APPENDIX H – POLICY DOCUMENT

SUMMARY MEMO – LAWRENCE PARK NEIGHBORHOOD ENVIRONMENTAL ASSESSMENT

- ALTERNATIVE ROADWAY CROSS SECTIONS AND DRAINGE POLICY

CITY OF TORONTO REFERENCE # 9117-12-7049

This memo was initially presented to the TAC on April 23rd for discussion purposes. The memo has been updated based on input received from the committee members as well as input received at the Senior Management meeting on May 04, 2014.

The objectives of this memo are to:

- Summarize the history as well as where we are at with respect to both Alternative Roadway cross sections and Drainage Policy.
- Highlight potential points of conflict between City Policy and the characteristics of the Lawrence Park Neighborhood (LPN).
- Define how these policies can be interpreted or applied based on staff or public input.

Provided below, is the history of how initial information was presented (at PIC #2), refinements that were made after the second PIC but prior to our April 23rd meeting as well as a series of recommendations for moving forward based on all discussions to date.

1. History – Prior to the Second PIC

A number of TAC meetings were held prior to the Second PIC. In summary, the following key points**, some of which are based on City policy,** were discussed and agreed to:

- **Sidewalks –** It is the city's policy to promote safety and walkability through the installation of sidewalks on both sides of arterial and collector roads and on at least one side of local streets. The Essential Links program considers the road class, the presence of pedestrian generators such as nearby schools, parks, bus stops, right-of-way and road width, impact on trees and vegetation, and other cost factors such as pole relocations, etc. in making recommendations for funding (email Fiona Chapman April 24, 2013).

- **Road Width – Local Roads –** City's desired requirement is 8.5 m

- **Tree Preservation Policy –** no defined policy was provided for the protection of trees located within the public right of way unless the trees were defined as having a heritage designation. It was also noted that the City has the right to remove trees (May 17, 2013 minutes).

- **Water Quality –** four alternatives were put forth. The type of alternative to be implemented would be dependent upon the roadway cross section. Each alternative, would however,

provide treatment of stormwater consistent with the Wet Weather Flow Management Master Plan (WWFMP).

The above information was used to present material to the public at the second PIC. Provided below is a summary of the key points that were provided to the public.

1.1. General – Cross sections and Drainage

At the second PIC a board entitled Alternative Roadway Cross sections was presented. The board was accompanied by a series of illustrations which were noted as being conceptual in nature.
As noted (see exhibit #1), the proposed illustrations were intended to illustrate alternatives which incorporate:

- Widening of roadway width to meet the City's desired requirements (8.5m for local roads)
- Incorporation of improved drainage features to reduce flooding and improve stormwater quality
- Incorporation of sidewalks according to City's policies, that is:

  -sidewalks are mandatory on both sides of collector and arterial roads, and on at least one side of local roads, where possible
  -consideration is given to balance cost, existing conditions, community and local Councillor input (for local roads), and priority is given to creating priority links.

- Protection of existing trees where possible

Please note that it was also stated that road cross sections illustrating urban (curb and gutter) and rural (swales) would be shown. (see two examples, exhibits #2 and 3)

1.2. Alternative Roadway Cross Sections

The preferred road width, together with the factors which were assessed in determining the road width, was presented at the second PIC (November 19, 2013). As stated on exhibit # 4 the recognized transportation infrastructure policy for a local residential roadway within the City consists of a 20.1 m Right-of-Way (ROW), an 8.5 m paved road surface, concrete curb and a 1.7 – 2.0 metre sidewalk on one or both sides of the road . The above applies to all local roads (Mildenhall Road is the only collector within the study area).

1.3. Drainage

Also presented at the second PIC was a board (exhibit #5) entitled Stormwater Quality Alternatives. This board is consistent with two items as noted above, these being:

- Both urban and rural cross sections would be presented, and
- The alternatives would look at improving stormwater quality.

2. Discussions after the Second PIC

Public input was received at the second PIC. At this meeting the public were asked to prioritize the evaluation criteria as presented. The three priorities were:

- **Basement Flooding**
- **Pedestrian safety**
- **Impact to Urban Greenspace (interpreted to mean preservation of trees)**

Based on this input as well as discussions with the TAC (four TAC meetings have been held since the second PIC) several potential conflicts between City policy and the characteristics of the LPN neighborhood have been identified. These are summarized below:

- **Sidewalks –** Consideration should be given to prioritizing streets where sidewalks are required. In addition the alternatives should consider no sidewalks on some streets. The later statement is based on public input together with the fact that, for some of the alternatives that are being considered, a significant percentage of trees (see below for further details) may be impacted.
- **Road Width – Local Roads –** road widths of between 7.2 and 8.5m should be considered for local roads in order to provide a balance between transportation requirements as defined above and resident's interest.
- **Tree Preservation Policy-** although there is no formal policy due consideration needs to be given to the potential impact of various alternatives on the potential loss of trees.
- **Urban vs Rural Cross Sections-** at the second PIC both rural and urban cross sections were presented as viable alternatives. The final decision as to which type of section would be used would be based, in part, on public input (many residents want to maintain the rural character) as well as technical findings. It has recently been pointed out that the City may prefer to maintain ditches (rural) where they currently exist. Should this be the case then the approach that has been presented would have to change. Also, confirmation would be required as to how we address the objective of improving water quality.

A recap followed by several recommendations to address **potential conflicts with City policy have been provided below.** The summary is based on the four TAC meetings have been held since the second PIC on November 19, 2013**.**

2.1. Basic Reasons for Undertaking Work

There are four basic reasons for undertaking work within the LPN. These include:

- Flood control works
- Reconstruct or repave roads or widen existing road
- Improve (or provide) drainage system to reduce flooding or address nuisance issues
- Construct sidewalks

2.2. Basic Variables

As noted above, when alternative roadway cross sections are being addressed there are four variables to be considered. These are:

- Road width
- Drainage type (rural or urban)
- Inclusion of sidewalks
- Protection of trees

2.3. Sample Assessment

Based on the four basic variables as noted above different alternatives were prepared for five of the 16 areas. The five areas were selected as they present a range of items that would need to be considered. The material is presented as exhibits (#7-11).

The following needs to be emphasized. Work that was completed prior to the second PIC did not consider the number of trees that might be impacted as a result of implementing some of the alternatives. As exhibits #7-11 show a significant number of trees (up to 80% for some alternatives) may be impacted. Once this information was presented to the TAC (and based on input from the public at PIC #2) alternatives which lessened the impact (narrower roads, less sidewalks) were brought forward. The sidewalk policy allows for consideration of tree impacts, although no firm number has been established in terms of a threshold for acceptable impacts, on balance.

3. Summary of Discussions and Key Points that have been agreed to **(Recommendations for addressing potential conflicts with City policy)**

Exhibit # 7 (Dawlish and St. Leonard's) shows nine different alternatives for this group. As can be seen, the impact on existing vegetation is significant for several alternatives. Based on the discussions, it is **recommended** that:

- For local roads, 0 or 1 sidewalk would be considered and that we would add in another evaluation criteria (see exhibit 11a and 11b, Pedestrian Connectivity) not shown on these boards) that takes into consideration priority sidewalks (sidewalks which are key with respect to providing (or closing) links to existing destinations).
- For local roads, widths of 7.2, or 8.5 m would be considered and that it would be clearly noted that roads with a 7.2 m width would have parking limited to one side of the road

Exhibit # 8 shows the impact of adding a sidewalk in on Sunnydene (where no other work is required).

It is **recommended** that sidewalks would not be considered as a standalone project.

Exhibit #9 shows the impacts of adding two sidewalks along Mildenhall Road. Based on discussions it is **recommended** that:

- Alternative road widths of 8.5 or 9.5 m would be considered
- That one or two sidewalks would be considered for Mildenhall Road

One other note with respect to sidewalk widths. In order to simplify the approach at this stage it is **recommended** that a 1.7 m width would be used in the assessments.

It should also be noted that consideration of Tree Impacts with respect to sidewalk installation, widening of roads or implementing a rural or urban cross section will be compared against a baseline impact which would include only road reconstruction to the same width as presently exists (trees would be lost as we have assumed 0.5 m on each side of the road would be required for construction purposes). That is, if 20% of trees are impacted solely due to reconstructing on its own, and a marginal increase of trees are impacted for sidewalk installation, widening of the road or implementing a rural or urban cross section. The public would have a basis for defining the impact of implementing the above noted measures.

Recommendations with Respect to Drainage

With respect to **drainage** three items have been recently discussed. Provided below is a summary of the discussions together with recommendations. We have presented, at the second PIC, alternatives which include (for roads to be reconstructed) both rural and urban cross sections. Please refer to exhibit #5. There are a number of streets which are presently serviced by some form of ditch or lack of drainage system. The streets are generally located between St. Ives Ave. and Mildenhall Road. Please refer to Exhibit #12.

Recommendation #1 – In order to be consistent with the Environmental Assessment process a ditch width of 1.5 m will be considered. This width is consistent with that shown in the Draft Guideline – Stormwater Management Options for Roadway Reconstruction Projects – June 2005 (Figure 4). A consistent width is required at the EA stage in order to reasonably evaluate the different roadway cross sections as outlined above.

Recommendation #2 – Two relevant documents which relate to incorporation of water quality improvement (for reconstruction projects) were reviewed. The two documents are entitled:

- Wet Weather Flow management Guidelines – November 2006
- Draft Guideline – Stormwater Management Options for Roadway Reconstruction Projects – June 2005

Relevant excerpts are provided below:

Draft Guideline – Stormwater Management Options for Roadway Reconstruction Projects – June 2005

- Page ii) According to WWFMMP principles, conveyance controls, such as infiltration systems, should be considered and implemented to the extent site conditions and subsoil conditions permit in areas identified by the WWFMMP.

Draft Guideline – Stormwater Management Options for Roadway Reconstruction Projects – June 2005

- Page 1 - Specifically, this policy (WWFMP) applies to projects where the City's sewer system is reconstructed, in conjunction with road reconstruction projects and where new roads are built. An excerpt of the policy is provided in Appendix A.

Furthermore, where roadside ditches exist, these ditches should be retained and enhanced to achieve the targets in the WWFMMP. Where the retention of roadside ditches is not possible, infiltration / exfiltration techniques or equivalent wet weather flow management measures shall be implemented, where feasible, to achieve water quality and quantity control targets consistent with the WWFMMP.

Based on the above and discussions at the April 23rd meeting it is recommended that where feasible, measures be incorporated into reconstruction projects in order to meet the WWFMP objective. It is also recommended that the four alternatives as shown on exhibit 5 provide reasonable alternatives for achieving these objectives for both rural and urban cross sections. If a ditch is used (based on preference by the community, then some form of permeable pipe (as illustrated in exhibit 5) would be incorporated into the design.

Recommendation #3 – as noted under 2.2 above, there are four basic variables that will be considered when alternative road cross sections are considered for streets that are to be reconstructed. These are:

- Road width
- Drainage type (rural or urban)
- Inclusion of sidewalks
- Protection of trees

A majority of the streets in this area are serviced by substandard drainage systems (unimproved as defined in the 2005 document). It is therefore recommended that for all streets that are to be reconstructed that both rural and urban cross sections, as noted above, be considered.

Yours truly
Aquafor Beech Limited

David Maunder
Project Manager

Alternative Roadway Cross Sections

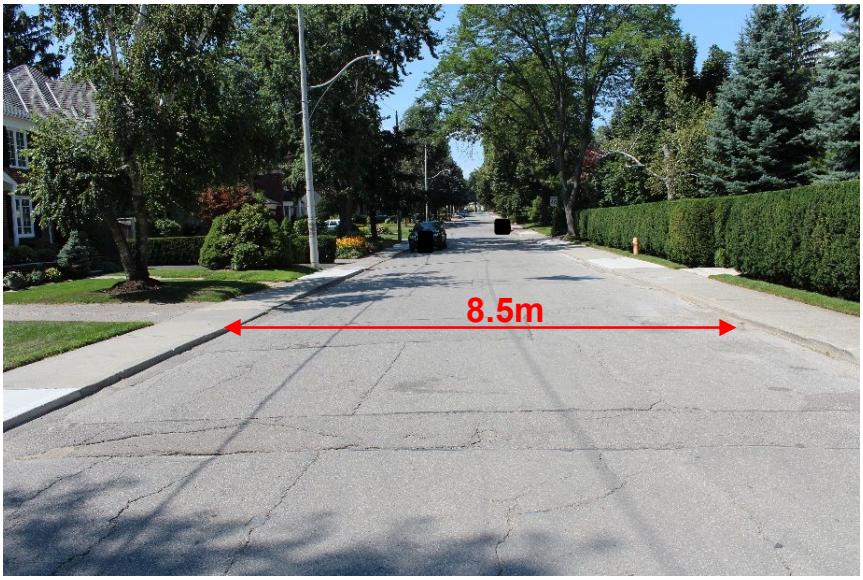
The following boards illustrate existing roadways within the study area together with conceptual alternatives of what the roadways could look like after reconstruction.

The proposed illustrations are conceptual in nature and are intended to illustrate alternatives which incorporate:

- Widening of roadway width to meet the City's desired requirements (8.5m for local roads)
- Incorporation of improved drainage features to reduce flooding and improve stormwater quality
- Incorporation of sidewalks according to City's policies, that is:
  - Sidewalks are mandatory on both sides of collector and arterial roads, and on at least one side of local roads, where possible
  - Consideration is given to balance cost, existing conditions, community and local Councillor input (for local roads), and priority is given to creating pedestrian links
- Protection of existing trees where possible

Road cross sections illustrating urban (curb & gutter) and rural (swales) are shown. In several cases the conceptual illustration is the same as the existing roadways which suggests no changes may occur (or be proposed).

Alternative Roadway Cross Sections



Existing

Conceptual

Legend

Road Width

Approximate Limit of Municipal Right of Way

Key Features

- The roadway cross section would remain as is
- This is referred to as the Do Nothing option in the Environmental Assessment Process

Alternative Roadway Cross Sections

Existing

Conceptual

Legend

Road Width

Approximate Limit of Municipal Right of Way

Key Features

- Existing road width would be increased from 7.5m to 8.5m
- Existing ditches on each side of roadway would be regraded to convey required flows

Preferred Road Width

The recognized transportation infrastructure policy for a local residential roadway within the City consists of a 20.1m Right-of-Way (ROW), an 8.5 metre paved road surface, concrete curb and a 1.7 – 2.0 metre sidewalk on one or both sides of road.

There are a number of factors which are considered in determining the road width. These include:

- Requirements for emergency vehicle access
- Requirements for service vehicle access
- Considerations for cyclist and pedestrian / vehicle conflicts
- Considerations for safe two way traffic flow
- Requirements for winter road maintenance
- Requirements for parking
- Provision of adequate widths for underground structures

Provided below is an illustration of several of the factors which are taken into consideration when defining the preferred road width.

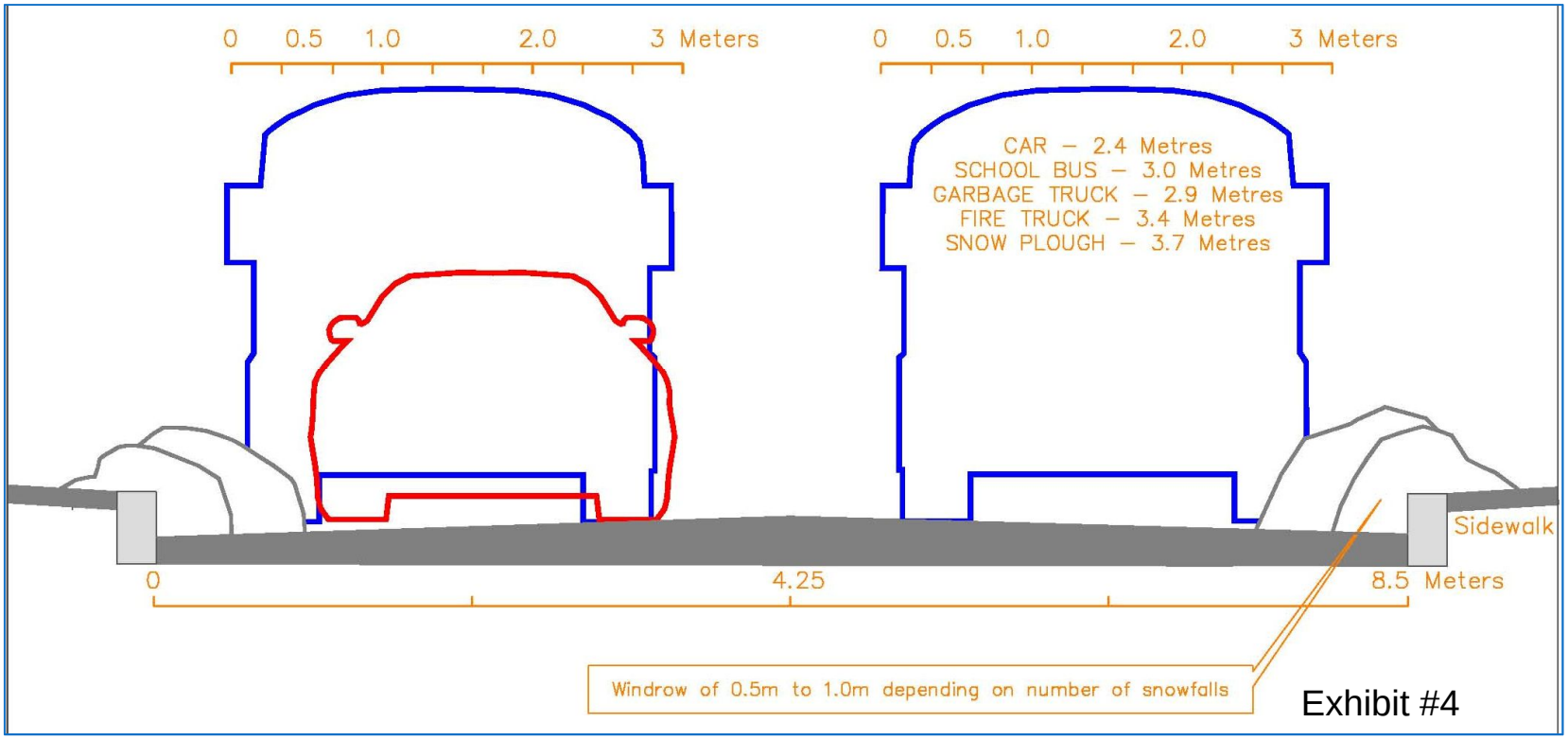
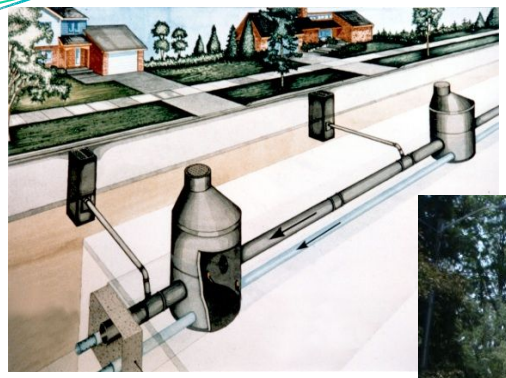


Exhibit #4

Stormwater Quality Alternatives



Stormwater is initially directed to a perforated pipe system located under the road. Excess flows are then directed to a conventional storm sewer.

Perforated Pipe System

Alternative No.1

Stormwater is directed to catch basins and a perforated pipe system located in the boulevard.

Alternative No.2

Stormwater is directed via a curb cut to the bioretention unit. Stormwater then infiltrates to a perforated sewer located at the bottom of the unit.

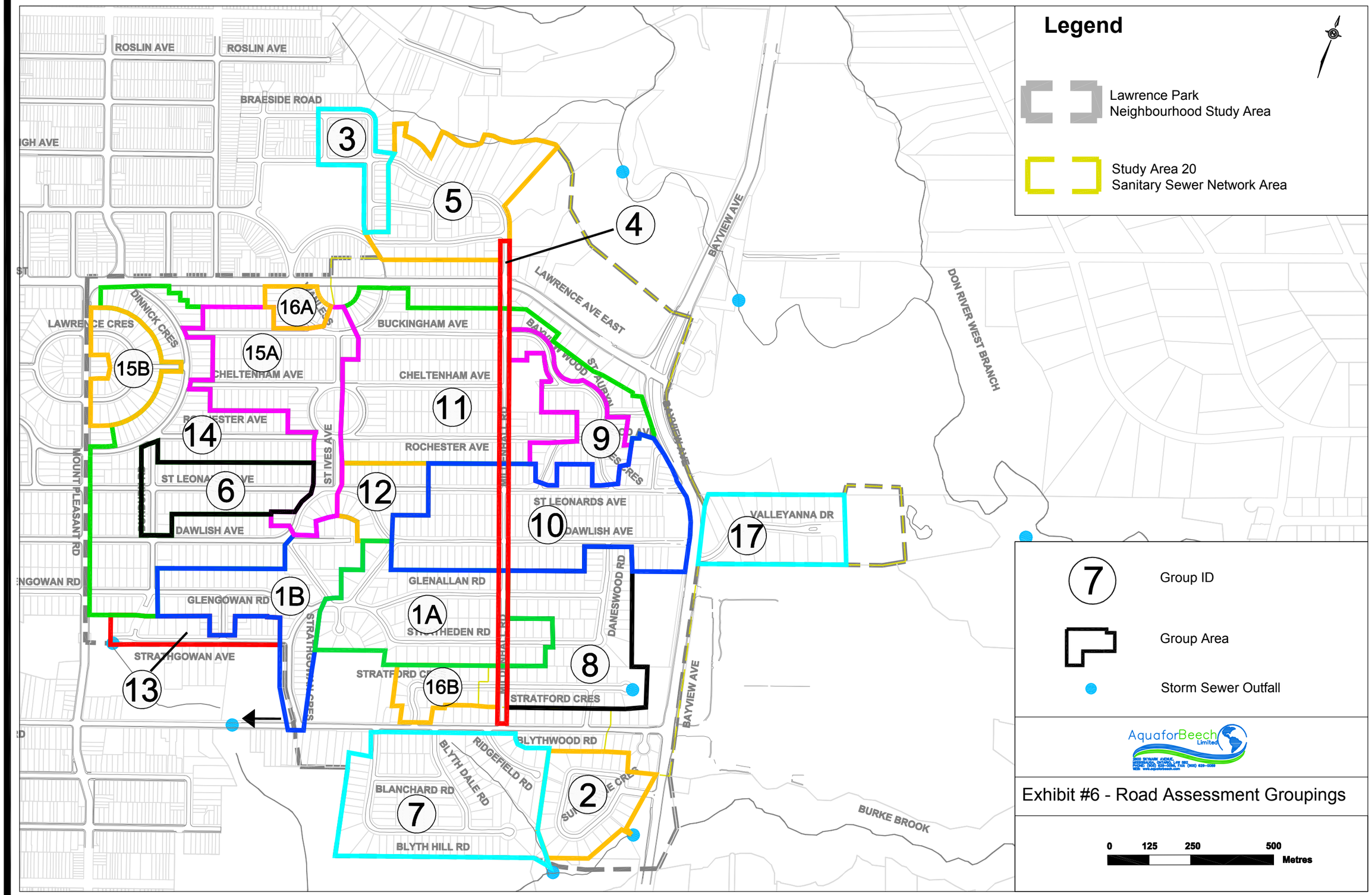
Alternative No.3

Alternative No.4

Stormwater is directed via a curb cut to the bioretention unit. Stormwater then infiltrates through the unit and is directed to a storm sewer located within the roadway.

TORONTO

Exhibit #5


Legend
Lawrence Park
Neighbourhood Study Area
Study Area 20
Sanitary Sewer Network Area
ROSLIN AVE
ROSLIN AVE
BRAESIDE ROAD
3
5
4
LAWRENCE AVE EAST
BAYVIEW AVE
DON RIVER WEST BRANCH
DINNICK CRES
LAWRENCE CRES
16A
BUCKINGHAM AVE
15B
15A
CHELTENHAM AVE
CHELTENHAM AVE
11
ROCHESTER AVE
14
ST IVES AVE
9
ROCHESTER AVE
6
ST LEONARDS AVE
12
10
DAWLISH AVE
DAWLISH AVE
17
VALLEYANNA DR
MOUNT PLEASANT RD
GLENALLAN RD
GLENGOWAN RD
1B
GLENGOWAN RD
1A
STRATHEDEN RD
DANESWOOD RD
STRATHGOWAN AVE
STRATHGOWAN CRES
8
STRATFORD CRES
13
16B
STRATFORD CRES
BAYVIEW AVE
BLYTHWOOD RD
RIDGEFIELD RD
BLYTH DALE RD
BLANCHARD RD
7
2
BLYTH HILL RD
BURKE BROOK
7
Group ID
Group Area
Storm Sewer Outfall
AquaforBeech Limited
Exhibit #6 - Road Assessment Groupings
0
125
250
500
Metres

Area 10 - Dawlish Avenue / St. Leonards Avenue Area (Page 1 of 2)

Streets Included:
- Dawlish Avenue (east of Fidelia Ave)
- St. Leonards Avenue (east of St. Leonards Cres)

Existing Conditions
St. Leonards Ave
(west of Mildenhall Rd)

Existing Conditions
Dawlish Ave
(east of Mildenhall Rd)

Existing Conditions

- Surface and basement flooding
- Existing road widths 6m - 8m
- Approximately 220 mature native and non-native hardwoods & conifers within public right-of-way
- Reverse slope driveways
- Poor quality road structure
- Insufficient ditched drainage system
- No sidewalks

Alternative #1 – Do Nothing
The Environmental Assessment process requires that consideration be given to the Do Nothing option.

Alternative #2	Alternative #3	Alternative #4	Alternative #5
• Reconstruct roads to 8.5m wide, install 1 sidewalk with drainage system located in boulevard	• Reconstruct roads to 8.5m wide, install 1 sidewalk with drainage system under roadway	• Reconstruct roads to 7.2m wide, install 1 sidewalk with drainage system located in boulevard	• Reconstruct roads to 7.2m wide, install 1 sidewalk with drainage system under roadway
• Up to 200 trees impacted due to construction	• Up to 130 trees impacted due to construction	• Up to 160 trees impacted due to construction	• Up to 105 trees impacted due to construction
1.5 m boulevard, 1.7 m sidewalk 8.5 m road width	1.7 m sidewalk 8.5 m road width	1.5 m boulevard, 1.7 m sidewalk 7.2 m road width	1.7 m sidewalk 7.2 m road width
• Approx. Cost: $7,000,000	• Approx. Cost: $7,000,000	• Approx. Cost: $6,300,000	• Approx. Cost: $6,300,000

Note : Costs are approximated and subject to change

Note : Parking would be limited to one side of the street for Alt #4 and #5

Evaluation Criteria	Alt #1	Alt #2	Alt #3	Alt #4	Alt #5
Socio-Cultural					
Pedestrian Safety	0	4	4	4	4
Vehicular Safety	0	4	4	2	2
Impact on Urban Greenspace / Recreational Use (Street Trees, Parks, Open Spaces)	8	0	4	2	4
Technical - Technical Effectiveness					
Surface and Basement Flooding	0	8	8	8	8
Stormwater Quality Improvement	0	4	4	4	4
Roadway Conditions	0	4	4	4	4
Economic					
Capital Costs	4	0	0	2	2
Total	12	24	28	26	28

Area 10 - Dawlish Avenue / St. Leonards Avenue Area (Page 2 of 2)

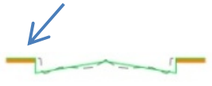
Streets Included:
- Dawlish Avenue (east of Fidelia Ave)
- St. Leonards Avenue (east of St. Leonards Cres)

Existing Conditions

- Surface and basement flooding
- Existing road widths 6m - 8m
- Approximately 220 mature native and non-native hardwoods & conifers within public right-of-way
- Reverse slope driveways
- Poor quality road structure
- Insufficient ditched drainage system
- No sidewalks

Existing Conditions
St. Leonards Ave
(west of Mildenhall Rd)

Existing Conditions
Dawlish Ave
(east of Mildenhall Rd)

Alternative #6	Alternative #7	Alternative #8	Alternative #9
• Reconstruct roads to 8.5m wide with drainage system located in boulevard and no sidewalk	• Reconstruct roads to 8.5m wide with drainage system under roadway and no sidewalk	• Reconstruct roads to 7.2m wide with drainage system located in boulevard and no sidewalk	• Reconstruct roads to 7.2m wide with drainage system under roadway and no sidewalk
• Up to 150 trees impacted due to construction	• Up to 100 trees impacted due to construction	• Up to 130 trees impacted due to construction	• Up to 75 trees impacted due to construction
1.5 m boulevard  8.5 m road width	no sidewalk  8.5 m road width	1.5 m boulevard  7.2 m road width	no sidewalk  7.2 m road width
• Approx. Cost: $6,300,000	• Approx. Cost: $6,300,000	• Approx. Cost: $5,800,000	• Approx. Cost: $5,800,000

Note : Costs are approximated and subject to change

Note : Parking would be limited to one side of the street for Alt #8 and #9

Evaluation Criteria	Alt #6	Alt #7	Alt #8	Alt #9
Socio-Cultural				
Pedestrian Safety	0	0	0	0
Vehicular Safety	4	4	2	2
Impact on Urban Greenspace / Recreational Use (Street Trees, Parks, Open Spaces)	2	4	4	6
Technical - Technical Effectiveness				
Surface and Basement Flooding	8	8	8	8
Stormwater Quality Improvement	4	4	4	4
Roadway Conditions	4	4	4	4
Economic				
Capital Costs	2	2	3	3
Total	24	26	25	27

Exhibit #7b

Area 2 – Sunnydene Crescent Drainage Area

Street Included:
• Sunnydene Crescent

Existing Conditions

• Existing road width 8m or greater
• Approximately 130 mature trees within public right-of-way
• Sufficient drainage system
• Good quality road structure
• No sidewalks

Existing Conditions
Sunnydene Cres
(facing south)

Existing Conditions
Sunnydene Cres
(facing north)

Alternative #1 – Do Nothing
The Environmental Assessment process requires that consideration be given to the Do Nothing option.

Alternative #2	Alternative #3
• Install 1 sidewalk	• Install 2 sidewalks
• Up to 30 trees impacted due to construction	• Up to 60 trees impacted due to construction
1.7 m sidewalk  8.0 m road width	1.7 m sidewalk  8.0 m road width
• Approx. Cost: $200,000	• Approx. Cost: $400,000

Evaluation Criteria	Alt #1	Alt #2	Alt #3
Socio-Cultural			
Pedestrian Safety	0	4	6
Impact on Urban Greenspace / Recreational Use (Street Trees, Parks, Open Spaces)	8	6	4
Technical - Technical Effectiveness			
Roadway Conditions	0	0	0
Economic			
Capital Costs	4	3	0
Total	12	13	10

Note : Costs are approximated and subject to change

Exhibit #8

Area 4 - Mildenhall Road

Street Included:
• Mildenhall Road (south of Rothmere Dr)

Existing Conditions

• Surface and basement flooding
• Collector road widths 7m - 9m
• Approximately 350 mature trees within public right-of-way
• Poor quality road structure
• Insufficient ditched drainage system
• No sidewalks

Existing Conditions
Mildenhall Rd
(north of Bayview Wood)

Existing Conditions
Mildenhall Rd
(south of Bayview Wood)

Alternative #1 – Do Nothing
The Environmental Assessment process requires that consideration be given to the Do Nothing option.

Alternative #2	Alternative #3	Alternative #4
• Reconstruct road to 9.5m wide, install 2 sidewalks with drainage system under roadway	• Reconstruct road to 9.0m wide, install 2 sidewalks with drainage system under roadway	• Reconstruct road to 8.5m wide, install 2 sidewalks with drainage system under roadway
• Up to 200 trees impacted due to construction	• Up to 180 trees impacted due to construction	• Up to 170 trees impacted due to construction
 9.5 m road width	 9.0 m road width	 8.5 m road width
• Approx. Cost: $6,200,000	• Approx. Cost: $5,800,000	• Approx. Cost: $5,400,000

Note : Costs are approximated and subject to change

Evaluation Criteria	Alt #1	Alt #2	Alt #3	Alt #4
Socio-Cultural				
Pedestrian Safety	0	6	6	6
Vehicular Safety	0	4	3	2
Impact on Urban Greenspace / Recreational Use (Street Trees, Parks, Open Spaces)	8	4	4	4
Technical - Technical Effectiveness				
Surface and Basement Flooding	0	8	8	8
Stormwater Quality Improvement	0	4	4	4
Roadway Conditions	0	4	4	4
Economic				
Capital Costs	4	1	2	3
Total	12	31	31	31

Area 6 – St. Leonards Avenue / Dundurn Road

Existing Conditions
St. Leonards Ave
(facing east)

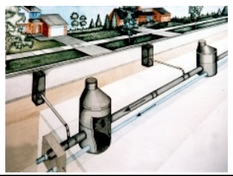
Existing Conditions
St. Leonards Ave
(facing west)

Streets Included:
- St. Leonards Avenue (west of St. Ives Ave)
- Dundurn Road (north of Dawlish Ave)

Existing Conditions

- Surface and basement flooding
- Existing road width 8m or greater
- Approximately 125 mature trees within public right-of-way
- Sufficient drainage system
- Poor quality road structure
- Sidewalks on both sides

Alternative #1 – Do Nothing
The Environmental Assessment process requires that consideration be given to the Do Nothing option.

Alternative #2	Alternative #3	Alternative #4
• Reconstruct road to original width (8.5m) and install storm sewer to alleviate flooding	• Reconstruct road to original width (8.5m) and install storm sewer to alleviate flooding and underground infiltration system to improve water quality conditions	• Reconstruct road to original width (8.5m) and install storm sewer to alleviate flooding and install bioretention units to improve water quality conditions
• Up to 50 trees impacted due to construction	• Up to 50 trees impacted due to construction	• Up to 50 trees impacted due to construction
		
• Approx. Cost: $3,000,000	• Approx. Cost: $3,200,000	• Approx. Cost: $3,200,000

Note : Costs are approximated and subject to change

Evaluation Criteria	Alt #1	Alt #2	Alt #3	Alt #4
Socio-Cultural				
Impact on Urban Greenspace / Recreational Use (Street Trees, Parks, Open Spaces)	8	6	6	6
Technical - Technical Effectiveness				
Surface and Basement Flooding	0	8	8	8
Stormwater Quality Improvement	0	0	4	4
Roadway Conditions	0	4	4	4
Economic				
Capital Costs	4	3	2	2
Total	12	21	24	24

Exhibit #10

Area 13 – Strathgowan Avenue

Street Included:
- Strathgowan Avenue

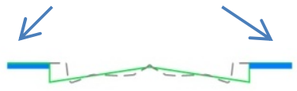
Existing Conditions

- Surface and basement flooding
- Existing road widths 6m – 7m
- Approximately 140 mature trees within public right-of-way
- Sufficient drainage system
- Poor quality road structure
- No sidewalks or one sidewalk

Existing Conditions
Strathgowan Ave
(facing east)

Existing Conditions
Strathgowan Ave
(facing west)

Alternative #1 – Do Nothing
The Environmental Assessment process requires that consideration be given to the Do Nothing option.

Alternative #2	Alternative #3	Alternative #4
• Reconstruct road to 8.5m wide, install 1 sidewalk	• Reconstruct road to 8.0m wide, install 2 sidewalks	• Reconstruct road to 7.2m wide, install 1 sidewalk
• Up to 60 trees impacted due to construction	• Up to 80 trees impacted due to construction	• Up to 40 trees impacted due to construction
1.7 m sidewalk  8.5 m road width	1.7 m sidewalk  8.0 m road width	1.7 m sidewalk  7.2 m road width
• Approx. Cost: $1,200,000	• Approx. Cost: $1,100,000	• Approx. Cost: $1,000,000

Note : Costs are approximated and subject to change

Evaluation Criteria	Alt #1	Alt #2	Alt #3	Alt #4
Socio-Cultural				
Pedestrian Safety	0	4	6	4
Vehicular Safety	0	4	3	2
Impact on Urban Greenspace / Recreational Use (Street Trees, Parks, Open Spaces)	8	4	4	6
Technical - Technical Effectiveness				
Surface and Basement Flooding	0	0	0	0
Stormwater Quality Improvement	0	0	0	0
Roadway Conditions	0	4	4	4
Economic				
Capital Costs	4	1	2	3
Total	12	17	19	19

Evaluation Criteria

The following criteria will be used to evaluate each alternatives. It will help determine which alternatives should continue to be considered in selecting a preferred alternative or final recommendation.

Socio-Cultural

- Pedestrian Safety
- Vehicular Safety
- Impact on Urban Greenspace / Recreational Use (Trees, Parks, Open Spaces)
- Disruption to Community During Construction
- Potential Impact to Archaeological and/or Natural Heritage Sites

Natural Environment

- Potential Impact on Terrestrial Systems (Vegetation, Trees, Wildlife)
- Potential Impact on Aquatic Systems, Aquatic Life and Aquatic Vegetation
- Potential Impact on Soils, Groundwater and Surface Water

Technical

- Technical Effectiveness
  - Surface and Basement Flooding
  - Stormwater Quality Improvement
  - Traffic Operations
  - Roadway Conditions
  - Pedestrian Connectivity

Economic

- Capital Costs
- Operating/Maintenance Costs

Exhibit 11A

Category	Criteria	Description of Criteria	Measures for Assigning Scores	Weighting Factor
Socio-Cultural				
	Pedestrian Safety	• Ability of alternative to provide safe conditions for pedestrians	Scores are assigned as follows: • 4 – sidewalks with boulevards on both sides • 3 – sidewalks without boulevards on both sides • 2 – sidewalk on one side • 0 – no sidewalk	2
	Vehicular Safety for Local Roads	• Ability of the alternative to provide safe conditions for motorists	Scores are assigned as follows: • 4 – 8.5m roadway width • 3 – 8.0m roadway width • 2 – 7.2m roadway width • 0 – no improvements	1
	Vehicular Safety for Collector Roads	• Ability of the alternative to provide safe conditions for motorists	Scores are assigned as follows: • 4 – 9.5m roadway width • 3 – 9.0m roadway width • 2 – 8.5m roadway width • 0 – no improvements	1
	Impact on Urban Greenspace/Recreational Uses (Street Trees, Parks, Open Spaces)	• Potential of alternative to impact usage or vegetation in public parks	Scores are assigned as follows: • 4 – less than 20% of moderate - high caliber trees are impacted • 3 – 20-40% of moderate - high caliber trees are impacted • 2 – 41-60% of moderate - high caliber trees are impacted • 1 – 61-80% of moderate - high caliber trees are impacted • 0 – greater than 80% of moderate - high caliber trees are impacted	2

Category	Criteria	Description of Criteria	Measures for Assigning Scores	Weighting Factor
Technical – Technical Effectiveness				
	Surface & Basement Flooding	• Ability of alternative to reduce surface & basement flooding associated with public property issues	Scores are assigned as follows: • 4 – resolves public property surface and basement flooding • 3 – moderate resolution to public property surface and basement flooding • 2 – limited resolution to public property surface and basement flooding • 0 – does not resolve public property surface and basement flooding	1
	Stormwater Quality Improvement	• Ability of alternative to meet water quality requirements as established in the City of Toronto Wet Weather Flow Master Plan (WWFMP) (2003)	Scores are assigned as follows: • 4 – meets Toronto WWFMP requirements • 3 – moderate resolution to Toronto WWFMP requirements • 2 – limited resolution to Toronto WWFMP requirements • 0 – does not address Toronto WWFMP requirements	1
	Traffic Operations	• Ability of alternative to improve traffic operations including: o reduce infiltration (1/3 weight) o improve sightlines (1/3weight) o maintain parking (1/3 weight)	Scores are assigned as follows: • 4 – LOS A and B • 3 – LOS C • 2 – LOS D • 1 – LOS E • 0 – LOS F	1
	Roadway Conditions	• Ability of alternative to improve existing roadway conditions	Scores are assigned as follows: • 4 – significant improvement in existing roadway conditions • 3 – moderate improvement in existing roadway conditions • 2 – limited improvement in existing roadway conditions	1

			• 0 – no improvement in existing roadway conditions	
	Pedestrian Connectivity	• Ability of alternative to provide (or close) link to existing destinations	Scores are assigned as follows: • 4 – significant improvement to existing pedestrian system • 3 – moderate improvement to existing pedestrian system • 2 – limited improvement to existing pedestrian system • 0 – no improvement to existing pedestrian system	1
Natural Environment				
	Potential Impact on Terrestrial Systems (Vegetation, Trees in Valleys and Parks, Wildlife)	• Potential of alternative to impact vegetation, street trees and associated wildlife	Scores are assigned as follows: • 4 – no impact on usage or vegetation • 3 – limited impact on usage or vegetation • 2 – moderate impact on usage or vegetation • 1 – significant impact on usage or vegetation	1
Economic				
	Capital Costs	• The relative estimated capital cost as compared to the other alternatives	Scores are assigned as follows: • 4 – lowest overall cost • 3 – lowest of alternatives 2 through 4 • 2 – within 10% of alternatives 2 through 4 • 1 – within 20% of alternatives 2 through 4 • 0 – greater than 20% of alternatives 2 through 4	1
	Operating/Maintenance Costs	• The relative operating/maintenance cost as compared to the other alternatives	Scores are assigned as follows: • 4 – lowest overall cost • 3 – lowest of alternatives 2 through 4 • 2 – within 10% of alternatives 2 through 4	1

			• 1 – within 20% of alternatives 2 through 4 • 0 – greater than 20% of alternatives 2 through 4	

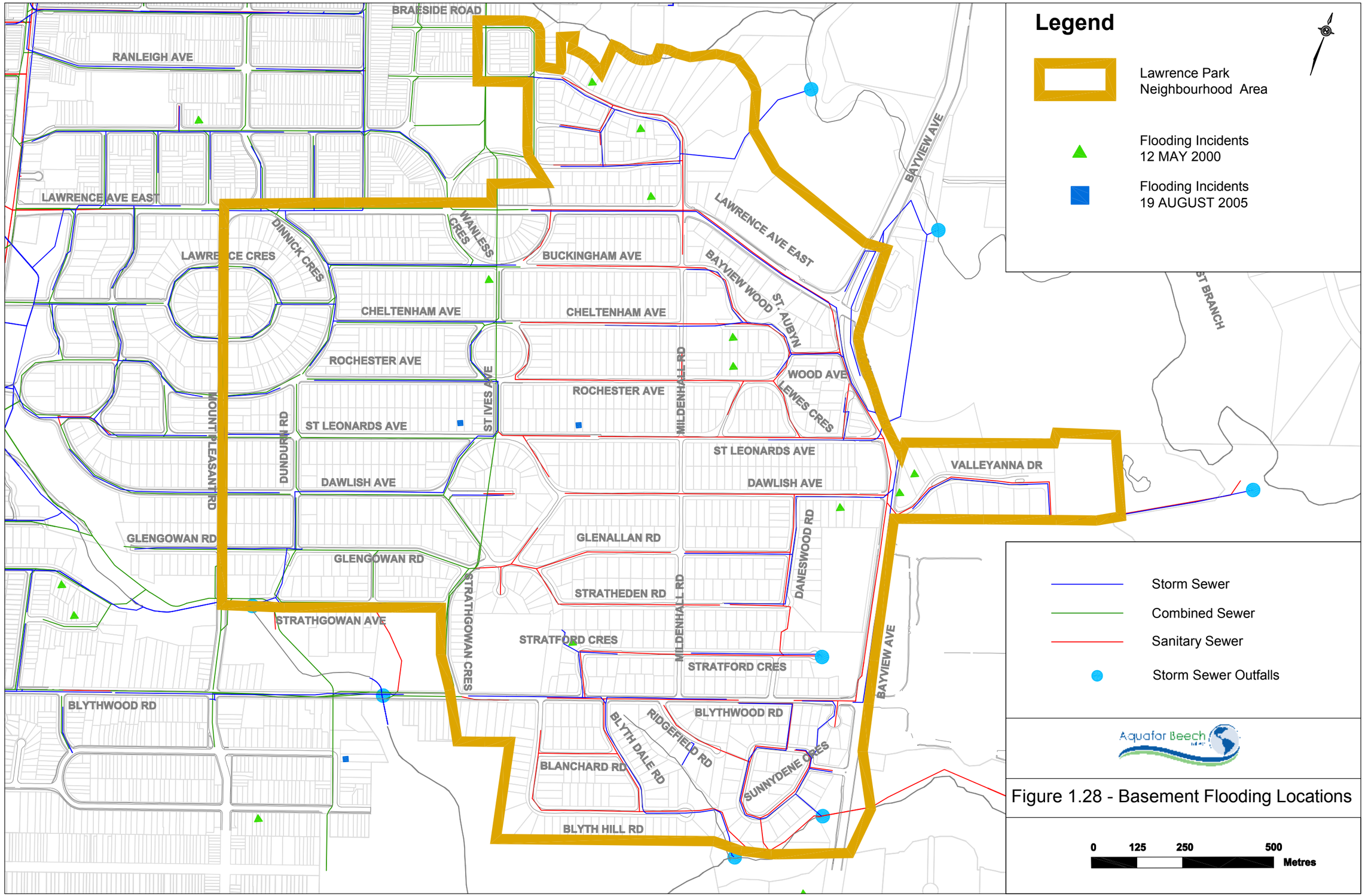

Legend
Lawrence Park Neighbourhood Area
Flooding Incidents 12 MAY 2000
Flooding Incidents 19 AUGUST 2005
Storm Sewer
Combined Sewer
Sanitary Sewer
Storm Sewer Outfalls
Aquafor Beech
Figure 1.28 - Basement Flooding Locations
0 125 250 500
Metres
BRAESIDE ROAD
RANLEIGH AVE
LAWRENCE AVE EAST
LAWRENCE CRES
DINNICK CRES
WANLESS CRES
BUCKINGHAM AVE
CHELTENHAM AVE
ROCHESTER AVE
ST LEONARDS AVE
DAWLISH AVE
GLENGOWAN RD
STRATHGOWAN AVE
BLYTHWOOD RD
MOUNT PLEASANT RD
DUNDURN RD
ST IVES AVE
MILDENHALL RD
BAYVIEW WOOD
ST. AUBYN
WOOD AVE
LEWES CRES
BAYVIEW AVE
VALLEYANNA DR
GLENALLAN RD
STRATHEDEN RD
STRATFORD CRES
STRATHGOWAN CRES
DANESWOOD RD
BLANCHARD RD
BLYTH DALE RD
RIDGEFIELD RD
SUNNYDENE CRES
BLYTH HILL RD
ST BRANCH

Exhibit #12