APPENDIX H
Public Consultation Responses

Comments Received Prior to Public Information Centre #1

Melody Brown

From: [redacted]
Sent: Friday, September 21, 2012 4:51 PM
To: Markham Pond EA
Subject: flooding
Follow Up Flag: Follow up
Flag Status: Completed

email typo first time

----- Original Message -----
From: [redacted]
To: markhampondretorfitea@coleengineering.ca ; clam@markham.ca
Sent: Friday, September 21, 2012 4:49 PM
Subject: flooding

I am a new resident at [redacted] just north of BCSS.
It would be interesting to know, which firms were involved in designing and landscaping for that property because clearly they were out of their league given the flooding that occurred recently which had the entire football field (artificial turf) looking about 2 feet underwater. This also affected the eastern side of Main Street to a shocking degree and so clearly, the rivercourse in general, has been poorly "engineered."
To me, it looked like the water levels were at minimum, 3 feet above ground, flooding not only the walkway through the park to my southeast, but the entire area, which is likely designated a flood plain. The Town garbage cans were completely underwater as well.
It took a long time to dissipate and with the second set of rains, was once again severely flooded.
It seems clear to me that sewage is flowing through these rivercourses as well which I have noticed for several years in the areas here (by the smell) but moreso north of highway 7, both west and east of Kennedy.
[redacted]

Melody Brown

From: [redacted]
Sent: Saturday, September 22, 2012 2:22 PM
To: Markham Pond EA
Subject: Markham SWM EA
Follow Up Flag: Follow up
Flag Status: Completed

Please add me to the mailing/contact list for this EA.

Thank you,

[redacted]

Melody Brown

From: Geoff Masotti
Sent: Tuesday, October 09, 2012 3:59 PM
To: Markham Pond EA
Subject: FW: Markham SWM Retrofit - Mailing List

FYI

Geoff Masotti, P.Eng.
Project Manager, Water Resources

Cole Engineering Group Ltd.
70 Valleywood Drive, Markham, ON Canada L3R 4T5
T: 905-940-6161 Ext. 254 Tor. Line: 416-987-6161
C: 416-230-9222 F: 905-940-2064
E: gmasotti@ColeEngineering.ca
www.ColeEngineering.ca

From: Tam, Cynthia [mailto:CTam@markham.ca]
Sent: Tuesday, October 09, 2012 2:26 PM
To: Geoff Masotti
Subject: Markham SWM Retrofit - Mailing List

Hi Geoff:

A resident contacted me and mentioned that she and her husband would like to be added on the mailing list so that they would be notified of any public meetings and get involved. The following is her contact information:

Contact Name: [redacted]
Address: [redacted]
Phone Numbe[redacted]
Email: [redacted]

Please add the resident to the list. Thanks!!

Regards,

Cynthia Tam, M.Eng., P.Eng., PMP
Environmental Engineer
Asset Management Department
City of Markham . 8100 Warden Ave . Markham . Ontario . L6G 1B4
e: ctam@markham.ca . t: 905.477.7000 x 2357 . f: 905.479.7766

Melody Brown

From: [redacted]
Sent: Friday, November 02, 2012 1:38 PM
To: Markham Pond EA
Subject: Notice of Study Commencement, Class EA for Stormwater Management Facilities Retrofit

Could you please add my name to the distribution list for this project. Thank you.

[redacted]

Melody Brown

From: Tam, Cynthia [CTam@markham.ca]
Sent: Wednesday, February 13, 2013 8:51 AM
To: Kathleen Mulroy; Markham Pond EA
Subject: RE: Class EA - Markham Stormwater Management Facilities Retrofit Study

Good morning Kathleen:

We are glad that Town of Richmond Hill shows interest in this study. We will place you on the mailing list as the contact person for Richmond Hill.

Thank you,

Cynthia Tam, M.Eng., P.Eng., PMP
Environmental Engineer
Asset Management Department
City of Markham . 8100 Warden Ave . Markham . Ontario . L6G 1B4
e: ctam@markham.ca . t: 905.477.7000 x 2357 . f: 905.479.7766

From: Kathleen Mulroy [mailto:kathleen.mulroy@richmondhill.ca]
Sent: February 13, 2013 8:24 AM
To: Tam, Cynthia; MarkhamPondRetrofitEA@coleengineering.ca
Subject: Class EA - Markham Stormwater Management Facilities Retrofit Study

Good morning Cynthia and Geoff,

I would like to acknowledge our receipt of Notice of Public Information Open House for the City of Markham's Stormwater Management Facilities Retrofit Study. This is a very interesting study and we would like to be kept on the project mailing list for future updates. I would respectfully request changing the current contact person to myself.

Warm regards,

Kathleen Mulroy, M.Sc.
Water Resources Coordinator
Environment & Infrastructure Services
Town of Richmond Hill
Telephone: 905-771-5539
Fax: 905-771-2405
Email: kathleen.mulroy@richmondhill.ca

Richmond Hill CELEBRATING 14 YEARS!

Melody Brown

From: [redacted]
Sent: Tuesday, November 06, 2012 9:26 AM
To: Markham Pond EA
Subject: Please add me to mailing list

Thanks,
[redacted]
Sent from my BlackBerry device on the Rogers Wireless Network

Melody Brown

From: Tam, Cynthia [CTam@markham.ca]
Sent: Thursday, February 21, 2013 10:26 AM
To: Geoff Masotti
Cc: Melody Brown
Subject: FW: City - Stormwater Management Retrofit EA

Follow Up Flag: Follow up
Flag Status: Red

Geoff:

FYI, please find below email conversation enquiring information for the SWM Retrofit. The lady is highly engaged to the West Thornhill Flood Implementation, and has concern on stormwater quality issues. The West Thornhill project is currently on-going, and the decision of whether OGS will be applied at stormsewer outlets will be made in probably two weeks.

Regards,

Cynthia Tam, M.Eng., P.Eng., PMP
Environmental Engineer
Asset Management Department
City of Markham . 8100 Warden Ave . Markham . Ontario . L6G 1B4
e: ctam@markham.ca . t: 905.477.7000 x 2357 . f: 905.479.7766

-----Original Message-----
From: Tam, Cynthia
Sent: February 19, 2013 3:13 PM
To: [redacted]
Cc: [redacted]
Subject: RE: City - Stormwater Management Retrofit EA

Hello [redacted]:

Thank you for your enquiry in regard to the Stormwater Management Facility Retrofit Class EA. The study is City-wide, which includes Ward 1 and Ward 2 in Thornhill Area. For your information, the study was commenced in September 2012, and is now on-going. The first open-house Public Information Centre (PIC) will be hosted at Canada Room of Markham Civic Centre (101 Town Centre Boulevard, Markham, Ontario, L3R 9W3) on March 5, 2013 from 6:30pm to 8:00pm to share information to and get feedback from the public. As the PIC materials are currently under preparation, we could not provide you the PIC material at this moment.

In general, criteria that will be considered for ranking of the areas are the existing level of water quantity and quality control, the current design criteria of various authorities, existence of endangered species in the area, engineering feasibility, etc. You are welcome to attend the PIC to learn more about the study, and public input are encouraged at the PIC.

Regards,

Cynthia Tam, M.Eng., P.Eng., PMP
Environmental Engineer
Asset Management Department
City of Markham . 8100 Warden Ave . Markham . Ontario . L6G 1B4
e: ctam@markham.ca . t: 905.477.7000 x 2357 . f: 905.479.7766

-----Original Message-----
From: [redacted]
Sent: February 19, 2013 9:13 AM

To: Tam, Cynthia
Cc: [redacted]
Subject: City - Stormwater Management Retrofit EA

Good Morning Cynthia,

I see that the City will be implementing a Stormwater Management Retrofit Class EA Study, including investigation of construction opportunities in areas currently lacking stormwater management controls.

Could you please advise if the Study Area will be city -wide, including Ward 1 and 2 in the Thornhill area.

Would it be possible to receive further information as to the criteria used to determine and/or identify those areas currently lacking stormwater management controls that may be candidates for new control measures.

Thank you,

[redacted] on behalf of the Bayview Glen Residents Association

Melody Brown

From: Markham Pond EA
Sent: Thursday, February 21, 2013 2:45 PM
To: [redacted]
Subject: RE: Markham - STORMWATER MANAGEMENT FACILITIES RETROFIT - Class EA

[redacted]

Thank you for your interest in the SWM Facilities Retrofit EA for the City of Markham. In responce to your questions:

- Yes the entire City is being considered in the study area, however consideration is only being given those SWM facilities that are currently owned and operated by the City of Markham. Any privately owned or un-assumed facilities are not being considered in the screening, prioritization, or evaluation process.
- Subject to changes based on agencies review prior to the PIC, we have identified 24 existing SWM facilities and 13 uncontrolled outlets that may benefit from SWM infrastructure improvements by using the City's database and available documentation. From these sites, 20 priority sites have been identified based on the existing SWM in place, sensitively of the receiving watercourse, the presence of sensitive species, SWM criteria from the City, TRCA, and other approving agencies, and the feasibility for access and constructability. A map of the priority areas will be available at the PIC for review and we will be on hand to answer any specific questions.
- This PIC will provide the public with an introduction to the project, provide an overview of the project objectives, illustrate the screening and evaluation process, and identification of the preferred SWM approach for the priority areas. This information will all be available for review at the PIC. A copy of the PIC information can be made available after the meeting for additional questions or comment.
- At this stage of the process, we have not developed conceptual designs for the priority retrofit opportunities; however these will be developed over the next couple of months and presented to the public in another PIC to be scheduled later this spring.
- As part of the project, we will be identifying potential sources of funding for these infrastructure improvement projects. At this stage of the process, we have not identified a comprehensive list yet. More information on these sources can be provided as the study progresses further.

Thank you for your email and we look forward to seeing you on March 5th to discuss any other questions.

From: [redacted]
Sent: Friday, February 15, 2013 11:11 AM
To: Markham Pond EA
Subject: Markham - STORMWATER MANAGEMENT FACILITIES RETROFIT - Class EA

Mr. Masotti,

I am a resident in Unionville. I received a notice for a PIC for the above noted project on March 5th. I am looking for some more detailed information in advance of the PIC if possible, so I can come prepared to the PIC. In particular, can you provide me with any available information on:

- Study Area (I presume the entire City)
- Constraints / opportunities identified to date
- Areas of priority / greatest concern
- Any draft options to improve the management of stormwater within the City (specifics, if possible)
- How will these costs for improvements be funded

Thanking you in advance,

[redacted]

Comments Received at Public Information Centre #1

REGISTRATION SHEET

Public Information Centre – Markham Stormwater Management Facilities Retrofit Study
Municipal Class Environmental Assessment

Tuesday, March 5, 2013 – Markham Civic Centre, Canada Room

Name (Please Print)	Address/E-mail	Phone Number
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

COLE ENGINEERING

MARKHAM

COMMENT FORM

Public Information Centre – Markham Stormwater Management Facilities Retrofit Study Municipal Class Environmental Assessment

Tuesday, March 5, 2013 – Markham Civic Centre, Canada Room

We are interested in hearing any comments you may have associated with this Class Environmental Assessment project. Thank-you for clearly writing your comments in the space provided below. If you require additional space, please continue your comments on the back of this sheet.

I enjoyed the information provided by staff & Cole. Very professional and well-explained. Thank you!

Comments and information regarding this project are being collected to assist the City of Burlington in meeting the requirements of the Environmental Assessment Act. This material will be maintained on file for use during the project and may be included in project documentation. Information collected will be used in accordance with the Freedom of Information and Privacy Act. With the exception of personal information, all comments will become part of the public record.

Please submit your written comments before leaving the PIC. If you require more time to comment, please mail/fax in the comment sheet by March 19, 2013 to:

Cynthia Tam, M.Eng., P.Eng., PMP
Environmental Engineer
City of Markham
8100 Warden Avenue

Geoff Masotti, P.Eng.
Project Manager
Cole Engineering Group Ltd.
70 Valleywood Drive

COMMENT FORM

Public Information Centre – Markham Stormwater Management Facilities Retrofit Study Municipal Class Environmental Assessment

Tuesday, March 5, 2013 – Markham Civic Centre, Canada Room

We are interested in hearing any comments you may have associated with this Class Environmental Assessment project. Thank-you for clearly writing your comments in the space provided below. If you require additional space, please continue your comments on the back of this sheet.

Very informative

Staff very professional

Cole Engineer very knowledgeable

Comments and information regarding this project are being collected to assist the City of Burlington in meeting the requirements of the Environmental Assessment Act. This material will be maintained on file for use during the project and may be included in project documentation. Information collected will be used in accordance with the Freedom of Information and Privacy Act. With the exception of personal information, all comments will become part of the public record.

Please submit your written comments before leaving the PIC. If you require more time to comment, please mail/fax in the comment sheet by March 19, 2013 to:

Cynthia Tam, M.Eng., P.Eng., PMP
Environmental Engineer
City of Markham
8100 Warden Avenue

Geoff Masotti, P.Eng.
Project Manager
Cole Engineering Group Ltd.
70 Valleywood Drive

COMMENT FORM

Public Information Centre – Markham Stormwater Management Facilities Retrofit Study Municipal Class Environmental Assessment

Tuesday, March 5, 2013 – Markham Civic Centre, Canada Room

We are interested in hearing any comments you may have associated with this Class Environmental Assessment project. Thank-you for clearly writing your comments in the space provided below. If you require additional space, please continue your comments on the back of this sheet.

VERY INFORMATIVE

Comments and information regarding this project are being collected to assist the City of Burlington in meeting the requirements of the Environmental Assessment Act. This material will be maintained on file for use during the project and may be included in project documentation. Information collected will be used in accordance with the Freedom of Information and Privacy Act. With the exception of personal information, all comments will become part of the public record.

Please submit your written comments before leaving the PIC. If you require more time to comment, please mail/fax in the comment sheet by March 19, 2013 to:

Cynthia Tam, M.Eng., P.Eng., PMP
Environmental Engineer
City of Markham
8100 Warden Avenue

Geoff Masotti, P.Eng.
Project Manager
Cole Engineering Group Ltd.
70 Valleywood Drive

COMMENT FORM

Public Information Centre – Markham Stormwater Management Facilities Retrofit Study Municipal Class Environmental Assessment

Tuesday, March 5, 2013 – Markham Civic Centre, Canada Room

We are interested in hearing any comments you may have associated with this Class Environmental Assessment project. Thank-you for clearly writing your comments in the space provided below. If you require additional space, please continue your comments on the back of this sheet.

Very Informative well done and set up.
Staff extremely helpful with explanations.

Comments and information regarding this project are being collected to assist the City of Burlington in meeting the requirements of the Environmental Assessment Act. This material will be maintained on file for use during the project and may be included in project documentation. Information collected will be used in accordance with the Freedom of Information and Privacy Act. With the exception of personal information, all comments will become part of the public record.

Please submit your written comments before leaving the PIC. If you require more time to comment, please mail/fax in the comment sheet by March 19, 2013 to:

Cynthia Tam, M.Eng., P.Eng., PMP
Environmental Engineer
City of Markham
8100 Warden Avenue

Geoff Masotti, P.Eng.
Project Manager
Cole Engineering Group Ltd.
70 Valleywood Drive

Comments Received After Public Information Centre #1

Melody Brown

From: Tam, Cynthia (CTam@markham.ca)
Sent: Wednesday, March 13, 2013 3:02 PM
To: [redacted]
Cc: Markham Pond EA
Subject: RE: Stormwater Retrofit PIC- Question (email 3)
Attachments: Appendix H (1).PDF; Appendix H (2) to Appendix J.PDF

Appendix H to Appendix J of the 1999 SWM Retrofit Study.

Regards,

Cynthia Tam, M.Eng., P.Eng., PMP
Environmental Engineer
Asset Management Department
City of Markham . 8100 Warden Ave . Markham . Ontario . L6G 1B4
e: ctam@markham.ca . t: 905.477.7000 x 2357 . f: 905.479.7766

-----Original Message----
From: Tam, Cynthia
Sent: March 13, 2013 2:59 PM
To: [redacted]
Cc: 'markhampondretrofites@coleengineering.ca'
Subject: RE: Stormwater Retrofit PIC- Question

Hello [redacted]

The SWM facility located between Bayview Avenue and CN Rail to the north of Green Lane is a privately owned SWM facility. It is within the condominium property.

Glynnwood Pond has always been functioning as a stormwater management pond.

Sure you can review the 1999 SWM Retrofit Study. I am attaching the report for your review. Due to large file size, the report is scanned into four files and you will receive them in 3 emails.

I hope you find this email sufficient. If you have further questions, please feel free to contact me.

Regards,

Cynthia Tam, M.Eng , P.Eng., PMP
Environmental Engineer
Asset Management Department
City of Markham . 8100 Warden Ave . Markham . Ontario . L6G 1B4
e: ctam@markham.ca . t: 905.477.7000 x 2357 . f: 905.479.7766

-----Original Message-----
From: [redacted]
Sent: March 12, 2013 10:47 AM
To: Tam, Cynthia
Subject: Stormwater Retrofit PIC- Question

Hello Cynthia,

Melody Brown

From: Tam, Cynthia [CTam@markham.ca]
Sent: Wednesday, March 13, 2013 3:01 PM
To: [redacted]
Cc: Markham Pond EA
Subject: RE: Stormwater Retrofit PIC- Question (email 2)
Attachments: Appendix A to Appendix G.pdf

Appendix A to Appendix G of the 1999 SWM Retrofit Study.

Regards,

Cynthia Tam, M.Eng., P.Eng., PMP
Environmental Engineer
Asset Management Department
City of Markham . 8100 Warden Ave . Markham . Ontario . L6G 1B4
e: ctam@markham.ca . t: 905.477.7000 x 2357 . f: 905.479.7766

-----Original Message-----
From: Tam, Cynthia
Sent: March 13, 2013 2:59 PM
To: 'Bezant'
Cc: 'markhampondretrofitea@coleengineering.ca'
Subject: RE: Stormwater Retrofit PIC- Question

Hello [redacted]

The SWM facility located between Bayview Avenue and CN Rail to the north of Green Lane is a privately owned SWM facility. It is within the condominium property.

Glynnwood Pond has always been functioning as a stormwater management pond.

Sure you can review the 1999 SWM Retrofit Study. I am attaching the report for your review. Due to large file size, the report is scanned into four files and you will receive them in 3 emails.

I hope you find this email sufficient. If you have further questions, please feel free to contact me.

Regards,

Cynthia Tam, M.Eng., P.Eng., PMP
Environmental Engineer
Asset Management Department
City of Markham . 8100 Warden Ave . Markham . Ontario . L6G 1B4
e: ctam@markham.ca . t: 905.477.7000 x 2357 . f: 905.479.7766

-----Original Message-----
From: [redacted]
Sent: March 12, 2013 10:47 AM
To: Tam, Cynthia
Subject: Stormwater Retrofit PIC- Question

Hello Cynthia,

I had an opportunity to review the SWM Retrofit PIC material and have a few questions.

I would appreciate if you could help in identifying the type of stormwater management facility located on the Study Overview map (page 4). The swm facility (pink dot) is on the east side of Bayview Avenue (next to # 26) near the CN rail line... is this a swm pond or is this some type of sw storage facility. Is the facility a city owned or private swm facility (CN Rail ?).

Clarification, is the Glynwood Pond functioning as a stormwater pond as yet ?

Is it possible to review the previous 1999 TRCA /Markham Stormwater Retrofit study.

Thank you,

[redacted] Bayview Glen Residents Association

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Melody Brown

From: Tam, Cynthia [CTam@markham.ca]
Sent: Friday, March 15, 2013 9:40 AM
To: [redacted]
Cc: [redacted]
Subject: RE: SWM Facilities Retrofit Study

Hello [redacted]

Thank you very much for your comments. Please find below our response to your comments on the SWM Facilities Retrofit Study PIC. I have numbered your comments and formatted them in italic and boldface, and provided our feedback underneath each comment.

1) ***I have numbered my sheets 1 to 17 omitting the cover sheet and the comment sheet at the back.***

Acknowledged.

2) ***Page 4, second bullet point: the number of uncontrolled storm sewer outlets should read 358 not 70. (see page 8, second bullet point).***

Acknowledged.

3) ***page 6, second bullet point: municipal should read urban.***

Acknowledged.

4) ***Page 9, ELC = Environmental Land Classification***
SAR = Species At Risk
ESA = Environmentally Significant or Sensitive Area

Acknowledged.

The above is what I was told at the PIC.

Map Analysis

Ward	Current SWM facilities	Current Uncontrolled Outlets	Selected Priority Sites SWMF	Selected Priority Sites Uncontrolled Outlets
1	0	31	0	3
2	7	29	1	3
3	15	37	1	3
4	19	77	1	0
5	19	9	0	1
6	31	33	1	1
7	16	3	2	0
8	15	0	3	0

Counted from the handout maps which were difficult to read (so approximate numbers only)

5) ***If "improvements may be achieved through the construction of new SWM facilities in areas that are currently lacking appropriate controls," as stated on page 6 (Problem/Opportunity Statement) then the main problem areas are being ignored and the greatest opportunities are being squandered. It is clear from the table above that Wards 1 and 2 (the East Don Watershed) have the lowest numbers of SWM facilities, Ward 1 has none. It is also clear that the exact same area has the highest number of uncontrolled storm water outlets. While Wards 3, 4, and 6 also have high numbers for uncontrolled storm water outlets those wards all have significantly higher numbers of SWM facilities.***

The lower number of SWM facilities within Wards 1 and 2 is due to the older age of development in these 2 two areas (prior to 1970s) and the less stringent Ministry of Environment stormwater management requirements when these two areas were developed. As SWM requirements have evolved overtime, Wards 3, 4, and 6, being relatively newer development areas as compared to Wards 1 and 2, therefore have more SWM facilities.

6) ***How is this imbalance being rectified with this Study? It isn't; it is being made worse. The two wards with the least number of uncontrolled outlets, and a good number of SWM facilities, Wards 7 and 8, are to receive 5, more than half of the SWM facilities/facility improvements, while the Ward which has none, Ward 1, receives none and only 3 of the 31 uncontrolled outlets are to be improved. Ward 2 fares only a little better.***

Wards 7 and 8 are <u>newer and approximately 3 times larger</u> areas as compared to Wards 1 and 2 and therefore there are more SWM facilities within Wards 7 and 8. Although SWM facilities are located within Wards 7 and 8, the existing SWM functions are not up to current standards. It is important to recognize that while there are a number of uncontrolled outlets in Wards 1 and 2, they are significantly constrained. For example most of these outlets lack the available land to provide the SWM facilities that would be necessary to satisfy the current SWM criteria. The introduction of new SWM facilities within Wards 1 and 2 would create a large social and economic impact such as acquiring private properties and relocating residents. Conversely, it is feasible to retrofit some of the existing facilities in other areas of the City and provide an overall environmental benefit with minimum social and economical impacts. As a result, those ponds receive higher priority on the retrofit list because of the overall environmental benefits and acceptable economic and social impacts.

7) ***It is abundantly clear that the waters and environment of the Rouge River watershed are being improved significantly better than the waters and environment of the East Don watershed. This Study is using criteria and weighting which will result in vast differences in the control of water quantity, water quality, water temperature, erosion and sedimentation and the protection of species at risk and their habitats, producing an environment in the East Don watershed which is far inferior to that in the Rouge watershed.***

Please note that:

a) The Thornhill area of the Don River Watershed is receiving the highest priority for water quantity control through the West Thornhill flood remediation study and implementation. No other area in Markham is receiving the level of water quantity treatment being provided for West Thornhill area.
b) Please note that the Rouge River watershed covers a much bigger catchment area within the City which is about 10 times larger than the East Don River watershed.
c) As mentioned in bullet 6 above, development in Thornhill area occurred during times when the Ministry of Environment (MOE) did not have criteria for stormwater quantity control (SWM Ponds). The majority of the areas of Markham east of the 404 where development during times when the MOE and the Toronto Region Conservation Authority required stormwater control up to the 100 year event which necessitated the need for constructing SWM ponds.
d) Large population of the endangered species, Redside Dace, is found within the Rouge River watershed within Markham but not the East Don River watershed. Since

environmental benefits are of the evaluation criteria in our study, higher scoring were placed on sites with direct impact/benefit to the endangered species (Redside Dace).

It is also important to note that of the 20 priority retrofits, 5 of these have been identified within the East Don and German Mills Creek, both of which are part of the Don River Watershed.

8) After years of devastating flooding in the East Don watershed, especially after the August 19, 2005 storm, I find it incredible that quantity control receives a weighting of only 15 out of 100. This has contributed to an equally incredible result shown on the spreadsheet whereby only four of the 20 priority sites are targeted for flood control when flooding has been such a serious problem in some areas of the City. What a missed opportunity. Likewise after years of e-coli readings in the East Don at Bayview and Steeles, many times higher than MOE standards, a quality control weighting of 15 out of 100 is also insufficient. I am also concerned about the cost weighting of zero for high cost. This criterion has the highest weighting at 19 out of 100. Who determined the number of priority sites at 20 and how was that number determined? If a number lower than 20 had been selected then sites with higher improvement costs could have been included and this could have helped better balance the distribution of improvements between the two watersheds.
Don't misunderstand me. I don't expect the outcome to be a 50/50 split between the two watersheds when the Rouge watershed is so much bigger nor do I expect equality between the wards. This is neither the goal nor desirable in a nature-based system. Nevertheless we all pay taxes to fund these measures and since we are dealing with the environment we all live in, not just the environment some of us live in, I think the distribution of improvements across the City could have been much better. Introducing the criterion of greatest need based objectively on the left half of the table above might have helped create a better balance for example.

The weighting factors are adequate for this study and distributed proportionally between quantity, quality, and economic, social and environmental benefits. Please keep in mind that this is not a flood control study and that a separate study, West Thornhill Flood Remediation, has been completed for Thornhill targeting improvements in stormwater quantity control (flood control).

While quantity control is an important function of SWM, it is important to recognize all of the environmental impacts associated with the control of stormwater including quality control (related largely to sediment removal from stormwater), erosion control, and temperature control, as well as the sensitivity of endangered species habitat for the health and vitality of the existing watercourses in Markham. Of these, the environmental aspects make up more than half of the weighting being considered when prioritizing the sites. The Environmental Assessment process also requires the proponent to consider the economic and social impacts associated with the alternatives being considered. Of these the cost of the retrofit as well as the impacts to surrounding properties and potential impacts associated with archaeological and cultural resources needs to be considered and weighed in the evaluation. Also, please recognize that the priority list is not an exhaustive list of potential improvements and the City does recognize that there are other areas that could benefit from SWM improvements. However, as an Environmental Assessment is valid for 10 years, the 20 priority sites was selected based on our previous experience that approximately 1-2 sites could be accommodated for retrofitting in each year subject to budget and Council's approval.

9) On the last page entitled "Next Steps" it states that comments received will be considered in order to finalize the preferred Solution for each of the 20 sites. My comments are based mainly on the choice of criteria and weighting which lead to the selection of the 20 sites in the first place. This is where the efforts of a working group from across the City could have provided valuable input. It is also why I thought I had missed PIC #1 and thought this must be PIC #2. I think public input should come at the stage where criteria and weighting are being finalized so the public could see how you intended to proceed to select the priority sites and so that their comments had some effect on the criteria and weighting going forward to site selection. They might have come at the problem from a more subjective standpoint but then there's subjectivity in the weighting anyway.

The intent of PIC#1 is to seek for valuable input from the public. Gathered input are being discussed and analysed to determine whether they are appropriate and feasible to be adopted. We appreciate your input and will weigh it along with the experience of the study team when finalizing the project.

Some problems I had with the handouts were:

10) the pages were not numbered so it was difficult to refer to the location of items.

Acknowledged.

11) the cover page should have indicated that this was PIC #1. I was confused about that at one point.

Acknowledged.

12) some of the priority sites were shown on the map in yellow circles as Selected Uncontrolled Sites, yet on the spreadsheet it spoke of ponds. I found that confusing and thought they should have been shown on the map in red as a SWM facility.

We believe you are referring to #55. Actually there are Uncontrolled Outlet #55 and SWM Facilities #55 on the summary of alternative solution evaluation and results spreadsheet. We apologize for the confusion and we will re-label the uncontrolled outlet as #UC-55 for clarification. Other than the labelling confusion, the illustrations on the "Priority Sites Evaluated for Preferred Retrofit Solution" map are correct.

13) while it's nice to know that I am assisting the City of Burlington in meeting the requirements of the Environmental Assessment Act with these comments, I was really intending to assist the City of Markham. (lol)

We apologize for overlooking the error.

We hope that this email provide you adequate feedback. Please feel free to contact us if you have further queries.

Regards,

Cynthia Tam, M.Eng., P.Eng.
Environmental Engineer
Asset Management Department
City of Markham, 8100 Warden Ave., Markham, Ontario, L6G 1B4
ctam@markham.ca, t. 905.477.7000 x 2387, f. 905.479.7746

From: [redacted]
Sent: March 8, 2013 1:56 AM
To: Tam, Cynthia; markhampondretrofitea@cotcengineering.ca
Cc: [redacted]
Subject: SWM Facilities Retrofit Study

Hi Cynthia and Geoff,

I have numbered my sheets 1 to 17 omitting the cover sheet and the comment sheet at the back.

Page 4, second bullet point, the number of uncontrolled storm sewer outlets should read 158 not 70 (see page 8, second bullet point).

page 6, second bullet point municipal should read
urban

Page 9, ELC = Environmental Land Classification
SAR = Species At Risk
ESA = Environmentally Significant or Sensitive Area

The above is what I was told at the PIC

Map Analysis

	Current	Current	Selected Priority Sites	
Ward	SWM facilities	Uncontrolled Outlets	SWMF	Uncontrolled Outlets
1	0	31	0	3
2	7	29	1	1
3	15	27	1	5
4	19	27	1	0
5	19	9	0	1
6	31	22	1	1
7	16	2	2	0
8	15	0	3	0

Counted from the handout maps which were difficult to read (so approximate numbers only)

If "improvements may be achieved through the construction of new SWM facilities in areas that are currently lacking appropriate controls " as stated on page 6 (Problem/Opportunity Statement) then the main problem areas are being ignored and the greatest opportunities are being squandered. It is clear from the table above that Wards 1 and 2 (the East Don Watershed) have the lowest numbers of SWM facilities, Ward 1 has none. It is also clear that the exact same area has the highest number of uncontrolled storm water outlets. While Wards 3,4, and 6 also have high numbers for uncontrolled storm water outlets those wards all have significantly higher numbers of SWM facilities.

How is this inbalance being rectified with this Study? It isn't, it is being made worse. The two wards with the least number of uncontrolled outlets, and a good number of SWM facilities, Wards 7 and 8, are to receive 5, more than half of the SWM facilities/facility improvements, while the Ward which has none, Ward 1, receives none and only 3 of the 31 uncontrolled outlets are to be improved. Ward 2 fares only a little better.

It is abundantly clear that the waters and environment of the Rouge River watershed are being improved significantly better than the waters and environment of the East Don watershed. This Study is using criteria and weighting which will result in vast differences in the control of water quantity, water quality, water temperature, erosion and sedimentation and the protection of species at risk and their habitats, producing an environment in the East Don watershed which is far inferior to that in the Rouge watershed.

After years of devastating flooding in the East Don watershed, especially after the August 19, 2005 storm, I find it incredible that quantity control receives a weighting of only 15 out of 100. This has contributed to an equally incredible result shown on the spreadsheet whereby only four of the 20 priority sites are targeted for flood control when flooding has been such a serious problem in some areas of the City. What a missed opportunity. Likewise after years of e-coli readings in the East Don at Bayview and Steeles, many times higher than MOE standards, a quality control weighting of 15 out of 100 is also insufficient. I am also concerned about the cost weighting of zero for high cost. This criterion has the highest weighting at 19 out of 100. Who determined the number of priority sites at 20 and how was that number determined? If a number lower than 20 had been selected then sites with higher improvement costs could have been included and this could have helped better balance the distribution of improvements between the two watersheds.

Don't misunderstand me. I don't expect the outcome to be a 50/50 split between the two watersheds when the Rouge watershed is so much bigger nor do I expect equality between the wards. This is neither the goal nor desirable in a nature-based system. Nevertheless we all pay taxes to fund these measures and since we are dealing with the environment we all live in, not just the environment some of us live in, I think the distribution of improvements across the City could have been much better. Introducing the criterion of greatest need based objectively on the left half of the table above might have helped create a better balance for example.

On the last page entitled "Next Steps" it states that comments received will be considered in order to finalize the preferred Solution for each of the 20 sites. My comments are based mainly on the choice of criteria and weighting which lead to the selection of the 20 sites in the first place. This is where the efforts of a working group from across the City could have provided valuable input. It is also why I thought I had missed PIC #1 and thought this must be PIC #2. I think public input should come at the stage where criteria and weighting are being finalized so the public could see how you intended to proceed to select the priority sites and so that their comments had some effect on the criteria and weighting going forward to site selection. They might have come at the problem from a more subjective standpoint but then there's subjectivity in the weighting anyway.

Some problems I had with the handouts were:

- the pages were not numbered so it was difficult to refer to the location of items.
- the cover page should have indicated that this was PIC #1. I was confused about that at one point.
- some of the priority sites were shown on the map in yellow circles as Selected Uncontrolled Sites, yet on the spreadsheet it spoke of ponds. I found that confusing and thought they should have been shown on the map in red as a SWM facility.
- while it's nice to know that I am assisting the City of Burlington in meeting the requirements of

the Environmental Assessment Act with these comments, I was really intending to assist the City of Markham. (lol)

I hope this is helpful. [redacted]

[redacted]

Melody Brown

From: Markham Pond EA
Sent: Thursday, March 21, 2013 3:58 PM
To: [redacted]
Cc: Geoff Masotti; ctam@markham.ca
Subject: RE: Comments on Markham Stormwater Management Facilities Retrofit EA

[redacted]

We would like to provide you further information about the small pond near 59 Normandale Road. The pond was originally a natural depression, and it was modified in 1980 to provide a certain level of sediment detention which is not adequate in today's standard. We considered this minimal level of quality control as "uncontrolled" when we did the screening of the stormwater management facilities so as to include this in the screening process. However, we appreciate your valuable input and will further assess the pond and might consider it as a partially controlled pond. We will investigate further into the level of stormwater management control of this pond and determine whether this will change the priority list.

Thank you for your valuable input.

From: Markham Pond EA
Sent: Monday, March 18, 2013 5:18 PM
To: [redacted]
Cc: Geoff Masotti; ctam@markham.ca
Subject: RE: Comments on Markham Stormwater Management Facilities Retrofit EA

[redacted]

Thank you for your email. We've prepared the following responses to your questions:

1. Unfortunately the mapping is a little difficult to read in this area because the outlets are bunched together in a common location. Uncontrolled outlets 103 and 104 are very close and the defining points are almost on top of each other making it a little difficult to differentiate. We will look at trying to clarify these locations in our final report. There are however 7 outlets in this location.
2. Thank you for bringing this point forward. We will consider your recommendation to make the numbering consistent.
3. The small pond you are referring to is actually a natural wetland and not a SWM facility.

I hope this answers your questions.

Best Regards,

Geoff Masotti, P.Eng.
Water Resources, Associate

Cole Engineering Group Ltd.
70 Valleywood Drive, Markham, ON Canada L3R 4T5
T: 905-940-6161 Ext. 254 Tor. Line: 416-987-6161
C: 416-230-9222 F: 905-940-2064
E: gmasotti@ColeEngineering.ca
www.ColeEngineering.ca

From: [redacted]
Sent: Saturday, March 16, 2013 6:10 PM
To: ctam@markham.ca; Markham Pond EA
Subject: Comments on Markham Stormwater Management Facilities Retrofit EA

Cynthia and Geoff.....I attended the PIC on March 5 and spoke to the engineers. I support the objectives of the project, but have questions about the details. To groundtruth the information, I looked at the locations near my house on Normandale Road. I have three questions.

1. Although hard to read, the Study Overview map shows 6 uncontrolled outlets and zero storm water management facilities, yet 7 numbers are shown on this map – 100, 101, 102, 103, 104, 105, 106. Please explain the discrepancy.

2. The map with "Priority Sites Evaluated for Preferred Retrofit" identifies 3 selected uncontrolled outlets in this area – 106, 105, 112. Why is this numbering system different from the earlier map? Isn't this a recipe for confusion and error?

3. I always assumed that the small pond east of 59(?) Normandale was a storm water pond. Is it?

Following your response to these questions, I may have more points to raise.

Thanks for your response.

[redacted]

Melody Brown

From: Tam, Cynthia [CTam@markham.ca]
Sent: Monday, March 25, 2013 3:30 PM
To: [redacted]
Cc: Markham Pond EA
Subject: RE: SW Retrofit Study- Watershed Controls

Hello [redacted]

The scope of the current SWM Retrofit study does not include the estimation of the percentages of SWM controls based on watershed. This information was provided in the 1997 report as a background information.

The intent of the current SWM Retrofit study is to concentrate on areas that would benefit the most from retrofits while minimizing social and economical impact. As weighting factors which are considered for this study are distributed proportionally between quantity, quality, and economic, social and environmental benefits, and that the percentages of SWM controls based on watershed does not provide essential input for the evaluation of retrofit opportunities, the percentage analysis is not included in the current study.

We hope you find this explanation satisfactory. Please feel free to contact us if you have further queries.

Regards,

Cynthia Tam, M.Eng., P.Eng., PMP
Environmental Engineer
Asset Management Department
City of Markham . 8100 Warden Ave . Markham . Ontario . L6G 1B4
e: ctam@markham.ca . t: 905.477.7000 x 2357 . f: 905.479.7766

-----Original Message-----
From: [redacted]
Sent: March 22, 2013 12:11 PM
To: Tam, Cynthia
Cc: markhampondretrofitea@coleengineering.ca
Subject: SW Retrofit Study- Watershed Controls

Hello Cynthia,

Thank you for the copy of the 1999 TRCA/Markham SW Retrofit Study. This report is helpful in terms of providing an overview of sw control based on Watershed.

I noted that in the main report, 1.4. Study Area- Conclusions (pg. 4, last paragraph) there was an estimate of 63% (town-wide) of existing/proposed urban areas with some level of swm controls in place.

The figure was broken down by Watershed estimated control:

72% controlled within the Rouge Watershed,

71% controlled within the Highland Watershed and

17% controlled within the Don Watershed.

Has the current SW Retrofit Study estimated, as was done in the 1999 Study, the percentage of town-wide swm controls by Watershed?

If so, have there been changes in the percentage of controls within each of the three Watersheds (Rouge, Highland and Don) since 1999 ?

I am providing a map from the West Thornhill Stormwater Study (June 2009) that estimated areas of the city without overland swm control, however, areas were not identified by Watershed.

Would swm controls by Watershed be possible to determine or estimate based on current Retrofit Study? Thank you, [redacted]

West Thornhill SW Study: June 2009 (pg. 6) -Town wide areas built before 1978 with

2 year Storm sewers without design for overland flow .

Link
http://www.markham.ca/markham/ccbs/indexfile/Agendas/2009/Development%20Services/pl090602/Special%20Development%20Services%20Committee%20Meeting_Jun2%2009_FINAL.pdf

Melody Brown

From: Myslicki, Lisa (IO) [Lisa.Myslicki@infrastructureontario.ca]
Sent: Thursday, June 27, 2013 9:21 AM
To: Markham Pond EA
Subject: RE: Stormwater Management Facilities Retrofit Study

The parcels with the 777 bay and 1 dundas street address.

Regards,

Lisa Myslicki
Environmental Advisor
Ontario Infrastructure and Lands Corporation
☎ Direct: 416 212 3768
(416) 212-1131
lisa.myslicki@infrastructureontario.ca
please consider the environment before printing this e-mail

From: Markham Pond EA [mailto:MarkhamPondRetrofitEA@coleengineering.ca]
Sent: Thursday, June 27, 2013 9:15 AM
To: Myslicki, Lisa (IO)
Cc: Geoff Masotti
Subject: RE: Stormwater Management Facilities Retrofit Study

Good morning Lisa,

Could you please clarify, in reference to the attached maps, which parcels of Infrastructure Ontario lands will be impacted?

Thank you.

From: Myslicki, Lisa (IO) [Lisa.Myslicki@infrastructureontario.ca]
Sent: Wednesday, June 26, 2013 2:10 PM
To: Markham Pond EA
Subject: RE: Stormwater Management Facilities Retrofit Study

Hi, it appears that our lands will be impacted by the proposed undertaking.

Regards,

L. Myslicki

Lisa Myslicki

Environmental Advisor

Ontario Infrastructureand Lands Corporation

☎ Direct: 416 212 3765

(416) 212-1131

lisa.myslicki@infrastructureontario.ca

Please consider the environment before printing this e-mail.

From: Markham Pond EA [mailto:MarkhamPondRetrofitEA@coleengineering.ca]
Sent: Tuesday, June 25, 2013 2:24 PM
To: Litner, Matthew
Cc: Myslicki, Lisa (IO); Geoff Masotti; ctam@markham.ca
Subject: RE: Stormwater Management Facilities Retrofit Study

Good morning,

Cole Engineering has received Infrastructure Ontario's letter dated May 10, 2013 in regards to the City of Markham Stormwater Management Facilities Retrofit Study Environmental Assessment. The study outlines proposed stormwater management facility retrofits within the City of Markham. It should be noted the proposed retrofit works will be contained within City of Markham property, however, Infrastructure Ontario (IO) had requested actions should the project have potential impact on or adjacent to IO Managed properties. Two (2) of the sites currently being investigated (see attached ownership map) have ownership that the City is not clear if IO have any managing interests. Therefore, at this time, Cole Engineering requests clarification if IO has interest in these lands.

If these lands are not managed by IO or if IO has no interest in the works adjacent to these lands, IO will be removed from the circulation list as requested.

Best Regards

From: Litner, Matthew [Matthew.Litner@infrastructureontario.ca]
Sent: Friday, May 10, 2013 1:26 PM
To: Markham Pond EA
Cc: Myslicki, Lisa (IO)
Subject: Stormwater Management Facilities Retrofit Study

Good afternoon,

Please refer to attached documents for your information regarding potential impacts of IO lands.

Thank you,

Matthew Litner
Summer Associate - Environmental Management
Ontario Infrastructure and Lands Corporation
☎ Direct: 416 212 0637
(416) 212-1131
matthew.litner@infrastructureontario.ca

Ontario
Infrastructure Ontario

One Dundas Street West, Suite 2000, Toronto, ON M5G 2L5
1, rue Dundas Ouest, bureau 2000, Toronto, ON M5G 2L5

May 10, 2013

Thank you for circulating Infrastructure Ontario (formerly the Ontario Realty Corporation) on your Notice. Infrastructure Ontario (IO) is the strategic manager of the provincial government's real estate property with a mandate of maintaining and optimizing value of the portfolio, while ensuring real estate decisions reflect public policy objectives of the government.

As you may be aware, *IO is responsible for managing real estate property that is owned by Her Majesty the Queen in Right of Ontario as represented by the Minister of Infrastructure (MOI).* There is a potential that IO manages lands that fall within your study area. As a result, your proposal may impact IO managed properties and/or the activities of tenants present on IO-managed lands. In order to determine if IO property is within your study area, IO requires that the proponent of the project conduct a title search by reviewing parcel register(s) for adjoining lands, to determine the extent of ownership by MOI or it's predecessors (listed below) ownership. Please contact IO if any ownership of provincial government lands are known to occur within your study area and are proposed to be impacted. IO is obligated to complete due diligence for any realty activity on IO managed lands and this should be incorporated into all project timelines. IO managed lands can ***include within the title but is not limited to*** variations of the following: Her Majesty the Queen/King, OLC, ORC, Public Works, Hydro One, PIR, MGS, MBS, MOI, MTO, MNR and MEI*. Please ensure that a copy of your notice is also sent to the ministry/agency on title. As an example, if the study area includes a Provincial Park, then MNR is to also to be circulated notices related to your project.

Potential Negative Impacts to IO Tenants and Lands

General Impacts
Negative environmental impacts associated with the project design and construction, such as the potential for dewatering, dust, noise and vibration impacts, and impacts to natural heritage features/habitat and functions, should be avoided and/or appropriately mitigated in accordance with applicable regulations best practices and Ministry of Natural Resources (MNR) and Ministry of the Environment (MOE) standards. Avoidance and mitigation options that characterize baseline conditions and quantify the potential impacts should be present as part of the EA project file. Details of appropriate mitigation, contingency plans and triggers for implementing contingency plans should also be present.

Impacts to Land holdings
Negative impacts to land holdings, such as the taking of developable parcels of IO managed land or fragmentation of utility or transportation corridors, should be avoided. If the potential for such impacts is present as part of this undertaking, you should contact the undersigned to discuss these issues at the earliest possible stage of your study.

If takings are suggested as part of any alternative these should be appropriately mapped and quantified within EA report documentation. In addition, details of appropriate miligation and or next steps related to compensation for any required takings should be present. IO requests circulation of the draft EA report prior to finalization if potential impacts to IO-managed lands are present as part of this study.

416.327.3937 416.327.1906 info@infrastructureontario.ca www.infrastructureontario.ca

Heritage Management Process & Class Environmental Assessment (EA) Process

Should the proposed activities impact cultural heritage features on IO managed lands, a request to examine cultural heritage issues which can include the cultural landscape, archaeology and places of sacred and secular value could be required. The IO (formerly Ontario Realty Corporation) Heritage Management Process should be used for identifying and conserving heritage properties in the provincial portfolio (this document can be downloaded from the Heritage section of our website: http://www.ontariorealty.ca/What-We-Do/Heritage.htm). Through this process, IO identifies, communicates and conserves the values of its heritage places. In addition, the Class EA ensures that IO considers the potential effects of proposed undertakings on the environment, including cultural heritage.

Potential Triggers Related to MOI's Class EA

IO is required to follow the MOI Class Environmental Assessment Process for Realty Activities Not Related to Electricity Projects (MOI Class EA). The MOI Class EA applies to a wide range of realty and planning activities including leasing or letting, planning approvals, dispostion, granting of easements, demolition and property maintenance/repair. For details on the MOI Class EA please visit the Environment and Heritage page of our website found at http://www.infrastructureontario.ca/What-We-Do/Buildings/Realty-Services/Environmental-Management/Class-EAs/
Please note that completion of any EA process does not necessarily provide an approval for IO's EA process unless the alternative EA incorporates IO's applicable Class EA requirements.

If the MOI Class EA is triggered, and deferral to another ministry's or agency's Class EA or individual EA is requested, the alternative EA will be subject to a critical review prior to approval for any signoff of a deferral by the proponent. The alternative EA needs to fulfill the minimum criteria of the MOI Class EA. When evaluating an alternative EA there must be explicit reference to the corresponding undertaking in the MOI Class EA (*e.g.*, if the proponent identifies the need to acquire land owned by MOI, then "acquisition of MOI-owned land", or similar statement, must be referenced in the EA document). Furthermore, sufficient levels of consultation with MOI's/IO's specific stakeholders, such as the MNR, must be documented with the relevant information corresponding to MOI's/IO's undertaking and the associated maps. In addition to *archaeological and heritage reports, a Phase I Environmental Site Assessment (ESA),* on IO lands should also be incorporated into the alternative EA study. Deficiencies in any of these requirements could result in an inability to defer to the alternative EA study and require completing MOI's Class EA prior to commencement of the proposed undertaking.

In summary, the purchase of MOI-owned/IO-managed lands or disposal of rights and responsibilities (e.g. easement) for IO-managed lands triggers the application of the MOI Class EA. If any of these realty activities affecting IO-managed lands are being proposed as part of any alternative, please contact the Sales and Marketing Group through IO's main line (Phone: 416-327-3937, Toll Free: 1-877-863-9672), and contact the undersigned at your earliest convenience to discuss next steps.

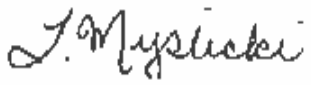
Specific Comments

If an EA for this project is currently being undertaken and only if the undertaking directly affects all or in part any IO-managed property, please send the undersigned a copy of the DRAFT EA report and allow sufficient time (minimum of 30 calendar days) for comments and discussion prior to finalizing the report to ensure that all MOI Class EA requirements can be met through the EA study.

Please remove IO from your circulation list, with respect to this project, if there are no IO managed lands in the study area. In addition, in the future, please send only electronic copies of notices for any projects impacting IO managed lands to:
Keith.Noronha@infrastructureontario.ca

Thank you for the opportunity to provide initial comments on this undertaking. If you have any questions on the above I can be reached at the contacts below.

Sincerely,



Lisa Myslicki
Environmental Advisor, Environmental Management
Infrastructure Ontario
1 Dundas Street West,
Suite 2000, Toronto, Ontario
M5G 2L5
(416) 212-3768
lisa.myslicki@infrastructureontario.ca

* Below are the acronyms for agencies/ministries listed in the above letter
OLC: Ontario Lands Corporation
ORC: Ontario Realty Corporation
PIR: Public Infrastructure and Renewal
MGS: Ministry of Government Services
MBS: Management Board and Secretariat
MOI: Ministry of Infrastructure
MTO: Ministry of Transportation
MNR: Ministry of Natural Resources
MEI: Ministry of Energy and Infrastructure

Comments Received at Public Information Centre #2

REGISTRATION SHEET

Public Information Centre – Markham Stormwater Management Facilities Retrofit Study
Municipal Class Environmental Assessment

Wednesday, December 4, 2013 – Markham Civic Centre, ~~Lower Atrium~~ CHAPEL

Name (Please Print)	Address/E-mail	Phone Number
1.		
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COLE ENGINEERING

MARKHAM

APPENDIX I
Notice of Commencement

CITY OF MARKHAM

CLASS ENVIRONMENTAL ASSESSMENT

STORMWATER MANAGEMENT FACILITIES RETROFIT

NOTICE OF STUDY COMMENCEMENT

The City of Markham has initiated a Municipal Class Environmental Assessment (Class EA) to identify and prioritize opportunities to improve the management of stormwater within the City. Improvements may be achieved through the retrofit of existing stormwater management (SWM) facilities and/or through the construction of new SWM facilities in areas that are currently lacking appropriate controls. Once the problem is fully documented, a set of alternative solutions will be evaluated and presented to the public and agencies for comment at various points throughout the study. A prioritized list of SWM facilities retrofit and new construction opportunities will be developed. The study will also identify mitigative measures to reduce impacts of the resulting proposed work.

A key component of the study will be consultation with interested stakeholders (public, landowners and regulatory agencies). Two (2) Public Information Centres (PICs) will be held to provide interested parties with an opportunity to review and discuss issues related to the study. The first PIC is scheduled for the winter of 2012. Details regarding the forthcoming PIC will be advertised in local newspaper and the City's website as the study progresses.

The study will be conducted as a 'Schedule B' project in compliance with the Municipal Engineers Association document *"Municipal Class Environmental Assessment,"* (October 2000, amended in 2007 and 2011) that will address Phases 1 and 2 of the Class EA Process. We are interested in hearing any comments or input that you may have about this study. Comments and information regarding the study are being collected to assist the City of Markham in meeting the requirements of the Environmental Assessment Act. This material will be maintained on file for use during the study and may be included in study documentation.

If you require further information, would like to be added to the mailing list, or if you have specific comments related to this study, please email your comments to MarkhamPondRetrofitEA@coleengineering.ca or contact either of the following:

Ms. Cynthia Tam, M. Eng., P. Eng., PMP
Environmental Engineer
City of Markham
800 Warden Avenue
Markham, ON, L6G 1B4
Tel: (905) 477-7000 Ext. 2357
E-mail: ctam@markham.ca

Mr. Geoff Masotti, P.Eng.
Project Manager
Cole Engineering Group Ltd. (Consultant)
70 Valleywood Drive
Markham, ON L3R 4T5
Tel: (905) 987-6161
E-mail: MarkhamPondRetrofitEA@coleengineering.ca

This Notice issued on Thursday, September 20, 2012.

COUNCIL

Markham Council
Markham Council and Standing Committee meetings take place at the Markham Civic Centre and are open to the public.

Monday, September 23, 2012
9 a.m. - General Committee
7 p.m. - Planning Committee Public Meeting

Tuesday, September 24, 2012
9 a.m. – Development Services Committee

Markham Council has proclaimed
September 2012:
Childhood Cancer Awareness Month

September 17 - 23, 2012:
Prostate Cancer Week

September 25, 2012:
Franco-Ontarian Day

September 27 – 30, 2012:
Markham Fair Week

NOTICE

2012 COMMERCIAL, INDUSTRIAL AND MULTI-RESIDENTIAL FINAL TAX BILLS DUE DATES

Commercial, Industrial and Multi-Residential Final Tax bills have now been mailed.

Payment Due Dates for the Final Commercial, Industrial and Multi-Residential Tax Bills are:

October 5, 2012; November 5, 2012; December 5, 2012

PAYMENT OF TAXES may be made by mail, in person at the Markham Civic Centre, and at most financial institutions, bank machines, by telephone or online. Banking fees may apply. After hours tax payments may be made in the drop box at the Thornhill entrance of the Civic Centre, 101 City Centre Boulevard, northwest corner of Warden Avenue and Highway 7.

Haven't received your 2012 tax bill? Want more information? Contact the Markham Tax Office at 905-475-4864 or visit www.markham.ca. Failure to receive a tax bill does not eliminate your responsibility for payment of taxes or the penalty charges in the event of late payment.

COLAB:
A Change Lab for Markham

20 September to 14 October, 2012
Organized by the Institute without Boundaries at George Brown College

OPENING PARTY - All are welcome
Thursday, 20 September 7 - 9 p.m.

DOORS OPEN MARKHAM
Saturday, 22 September 10 a.m. - 5 p.m.

Varley Art Gallery of Markham (216 Main Street Unionville)
905.477.9511 • www.varleygallery.ca

INSTITUTE WITHOUT BOUNDARIES · MARKHAM

NOTICE OF CONSTRUCTION

This notice advises you that construction of the Highway 7 Storm Sewer and Sheridan Stormwater Management Pond, is scheduled to begin in September and to be completed by November 2012.

In order to provide for the safe and efficient installation of the sewers, it will be necessary to restrict traffic through the use of temporary road/lane closures within the construction zone, which may result in traffic delays.

For further information or clarification about this project, please contact:

Mr. Mike Lafeze, C.E.T.
Engineering Technologist/Inspector
City of Markham
101 Town Centre Boulevard
Markham, Ontario, L3R 9W3
(905) 477-7000 ext. 3080 | mlafeze@markham.ca

Ms. Julia Risi, C.E.T.
Field Services Project Manager
SCS Consulting Group Ltd.
30 Centurian Drive, Suite 100
Markham, Ontario, L3R 8B8
(905) 475-1900 | jrisi@scsconsultinggroup.com

Don Hamilton
Unionville Ward 3 Councillor
City of Markham
101 Town Centre Boulevard
Markham, Ontario, L3R 9W3
(905) 415-7549 | dhamilton@markham.ca

kids sports celebration

Children's CANCER RECOVERY PROJECT

In celebration of Sports Day in Canada, the first annual ***Kids Sports Celebration in Markham,*** in partnership with the Children's Cancer Recovery Project, will be held on Saturday, September 29. Markham kids and their families will have the opportunity to participate in numerous healthy, active and fun sports throughout the City.

For a full listing of events happening in Markham visit
www.KidsSportsCelebration.ca

NOTICE OF STUDY

The City of Markham has initiated a Municipal Class Environmental Assessment (Class EA) to identify and prioritize opportunities to improve the management of stormwater within the City. Improvements may be achieved through the retrofit of existing stormwater management (SWM) facilities and/or through the construction of new SWM facilities in areas that are currently lacking appropriate controls. Once the problem is fully documented, a set of alternative solutions will be evaluated and presented to the public and agencies for comment at various points throughout the study. A prioritized list of SWM facilities retrofit and new construction opportunities will be developed. The study will also identify mitigative measures to reduce impacts of the resulting proposed work.

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The study will be conducted as a 'Schedule B' project in compliance with the Municipal Engineers Association document "Municipal Class Environmental Assessment," (October 2000, amended in 2007 & 2011) that will address Phases 1 and 2 of the Class EA Process. We are interested in hearing any comments or input that you may have about this study. Comments and information regarding the study are being collected to assist the City of Markham in meeting the requirements of the Environmental Assessment Act. This material will be maintained on file for use during the study and may be included in study documentation.

If you require further information, would like to be added to the mailing list, or have specific comments related to this study, please email your comments to MarkhamPondRetrofitEA@coleengineering.ca or contact:

Ms. Cynthia Tam, M. Eng., P. Eng., PMP
Environmental Engineer
City of Markham
Tel: (905) 477-7000 Ext. 2357
E-mail: ctam@markham.ca

Mr. Geoff Masotti, P.Eng.
Project Manager
Cole Engineering Group Ltd.
Tel: (905) 987-6161
E-mail: MarkhamPondRetrofitEA@coleengineering.ca

This Notice issued 20 September, 2012.

FREE *Tour the Markham Civic Centre, heritage estates, restored private homes, a haunted library and so much more!*

Saturday, Sept. 22, 2012

OLDER ADULT WATERCOLOUR PROGRAM

Reveal your hidden painting talent. Instructor will assist and help develop painting techniques. Please speak with staff regarding materials.

APPENDIX J
Notice of Public Information Centre

NOTICE OF PUBLIC INFORMATION OPEN HOUSE

CLASS ENVIRONMENTAL ASSESSMENT

MARKHAM STORMWATER MANAGEMENT FACILITIES RETROFIT STUDY

The City of Markham has initiated a Municipal Class Environmental Assessment (Class EA) to identify and prioritize opportunities to improve stormwater management within the City, and to generate conceptual design solutions. Improvements may be achieved through the retrofit of existing stormwater management (SWM) facilities and/or through the construction of new SWM facilities in areas that currently lack appropriate controls. The study will also identify ways to reduce impacts that the recommended retrofit work may cause.

To date, a prioritized list of SWM facility retrofit and new construction opportunities has been developed. In addition, a set of retrofit design alternatives has been generated with a preferred design solution identified for each of the priority sites.

A key component of the study is consultation with interested parties – public, landowners and regulatory agencies. The Public Information Open House will provide you with an opportunity to review the work completed to-date and discuss with us any issues related to the project, including the preferred design solutions. A Public Information Open House is scheduled for:

Date: Tuesday, March 5, 2013
Time: Drop-in between 6:30 p.m. and 8:00 p.m.
Location: Markham Civic Centre – Canada Room
101 Town Centre Boulevard
Markham, Ontario

The study is being conducted as a 'Schedule B' project in compliance with the Municipal Engineers Association document *"Municipal Class Environmental Assessment,"* (October 2000, amended 2007 and 2011) and will address Phases 1 and 2 of the Class EA process. We are interested in hearing any comments or input that you may have about this study to assist the City of Markham in meeting the requirements of the Environmental Assessment Act. This material will be maintained on file for use during the study and may be included in study documentation.

If you require further information, would like to be added to the mailing list, or have specific comments related to this study, please email MarkhamPondRetrofitEA@coleengineering.ca or contact:

Ms. Cynthia Tam, M. Eng., P. Eng., PMP
Environmental Engineer
City of Markham
8100 Warden Avenue
Markham, ON L6G 1B4
Tel: (905) 477-7000 Ext. 2357
E-mail: ctam@markham.ca

Mr. Geoff Masotti, P.Eng.
Project Manager
Cole Engineering Group Ltd. (Consultant)
70 Valleywood Drive
Markham, ON L3R 4T5
Tel: (905) 940-6161
E-mail: MarkhamPondRetrofitEA@coleengineering.ca

Personal information excluded, all comments received may become part of the public record.

COLE ENGINEERING

Experience Enhancing Excellence

February 11, 2013
Our Ref: ES12-0316

Attention:

Dear Mr. /:

Re: City of Markham – Class Environmental Assessment
Stormwater Management Facilities Retrofit Study
Notice of Public Information Centre

The City of Markham, through its consultants Cole Engineering Group Ltd., has commenced a Class Environmental Assessment (Class EA) Study for the Stormwater Management Facilities Retrofit. A Notice of Public Information Centre (PIC) has been published as part of the study and is enclosed for your consideration. The notice describes the project, invites stakeholders to attend the PIC, and provides information regarding the PIC.

The purpose of this letter is to inform you of the PIC, and to provide you with a copy of the Notice of Public Information Study. If you would like to comment on the project or have any questions or concerns, please contact Geoff Masotti, P.Eng. at MarkhamPondRetrofitEA@coleengineering.ca.

Yours truly,

COLE ENGINEERING GROUP LTD.

Geoff Masotti, P.Eng.
Project Manager

MG:kb

Encls. Notice of Public Information Centre

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Markham SWM Retrofit Class EA PIC #1 Stakeholder Contact List

Ministry of Natural Resources	Mr.	Steven	Strong	Aurora District Planner	50 Bloomington Road West	Aurora ON L4G 3G8
Ministry of Environment	Ms	Dorothy	Moszynski	Environmental Resource Planner/EA Coordinator	5th Floor, 5775 Yonge Street	North York ON M2M 4J1
Ministry of Transportation Ontario	Ms	Lola	Van-Rassel	Head, Transportation Highway Engineering	1201 Wilson Avenue, 2nd Floor, Bldg D	Downsview ON M3M 1J8
Ministry of Transportation Ontario	Mr.	Bob	Stephenson	Head, Transportation Highway Engineering	1201 Wilson Avenue, 2nd Floor, Bldg D	Downsview ON M3M 1J8
Ministry of Transportation Ontario	Ms / P.Eng	Rebecca	Palys	Senior Project Engineer, Highway Engineering, York / Simcoe	1201 Wilson Avenue, 4th Floor, Bldg D	Downsview ON M3M 1J8
Ministry of Culture	Ms.	Paula	Kulpa	Team Lead, Heritage Land Use Planning	401 Bay Street, Suite 1700	Toronto, ON M7A 0A7
Ministry of Aboriginal Affairs	Mr.	David	Pichler	Team Lead for EAs	9th Floor, 160 Bloor Street East	Toronto ON M7A 2E6
ORC	Mr.	Anil	Wijesooriya	General Manager, Planning, Survey and Appraisal, Professional Services	1 Dundas St W., Suite 2000	Toronto, ON M5G 2L5
Environment Canada	Mr.	Rob	Dobos	Manager, Environmental Assessment Section	P.O. Box 5050, 867 Lakeshore Road	Burlington, Ontario L7R 4A6
Environment Canada	Ms.	Sheila	Allan	Senior EA Officer	P.O. Box 5050, 867 Lakeshore Road	Burlington ON L7R 4A6
Department of Indian and Northern Affairs		Environmental Unit			25 St. Clair Avenue East, 8th Floor	Toronto ON M4T 1M2
Fisheries and Oceans Canada	Ms.	Cindy	[illegible]	Administrative Assistant	District Office, 3027 Harvester Road, Unit 304	Burlington ON L7R 4K3
Department of Indian and Northern Affairs						
The Chiefs of Ontario	Ms.	Sue	Chiblow	Environmental Coordinator	111 Peter Street, Suite 804	Toronto, ON M5V 2H1
The Métis Nation of Ontario	Ms.	Melanie	Paradis	Director	75 Sherbourne Street, Suite 311	Toronto, ON M5A 2P9
Ontario Federation of Indian Friendship	Ms	Sylvia	Maracle	Executive Director	219 Front Street East	Toronto, ON M5A 1E8
Lands and ART Lands and Trust Services, Indian and Northern Affairs Canada	Ms	Cheyenne	Loon	Senior Environmental Officer	25 St. Clair Avenue East, 8th Floor	Toronto ON M4T 1M2
Mississaugas of the New Credit First Nation	Chief	Bryan	LaForme	Chief	2789 Mississauga Road, R.R. #6	Hagersville, ON N0A 1H0
Regional Municipality of York	Ms	Eva	Pulecio	Environmental Servicing Engineer, Road Branch Transportation and Works Department	17250 Yonge Street	Newmarket ON L3Y 6Z1
City of Toronto (Toronto Water)	Mr	Ted	Bowering	Stormwater Management Manager, Water Infrastructure Management	Metro Hall, 19th Floor, 55 John Street	Toronto ON M5V 3C6
Town of Richmond Hill	Mr	John	Nemeth	Manager of Water Resources	225 East Beaver Creek Road	Richmond Hill ON L4B 3P4
City of Vaughan	Mr.	Saad	Yousaf	Storm Drainage Engineer	2141 Major Mackenzie Drive	Vaughan ON L6A 1T1
Toronto Region Conservation Authority	Mr.	Scott	Smith	Planner II, Environmental Assessment Planning	5 Shoreham Drive	Downsview, Ontario M3N 1S5
Toronto Region Conservation Authority	Mr.	Sameer	Dhalla		5 Shoreham Drive	Downsview, Ontario M3N 1S5
Toronto Region Conservation Authority	Ms	Arlen	Leeming	Don Project Manager	5 Shoreham Drive	Downsview, Ontario M3N 1S5
Toronto Region Conservation Authority	Ms	Alexis	Wood	Highland Project Manager	5 Shoreham Drive	Downsview, Ontario M3N 1S5
Toronto Region Conservation Authority	Ms.	Maria	Papoutsis	Rouge Project Manager	5 Shoreham Drive	Downsview, Ontario M3N 1S5
[redacted]	Mrs	[redacted]	[redacted]		[redacted]	[redacted]
	Mrs	[redacted]	[redacted]		[redacted]	[redacted]
	Mr	[redacted]	[redacted]			

MARKHAM CIVIC CENTRE
101 TOWN CENTRE BOULEVARD
MARKHAM, ONTARIO L3R 9W3
905-477-7000
WWW.MARKHAM.CA

THE CITY PAGE
City of Markham News & Announcements

COUNCIL

Markham Council

Markham Council, Standing Committee and several Advisory and Sub-Committee meetings take place at the Civic Centre and are open to the public. For a complete listing of all meetings that residents are welcome to attend, visit www.markham.ca. Meeting agendas and live audio streaming for Council and Standing Committees are also available online.

Tuesday, February 19, 2013
7:00 p.m. – Public Meeting – Planning

Proclamations
February 17 – 23, 2013: Heritage Week

For more information please contact the Clerk's Office at 905-475-4744

PHASING OUT THE PENNY

Effective February 4, 2013, the Government of Canada began phasing out the penny from the nation's coinage system and the Royal Canadian Mint ceased distribution of the penny to all financial institutions in Canada. As a result of the elimination of the penny over time, businesses have been advised to begin rounding cash transactions to the nearest five cent increment, after all applicable taxes. For non-cash transactions, such as cheque, debit and credit cards, rounding is not required and will still be settled electronically to the cent.

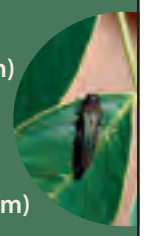
The cent will remain Canada's smallest unit pricing for goods and services and can still be used in cash transactions indefinitely with businesses that choose to accept them. Pennies may be redeemed at your financial institution and the Government encourages Canadians to consider donating them to charities.

The Corporation of the City of Markham will continue to accept pennies as a form of cash payment at its facilities until further notice.

For more information, please visit www.markham.ca

EMERALD ASH BORER
COMMUNITY INFORMATION MEETINGS | 7-9 p.m.

Find out how *YOU* can help!



February 21	Centennial Community Centre (Bocce Room) 8600 McCowan Road
February 27	Thornhill Community Centre (North Hall) 7755 Bayview Avenue
February 28	Armadale Community Centre (Denison Room) 2401 Denison Street
March 21	Cornell Community Centre (Room 1A & 1B) 3201 Bur Oak Avenue
March 28	Angus Glen Community Centre (Activity Room 2 & 3) 3990 Major Mackenzie Drive, East

For more information: www.markham.ca | 905-477-5530

NOTICE OF PUBLIC INFO OPEN HOUSE

CLASS ENVIRONMENTAL ASSESSMENT
MARKHAM STORMWATER MANAGEMENT FACILITIES RETROFIT STUDY

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A key component of the study is consultation with interested parties – public, landowners and regulatory agencies. The Public Information Open House will provide you with an opportunity to review the work completed to-date and discuss with us any issues related to the project, including the preferred design solutions.

Tuesday, March 5, 2013 • 6:30 - 8:00 p.m. • Markham Civic Centre, Canada Room

The study is being conducted as a 'Schedule B' project in compliance with the Municipal Engineers Association document "Municipal Class Environmental Assessment," (October 2000, amended 2007 and 2011) and will address Phases 1 and 2 of the Class EA process. We are interested in hearing any comments or input that you may have about this study to assist the City of Markham in meeting the requirements of the Environmental Assessment Act. This material will be maintained on file for use during the study and may be included in study documentation.

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Environmental Engineer
City of Markham
8100 Warden Avenue, Markham, ON L6G 1B4
Tel: (905) 477-7000 Ext. 2357
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Mr. Geoff Masotti, P.Eng.
Project Manager
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70 Valleywood Drive, Markham, ON L3R 4T5
Tel: (905) 940-6161
E-mail: MarkhamPondRetrofitEA@coleengineering.ca

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PUBLIC NOTICE

2013 Interim Tax Bill – Due Dates

1st Instalment	February 5, 2013
2nd Instalment	March 5, 2013

2013 Interim Pre-Authorized Tax Payment Due Dates

4 Instalment Plan	February 5 and March 5, 2013
6 Instalment Plan	February 5, March 5 and April 5, 2013
11 Instalment Plan	February 1, March 1, April 1, May 1 and June 1, 2013

The balance of the 2013 instalment dates will be reflected on the Final Tax billing in July.

CALCULATION OF INTERIM TAXES: Interim taxes equal 50% of your 2012 annualized taxes. For new properties that were not assessed in 2012 but are on the assessment roll for 2013, 50% of the 2012 tax rate for that class will be applied.

PAYMENT OF TAXES may be made by cash, cheque or debit at the Tax Counter at the Markham Civic Centre or through your financial institution. To serve you better, the Tax Counter is open until 7:00 p.m. every Thursday. After hours tax payments may also be deposited in the drop box at the Thornhill entrance of the Markham Civic Centre.

Payments must be received in the City office or paid at the bank **on or before the due date** to avoid penalty/interest charges. In order for your payment to arrive by the due date, be sure to mail it early. **You should allow 7 days for mailing**. The City does not accept the postmark as proof of the date of receipt.

Failure to receive a Tax Bill does not excuse the taxpayer of the responsibility of paying taxes, nor does it discharge the taxpayer from the liability of any penalties or interest charged for late payment.

PRE-AUTHORIZED PAYMENTS: A Pre-Authorized Payment plan for monthly or instalment payment of taxes through a deduction from your bank account is available. Visit www.markham.ca for an application and more information or contact the Tax Office at 905-475-4864.

ADDRESS/OWNERSHIP CHANGES: If you have changed your mailing address, or if the ownership of the property has changed, please fax the change to 905-415-7544 or write to: City of Markham, Tax Office, 101 Town Centre Boulevard, Markham, Ontario L3R 9W3.

PROPERTY ASSESSMENT: The Municipal Property Assessment Corporation (MPAC) and not the Town of Markham determines the property values. Should you wish to discuss your property's current value assessment, please contact MPAC at 1-866-296-MPAC (6722).

ALL access markham

NEW daily service hours at the Civic Centre beginning February 19
Monday - Friday: 8 a.m. - 5 p.m.

***CONTINUED* extended Contact Centre and Tax Counter service hours**
Every Thursday until 7:00 p.m.

Come in or call 905-477-5530
www.markham.ca provides access to many City services online

MARKHAM

MARKHAM CIVIC CENTRE
101 TOWN CENTRE BOULEVARD
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THE CITY PAGE

City of Markham News & Announcements

Connect with us today!

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Markham Council

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Monday February 25, 2013
9 a.m. – General Committee Meeting
7 p.m. – Special Council Meeting – Queen Elizabeth II Diamond Jubilee Medal Presentation Ceremony

Tuesday, February 26, 2013
7 p.m. – Council Meeting

Wednessday, February 27, 2013
7 p.m. – Committe of Adjustment

For more information please contact the Clerk's Office at 905-475-4744

EMERALD ASH BORER

COMMUNITY INFORMATION MEETINGS | 7-9 p.m.

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www.markham.ca | 905-477-5530

THE CITY OF MARKHAM HAS MOVED FROM 6 TO 4 STANDARD TAX PAYMENT INSTALMENTS A YEAR

2013 Interim Tax Bill – Due Dates

1st Instalment	February 5, 2013
2nd Instalment	March 5, 2013
The balance of the 2013 instalment dates will be reflected on the Final Tax billing in July.	

What Are My Payment Options If I Opt for The Pre-Authorized Tax Payment (PTP) Plan?

The PTP plan provides residents with flexibility, allowing for payment of taxes in 4, 6 or 11 monthly instalments.

2013 Interim PTP - Due Dates

4 Instalment Plan	February 5 and March 5, 2013
6 Instalment Plan	February 5, March 5 and April 5, 2013
11 Instalment Plan	February 1, March 1, April 1, May 1 and June 1, 2013
The balance of the 2013 instalment dates will be reflected on the Final Tax billing in July.	

To apply for the PTP plan, call 905-475-4864 or visit www.markham.ca.

Residents who do not wish to use the PTP plan are required to make their property tax payments through a maximum of 4 instalments per year.

Markham's Race Relations Committee Presents

MANY FACES OF MARKHAM

Celebrating Our *Diverse City*

GET YOUR TICKETS TODAY!
Call 905-415-7500

March 17, 2013 • 2 p.m.
Flato Markham Theatre, 171 Town Centre Blvd.

NOTICE OF PUBLIC INFO OPEN HOUSE

CLASS ENVIRONMENTAL ASSESSMENT
MARKHAM STORMWATER MANAGEMENT FACILITIES RETROFIT STUDY

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Tuesday, March 5, 2013 • 6:30 - 8:00 p.m. • Markham Civic Centre, Canada Room

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Environmental Engineer
City of Markham
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Tel: (905) 477-7000 Ext. 2357
E-mail: ctam@markham.ca

Mr. Geoff Masotti, P.Eng.
Project Manager
Cole Engineering Group Ltd. (Consultant)
70 Valleywood Drive, Markham, ON L3R 4T5
Tel: (905) 940-6161
E-mail: MarkhamPondRetrofitEA@coleengineering.ca

Personal information excluded, all comments received may become part of the public record.

DESIGNATED HERITAGE GRANTS PROGRAM

Markham has a grant program to assist owners of heritage properties designated under the Ontario Heritage Act. A grant in the amount of 50% of the eligible conservation work, to a maximum of $5,000, is available for conservation work such as:

- Improvements which preserve, restore or enhance the specific heritage features of a heritage building (e.g., windows, doors, siding, trim work, verandas, fences);
- Work related to the building's structural soundness;
- Exterior painting in documented original colours to a maximum of 25% of the cost or $2,000, whichever is the lesser;
- Professional design fees related to the heritage work to a maximum of $1,000.

Contact Heritage Section staff to determine eligibility requirements and further details on eligible properties in heritage conservation districts.

Deadline for 2013 Applications: Friday, March 8, 2013 (including two contractor quotes).

For more information call 905-477-7000 ext. 7955, email heritage@markham.ca or visit www.markham .ca

A showcase of art and performances developed by the imagination, creativity, and talent of Markham Youth

An activity of the Canadian Museum and Youth Diversity Experience project made possible with the support of Citizenship and Immigration Canada.

Feb. 22, 2013 | 6 - 10 p.m.
$3 cash only/person
9350 Markham Rd. (Hwy. 48)
905-294-4576
www.markhammuseum.ca

ALL access markham

NEW **daily service hours at the Civic Centre**
Monday - Friday: 8 a.m. - 5 p.m.

CONTINUED **extended Contact Centre and Tax Counter service hours**
Every Thursday until 7:00 p.m.

Come in or call 905-477-5530
www.markham.ca provides access to many City services online


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The Official Site of The City of Markham
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Residents
Business & Development
Recreation & Culture
Municipal Government
About Markham
Recreation & Culture
Discover Markham
Event Calendar
RECREATION & CULTURE
Programs & Activities
Community Centres
Parks & Pathways
Culture
Discover Markham
Event Calendar
Festivals
Community Events
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Return to Home Page
Public Information Open House - Class EA Markham Stormwater Management Facilities Retrofit Study
This Public Information Open House will provide Markham residents with an opportunity to review the work completed to-date on identifying opportunities to improve stormwater management within the City and to discuss with us any issues related to the project, including the preferred design solution identified for each of the priority areas.


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The Official Site of The City of Markham
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Business & Development
Recreation & Culture
Municipal Government
About Markham
About Markham
News Room
News Releases
ABOUT MARKHAM
News Room
Publications
Social Media
Markham Life
Facts & Stats
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Public Information Open House - March 5, 2013
Return to Home Page
This Public Information Open House will provide Markham residents with an opportunity to review the work completed to-date and discuss with City staff any issues related to this project, including the preferred design solutions.
Date: Tuesday, March 5, 2013
Time: Drop-in between 6:30 p.m. and 8:00 p.m.
Location: Markham Civic Centre – Canada Room, 101 Town Centre Boulevard, Markham, Ontario
For more information, read the full Public Information Open House public notice

NOTICE OF PUBLIC INFORMATION OPEN HOUSE

CLASS ENVIRONMENTAL ASSESSMENT
MARKHAM STORMWATER MANAGEMENT FACILITIES RETROFIT STUDY

The City of Markham has initiated a Municipal Class Environmental Assessment (Class EA) to identify and prioritize opportunities to improve stormwater management within the City. Improvements may be achieved through the retrofit of existing stormwater management (SWM) facilities and/or through new SWM infrastructure in areas that currently lack appropriate controls. The study will also identify ways to reduce impacts that the recommended retrofit work may cause.

The first Public Information Open House was held on March 5, 2013 to introduce the study, and present the retrofit design alternatives and preferred solution for the selected priority sites. To date, design concepts for the proposed SWM facility retrofit opportunities have been completed for each of the priority sites.

A second Public Information Open House has been arranged to provide you with an opportunity to review the work completed to-date and discuss with us any issues related to the project, including the proposed retrofit concept designs:

Date: Wednesday, December 4, 2013
Time: Drop-in between 6:30 p.m. and 8:00 p.m.
Location: Markham Civic Centre – Building Boardroom
101 Town Centre Boulevard
Markham, Ontario

If you require further information, would like to be added to the mailing list, or have specific comments related to this study, please email MarkhamPondRetrofitEA@coleengineering.ca or contact:
City of Markham | Cynthia Tam | 905-477-7000x2357 | ctam@markham.ca
Cole Engineering | Geoff Masotti | 905-940-6161 | MarkhamPondRetrofitEA@coleengineering.ca

Personal information excluded, all comments received may become part of the public record.

COLE ENGINEERING

Experience Enhancing Excellence

November 18, 2013
Our Ref: ES12-0316

Email: [redacted]

Attention: [redacted]

Dear Mr. [redacted]:

Re: City of Markham – Class Environmental Assessment
Stormwater Management Facilities Retrofit Study
Notice of Public Information Centre

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The purpose of this letter is to inform you of the PIC, and to provide you with a copy of the Notice of Public Information Centre. If you would like to comment on the project or have any questions or concerns, please contact Geoff Masotti, P.Eng. at MarkhamPondRetrofitEA@coleengineering.ca.

Yours truly,

COLE ENGINEERING GROUP LTD.

Geoff Masotti, P.Eng.
Project Manager

GM:jn

Encls. Notice of Public Information Open House

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Markham SWM Retrofit Class EA PIC #2 Stakeholder Contact List

Ministry of Natural Resources	Mr.	Steven	Strong	Aurora District Planner	50 Bloomington Road West	Aurora ON L4G 3G8
Ministry of Environment	Ms.	Dorothy	Moszynski	Environmental Resource Planner/EA Coordinator	5th Floor, 5775 Yonge Street	North York ON M2M 4J1
Ministry of Transportation Ontario	Ms.	Lola	Vaz-Relvero	Head, Transportation Highway Engineering	1201 Wilson Avenue, 2nd Floor, Bldg D	Downsview ON M3M 1J8
Ministry of Transportation Ontario	Mr.	Bob	Stephenson	Head, Transportation Highway Engineering	1201 Wilson Avenue, 2nd Floor, Bldg D	Downsview ON M3M 1J8
Ministry of Transportation Ontario	Ms. / P.Eng	Rebecca	Peirs	Senior Project Engineer, Highway Engineering, York / Simcoe	1201 Wilson Avenue, 4th Floor, Bldg D	Downsview ON M3M 1J8
Ministry of Culture	Ms.	Paula	Kulpa	Team Lead, Heritage Land Use Planning	401 Bay Street, Suite 1700	Toronto, ON M7A 0A7
Ministry of Aboriginal Affairs	Mr.	David	Pickles	Team Lead for EAs	9th Floor, 160 Bloor Street East	Toronto ON M7A 2E6
Infrastructure Ontario	Ms.	Lisa	Myslicki	Environmental Advisor, Environmental Management	1 Dundas St W., Suite 2000	Toronto, ON M5G 2L5
Environment Canada	Mr.	Rob	Dobos	Manager, Environmental Assessment Section	P.O. Box 5050, 867 Lakeshore Road	Burlington, Ontario L7R 4A6
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Department of Indian and Northern Affairs		Environmental Unit			25 St. Clair Avenue East, 8th Floor	Toronto ON M4T 1M2
Fisheries and Oceans Canada	Ms.	Cindy	Letendresse	Administrative Assistant	District Office, 3027 Harvester Road, Unit 304	Burlington ON L7R 4K3
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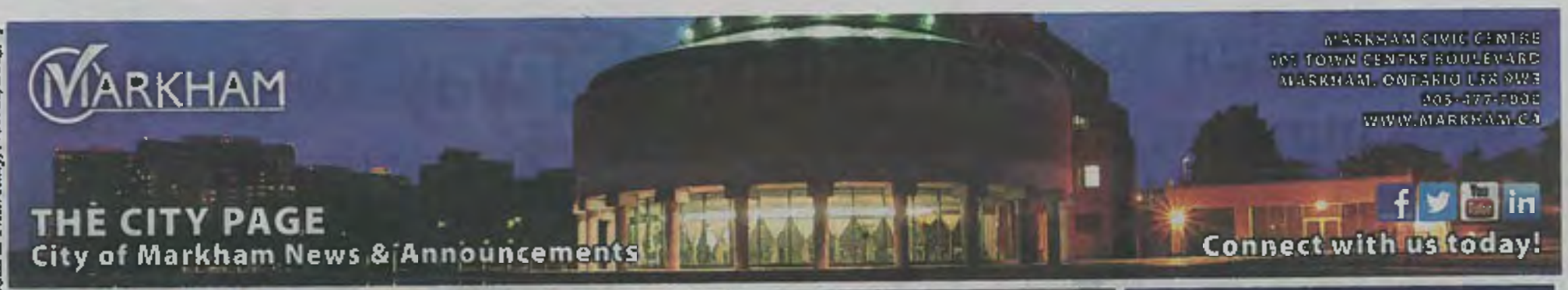
Regional Municipality of York	Ms.	Eva	Pulnicki	Environmental Servicing Engineer, Road Branch, Transportation and Works Department	17250 Yonge Street	Newmarket ON L3Y 6Z1
City of Toronto (Toronto Water)	Mr.	Ted	Bowering	Stormwater Management Manager, Water Infrastructure Management	Metro Hall, 18th Floor, 55 John Street	Toronto ON M5V 3C6
Town of Richmond Hill	Ms.	Kathleen	Wyeth	Water Resources Coordinator	225 East Beaver Creek Road	Richmond Hill ON L4B 3P4
City of Vaughan	Mr.	Saad	Yousaf	Storm Drainage Engineer	2141 Major Mackenzie Drive	Vaughan ON L6A 1T1
Toronto Region Conservation Authority	Mr.	Scott	Smith	Planner II, Environmental Assessment Planning	5 Shoreham Drive	Downsview, Ontario M3N 1S4
Toronto Region Conservation Authority	Mr.	Sameer	Dhalla		5 Shoreham Drive	Downsview, Ontario M3N 1S4
Toronto Region Conservation Authority	Ms.	Arlen	Leeming	Don Project Manager	5 Shoreham Drive	Downsview, Ontario M3N 1S4
Toronto Region Conservation Authority	Ms.	Alexis	Wood	Highland Project Manager	5 Shoreham Drive	Downsview, Ontario M3N 1S4
Toronto Region Conservation Authority	Ms.	Maria	Parker	Rouge Project Manager	5 Shoreham Drive	Downsview, Ontario M3N 1S4
[redacted]	Miss	[redacted]	[redacted]		[redacted]	[redacted]
	Mrs.	[redacted]	[redacted]		[redacted]	[redacted]
	Mr.	[redacted]	[redacted]			



COUNCIL

Markham Council

Markham Council, Standing Committee and several Advisory and Sub-Committee meetings take place at the Civic Centre and are open to the public. For a complete listing of all meetings that residents are welcome to attend, visit www.markham.ca. Meeting agendas and live audio streaming for Council and Standing Committees are also available online.

Tuesday, November 26, 2013
6:00 p.m. – Water and Wastewater Public Meeting
7:00 p.m. – Council

Proclamations
November: Lung Month

For more information please contact the Clerk's Office at 905-475-4744.

Markham Village Music Festival

Annual General Meeting
Nov. 25 @ 6:30 p.m.
St. Andrew's Presbyterian Church
143 Main Street Markham
Fellowship Hall - Lower Level

- Be part of one of the community's largest annual events
- Meet new people and join a great events team

Refreshments will be served. All are welcome.
For more information, contact Jo-anne Pyke at east2westeo@gmail.com

Markham Fire and Emergency Services 27th ANNUAL TOY DRIVE

In support of the Salvation Army and Markham Stouffville Hospital Children's Centre

Suggested items:
Infants: Diapers and formula
Children: New unwrapped toys, mitts, hats, stocking stuffers
Teens: Gift cards for movies or clothing stores

New unwrapped toys can be dropped off at any Markham Fire Station until Dec. 20. For large donations, contact us for pick up

For more information, visit mfes-toydrive.com

Mayor Scarpitti & Members of Council invite you to celebrate the

SOUTHEAST COMMUNITY CENTRE & LIBRARY

Official Groundbreaking Ceremony

Sunday, December 1, 2013
2:00 p.m. - 4:00 p.m.
On Middlefield Rd. at 14th Ave.
(Middlefield Rd. closed between 14th Ave. and Highglen Ave.)

Building Markham's Future Together!

PUBLIC INFORMATION OPEN HOUSE
STORMWATER MANAGEMENT FACILITIES RETROFIT STUDY

The City of Markham has initiated a Municipal Class Environmental Assessment (Class EA) to identify and prioritize opportunities to improve stormwater management within the City. Improvements may be achieved through the retrofit of existing stormwater management (SWM) facilities and/or through new SWM infrastructure in areas that currently lack appropriate controls. The study will also identify ways to reduce impacts that the recommended retrofit work may cause.

The first Public Information Open House was held on March 5, 2013 to introduce the study, and present the retrofit design alternatives and preferred solution for the selected priority sites. To date, design concepts for the proposed SWM facility retrofit opportunities have been completed for each of the priority sites.

A second Public Information Open House has been arranged to provide you with an opportunity to review the work completed to-date and discuss with us any issues related to the project, including the proposed retrofit concept designs:

Wednesday, December 4, 2013
Drop-in between 6:30 p.m. and 8:00 p.m.
Markham Civic Centre – Building Boardroom
101 Town Centre Boulevard

If you require further information, would like to be added to the mailing list, or have specific comments related to this study, please email:
MarkhamPondRetrofitEA@coleengineering.ca or contact:
City of Markham | Cynthia Tam | 905-477-7000 x2357 | ctam@markham.ca
Cole Engineering | Geoff Masotti | 905-940-6161 | MarkhamPondRetrofitEA@coleengineering.ca

Personal information excluded, all comments received may become part of the public record.

Building Markham's Future Together

AN EXHIBITION OF ACCOMPLISHMENTS
2009 - 2013

The City of Markham, its residents, businesses and local organizations have been hard at work Building Markham's Future Together (BMFT).

Over the next few months, we're taking our exhibition of accomplishments on the road. Come out and see the many achievements we have to celebrate!

Visit markham.ca for a list of locations.

Join us November 30, 2013

Sport Celebration Day in Markham

In celebration of RBC Sports Day in Canada, Markham invites you to participate in FREE activities for the whole family!

Centennial Community Centre
(8600 McCowan Road)
1:00 – 10:00 p.m.

Details at www.markham.ca

TRUE SPORT

MARKHAM SANTA CLAUS PARADE

Presented by:
ROTARY CLUB OF MARKHAM SUNRISE INC.

Sat., Nov. 30 • 11 a.m. - 1 p.m.
Main Street Markham (Markham Rd. & Hwy. 7)
Don't miss the Main Street Markham BIA's 29th Annual Festival of Lights on Friday, November 29, from 6 - 9 p.m.!
MarkhamSantaClausParade.com

Parade Sponsors
Media Sponsors
MARKHAM

MARKHAM COUNCIL

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Monday, December 2, 2013
9:00 a.m. – General Committee:
Report on the recommended 2014 Budget
7:00 - 11:00 p.m. - Special Council Meeting Re: Markham Sports, Entertainment & Cultural Centre at Hilton Suites
If required, an additional meeting will be held on Dec. 3 at the same time and location.

Tuesday, December 3, 2013
9:00 a.m. – Development Services Committee/Public Meeting

Wednesday, December 4, 2013
7:00 p.m. – Committee of Adjustment

Proclamations
Dec. 1: World AIDS Day
Dec. 3: International Day of Persons with Disabilities

Markham Environmental Sustainability Fund

If you have a great idea for an environmental project, APPLY NOW!

For more information, visit *www.markham.ca*
For an application form, call **905-415-7502**

Spring application deadline: Feb. 14, 2014

Markham Fire and Emergency Services
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Markham Civic Centre – Lower Atrium of Great Hall
101 Town Centre Boulevard

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Cole Engineering | Geoff Masotti | 905-940-6161 | MarkhamPondRetrofitEA@coleengineering.ca

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Markham Winter Parking

Safety Awareness Program

Parking on both sides of residential streets restricts emergency vehicle access.

Please park **only** on the **odd** numbered side of local residential streets between **November 15 and April 15.**

(Does not apply to streets with existing posted parking restrictions.)

For more info, call 905-477-7000 ext. 2050 or visit www.markham.ca

Driveway Windrow Removal Assistance Program

Eligible elderly and physically challenged residents can register to have snow windrows cleared from driveways.

For further info, call 905-477-5530, email customerservice@markham.ca or visit www.markham.ca

Join us November 30, 2013

Sport Celebration Day in Markham

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Centennial Community Centre
(8600 McCowan Road)
1:00 – 10:00 p.m.

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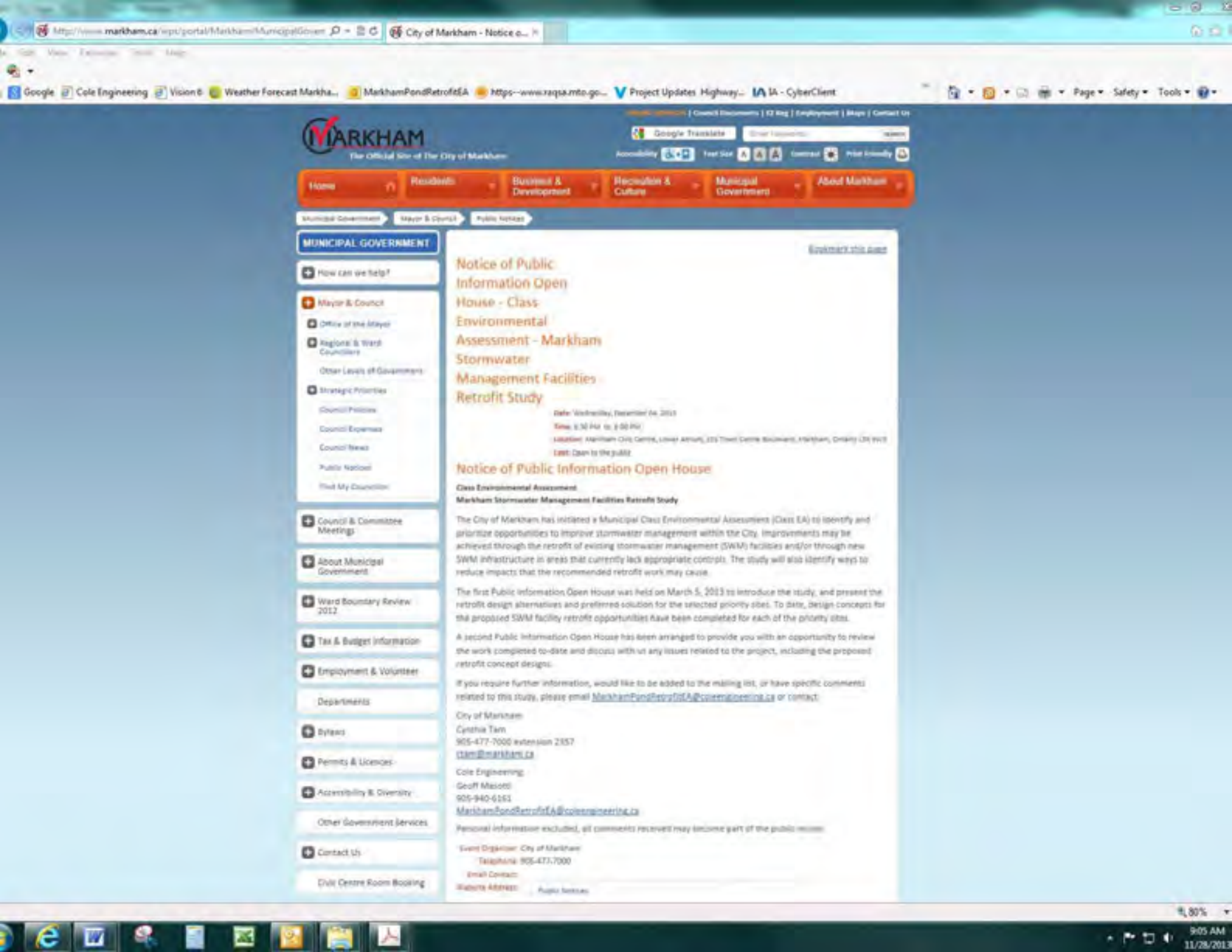

City of Markham - Notice o...

Google | Cole Engineering | Vision 6 | Weather Forecast Markha... | MarkhamPondRetrofitEA | https--www.raqsa.mto.go... | Project Updates Highway... | IA - CyberClient

MARKHAM
The Official Site of The City of Markham

Google Translate | Accessibility | Text Size | Contrast | Print Friendly

Home | Residents | Business & Development | Recreation & Culture | Municipal Government | About Markham

MUNICIPAL GOVERNMENT

- How can we help?
- Mayor & Council
  - Office of the Mayor
  - Regional & Ward Councillors
  - Other Levels of Government
  - Strategic Priorities
  - Council Policies
  - Council Expenses
  - Council News
  - Public Notices
  - Find My Councillor
- Council & Committee Meetings
- About Municipal Government
- Ward Boundary Review 2012
- Tax & Budget Information
- Employment & Volunteer
- Departments
- Bylaws
- Permits & Licences
- Accessibility & Diversity
- Other Government Services
- Contact Us
- Civic Centre Room Booking

Bookmark this page

Notice of Public Information Open House - Class Environmental Assessment - Markham Stormwater Management Facilities Retrofit Study

Date: Wednesday, December 04, 2013
Time: 6:30 PM to 8:00 PM
Location: Markham Civic Centre, Lower Atrium, 101 Town Centre Boulevard, Markham, Ontario L3R 9W3
Cost: Open to the public

Notice of Public Information Open House

Class Environmental Assessment
Markham Stormwater Management Facilities Retrofit Study

The City of Markham has initiated a Municipal Class Environmental Assessment (Class EA) to identify and prioritize opportunities to improve stormwater management within the City. Improvements may be achieved through the retrofit of existing stormwater management (SWM) facilities and/or through new SWM infrastructure in areas that currently lack appropriate controls. The study will also identify ways to reduce impacts that the recommended retrofit work may cause.

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If you require further information, would like to be added to the mailing list, or have specific comments related to this study, please email MarkhamPondRetrofitEA@coleengineering.ca or contact:

City of Markham
Cynthia Tam
905-477-7000 extension 2357
ctam@markham.ca

Cole Engineering
Geoff Mason
905-940-6161
MarkhamPondRetrofitEA@coleengineering.ca

Personal information excluded, all comments received may become part of the public record.

Event Organizer: City of Markham
Telephone: 905-477-7000
Email Contact:
Website Address: Public Notices

80%

9:05 AM
11/28/2013

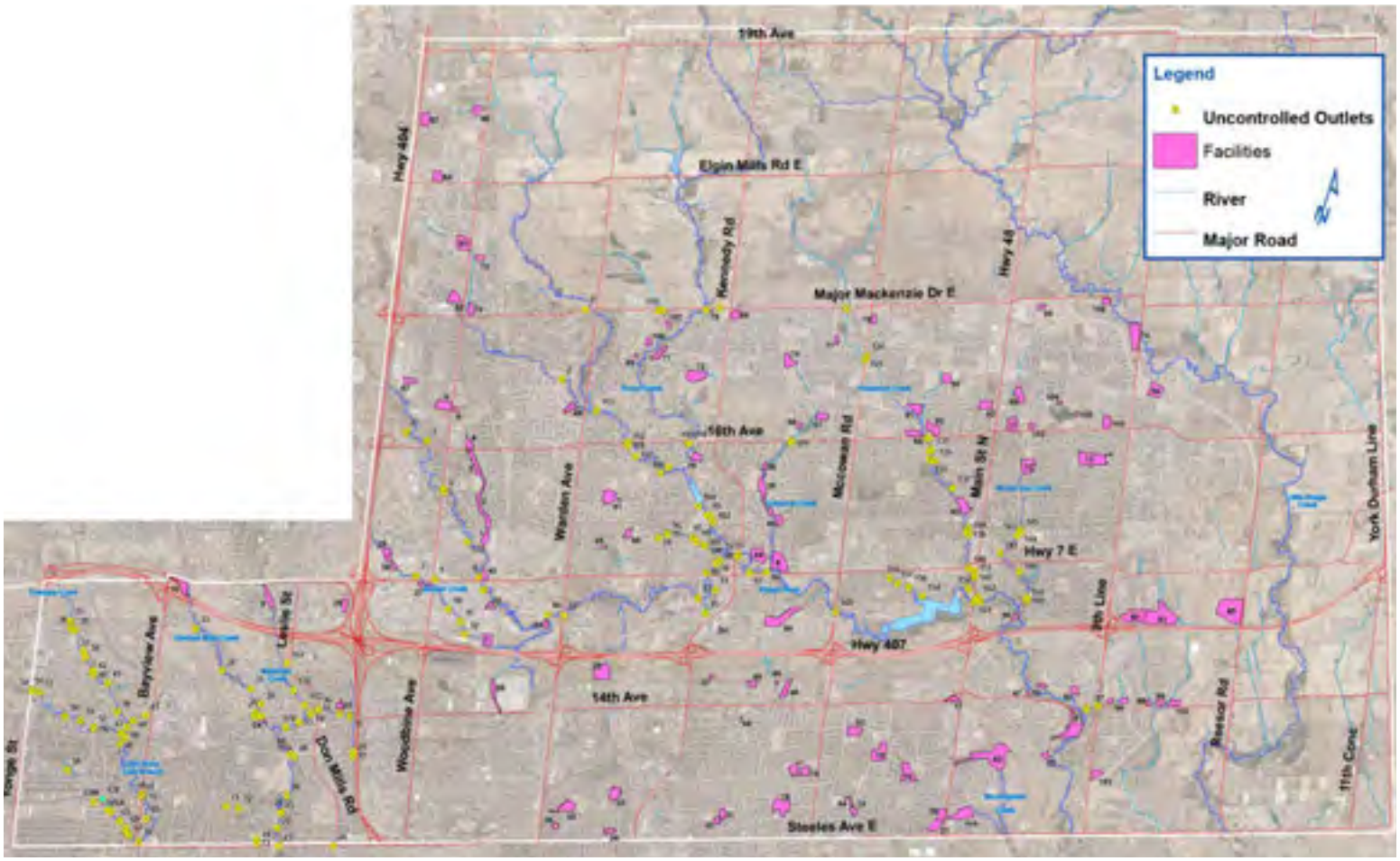
APPENDIX K
Public Information Centre Materials

Markham Stormwater Management Facilities Retrofit Study
Municipal Class EA

Public Information Centre

Markham Civic Centre, Canada Room

March 5, 2013



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Welcome to the Markham Stormwater Management Facilities Retrofit Study Municipal Class EA Public Information Centre (PIC)

Markham Civic Centre, Canada Room
March 5, 2013

- Please sign in on the sheet provided, then feel free to walk around and view the displays.
- If you have any questions, our representatives will be pleased to discuss the project with you.
- Comment sheets are provided for those who wish to provide comments in writing. Please either place your completed sheets in the Comment Box or mail / fax them to one of the identified Project Team Members (see below) by **March 19, 2013.**
- Thank-you for your involvement in this project.
- For additional information, please contact one of the following Team Members:

Cynthia Tam, M. Eng., P.Eng., PMP
Environmental Engineer
City of Markham
8100 Warden Avenue
Markham, ON L6G 1B4
Phone: 905-477-7000 ext. 2357
Fax: 905-479-7766
Email: ctam@markham.ca

Geoff Masotti, P.Eng.
Project Manager
Cole Engineering Group Ltd.
70 Valleywood Drive
Markham, ON L3R 4T5
Phone: 905-940-6161
Fax: 905-940-2064
E-mail:
MarkhamPondRetrofitEA@coleengineering.ca

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Purpose of the Public Information Centre

The purpose of this PIC is to introduce you to this project, inform you of progress to date, and obtain your comments.

The major elements presented today are:

- Study Overview & Background;
- Overview of the Municipal Class Environmental Assessment Process;
- Problem / Opportunity Statement;
- Screening of Existing Stormwater Management Facilities & Outlets to Identify Opportunities for Improvement;
- Prioritization of Opportunities for Stormwater Management Improvements;
- Alternative Solutions;
- Evaluation of Alternative Solutions;
- Identification of the Preferred Solution(s); and,
- Next Steps.

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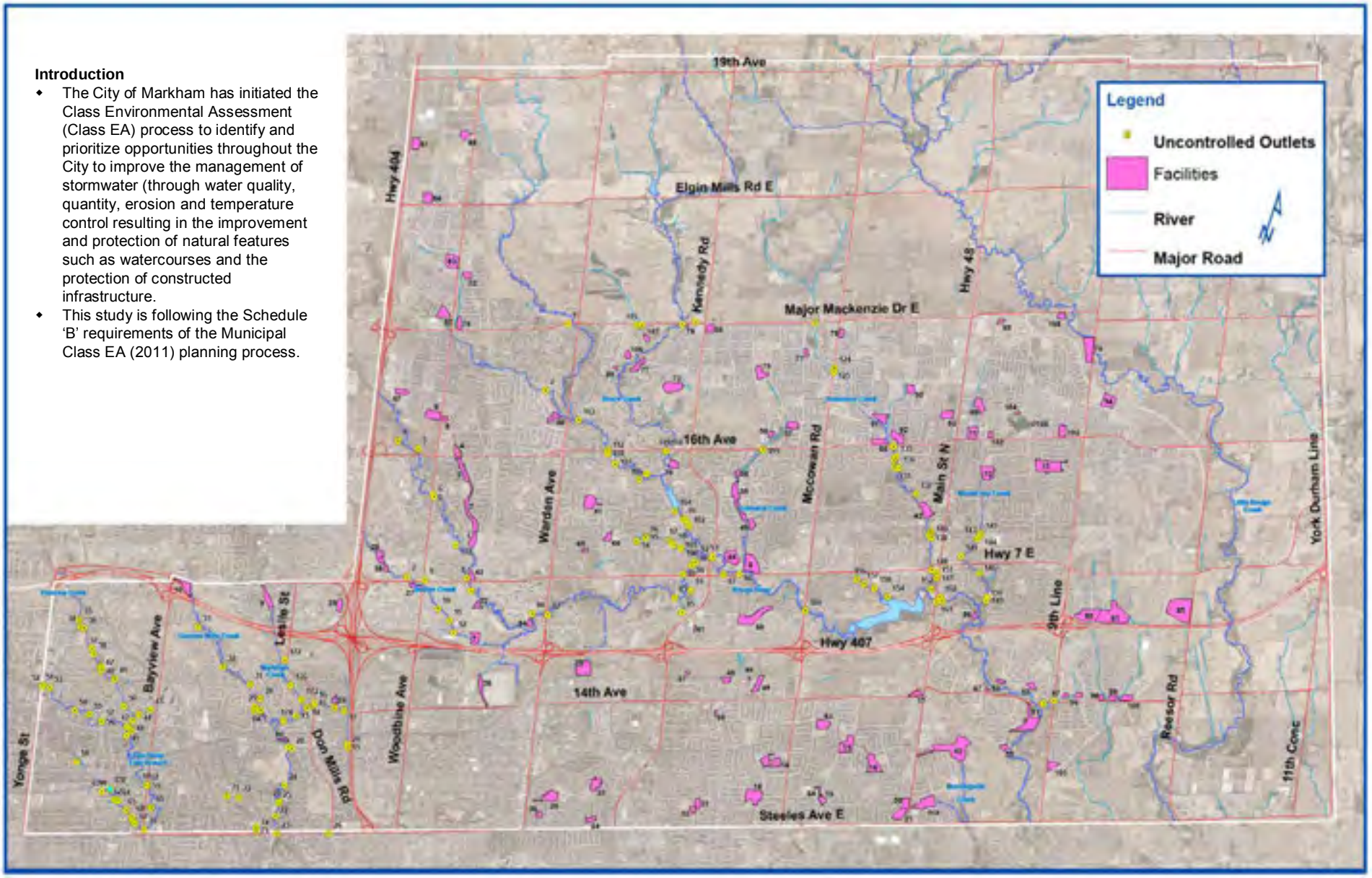
Study Overview

Introduction

- The City of Markham has initiated the Class Environmental Assessment (Class EA) process to identify and prioritize opportunities throughout the City to improve the management of stormwater (through water quality, quantity, erosion and temperature control resulting in the improvement and protection of natural features such as watercourses and the protection of constructed infrastructure.
- This study is following the Schedule 'B' requirements of the Municipal Class EA (2011) planning process.



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Background

- There are approximately 110 stormwater management (SWM) facilities in the City of Markham (City) including ponds, wetlands and flood control storage areas. The City is responsible for the management of approximately 80 of these SWM facilities.

- There are approximately 158 storm sewer outlets throughout the City that do not have any stormwater controls and outlet directly to creeks and rivers.

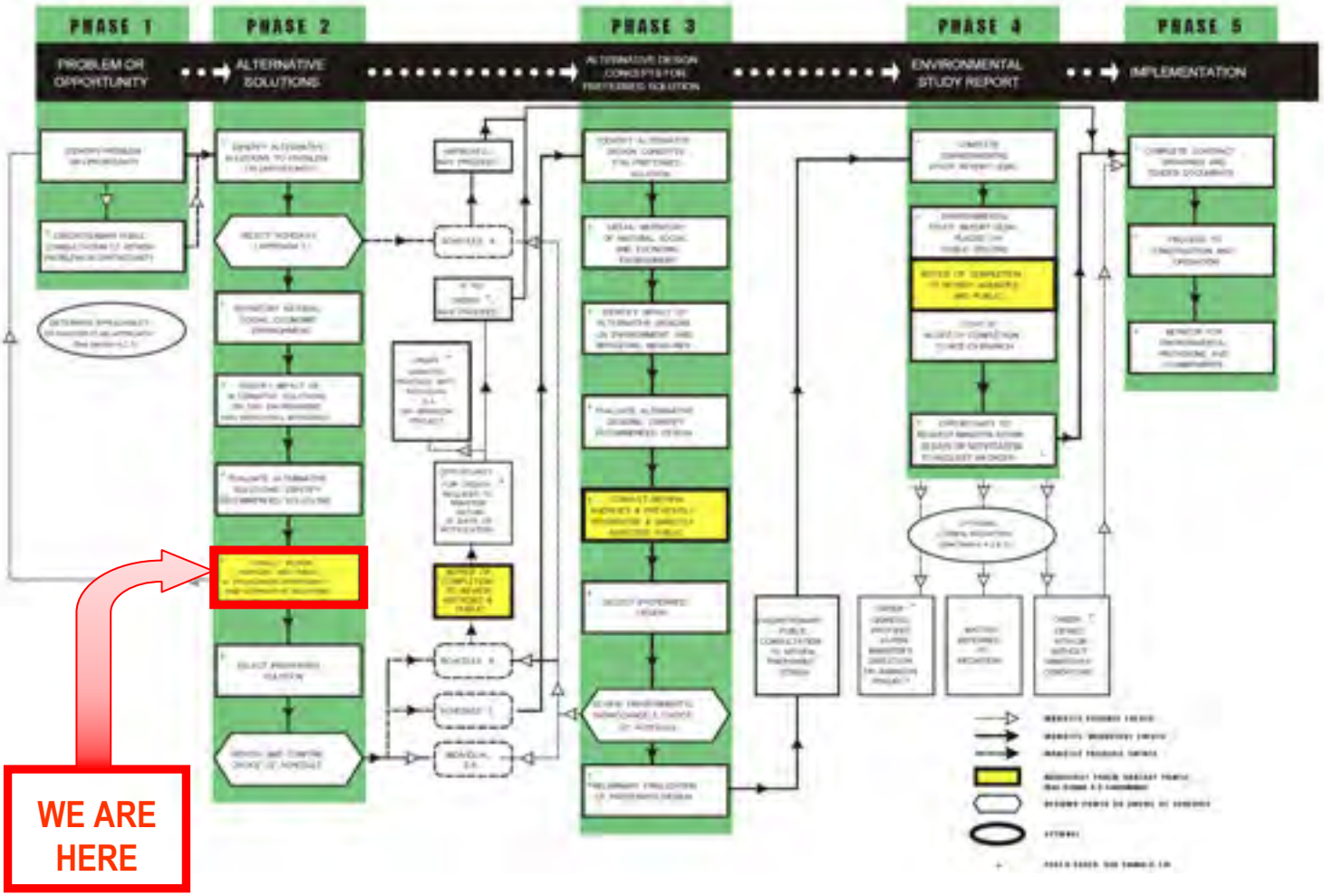
- SWM standards have advanced significantly since the earliest SWM facilities were constructed, resulting in the need to improve the functionality of older facilities.

- A previous Stormwater Retrofit Study was completed in 1999 with the participation of the TRCA. Since then, a number of stormwater management facilities have been retrofitted as recommended in the 1999 Study.

- Since the 1999 Study, Redside Dace, a fish species with significant populations throughout the City has been listed as an endangered species. The City would like to identify new retrofit opportunities to protect and enhance the habitat for this protected species.

- Since the 1999 Study, the City's urban boundary has expanded and SWM standards have further advanced. Given all of these factors the City has initiated a Stormwater Retrofit Study Update.

Overview of the Class Environmental Assessment Process



- The *Municipal Class Environmental Assessment (2011)* (Class EA) process, which is approved under the *Environmental Assessment Act*, enables the planning of municipal infrastructure projects in accordance with a proven procedure for protecting the environment.
- The study is being undertaken as a Schedule 'B' project in accordance with the first two Phases of the Class EA process.
- The Schedule 'B' Class EA process includes public and review agency consultation, an evaluation of alternatives, an assessment of the effects on the environment, and identification of reasonable measures to mitigate any adverse effects.
- There are opportunities at any time during the Class EA process for public input, including this PIC.
- Upon completion of the Class EA, a Project File Report will be available for public review.

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Problem / Opportunity Statement

Problem

- Stormwater Management (SWM) standards in Ontario have evolved significantly since the practice was made widespread pre-1980's. A number of the City's SWM facilities were built prior to 1990 and may not achieve the current standard level of water quality and flood control, or habitat protection.
- The City's urban boundary has recently expanded and now includes additional existing SWM facilities.
- The City contains a significant population of Redside Dace, a fish species recently designated as an endangered species by the Ministry of Natural Resources. Redside Dace habitat may be negatively impacted by lower quality runoff released by SWM facilities or lack of proper SWM facilities.

Opportunity

- In response to the additional SWM retrofit opportunities and to participate in the protection and recovery of Redside Dace, the City has commissioned this SWM Facilities Retrofit Study Class Environmental Assessment to update and prioritize opportunities to improve the management of stormwater within Markham.
- Improvements may be achieved through the retrofit of existing SWM facilities and through the construction of new SWM facilities in areas that are currently lacking appropriate controls.
- These opportunities seek to improve watercourse water quality and water temperature control, protect / enhance aquatic and terrestrial habitat and give consideration to environmentally significant areas.
- A prioritized list of SWM facility retrofit and new construction opportunities will be developed with consideration of the potential natural, social, economic, and cultural effects of the alternatives.

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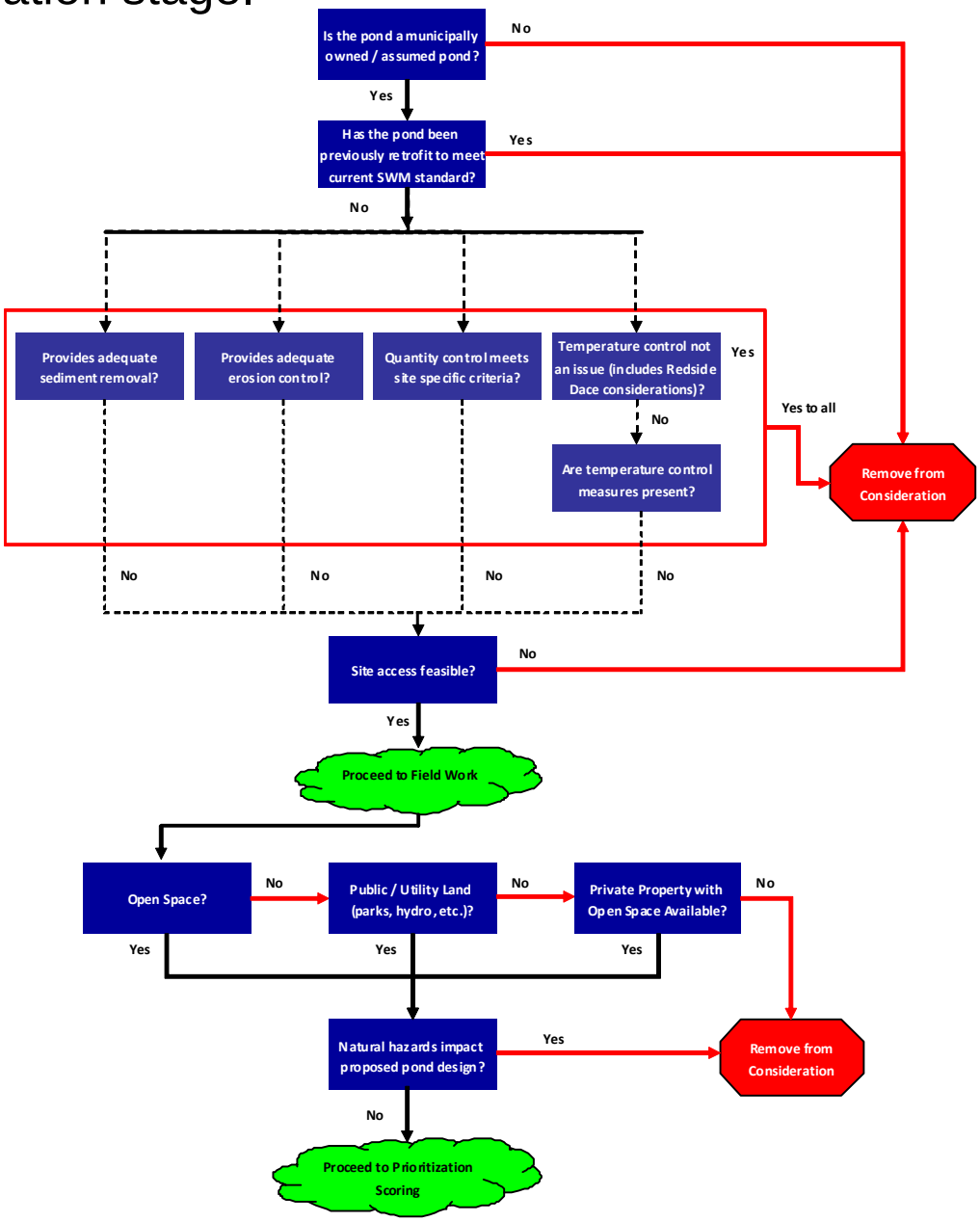
Screening of Existing SWM Facilities to Identify Opportunities for Improvement

- The following screening criteria were used to screen out existing stormwater management facilities that would not benefit from retrofit or where retrofit is not feasible.

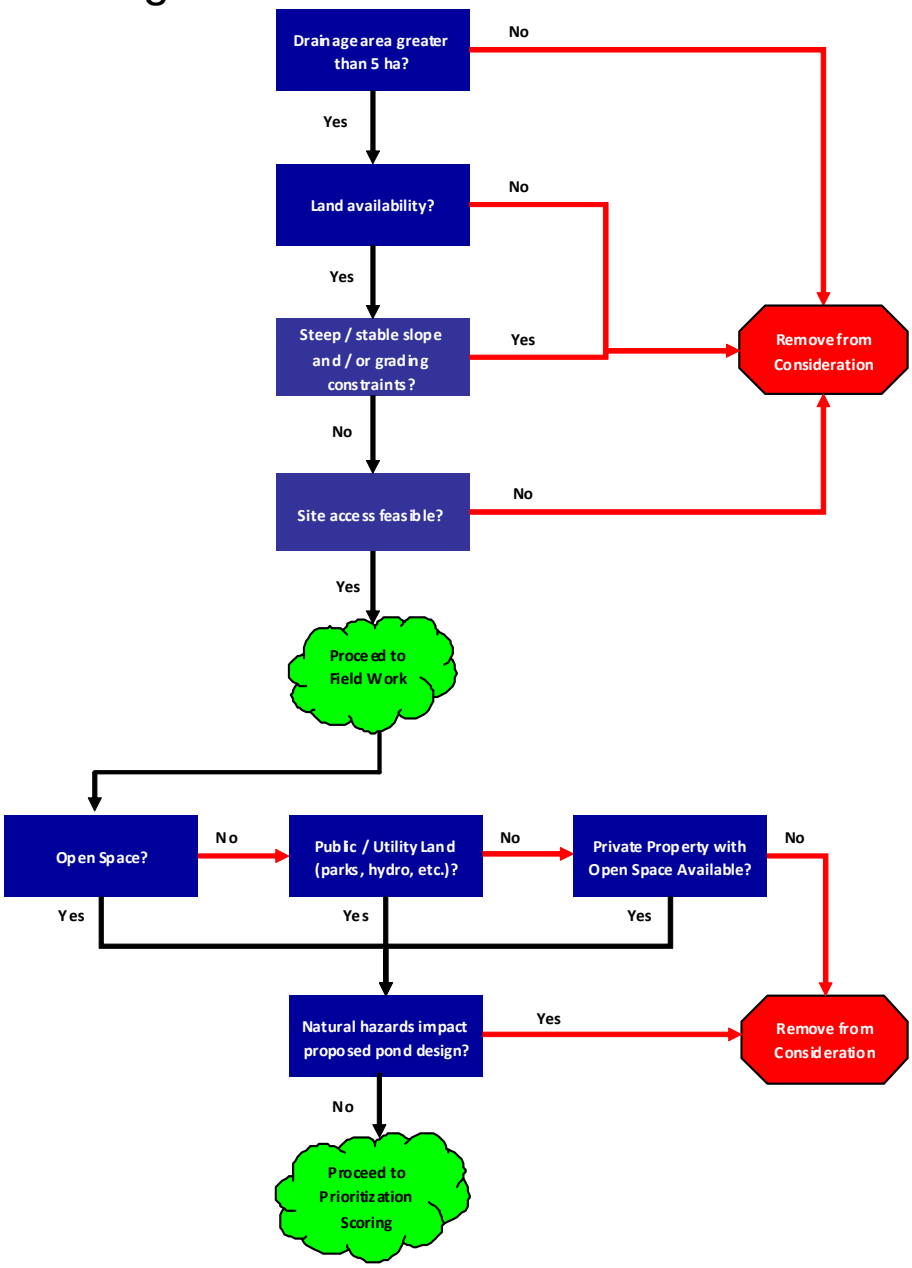
- Using this criteria 110 existing SWM facilities were screened down to a list of 24 facilities that proceeded to the prioritization stage.



Screening of Existing Uncontrolled Storm Outlets to Identify Opportunities for Improvement

- The following screening criteria were used to screen out existing uncontrolled outlets that would not significantly benefit from retrofit or where retrofit is not feasible.

- Using this criteria 158 uncontrolled outlets were screened down to a list of 13 outlets that proceeded to the prioritization stage.



Prioritization of Opportunities for Stormwater Management Improvements

- The following prioritization criteria were used to prioritize the 37 identified opportunities for SWM improvements.

Criterion (Score)	Weighting out of 100
Quantity Control Upgrade Required and Feasible (Yes = 1, No = 0)	15
Quality Control Upgrade Required and Feasible (Yes = 1, No = 0)	15
Erosion Control Upgrade Required and Feasible (Yes = 1, No = 0)	10
Temperature Mitigation Upgrade Required and Feasible (Yes = 1, No = 0)	10
Cost / order of magnitude (Low = 1, Moderate = 0.5, High = 0)	19
Property Acquisition Required (No = 1, Yes = 0)	17
ELC / SAR / ESA (Less valued ELC and no SAR / ESA = 1, Less valued ELC, no ESA and only SAR present is Redside Dace = 0.5, Valued ELC and/or ESA and/or multiple SAR present = 0)	7
Archaeological / Cultural Heritage Significance (No = 1, Either archaeological or cultural assessment required = 0.5, Both archaeological and cultural assessment required = 0)	7

- SWM improvements could be achieved by retrofitting an existing SWM facility or by constructing new SWM controls where there is currently an uncontrolled storm sewer outlet.

- The top 20 priority sites were then carried forward to the next phase of the Study.

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Evaluation of Alternative Design Solutions

- The alternative solutions for each of the top 20 priority sites were evaluated based on the below criteria to identify the preferred design solution(s) for each site.
- In many cases a combination of solutions is preferred to improve a number of different stormwater management aspects including water quality, erosion, temperature and flood control.

Technical Considerations
Constructability and accessibility
Ability to meet stormwater management objectives, as applicable (e.g. quantity, quality, erosion and temperature control)
Engineering best practises / innovative solution
Natural Environment
Impacts to wildlife and vegetation habitats
Impacts / improvements based on SAR / ESA
Social Impacts
Requirement of easements or purchase of private lands
Impacts to public and private properties due to construction and operations
Effect on public safety
Cultural Environment
Impacts to built and cultural heritage landscape
Impacts to archaeological resources
Economic Considerations
Capital costs
Maintenance and operating costs
Impact on future development and growth

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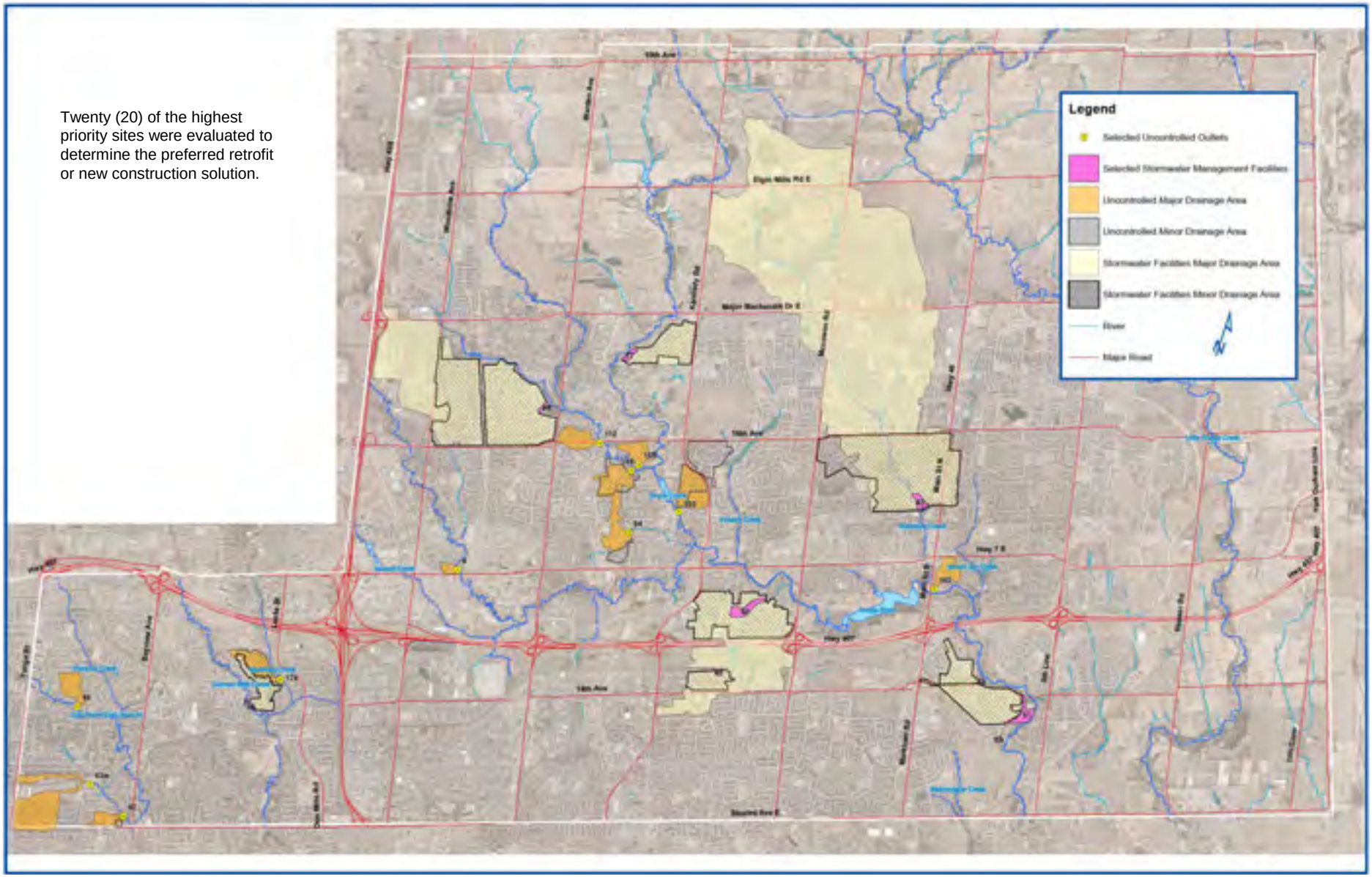
Priority Sites Evaluated for Preferred Retrofit Solution

Twenty (20) of the highest priority sites were evaluated to determine the preferred retrofit or new construction solution.



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Summary of Alternative Solution Evaluation and Results

	Target SWM Objectives	Pond ID									Uncontrolled Outlet ID										
		24	42	45	47	48	51	55	60	77	8	55	63w	67	94	103	105	106	112	162	176
	Flood Control	◊				◊								◊						◊	
	Erosion Control	◊	◊	◊	◊	◊	◊	◊	◊		◊	◊	◊	◊	◊		◊	◊	◊	◊	◊
	Water Quality Control	◊	◊	◊	◊		◊				◊	◊	◊	◊	◊	◊	◊	◊	◊	◊	◊
	Temperature Control		◊	◊	◊	◊	◊	◊		◊	◊				◊	◊	◊	◊	◊	◊	
Target SWM Objectives Achieved	**Design Alternative**																				
N/A	Do Nothing	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Water Quality Control	Oil-Grit Separator	✓	✓	×	✓		×				✓	✓	×	×	✓	×	×	✓	✓	×	✓
Water Quality Control	Convert to Wet Pond	×	×	✓			✓														
Water Quality Control	Construct Forebay	×	×																		
Water Quality Control	Construct Quality Control Pond		✓								×	×	✓	✓	×	✓	✓	×	×	✓	×
Erosion Control	Construct Extended Detention Facility		✓					×			✓		✓	✓	×		✓	✓	✓	✓	×
Erosion Control	Retrofit Pond Outlet to Extend Detention	✓		✓	✓	✓	✓	✓	✓												
Temperature Control	Bottom Draw Outlet in Wet Pond		✓	✓	×	✓	✓	×		×	×				×	✓	✓	×	×	✓	
Temperature Control	Cooling Trench		×	×	✓	×	×	✓		✓	✓				×	×	×	✓	✓	×	
Temperature Control	Aquatic and Riparian Plantings at Facility		✓	✓	✓	✓	✓	✓		✓	✓				×	×	✓	✓	✓	✓	
Erosion and Temperature Control - or - Flood and Temperature Control	Underground Storage (with or without infiltration)	×	×	×	✓	✓	✓	×	✓	×	✓	✓	×	×	✓	×	×	×	×	✓	✓
Flood Control	Retrofit Pond Outlet to Control Major Events	✓				✓															
Flood Control	Construct Quantity Control Facility													✓						✓	
Water Quality, Erosion and Temperature Control	Bioswales	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Water Quality, Erosion and Temperature Control	Perforated Pipe System (infiltration in road right-of-ways)	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Water Quality, Erosion and Temperature Control	Vegetated Filter Strip Along Watercourse		×																		
Flood Control &/or Water Quality Control &/or Erosion Control	Expand Size of Existing Pond	×		✓	✓	✓	✓	✓	✓												

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✓ Preferred Solution

× Evaluated Option but not the Preferred Solution

Not Applicable for this Site

◊ Targeted Stormwater Management Objective

MARKHAM

Alternative Solutions for Water Quality Control

Install a Oil-Grit Separator

- An underground chamber that treats stormwater collected in sewers before it's released into a pond or watercourse.
- A relatively low cost option that can fully meet water quality control criteria.
- Minimal disturbance during construction and the structure is fully underground so there are no impacts on safety or aesthetics of a public space.

Convert Existing Facility into a Wet Pond

- Convert an existing dry pond or wetland (which does not provide any or only a limited amount of water quality control) into a wet pond which can fully meet quality control criteria.
- The retrofit facility can likely remain the same size as the existing facility and incorporate existing infrastructure. This reduces the size of the construction site and costs.

Construct a Forebay

- Construct a forebay within an existing facility at the facility inlet. This involves excavation of a deeper depression with ponded water at the inlet and can improve or fully meet water quality control criteria.
- This retrofit alternative contains the construction within the area of an existing dry or wet SWM facility, minimizing impacts to the surrounding area.

Construct a Quality Control Pond

- Construct a quality control pond where no facility currently exists (only an uncontrolled outlet exists).
- A quality control pond is also known as a wet pond and includes a forebay and a separate section of ponded water that allows sediment in the storm water to settle out and be contained within the pond.
- This retrofit will result in a change of the current land use, more extensive construction work and greater costs.

Example of a Quality Control Pond

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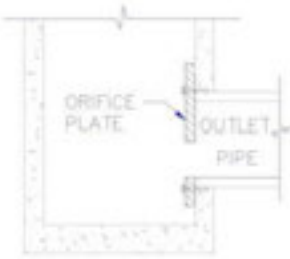
Alternative Solutions for Erosion or Flood Control

Construct an Extended Detention Facility

- Construct a surface storage facility that will hold back a specific quantity of storm runoff and release over an extended period of time to reduce erosion of the receiving watercourse.
- A stand-alone extended detention facility is a dry pond, or the extended detention facility can be constructed vertically ‘ontop’ of a quality control facility (wet pond) to minimize the area utilized for stormwater management control.
- A surface storage facility is less costly than an underground facility. A dry pond allows for recreational use of the land during dry periods.

Retrofit Pond Outlet to Extend the Detention Time



- Modify or replace the existing outlet control structure to extend the amount of time it takes for water to drain out of an existing SWM facility (wet or dry pond).
- The retrofit facility can likely remain the same size as the existing facility and incorporate existing infrastructure. This reduces the size of the construction site and costs.

Retrofit Pond Outlet to Provide Additional Storage for Flood Control

- Modify, replace or add outlet control structures within an existing pond to allow the pond the detain and control the release of stormwater from large rainstorms.
- If the pond does not have storage space available to store this water, the pond will need to be expanded outward and/or vertically. Construction activity will be limited to the immediate area surrounding the existing facility.
- This alternative can fully meet flood control criteria if the necessary storage volume can be provided.

Construct a Flood Control Facility

- Construct a surface storage facility that will hold back a specific quantity of storm runoff from large rainstorms and control the release of the water into the receiving watercourse.
- A stand-alone flood control facility is a dry pond, or the flood control facility can be constructed vertically ‘ontop’ of a quality control facility (wet pond) to minimize the area utilized for stormwater management control.
- A surface storage facility is less costly than an underground facility. A dry pond allows for recreational use of the land during dry periods.

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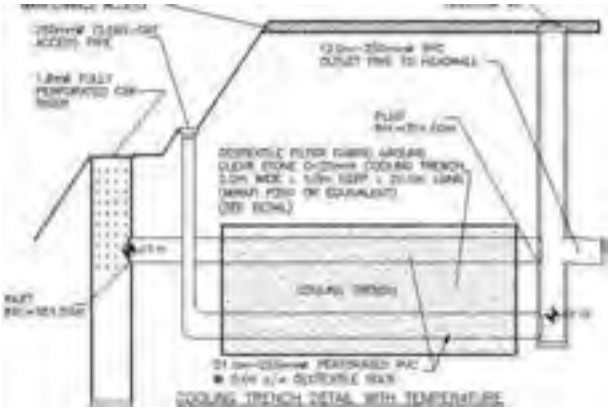
Alternative Solutions for Temperature Control

Install a Bottom Draw Outlet in a Wet Pond

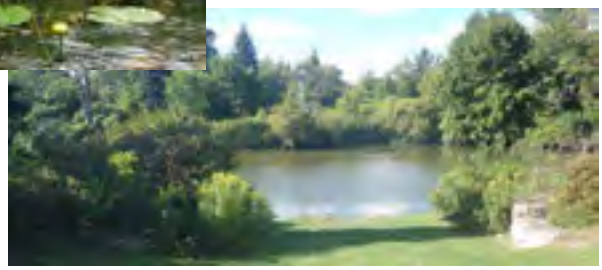
- Modifying the outlet control structure to add a bottom draw pipe is a relatively low cost method to reduce the temperature of water released from the pond.
- Runoff captured in ponds is released from the pond through a pipe located at the bottom of the pond where the water is furthest from the sun and the coolest.
- This retrofit involves construction within an existing or newly constructed wet pond, reducing the area disturbed during constriction.

Install a Cooling Trench



- Construct a cooling trench within an existing or new stormwater management facility to cool water before it is released.
- A cooling trench is fully underground. The ground surface can be covered with grass.
- A cooling trench is a cost effective alternative to achieve temperature control and construction work is limited to a small section of the pond.

Aquatic and Riparian Plantings at Pond



- Plant aquatic vegetation in wet ponds and riparian vegetation around the perimeter of wet or dry ponds to provide shade. Shading the water ponded within the SWM facility reduces the warming affects of the sun.
- This alternative is relatively low cost and provides temperature control and improves the natural aesthetics of the SWM facility.

Construct Underground Storage

- Construct underground storage facilities to collect and detain stormwater runoff.
- Underground tanks or infiltration trenches can be used depending on desired function and surrounding soil type.
- This alternative allows the ground surface to be used for recreation purposes and parking or light traffic. The ground can be covered in grass or other landscaping.
- This alternative can be used for temperature control, and erosion and/or flood control depending on it's design.

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Alternative Solutions for Multiple Controls

Construct Bioswales

- Construct vegetated open channels that convey, treat and attenuate stormwater runoff. In areas with appropriate soil types, bioswales can increase infiltration of stormwater runoff, reducing the need for end-of-pipe controls.
- Bioswales can be constructed within road right-of-ways in residential and commercial areas and can provide some degree of erosion, temperature and water quality control.
- A large network of bioswales will provide the most benefit, however this is costly and disruptions to the public during construction will be more prominent.

Install Perforated Pipe Systems

- Install long infiltration trenches or linear soakaway pits within road right-of-ways. These are designed to both convey and infiltrate stormwater runoff.
- By infiltrating stormwater some degree of erosion, temperature and water quality control can be achieved and the size of end-of-pipe controls is reduced.
- A large network of perforated pipes will provide the most benefit, however this is costly and disruptions to the public during construction will be more prominent.

Plant Vegetated Filter Strips Along Watercourses

- Plant riparian and terrestrial vegetation along watercourses to create a densely vegetated area that will treat runoff from adjacent impervious areas.
- This alternative can provide erosion, temperature and water quality control. This alternative is most effective if the vegetated area is gently sloped allowing runoff velocities to slow down and sediment to be filtered out.

Expand the Size of an Existing Pond

- An existing dry or wet pond can be expanded outwards or built up vertically to increase it's capacity.
- This alternative can provide additional flood and/or erosion and/or water quality control where a facility already exists that provides some degree of such control.
- This alternative can be a cost effective solution where moderate improvement is needed and there is available space for expansion. Construction activity will be limited to the immediate area surrounding the existing facility.

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The Next Steps . . .

- Comments received from this PIC will be considered along with those received from review agencies and stakeholders in order to finalize the Preferred Solution for each of the 20 priority sites.

- The team will identify anticipated environmental impacts, ways of minimizing negative effects and maximizing positive effects associated with the preferred design solution for each site.

- A conceptual design and cost estimate will be prepared for the preferred solution for each site.

- A second PIC will be held to present the concept designs and allow for input from stakeholders and residents. This second PIC is tentatively scheduled for late spring.

Thank you for your participation!

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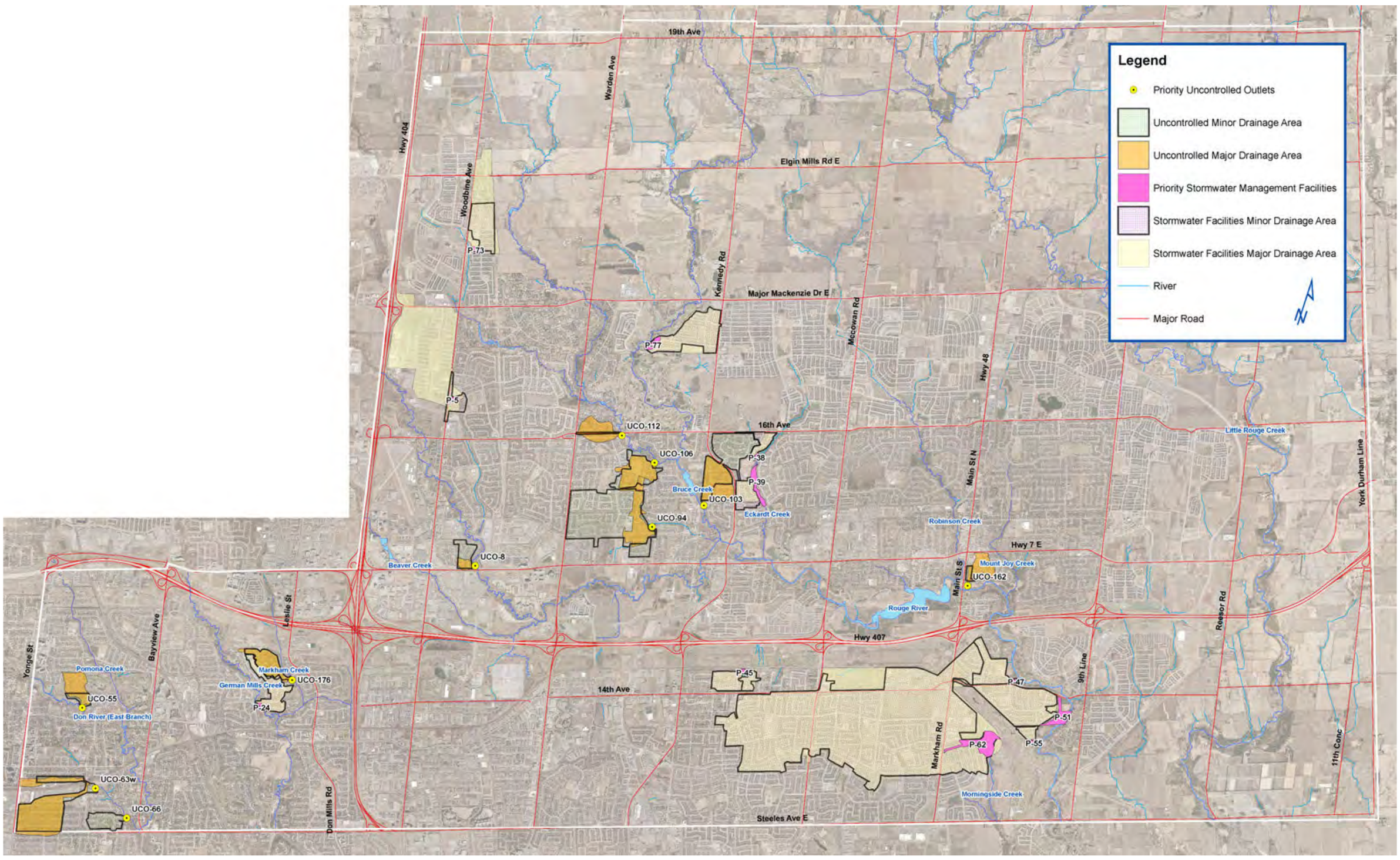
Markham Stormwater Management Facilities Retrofit Study
Municipal Class EA

Public Information Centre
Markham Civic Centre, Lower Atrium
December 4, 2013



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Welcome to the Markham Stormwater Management Facilities Retrofit Study Municipal Class EA Public Information Centre

Markham Civic Centre, Lower Atrium
December 4, 2013

- Please sign in on the sheet provided, then feel free to walk around and view the displays.

- If you have any questions, our representatives will be pleased to discuss the project with you.

- Comment sheets are provided for those who wish to provide comments in writing. Please either place your completed sheets in the Comment Box or mail / fax / email them to one of the identified Project Team Members (see below) by **December 18, 2013.**

- Thank-you for your involvement in this project.

- For additional information, please contact one of the following Team Members:

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City of Markham
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Markham, ON L6G 1B4
Phone: 905-477-7000 ext. 2357
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Geoff Masotti, P.Eng.
Project Manager
Cole Engineering Group Ltd.
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Markham, ON L3R 4T5
Phone: 905-940-6161
Fax: 905-940-2064
E-mail:
MarkhamPondRetrofitEA@coleengineering.ca

Purpose of the Public Information Centre

The purpose of this Public Information Centre is to provide you with an opportunity to review the work completed to-date and obtain your comments related to the project, including the proposed retrofit concept designs.

The major elements presented today are:

- Summary of the Study Progress Since the First Public Information Centre;
- Refined Location of the Top Priority Sites for Retrofit and New Stormwater Management Facility Construction;
- Summary of the Evaluation of Retrofit and New Stormwater Management Facility Alternatives and Identification of the Preferred Alternative(s);
- Design Concepts for Stormwater Management Facility Retrofits;
- Design Concepts for New Stormwater Management Facility Construction; and,
- Next Steps.

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Project Background and Problem / Opportunity Statement

- The City of Markham (City) is responsible for the management of approximately 80 stormwater management facilities located within the City. This includes ponds, wetlands and flood control storage areas.

- There are approximately 158 storm sewer outlets throughout the City that do not provide any stormwater controls and outlet directly to creeks and rivers.

- Since the completion of a previous Stormwater Retrofit Study in 1999, the City's urban boundary has expanded and stormwater management standards have further advanced. Additionally Redside Dace, a fish species with significant populations throughout the City, has been listed as an endangered species. The City would like to identify new retrofit opportunities to protect and enhance the habitat of this protected species. Given all of these factors the City has initiated a Stormwater Retrofit Study Update.

Problem

- Stormwater management standards in Ontario have evolved significantly since the practice was made widespread pre-1980's. A number of the City's stormwater management facilities were built prior to 1990 and may not achieve the current standard level of water quality and flood control, or habitat protection.

- The City's urban boundary has recently expanded and now includes additional existing stormwater management facilities.

- The City contains a significant population of Redside Dace, a fish species designated as an endangered species by the Ministry of Natural Resources. Redside Dace habitat may be negatively impacted by lower quality runoff released by stormwater management facilities or lack of proper stormwater management facilities.

Opportunity

- In response to the additional stormwater management retrofit opportunities and to participate in the protection and recovery of Redside Dace, the City has commissioned this Stormwater Management Facilities Retrofit Study Class Environmental Assessment to update and prioritize opportunities to improve the management of stormwater within Markham.

- Improvements may be achieved through the retrofit of existing stormwater management facilities and through the construction of new stormwater management facilities in areas that are currently lacking appropriate controls.

- These opportunities seek to improve watercourse water quality and water temperature control, protect / enhance aquatic and terrestrial habitat and give consideration to environmentally significant areas.

- A prioritized list of stormwater management facility retrofit and new construction opportunities will be developed with consideration of the potential natural, social, economic, and cultural effects of the alternatives.

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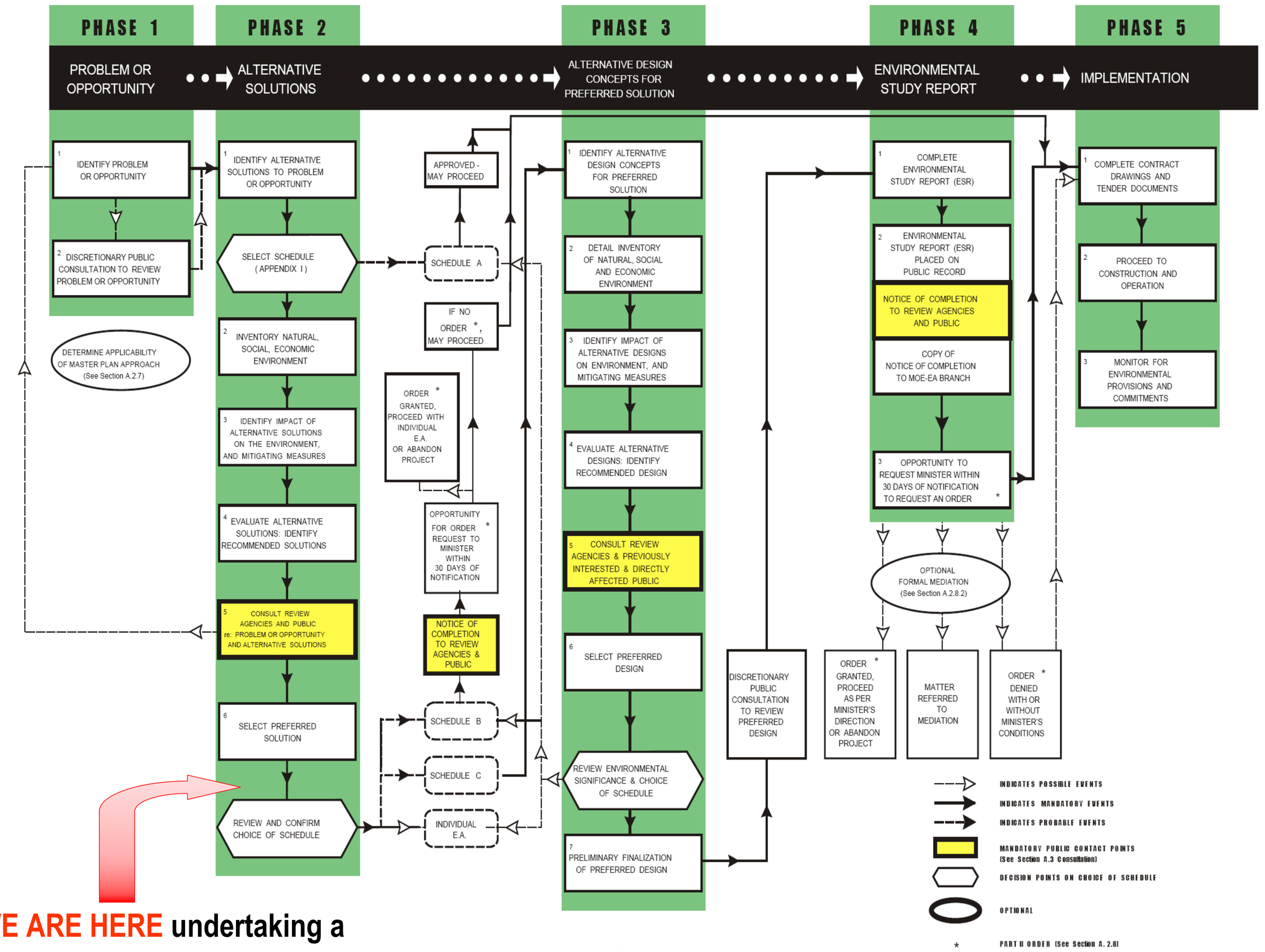
Municipal Class Environmental Assessment Progress



WE ARE HERE undertaking a discretionary public consultation to review the preferred designs.

- This study is being undertaken as a Schedule 'B' project in accordance with the first two (2) Phases of the *Municipal Class Environmental Assessment (2011)* process, which is approved under the *Environmental Assessment Act*.

- To-date the project has:
  - Identified sites where there are feasible opportunities to improve stormwater management;
  - Prioritized the implementation of stormwater management improvements at these sites;
  - Identified and evaluated alternative retrofits at each of the top priority sites to determine the preferred retrofit. Alternatives were evaluated based on technical performance, constructability, economic impacts and social, cultural and natural environmental impacts; and
  - Retrofit and new construction design concepts were developed to achieve the targeted stormwater management improvements.

- Public and stakeholder consultation has been undertaken through the first Public Information Centre held March 5th, 2013 as well as through meetings with review agencies.

- Comments received from the public, stakeholders and review agencies since the first Public Information Centre have been reviewed and resulted in revisions to:
  - The prioritization of stormwater management improvement sites;
  - The evaluation of alternative retrofits including the targeted stormwater management objectives and the preferred retrofit design; and,
  - Conceptual designs;

- There are opportunities at any time during the Municipal Class Environmental Assessment process for public input, including this Public Information Centre.

- Upon completion of the Class EA, a Project File Report will be available for public review.

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Evaluation of Retrofit and New Stormwater Management Facility Alternatives

- The alternatives for each of the top priority sites were evaluated based on the below criteria to identify the preferred design alternative(s) for each site.

- In many cases a combination of alternatives is preferred to improve a number of different stormwater management aspects including water quality, erosion, temperature and flood control.

Technical Considerations
Constructability and accessibility
Ability to meet stormwater management objectives, as applicable (e.g. quantity, quality, erosion and temperature control)
Engineering best practises / innovative solution
Natural Environment
Impacts to wildlife and vegetation habitats
Impacts / improvements based on SAR / ESA
Social Impacts
Requirement of easements or purchase of private lands
Impacts to public and private properties due to construction and operations
Effect on public safety
Cultural Environment
Impacts to built and cultural heritage landscape
Impacts to archaeological resources
Economic Considerations
Capital costs
Maintenance and operating costs
Impact on future development and growth

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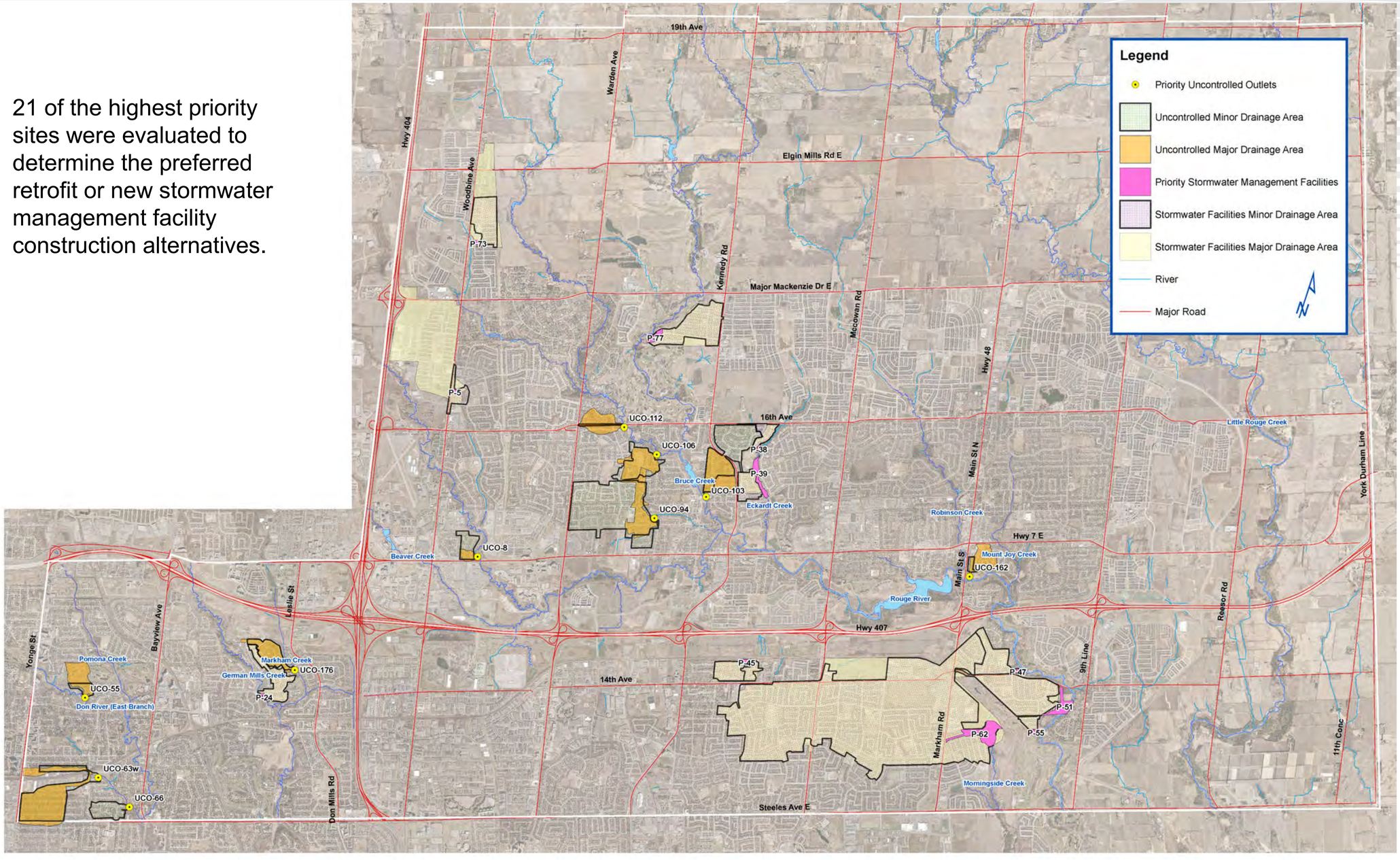
Priority Sites for Retrofit and New Stormwater Management Facility Construction

21 of the highest priority sites were evaluated to determine the preferred retrofit or new stormwater management facility construction alternatives.



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Summary of the Evaluation of Retrofit and New Facility Alternatives

	Target SWM Objectives	Pond ID											Uncontrolled Outlet ID									
		P-5	P-24	P-38	P-39	P-45	P-47	P-51	P-55	P-62	P-73	P-77	UCO-8	UCO-55	UCO-63w	UCO-66	UCO-94	UCO-103	UCO-106	UCO-112	UCO-162	UCO-176
	Flood Control																					
	Erosion Control	◊	◊	◊	◊	◊	◊	◊	◊	◊					◊		◊				◊	
	Water Quality Control		◊	◊	◊	◊	◊	◊					◊	◊	◊	◊	◊	◊	◊	◊	◊	◊
	Temperature Control	◊				◊	◊	◊	◊	◊	◊	◊	◊				◊	◊	◊	◊	◊	
Target SWM Objectives Achieved	**Design Alternative**																					
N/A	Do Nothing	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Water Quality Control	Oil-Grit Separator		✓	✓	✓	✓	✓	×					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Water Quality Control	Convert to Wet Pond		×	×	×	×		✓														
Water Quality Control	Construct Forebay		×	×	×	×		✓														
Water Quality Control	Construct Quality Control Pond												×	×	×	×	×	×	×	×	×	×
Erosion Control	Construct Extended Detention Facility														×		×			×	×	×
Erosion Control	Retrofit Pond Outlet to Extend Detention	×	×	✓	✓	×	✓	✓	✓	✓												
Temperature Control	Bottom Draw Outlet in Wet Pond	×				×	×	✓	×	×			×				×	×	×	×	×	
Temperature Control	Cooling Trench	×				✓	✓	×	✓	✓	✓	✓	×				×	×	×	×	×	
Temperature Control	Aquatic and Riparian Plantings at Facility	✓				✓	✓	✓		✓	×	✓	×				×	×		×	×	
Erosion and Temperature Control - or - Flood and Temperature Control	Underground Storage (with or without infiltration)	✓		×	×	✓	✓	×	×	×	×	×	×		✓		✓	×	×	×	✓	×
Flood Control	Retrofit Pond Outlet to Control Major Events																					
Flood Control	Construct Quantity Control Facility																				×	
Water Quality, Erosion and Temperature Control	Bioswales	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Water Quality, Erosion and Temperature Control	Perforated Pipe System (infiltration in road right-of-ways)	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Water Quality, Erosion and Temperature Control	Vegetated Filter Strip Along Watercourse																					
Flood Control &/or Water Quality Control &/or Erosion Control	Expand Size of Existing Pond	×	×	✓	✓	×	×	✓	×													

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✓ Preferred Solution

× Evaluated Option but not the Preferred Solution

Not Applicable for this Site

◊ Targeted Stormwater Management Objective

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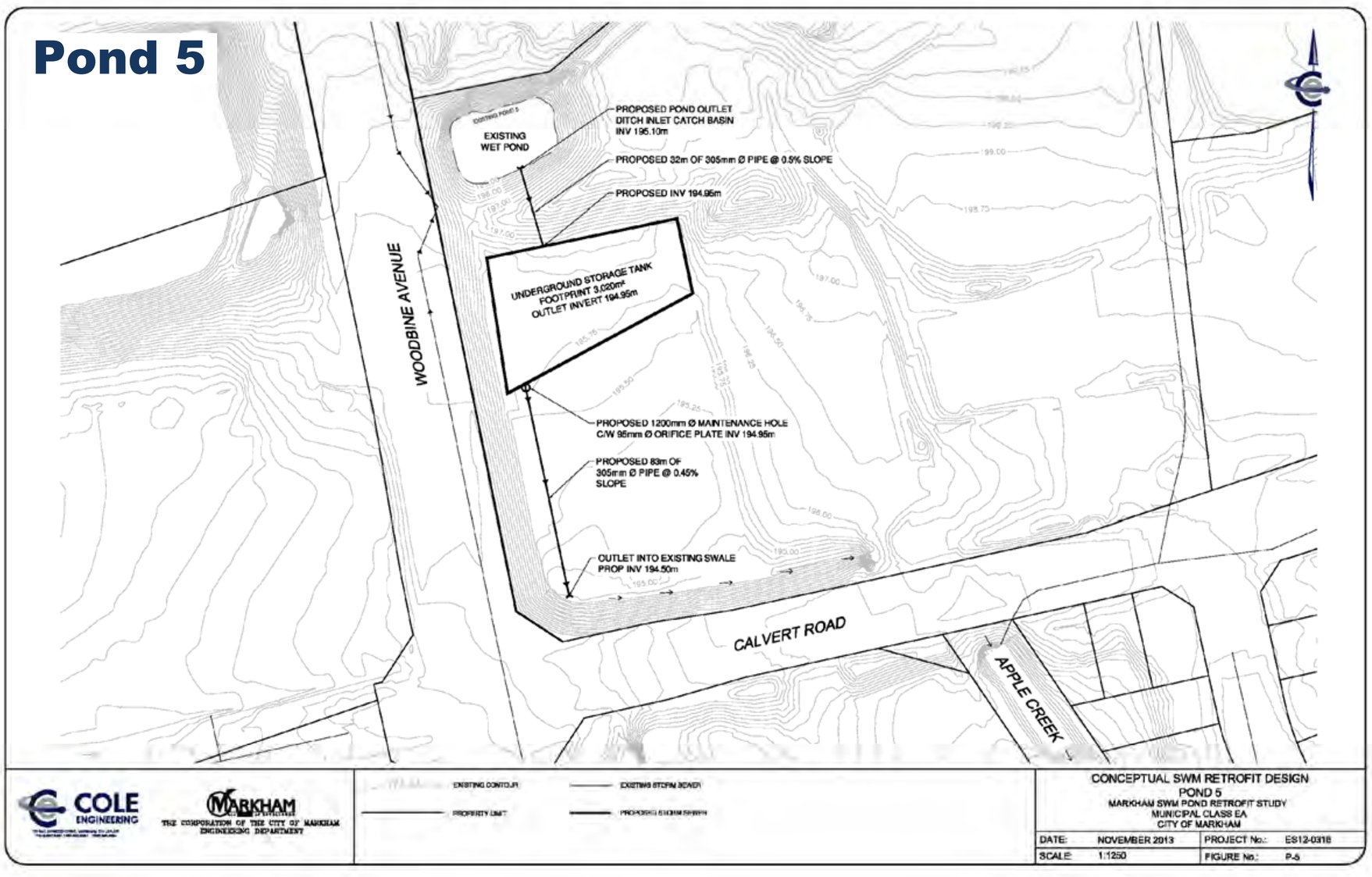
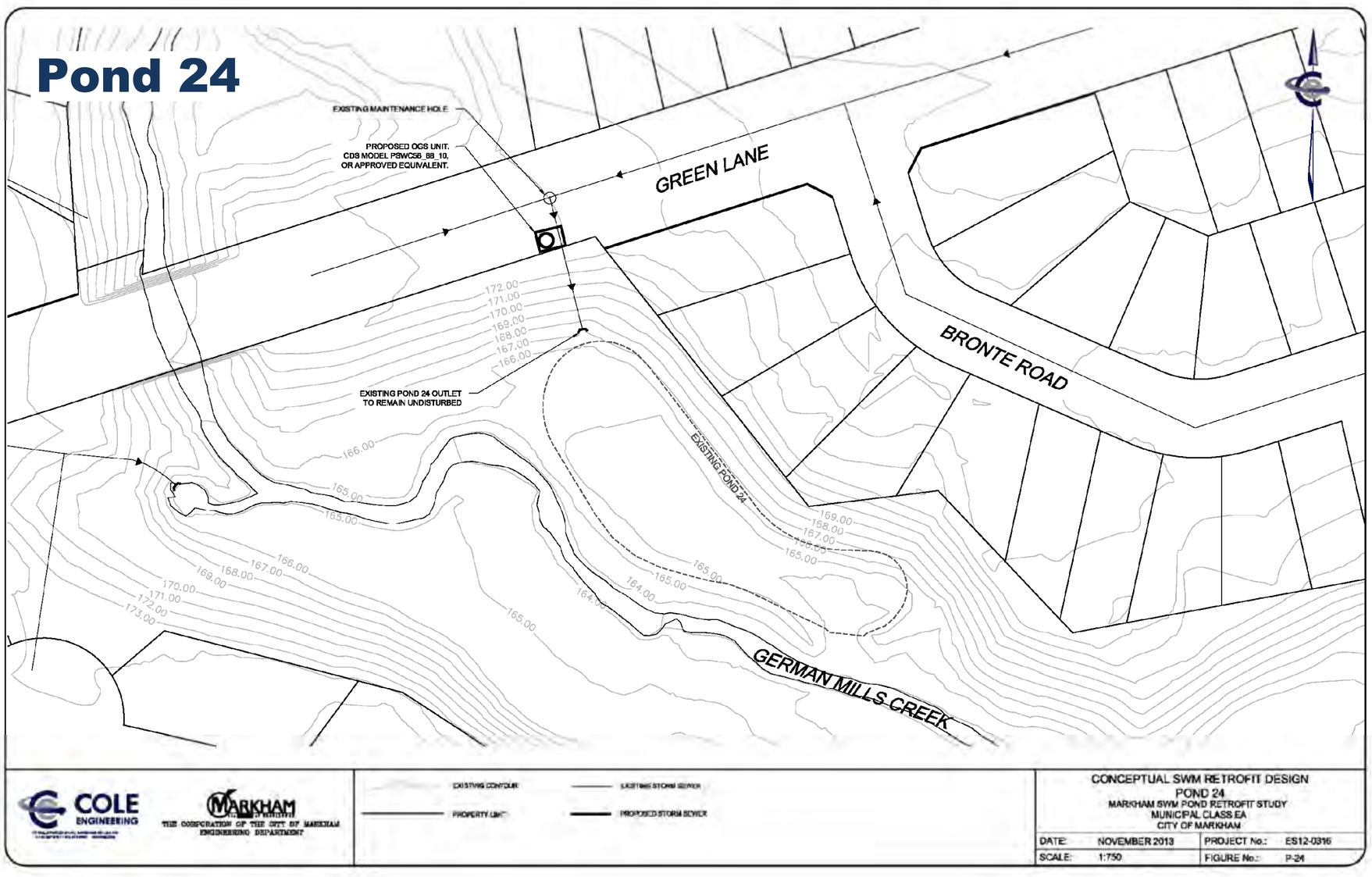
Pond Retrofit Conceptual Designs



- **Erosion Control:** Achieved through an underground storage facility with an outlet designed to control the release rate of stormwater. The underground facility will receive water from the existing pond, provide additional storage, and discharge into an existing swale.
- **Temperature Control:** The planting of additional trees around Pond 5 will provide shade for the pond, protecting it from the warming effects of the sun. The stormwater discharge from Pond 5 will be cooled as it passes through the stones in the underground chamber.



- **Erosion Control:** Since only partial erosion control can be achieved through retrofit of the existing pond outlet, it is concluded that improved erosion control is not desirable given the amount of environmental disturbance that construction of the retrofit would cause.
- **Water Quality Control:** Achieved through an oil / grit separator (OGS as shown on the figure) which will provide water quality control of the stormwater prior to discharge into Pond 24.

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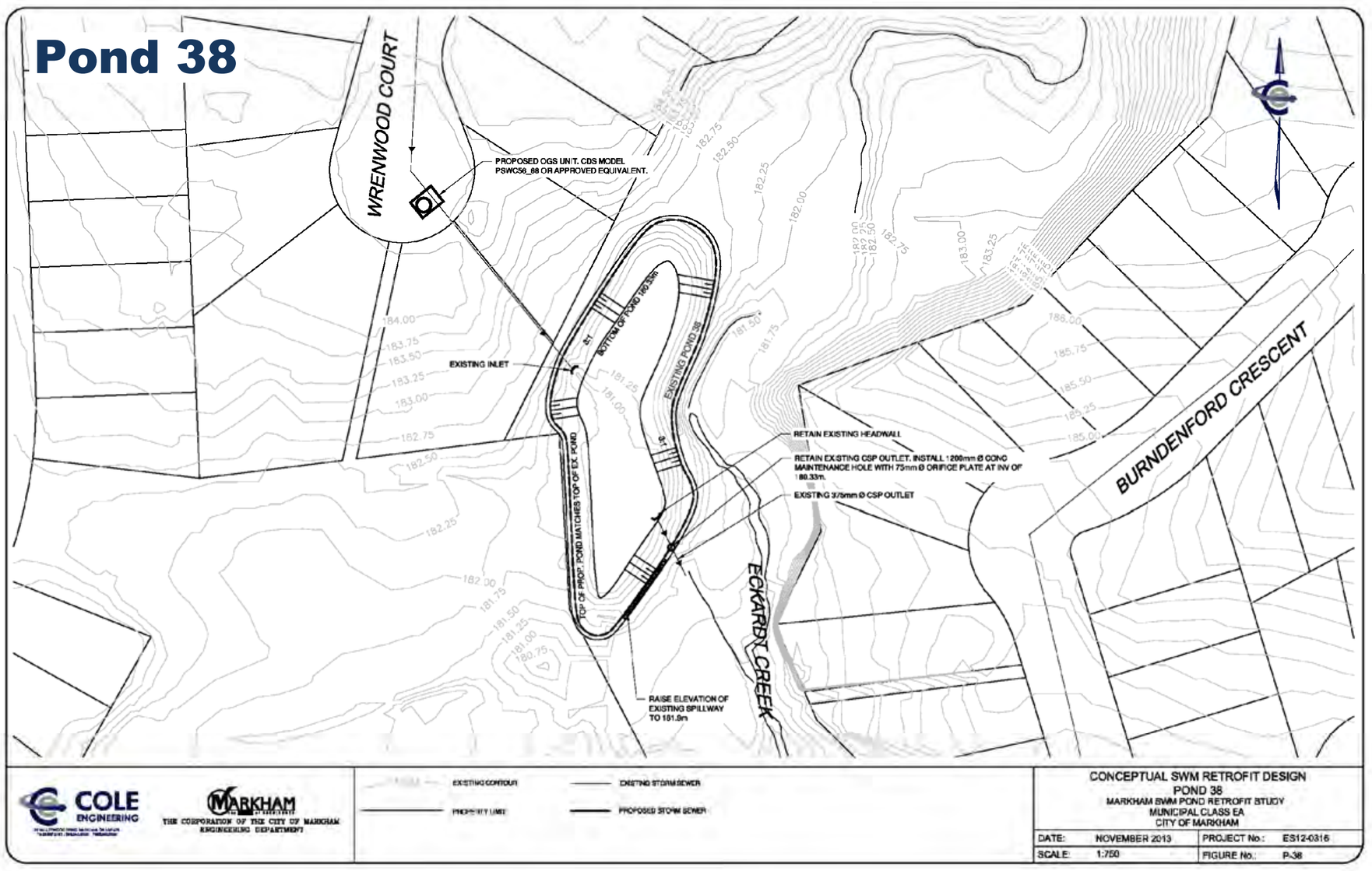
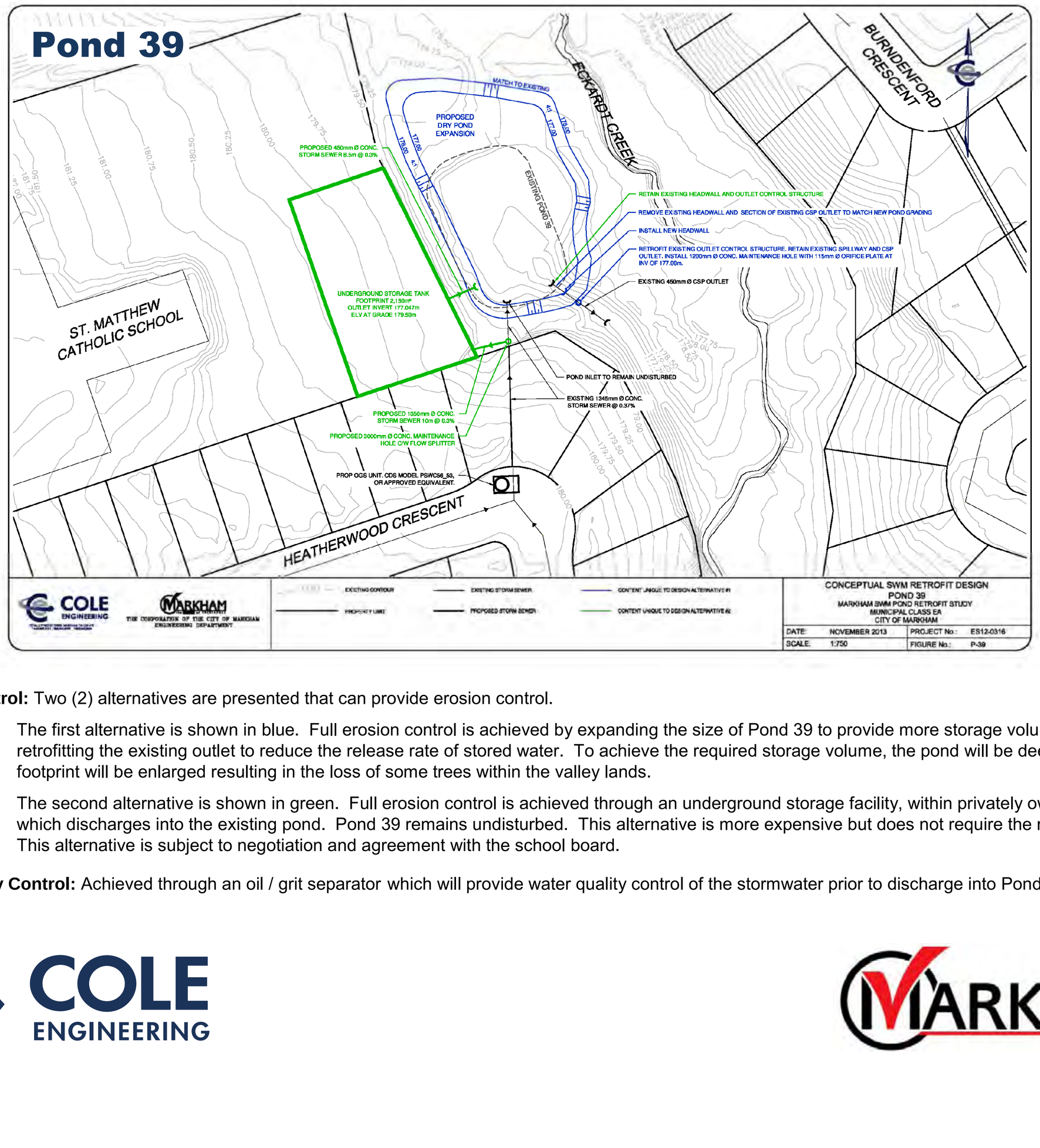
Pond Retrofit Conceptual Designs



- **Erosion Control:** Partial erosion control achieved by moderately deepening the pond to provide more storage volume and retrofitting the existing outlet to reduce the release rate of stored water. The pond footprint, inlet and outlet channel are to remain undisturbed.
- **Water Quality Control:** Achieved through an oil / grit separator which will provide water quality control of the stormwater prior to discharge into Pond 38.



- **Erosion Control:** Two (2) alternatives are presented that can provide erosion control.
  - The first alternative is shown in blue. Full erosion control is achieved by expanding the size of Pond 39 to provide more storage volume and retrofitting the existing outlet to reduce the release rate of stored water. To achieve the required storage volume, the pond will be deepened and the footprint will be enlarged resulting in the loss of some trees within the valley lands.
  - The second alternative is shown in green. Full erosion control is achieved through an underground storage facility, within privately owned land, which discharges into the existing pond. Pond 39 remains undisturbed. This alternative is more expensive but does not require the removal of trees. This alternative is subject to negotiation and agreement with the school board.
- **Water Quality Control:** Achieved through an oil / grit separator which will provide water quality control of the stormwater prior to discharge into Pond 39.

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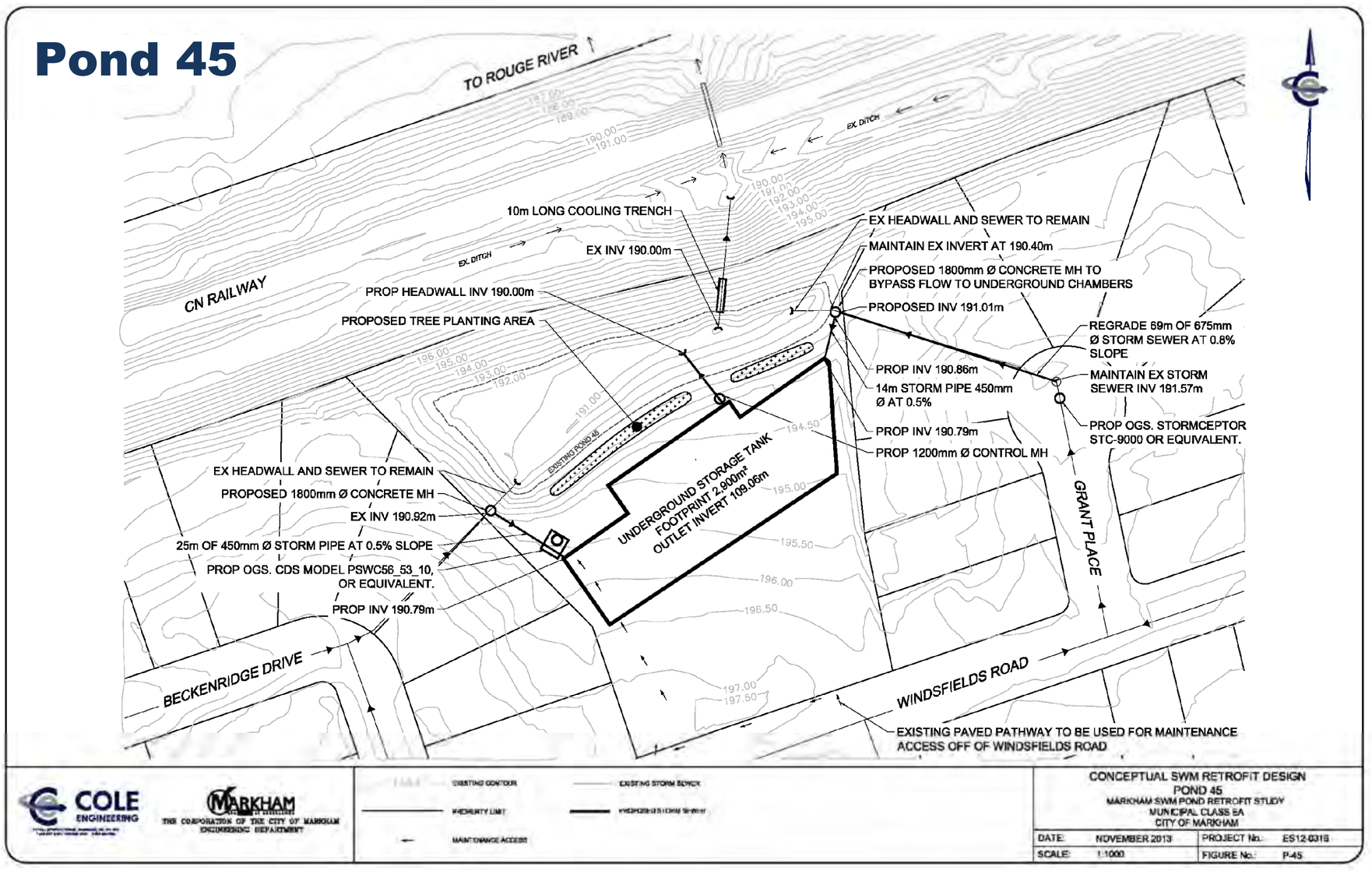
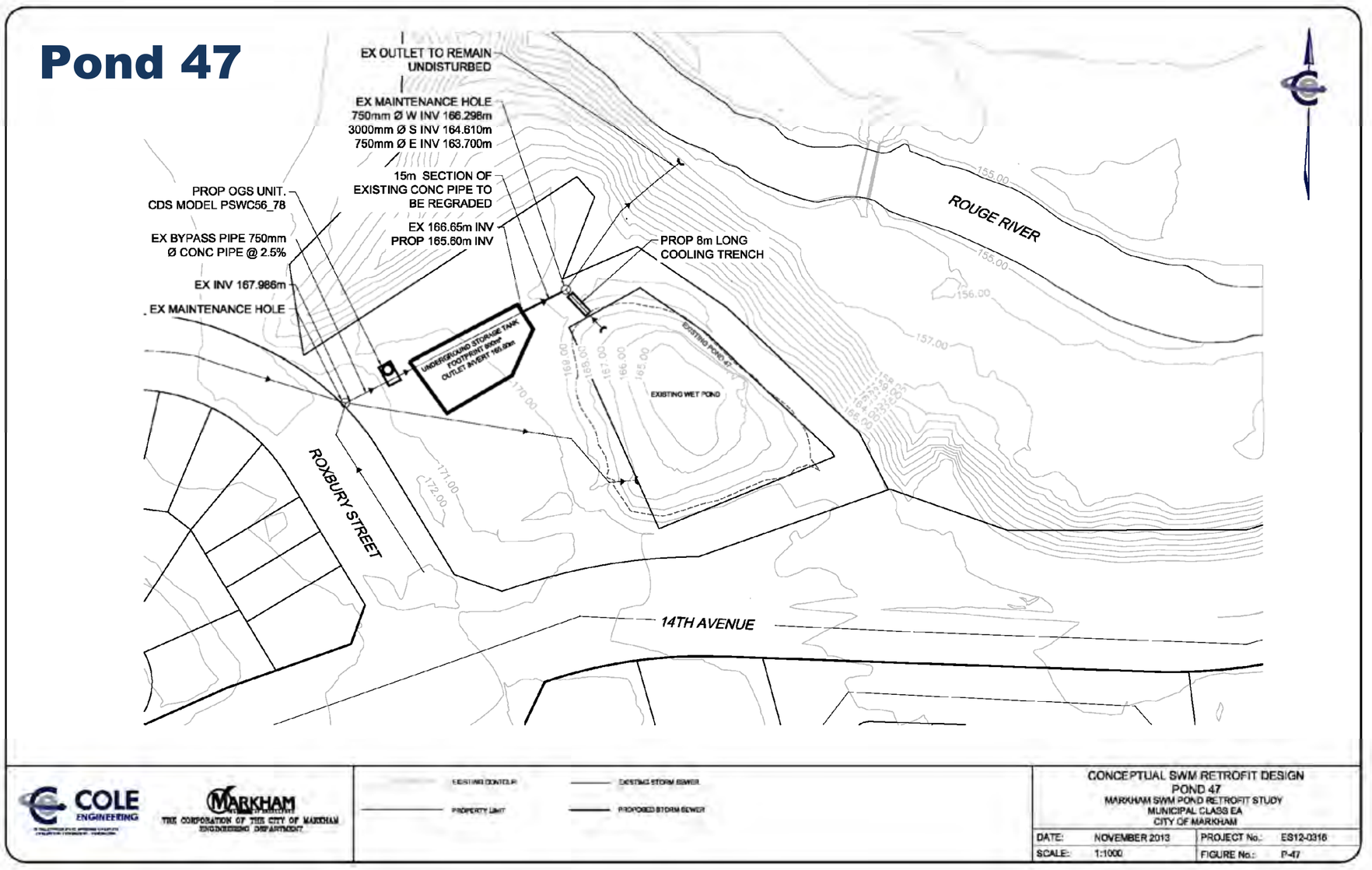
Pond Retrofit Conceptual Designs

Pond 45



- **Erosion Control:** Achieved through an underground storage facility with an outlet designed to control the release rate of stormwater. The underground facility will receive stormwater from the two (2) storm sewers that currently discharge into Pond 45 and will discharge into Pond 45.
- **Water Quality Control:** Achieved through an oil / grit separator prior to each of the two (2) existing pond inlets which will provide water quality control of the stormwater prior to discharge into the underground storage facility and Pond 45.
- **Temperature Control:** The stormwater will be cooled as it passes through the stones in the underground chamber prior to discharge into Pond 45. The planting of additional trees around Pond 45 will provide shade for the pond, protecting it from the warming effects of the sun.

Pond 47



- **Erosion Control:** Pond 47 currently provides partial erosion control. An underground storage facility with an outlet designed to control the release rate of stormwater will provide erosion control of existing bypassed stormwater, prior to discharging into the Rouge River.
- **Water Quality Control:** Pond 47 currently provides partial water quality control. An oil / grit separator will provide water quality control of the stormwater which currently bypasses Pond 47, prior to discharging into the Rouge River.
- **Temperature Control:** The stormwater which currently bypasses Pond 47 will be cooled as it passes through the stones in the underground storage chamber prior to discharge into the Rouge River. Additionally by storing the stormwater underground the water is protected from the warming effects of the sun. The stormwater discharge from Pond 47 will be cooled as it passes through the cooling trench proposed after the pond outlet.

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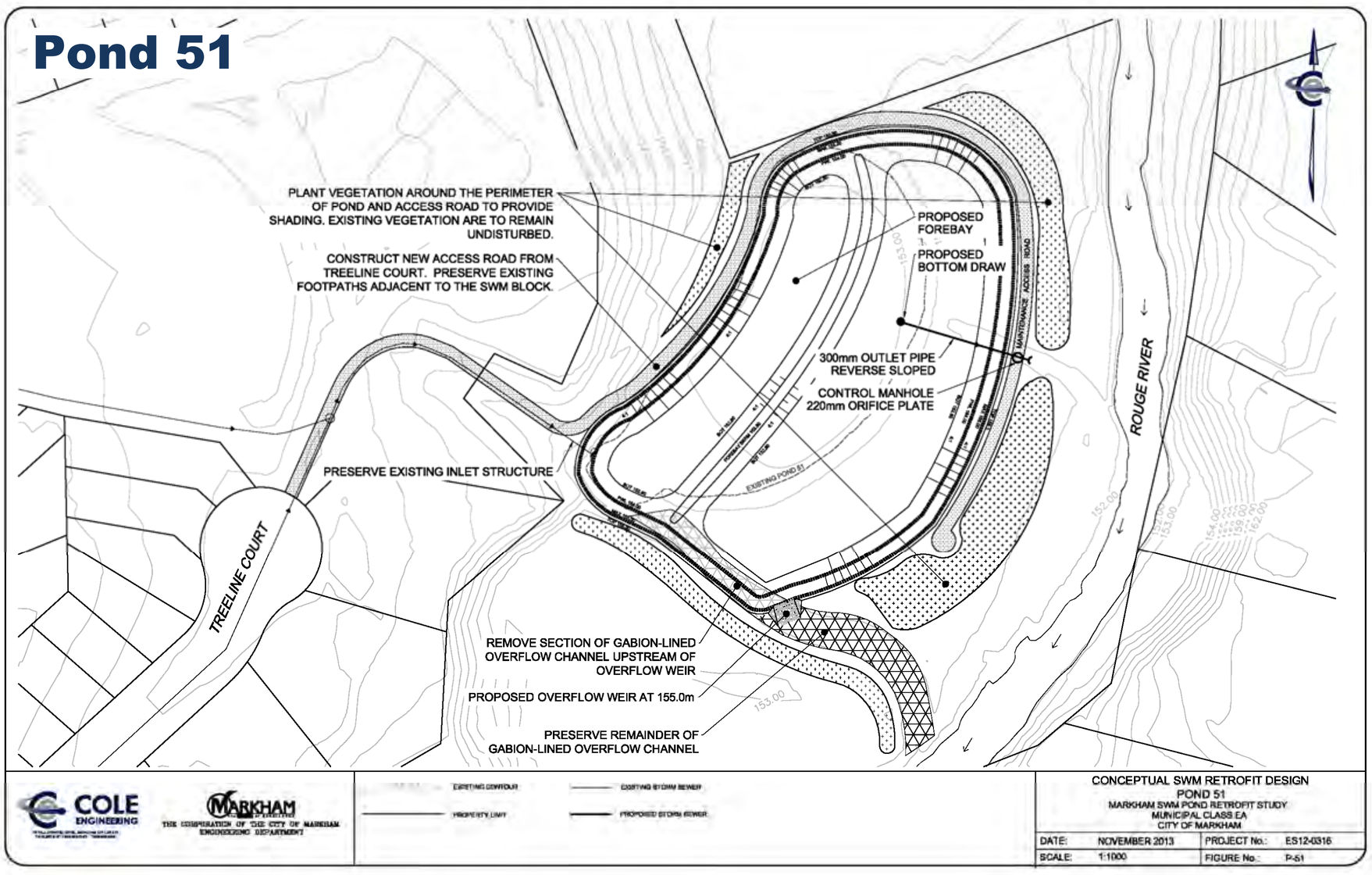
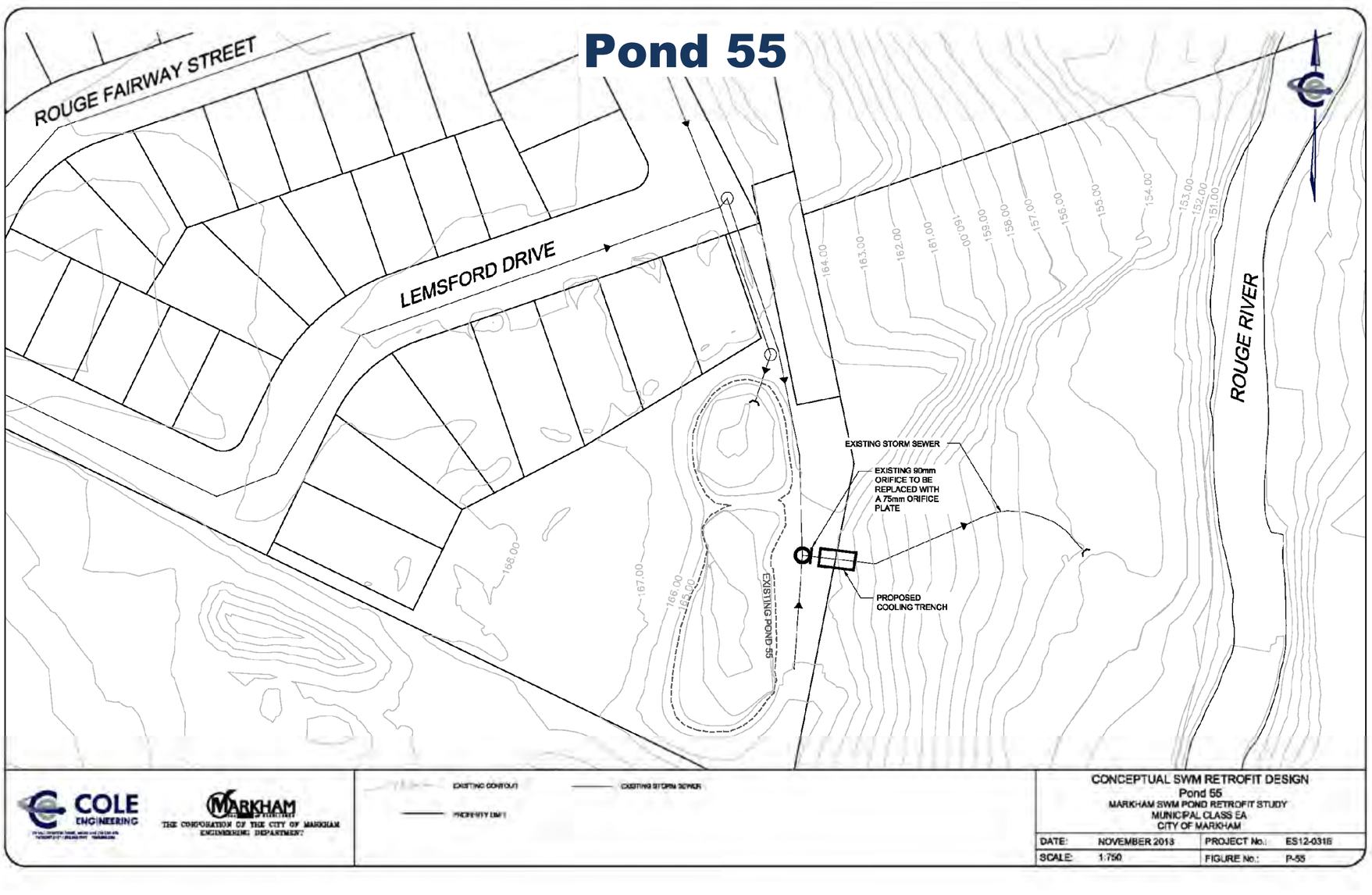
Pond Retrofit Conceptual Designs

Pond 51



- **Erosion Control:** Full erosion control is achieved by expanding the size of Pond 51 to provide more storage volume and retrofitting the existing outlet to reduce the release rate of stored water. To achieve the required storage volume the pond footprint will be enlarged.
- **Water Quality Control:** Achieved through conversion of Pond 51 into a wet pond with a forebay. This requires the retrofit of the existing pond outlet control structure to provide a permanent pool. To achieve the required permanent pool volume, along with the required storage volume for erosion control, the pond will be deepened and the footprint will be enlarged.
- **Temperature Control:** Achieved through a bottom draw outlet which will discharge stormwater from the deepest part of the pond where the water is coolest. Additionally, the planting of additional trees around Pond 51 will provide shade for the pond, protecting it from the warming effects of the sun.

Pond 55



- **Erosion Control:** Achieved through the retrofit of the existing pond outlet control structure to reduce the release rate of stormwater. Pond 55 currently provides partial erosion control.
- **Temperature Control:** Achieved through a cooling trench. The stormwater discharge from Pond 55 will be cooled as it passes through the stones in the cooling trench proposed downstream of the pond outlet.

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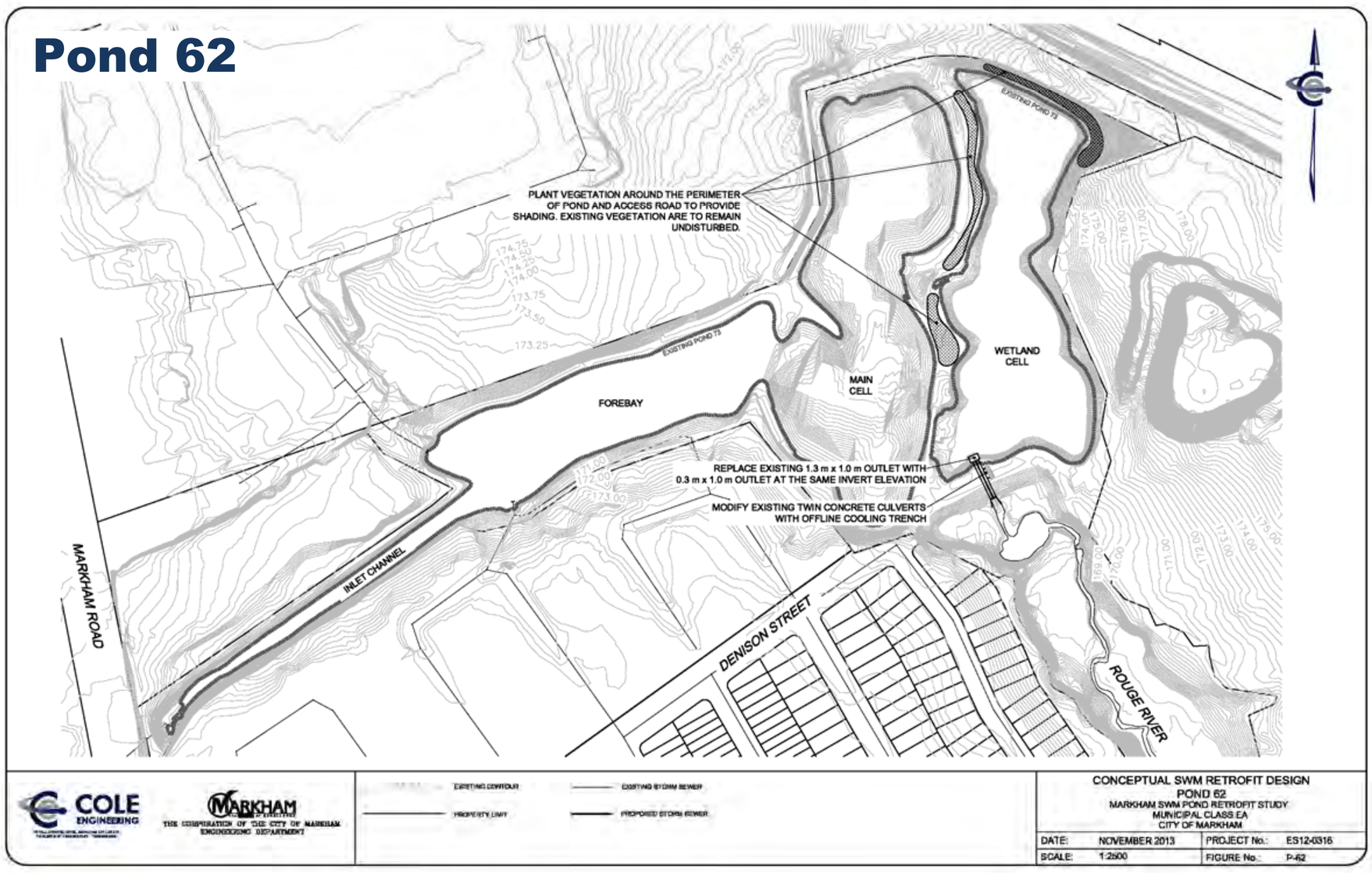
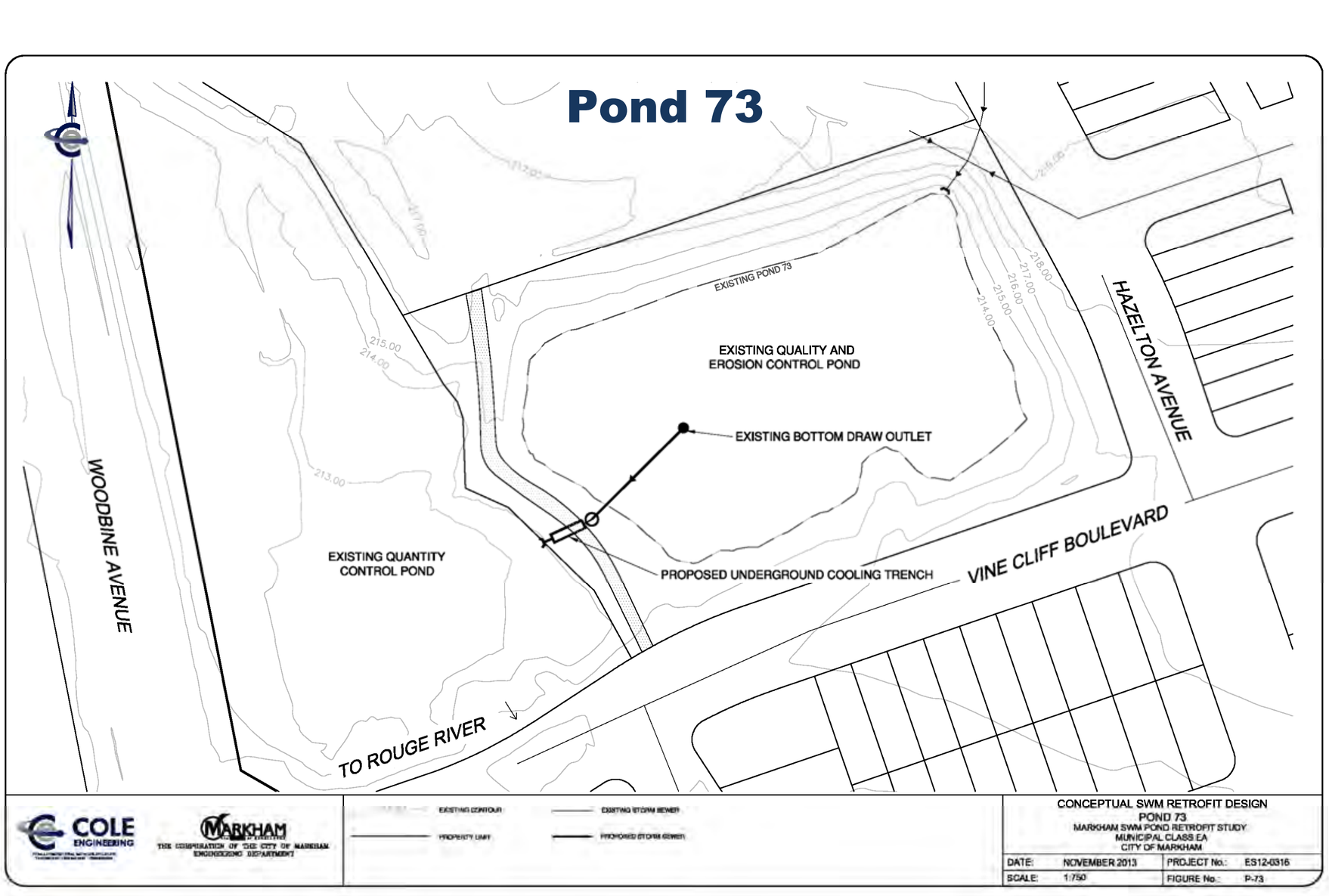
Pond Retrofit Conceptual Designs

Pond 62



- **Erosion Control:** Achieved through the retrofit of the existing pond outlet control structure to reduce the release rate of stormwater. Pond 62 currently provides partial erosion control.
- **Temperature Control:** The planting of additional trees around Pond 62 will provide shade for the pond, protecting it from the warming effects of the sun. Given the large size of the pond, a cooling trench is also proposed. An offline cooling trench connected to the pond outlet will provide additional cooling of stormwater discharge from Pond 62.

Pond 73



- **Temperature Control:** Achieved through a cooling trench. The stormwater discharge from Pond 73 will be cooled as it passes through the stones in the cooling trench proposed downstream of the pond outlet.

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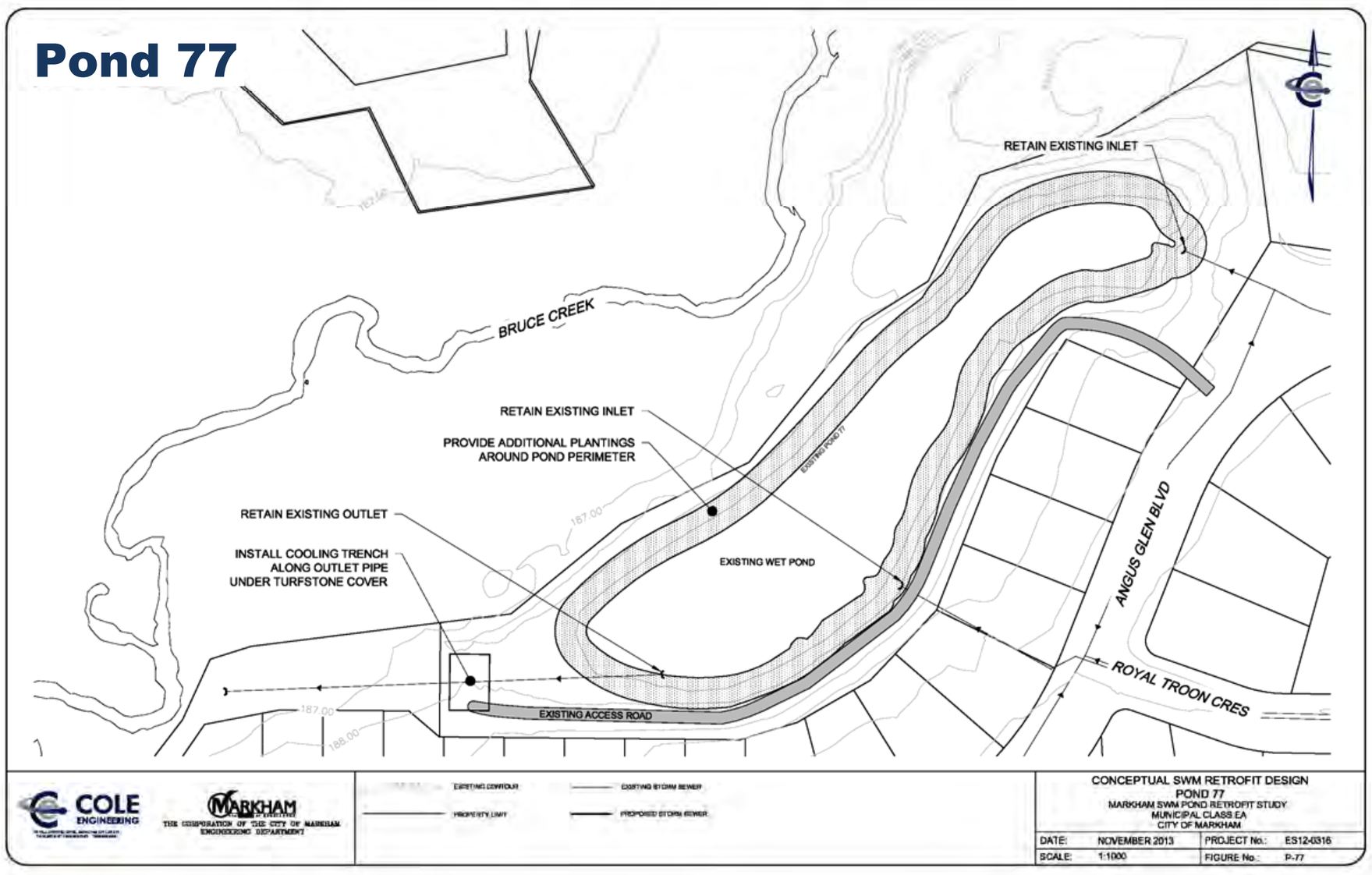
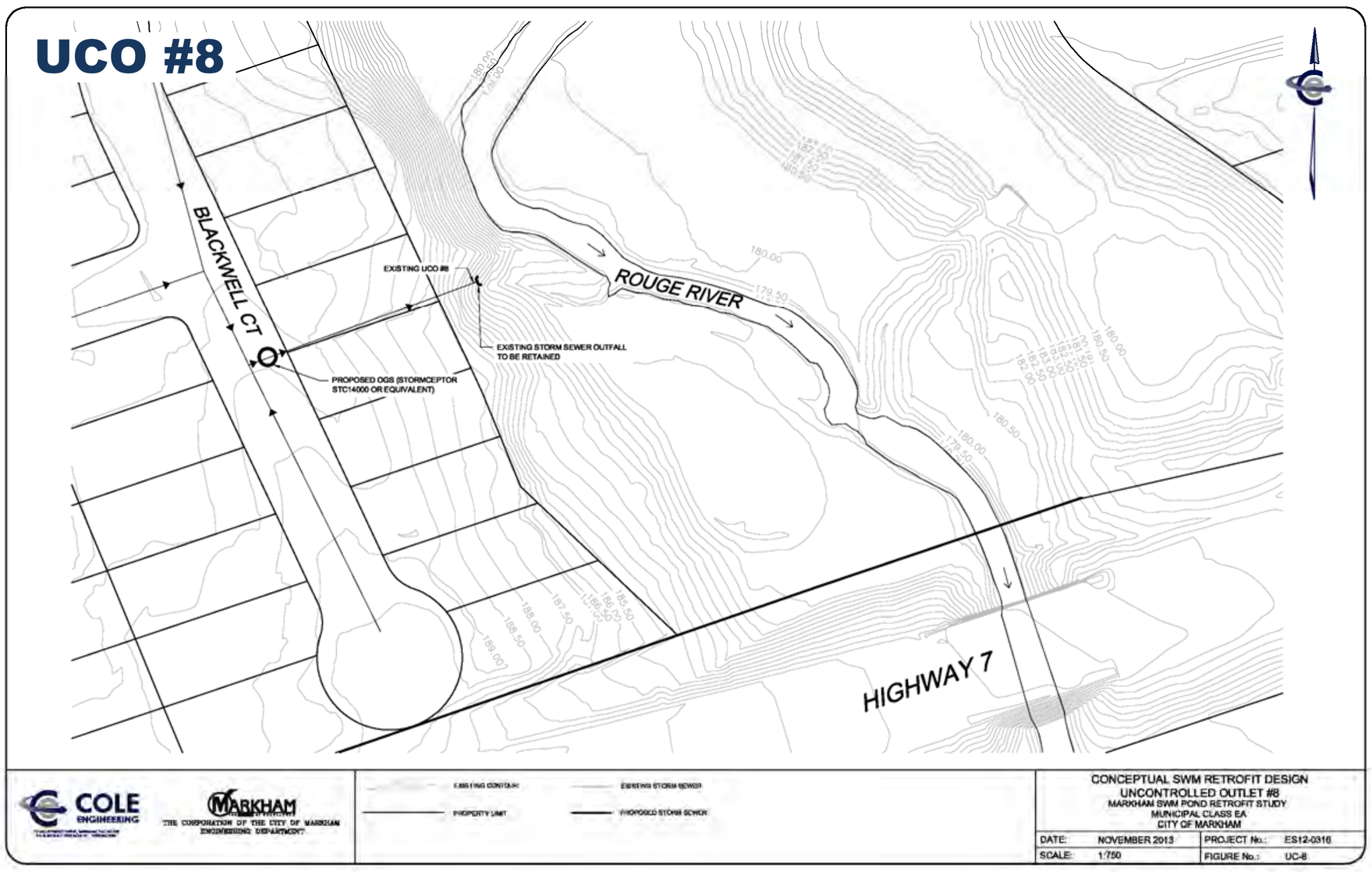
Pond Retrofit Conceptual Designs

Pond 77

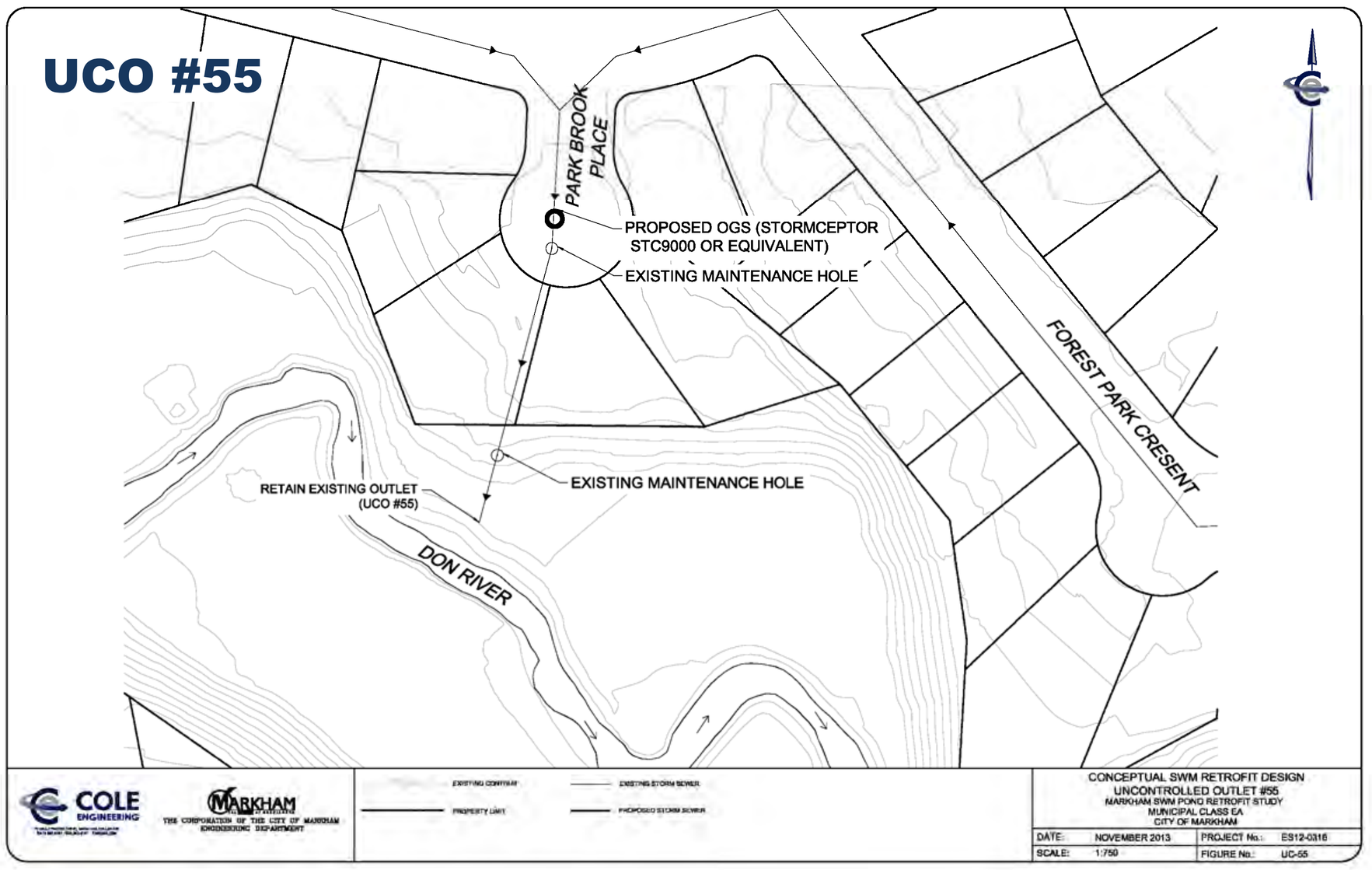


- **Temperature Control:** The planting of additional trees around Pond 77 will provide shade for the pond, protecting it from the warming effects of the sun. Additionally, stormwater discharge from Pond 77 will be cooled as it passes through the cooling trench proposed after the pond outlet.

Uncontrolled Outlet
New Stormwater Management Facility
Conceptual Designs



- **Water Quality Control:** Achieved through an oil / grit separator which will provide water quality control of the stormwater prior to discharge into the Rouge River.
- **Temperature Control:** Since the stormwater will not be stored above ground (which can have a significant warming effect) and will not be exposed to the sun for extended periods of time, it is expected that thermal mitigation will not be required.



- **Water Quality Control:** Achieved through an oil / grit separator which will provide water quality control of the stormwater prior to discharge into the Don River.

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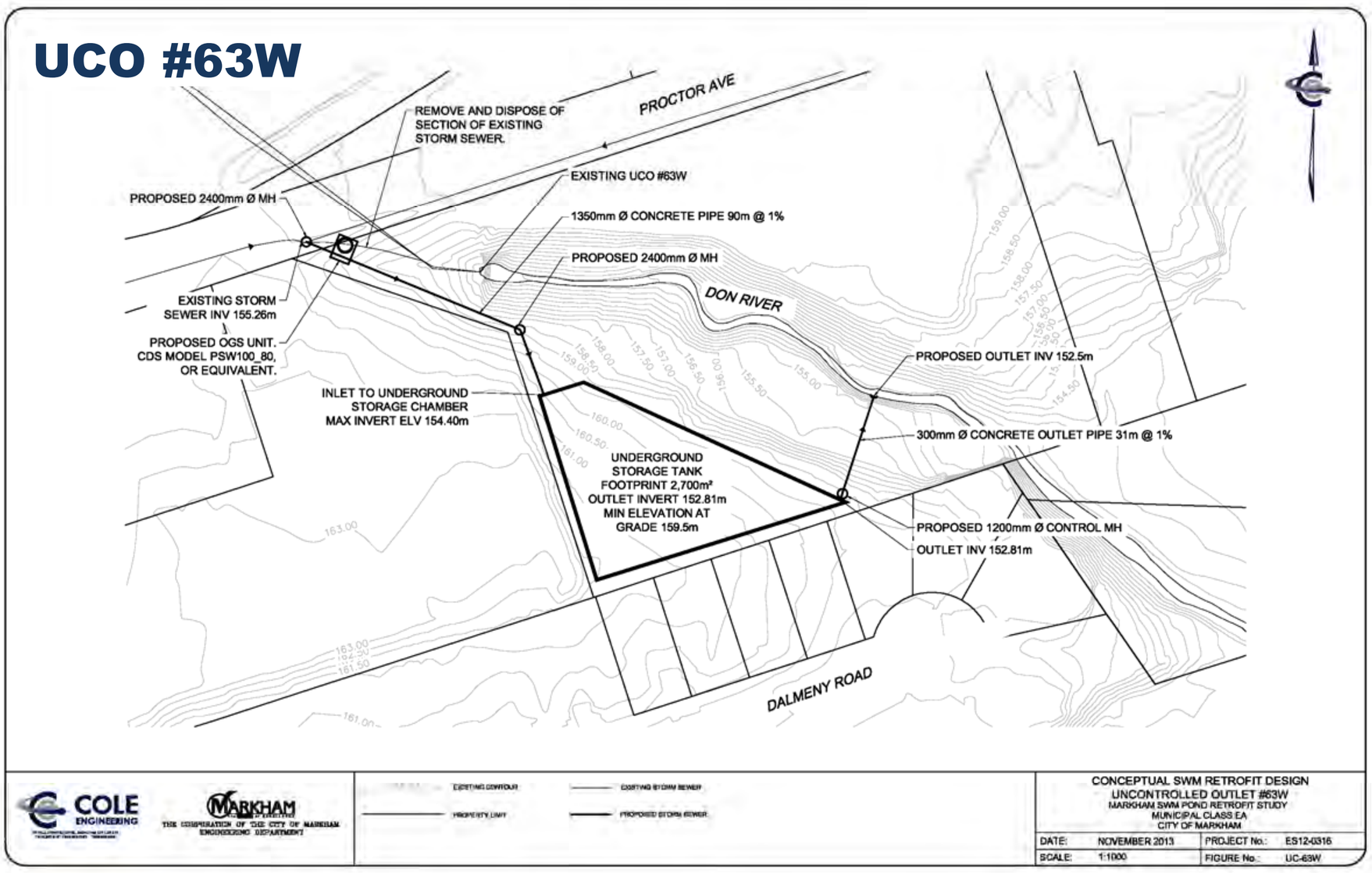
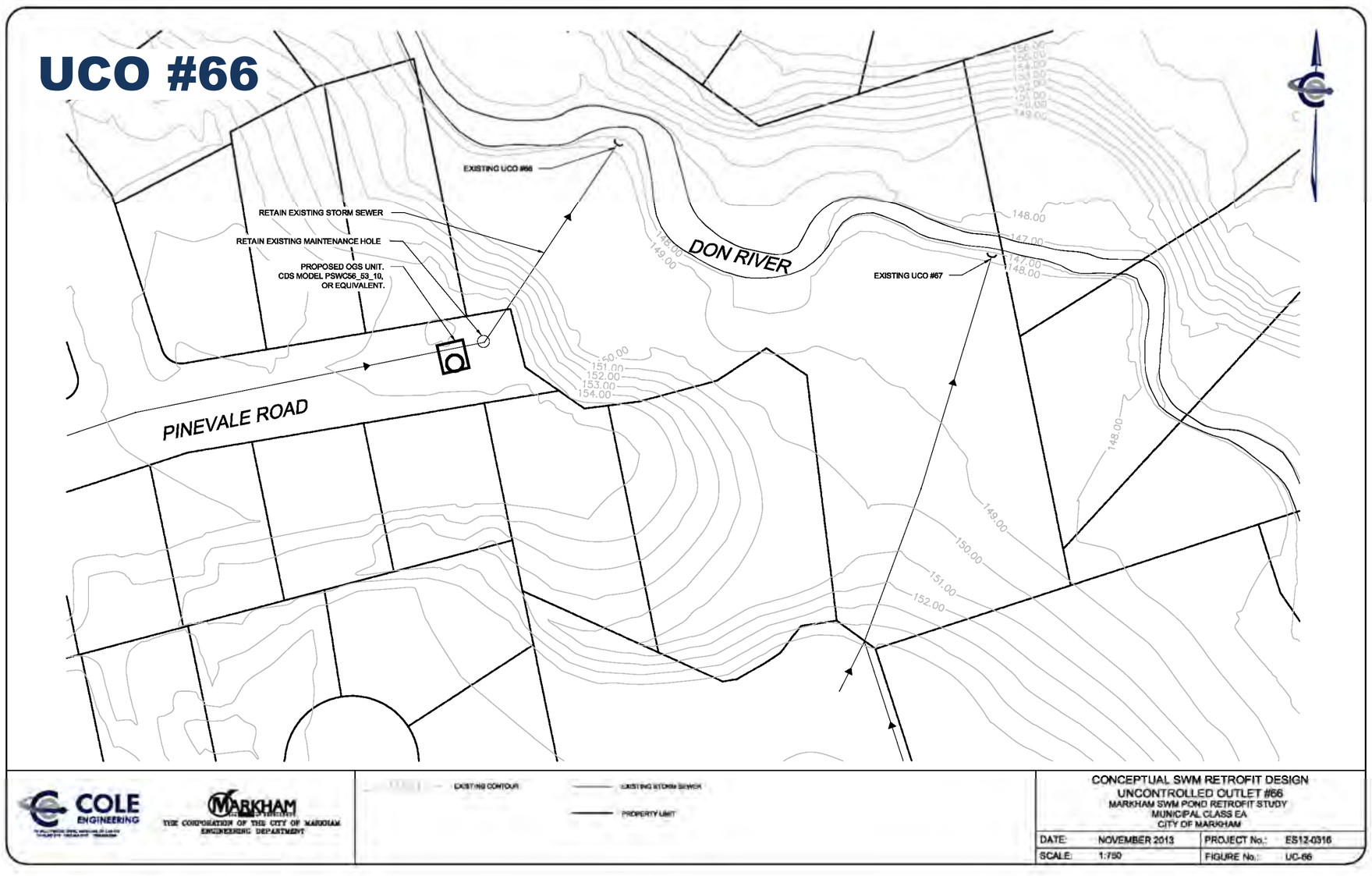
MARKHAM

Uncontrolled Outlet
New Stormwater Management Facility
Conceptual Designs



- **Erosion Control:** Partial erosion control achieved through an underground storage facility with an outlet designed to control the release rate of stormwater. The underground facility will received water from the storm sewer that currently discharges at uncontrolled outlet #63W and will discharge the stormwater downstream into the Don River. Only partial erosion control is possible given the limited space available for a stormwater management facility while protecting existing trees. Excess stormwater will discharge into the Don River via an overflow outlet in the underground storage facility.

- **Water Quality Control:** Achieved through an oil / grit separator which will provide water quality control of the stormwater prior to discharge into the underground storage facility and into the Don River.



- **Water Quality Control:** Achieved through an oil / grit separator which will provide water quality control of the stormwater prior to discharge into the Don River.

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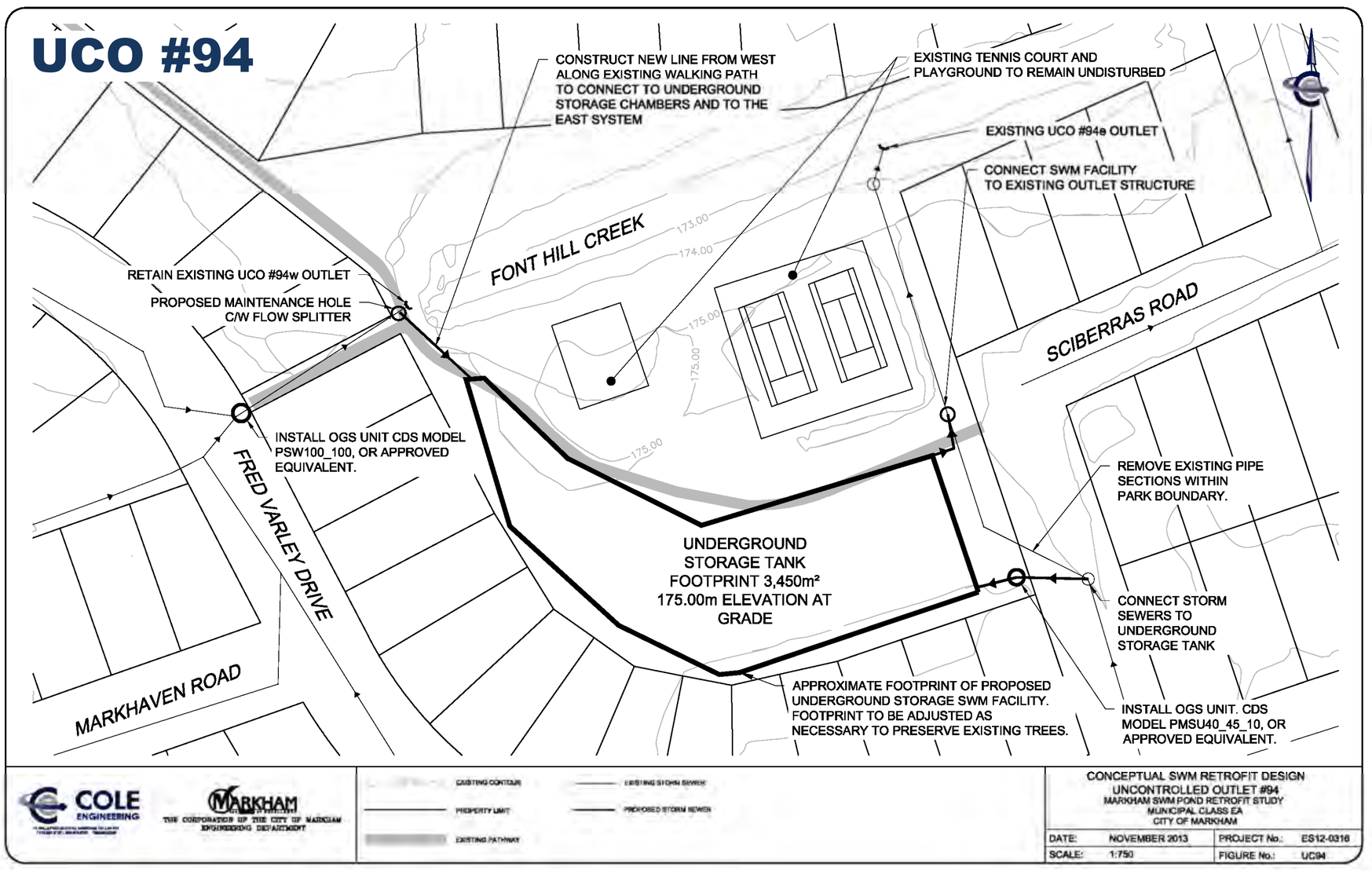
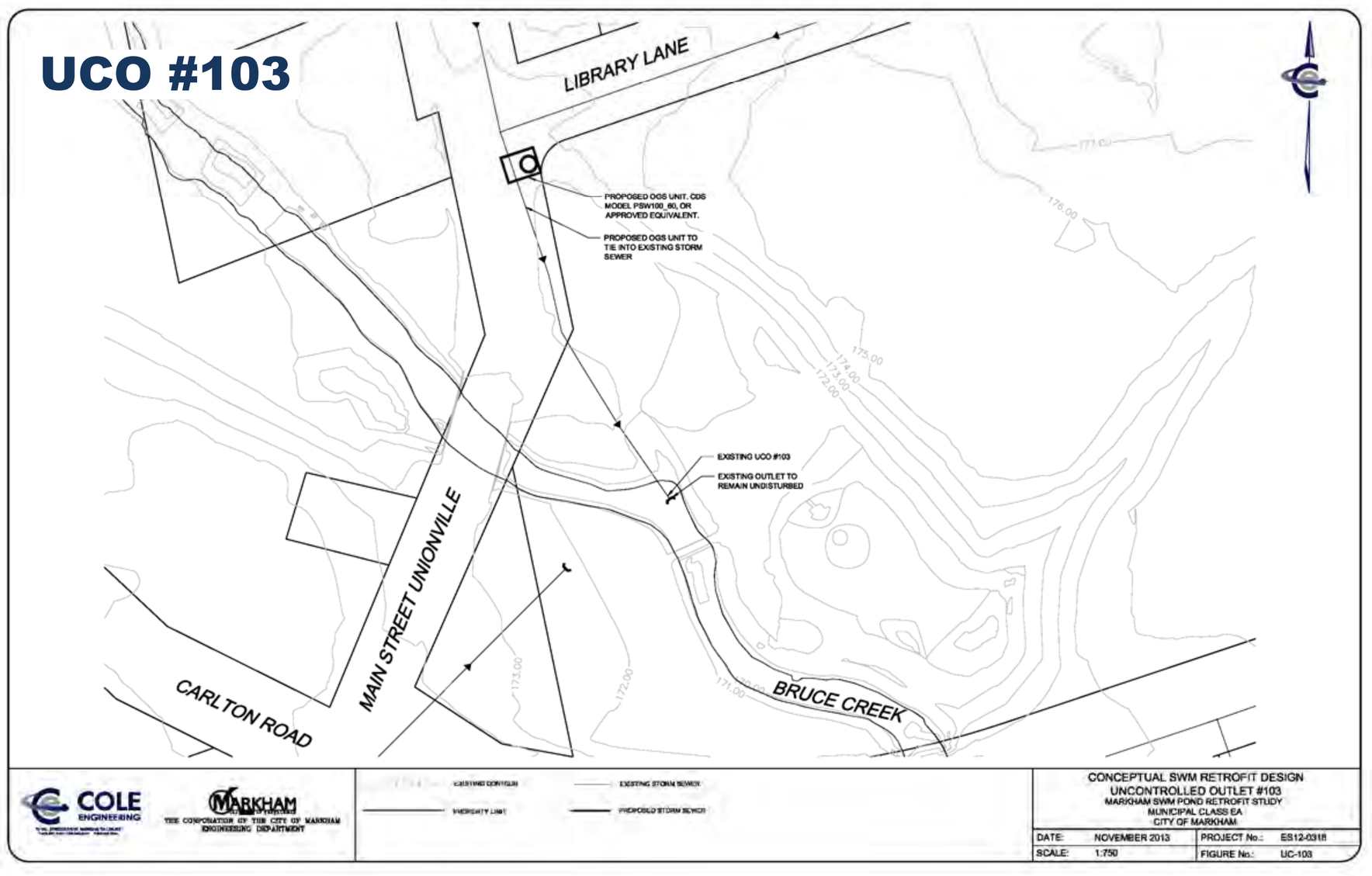
Uncontrolled Outlet
New Stormwater Management Facility
Conceptual Designs



- **Erosion Control:** Partial erosion control achieved through an underground storage facility with an outlet designed to control the release rate of stormwater. The underground facility will received water from the storm sewers that currently discharge at uncontrolled outlet #94w and #94e and will discharge the stormwater downstream into Font Hill Creek through the existing uncontrolled outlet #94e outlet. Only partial erosion control is possible given the limited space available for a stormwater management facility while protecting existing trees and infrastructure. Excess stormwater will discharge into Font Hill Creek through the existing uncontrolled outlet #94w outlet via a flow splitter in the proposed adjacent maintenance hole and through the existing uncontrolled outlet #94e outlet via an overflow outlet in the underground storage facility.
- **Water Quality Control:** Achieved through an oil / grit separator prior to each of the two (2) underground storage facility inlets (#94w and #94e). The oil / grit separators will provide water quality control of the stormwater prior to discharge into the underground storage facility and Font Hill Creek.
- **Temperature Control:** The stormwater will be cooled as it passes through the stones in the underground storage chamber prior to discharge into Font Hill Creek. Additionally by storing the stormwater underground the water is protected from the warming effects of the sun.



- **Water Quality Control:** Achieved through an oil / grit separator which will provide water quality control of the stormwater prior to discharge into the Don River.
- **Temperature Control:** Since the stormwater will not be stored above ground (which can have a significant warming effect) and will not be exposed to the sun for extended periods of time, it is expected that thermal mitigation will not be required.

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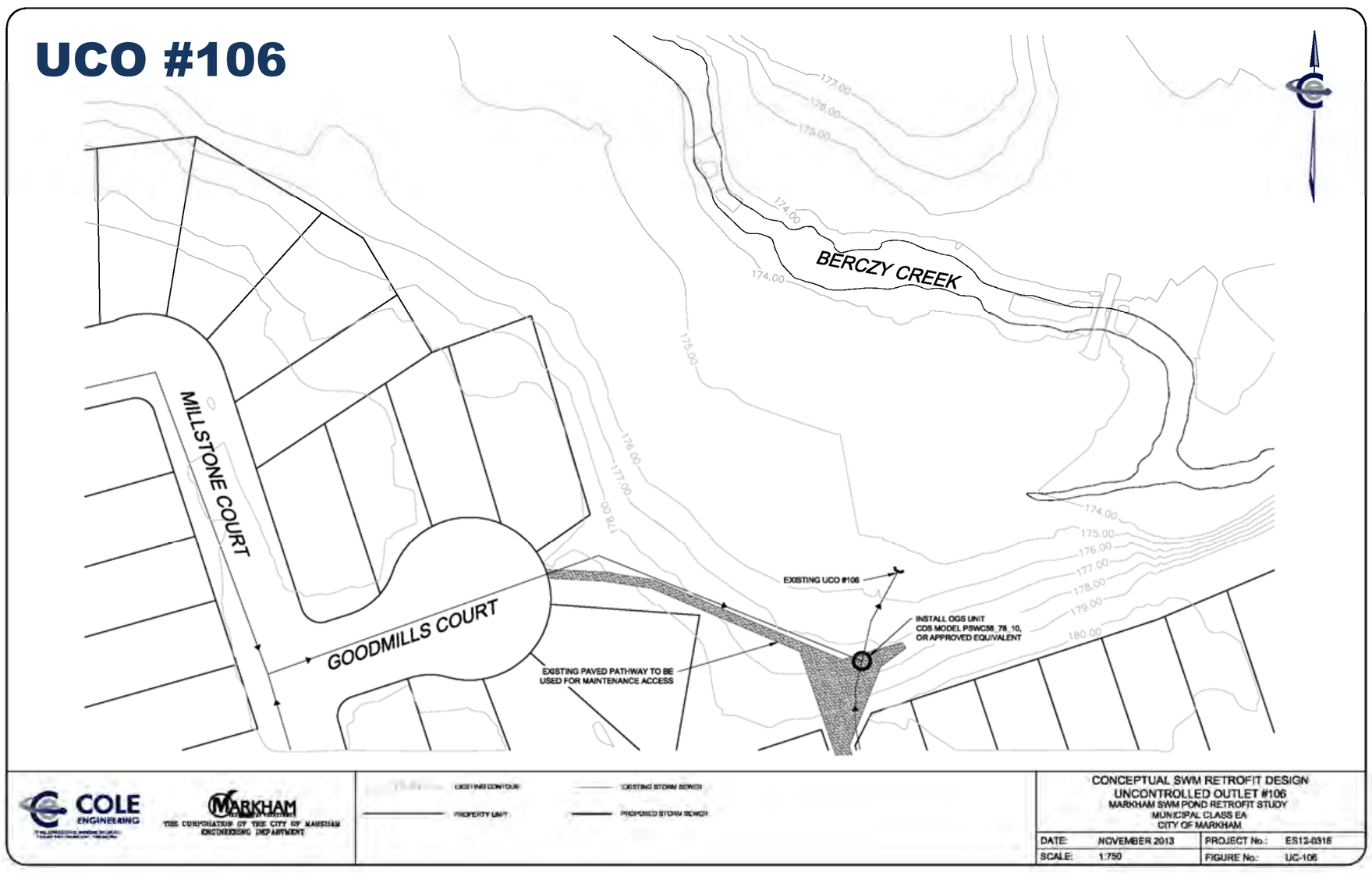
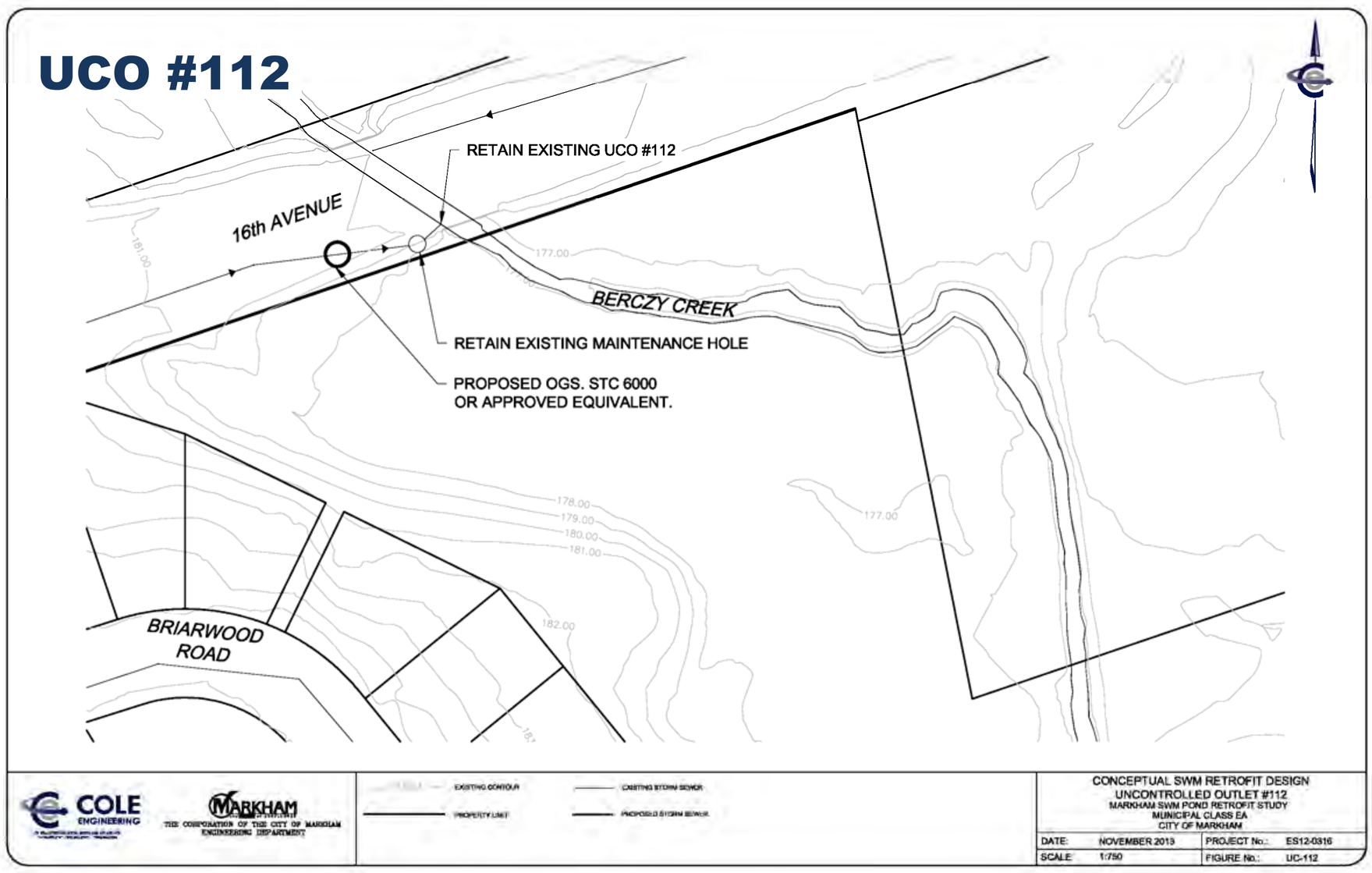
MARKHAM

Uncontrolled Outlet
New Stormwater Management Facility
Conceptual Designs



- **Water Quality Control:** Achieved through an oil / grit separator which will provide water quality control of the stormwater prior to discharge into Berczy Creek.
- **Temperature Control:** Since the stormwater will not be stored above ground (which can have a significant warming effect) and will not be exposed to the sun for extended periods of time, it is expected that thermal mitigation will not be required.

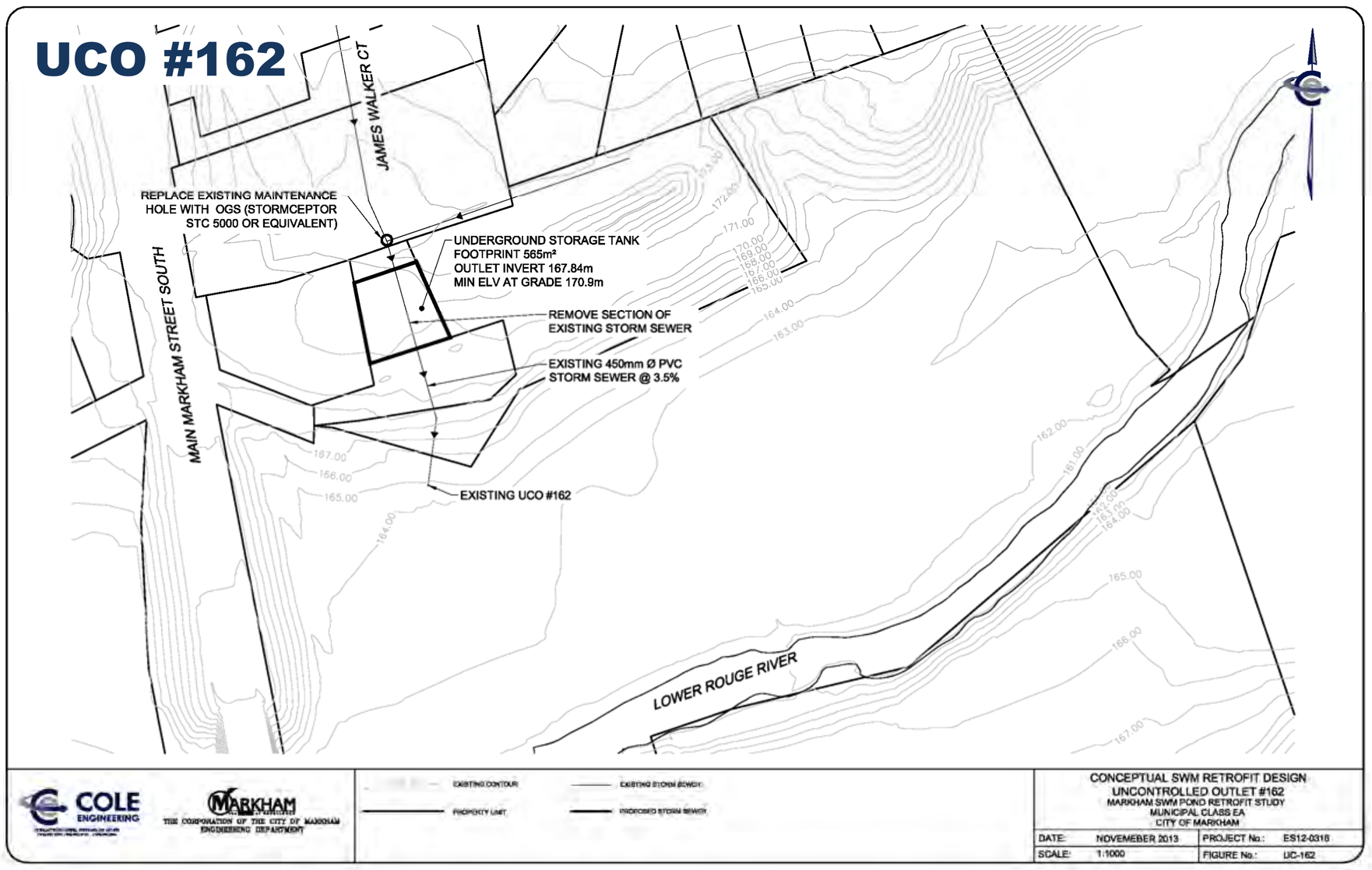


- **Water Quality Control:** Achieved through an oil / grit separator which will provide water quality control of the stormwater prior to discharge into Berczy Creek.
- **Temperature Control:** Since the stormwater will not be stored above ground (which can have a significant warming effect) and will not be exposed to the sun for extended periods of time, it is expected that thermal mitigation will not be required.

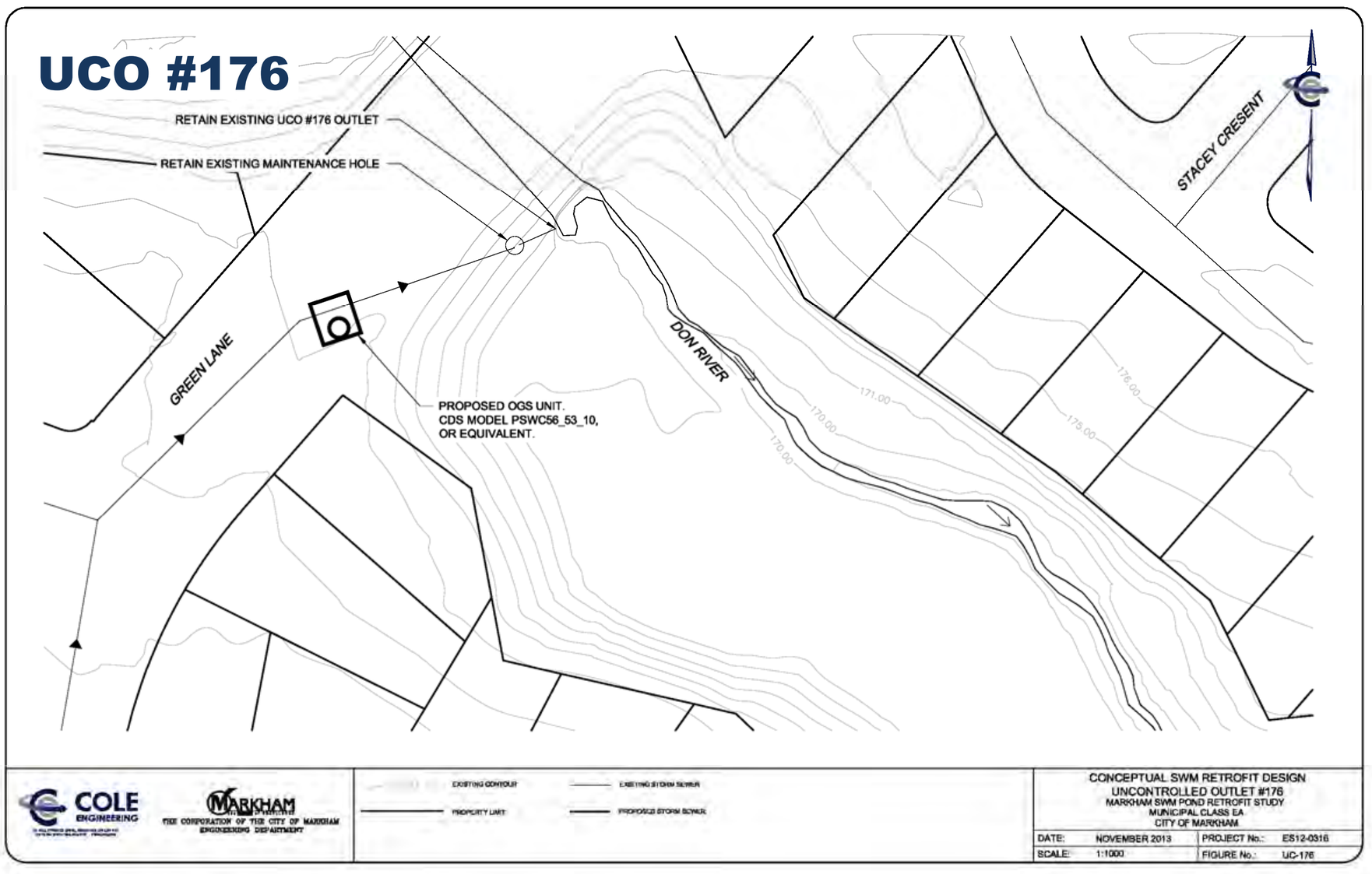
COLE ENGINEERING

MARKHAM

Uncontrolled Outlet
New Stormwater Management Facility
Conceptual Designs



- **Erosion Control:** Partial erosion control achieved through an underground storage facility with an outlet designed to control the release rate of stormwater. The underground facility will receive water from the storm sewer that currently discharges at uncontrolled outlet #162 and will discharge the stormwater through the existing uncontrolled outlet #162 outlet. Only partial erosion control is possible given existing infrastructure and constructability constraints.
- **Water Quality Control:** Achieved through an oil / grit separator which will provide water quality control of the stormwater prior to discharge into the underground storage facility and the Lower Rouge River.
- **Temperature Control:** The stormwater will be cooled as it passes through the stones in the underground storage chamber prior to discharge to the Lower Rouge River. Additionally by storing the stormwater underground the water is protected from the warming effects of the sun.



- **Water Quality Control:** Achieved through an oil / grit separator which will provide water quality control of the stormwater prior to discharge into the Don River.
- **Temperature Control:** Since the stormwater will not be stored above ground (which can have a significant warming effect) and will not be exposed to the sun for extended periods of time, it is expected that thermal mitigation will not be required.

COLE ENGINEERING

MARKHAM

The Next Steps . . .

- Comments received from this Public Information Centre will be considered along with those received from review agencies and stakeholders in order to finalize the Conceptual Design for each of the priority sites.

Please provide your comments on the provided comment form or email

MarkhamPondRetrofitEA@coleengineering.ca

by December 18th, 2013.

- A Notice of Completion will be mailed out to stakeholders and individuals on the mailing list once the Project File Report is placed on public record.

- The Project File Report will be completed and placed on public record. The Project File Report will be available for public review and comment for 30 days.

Thank you for your participation!

COLE ENGINEERING

MARKHAM

APPENDIX L
Notice of Completion

NOTICE OF STUDY COMPLETION

STORMWATER MANAGEMENT FACILITIES RETROFIT CLASS ENVIRONMENTAL ASSESSMENT

The City of Markham has completed a Municipal Class Environmental Assessment (Class EA) study to identify and prioritize opportunities to improve the management of stormwater within the City. Improvements may be achieved through the retrofit of existing stormwater management (SWM) facilities and/or through the construction of new SWM facilities in areas that are currently lacking appropriate controls.

The study was conducted as a 'Schedule B' project in compliance with the Municipal Engineers Association document "Municipal Class EA," (October 2000, amended in 2007 and 2011) which addressed Phases 1 and 2 of the Class EA Process. Opportunities for improvements were identified by assessing the level of control provided by existing SWM facilities, identifying existing uncontrolled storm sewer outlets and assessing the feasibility of providing enhancements at these sites to screen out impractical options. The remaining sites were then prioritized based on criteria developed by Cole Engineering Group Ltd (Cole Engineering), the City, and stakeholders. A set of alternative solutions for each of the top priority sites was evaluated and associated mitigative measures to reduce impacts of the resulting proposed work were identified.

The Class EA study determined the preferred alternative solution to provide improved SWM at each of the top priority sites. The preferred solution varies for each site which may include the installation of an oil-grit separator for quality control, the installation of an underground storage tank, the installation of a cooling trench and/or the planting of trees and shrubs to provide temperature mitigation, the expansion of existing SWM ponds and the modification of existing controls at SWM ponds.

A Class EA Project File Report has been prepared documenting the study process, how public and review agency input was considered, and conclusions/recommendations of the study. The Class EA Project File Report is available during regular business hours at the following location for a 30 day public review period **beginning January 14, 2016 and ending on February 13, 2016**:

Markham Civic Centre – Clerk Office Counter
101 Town Centre Boulevard
Markham, ON L3R 9W3

The Class EA Project File will also be posted on the City's website: www.markham.ca under "Major City Projects / Stormwater Management" section.

Interested persons should provide written comments regarding the project within the prescribed Review Period to:

Mr. Robert Muir, M.A.Sc., P.Eng.
Manager, Stormwater
Asset Management, City of Markham
8100 Warden Avenue
Markham, ON L6G 1B4
Email: rmuir@markham.ca
Tel: 905.477.7000 x 2894

Mr. Geoff Masotti, P.Eng.
Project Manager
Cole Engineering Group Ltd.
70 Valleywood Drive
Markham, ON, L3R 4T5
Email: gmasotti@coleengineering.ca
Tel: 905.940.6161 x 254

If concerns arise during the Review Period that cannot be resolved through discussion with the City, a person may request the Minister of the Environment to subject the project to an individual environmental assessment. This request (commonly referred to as a "bump-up" request) must be received within the above prescribed Review Period by the Minister, at the address listed below. A copy of the request must also be sent to the City at the address listed above. If no request is received by February 13, 2016, the City may proceed with design and construction of the project as presented in the planning documentation.

The Honourable Glen Murray
Minister of the Environment
135 St. Clair Avenue West, 12th Floor
Toronto, Ontario
M4V 1P5

This Notice was first issued on January 14, 2016.

APPENDIX M
Consultation with Review Agencies

Meeting Minutes

PROGRESS MEETING #:	Stakeholders Meeting #1	DATE:	September 25, 2012
		TIME:	10:00 AM
PROJECT NAME:	Stormwater Management Facilities Retrofit Municipal Class EA	PROJECT #:	ES12-0316
LOCATION:	City of Markham Offices		
PURPOSE:	Stakeholders Meeting		

PRESENT:

Cynthia Tam (CT), City of Markham
Soran Sito (SS), City of Markham
Dorothy Moszynski (DM), MOE
Dan Hipple (DH), TRCA
Geoff Masotti (GM), Cole Engineering Group Ltd.
Patricia Osika (PO), Cole Engineering Group Ltd.

REGRETS:

ITEM	DESCRIPTION	ACTION BY
1.	**Introductions**	
2.	**Study Overview / Purpose** The City had provided a brief overview of the purpose of the study. This study is to look at retrofit opportunities for stormwater management (SWM) facilities in the City of Markham (the City) as well as to look at proposed ponds in currently uncontrolled areas. A similar study was completed in 1999 by Aquifer Beach for the City and the Toronto and Region Conservation Authority (TRCA). Since that time the City's urban boundary has expanded and new SWM guidelines have been implemented. Five of the priority retrofits identified in the 1999 study have been undertaken in the last five to seven years. The process for this project includes three levels of screening to determine the priority retrofit projects. These include: • Initial screening to determine ponds that do not require retrofits; • Prioritize remaining ponds with retrofit potential; • Identify preferred design concepts. This study is being conducted as a Class EA with conceptual designs to allow for design and construction of the facilities without the need for individual EA's.	INFO

ITEM	DESCRIPTION	ACTION BY
3.	**Preliminary Screening Criteria**	
	Screening criteria was developed to identify SWM ponds that meet current SWM criteria and remove these from consideration. The initial screening will guide the need for field investigation work to characterize site habitat and determine retrofit feasibility / site constraints.	INFO
	Currently the Ministry of Natural Resources (MNR) is working with Cole to determine where Redside Dace and temperature mitigation is a consideration.	INFO
	DH informed that if a SWM facility is already within the floodplain then the TRCA would allow for a retrofit to be considered provided there is an overall improvement to the health of the watercourse. If the retrofit requires an expansion into the floodplain where the facility previously was not in the floodplain, additional discussion with the TRCA.	INFO
	DM suggested that the later stages such as "land available for retrofit" and "100 year floodplain" do not result in removal of the facility from consideration but are carried forward for more detailed evaluation.	COLE
	Land acquisition will be considered to facilitate SWM Pond retrofits on a case by case basis. Considerations for the type and number of properties required (i.e. multiple residential lots vs. park for example) as well as ownership (private vs. public) will need to be weighed to determine feasibility and cost of the acquisition.	INFO
	DM suggested to check for greenbelt urban connection areas and the Provincial Policy Statement as it relates to the retrofit locations because these could present constraints. DH indicated that the City's new Official Plan should show these as part of the natural heritage system and could be used for the evaluation.	COLE
	TRCA to check for a summary of watershed specific SWM facility criteria. Unit release rates are available for each watershed. Mike Todd is pulling together the requested data and DH is to follow up on data request. Cole can come to collect some of the data if it's currently available.	TRCA
	DH suggested Cole should check with the Ministry of Municipal Affairs and Housing to see if they have any policies that would apply to the screening.	COLE
4.	**Other Business**	
	The MOE's Technical Support Section (regional office) will not require consultation during detailed design of any identified retrofits. Any changes to the SWM facilities will require an amendment to the ECA (formerly C of A).	INFO
	TRCA is to approve any proposed pond designs and permits will likely be required.	INFO
	Cole is targeting to commence field work in early October.	COLE
	The first Public Information Centre is scheduled for early December. Notices are pending.	INFO
5.	**Other Business**	
	DM will provide MOE comments on the screening criteria by the end of the day if any further. TRCA will provide comments within the week.	MOE / TRCA
	Cole provided the City with a list of data gaps in the SWM facility background information in the database. City to check if this additional information is available and circulate to Cole.	CITY
	The next stakeholders meeting will occur after the priority list of SWM facilities for retrofit has occurred.	INFO

Next Meeting: TBD
Minutes Recorded By: Patricia Osika
Distribution: All Attendees

Meeting Minutes

PROGRESS MEETING #:	Stakeholders Meeting #2	DATE:	February 26, 2013
		TIME:	10:00 AM
PROJECT NAME:	Stormwater Management Facilities Retrofit Municipal Class EA	PROJECT #:	ES12-0316
LOCATION:	City of Markham Offices		
PURPOSE:	Stakeholders Meeting		

PRESENT:

Cynthia Tam (CT), City of Markham
Soran Sito (SS-City), City of Markham
Dorothy Moszynski (DM), MOE
Dan Hipple (DH), TRCA
Scott Smith (SS-TRCA), TRCA
Geoff Masotti (GM), Cole Engineering Group Ltd.
Melody Brown (MB), Cole Engineering Group Ltd.

ITEM	DESCRIPTION	ACTION BY
1.	**Study Progress**	
2.	**Screening / Prioritization Update**	
	The screening and prioritization criteria have been revised since the last stakeholder meeting. GM explained the process and criteria used to screen the 110 SWM facilities and 158 uncontrolled outlets down to 24 SWM facilities and 13 uncontrolled outlets that were then prioritized.	INFO
	The presence of Redside Dace raises the priority of the site (reflected in a score for requiring temperature mitigation) while the presence of other SAR / ESA / ELC lowers the priority of a site to mitigate impacts to ecologically valuable areas.	INFO
	The sites will have to be submitted to MNR for a full screening of SAR, etc. during the detailed design stage. At this time only Redside Dace screening has been completed by MNR.	INFO
	SS-CITY would like a copy of the Redside Dace data that was provided by MNR.	COLE
	DM inquired into what SWM criteria are being used for the evaluations and designs. GM confirmed that the 2003 MOE SWM criteria and the "Enhanced" level of quality control are being used.	INFO

ITEM	DESCRIPTION	ACTION BY
3.	**Evaluation and Preferred Solution**	
	DM suggested to check whether any of the uncontrolled outlets are combined sewer overflows and included this in the evaluation of social impacts. (i.e. A pond retaining sewage could have a negative impact on the health and happiness of nearby residents). CT to obtain combined sewer mapping/data.	COLE / CT
	GM provided the clarification that the economic criteria "impact on future development and growth" considers cost sharing opportunities for proposed works (i.e. if there is developable land within the catchment area):	INFO
	• The map of the top 20 priority sites should show the drainage areas to delineate the affected lands to help determine where development charges may apply.	COLE
	At the inquiry of SS-CITY, GM confirmed that the purchase of open/available land is being considered in the evaluation of SWM alternatives.	INFO
4.	**Upcoming PIC**	
	Map of the top 20 priority sites should show the drainage areas to delineate the affected lands:	COLE
	• The source of the drainage area information of the uncontrolled outlets needs to be confirmed. It is thought that the drainage areas were delineated based on DEM and sewer mapping data provided in SWMsoft and by the City.	
	SS-CITY has requested that the PIC boards be printed on letter sized paper and given out as packages to attendees at the PIC. Cole will send the final PIC boards to CT as a pdf and CT will print the packages.	COLE / CT
	The finalized boards will be emailed to the TRCA.	COLE
	The maps that will be displayed at the PIC should be revised:	COLE
	• Use a semi-transparent aerial photo; • Larger labels; • Show the drainage areas of the priority sites; and, • A brighter colour should be used to mark the uncontrolled outlets.	
	A hard copy of the City comments regarding the PIC boards were provided to MB.	COLE
5.	**Other Business**	
	It was discussed that a significant impacts to Redside Dace habitat occur due to erosion and sedimentation during construction. The Project File will contain the recommendation that all sites upstream of Redside Dace habitat should have stringent ESC measures and enforcement/inspection of ESC measures.	COLE
	SS-CITY would like the retrofits of existing SWM facilities to be completed at the same time as scheduled maintenance work to provide a cost saving to the City (the pond will already be dewatered, etc. for the maintenance work).	COLE
	• GM suggested that this be reflected in the implementation plan and the final prioritization list (rather than during the prioritization that is used to identify the top 20 sites). This will allow the City flexibility to re-prioritize the implementation of retrofits based on changes to the maintenance scheduling.	

ITEM	DESCRIPTION	ACTION BY
	• CT to provide COLE with the maintenance schedule / life cycle data.	CT
	Newly constructed SWM facilities ("ponds") need an ECA (Environmental Compliance Approval) from the MOE. This is issued in place of a C of A (Certificate of Approval). Retrofitted SWM facilities will need an amended C of A. DM to confirm.	DM
	SS-CITY had a number of questions about MOE policy. DM will inquire at the District Office regarding these questions and has requested that any additional questions be emailed to her.	DM
	SS-TRCA noted that it will take 6-7 weeks for the TRCA to review the Project File once submitted. COLE to consider this in the project schedule.	INFO / GM
	The completed Project File will be sent to the TRCA and MOE and by request to others.	INFO

Next Meeting: TBD
Minutes Recorded By: Melody Brown
Distribution: All Attendees

From: Scott Smith [mailto:SSmith@TRCA.on.ca]
Sent: July 9, 2013 9:19 AM
To: Tam, Cynthia
Cc: Geoff Masotti
Subject: RE: City of Markham SWM Retrofit Class EA Study - Top 20 Conceptual Designs

Cynthia,

We had a cursory look at the 20 sites provided, and don't see any glaring issues from a floodplain perspective. Please ensure that any pond retrofits can outlet to the watercourse during a storm event. When we have some more detail on the sites, staff would like to arrange for site visits. Water Resources, and ecology don't have any issue so far with the proposal for P-51.

Thank you,

Scott Smith | Planner II, Environmental Assessment Planning |Toronto and Region Conservation | 5 Shoreham Drive | Toronto, ON | M3N 1S4 |☎416-661-6600 ext. 5758 | ✉ssmith@trca.on.ca |www.trca.on.ca |

From: "Tam, Cynthia" <CTam@markham.ca>
To: Scott Smith <SSmith@TRCA.on.ca>,
Date: 07/08/2013 03:36 PM
Subject: RE: City of Markham SWM Retrofit Class EA Study - Top 20 Conceptual Designs

Hi Scott:

Any update?

Thanks,
Cynthia Tam, M.Eng., P.Eng., PMP
Environmental Engineer
Asset Management Department
City of Markham . 8100 Warden Ave . Markham . Ontario . L6G 1B4
e: ctam@markham.ca . t: 905.477.7000 x 2357 . f: 905.479.7766

From: Scott Smith [mailto:SSmith@TRCA.on.ca]
Sent: June 27, 2013 10:52 AM
To: Tam, Cynthia
Subject: RE: City of Markham SWM Retrofit Class EA Study - Top 20 Conceptual Designs

We met on this the other day. Dan is going to check our modelling to find the 5 year flood line. We just need to make sure the future pond can be outside this line. I'll get back to you shortly - hopefully I can have a response by early next week.

Scott Smith | Planner II, Environmental Assessment Planning |Toronto and Region Conservation | 5 Shoreham Drive | Toronto, ON | M3N 1S4 |☎416-661-6600 ext. 5758 | ✉ssmith@trca.on.ca |www.trca.on.ca |

From: "Tam, Cynthia" <CTam@markham.ca>
To: Scott Smith <SSmith@TRCA.on.ca>,
Date: 06/27/2013 10:48 AM
Subject: RE: City of Markham SWM Retrofit Class EA Study - Top 20 Conceptual Designs

Hi Scott:

I would like to follow up on the previous emails in regard to TRCA's standpoint on converting a constructed wetland to a wetpond. It would be greatly appreciated if you provide us a confirmation at your earliest convenience.

Thank you,

Cynthia
From: Tam, Cynthia
Sent: June 24, 2013 3:35 PM
To: 'Scott Smith'
Cc: Geoff Masotti
Subject: RE: City of Markham SWM Retrofit Class EA Study - Top 20 Conceptual Designs

Hi Scott:

Yes, P-51 is an artificial SWM treatment facility, and the blue line is a rough estimation of the future retrofitted pond. However, it was agreed that the footprint of the retrofitted pond will be minimized if possible, so as to reduce the impact to adjacent trees.

Regards,

Cynthia Tam, M.Eng., P.Eng., PMP
Environmental Engineer
Asset Management Department
City of Markham . 8100 Warden Ave . Markham . Ontario . L6G 1B4
e: ctam@markham.ca . t: 905.477.7000 x 2357 . f: 905.479.7766

From: Scott Smith [mailto:SSmith@TRCA.on.ca]
Sent: June 24, 2013 2:15 PM
To: Tam, Cynthia
Cc: Geoff Masotti
Subject: RE: City of Markham SWM Retrofit Class EA Study - Top 20 Conceptual Designs

Cythia,

That is a fair question at this stage. Is this wetland an artificial stormwater effluent treatment wetland? Is the blue line in the submitted aerial photo a rough guess of the future size of the set pond?

Scott Smith | Planner II, Environmental Assessment Planning |Toronto and Region Conservation | 5 Shoreham Drive | Toronto, ON | M3N 1S4 | ☎416-661-6600 ext. 5758 | ✉ssmith@trca.on.ca | www.trca.on.ca |

From: "Tam, Cynthia" <CTam@markham.ca>
To: "'ssmith@trca.on.ca'" <ssmith@trca.on.ca>,
Cc: "'dhipple@trca.on.ca'" <dhipple@trca.on.ca>, Geoff Masotti <GMasotti@coleengineering.ca>, Alan Manlucu <AManlucu@coleengineering.ca>
Date: 06/20/2013 02:21 PM
Subject: RE: City of Markham SWM Retrofit Class EA Study - Top 20 Conceptual Designs

Hi Scott:

We understand that TRCA might not be able to provide confirmation on the location based on the level of detail at this stage. However, we would like to confirm with TRCA whether TRCA would support converting a wetland to a wet pond (Pond P-51) in order to provide sufficient permanent pool and volume for erosion control; as well as the proposed new facilities to be located within the floodplain. It would be greatly appreciated if you could kindly confirm the above, as these are critical criterion that determine whether the proposed retrofit sites are feasible to work on or not. We do not prefer our consultant to spend time and effort in going into further detail, and later find out that TRCA do not support these critical criterion.

I hope you understand the City's concern. Thank you very much!

Regards,

Cynthia Tam, M.Eng., P.Eng., PMP
Environmental Engineer
Asset Management Department
City of Markham . 8100 Warden Ave . Markham . Ontario . L6G 1B4
e: ctam@markham.ca . t: 905.477.7000 x 2357 . f: 905.479.7766

From: Geoff Masotti [mailto:GMasotti@coleengineering.ca]
Sent: June 17, 2013 4:45 PM
To: 'ssmith@trca.on.ca'; Alan Manlucu
Cc: Tam, Cynthia; 'dhipple@trca.on.ca'
Subject: Re: City of Markham SWM Retrofit Class EA Study - Top 20 Conceptual Designs

Scott,

The City is looking for conceptual buy in at this time such that we can proceed with the concept plans and provide you with these details. Is the TRCA aware of any issues that would prevent the plans from proceeding as discussed in the package that was circulated? If not we can complete our concept designs and circulate when ready. The City is looking to keep the authority informed of it's plans and avoid any significant comments on the concept designs. I think some dialogue would be beneficial at this stage.

Best Regards,

Geoff Masotti, P.Eng.
Water Resources, Associate
Cole Engineering Group Ltd.
line: 905-940-6161 ext. 254

cell: 416-230-9222
gmasotti@ColeEngineering.ca

Sent using BlackBerry

From: Scott Smith [mailto:SSmith@TRCA.on.ca]
Sent: Monday, June 17, 2013 04:24 PM
To: Alan Manlucu
Cc: 'Tam, Cynthia' <CTam@markham.ca>; 'DHipple@trca.on.ca' <DHipple@trca.on.ca>; Geoff Masotti
Subject: RE: City of Markham SWM Retrofit Class EA Study - Top 20 Conceptual Designs

Alan,

Dan and I have taken a quick look at what was provided. We are not able to provide written confirmation of support for the proposed retrofit locations and works based on the sketches provided. Please provide more detailed sketches for our review.

Thank you,

Scott Smith | Planner II, Environmental Assessment Planning |Toronto and Region Conservation | 5 Shoreham Drive | Toronto, ON | M3N 1S4 |☎416-661-6600 ext. 5758 | ✉ssmith@trca.on.ca |www.trca.on.ca |

From: Alan Manlucu <AManlucu@coleengineering.ca>
To: "'Scott Smith'" <SSmith@TRCA.on.ca>,
Cc: Geoff Masotti <GMasotti@coleengineering.ca>, "'DHipple@trca.on.ca'" <DHipple@trca.on.ca>, "'Tam, Cynthia'" <CTam@markham.ca>
Date: 06/17/2013 02:13 PM
Subject: RE: City of Markham SWM Retrofit Class EA Study - Top 20 Conceptual Designs

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Hi Scott,

Just following up on this email. Have you had a chance to review the conceptual pond retrofit locations and works?
Please let me know if you require any further info.

Thanks.

Alan Manlucu, P.Eng.
Water Resources Engineer

Cole Engineering Group Ltd.
70 Valleywood Drive, Markham, ON Canada L3R 4T5
T: 905-940-6161 Ext. 239 Tor. Line: 416-987-6161

F: 905-940-2064
E: amanlucu@ColeEngineering.ca
www.ColeEngineering.ca

From: Alan Manlucu
Sent: Monday, June 03, 2013 3:28 PM
To: 'Scott Smith'
Cc: Geoff Masotti; 'DHipple@trca.on.ca'; 'Tam, Cynthia'
Subject: RE: City of Markham SWM Retrofit Class EA Study - Top 20 Conceptual Designs

Hi Scott / Dan,

We are currently in the process of completing the conceptual designs for the Top 20 Prioritized Retrofit sites for the above noted project. At this time, we would like your input in regards to the design concepts prior to moving forward with the EA.
Below is an FTP link to the draft conceptual design sketches which include the retrofit locations and proposed works at each site.

Ideally, the City would like written confirmation that TRCA (at a conceptual level) are supportive of the proposed retrofit locations and works.
We greatly appreciate your assistance with this matter.

Please let me know if you require any further information for your review.

Thanks.

Alan Manlucu, P.Eng.
Water Resources Engineer

Cole Engineering Group Ltd.
70 Valleywood Drive, Markham, ON Canada L3R 4T5
T: 905-940-6161 Ext. 239 Tor. Line: 416-987-6161
F: 905-940-2064
E: amanlucu@ColeEngineering.ca
www.ColeEngineering.ca

From: Alan Manlucu via FilePort [mailto:delivery@datagnosis.com]
Sent: Monday, June 03, 2013 2:56 PM
To: Alan Manlucu

Subject: RE: Markham SWM Retrofit Study - Top 20 Conceptual Designs

RE: Markham SWM Retrofit Study - Top 20 Conceptual Designs

The following file(s) have been sent to you from **Alan Manlucu**. To download the file(s), click here.

For technical assistance, please email us at itsupport@coleengineering.ca.

Notes from sender:

Files:

Top 20 Concept Design Summary.pdf (filetype: application/pdf, filesize: 10694 KB)

Recipients:

amanlucu@coleengineering.ca

Cole Engineering Group Ltd.
70 Valleywood Drive, Markham ON L3R 4T5
Phone: 416-987-6161 Fax: 905-940-2064

 bottom banner

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From: Patricia Osika
Sent: Monday, December 10, 2012 9:39 AM
To: 'Scott Smith'
Cc: Geoff Masotti
Subject: RE: Markham SWM Retrofit Study

Good Morning Scott,

I just wanted to follow up with you to confirm that the TRCA doesn't have reports for the remainder of the ponds listed in the email below. If you could send an email to confirm that would be great.

Thanks,

Patricia Osika, B. Eng., E.I.T.
Water Resources Designer

Cole Engineering Group Ltd.
70 Valleywood Drive Markham, ON L3R 4T5
Tor. Line: 416-987-6161, Ext. 273 Phone: 905-940-6161
Fax: 905-940-2064
Email: POsika@ColeEngineering.ca
Website: www.ColeEngineering.ca

From: Scott Smith [mailto:SSmith@TRCA.on.ca]
Sent: Wednesday, November 28, 2012 1:52 PM
To: Patricia Osika
Cc: Geoff Masotti
Subject: RE: Markham SWM Retrofit Study

Patricia,

More good news. I've dug up information on ponds 12, 29, 132 and 147 (in addition to 110). I'll hopefully receive the files tomorrow. I'll give you a call tomorrow when I've looked at the files and we can decide if there's useful information there and how to get it to you.

Thanks,

Scott Smith | Planner II, Environmental Assessment Planning |Toronto and Region Conservation | 5 Shoreham Drive | Toronto, ON | M3N 1S4 |☎416-661-6600 ext. 5758 | ✉ssmith@trca.on.ca |www.trca.on.ca |

From: Patricia Osika <POsika@coleengineering.ca>
To: Scott Smith <SSmith@TRCA.on.ca>,
Cc: Geoff Masotti <GMasotti@coleengineering.ca>
Date: 11/26/2012 03:50 PM
Subject: RE: Markham SWM Retrofit Study

Toronto and Region Conservation
for The Living City

October 10, 2013 CFN 48181

BY E-MAIL ONLY (ctam@markham.ca)

Ms. Cynthia Tam
City of Markham
8100 Warden Avenue
Markham, Ontario
L6G 1B4

Dear Ms. Tam:

Re: Response to Conceptual Designs and Calculations
Stormwater Management Facilities Retrofit
Municipal Class Environmental Assessment (EA) - Schedule B
Don River & Rouge River Watersheds; City of Markham; Regional Municipality of York

Toronto and Region Conservation Authority (TRCA) staff received the conceptual designs and calculations for the above noted project on August 7, 2013. The Environmental Assessment (EA) involves the identification of priority sites for stormwater management retrofits within the City of Markham. TRCA staff commends the city of Markham for recognizing the benefit of stormwater management retrofits and looks forward to reviewing the draft EA document.

TRCA staff recommends that the EA document be written with regard to the City of Markham's *Draft Official Plan.* Specifically, TRCA staff recommends that all locations be reviewed in light of Section 3.3.3: Stormwater Management. From a broader perspective, the EA document should be written within the systems framework established by the City of Markham's *Greenprint Sustainability Plan* with an emphasis on the systems of water efficiency and ecosystem integrity. The draft EA should also speak to achieving the objectives of the Don River and Rouge River watershed plans with respect to stormwater management.

Section 3.3.3.10 of the City of Markham's Draft Official Plan directs the city to prepare a stormwater management retrofit master plan; however, TRCA staff note that this is a schedule B EA. As such, there is no requirement to present alternative designs. Nevertheless, the City of Markham should consider an analysis closer to that of a schedule C EA, including alternative designs, for the more complex, difficult or controversial sites. The greater level of detailed analysis will assist with TRCA review and with public support for many of these sites.

While staff has no objection in principle to most of the preferred designs, we do have concerns with proposals at locations UC-162, UC-8, UC-55 and UC-176. These proposals are for new stormwater management infrastructure within the valley. Generally, stormwater management facilities should be located outside valley and stream corridors. These proposals present significant implications to the natural heritage system due to permanent losses to the system, significant construction impacts on

the natural system, intrusions into the natural heritage system for maintenance, and potential long-term maintenance issues due to river dynamics such as erosion putting the infrastructure at risk. Furthermore, TRCA requires more information before supporting an expansion of the existing stormwater management pond at P-39 into the natural heritage feature. TRCA also has concerns with construction impacts and design of the proposal at UC-112. Please examine alternatives to achieve the City of Markham's stormwater objectives while minimizing impacts on the natural heritage system. If the City of Markham wishes to pursue any of these sites, further discussions with TRCA staff are required.

In many locations, further consideration should be made of incorporating low impact development (LID) measures. LID measures can help the City of Markham better achieve their stormwater management site objectives, reduce or avoid intrusions into natural heritage features, and reduce project costs. TRCA staff has made some site specific LID recommendations in Appendix A.

Please ensure that TRCA staff receives three (3) hard copies and one (1) digital copy of the draft EA document. The draft EA document should be accompanied by a covering letter that uses the numbering scheme provided in this letter and identifies how these comments have been addressed. Digital materials must be submitted in PDF format.

Please contact me at extension 5758 or at ssmith@trca.on.ca to arrange a meeting if clarification on these comments is required.

Yours truly,

Scott R Smith

Scott Smith
Planner II, Environmental Assessment Planning
Planning and Development

BY E-MAIL

cc: Cole: Geoff Masotti, Project Manager (gmasotti@coleengineering.ca)
TRCA: Beth Williston, Senior Manager, Environmental Assessment Planning
Suzanne Bevan, Senior Planner, Environmental Assessment Planning
Quentin Hanchard, Senior Manager, Development, Planning and Regulation
Arlen Leeming, Project Manager, Don River Watershed
Rouge Park: Maria Papoulias, Natural Heritage Manager

APPENDIX A: TRCA COMMENTS

Location	TRCA Comments (October 4, 2013)	Cole Engineering Response
P-5	a) Based on the grading provided, there is only approximately 0.75m grade difference from the outlet to the ground elevation. Given the size of land available and the shallow outlet, there are excellent opportunities for low impact development (LID) measures, especially linear facilities such as bio-swales. b) Consider converting the underground storage tank to an infiltration unit, as any infiltration will benefit the receiving system.	
P24	a) TRCA staff has concerns with erosion and sediment control for the protection of the adjacent natural heritage system and watercourse. The condition of the existing outfall with regard to erosion and related impacts to the existing natural features should be investigated, and any mitigation that may be necessary provided as part of this project. b) Please review the OGS location, and confirm if there is the potential to negatively impact the slope adjacent to the right-of-way (ROW) during construction.	
P-39	a) Explore upslope solutions to avoid the need to expand the existing pond into the vegetated area. b) Consider relocating the oil grit separator (OGS) unit to Heatherwood Crescent for maintenance purposes. c) In order for TRCA to evaluate an expansion of the existing storm pond into the well vegetated area, a detailed tree inventory and Environmental Impact Statement (EIS) is required. d) Provide confirmation of how the OGS will be accessed for maintenance.	
P-45	a) Please explore opportunities for using infiltration chambers as opposed to storage only chambers. b) Provide the access point for the OGS maintenance.	
P-47	Explore opportunities for using infiltration chambers as opposed to storage only chambers.	

P-51	a) Explore opportunities for infiltration or LID measures, such as underground infiltration chambers within the park or sports field to the north to limit the proposed expansion of the existing storm pond. b) Confirm that the proposed expansion is outside the 25 year erosion allowance for the downstream watercourse c) Note in the EA that at detailed design the pond needs to be planted as per the stormwater management pond planting guideline and the post-construction restoration guideline. d) Please explore opportunities to replace gabions with a more suitable alternative.	
P-55	No concerns.	
P-62:	a) The City of Markham and Forest Bay Homes are co-proponents in an EA to extend Denison Street and Kirkham Drive through the proposed stormwater management improvements. Please speak to Masonsong to coordinate aspects of this pond design such as the cooling trench and vegetation. TRCA would be happy to discuss synergies between these two projects. b) Note in the EA that the wetland is habitat, not infrastructure.	
P-73	Explore options to keep the cooling trench on the upslope side of the trail to avoid the need to remove trees.	
P-77	No concerns	
UC-8	a) TRCA generally does not support the addition of new stormwater management infrastructure within the valley feature. Should the City of Markham pursue infrastructure within the valley, further discussion with TRCA is required. b) Consider investigating potential opportunities to repair the outlet channel, which currently has seen the majority of the stone within the gabion wall wash away. c) Consider relocating the OGS unit closer to a municipal ROW, such as Blackwell Court, for maintenance access.	
UC-55	a) TRCA generally does not support the addition of new stormwater management infrastructure within the valley feature. Should the City of Markham pursue infrastructure within the valley, further discussion with TRCA is required. b) Note that there are significant implications to the natural heritage system with the proposed works, primarily related to the required conveyance sewers, but also potentially due to the proposed tank size and location with regard to channel	

	dynamics, slope stability and loss of existing woodlands and naturalized areas. c) Consider alternative options to provide storage and treatment via on-line conveyance super-pipes within the existing sewer alignment.	
UC-63W	a) Note that TRCA staff has concerns related to the protection of existing natural heritage resources and erosion and sediment controls during construction. b) TRCA staff has concerns with the location as construction of the proposed 1350mm concrete pipe next to the Don River may destabilize the bank slope, as the distance from the trees to the top of slope is very narrow. Please address this concern in the EA. c) The proposed outfall location should be determined based on site specific investigations to minimize impacts. d) Consider relocating the OGS unit closer to a municipal ROW, such as Proctor Avenue for maintenance access. e) Explore opportunities for using Stormtech infiltration chambers as opposed to storage only chambers.	
UC-67	a) Clarify if UCO-67 is a proposed or existing outfall and label on the drawing. b) Works within the road ROW on Pinevale Avenue are supported with the understanding that erosion and sediment controls would be implemented during construction. c) The proposed location for the OGS at site UCO-67 appears to be within an existing wooded ravine area that is of very high quality based on previous (unrelated) site visits. Protection of the existing forest community is a high priority, and identification of potential impacts anticipated at this preliminary level is requested for this site in order for staff to support this element. If new outfalls are required, staff would have similar concerns for both sites, again related to impacts to the existing mature forest and wetland communities located in the general area. d) It is unclear how the southerly OGS will be accessed for maintenance. Please explore opportunities to relocate closer to a municipal ROW.	
UC-94	a) Please explore the possibility of using LID's, such as bio-retention units or bio swales, through this area, including the storm sewer from Sciberras Road. b) Maintain baseflow from the existing outlet through Font Hill Creek, such through the installation of a flow splitter. c) Discuss with other departments the implications of removing the mature trees.	

UC-103	No concerns.	
UC-106	Explore opportunities for LID measure nearby.	
UC-112	a) Note that the watercourse in this stretch is one of the best quality habitats in our jurisdiction. b) The proposed outlet is located in a stream bank that is vertical and undercut in some areas, with a bank approximately 1.5m high with gabion supporting adjacent infrastructure. TRCA staff has geotechnical concerns, and structural concerns with the proposed outfall location. c) MNR review may be required for Redside Dace at this location. d) Please reconsider the cost-benefit of the proposal in this location.	
UC-162	a) TRCA does not generally support new stormwater management infrastructure within valley features. Should the City of Markham pursue infrastructure within the valley, further discussion with TRCA is required. b) Please explore opportunities that keep development 10m from the trip line and top of bank. c) Please consider an underground infiltration or storage tank, or top of slope LIDs. d) Note that TRCA owns most of the valley land at this location, under management agreement with the City of Markham, and owns a small parcel at the top of bank, just south of James Walker Court. Infrastructure on TRCA property requires a permanent easement. Land, habitat improvements or other forms of compensation may be part of negotiations, depending on the proposal.	
UC-176	a) TRCA does not generally support new stormwater management infrastructure within valley features. Should the City of Markham pursue infrastructure within the valley, further discussion with TRCA is required. b) Implications to natural heritage and stream dynamics are of concern at this site. c) Please undertake an assessment of alternative storage options to avoid the need to create new infrastructure within the stream corridor.	

Response to TRCA Comments

	TRCA Comments (October 4, 2013)	Cole Engineering Response (January 10, 2014)
P-5	a) Based on the grading provided, there is only approximately 0.75m grade difference from the outlet to the ground elevation. Given the size of land available and the shallow outlet, there are excellent opportunities for low impact development (LID) measures, especially linear facilities such as bio-swales. b) Consider converting the underground storage tank to an infiltration unit, as any infiltration will benefit the receiving system.	a) It was determined that the use of above ground SWM infrastructure such as a bio-swale would be too impactful to the City's sports fields. Furthermore, given the objective of temperature control due to the presence of Redside Dace in the downstream receiving watercourse, the slow movement of water through a surface bio-swale would contribute to warming effects. As such, it was preferred to utilize an underground solution in this location to achieve the objectives and minimize the impacts to the existing sports fields. b) Provision for an infiltration system has been identified in the EA as a design detail to be determined once this site goes to implementation. This will be contingent on the existing groundwater elevation and soils which will require detailed investigation. Note that the City plans on reusing stored water for irrigation of the sports field / park areas for all underground systems wherever feasible.
P24	a) TRCA staff has concerns with erosion and sediment control for the protection of the adjacent natural heritage system and watercourse. The condition of the existing outfall with regard to erosion and related impacts to the existing natural features should be investigated, and any mitigation that may be necessary provided as part of this project. b) Please review the OGS location, and confirm if there is the potential to negatively impact the slope adjacent to the right-of-way (ROW) during construction.	a) Provision for erosion and sediment control measures has been identified in the EA as a design detail to be developed once this site goes to implementation. This will be contingent on the detailed retrofit design and construction staging plan which will require detailed investigation. b) The OGS unit is proposed within the road ROW. The adjacent slope is estimated at approximately 3:1 based on the topographic data that was included in the concept plan and is not anticipated to be a significant obstacle. Construction detailing and phasing will be included as part of the design detail when the project proceeds to implementation.
P-39	a) Explore upslope solutions to avoid the need to expand the existing pond into the vegetated area. b) Consider relocating the oil grit separator (OGS) unit to Heatherwood Crescent for maintenance purposes. c) In order for TRCA to evaluate an expansion of	a) As part of the consideration, upstream controls were considered to create too much of a disturbance to the existing neighbourhood as well as create additional maintenance costs and complications for the City. As such, it was preferred, as per the previous 1999 retrofit study, to expand the existing SWM facility to a central facility to provide the preferred level of SWM, limit disturbance, and

	the existing storm pond into the well vegetated area, a detailed tree inventory and Environmental Impact Statement (EIS) is required. d) Provide confirmation of how the OGS will be accessed for maintenance.	simplify maintenance. The City is currently looking at an agreement with the school board which may allow for the use of a portion of their lands. The EA will consider this as a viable alternative to be confirmed at the implementation stage. b) We agree, that relocating the OGS to Heatherwood Crescent is practical and this has been revised in the EA. This will be contingent on the location of existing underground services which will require detailed investigation once this site goes to implementation. c) The City acknowledges that additional environmental work may be required prior to the implementation of the proposed retrofit. This item can be deferred to the implementation stage and the EA will identify these as additional study. There is always an opportunity to provide enhance planting within the SWM facility to help offset some of the vegetated cover. d) Maintenance access will be from Heatherwood Crescent.
P-45	a) Please explore opportunities for using infiltration chambers as opposed to storage only chambers. b) Provide the access point for the OGS maintenance.	a) Consideration of water infiltrating from the storage chamber is provisioned in the EA. The sizing of an infiltration system has been identified in the EA as a design detail to be determined once this site goes to implementation. This will be contingent on the existing groundwater elevation and soils which will require detailed investigation. b) Maintenance access can be easily provided from Windsfield Road. The EA has identified the intended maintenance access including that to avoid impacting any existing mature trees.
P-47	Explore opportunities for using infiltration chambers as opposed to storage only chambers.	Consideration of water infiltrating from the storage chamber was mentioned in the EA. The sizing of an infiltration system has been identified in the EA as a design detail to be determined once this site goes to implementation. This will be contingent on the existing groundwater elevation and soils which will require detailed investigation.
P-51	a) Explore opportunities for infiltration or LID measures, such as underground infiltration	a) The evaluation had concluded that retrofit of the existing facility was preferred over storage tanks based on cost

	chambers within the park or sports field to the north to limit the proposed expansion of the existing storm pond. b) Confirm that the proposed expansion is outside the 25 year erosion allowance for the downstream watercourse c) Note in the EA that at detailed design the pond needs to be planted as per the stormwater management pond planting guideline and the post-construction restoration guideline. d) Please explore opportunities to replace gabions with a more suitable alternative.	implications and expected disturbance to the park. b) The comment is noted. The pond footprint may be adjusted to provide a greater setback to the creek. This consideration has been noted as a requirement for the implementation. c) It has been noted in the EA that at detailed design the pond needs to be planted as per the stormwater management pond planting guideline and the post-construction restoration guideline. d) The concept design has identified a portion of the gabions to be removed and replaced. However, it is proposed to retain a portion of the existing gabion lining to reduce costs and limit the area of disturbance. Provision for replacement of the gabions has been identified in the EA as a design detail to be determined once this site goes to implementation. This will be contingent on the condition and remaining life span of the existing gabion lining and budgeting constraints.
P-55	No concerns.	
P-62:	a) The City of Markham and Forest Bay Homes are co-proponents in an EA to extend Denison Street and Kirkham Drive through the proposed stormwater management improvements. Please speak to Masonsong to coordinate aspects of this pond design such as the cooling trench and vegetation. TRCA would be happy to discuss synergies between these two projects. b) Note in the EA that the wetland is habitat, not infrastructure.	a) The City previously provided a copy of plans for the extension of Denison Street. These plans were taken into consideration during the design of the retrofit concept. It has been noted in the EA that detailed design and construction of this retrofit should be coordinated with the Denison Street and Kirkham Drive extension project. As a note, the Denison extension should account for the existing outlet from the pond. b) It should be noted that based on information provided by the City of Markham, the existing control is located within the wetland cell. As such, the changes are being proposed within this cell as it appears to be providing SWM properties.
P-73	Explore options to keep the cooling trench on the upslope side of the trail to avoid the need to remove trees.	The orientation of the cooling trench will have to be considered as a design detail during implementation. The EA notes that the removal of trees should be minimized where reasonable as part of the implementation.
P-77	No concerns	
UC-8	a) TRCA generally does not support the addition of	a) As discussed at the meeting on November 5th, 2013, the

	new stormwater management infrastructure within the valley feature. Should the City of Markham pursue infrastructure within the valley, further discussion with TRCA is required. b) Consider investigating potential opportunities to repair the outlet channel, which currently has seen the majority of the stone within the gabion wall wash away. c) Consider relocating the OGS unit closer to a municipal ROW, such as Blackwell Court, for maintenance access.	proposed pond within the valley feature was removed from the proposed retrofit. The proposed retrofit now consists of only an OGS within the Blackwell Court ROW. b) Repair of damaged or failing existing infrastructure is outside of the scope of this study. The City currently undertakes an annual component condition assessment and inventory of their assumed stormwater management ponds. The City could consider expanding the program to include all stormwater outfalls. c) The proposed OGS has been relocated to Blackwell Court. This will be contingent on the location of existing underground services which will require detailed investigation once this site goes to implementation.
UC-55	a) TRCA generally does not support the addition of new stormwater management infrastructure within the valley feature. Should the City of Markham pursue infrastructure within the valley, further discussion with TRCA is required. b) Note that there are significant implications to the natural heritage system with the proposed works, primarily related to the required conveyance sewers, but also potentially due to the proposed tank size and location with regard to channel dynamics, slope stability and loss of existing woodlands and naturalized areas. c) Consider alternative options to provide storage and treatment via on-line conveyance super-pipes within the existing sewer alignment.	a) As discussed at the meeting on November 5th, 2013, the proposed underground storage infrastructure within the valley feature was removed from the proposed retrofit. The proposed retrofit now consists of only the OGS within the Park Brook Place ROW. b) As discussed at the meeting on November 5th, 2013, the proposed underground storage infrastructure within the valley / park was removed from the proposed retrofit. c) Upstream alternatives, such as superpipe storage within the park, were considered infeasible due to lack of pipe cover and insufficient grade.
UC-63W	a) Note that TRCA staff has concerns related to the protection of existing natural heritage resources and erosion and sediment controls during construction. b) TRCA staff has concerns with the location as construction of the proposed 1350mm concrete pipe next to the Don River may destabilize the bank slope, as the distance from the trees to the	a) Efforts were taken to minimize negative impacts to the floodplain and natural heritage park lands including: ▪ Underground facility does not impact floodplain storage; ▪ Underground facility allows for the continued use of the land as a public recreational park and does not have a long term impact on terrestrial habitat; and, ▪ Limited construction area and strategic layout of tank

	top of slope is very narrow. Please address this concern in the EA. c) The proposed outfall location should be determined based on site specific investigations to minimize impacts. d) Consider relocating the OGS unit closer to a municipal ROW, such as Proctor Avenue for maintenance access. e) Explore opportunities for using Stormtech infiltration chambers as opposed to storage only chambers.	units and sewers to avoid removal of mature trees. ▪ Provision for an adjusted infrastructure layout based on a detailed tree survey will be identified in the EA as a design detail to be developed once this site goes to implementation. Provision for erosion and sediment control measures has been identified in the EA as a design detail to be developed once this site goes to implementation. This will be contingent on the detailed retrofit design and construction staging plan which will require detailed investigation. b) The EA has identified that protection of the bank is to be considered during the detailed design and construction of the proposed pipe. While it is acknowledged that some disturbance of the bank may be required as part of the construction, this area can be isolated, stabilized, and restored to equal or better conditions. c) Identification of the optimal outfall location has been identified in the EA as a design detail to be developed once this site goes to implementation as a detailed investigation will be needed. d) The OGS has been relocated to the Proctor Avenue ROW. This will be contingent on the location of existing underground services which will require detailed investigation once this site goes to implementation. e) Provision for an infiltration system has been identified in the EA as a design detail to be determined once this site goes to implementation. This will be contingent on the existing groundwater elevation and soils which will require detailed investigation.
UC-67	a) Clarify if UCO-67 is a proposed or existing outfall and label on the drawing. b) Works within the road ROW on Pinevale Avenue are supported with the understanding that erosion and sediment controls would be implemented during construction. c) The proposed location for the OGS at site UCO-67 appears to be within an existing wooded ravine area that is of very high quality based on	a) UCO-67 is an existing outfall. Figure UC-67 has been revised to clarify that this outfall is existing. b) Provision for erosion and sediment control measures has been identified in the EA as a design detail to be developed once this site goes to implementation. c) New outfalls and sewers are not required. The focus of the retrofit designs at sites UCO-66 and UCO-67 is to minimize the disturbance area and avoid loss of mature trees while improving the water quality of discharged stormwater. It has

	previous (unrelated) site visits. Protection of the existing forest community is a high priority, and identification of potential impacts anticipated at this preliminary level is requested for this site in order for staff to support this element. If new outfalls are required, staff would have similar concerns for both sites, again related to impacts to the existing mature forest and wetland communities located in the general area. d) It is unclear how the southerly OGS will be accessed for maintenance. Please explore opportunities to relocate closer to a municipal ROW.	since been determined that UCO-67 is a private outfall and has been removed as a retrofit opportunity. d) The need for an OGS on UCO-67 has been removed as this is a private site.
UC-94	a) Please explore the possibility of using LID's, such as bio-retention units or bio swales, through this area, including the storm sewer from Sciberras Road. b) Maintain baseflow from the existing outlet through Font Hill Creek, such through the installation of a flow splitter. c) Discuss with other departments the implications of removing the mature trees.	a) It was determined that the use of above ground SWM infrastructure such as a bio-swale would be too impactful to the City's parkland. Furthermore, it should be noted that the sewer in Sciberras Road does not outlet to this area. b) A flow splitter can be added immediately after the OGS at existing UCO-94w such that baseflow is maintained through Font Hill Creek. A provision has been made in the EA. c) The underground tank shown is conceptual. The intension of this conceptual retrofit design is to avoid loss of mature trees and it is anticipated that existing trees along the border of the park will be retained. Provision for reconfiguration of the tank units to ensure trees are retained has been identified in the EA as a design detail to be determined once this site goes to implementation. This will be contingent on a detailed vegetation inventory.
UC-103	No concerns.	
UC-106	Explore opportunities for LID measure nearby.	Opportunities and availability of land are limited at this outlet. Furthermore the objective is to provide TSS removal which can be achieved through the use of an OGS unit with the most economical means of maintenance.
UC-112	a) Note that the watercourse in this stretch is one of the best quality habitats in our jurisdiction. b) The proposed outlet is located in a stream bank	a) Noted. We will discuss the need for this retrofit further with the City. However, the installation of an OGS at this location would mitigate sediment from 16th Avenue from entering the

	that is vertical and undercut in some areas, with a bank approximately 1.5m high with gabion supporting adjacent infrastructure. TRCA staff has geotechnical concerns, and structural concerns with the proposed outfall location. c) MNR review may be required for Redside Dace at this location. d) Please reconsider the cost-benefit of the proposal in this location.	watercourse. b) We believe we could reconfigure the OGS location to prevent impacts to the area in question by limiting the works to the 16th Avenue ROW. c) MNR was previously contacted in regards to this project to provide pre-screening for Redisde Dace. MNR pre-screening has identified the downstream receiving watercourse as Redside Dace habitat. As a result this uncontrolled outlet is of higher priority for retrofit to provide improved habitat conditions for Redside Dace. d) Noted.
UC-162	a) TRCA does not generally support new stormwater management infrastructure within valley features. Should the City of Markham pursue infrastructure within the valley, further discussion with TRCA is required. b) Please explore opportunities that keep development 10m from the trip line and top of bank. c) Please consider an underground infiltration or storage tank, or top of slope LIDs. d) Note that TRCA owns most of the valley land at this location, under management agreement with the City of Markham, and owns a small parcel at the top of bank, just south of James Walker Court. Infrastructure on TRCA property requires a permanent easement. Land, habitat improvements or other forms of compensation may be part of negotiations, depending on the proposal.	a) As discussed at the meeting on November 5th, 2013, the proposed new pond within the valley was removed from the proposed retrofit. The proposed retrofit now consists of an underground storage facility at the top of the valley feature, within the TRCA parcel as suggested by the TRCA. b) Provisions have been identified in the EA to confirm the extent of vegetation to be preserved and identify potential impacts. The ultimate alignment of the proposed facility will be confirmed through design details undertaken as part of the implementation. c) Underground storage has been reconsidered and found to be feasible for erosion control but not quantity control. Construction and maintenance access for a pond would require the removal of some mature trees. It was decided that the value of the existing natural heritage features is greater than that of providing quantity control in this area. Therefore, an underground storage tank is now proposed at the top of the slope instead of the previously proposed dry pond in the valley. d) Noted. These have been identified in the EA as part of the land and approvals considerations of the retrofit. We would recommend that the City and TRCA continue discussions on how the implementation of the site can be achieved.
UC-176	a) TRCA does not generally support new stormwater management infrastructure within valley features. Should the City of Markham	a) As discussed at the meeting on November 5th, 2013, the proposed underground storage infrastructure within the valley was removed from the proposed retrofit. The proposed

	pursue infrastructure within the valley, further discussion with TRCA is required. b) Implications to natural heritage and stream dynamics are of concern at this site. c) Please undertake an assessment of alternative storage options to avoid the need to create new infrastructure within the stream corridor.	retrofit now consists of an OGS within the Green Lane ROW. b) Upon review of the site, this site was identified as a cultural meadow and is consistent with urbanized recently disturbed areas. It is made up of predominantly non-native species, which can either be mowed or left to grow naturally. This type of vegetation includes Goldenrods, Asters, Teasel, Queen Anne's Lace, Milkweed and many other species that are often described as weeds. The layout of the tank may be adjusted to limit direct impact on the creek. c) There are no other reasonable storage options upstream of the outlet to provide the proposed storage. As discussed at the meeting on November 5th, 2013, the proposed underground storage infrastructure within the valley was removed from the proposed retrofit. Furthermore, the proposed OGS was relocated to Green Lane ROW to avoid placing any infrastructure within the stream corridor.

Meeting Minutes

PROGRESS MEETING #:	TRCA Meeting #1	DATE:	November 5, 2013
		TIME:	9:30 AM
PROJECT NAME:	Stormwater Management Facilities Retrofit Municipal Class EA	PROJECT #:	ES12-0316
LOCATION:	TRCA Head Office - Rouge Room		
PURPOSE:	Meeting to discuss comments received from circulation of Design Concepts		

PRESENT:

Scott Smith (SS), TRCA
Dan Hipple (DH), TRCA
Brad Stephens (BS), TRCA
Leslie Piercey (LP), TRCA
Suzanne Bevan (SB), TRCA
Cynthia Tam (CT), City of Markham (City)
Soran Sito (SS), City of Markham (City)
Geoff Masotti (GM), Cole Engineering Group Ltd. (Cole)

REGRETS:

ITEM	DESCRIPTION	ACTION BY
1.	**Introductions** TRCA indicated that in general the TRCA is supportive of the proposed retrofit opportunities but have concerns regarding some sites, specifically as it relates to those proposed within the valleys. As such, the conversation was focused on these areas.	Info
2.	**General Comments / Discussion** GM noted that the majority of the comments appeared general in nature and would be addressed through the EA and/or through the implementation stages for the individual retrofit opportunities. The main concern was centred on the comments related to the retrofits proposed within the valleys. The idea of retrofit opportunities was discussed with the TRCA on July 9, 2013 and was met with positive feedback which was the basis for these sites proceeding.	Info
	GM noted that the City is open to utilizing infiltration in underground storage units where the soils and groundwater conditions allow. These will be subject to further investigation at the implementation stage for each site but does not change the concepts as proposed. It was also noted that the City will be looking to implement water reuse opportunities for City owned lands where underground storage is proposed.	Cole
	GM also noted that the OGS locations will be adjusted, where feasible, to allow for access from a public right of way (ROW) for maintenance purposes.	Cole
	There was a general discussion on how to deal with SWM infrastructure proposed within the valley areas. It was recognized that new infrastructure will be differentiated from existing infrastructure that is proposed for expansion. It was decided to focus the discussion on the areas where infrastructure is proposed within the valley areas.	Info

PLEASE NOTE: If your records of this meeting do not agree with this document, or if there are any omissions, please advise the writer at once, otherwise the contents of this document shall be assumed accurate and correct.

ITEM	DESCRIPTION	ACTION BY
3.	**Site Specific Discussions**	
	P-39	
	TRCA acknowledged that this site is an existing SWM facility that is proposed for expansion. TRCA do not have any significant problems with the concept, however; would request an additional study to justify the loss of the existing poplars north of the existing SWM Pond.	Info
	It was agreed that there is an opportunity on the adjacent school block and that the City will negotiate with the school board during the implementation stage to discuss the opportunity of installing underground storage beneath the soccer field. It was agreed to investigate the school option further in this EA process. However, if the pond expansion option is chosen, the TRCA will provide caveats for further study required prior to implementation.	Cole / City / TRCA
	Post meeting, it was agreed between the City and Cole that both options will be presented in the EA and will be contingent on the City obtaining an agreement with the School Board.	Info
	P-51	
	TRCA acknowledged that this site is an existing SWM facility that is proposed for expansion. TRCA do not have any significant problems with the concept, however, would request additional an study prior to implementation to establish the limit of the facility in relation to the 25 year erosion hazard limit.	Info
	Cole agreed that the edge if the facility expansion could be adjusted to respect the 25 year erosion hazard limit once it is established as part of the detailed studies at implementation. Cole further offered that the concept can be revised to shift the proposed eastern limit away from the creek in favour of expanding further south by removing the existing gabions. The TRCA will provide caveats for further study required prior to implementation.	Cole / City / TRCA
	TRCA agreed with approach but noted that these gabions were in excellent condition. However, the concept will consider other options for the emergency overflow outlet.	Info
	UC-8	
	TRCA stated that generally their policy does not allow for new infrastructure within the valley and in order to justify the placement of this new infrastructure, several detailed studies would be requested to further evaluate the environmental impacts to the valley. The TRCA requested that this either be included as part of this EA or a separate EA may be required in the future to further evaluate the impacts.	Info
	It was agreed that the proposed facility will be removed from this proposed retrofit and the OGS unit will be installed in or adjacent to the road ROW. The EA will state that should infrastructure be placed within the valley, an additional study will be required. The TRCA is to provide a list of the necessary studies to facilitate this.	Cole / City / TRCA
	UC-55	
	TRCA stated that generally their policy does not allow for new infrastructure within the valley and in order to justify the placement of this new infrastructure, several detailed studies would be requested to further evaluate the environmental impacts to the valley. The TRCA requested that this either be included as part of this EA or a separate EA may be required in the future to further evaluate the impacts.	Info
	It was agreed that the proposed infrastructure will be removed from this proposed retrofit and the OGS unit will be installed in or adjacent to the road ROW. The EA will state that should infrastructure be placed within the valley, additional study and permit will be required. The TRCA is to provide a list of the necessary studies to facilitate this.	Cole / City / TRCA
	UC-67	
	Cole had explained that since circulating the concepts to the TRCA, it has been	

ITEM	DESCRIPTION	ACTION BY
	discovered with the City that this is a private site and will be removed from the study.	Info
	UC-162	
	TRCA stated that generally their policy does not allow for new infrastructure within the valley and in order to justify the placement of this new infrastructure, several detailed studies would be requested to further evaluate the environmental impacts to the valley. The TRCA requested that this either be included as part of this EA or a separate EA may be required in the future to further evaluate the impacts.	Info
	It was agreed that the proposed infrastructure will be removed from this proposed retrofit and the OGS unit will be installed in or adjacent to the road ROW. Any proposed storage will be limited to a small portion of the property south of James Walker Ct and not impact any of the existing mature trees.	Cole / City / TRCA
	UC-176	
	TRCA stated that generally their policy does not allow for new infrastructure within the valley and in order to justify the placement of this new infrastructure, several detailed studies would be requested to further evaluate the environmental impacts to the valley. The TRCA requested that this either be included as part of this EA or a separate EA may be required in the future to further evaluate the impacts.	Info
	It was agreed that the proposed infrastructure will be removed from this proposed retrofit and the OGS unit will be installed in or adjacent to the road ROW. The EA will state that should infrastructure be placed within the valley, additional study and permit will be required. The TRCA is to provide a list of the necessary studies to facilitate this.	Cole / City / TRCA
4.	**Next Steps**	
	Cole and the City will adjust the concepts as agreed.	Info
	The next PIC will be scheduled shortly thereafter.	Info
	The draft report will be circulated to the TRCA prior to posting for public review. TRCA expects an approximate 6 week review period.	Info

Next Meeting: No meeting scheduled
Minutes Recorded By: Geoff Masotti
Distribution: All attendees listed above,

March 7, 2014 CFN 48181

BY E-MAIL ONLY (ctam@markham.ca)

Ms. Cynthia Tam
City of Markham
8100 Warden Avenue
Markham, Ontario, L6G 1B4

Dear Ms. Tam:

Re: Response to Conceptual Designs and Calculations
Stormwater Management Facilities Retrofit
Municipal Class Environmental Assessment (EA) - Schedule B
Don River & Rouge River Watersheds; City of Markham; Regional Municipality of York

Toronto and Region Conservation Authority (TRCA) staff received the draft Project File Report (PFR) and a letter of response to our previous concerns on January 17, 2014. The Environmental Assessment (EA) involves the identification of priority sites for stormwater management retrofits within the City of Markham. While staff has no objection in principle to the preferred alternatives, the following concerns must be addressed in the final EA document.

1. Page 19 of the report under section *6.2.2 – Water Quality Control* states:

   "An OGS is a relatively low cost option that is recognized within the City as being able to fully meet MOE enhanced level water quality control criteria."

   Note that TRCA has taken a position parallel to the City of Toronto whereby OGS units, regardless of manufacturer, as a stand-alone measure can achieve up to a 50% TSS removal. Please revise the text of the report to ensure it is clear that the TRCA does not agree that the full 80% TSS removal is achieved through the installation of an OGS unit. A treatment train approach to achieve the enhanced water quality level is recommended. Please revise the text accordingly.

2. In the last set of comments TRCA suggested using Low Impact Development Measures (LID's) at various retrofit opportunities. It is still strongly suggested that LID measures be considered in further detail during detailed design. Implementing Low Impact Development Measures can achieve the treatment train approach which was referred to in the above comment, can effectively remove nutrients, pathogens and metals from runoff, and they reduce the volume and intensity of stormwater flows. Please reference LID measures in the EA report so the reader is clear these should be considered in further detail once the sites go to implementation. Reference should be made to the *Low Impact Development Stormwater Management Planning and Design Guide* found at www.sustainabletechnologies.ca.

3. UC 94: Further to comment 2, it appears there is space available between the path and tennis courts where a bioswale or above ground feature could be implemented without impacting the programmed park areas. Please reconsider implementation of a feature to reduce stormwater volumes reaching the watercourse and exacerbating erosion downstream. Perhaps a pilot project approach could be used by the City to focus on one site and test feasibility and performance. TRCA would be happy to discuss further.

4. It is suggested that the retrofit designs proposed within the Don River Watersheds utilize the 12 hour SCS event as specified in the *Stormwater Management Criteria* document. Please add additional text to the report, page 32, section 8.3.1 – *SWM Pond Retrofit*, that the SCS storm event will be used when redesigning SWM facilities in the Don River watershed.

5. UC 8: On page 65 of the report under the heading *Quality Control* there is a statement that the "OGS will be located prior to the proposed extended detention facility". Please remove any mention to the proposed extended detention facility as it was stated by the consultant that this facility was no longer proposed as TRCA does not support SWM ponds within the valley feature. Please adjust the text accordingly to prevent any confusion.

6. UC 55: On page 67 of the report under the heading *Quality Control* there is information regarding the proposed works which are not consistent with the consultant's response and information featured in the appendix of the report (i.e. the text mentions the placement of the OGS in park lands and prior to the proposed underground storage tank which are both no longer proposed). Please revise the text of the report to be consistent with all the other information (i.e. response letter to TRCA, etc.).

7. UC 106: Please consider relocating the OGS unit closer to a municipal ROW for maintenance access, as it is currently proposed on a portion of the existing paved pathway.

8. As a courtesy, staff noticed that the black highlighting used to cover personal information in the appendices is not effective as the information is still legible.

Please ensure TRCA receives a copy of the Notice of Study Completion, as well as one (1) hard copy and one (1) digital copy of the final **PFR**. The final EA document should be accompanied by a covering letter which uses the numbering scheme provided in this letter and identifies how these comments have been addressed. Digital materials must be submitted in PDF.

Should you have any questions, please contact me at extension 5758 or at ssmith@trca.on.ca.

Yours truly,

Scott R Smith

Scott Smith
Planner II, Environmental Assessment Planning
Planning and Development

BY E-MAIL

cc: Cole: Geoff Masotti, Project Manager (gmasotti@coleengineering.ca)
TRCA: Beth Williston, Senior Manager, Environmental Assessment Planning
Suzanne Bevan, Senior Planner, Environmental Assessment Planning
Quentin Hanchard, Senior Manager, Development, Planning and Regulation
Arlen Leeming, Project Manager, Don River Watershed
Rouge Park: Maria Papoulias, Natural Heritage Manager

COLE ENGINEERING

Experience Enhancing Excellence

September 14, 2015
Our Ref: ES12-0316

Toronto Region Conservation Authority
5 Shoreham Drive
Downsview, ON M3N 1S5

Attention: **Scott Smith**
Planner II, Environmental Assessment Planning

Dear Mr. Smith:

Re: **Response to Conceptual Designs and Calculations Comments**
Stormwater Management Facilities Retrofit
Municipal Class Environmental Assessment (EA) – Schedule B
Don River & Rouge River Watershed; City of Markham; Regional Municipality of York

On behalf of our Client, the City of Markham, Cole Engineering Group Ltd. is pleased to provide our responses to address comments provided in the Toronto Region Conservation Authority's letter dated March 7, 2014, concerning the Stormwater Management Facilities Retrofit Municipal Class EA Draft Project File dated January 2014.

TRCA's comments have been summarized / re-iterated below (***shown in bold italics***) for reference purposes and our detailed responses are included in regular text.

1) ***Page 19 of the report... states: "An OGS is a relatively low cost option that is recognized within the City as being able to fully meet MOE enhanced level water quality control criteria." Note that the TCRA has taken a position... whereby OGS units, regardless of manufacturer, as a stand-alone measure can achieve up tot a 50% TSS removal. Please revise the text of the report...***

   Response: Section 6.2.2 of the report has been revised accordingly.

2) ***In the last set of comments TRCA suggested using Low Impact Development Measures (LID's) at various retrofit opportunities... Please reference LID measures in the EA report so the reader is clear these should be considered in further detail once the sites go to implementation.***

Response: Section 10.3.3 of the report has been revised to include the recommendation for the consideration of LIDs at the detailed design stage. The *Low Impact Development Stormwater Management Planning and Design Guide* has been referenced.

3) ***UC 94: Further to comment 2... Please reconsider implementation of a [LID] feature to reduce stormwater volumes reaching the watercourse and exacerbating erosion downstream. Perhaps a pilot project approach could be used by the City to focus on one site and test feasibility and performance. TRCA would be happy to discuss further.***

Response: The investigation and design of LIDs for each pond retrofit at the conceptual design stage is beyond the scope of this project. The purpose of the conceptual design through the SWM retrofit study is to bring existing facilities up to current SWM standards at a functional level (i.e., assess quantity, quality, erosion control volumes, retrofit space restrictions for the end of pipe component of the overall treatment train). However, the City will investigate the implementation of LIDs at the retrofit site where feasible at the detailed design stage. In addition, the City will entertain the implementation of LIDs in future capital works projects within the UCO94 catchment and other catchments (i.e., roadway reconstructions, infrastructure improvements etc.) to provide conveyance and at source controls in right of way areas (e.g., South East Community Centre green road pilot study that will be monitored through TRCA's STEP program). At-source LIDs at facilities and parks beyond right of ways have been, and will continue to be, identified as part of other studies such as the Sustainable Neighbourhood Action Plan in Bayview Glen conducted in partnership with TRCA (e.g., rain gardens and enhanced swales), and thereafter through future park renaissance planning in the City. It should also be noted the retrofit construction of Uncontrolled Outlet 94 (UCO94) is currently outside of the 10-year implementation life cycle for the City and will likely be re-evaluated in a future study.

4) ***It is suggested that the retrofit designs proposed within the Don River Watersheds utilize the 12 hour SCS event as specified in the*** **Stormwater Management Criteria** ***document. Please add additional text to the report, page 32, section 8.3.1 –*** **SWM Pond Retrofit,** ***that the SCS storm event will be used when redesigning SWM facilities in the Don River watershed.***

Response: Section 8.3.1 of the report has been revised to recommend the use of the 12 hour SCS storm event for the hydrologic modelling associated with SWM facility retrofits within the Don River Watershed.

5) ***UC 8: On page 65 of the report under the heading*** **Quality Control** ***there is a statement that the "OGS will be located prior to the proposed extended detention facility". Please remove any mention to the proposed extended detention facility as it was stated by the consultant that this facility was no longer proposed as TRCA does not support SWM ponds within the valley feature. Please adjust the text accordingly to prevent any confusion.***

Response: Section 8.4.12 of the report has been revised to remove reference to a proposed SWM facility within the valleylands.

6) ***UC 55: On page 67 of the report under the heading*** **Quality Control** ***there is information regarding the proposed works which are not consistent with the consultant's response and information featured in the appendix of the report... Please revise the text of the report to be consistent with the other information.***

Response: Section 8.4.13 of the report has been revised to remove reference to a proposed SWM facility within the valleylands.

7) ***UC 106: Please consider relocating the OGS unit closer to a municipal ROW for maintenance access, as it is currently proposed on a portion of the existing paved pathway.***

Response: The OGS has been proposed within the paved pathway at the junction of two existing storm sewers to allow for the treatment of stormwater from both sewers with a single unit, thereby reducing costs and maintenance work. The proposed OGS is within 65 m of Pennock Crescent, located to

the south along the existing paved pathway. The hose of a hydrovac truck should be able to reach the OGS without excessive measures.

8) ***As a courtesy, staff noticed that the black highlighting used to cover personal information in the appendices is note effective as the information is still legible.***

Response: Thank you for noting this. We have taken additional measures to ensure the censored information is not legible.

We trust that the above responses are satisfactory. Please do not hesitate to contact the undersigned should you require additional information.

Yours truly,

COLE ENGINEERING GROUP LTD.

Geoff Masotti, P.Eng.
Project Manager

GM:mjb

c.: Robert Muir, City of Markham

Encls. Response to TRCA Comments
Notice of Study Completion
Project File (1 hard copy and 1 electronic copy on DVD)

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APPENDIX N
Implementation Ranking

Prioritization Scoring and Ranking of the Order to Implement Retrofit and New Stormwater Management Facility Projects

Prioritization Criteria	Site ID	Capital Cost	Capital Cost Score	Size of Drainage Area Treated / Controlled (ha)	Treated Drainage Area Score	Number of Stormwater Management Objectives Achieved	Number of Stormwater Management Objectives Achieved Score	Unique Benefit Description	Unique Benefit Score	Ease of Implementation and Description of Challenges	Ease of Implementation Score	Total Prioritization Score	Anticipated Date of Other Works At / Near the Site	Description of Other Works	Ranking
Scoring Rational			Less than $100,00 = 1, $100,000 to $499,999 = 0.75, $500,000 to $999,999 = 0.5, $1 Million or more = 0.25		DA ≥ 50 ha = 1, 50 ha > DA > 20 ha = 0.75, 20 ha ≥ DA > 10 ha =0.5, DA ≤ 10 ha = 0.25		4 objectives achieved = 1, 1 objective achieved = 0.25		Meets a unique need = 1, Potentially meets a unique need = 0.5, Does not provide any unique benefit = 0	Level 1 = easiest, Level 4 = most challenging / involved	Easiest implementation = 1, Most challenging / involved implementation = 0.25				
Criteria Weighting			40		15		15		10		20	100			
	P-62	$52,500.00	1	23.76	0.75	2	0.5	Benefits Redside Dace habitat.	1	Level 4 - design and construction to be coordinated with external project (expansion of Denison St).	0.25	74	2015	Extension of Denison St.	1
	P-47	$729,000.00	0.5	23.01	0.75	3	0.75	*Possibly* benefits Redside Dace habitat.	0.5	Level 1 - all works within City park land.	1	68	2016	Sediment removal from the pond.	2
	UCO-66	$227,500.00	0.75	13.30	0.5	1	0.25	-	0	Level 4 - all works within City ROW however, design and construction to be coordinated with external project (West Thornhill Storm Water Flood Remediation Study).	0.25	46	2015	West Thornhill Storm Water Flood Remediation (implementation includes upsizing some of the storm sewers).	3
	UCO-63w	$2,679,700.00	0.25	48.10	0.75	2	0.5	-	0	Level 4 - design and construction to be coordinated with external project (West Thornhill Storm Water Flood Remediation Study).	0.25	34	2015	West Thornhill Storm Water Flood Remediation (implementation includes upsizing some of the storm sewers).	4
	P-5	$685,200.00	0.5	9.82	0.25	2	0.5	Benefits Redside Dace habitat.	1	Level 2 - site under soccer field. Will create disturbance to residents and need to be coordinated with soccer clubs.	0.75	56	2024	Sediment removal from the pond.	5
	P-77	$40,000.00	1	43.65	0.75	1	0.25	Benefits Redside Dace habitat.	1	Level 1 - all works within City land.	1	85	2039	Sediment removal from the pond.	6
	P-73	$28,000.00	1	25.70	0.75	1	0.25	*Possibly* benefits Redside Dace habitat.	0.5	Level 1 - all works within City land.	1	80	2039	Sediment removal from the pond.	7
	UCO-106	$262,500.00	0.75	23.76	0.75	2	0.5	Benefits Redside Dace habitat.	1	Level 1 - all works within City park land.	1	79	N/A		8
	P-55	$31,250.00	1	6.47	0.25	1	0.25	*Possibly* benefits Redside Dace habitat.	0.5	Level 1 - all works within City park land.	1	73	2023	Sediment removal from the pond.	9
	UCO-8	$486,960.00	0.75	10.00	0.25	2	0.5	Benefits Redside Dace habitat.	1	Level 1 - all works within City ROW.	1	71	N/A		10
	P-38	$277,000.00	0.75	18.16	0.5	2	0.5	Provides full erosion control and area was identified as needing erosion control in the "Burndenett Creek Erosion Control Optimization Study, Phase 1 Final Report", dated January 2012 by Aquafor Beech Limited.	1	Level 3 - access through City land with minimal tree removal. However, in floodplain so may need more studies done to get a permit.	0.5	65	2030	Sediment removal from the pond.	11
	P-24	$246,250.00	0.75	20.84	0.75	1	0.25	-	0	Level 1 - all works within City ROW.	1	65	2030	Sediment removal from the pond.	12
	UCO-103	$533,750.00	0.5	46.64	0.75	2	0.5	*Possibly* benefits Redside Dace habitat.	0.5	Level 1 - all works within City ROW.	1	64	N/A		13
	UCO-112	$120,700.00	0.75	1.69	0.25	2	0.5	Benefits Redside Dace habitat.	1	Level 3 - all works within Regional Road ROW so coordination with York Region is required.	0.5	61	N/A		14
	UCO-176	$227,500.00	0.75	15.94	0.5	1	0.25	-	0	Level 1 - all works within City ROW.	1	61	N/A		15
	P-51	$507,900.00	0.5	60.63	1	3	0.75	*Possibly* benefits Redside Dace habitat.	0.5	Level 3 - access through City land with some tree removal however, in floodplain. Multiple additional studies may be needed (watercourse erosion limit, tree removal, etc.).	0.5	61	2039	Sediment removal from the pond.	16
	UCO-94	$2,098,800.00	0.25	100.32	1	3	0.75	*Possibly* benefits Redside Dace habitat.	0.5	Level 1 - all works within City park land.	1	61	N/A		17
	UCO-162	$332,700.00	0.75	2.15	0.25	3	0.75	Benefits Redside Dace habitat.	1	Level 4 - works within City ROW and TRCA owned land. Easement and land use agreement with TRCA will be required.	0.25	60	N/A		18
	UCO-55	$147,200.00	0.75	4.77	0.25	1	0.25	-	0	Level 1 - all works within City ROW.	1	58	N/A		19
	P-45	$2,159,100.00	0.25	20.76	0.75	3	0.75	*Possibly* benefits Redside Dace habitat.	0.5	Level 2 - requires construction within sewer easement between / within private lots.	0.75	53	2039	Sediment removal from the pond.	20
	P-39	$427,300 (alt. 1) OR $1,409,200 (alt. 2)	0.25	14.35	0.5	2	0.5	Provides full erosion control and area was identified as needing erosion control in the "Burndenett Creek Erosion Control Optimization Study, Phase 1 Final Report", dated January 2012 by Aquafor Beech Limited.	1	Level 4 - construction access is dependent on School Board. Agreement must be reached with the School Board. For alternative 1 (pond expansion) the TRCA will require additional studies to justify tree loss. For alternative 2 the construction site is within School lands and is dependent on an agreement with the School Board.	0.25	40	2030	Sediment removal from the pond.	21

APPENDIX O
Statement of Limiting Conditions and Assumptions

Statement of Limiting Conditions and Assumptions

1. This Report/Study (the "Work") has been prepared at the request of, and for the exclusive use of, the Owner, and its affiliates (the "Intended Users"). No one other than the Intended Users has the right to use and rely on the Work without first obtaining the written authorization of Cole Engineering Group Ltd. (Cole Engineering) and its Owner.

2. Cole Engineering expressly excludes liability to any party except the Intended Users for any use of, and/or reliance upon, the Work.

3. Cole Engineering notes that the following assumptions were made in completing the Work:

   a) the land use description(s) supplied to us are correct;
   b) the surveys and data supplied to Cole Engineering by the Owner are accurate;
   c) market timing, approval delivery and secondary source information is within the control of Parties other than Cole Engineering; and
   d) there are no encroachments, leases, covenants, binding agreements, restrictions, pledges, charges, liens or special assessments outstanding, or encumbrances which would significantly affect the use or servicing.

   Investigations have not been carried out to verify these assumptions. Cole Engineering deems the sources of data and statistical information contained herein to be reliable, but we extend no guarantee of accuracy in these respects.

4. Cole Engineering accepts no responsibility for legal interpretations, questions of survey, opinion of title, hidden or inconspicuous conditions of the property, toxic wastes or contaminated materials, soil or sub-soil conditions, environmental, engineering or other factual and technical matters disclosed by the Owner, the Client, or any public agency, which by their nature, may change the outcome of the Work. Such factors, beyond the scope of this Work, could affect the findings, conclusions and opinions rendered in the Work. We have made disclosure of related potential problems that have come to our attention. Responsibility for diligence with respect to all matters of fact reported herein rests with the Intended Users.

5. Cole Engineering practices engineering in the general areas of infrastructure and transportation. It is not qualified to and is not providing legal or planning advice in this Work.

6. The legal description of the property and the area of the site were based upon surveys and data supplied to us by the Owner. The plans, photographs, and sketches contained in this report are included solely to aide in visualizing the location of the property, the configuration and boundaries of the site, and the relative position of the improvements on the said lands.

7. We have made investigations from secondary sources as documented in the Work, but we have not checked for compliance with by-laws, codes, agency and governmental regulations, etc., unless specifically noted in the Work.

8. Because conditions, including capacity, allocation, economic, social, and political factors change rapidly and, on occasion, without notice or warning, the findings of the Work expressed herein, are as of the date of the Work and cannot necessarily be relied upon as of any other date without subsequent advice from Cole Engineering.

9. The value of proposed improvements should be applied only with regard to the purpose and function of the Work, as outlined in the body of this Work. Any cost estimates set out in the Work are based on construction averages and subject to change.

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