permeable pavements |
| iv. **SWM Infrastructure Program & Policies for Municipal ROW Projects** | SWM Infrastructure Program & Policies for all municipally (City of Kitchener) funded ROW construction, reconstruction and rehabilitation projects within the Municipal boundaries of the City of Kitchener.  
- An established policy whereby all municipally funded roadway construction, reconstruction and rehabilitation projects be required to implement SWM treatment. Practices would include, but not limited to:  
  - Grey SWM treatment - hydrodynamic separators (OGS) or SWM Filters  
  - LID - bioswales, boulevard bioretention, bioretention bump-outs & planters, perforated pipes and permeable pavements |
| v. **SWM Infrastructure Program & Policies for all Public ROW Projects (Municipal & Region)** | SWM Infrastructure Program & Policies all Publically funded (Municipal & Region) ROW construction, reconstruction and rehabilitation projects within the Municipal boundaries of the City of Kitchener.  
- An established policy whereby all publically funded (Municipal & Region) ROW roadway construction, reconstruction and rehabilitation projects be required to implement SWM treatment. Practices would include, but not limited to:  
  - Grey SWM treatment - hydrodynamic separators (OGS) or SWM Filters  
  - LID - bioswales, boulevard bioretention, bioretention bump-outs & planters, perforated pipes and permeable pavements  
(Leading jurisdiction best practices – Portland Green Street Policy and Program requirement for LID installations or offset fee of 1% of total project cost where LID installation not possible / Seattle Green Stormwater Infrastructure program requirement for LID where land disturbance in right-of-way exceeds specific area size)
| vi. SWM Infrastructure Program & Policies for all ROW Projects (City, Region & New development) | SWM Infrastructure Program & Policies for all (Municipal, Region & New development) ROW construction, reconstruction and rehabilitation projects within the Municipal boundaries of the City of Kitchener.  
- An established policy whereby all (Municipal, Region & New development) ROW roadway construction, reconstruction and rehabilitation projects be required to implement SWM treatment. Practices would include, but not limited to:
  - Grey SWM treatment - hydrodynamic separators (OGS) or SWM Filters
  - LID - bioswales, boulevard bioretention, bioretention bump-outs & planters, perforated pipes and permeable pavements
| vii. Financial - Green Street Fund | A Green Street Fund policy would be an added component of a municipal conveyance control approach, would complement any of the approaches above and would serve as a financial incentive as well as a potential funding source.  
- An established policy would require for all public and utility projects involving the municipal ROW but not involving roadway construction, reconstruction and rehabilitation to contribute to the City’s Green Street Fund.  
- A fee set at a percentage of the total project cost (i.e. Portland sets the amount is 1% of the construction costs for the project) would need to be established and embedded in the right-of-way policy. All project funds collected would be aggregated and utilized to implement, maintain or refurbish the preferred ROW approach.
- Non-municipal ROW activities or actions may include but are not limited to: utility maintenance, relocations, reconstructions or construction projects, transit projects, road cuts etc  
(Leading jurisdiction best practices – Portland Green Street Policy and Program requirement for LID installations or offset fee of 1% of total project cost where LID installation not possible)
### Table 5 a) - Residential Source (Lot level) Control Approaches

<table>
<thead>
<tr>
<th>SWM Approaches</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. Do Nothing</td>
<td>The do-nothing approach would entail no action or funding allocation to the residential source (Lot level) controls in the City of Kitchener.</td>
</tr>
</tbody>
</table>
| ii. 3rd Party Delivery Outreach & Education | **Third Party Delivery Outreach & Education** to planning and decision-making processes pertaining to, or impacting, SWM practices by private residential property owners.  
  - The City in partnership with Residential Energy Efficiency Project (REEP Green Solutions) would provide supporting informational resources and direct expert guidance to industrial, commercial and institutional (ICI) property owners/managers to encourage implementation stormwater mitigation measures such as, rain gardens, bio-swales, stormwater ponds or engineered wetlands, rooftop or underground storage, oil-grit separators, rain water harvesting, salt management plans, etc. |
| iii. Municipal Delivery Outreach & Education | **Municipal Delivery Outreach & Education** to planning and decision-making processes pertaining to, or impacting, SWM practices by private residential property owners.  
  - The City would manage in-house and provide supporting informational resources and direct expert guidance to industrial, commercial and institutional (ICI) property owners/managers to encourage implementation stormwater mitigation measures such as, rain gardens, bio-swales, stormwater ponds or engineered wetlands, rooftop or underground storage, oil-grit separators, rain water harvesting, salt management plans, etc. |
| iv. Market-Based Strategy delivered through local service providers | **Market-based approach** to planning and decision-making processes pertaining to, or impacting, SWM practices by private residential property owners through local service providers.  
  - A market-based approach employs or stimulates the marketplace to deliver/support SWM initiatives with the ultimate goal of generating transformative, sustained changed through the use of a use of external market drivers through local service providers.  
  - Service providers, in particular those in the landscaping service sector, represent a significant and untapped opportunity to secure at-source SWM installations on residential properties.  
  - A municipally funded service provider incentive program for landscape design and/or installation contractors would act as the delivery mechanism to stimulate the marketplace to design and install (deliver/support) SWM initiatives including rain gardens, absorptive landscapes, RWH, tree plantings and enhanced permeable surfaces (i.e. permeable pavements).  
  - Certified Landscape design and/or installation contractors who achieve the minimum SWM criteria (as develop by the municipality) would qualify for the financial incentive, which could be retained by the contractor or the savings passed on to the homeowner/consumer.  
  - A key component would include a three-pronged SWM landscaping marketing and promotional initiative targeting single-family homeowners involving:  
    i. A New Landscape Paradigm focused on the aesthetic beauty and trending value of the new landscape  
    ii. A Visually-Based Outreach Campaign utilizing image-based communications to address the perceptual barrier to homeowners’ uptake of enhanced SWM landscapes and specifically targeting key areas and/or demographics  
    iii. Demonstration Projects focused on the creation of beautiful landscapes that employ SWM measures and water efficient landscaping techniques in key locations in target neighborhoods.  
  *(Leading jurisdiction best practice – York Region peak season demand reduction program targeting high seasonal water users.)* |
| v. DIY Market Strategy delivered through local retailers | Market-based approach to planning and decision-making processes pertaining to, or impacting, SWM practices by private residential property owners through local retailers aimed at the “do-it-yourself” (DIY Market) and via landscaping design/install contractors.  
  
  - A market-based approach employs or stimulates the marketplace to deliver/support SWM initiatives with the ultimate goal of generating transformative, sustained changed through the use of a use of external market drivers through local retailers.  
  
  - Strategic engagement of local retailers and landscape design/install service providers within the marketplace to drive uptake of at-source actions by property owners can create the impetus for market transformation and can magnify the impact of municipal programs, leverage limited resources and, most significantly, move the marketplace toward desired water management practices. Over the longer term, market transformation occurs. In other words, at-source SWM and pollution prevention, and water capture and reuse become imbedded practices in the marketplace or the way business is done.  
  
  - Retailers such as Local Nurseries and Garden Centres represent a significant opportunity to influence the residential marketplace. Certified retailers benefit from the municipal programs and receive status on City websites and marketing products in exchange for education, advice, products and materials which support the City’s objectives.  
  
  (Leading jurisdiction best practice – York Region and Peel Region delivery of retailer-based and contractor-based programming to reduce peak demand via landscape irrigation contractor incentive and landscape designer/installer incentive. Metropolitan Water District of Southern California Contractor Direct Rebates for irrigation and landscaping contractors: [http://socalwatersmart.com/?page_id=2985](http://socalwatersmart.com/?page_id=2985)) |
| vi. Target Markets (Priority Watersheds) | Target marketing and promotion as a key component of market-based programming. A cost-effective means of re-positioning SWM in the marketplace.  
  
  - Target marketing involves the identification of specific demographics, sectors/sub-sectors and/or geographic areas (e.g., priority watershed or sewersheds) to which tailored marketing and promotion is targeted.  
  
  - This approach allows customization of messages and materials, targeted use of demonstration projects and outreach initiatives, focuses resources where they are most needed, and enables program tracking and measurement.  
  
  - Can be combined with enhanced financial incentives, based on a return-on-investment (ROI) analysis and risk assessment evaluation. |
<table>
<thead>
<tr>
<th>SWM Approaches</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. Do Nothing</td>
<td>The do-nothing approach would entail no action or funding allocation to the ICI source (Lot level) controls in the City of Kitchener</td>
</tr>
<tr>
<td>ii. 3rd Party Delivery Outreach &amp; Education</td>
<td><strong>Third Party Delivery Outreach &amp; Education to planning and decision-making processes pertaining to, or impacting, SWM practices by private ICI property owners.</strong></td>
</tr>
<tr>
<td></td>
<td>- The City in partnership with Residential Energy Efficiency Project (REEP Green Solutions) would provide supporting informational resources and direct expert guidance to industrial, commercial and institutional (ICI) property owners/managers to encourage implementation stormwater mitigation measures such as, rain gardens, bio-swales, stormwater ponds or engineered wetlands, rooftop or underground storage, oil-grit separators, rainwater harvesting, salt management plans, etc.</td>
</tr>
<tr>
<td>iii. Municipal Delivery Outreach &amp; Education</td>
<td><strong>Municipal Delivery Outreach &amp; Education to planning and decision-making processes pertaining to, or impacting, SWM practices by private ICI property owners.</strong></td>
</tr>
<tr>
<td></td>
<td>The City would manage in-house and provide supporting informational resources and direct expert guidance to industrial, commercial and institutional (ICI) property owners/managers to encourage implementation stormwater mitigation measures such as, rain gardens, bio-swales, stormwater ponds or engineered wetlands, rooftop or underground storage, oil-grit separators, rainwater harvesting, salt management plans, etc.</td>
</tr>
<tr>
<td>iv. Market Based Strategy delivered through local service providers</td>
<td><strong>Market-based approach to planning and decision-making processes pertaining to, or impacting, SWM practices by private ICI property owners through local service providers.</strong></td>
</tr>
<tr>
<td></td>
<td>- A market-based approach employs or stimulates the marketplace to deliver/support SWM initiatives with the ultimate goal of generating transformative, sustained changes through the use of a use of external market drivers through local service providers.</td>
</tr>
<tr>
<td></td>
<td>- Service providers, in particular those in the landscaping service sector, represent a significant and untapped opportunity to secure at-source SWM installations on residential properties.</td>
</tr>
<tr>
<td></td>
<td>- A municipally funded service provider incentive program for landscape design and/or installation contractors would act as the delivery mechanism to stimulate the marketplace to design and install (deliver/support) SWM initiatives including rain gardens, absorptive landscapes, RWH, tree plantings and enhanced permeable surfaces (i.e. permeable pavements).</td>
</tr>
<tr>
<td></td>
<td>- Certified Landscape design and/or installation contractors who achieve the minimum SWM criteria (as develop by the municipality) would qualify for the financial incentive, which could be retained by the contractor or the savings passed on to the homeowner/consumer.</td>
</tr>
<tr>
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<td>- A key component would include a three-pronged SWM landscaping marketing and promotional initiative targeting single-family homeowners involving:</td>
</tr>
<tr>
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<tr>
<td></td>
<td>iii. Demonstration Projects focused on the creation of beautiful landscapes that employ SWM measures and water efficient landscaping techniques in key locations in target neighbourhoods.</td>
</tr>
<tr>
<td><strong>(Leading jurisdiction best practice – York Region and Peel Region delivery of retailer-based and contractor-based programming to reduce peak demand via landscape irrigation contractor incentive and landscape designer/installer incentive / Metropolitan Water District of Southern California Contractor Direct Rebates for irrigation and landscaping contractors)</strong></td>
<td></td>
</tr>
</tbody>
</table>
### v. Market Based Strategy with Water Innovation Hub

Market-based approach to planning and decision-making processes pertaining to, or impacting, SWM practices by private ICI property owners.

- A market-based approach employs or stimulates the marketplace to deliver/support SWM initiatives with the ultimate goal of generating transformative, sustained change through the use of external market drivers through strategic advertisements, promotional initiatives including municipal pilot projects and recognition/award programs.
- Inclusion and funding of a Water Innovation Hub to bring together business leaders, academics, non-government organization specialists, and government experts to identify, vet, and foster innovation.
  - Kitchener-Waterloo hosts numerous large corporations, small- and mid-sized enterprises, two universities and a college representing a vast resource of experience, know-how and abilities.
  - This collective and untapped resource could be brought to bear via a water innovation hub to tackle SWM and other water management challenges and generate new and innovative opportunities to advance all levels of water management in the City and the Region.
  - The establishment of a Water Innovation Hub is consistent with the City’s Downtown Kitchener Action Plan (2012 – 2016), which indicates the formation of “an Innovation District” as one of four core areas of focus for the economic development and vitality of the City centre.

### vi. Financial Drivers

Use of a variety of financial incentives, which may include but is not limited to:

- Adjusted SWM Utility Fee structure
- Financial incentives & Low interest financing (i.e. grants and 0% interest loans)
- Rebates/ Subsidy programs – one time injection of funds to implement source controls
- ‘Feebates’ – ongoing reduction in SWM Utility Fee charge
- Aggregation of properties
- SWM Credit Trading


### vii. Strategic Joint Ventures

An added component of a Market-based approach to planning and decision-making processes pertaining to, or impacting, SWM practices by private ICI property owners.

- Identifying potential synergies with external organizations and business and developing strategic joint venture agreements for delivery of complementary programs is an effective means of securing higher uptake and leveraging of resources.

### viii. Source Control Standards for Municipal Properties

A supplemental to all approaches listed above. Source Control Standards for Municipal Properties would create mandatory source controls requirements and standards for all municipal properties within the ICI sector.

- A component of the external market drivers of a Market Based Approach – source controls requirements and standards would create numerous municipal pilot projects for use in promotional initiatives and would represent tangible examples of the City ‘leading by example.’

Leading Jurisdiction best practices – Minnesota Stormwater Management for Development and Re-development Ordinance requiring on-site SWM for any land disturbance on CI properties in excess of 1 acre unless exemption is provided.
<table>
<thead>
<tr>
<th></th>
<th>Target Markets (Priority Watersheds)</th>
<th>Property Aggregation Incentive</th>
</tr>
</thead>
</table>
| ix. | Target marketing and promotion as a key component of market-based programming. A cost-effective means of re-positioning SWM in the marketplace.  
- Target marketing involves the identification of specific demographics, sectors/sub-sectors and/or geographic areas (e.g., priority watershed or sewersheds) to which tailored marketing and promotion is targeted.  
- This approach allows customization of messages and materials, targeted use of demonstration projects and outreach initiatives, focuses resources where they are most needed, and enables program tracking and measurement.  
- Can be combined with enhanced financial incentives, based on a return-on-investment (ROI) analysis and risk assessment evaluation. | Property Aggregation Incentive would involve the establishment of an incentive and administrative mechanisms to enable the aggregation of non-residential privately-owned properties for SWM utility credit.  
- Program may include a grant program to encourage non-residential property owners to implement SWM measures covering multiple properties. By offering a grant or low/no-interest financing program in conjunction with credit banking or credit trading would encourage non-residential property owners/managers to develop and implement SWM practices to address multiple properties in a drainage area.  
- Allowing for the aggregation of properties/Grid Low Impact Development (Grid LID) has the potential to bring payback periods down to justifiable investment levels for business property owners (long payback period for SWM investments for individual non-residential property owners was identified as a significant barrier to implementation). In addition to grants, bankable and tradable SWM credits based on the value of the loading reduction to the City’s SWM system would serve as an added financial incentive for property owners.  
<table>
<thead>
<tr>
<th>SWM Approaches</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. Do Nothing</td>
<td>The do-nothing approach would entail no action or funding allocation to Pollution prevention approaches in the City of Kitchener.</td>
</tr>
<tr>
<td>ii. Enhanced Street Sweeping</td>
<td>Implement an enhanced street sweeping program to reduce sediment and pollutant loading to EOP SWM infrastructure and receivers. The approach also serves to lower operation &amp; maintenance costs (O&amp;M) related to EOP SWM facility maintenance, refurbishment and sediment removal.</td>
</tr>
<tr>
<td>iii. Enhanced Catch-basin (CB) Cleaning</td>
<td>Implement an enhanced catch-basin (CB) cleaning program to reduce sediment and pollutant loading to EOP SWM infrastructure and receivers. The approach also serves to lower operation &amp; maintenance costs (O&amp;M) related to EOP SWM facility maintenance, refurbishment and sediment removal.</td>
</tr>
</tbody>
</table>
| iv. Pollution Prevention (P²) Inspections | Develop a program and policy for pollution prevention (P²) inspections for ICI properties. Program can be administered and undertaken by the municipality or via third party delivery.  
Issuance of order to comply with P² policy based on inspection results. Potential for penalties for non-compliance.  
Program can be integrated with the existing Stormwater Credit policy. |
| v. Incentivize Smart About Salt Program | Incentivize the RMOW Smart About Salt Program for residential and non-residential property owners and local service providers. Program can be integrated with the existing Stormwater Credit policy. |
### Table 7 - New Development Approaches

<table>
<thead>
<tr>
<th>SWM Approaches</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. Do Nothing</td>
<td>The do-nothing approach would entail no action or funding allocation to new development approaches in the City of Kitchener.</td>
</tr>
<tr>
<td>ii. Financial Incentives</td>
<td>Use of a variety of financial incentives to encourage new development to implement the preferred SWM approaches. Financial incentives may include but is not limited to:</td>
</tr>
<tr>
<td></td>
<td>• Rebates/ Subsidy programs – one time injection of funds to implement preferred approaches</td>
</tr>
<tr>
<td></td>
<td>• DC reductions – specifically in priority watershed or sewersheds</td>
</tr>
<tr>
<td></td>
<td>• Allow for qualification for Stormwater credit upon sale of house – transferable from builder to buyers. Represents and marketing opportunity for the development industry.</td>
</tr>
<tr>
<td>iii. Non-Financial Incentives</td>
<td>Use of a variety of non-financial incentives to encourage new development to implement the preferred SWM approaches. Financial incentives may include but is not limited to:</td>
</tr>
<tr>
<td></td>
<td>• Expedited Permitting – can include an expedited review and approval process for development projects that employ SWM measures beyond required site plan approval levels. The most significant barriers to the use of enhanced and innovative SWM measures by builders/developers are the costs and the difficulty in securing timely review and approvals. Expedited permitting involves fast tracking review and approval of development applications through a designated green building approvals process. Two primary models exist: a team of experts involved throughout the approval process or a single expert shepherding the project through the approval process.</td>
</tr>
<tr>
<td></td>
<td>• Bonusing Strategies - by evaluate modifying Section 5 of the City of Kitchener Zoning By-law (85-1) to allow for increases in building height and Floor Area Ratio bonuses. The cost of enhanced SWM measures such as rain gardens, bioswales, exfiltration systems, eco-/green roofs, rain water harvesting, porous paving, etc., results in their limited application in new development. Such SWM enhancements have occurred, but on an ad hoc, case-by-case basis involving negotiations between the City and the builders/developer. Green building requirements for bonus qualification must be stringent, non-negotiable and in law.</td>
</tr>
<tr>
<td></td>
<td>• Allocation Grants – priority or increased allocation of water and waste water for development projects that employ SWM measures beyond required site plan approval levels and include SWM measures such as rain gardens, bioswales, exfiltration systems, eco-/green roofs, rain water harvesting, porous paving, etc.</td>
</tr>
<tr>
<td></td>
<td>(Leading jurisdictions best practices – Vancouver, Ottawa, Toronto, San Francisco, Berkeley, Seattle, Philadelphia, Chicago, and Boston offer one or more of the following non-monetary incentives; expedited review and approvals FAR or density bonuses and allocation bonuses.)</td>
</tr>
<tr>
<td>iv. Mandatory Policy</td>
<td>Development of mandatory minimum SWM requirement for all new development in the City of Kitchener relating to water quality, quantity, erosion control, water balance (infiltration) and stormwater volume controls.</td>
</tr>
<tr>
<td></td>
<td>• Minimum criteria to be in accordance with pending MOECC minimum SWM volume criteria.</td>
</tr>
</tbody>
</table>
Response Form 1: Draft Market-Based Strategy Report
City of Kitchener

CLASS ENVIRONMENTAL ASSESSMENT
CITY OF KITCHENER INTEGRATED STORMWATER MANAGEMENT MASTER PLAN

1. Contact Name: ____________________________________________________________

2. Agency/ Organization/ Office: ____________________________________________

3. Address: ______________________________________________________________
   Postal Code: ______________
   Phone No: _____________________
   Email: _______________________

4. Do you agree or disagree with any of the identified opportunity or constraint themes for the Industrial & Commercial Sector?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

5. Do you agree or disagree with any of the identified opportunity or constraint themes for the Residential Sector?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

6. Would you support or do you agree some or all of the recommendations? If so which ones and why?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Thank you for your participation in this study!
7. Would you **not support** or **do you disagree** some or all of the recommendations? If so which ones and why?


8. Please note specific comments and/or concerns in regards to the **Draft Market-Based Strategy Report**. Please attach additional sheets if necessary.


Signature_________________________ Date_________________________

Please return to this form by **October 31, 2015** to:

Nick Gollan
Manager, Stormwater Utility
City of Kitchener
200 King St. W.
Kitchener, Ontario
N2G 4G7

Tel.: (519) 741-2200 x7422
Fax: (519) 741-2230
E-mail: nick.gollan@kitchener.ca

Thank you for your participation in this study!
Response Form 2: Draft SWM Approaches

City of Kitchener

CLASS ENVIRONMENTAL ASSESSMENT
CITY OF KITCHENER INTEGRATED STORMWATER MANAGEMENT MASTER PLAN

1. Contact Name: ________________________________
2. Agency/ Organization/ Office: ________________________________
3. Address: ____________________________________________
   Postal Code: ________________
   Phone No: _____________________________
   Email: ______________________________

4. Do you support or agree with the application of the Treatment Train Approach to stormwater management? and why?
   ____________________________________________
   ____________________________________________
   ____________________________________________
   ____________________________________________
   ____________________________________________

5. Do you have any suggestions or comments on the Urban Flood Management Approaches?
   ____________________________________________
   ____________________________________________
   ____________________________________________
   ____________________________________________
   ____________________________________________

6. Do you have any suggestions or comments on the Erosion and Stream System Understanding Approaches?
   ____________________________________________
   ____________________________________________
   ____________________________________________
   ____________________________________________
   ____________________________________________

Thank you for your participation in this study!
7. Do you have any suggestions or comments on the **End-of-Pipe Control Approaches**?

   __________________________________________________________

   __________________________________________________________

   __________________________________________________________

   __________________________________________________________

8. Do you have any suggestions or comments on the **Conveyance Control Approaches**?

   __________________________________________________________

   __________________________________________________________

   __________________________________________________________

   __________________________________________________________

9. Do you have any suggestions or comments on the **Residential Source (Lot level) Control Approaches**?

   __________________________________________________________

   __________________________________________________________

   __________________________________________________________

   __________________________________________________________

10. Do you have any suggestions or comments on the **Industrial-Commercial-Institutional (CI) Source (Lot level) Control Approaches**?

    __________________________________________________________

    __________________________________________________________

    __________________________________________________________

    __________________________________________________________

Thank you for your participation in this study!
11. Do you have any suggestions or comments on the **Pollution Prevention Approaches**?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

12. Do you have any suggestions or comments on the **New Development Approaches**?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

13. Please note specific comments and/or concerns in regards to **Draft SWM Approaches**. Please attach additional sheets if necessary.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

14. Do you wish to be notified for continued involvement in the project process, up to and including the release of the final study documentation? **Yes** ______ **No** ______

Signature __________________________ Date __________________________

Please return to this form by **October 31, 2105** to:

Nick Gollan  
Manager, Stormwater Utility  
City of Kitchener  
200 King St. W.  
Kitchener, Ontario  
N2G 4G7  
Tel.: (519) 741-2200 x7422  
Fax: (519) 741-2230  
E-mail: nick.gollan@kitchener.ca

*Thank you for your participation in this study!*
## CPAC Newsletter No. 3

The following organizations have provided comments in regards to CPAC Newsletter No.3.

<table>
<thead>
<tr>
<th>Organization</th>
<th>Comment</th>
<th>Response</th>
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| **Kitchener Environmental Committee** | Do you **agree** or **disagree** with any of the identified opportunity or constraint themes for the Industrial & Commercial Sector?                                                                 | 1. Long payback period was identified as a barrier by ICI respondents. This was not an assumption put forward by the project team or the City but rather is reflective of what the ICI sector currently perceives. Optimizing the SWM Credits is part of the Master plan scope and remains as an optional 'lever' in target sewersheds or subwatersheds.  
2. Noted. Harming competitive advantage was a constraint identified by respondents. Part of the Market Transformation strategy is the concept of creating incentives to industry, possibly through education and other mechanisms for the industry to employ progressive SWM controls.  
3. GI on public buildings and in public spaces is already included as a recommendation – in fact the City has already completed a permeable pavement parking lot pilot project at the Huron Natural Area.  
4. Noted. Under 2 to 3 year payback was identified by research respondents as a motivator for investment.  
5. Agreed.  
6. Multi-family residential as well as strategies to deal with general intensification have been incorporated into the draft Infiltration Policy Recommendations as well as the pending Minimum Volume Targets Report.  
7. Agreed. Education and outreach will be an ongoing theme coming out of the Master Plan. Changing the public’s perception as to what is “most practical” needs to change as well. |
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| 7. | In the residential constraints, a recurring theme is that homeowners don’t like naturescape etc. Part of the SWMMP must be how the City can help the cultural change occur that sees naturescape as the most beautiful and best. This can happen and does happen. An interesting example is how people’s attitudes to outdoor water use have changed because of the educational actions of the Region. Also Kitchener should set an example by using G-I in their own projects and making the people in the community aware of these. For example, when the City rebuilt King St in the main downtown blocks and changed the drainage system and plantings to reflect GI. Unfortunately most people don’t realize the positive related to that because there isn’t signage explaining what was done and why. All most people think is that it is a different kind of plantings. In Mississauga, they build a major GI system in a park. They have well-designed signs in the park explaining what they did. I notice there that people wandering through the park stop and read the signs. This can have a major impact on their openness to do such things on their own property. The culture will change, but help must be provided.

Would you support or do you agree some or all of the recommendations? If so which ones and why?

8. Very pleased with the recommendations on page 8 for integrated water management and IWM steering committee. The only adjustment I would recommend for that it to go beyond including the Region and the GRCA in it. The other municipalities in the Region and perhaps in the watershed would also need to be included. It may make sense to have the Region or GRCA take the lead in exploring this. I think this is a very important initiative and urge the City to pursue it.

9. The water innovation hub is also an exciting recommendation.

10. The municipal functions and operations recommendations are very good.

11. I am fine with the other recommendations except for the couple listed in question 7 below.

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| 8. | Thank-you for your support. It is being considered, potentially as part of a larger group which includes already established organizations.


10. Thank-you

11. Noted
<table>
<thead>
<tr>
<th>Would you <strong>not support</strong> or <strong>do you disagree</strong> some or all of the recommendations? If so which ones and why?</th>
</tr>
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<tbody>
<tr>
<td>12. On the market-based approach on page 8, I would make two adjustments. First, it needs to emphasize “full costs” approach. Otherwise it can’t work. Secondly, market-based should only be one aspect of the approach. The other is to make substantial changes in the requirements for SWM to require G-I as a basic part of the SWM system.</td>
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<tr>
<td>13. On the municipal functions and operations recommendations section, I would add a recommendation (commitment by the City) to make G-I approach to be a core component of all their projects and too include in these projects an educational component to help people come to understand and value GI.</td>
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Please note specific comments and/or concerns in regards to the Draft Market-Based Strategy Report. Please attach additional sheets if necessary.

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<tr>
<th>12. City infrastructure financing is currently full cost recovery. Total cost of needed SWM infrastructure is being addressed in MP. In addition the Market Based Strategies put forward are only one component of the SWM Master Plan which are outlined in the following reports:</th>
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<tbody>
<tr>
<td>o Draft End-of-pipe SWM Facility Opportunities Report with Appendices</td>
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<tr>
<td>o Draft Municipal ROW (Conveyance Control) Retrofit Assessment Opportunities Report (separate Appendices)</td>
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<tr>
<td>o Draft Infiltration Policy Recommendations</td>
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<tr>
<td>o Draft Stormwater Management Facilities Catchment Report</td>
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<td>o Draft Sediment Analysis Memo: SWM Facilities and OGS Units</td>
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<tr>
<td>o Draft Erosion Assessment Report</td>
</tr>
<tr>
<td>13. Innovative SWM controls are being integrated into various City undertaking including capital roadway projects, parks, transit, trails etc. See the documents listed above.</td>
</tr>
</tbody>
</table>

| 14. A fundamental issue missing throughout this whole strategy is the principle that stormwater fees should reflect the real costs of the environmental damage, financial costs, etc from inadequate SWM. Also how much money do we need in the SWM pot in order to get the SWM system to a status that we want. A fundamental problem is that our failure to do full costs means that credit programs are not as effective as they could be. |
| 15. I am also concerned with the program being almost totally based on a market-based strategy, which means that it is focused on how we entice people to do the right thing. This is important, but it is also important to look at what types of actions are acceptable and what types are not acceptable and to then define what must be done by the developer, home-owner etc regardless of whether they can be financially enticed into it. |
| 16. Another concern is that institutions (municipal facilities, schools, universities, churches, etc) are not included. What percent of the stormwater runoff comes from these types of facilities? I am sure that it is substantial. Therefore, we must |

| 14. Per the previous response, City infrastructure financing is currently full cost recovery. Total cost of needed SWM infrastructure is being addressed in Master Plan. |
| 15. Noted. Per response 12, the Market Based Strategies put forward are only one component of the SWM Master Plan which are outlined in noted reports and will be strengthened through the use of the pending Minimum Volume Targets Report. |
| 16. In regards to municipal facilities, the Draft Infiltration Policy Recommendations provides guidance with regards to municipal facilities and the Master Plan will address the various opportunities that existing within parks, community centres and other municipal building and the importance of ‘leading by example’ - note that the City has completed several projects using innovative stormwater controls on municipal property, including most recently as part of a permeable pavement parking lot pilot project at the Huron Natural Area. Institutional (Universities and Churches) properties are also addressed in the Policies. |

As far as schools properties are concerned, a letter was received from the Ministry of Education on November 20th, 2013, advising the City of Kitchener of the Ministry of Education’s position regarding the authority of
| put in strategies and actions for all of these. Also residential and business people legitimately see it as an unfair system if institutions aren’t setting a good example. | municipalities to levy a stormwater management (SWM) user fee on school boards. While we acknowledge the Ministry of Education’s position on this matter, the city respectfully disagrees with it although we will abide by it. We are pleased that the letter indicated the province’s support of our SWM cost recovery initiative which is in line with provincial policy and regulations. As has been noted, this user fee is fair, equitable and encourages increased sustainability and protection of our water resources. Given the significant success of this program to date, we believe that as more municipalities implement SWM utility models based on Kitchener and Waterloo’s model, the province will need to revisit its current position on this matter. The cities also reserve their right to revisit this matter at some time in the future, if it is deemed necessary. |
Response Form 1: Draft Market-Based Strategy Report
City of Kitchener

CLASS ENVIRONMENTAL ASSESSMENT
CITY OF KITCHENER INTEGRATED STORMWATER MANAGEMENT MASTER PLAN

1. **Contact Name:** John Jackson

2. **Agency/ Organization/ Office:** Kitchener Environment Advisory Committee

3. **Address:** 17 Major St

   **Postal Code:** N2H 4R1

   **Phone No:** 519-744-7503

   **Email:** jjackson@web.ca

4. Do you **agree** or **disagree** with any of the identified opportunity or constraint themes for the Industrial & Commercial Sector?

   Constraints Industrial & Commercial Sector: 1. Payback period is too long – this reflects that the SWM fees and credits are not large enough – it also reflects that owners should have a responsibility to handle stormwater by the best techniques whether it “pays off” or not. These actions must be taken to avoid flooding, habitat destruction, water pollution, etc.

   Constraints Builders/Developers & Service Providers: Hurts competitive situation if they go beyond the requirements. This is certainly true and reflects that the standards/requirements are not high enough. For example, if all roofers are required to do certain g-I actions, the competitive advantage goes to those roofers most experienced in taking these kind of progressive actions. To help address this, the municipality should provide educational sessions for builders & service providers. Also City should set an example by the actions they take on their own projects and promote these to help the public and providers find out that it works and that they like it.

   The items listed as “opportunities” under industrial and commercial aren’t significant opportunities because they are all focused on quick pay-back periods.

   The items listed as opportunities for builders/developers and service providers are all significant opportunities and should be followed up on.

5. Do you **agree** or **disagree** with any of the identified opportunity or constraint themes for the Residential Sector?

   Thank you for your participation in this study!
The actions here are all focused on single-family homes. As we emphasize intensification of development in our Region and City, we must put serious focus on looking at actions to be taken in multi-family residential developments, including retrofitting the existing multi-family developments.

In the residential constraints, a recurring theme is that homeowners don’t like naturescape etc. Part of the SWMMP must be how the City can help the cultural change occur that sees naturescape as the most beautiful and best. This can happen and does happen. An interesting example is how people’s attitudes to outdoor water use have changed because of the educational actions of the Region. Also Kitchener should set an example by using G-I in their own projects and making the people in the community aware of these. For example, when the City rebuilt King St in the main downtown blocks and changed the drainage system and plantings to reflect G-I. Unfortunately most people don’t realize the positive related to that because there isn’t signage explaining what was done and why. All most people think is that it is a different kind of plantings. In Mississauga, they build a major G-I system in a park. They have well-designed signs in the park explaining what they did. I notice there that people wandering through the park stop and read the signs. This can have a major impact on their openness to do such things on their own property. The culture will change, but help must be provided.

6. Would you support or do you agree some or all of the recommendations? If so which ones and why?

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The water innovation hub is also an exciting recommendation.

The municipal functions and operations recommendations are very good.

I am fine with the other recommendations except for the couple listed in question 7 below.

Thank you for your participation in this study!
7. Would you not support or do you disagree some or all of the recommendations? If so which ones and why?

On the market-based approach on page 8, I would make two adjustments. First, it needs to emphasize “full costs” approach. Otherwise it can’t work. Secondly, market-based should only be one aspect of the approach. The other is to make substantial changes in the requirements for SWM to require G-I as a basic part of the SWM system.

On the municipal functions and operations recommendations section, I would add a recommendation (commitment by the City) to make G-I approach to be a core component of all their projects and too include in these projects an educational component to help people come to understand and value G-I.

8. Please note specific comments and/or concerns in regards to the Draft Market-Based Strategy Report. Please attach additional sheets if necessary.

A fundamental issue missing throughout this whole strategy is the principle that stormwater fees should reflect the real costs of the environmental damage, financial costs, etc from inadequate SWM. Also how much money do we need in the SWM pot in order to get the SWM system to a status that we want. A fundamental problem is that our failure to do full costs means that credit programs are not as effective as they could be.

I am also concerned with the program being almost totally based on a market-based strategy, which means that it is focused on how we entice people to do the right thing. This is important, but it is also important to look at what types of actions are acceptable and what types are not acceptable and to then define what must be done by the developer, home-owner etc regardless of whether they can be financially enticed into it.

Another concern is that institutions (municipal facilities, schools, universities, churches, etc) are not included. What percent of the stormwater runoff comes from these types of facilities? I am sure that it is substantial. Therefore, we must put in strategies and actions or all of these. Also residential and business people legitimately see it as an unfair system if institutions aren’t setting a good example.

Thank you for your participation in this study!
Signature __________________________ Date November 2, 2002

Nick Gollan
Manager, Stormwater Utility
City of Kitchener
200 King St. W.
Kitchener, Ontario
N2G 4G7

Tel.: (519) 741-2200 x7422
Fax: (519) 741-2230
E-mail: nick.gollan@kitchener.ca

Thank you for your participation in this study!
Response Form 2: Draft SWM Approaches

City of Kitchener

CLASS ENVIRONMENTAL ASSESSMENT
CITY OF KITCHENER INTEGRATED STORMWATER MANAGEMENT MASTER PLAN

1. Contact Name:  John Jackson

2. Agency/ Organization/ Office: Kitchener Environment Advisory Committee

3. Address:  17 Major St
   Postal Code:  N2H 4R1
   Phone No:  519-744-7503
   Email:  jjackson@web.ca

4. Do you support or agree with the application of the Treatment Train Approach to stormwater management? and why?

I agree with the treatment train approach to SWM as described. I wish to emphasize the statements in that section that the emphasis must be on source control and conveyance control.

In all cases, the “do nothing” approach is not adequate. Assume that this comment is in all of the following questions, even though I don’t repeat it.

5. Do you have any suggestions or comments on the Urban Flood Management Approaches?

This is almost totally pipe-oriented. Put more emphasis on assessing how G-I measures can help reduce the pressure on the pipe system. See G-I as something that combines with pipes to help solve the flooding problem.

Thank you for your participation in this study!
6. Do you have any suggestions or comments on the **Erosion and Stream System Understanding Approaches**?

No comment. All are important methods.

Thank you for your participation in this study!
7. Do you have any suggestions or comments on the End-of-Pipe Control Approaches?

No comment here. All are useful.

8. Do you have any suggestions or comments on the Conveyance Control Approaches?

Recommendations here are all very good. I like the repeated references to needing to consider Low Impact Development (G-I) in all cases. However, it needs to be stated more strongly to show that the expectation is that G-I will be part of the solution in all cases – not just an alternative that is considered and then can be rejected.

Recommendations vi and vii around funding are very important.

9. Do you have any suggestions or comments on the Residential Source (Lot level) Control Approaches?

No comment

10. Do you have any suggestions or comments on the Industrial-Commercial-Institutional (CI) Source (Lot level) Control Approaches?

No Comment

Thank you for your participation in this study!
11. Do you have any suggestions or comments on the **Pollution Prevention Approaches**?

All programs important here, but want to especially mention the Smart Salt program because this is a serious problem in our region.

12. Do you have any suggestions or comments on the **New Development Approaches**?

All are important. I particularly like the “expedited permitting” aspect. I would do some rewording of it to show that the method is “integrated permitting” where all aspects of water issues are being addressed at one spot in an integrated way. I would also link this back to your earlier recommendation for Integrated Water Management.

I stress the “Mandatory Policy” part in your last approach here. It is essential that the mandatory requirements be serious if we are to achieve the potential of the new approach to SWM. The City should work hard to persuade the Province to set strong SWM criteria.

13. Please note specific comments and/or concerns in regards to **Draft SWM Approaches**.

Please attach additional sheets if necessary.

Additional aspects that apply through much of what was written in the report. Sometimes the recommendations referred to “leading jurisdiction best practices.” The City should seriously pursue these leading edge practices.

**COMMENTS ON PAC CYBER COMMITTEE PROCESS:**

This has not felt like a committee process – cyber or not. I had assumed when it was described as a cyber committee that there would be mechanisms set up for us to share our views on the materials we review with each other and to have on-line discussions – not that I tend to get involved in on-line discussions because I don’t find them very satisfactory. But there has been absolutely no opportunity to find out what other people on the committee are thinking or to have discussion. So it is a misnomer to call this a “committee.” I think that we are missing the value that can be gained by the creative interaction of committee members.

Secondly, there has been absolutely no feedback on the comments that we have submitted thus far. It feels like we are submitting them into a vacuum where we don’t even know if they were read or had any effect on what is happening on the study. After each time we submit

*Thank you for your participation in this study!*
comments, we should receive a responsiveness document that summarizes the comments received and the City’s or consultant’s response to them.

14. Do you wish to be notified for continued involvement in the project process, up to and including the release of the final study documentation? Yes______X____ No ______

Signature ___________________ Date Nov 2 2015

Please return to this form by **October 31, 2105** to:

Nick Gollan  
Manager, Stormwater Utility  
City of Kitchener  
200 King St. W.  
Kitchener, Ontario  
N2G 4G7  
Tel.: (519) 741-2200 x7422  
Fax: (519) 741-2230  
E-mail: nick.gollan@kitchener.ca

*Thank you for your participation in this study!*