



Summary Notes

Hogg's Hollow
Stormwater Management and Road Improvement
Study

OPEN HOUSE #3

December 10, 2003

**WORKS and
EMERGENCY SERVICES**

Hogg's Hollow Stormwater Management and Road Improvement Study

OPEN HOUSE #3

Agricola Finnish Lutheran Congregation
25 Old York Mills Road, Toronto

Wednesday, December 10, 2003
6:30 p.m. to 9:15 p.m.

ATTENDANCE

Meeting Facilitator:

Ann Marie Weselan – WES / PC&CO Unit

Consultants:

Dave Maunder – Aquafor Beech Limited
Brian Worsley – Aquafor Beech Limited
Jim Weir – Morrison Hershfield Ltd.

City of Toronto:

Samuel Jebakumar – WES / Technical Services (District 3)
and HHSWMRI Project Manager
Les Arishenkoff – WES / Water and Wastewater,
Infrastructure & Asset Mgmt
Naomi Faulkner – UDS/ City Planning
Uwe Mader – WES / Technical Services,
Environmental Assessment & Policy Development
Jay Malone – WES / Transportation Services,
Traffic Operations (North District)
Penelope Palmer – WES / Transportation Services,
Infrastructure Planning
Bill Snodgrass – WES / Water and Wastewater,
Infrastructure & Asset Mgmt
Trevor Tenn – WES / Transportation Services,
Road Operations (North District)
Christine Iamonaco-Dagg – WES / PC&CO Unit
Dave Nagler – WES / PC&CO Unit
Liora Zion-Burton – WES / PC&CO Unit

Meeting Notes:

J. E. Simpson, ERH Associates (audio recording & 1st version of Draft Summary Notes)
Toronto WES / PC&CO (editing, printing, distribution of final version Draft Summary
Notes)

OPEN HOUSE #3

1. SYNOPSIS

The Hogg's Hollow Stormwater Management and Road Improvement Study is being conducted in response to the history of drainage problems, flooding and poor road conditions in the project Study Area during heavy rain fall events.

The purpose of the Study is:

"to determine the extent and causes of flooding within the Hogg's Hollow area, and define a program consisting of stormwater management, drainage and road improvement works to alleviate flooding."

The Study is being conducted as a Schedule 'B' Municipal Class Environmental Assessment.

The Study will produce recommendations applicable to the Study Area on the preferred method(s) for addressing problems related to Stormwater, and on any needed alterations to the road infrastructure.

This Open House and Public Meeting event, the third to date for this project, was held pursuant to the requirements of Class Environmental Assessments. The aims of this event were to:

- provide the public with a summary of the findings from the previous Open House, including the results of the questionnaire that was circulated at that time.*
- present the public with information on a series of possible Alternatives that have been developed for alleviating flooding problems and improving roads in the Study Area.*
- obtain the public's input with respect to the suggested Alternatives for the various Sub-Areas within the Hogg's Hollow Study Area, and indications as to their preferences, either among the alternatives developed or for some different approach to consider that they might wish to suggest.*

2. THE OPEN HOUSE and PUBLIC MEETING

The meeting room at the Agricola Finnish Lutheran Congregation facility was open to the public from about 6:30 p.m.

A series of display boards erected around the back of the room provided attendees with:

- A synopsis of information obtained from analysis of the responses to the questionnaire circulated in conjunction with the second Open House and Public Meeting;
- Diagrams of the possible road configurations (cross-sections and edge treatments) that could be used in the Alternatives; and,
- Information on a proposed set of three Alternatives for each of the six Sub-Areas within the overall Hogg's Hollow Study Area to be reviewed and considered as proposed solutions to the flooding problems.

That latter set of display panels provided, for each Sub-Area:

- A map and a list of the principal streets within that Sub-Area;
- A list of the flooding problems reported or known;
- The impacts on trees and vegetation within the road right-of-way of various possible road surface widths and overall road cross section widths;
- Issues reported and constraints to addressing them; and,
- Information including: descriptive text; photographs of the existing roadways taken every 50 m; diagrams; computer-enhanced photographs of the "before" and "after" of the set of five Alternatives; as well as the three Alternatives proposed to address the flooding problems in that Sub-Area.

Project consultants and City staff were on-hand to answer any questions from members of the public that arose in connection with that material.

Ann Marie Weselan called the Public Meeting portion of the Open House to order at 7:04 p.m.

Ms. Weselan introduced herself, welcomed the members of the public and area residents who had turned out to the Open House, then attended to some housekeeping items. These included: the availability of refreshments in the reception area; the location of washroom facilities; and, advice regarding the printed meeting Agenda, additional information materials and comment forms available at the registration desk.

She then advised the attendees as to the proposed format for this Public Meeting. First off, there would be some introductions, followed by a brief address by Councillor Cliff Jenkins (Ward 25 – Don Valley West). Next, Dave Maunder, of the consulting firm Aquafor Beech, would give a presentation to provide information on the consultants' work since the last Open House (held on 2003.09.25). Following that, the attendees would participate in one of the six concurrent "Break-Out Groups" – one for each of the Sub-Areas within the overall Hogg's Hollow Study Area – to discuss the three Alternatives proposed for that Sub-Area and provide additional feedback. Finally, the attendees would reconvene in a plenary session to hear the feedback (comments, preferences, objections) offered in all of the Break-Out Groups.

Ms. Weselan urged attendees to make certain that they filled out the Sign-In sheets at the registration desk with their name and contact information so that they could receive the "minutes" of this public Meeting, including the feedback gathered during the "Break-Out Group" sessions.

Ms. Weselan explained that the tables located around the meeting room were numbered 1 through 6, corresponding to the six Sub-Areas determined by the consultants within the overall Study Area. Information documents on each table, and the display boards adjacent to it, provided information for that specific Sub-Area on the flooding conditions found, and the three proposed Alternative solutions (see Attachment 'C'). She urged attendees to sit at the table designated for the Sub-Area in which they lived. By so doing, they would have a better opportunity during the Break-Out session to review, and offer comment on, the analyses of the conditions in their particular neighbourhood (Sub-Area) and the set of area-specific Alternatives that were being proposed. In turn, the project team would get maximal benefit by receiving feedback from the people most directly affected in each Sub-Area.

Ms. Weselan introduced the members of the project team for the Study, and the other City staff present for this meeting:

Project Team

- Samuel Jebakumar – City of Toronto, WES / Technical Services (District 3),
and Project Manager
- Les Arishenkoff – City of Toronto, WES / Water & Wastewater Division,
Infrastructure & Asset Management
- Bill Snodgrass – City of Toronto, WES / Water & Wastewater Division,
Infrastructure & Asset Management
- Penelope Palmer – City of Toronto, WES / Transportation Services,
Infrastructure Planning
- Uwe Mader – City of Toronto, WES* / Technical Services Group,
Environmental Assessment & Policy Development

City Staff

- Naomi Faulkner – City of Toronto, UDS* / City Planning
- Jay Malone – City of Toronto, WES / Transportation Services,
Traffic Operations (North District)

Consultants

- Dave Maunder – Aquafor Beech Limited
- Brian Worsley – Aquafor Beech Limited
- Jim Weir – Morrison Hershfield Ltd.

City Staff – Break-Out Group Facilitators

- Christine Iamonaco-Dagg – City of Toronto, WES / PC&CO
- David Nagler – City of Toronto, WES / PC&CO

(* WES = Works and Emergency Services Department)

(* UDS = Urban Development Services Department)

Councillor Cliff Jenkins spoke next. He thanked City staff and area residents for the information they have shared with him to date regarding the Study and the flooding problems and road improvement needs in the Hogg's Hollow area. He also thanked the area residents for their votes in the recently completed municipal election.

Jenkins advised that he has come to understand that the flooding problem in this area is very significant, in terms of both the nature of it and the need to resolve it, and as regards the size of the work and expenditures that will be required to address it. He urged the attendees to find consensus on the approach needed to best address the situation in each of their local Sub-Areas, and gave his commitment that he would then exert his best efforts to see that those measures were implemented.

Ann Marie Weselan introduced **Dave Maunder** who then used a PowerPoint presentation (see: Attachment 'B') to provide:

- An overview of the Study Area and the purpose of the Study and the work performed to date;
- A summary, and some analysis, of the information received in the response to the Questionnaire regarding flooding that was circulated in conjunction with the second Open House and Public Meeting event held in September, 2003;
- A definition of the "problem" in the Study Area as regards to flooding issues and road conditions;
- Information on the Sub-Areas designated within the overall Study Area.

The Sub-Areas were defined on the basis of information collected and received regarding drainage patterns, flooding issues and road conditions;

- An explanation of the criteria considered in determining which three of the seven possible road configuration Alternatives best addressed the local problems in each Sub-Area.

The items on the list of criteria, and their order of precedence, were based on feedback provided by area residents on the Questionnaires from the second Open House and Public Meeting;

- A review of the characteristics of the candidate road configuration Alternatives;
- Information regarding a survey conducted by the consultants of trees, shrubs and vegetation situated within the road right-of-way.

This information is important input in so far as determining which Alternatives to consider. Questionnaire responses overwhelmingly expressed that protection of trees and vegetation through minimizing potential impacts of the various possible roadway configurations was very important;

- An example of the area-specific data gathered and the information that would be available for discussion in the Break-Out Group for each Sub-Area;
- An outline of the "Next Steps" in the Study.

This includes analyses of feedback from the Break-Out Groups towards determining a Preferred Alternative Solution for each Sub-Area, and the other preparations that will be made over the period leading up to the fourth Open House, likely to be held sometime in early 2004.

Mr. Maunder stressed that,

The key aims of this Public Meeting were informing the area residents about the Alternatives that should best address the flooding problems in their Sub-Area

(neighbourhood), and, equally importantly, gathering their feedback on preferences among the suggested Alternatives and/or other measures or approaches they, the Sub-Area residents, feel should be considered.

The three suggested Alternatives for each Sub-Area was intended to provide a selection of road cross sections from among which the residents could choose, since the Questionnaire results did not provide any clear indication of a preference for one type over another.

The proposed selections were also strongly guided by the City's policy regarding flood protection: that the roadway should be built and sewer infrastructure implemented so as to eliminate, to the greatest extent possible, flooding of private property by surface water or water backing up from sewers. In general, this means providing protection to the 100-year storm level.

Another key issue that should be discussed at this meeting is the installation of sidewalks when roadways are rebuilt.

Dave Maunder then "charged" the attendees with four specific questions they should attempt to address in the Break-Out Groups:

- *What do you like about each alternative?*
- *What do you dislike about each alternative?*
- *Should another Alternative be considered?*
- *Which alternative do you prefer?*

In closing his presentation, Dave Maunder advised that the City has several programmes in place to assist residents with implementation of flood control measures on their own property. These include, downspout disconnection, installation of back-flow prevention valves, installation of sump-pumps and so forth. The assistance available is in both the area of technical guidance, so the work is performed correctly, and monetary grants to help defray the costs.

He urged the attendees to check out the flyers and brochures for these programmes that are available at the registration desk. Mr. Maunder advised the attendees that implementing at least some of these measures would help to alleviate flooding problems in the short term while the larger process of work on the roads and sewers in the area proceeds over the longer period of time required to implement those changes.

Samuel Jebakumar addressed the attendees to explain the City's policy that sidewalks should be installed on at least one side of the roadway when roads are re-built.

The rationale for the policy is providing pedestrian safety. It is for this reason that Transportation Services requires that sidewalks be shown in the proposed road cross-sections prepared for this meeting.

If, however, the residents in an area do not wish to have sidewalks installed on the streets on which they live, they can, on a street-by-street basis, petition against it.

The preparation of a petition can be started at any time when road works are in the planning.

The first step in that process would be arriving at a consensus among the neighbours in a given area as to their being 'for' or 'against' sidewalks installed on their street. Then, a petition could be circulated. The petition must include the name, address and signature of the signatories. When completed, the petition could be presented either to staff or the City Councillor for the area.

Ann Marie Weselan facilitated a brief Q&A Session for the public to ask questions about the presentation, and provide feedback on the work done to date by the consultants.

A synopsis of that Q&A Session is provided in the next section of these Summary Notes.

The attendees then reconvened in the six Break-Out Groups to discuss the specific information prepared for each Sub-Area, and address the four questions posed by Dave Maunder.

Each Sub-Area group was provided with a display board showing the flooding problem-related information available for their neighbourhood, and information and images pertaining to the three suggested Alternative road configurations that would best address that particular Sub-Area. (*see: Attachment C*) Each Sub-Area group also had a selection of photographs and diagrams for their Sub-Area.

Each Break-Out Group was provided with a Facilitator, and a Resource Expert from the Study Team or staff. These personnel helped focus discussion on the four questions posed by Mr. Maunder, recorded the comments, questions and suggestions offered by the attendees in that Break-Out Group, and attempted to address any technical or policy inquiries that arose. Additional Study Team members and City staff were present to help address questions that might arise.

After approximately an hour, the attendees reconvened as a plenary group to hear reports on the comments, opinions and suggestions raised in each of the Break-Out Groups. The Facilitator for each Break-Out Group recapped the information recorded during their respective session.

A synopsis of the comments, questions, and stated preferences that arose in each of the Break-Out Groups is provided in Attachment 'D.'

Dave Maunder addressed the attendees to describe the 'Next Steps' in the Study.

The work the consultants will be performing over the coming months is primarily focused on taking the attendees' input from the Break-Out Groups, along with information already gathered, and determining the Preferred Alternative for each street in the Study Area.

In addition to addressing the flooding problems and/or road-condition deficiencies on a particular street, the chosen Alternatives must be congruent with those selected for abutting streets – one can't have two substantially different road configurations on streets that connect with each other.

When the overall Preferred Alternative design has been completed, the consultants will develop further information to provide such as cost estimates, a prioritization recommendation (which work should be performed first, based on severity of flooding, road surface conditions, etc.), and the like.

All of this information will then be brought back to the area residents at the 4th Open House and Public Meeting. That event will likely be held some time in late February.

Following that, the consultants will prepare the EA (Environmental Assessment) Report for the Study. The document will be available to the public at City Hall, local libraries and like venues for a thirty-day period, to provide the required opportunity for public review and comment. If no objections are received, or any objections are resolved, the Report would then be considered as accepted. More detail on the precise nature and procedures of this process will be forthcoming at the next Public Meeting.

Dave Maunder and Ann Marie Weselan entertained some final questions from the attendees.

A synopsis of the final questions is provided in the next section of these Summary Notes.

The attendees were reminded to "sign in" at the Registration Desk, so they would be on the mailing list to receive a copy of the Summary Notes for this meeting.

Ann Marie Weselan thanked the members of the public for coming out to this meeting.

The Public Meeting section of this event drew to a close at approximately 8:57 p.m.

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3. SYNOPSIS OF COMMENTS/CONCERNS/QUESTIONS/SUGGESTIONS FROM THE PUBLIC

(●: Comment/Question; ◆: Response from project team; ○: Response/comment from public attendees)

- Would the existing sidewalk in our area have to be either moved or revised?
 - ◆ *If it is already in place and the configuration of the rebuilt roadway permits, it would not necessarily have to be moved. The sidewalk might, however, have to be rebuilt if it is old or deteriorated.*
- On average, how wide are the streets currently in place in this area?
 - ◆ *On average, they are about 6.5-7 metres (21.3-23 feet) wide. The roads are generally narrow, but there is an unpaved area (shoulder) along the edges of the asphalt surface.*
- A lot of outside drainage pipes (downspouts) in this area are connected to the sanitary sewer. The substantial flow of water from those pipes causes a lot of the flooding problems. What are you planning to do about that?
 - ◆ *Part of the answer to that issue is in the investigation and sewer pipe inspection work mentioned at the previous Open House. Where problems were found – blockages, broken pipes, incorrect connections, etc. – they have been noted and, to some extent, addressed. The Study we are preparing will also make recommendations on additional measures to address the problem of flooding in the sanitary sewers.*
- Are all the storm sewers going to be replaced?
 - ◆ *Over time, yes. The exception would be a couple of streets where the sewers in place are adequate. If you are on a newer street where the sewer has been recently redone, and the flooding problem is minimal or nil, that would not, of course, be a priority focus area for work.*
- When did the City policy as explained regarding sidewalks change or start? The roads were reconstructed on three streets in my area within the last two years and we had no problem about not having sidewalks installed.
 - ◆ *The City policy has been in place for a number of years. There was likely a public meeting prior to that work where the residents voiced an opinion. As explained, the City has a policy regarding sidewalks and if the residents of your area do not want sidewalks installed in the course of work on the roads in the Hogg's Hollow Study Area, there is a process you should follow to make that position known to the City.*
- Are you going to install sidewalks if we don't object?
 - ◆ Yes.
- 70% of the questionnaires said "no" to sidewalks. Is that not sufficient indication??
 - ◆ *Only 25 questionnaires were received at the last Open House and Public Meeting. The City has standards and policies. If the residents of an area want to deviate from them, there is a process whereby they can make their wishes known. Those wishes will then be taken into consideration. Also, a key tenet of the Environmental Assessment process is minimizing impacts, and impacts on people are one the things that are to be considered. It is very important to keep in mind here that we are trying to build a consensus on the approach to take to address the primary focus of the Study: flooding. Drainage and conveyance of water along the roadway surfaces are the primary ways to address that. As said earlier, a summary of this meeting will be prepared, and sent to the people at this meeting. We will include the best information we can assemble on the City's existing policy regarding sidewalks, and instructions on what you need to do to petition for a deviation from that standard. Remember too that another Public Meeting that will be held as part of this Study.*
- In a '100-year storm' do the storm sewers that flow into the West Don River have an impact on the river? Conversely, would the rising water levels in the river impact the storm sewers?
 - ◆ *The stormwater pipes in the area are, in general, large enough. The only outfall adversely impacted by very high water levels in the river would be that coming off Knightswood Road.*

- How are you going to determine consensus given the low overall number of people [versus the number of residents in this area] that turned out tonight, and that some streets are not very well represented?
 - ◆ *An invitation to this meeting was sent to everyone in the Study Area. We are doing the best we can do given the number of people that came to the meeting.*
 - The information we receive back from the Break-Out Groups will be evaluated both as to how much agreement there is between the people that did participate, and how the preferences of one Sub-Area 'fit' with those in Sub-Areas that abut it.*
 - We will again be inviting all residents in the Study Area to the next Public Meeting, but the meeting tonight is the opportunity for you to provide input. This approach is necessary since the process must move forward in order that we can present detailed information on the preferred approach to implement at that next Meeting. It will likely be held sometime in the early part of 2004.*

- Would it be possible to hold the 4th Public Meeting in late March rather than February? A fair number of area residents go away for the winter.
 - ◆ *By show of hands, approximately 1/3 of the attendees indicated a preference for holding the next Public Meeting later than February.*
 - The longest possible advance notice – beyond the typical 3-4 weeks – would be appreciated.

- What is the budget for this Study?
 - ◆ *Approximately \$180,000.*

- Would it be possible to have the EA Report available on “the web”?
 - ◆ *We can try to make it available on the City's web-site [<http://www.toronto.ca/involved>] in addition to the venues already mentioned.*

- Would it be possible to put the report up on the Hogg's Hollow Residents' Association web-site?
 - ◆ *We can investigate that.*

--- ATTACHMENTS ---

- A. – **Announcement/Notice for Open House #3 (10 December, 2003)**

- B. – ***“STORMWATER MANAGEMENT AND ROAD IMPROVEMENT STUDY
FOR THE HOGG’S HOLLOW AREA
Third Open House and Public Meeting”***
(Dave Maunder, Aquafor Beech Limited; PowerPoint presentation)

- C. – **Sub-Area-specific Flooding Problems & Road Improvement Needs,
and Suggested Alternative Solutions**
(Aquafor Beech Limited; display boards)

- D. – **Break-Out Session reports**



Agenda
Hogg's Hollow Stormwater Management & Road Improvement Study
Class Environmental Assessment
3rd Open House & Working Session
Wednesday, December 10, 2003
Agricola Finnish Lutheran Congregation
25 Old York Mills Road

Viewing of Displays

6:00 – 7:00 Questions for Staff/Consultants

Presentation & Working Session

| | | |
|-------------|--|---------------------------------------|
| 7:00 – 7:10 | Welcome & Introduction of Project Team Members | Ann Marie Weselan City of Toronto |
| 7:10 – 7:20 | Opening Address | Councillor Cliff Jenkins |
| 7:20 – 8:00 | Status of Hogg's Hollow Stormwater Management & Road Improvement Study - Class Environmental Assessment | Dave Maunder Aquafor Beech Limited |
| | <ul style="list-style-type: none">• Results of September 2003 Open House Questionnaire• Overview of Assessment & Selection of Proposed Alternatives | |
| 8:00 – 8:40 | Breakout Working Session for Street Groupings | |
| 8:40 – 8:50 | Plenary Session | |
| 8:50 – 9:00 | Next Steps | |

**STORMWATER MANAGEMENT AND
ROAD IMPROVEMENT STUDY FOR
THE HOGG'S HOLLOW AREA**

**THIRD OPEN HOUSE AND PUBLIC MEETING
10 DECEMBER 2003**

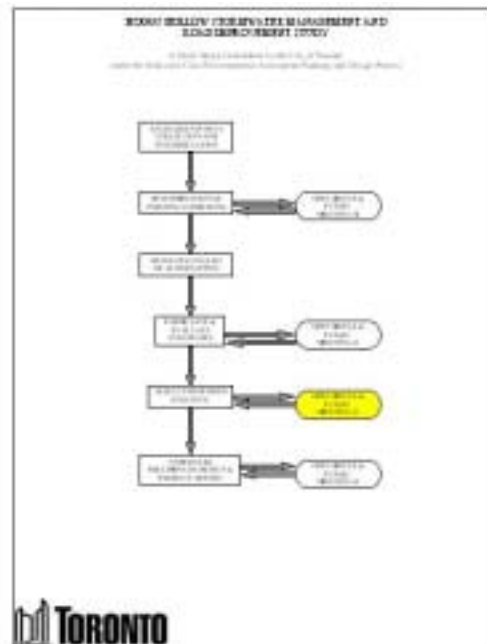


STUDY AREA



STUDY PURPOSE

- To determine the extent and causes of Flooding within the Hogg's Hollow area, and to define a program consisting of stormwater management, drainage and road improvement works to alleviate flooding



OBJECTIVES OF TONIGHT'S MEETING

- Summarize findings from previous open house
- Present alternatives for alleviating flooding problems and improving roads
- Obtain your input with respect to the alternatives and your preference



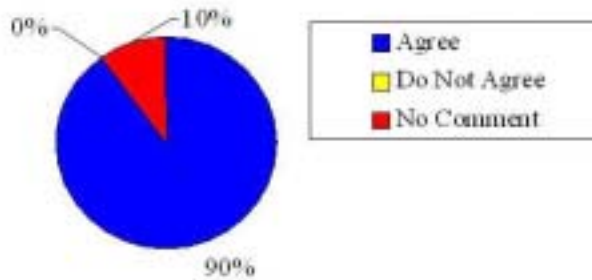
SEPTEMBER 25TH OPEN HOUSE

Summary of Questionnaire Results



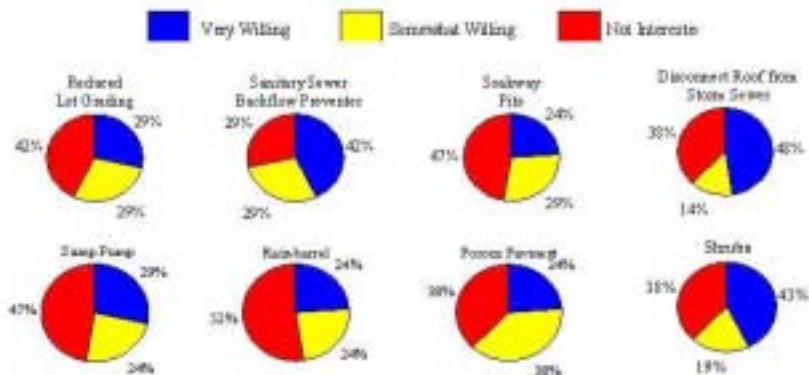
QUESTION 1

Do you agree or disagree that flooding occurs as a result of number of factors including lack of sewer and roadway capacity, inadequate lot grading and high river level?



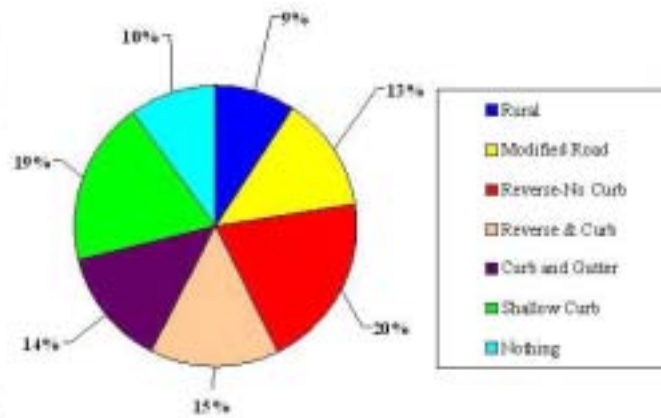
QUESTION 2

Please indicate your willingness/interest to implement the following measures.



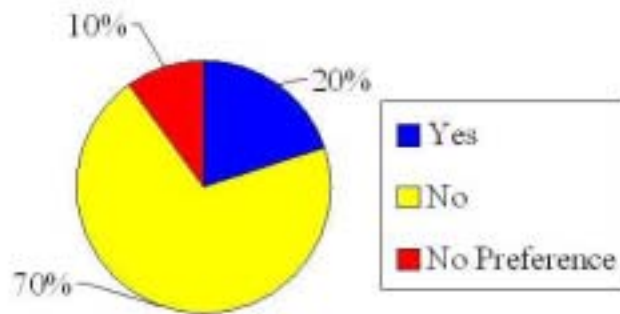
QUESTION 4

Please indicate your preference of the six different road cross sections that are being considered



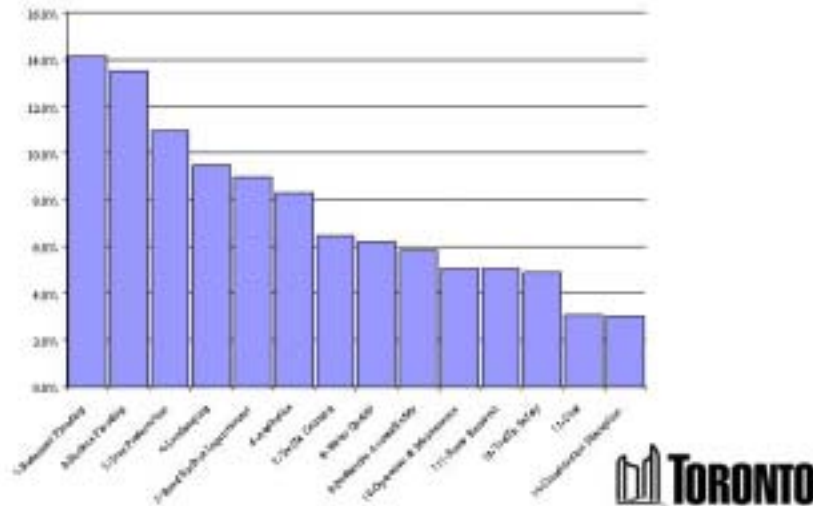
Do you feel a sidewalk should, or should not be installed?

QUESTION 5



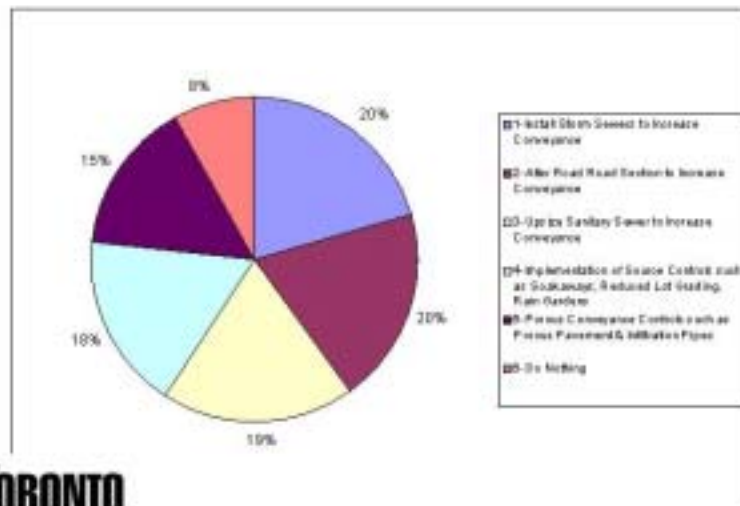
QUESTION 6

Please rank the following criteria in order of preference



QUESTION 7

Please indicate your preference of the following measures



DEFINE THE PROBLEM

- Approximately 25 percent of homes have experienced flooding problems
- A majority of existing roads are substandard and will, at some point, need to be reconstructed



DRAINAGE AREAS

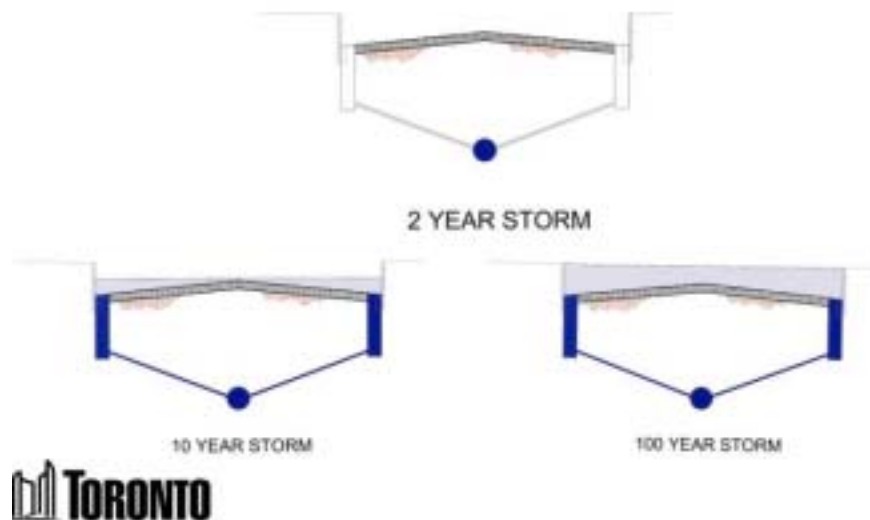


CRITERIA THAT WAS CONSIDERED

- Traffic Safety;
- Basement Flooding Mitigation;
- Runoff Flooding Mitigation;
- Tree Preservation;
- Snow Removal;
- Landscaping / Property Impact;
- Construction Disruption;
- Cost;
- Operation & Maintenance;
- Pedestrian Access;
- Traffic Calming;
- Aesthetics;
- Water Quality;
- Road Surface Improvement;



LEVEL OF SERVICE - FLOOD PROTECTION



ALTERNATIVE ROAD CROSS SECTIONS

- Conventional Curb and Gutter
- Shallow Curb and Gutter
- Reverse Crown – No Curb
- Reverse Crown – With Shallow Curb
- Rural Section – Deep Ditch
- Rural Section – Shallow Ditch
- Swale Section – 9m Right-of-Way



ALTERNATIVE # 1 - CONVENTIONAL CURB AND GUTTER

Road Width: 7.2 m

Flow Capacity @ 1% grade: 1.44 cubic meters per second



ALERNATIVE # 2 – SHALLOW CURB & GUTTER

Road Width: 7.2 m

Flow Capacity @ 1% grade: 0.20 cubic meters per second



ALTERNATIVE # 3 - REVERSE CROWN – NO CURB

Road Width: 7.2 m

Flow Capacity @ 1% grade: 0.22 cubic meters per second



ALTERNATIVE # 4 - REVERSE CROWN – WITH SHALLOW CURB

Road Width: 7.2 m

Flow Capacity @ 1% grade: 1.46 cubic meters per second



 **TORONTO**



ALTERNATIVE # 5 - RURAL SECTION - DEEP DITCH

Road Width: 20.0 m

Flow Capacity @ 1% grade: 2.2 cubic
meters per second

 **TORONTO**

ALTERNATIVE # 6 - RURAL SECTION - SHALLOW DITCH

Road Width: 10.8 m

Flow Capacity @ 1% grade: 0.38 cubic meters per second



 **TORONTO**

ALTERNATIVE # 7 - SWALE SECTION – 9m RIGHT-OF-WAY

Road Width: 9.0 m

Flow Capacity @ 1% grade: 0.12 cubic meters per second



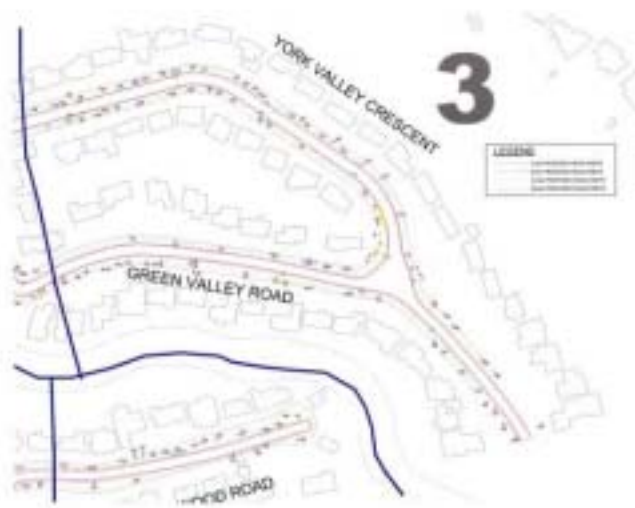
 **TORONTO**

TREE SURVEY

- A tree survey, which identified individual species, approximate age and health, was undertaken in October
- Trees were categorized into the following groups
 - Native Hardwood
 - Non-Native Hardwood
 - Native Conifer
 - Non-Native Conifer
 - Ornamental



DRAINAGE AREA



DONINO COURT EXAMPLE

HOGG'S HOLLOW - DONINO AVENUE

DESIGN AND CONSTRUCTION PLAN

DESIGN NOTES:

- 1. See Notes on Plans and Specifications.
- 2. See Notes on Plans and Specifications.

CONSTRUCTION NOTES:

- 1. See Notes on Plans and Specifications.
- 2. See Notes on Plans and Specifications.

CONSTRUCTION SPECIFICATIONS:

| Section | Description | Quantity | Unit |
|---------|-------------|----------|-------|
| 1.00 | Excavation | 100 | cu yd |
| 2.00 | Backfill | 100 | cu yd |
| 3.00 | Gravel | 100 | cu yd |
| 4.00 | Asphalt | 100 | sq ft |
| 5.00 | Concrete | 100 | sq ft |

ALTERNATIVE 1 - PLAN VIEW

ALTERNATIVE 2 - CONCEPTUAL PHOTO

ALTERNATIVE 3 - PLAN VIEW

ALTERNATIVE 4 - CONCEPTUAL PHOTO

ALTERNATIVE 5 - PLAN VIEW

ALTERNATIVE 6 - CONCEPTUAL PHOTO

DONINO COURT DRAINAGE AREA

DONINO COURT DRAINAGE AREA

DESIGN AND CONSTRUCTION PLAN

- 1. See Notes on Plans and Specifications.
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CONSTRUCTION NOTES:

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| 2.00 | Backfill | 100 | cu yd |
| 3.00 | Gravel | 100 | cu yd |
| 4.00 | Asphalt | 100 | sq ft |
| 5.00 | Concrete | 100 | sq ft |

| Section | Description | Quantity | Unit |
|---------|-------------|----------|-------|
| 1.00 | Excavation | 100 | cu yd |
| 2.00 | Backfill | 100 | cu yd |
| 3.00 | Gravel | 100 | cu yd |
| 4.00 | Asphalt | 100 | sq ft |
| 5.00 | Concrete | 100 | sq ft |

ALTERNATIVE # 2

Alternative 2 – Plan View



Estimated Cost = \$950,000

Alternative 2 – Conceptual Photo



Reverse Crown With Shallow Curb
With Small Storm Sewer

ALTERNATIVE # 3

Alternative 3 – Plan View



Estimated Cost = \$1,020,000

Alternative 3 – Conceptual Photo



Shallow Curb With Large Storm Sewer

ALTERNATIVE # 4

Alternative 4 – Plan View



Estimated Cost = \$960,000

Alternative 4 – Conceptual Photo



Reverse Crown With Shallow Curb

BREAKOUT GROUPS

- Explanation of information contained on boards will be given for each area
- Questions
 - What do you like about each alternative?
 - What do you dislike about each alternative?
 - Should another alternative be considered?
 - Which alternative do you prefer?



NEXT STEPS

- Summary from breakout groups will be provided to each person
- Steering committee will meet to discuss findings
- Preferred alternatives for each area will be selected based on summaries and consideration of criteria
- Preliminary design will be undertaken
- Proposed works will be costed and prioritized
- Fourth public open house will be held in early 2004



DONINO COURT DRAINAGE AREA

STREETS INCLUDED:

- Donino Court
- Donino Avenue from Plymbridge Road to Don River
- Ivor Road
- Donwoods Drive

TYPES OF FLOODING:

Surface & Basement

ROW TREE IMPACTS:

| Pavement / grading width | 7.2 metres | 9.0 metres | 20 metres |
|--------------------------|------------|------------|-----------|
| Donino Court | 0 | 4 | 11 |
| Donino Avenue | 0 | 5 | > 50 |
| Ivor Road | 0 | 5 | > 50 |
| Donwoods Drive | 1 | 6 | > 50 |

ISSUE:

- Minor Flooding along Ivor Road and Donwoods Drive
- Significant Flooding from Donino Ave into Donino Court,

CONSTRAINTS:

- The existing pavement width is typically 7 metres or less in width
- Mature native and non native hardwoods & conifers are in close proximity to the existing pavement surface
- Reverse slope driveways
- Lot grading below the roadway elevation
- Landscaping within the Right of Way in close proximity to the existing pavement
- Existing road cross section and profile grade not conducive to stormwater conveyance

ALTERNATIVES

Alternative # 1: do nothing

The Environmental Assessment process requires that consideration be given to the do nothing option, however geo-technical investigations have determined that the existing pavement structure is insufficient on Donino and sub-standard on Ivor and Donwoods for road re-surfacing to be cost effective. Road reconstruction will therefore be required.

| Alternative # 2 | Alternative # 3 | Alternative # 4 |
|---|---|---|
| Reconstruct Ivor Road and Donwoods Drive from Yonge Street to Donino Avenue, reconstruct Donino Court, and reconstruct Donino Avenue from north of the Donwoods Drive Plymbridge Road intersection to the River, reducing road grade at the river by approximately 0.35 m to provide overland conveyance (along the roadway) to the River; Utilise a reverse crown with shallow curb road section with a smaller storm sewer to convey up to the 1:100 year flow | Reconstruct Ivor Road and Donwoods Drive from Yonge Street to Donino Avenue, reconstruct Donino Court, and reconstruct Donino Avenue from north of the Donwoods Drive Plymbridge Road intersection to the River, reducing road grade at the river by approximately 0.35 m to provide overland conveyance (along the roadway) to the River; Utilise a shallow curb road section with a larger storm sewer to convey up to the 1:100 year flow | Reconstruct Ivor Road and Donwoods Drive from Yonge Street to Donino Avenue, reconstruct Donino Court, and reconstruct Donino Avenue from north of the Donwoods Drive Plymbridge Road intersection to the River; Install 24 m ³ underground storage tank to store excess flows construct reverse crown with shallow curb to direct flows to CB's install medium diameter storm sewer to convey road runoff to river |

| ALTERNATIVE # 2 COST | ALTERNATIVE # 3 COST | ALTERNATIVE # 4 COST |
|----------------------|----------------------|----------------------|
| \$ 947,280.00 | \$ 1,022,880.00 | \$ 964,280.00 |

Sub-Area #2 - Campbell Crescent Area

HOGG'S HOLLOW - CAMPBELL CRESCENT

CAMPBELL CRESCENT IMPROVEMENT AREA

SHEETS INCLUDED:

- Campbell Crescent

TYPES OF PLACEMENT:

- Median Placement

HOW TREE IMPACTS:

| | | | |
|-----------------------------|-----------|-----------|-----------|
| Percentage (existing width) | 11 metres | 24 metres | 31 metres |
| Campbell Crescent | 0 | 0 | 0 |

NOTE:

Final Board of Health has endorsed requests to conduct final design on Campbell Crescent

COMMENTS:

- The existing pavement width is 11 metres (41'-7" inches) wide.
- Trees within and over street boundaries of median width 2-3 metres of the existing pavement width.
- Landscaping within the Right-of-Way (ROW) is proposed to be the existing pavement.
- Existing and new median and grade, grade and sidewalks to be constructed.

ALTERNATIVES:

Alternative 1 - Side Median

The Conceptual Alternative 1 provides a side median that would be 11 metres wide, including the existing pavement and the existing sidewalk. The existing pavement and sidewalk would be 11 metres wide and the existing sidewalk would be 11 metres wide.

| Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 |
|---|---|---|---|
| Alternative 1: Right-of-Way (ROW) width of 11 metres (36'-3" inches) wide and sidewalk width of 11 metres (36'-3" inches) wide. | Alternative 2: Right-of-Way (ROW) width of 11 metres (36'-3" inches) wide and sidewalk width of 11 metres (36'-3" inches) wide. | Alternative 3: Right-of-Way (ROW) width of 11 metres (36'-3" inches) wide and sidewalk width of 11 metres (36'-3" inches) wide. | Alternative 4: Right-of-Way (ROW) width of 11 metres (36'-3" inches) wide and sidewalk width of 11 metres (36'-3" inches) wide. |

| | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|
| ALTERNATIVE #1 CORNER | ALTERNATIVE #1 CORNER | ALTERNATIVE #1 CORNER | ALTERNATIVE #1 CORNER |
|-----------------------|-----------------------|-----------------------|-----------------------|



ALTERNATIVE 1 - PLAN VIEW



ALTERNATIVE 1 - CONCEPTUAL PHOTO



ALTERNATIVE 2 - PLAN VIEW



ALTERNATIVE 2 - CONCEPTUAL PHOTO



ALTERNATIVE 3 - PLAN VIEW



ALTERNATIVE 3 - CONCEPTUAL PHOTO



CAMPBELL CRESCENT DRAINAGE AREA

STREETS INCLUDED:

- Campbell Crescent

TYPES OF FLOODING:

Surface & Basement

ROW TREE IMPACTS:

| | | | |
|--------------------------|------------|------------|-----------|
| Pavement / grading width | 7.2 metres | 9.0 metres | 20 metres |
| Campbell Crescent | 0 | 1 | 17 |

ISSUE:

Hillside Runoff & Insufficient roadway capacity causing flooding on Campbell Crescent

CONSTRAINTS:

- The existing pavement width varies from ~6 to ~7 metres in width
- Mature native and non native hardwoods & conifers within 2 – 3 metres of the existing pavement surface
- Landscaping within the Right of Way in close proximity to the existing pavement
- Existing road cross section and profile grade not conducive to stormwater conveyance

ALTERNATIVES

Alternative # 1; do nothing

The Environmental Assessment process requires that consideration be given to the do nothing option, however geo-technical investigations have determined that the existing pavement structure is sub-standard and road re-surfacing may not be cost effective. Road reconstruction will therefore be required.

| Alternative # 2 | Alternative # 3 | Alternative # 4 |
|--|---|---|
| Reconstruct Campbell to 0.2% longitudinal grade reverse crown with curb & 300 mm sewer, and 825 mm outlet pipe to at 0.2 % to park to convey the 1:100 year flow | Reconstruct Campbell to 0.2% longitudinal grade standard curb and gutter with curb & 300 mm sewer, and 825 mm outlet pipe to at 0.2 % to park to convey the 1:100 year flow | Reconstruct Campbell to 0.2% longitudinal grade shallow curb & 800 mm sewer, and 825 mm outlet pipe to at 0.2 % to park to convey the 1:100 year flow |

| ALTERNATIVE # 2 COST | ALTERNATIVE # 3 COST | ALTERNATIVE # 4 COST |
|----------------------|----------------------|----------------------|
| \$258,080.00 | \$258,080.00 | \$379,180.00 |

Sub-Area #3 - York Valley Crescent Area

HOGG'S HOLLOW - YORK VALLEY CRESCENT

YORK VALLEY & GREEN VALLEY ROAD DRAINAGE AREA

REPORT INCLUDES:

- York Valley Crescent
- Green Valley Road

TYPES OF FLOODING:

Surface & Baseflow

HOW TREE IMPACTS:

| Drainage / Catchment | 1.4 acres | 31.8 acres | 2.0 acres |
|----------------------|-----------|------------|-----------|
| York Valley Crescent | 0 | 19 | 0 |
| Green Valley Road | 0 | 0 | 48 |

NOTES:

The York Valley & Green Valley roadways are currently receiving flooding on York Valley Crescent and Green Valley Road.

CONSIDERATION:

- The existing pavement within a major flow of 4-6 ft major depth.
- Urban surface and new urban landscape of multiple sections 2-3 meters of the existing pavement surface.
- Landscaping within the height of York Valley Crescent to the existing pavement surface.
- Forcing of road surface and grade to be consistent to the surrounding area.

ALTERNATIVES:

Alternative #1 Life saving

The City would like to see a major flow of 4-6 ft major depth. The existing pavement surface and new urban landscape of multiple sections 2-3 meters of the existing pavement surface and road landscaping may not be sufficient. Final construction should be required.

| Alternative #1 | Alternative #2 | Alternative #3 | Alternative #4 |
|----------------------|----------------------|----------------------|----------------------|
| York Valley Crescent | York Valley Crescent | York Valley Crescent | York Valley Crescent |
| Green Valley Road | Green Valley Road | Green Valley Road | Green Valley Road |
| 1.4 acres | 31.8 acres | 2.0 acres | 1.4 acres |
| 0 | 19 | 0 | 0 |
| 0 | 0 | 48 | 0 |



ALTERNATIVE 1 - PLAN VIEW



ALTERNATIVE 1 - CONCEPTUAL PHOTO



ALTERNATIVE 3 - PLAN VIEW



ALTERNATIVE 3 - CONCEPTUAL PHOTO



ALTERNATIVE 4 - PLAN VIEW



ALTERNATIVE 4 - CONCEPTUAL PHOTO



YORK VALLEY & GREEN VALLEY ROAD DRAINAGE AREA

STREET S INCLUDED:

- York Valley Crescent
- Green Valley Road

TYPES OF FLOODING:

Surface & Basement

ROW TREE IMPACTS:

| Pavement / grading width | 7.2 metres | 9.0 metres | 20 metres |
|--------------------------|------------|------------|-----------|
| York Valley Crescent | 0 | 15 | 51 |
| Green Valley Road | 0 | 0 | 46 |

ISSUE:

Hillside Runoff & Insufficient roadway capacity causing flooding on York Valley Crescent and Green Valley Road.

CONSTRAINTS:

- The existing pavement width varies from ~6 to ~8.5 metres in width
- Mature native and non native hardwoods & conifers within 2 – 3 metres of the existing pavement surface
- Landscaping within the Right of Way in close proximity to the existing pavement
- Existing road cross section and profile grade not conducive to storm water conveyance

ALTERNATIVES

Alternative # 1; do nothing

The Environmental Assessment process requires that consideration be given to the do nothing option, however geo-technical investigations have determined that the existing pavement structure is sub-standard and road re-surfacing may not be cost effective. Road reconstruction will therefore be required.

| Alternative # 2 | Alternative # 3 | Alternative # 4 |
|---|---|--|
| Reconstruct York Valley to 0.3% longitudinal grade reverse crown with curb & 900 mm sewer, reconstruct Green Valley to 0.5 % longitudinal grade reverse crown with 750 mm storm sewer | Reconstruct York Valley to 0.3% longitudinal grade standard curb and gutter & 900 mm sewer, reconstruct Green Valley to 0.5 % longitudinal standard curb and gutter with 750 mm storm sewer | Reconstruct York Valley to 0.3% longitudinal grade shallow curb and gutter & 1100 mm sewer, reconstruct Green Valley to 0.5 % longitudinal grade shallow curb and gutter with 975 mm storm sewer |

| ALTERNATIVE #2 COST | ALTERNATIVE #3 COST | ALTERNATIVE # 4 COST |
|---------------------|---------------------|----------------------|
| \$882,065.00 | \$882,065.00 | \$967,615.00 |

DONWOODS DRIVE DRAINAGE AREA

STREETS INCLUDED:

- Donwoods Drive
- Donino Avenue
- Donwoods Grove
- Winton Road
- St Margarets Drive

TYPES OF FLOODING:

Surface & Basement

ROW TREE IMPACT S:

| Pavement / grading width | 7.2 metres | 9.0 metres | 20 metres |
|--------------------------|------------|------------|-----------|
| Donwoods Drive | 2 | 21 | > 100 |
| Donino Avenue | 1 | 6 | >50 |
| Donwoods Grove | 1 | 1 | 16 |
| Winton Road | 0 | 0 | 26 |
| St Margarets Drive | 28 | 31 | 94 |

ISSUE:

Hillside Runoff & Insufficient roadway capacity causing flooding on area roads

CONSTRAINTS:

- The existing pavement width is varies from ~4.5 to ~7 metres in width
- Mature native and non native hardwoods & conifers within 1 - 2 metres of the existing pavement surface
- Landscaping within the Right of Way in close proximity to the existing pavement
- Existing road cross section and profile grade not conducive to stormwater conveyance

ALTERNATIVE S

Alternative # 1; do nothing

The Environmental Assessment process requires that consideration be given to the do nothing option, however geo-technical investigations have determined that the existing pavement structure is sub-standard and road re-surfacing will not be cost effective. Road reconstruction will therefore be required.

| Alternative # 2 | Alternative # 3 | Alternative # 4 |
|--|---|--|
| Reconstruct Donwoods Drive, Donino Avenue, Donwoods Grove, Winton Road, and St Margarets Drive with reverse crown with curb & storm sewer. | Reconstruct Donwoods Drive, Donino Avenue, Donwoods Grove, Winton Road, and St Margarets Drive with shallow curb & storm sewer. | Reconstruct Donwoods Drive, Donino Avenue, Donwoods Grove, Winton Road, and St Margarets Drive with storm storage tanks on Donwoods Grove and Donwoods Drive at St Margarets with reverse crown with curb & storm sewer. |

| ALTERNATIVE # 2 COST | ALTERNATIVE # 3 COST | ALTERNATIVE # 4 COST |
|----------------------|----------------------|----------------------|
| \$ 1,570,044.00 | \$ 1,702,278.00 | \$ 2,053,440.00 |

KNIGHTSWOOD ROAD DRAINAGE AREA

STREETS INCLUDED:

- Knightswood Road
- Forest Glen Crescent
- Doreville Drive

TYPES OF FLOODING:

Surface & Basement

ROW/TREE IMPACTS:

| Pavement / grading width | 7.2 metres | 9.0 metres | 20 metres |
|--------------------------|------------|------------|-----------|
| Knightswood Road | 1 | 9 | 41 |
| Forest Glen Crescent | 0 | 3 | 46 |
| Doreville Drive | 0 | 6 | 27 |

ISSUE:

Major storm runoff from Forest Glen Crescent & Doreville Drive flows flow onto the Golf Course property; runoff from the Golf Course potentially aggravates flooding on Knightswood Road, particularly along Knightswood experiences flooding due to insufficient storm conveyance capacity.

CONSTRAINTS:

- The existing pavement width is typically 5.5 to 6.5 metres in width
- A significant upstream drainage area potentially flows onto Knightswood Road
- Mature native and non-native hardwoods & conifers within 3-4 metres of the existing pavement surface
- Lot grading below the roadway elevation
- Landscaping within the Right of Way in close proximity to the existing pavement
- Existing road cross section and profile grade not conducive to storm water conveyance

ALTERNATIVES

Alternative # 1; do nothing

The Environmental Assessment process requires that consideration be given to the do nothing option, however geo-technical investigations have determined that the existing pavement structure is insufficient on Knightswood for road re-surfacing to be cost-effective, and sub-standard on Forest Glen and Doreville Road reconstruction will therefore be required.

| Alternative #2 | Alternative #3 | Alternative #4 |
|--|--|---|
| Reconstruct Forest Glen & Doreville to shallow curb at 2.5% minimum, plus 450 mm sewer Provide ~ 96m ³ (67 m of 1350 mm dia.) storage tank on Mount Pleasant between Forest Glen Crescent & Doreville Drive to restrict flow into Golf Course drainage system. Minor banking within golf course to prevent spill onto residential streets. Reconstruct Knightswood to 0.5 % minimum Doreville Drive to flow with shallow curb plus 450 mm sewer at 0.5% min. | Reconstruct Forest Glen & Doreville to shallow curb at 2.5% minimum, plus 450 mm sewer Provide ~ 300m ³ (~ 100 m of twin 1000 mm dia.) infiltration - storage tank on Mount Pleasant between Forest Glen Crescent & Doreville Drive to restrict flow into Golf Course Reconstruct Knightswood to 0.5 % minimum Doreville Drive to flow with shallow curb plus 900 mm sewer at 0.5% min. | Reconstruct Forest Glen & Doreville to reverse crown shallow curb at 2.5% minimum, plus 300 mm sewer Provide ~ 390m ³ (~ 100 m of twin 1300 mm dia.) infiltration - storage tank on Mount Pleasant between Forest Glen Crescent & Doreville Drive to restrict flow into Golf Course. Reconstruct Knightswood to 0.5 % minimum Doreville Drive to flow with reverse crown shallow curb plus 600 mm sewer at 0.5% min. |

| ALTERNATIVE #2 COST | ALTERNATIVE #3 COST | ALTERNATIVE #4 COST |
|---------------------|---------------------|---------------------|
| \$ 980,200.00 | \$ 934,120.00 | \$ 844,200.00 |

Sub-Area #6 - Plymbridge Road & Maytree Road Area

HOGG'S HOLLOW - PLYMBRIDGE ROAD

PLYMBRIDGE ROAD DRAINAGE AREA

STREETS INCLUDED:

- 1) Plymbridge Road
- 1) Plymbridge Crescent
- 1) Brookfield Road

TYPES OF BUILDINGS:

- Residential
- Service & Basement

HOW TREE IMPACTS:

| | | | |
|--------------------------|------------|------------|-------------|
| Pavement / grading width | 7.2 meters | 0.1 meters | 21.0 meters |
| Plymbridge Road | 0 | 0 | ~40 |
| Plymbridge Crescent | 0 | 0 | 40 |
| Brookfield Road | 0 | 1 | 25 |

ISSUE:

Install, Guard & handle/over roadway capacity causing flooding on Plymbridge Road, Plymbridge Crescent, and Brookfield Road.

CONSTRAINTS:

- 1) The existing pavement width varies from ~5 to ~9 meters in width.
- 1) Major utility and semi utility handovers & crossings within 2 - 3 meters of the existing pavement surface.
- 1) Lot grading below the roadway elevation.
- 1) Landscaping within the Right of Way in close proximity to the existing pavement.
- 1) Existing road cross section and profile grade not conducive to storm water conveyance.

ALTERNATIVES:

Alternative #1: do nothing
 The Environmental Assessment process requires that consideration be given to the do nothing option, however geo-technical investigations have identified that the existing pavement structure is insufficient for road re-surfacing to be cost effective. Road reconstruction will therefore be required.

| Alternative # 2 | Alternative # 3 | Alternative # 4 |
|--|--|---|
| Reconstruct Plymbridge Road to 10.0 meters wide with a 1.00 m wide storm sewer, install 1100 mm diameter curb at low point with 600 mm sewer from trunk to storm sewer at Brookfield Road to reverse crown with 300 mm brookfield to reverse crown with shallow curb with 675 mm sewer | Reconstruct Plymbridge Road to 10.0 meters wide with a 1.00 m wide storm sewer, install 1100 mm diameter curb at low point with 600 mm sewer from trunk to storm sewer at Brookfield Road to reverse crown with 300 mm brookfield to reverse crown with shallow curb with 675 mm sewer | Reconstruct Plymbridge Road to 10.0 meters wide with a 1.00 m wide storm sewer, install 1100 mm diameter curb at low point with 600 mm sewer from trunk to storm sewer at Brookfield Road to reverse crown with 300 mm brookfield to reverse crown with shallow curb with 1100 mm sewer |

| | | |
|----------------------|----------------------|----------------------|
| ALTERNATIVE #1 COST: | ALTERNATIVE #3 COST: | ALTERNATIVE #4 COST: |
| \$ 1,038,000.00 | \$ 1,210,850.00 | \$ 1,244,450.00 |



ALTERNATIVE 2 - PLAN VIEW



ALTERNATIVE 2 - CONCEPTUAL PHOTO



ALTERNATIVE 3 - PLAN VIEW



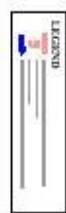
ALTERNATIVE 3 - CONCEPTUAL PHOTO



ALTERNATIVE 4 - PLAN VIEW



ALTERNATIVE 4 - CONCEPTUAL PHOTO



PLYMBRIDGE ROAD DRAINAGE AREA

STREETS INCLUDED:

- Plymbridge Road
- Plymbridge Crescent
- Brookfield Road

TYPES OF FLOODING:

Surface & Basement

ROW TREE IMPACTS:

| Pavement / grading width | 7.2 metres | 9.0 metres | 20 metres |
|--------------------------|------------|------------|-----------|
| Plymbridge Road | 0 | 7 | >40 |
| Plymbridge Crescent | 0 | 0 | 40 |
| Brookfield Road | 0 | 1 | 22 |

ISSUE:

Hillside Runoff & Insufficient roadway capacity causing flooding on Plymbridge Road, Plymbridge Crescent, and Brookfield Road.

CONSTRAINTS:

- The existing pavement width is varies from ~5 to ~8 metres in width
- Mature native and non native hardwoods & conifers within 2 – 3 metres of the existing pavement surface
- Lot grading below the roadway elevation
- Landscaping within the Right of Way in close proximity to the existing pavement
- Existing road cross section and profile grade not conducive to storm water conveyance

ALTERNATIVES

Alternative # 1; do nothing

The Environmental Assessment process requires that consideration be given to the do nothing option, however geo-technical investigations have determined that the existing pavement structure is insufficient on for road re-surfacing to be cost effective. Road reconstruction will therefore be required.

| Alternative # 2 | Alternative # 3 | Alternative # 4 |
|---|---|---|
| Reconstruct Plymbridge Road to reverse crown with curb & 300 mm sewer, install 110 m ³ storm detention tank at low point with 600 mm sewer from tank to River, reconstruct Plymbridge Crescent to reverse crown with 300 mm storm sewer & Reconstruct Brookfield to reverse crown with shallow with 975 mm sewer | Reconstruct Plymbridge Road to shallow curb & 675 mm sewer, install 110 m ³ storm detention tank at low point with 600 mm sewer from tank to River, reconstruct Plymbridge Crescent to shallow curb & 675 mm storm sewer & Reconstruct Brookfield to shallow curb with 1100 mm sewer | Reconstruct Plymbridge Road to shallow curb with 750 mm sewer to River, reconstruct Plymbridge Crescent to shallow curb with 675 mm storm sewer & Reconstruct Brookfield to shallow curb with 1100 mm sewer |

| ALTERNATIVE # 2 COST | ALTERNATIVE # 3 COST | ALTERNATIVE # 4 COST |
|----------------------|----------------------|----------------------|
| \$ 1,018,809.00 | \$ 1,210,829.00 | \$ 1,124,424.00 |

HOGG'S HOLLOW - MAYTREE ROAD

MAYTREE ROADWAY AREA

EFFECTS/IMPACTS:

- Maytree Road
- Maytree Road

TYPE OF FLOODED:

- Surface Water

HOW TREE IMPACTS:

| Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 |
|---------------|---------------|---------------|---------------|
| 1 | 2 | 3 | 4 |

NOTES:

Highly sensitive area including Maytree Road, located near the existing Maytree Road and Green Valley

CONSIDERATIONS:

- The existing ground surface is highly sensitive
- A large amount of water may be lost to the ground
- The existing ground surface is highly sensitive
- The existing ground surface is highly sensitive
- The existing ground surface is highly sensitive

ALTERNATIVES:

Alternative 1 - No action

The proposed development project requires that construction be limited to the existing ground surface. However, it is noted that the existing ground surface is highly sensitive and may require additional measures to be implemented.

| Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 |
|---------------|---------------|---------------|---------------|
| 1 | 2 | 3 | 4 |

ALTERNATIVE 2 - PLAN VIEW



ALTERNATIVE 2 - CONCEPTUAL PHOTO



ALTERNATIVE 3 - PLAN VIEW



ALTERNATIVE 3 - CONCEPTUAL PHOTO



ALTERNATIVE 4 - PLAN VIEW



ALTERNATIVE 4 - CONCEPTUAL PHOTO



MAYTREE DRAINAGE AREA

STREETS INCLUDED:

- Maytree Road
- Plymbridge Road

TYPES OF FLOODING:

Surface & Basement

ROW TREE IMPACTS:

| Pavement / grading width | 7.2 metres | 9.0 metres | 20 metres |
|--------------------------|------------|------------|-----------|
| Maytree | 0 | 2 | 33 |
| Plymbridge Road | 0 | 5 | > 40 |

ISSUE:

Significant upstream area draining Maytree, insufficient capacity causing flooding on Maytree, Plymbridge and Green Valley

CONSTRAINTS:

- The existing pavement width is typically 6.5 to 7 metres in width
- A large upstream drainage area flows into Maytree Road
- Numerous mature native and non native hardwoods & conifers within 3-4 metres of the existing pavement surface
- Lot grading below the roadway elevation
- Landscaping within the Right of Way in close proximity to the existing pavement
- Existing road cross section and profile grade not conducive to stormwater conveyance

ALTERNATIVES

Alternative # 1; do nothing

The Environmental Assessment process requires that consideration be given to the do nothing option, however geo-technical investigations have determined that the existing pavement structure is insufficient for road re-surfacing to be cost effective; road reconstruction will therefore be required.

| Alternative # 2 | Alternative # 3 | Alternative # 4 |
|--|--|---|
| Reconstruct Plymbridge Road to Maytree to reverse crown with curb @ 0.2% min. longitudinal grade & Reconstruct Maytree from top to River to 0.75 % min. longitudinal slope reverse crown with curb to provide conveyance | Reconstruct Plymbridge Road to Maytree to shallow curb @ 0.2% min. longitudinal grade & Reconstruct Maytree from top to River to 0.75 % min. longitudinal slope shallow curb to provide conveyance | Reconstruct Plymbridge Road to Maytree to no curb with outside swale @ 0.2% min. longitudinal grade & Reconstruct Maytree from top to River to 0.75 % min. longitudinal slope to no curb with outside swale |
| Install smaller diameter storm sewer convey balance of 1:100 year flow | Install larger storm sewer to convey balance of 1:100 year flow | Install larger storm sewer to convey entire 1:100 year flow |
| ALTERNATIVE # 2 COST | ALTERNATIVE # 3 COST | ALTERNATIVE # 4 COST |
| \$ 513,625.00 | \$ 605,520.00 | \$ 696,215.00 |

HSMRI OH#3 – Break-Out Groups

| | <u>Drainage Area Designation</u> | <u>Facilitator</u> | <u>Technical Staff</u> |
|----|---------------------------------------|-------------------------|------------------------|
| 1) | Donino Avenue | Liora Zion Burton | Brian Worsley |
| 2) | Campbell Crescent | David Nagler | Bill Snodgrass |
| 3) | York Valley Crescent | Uwe Mader | Penelope Palmer |
| 4) | Donwoods Drive | Ann Marie Weselan | Samuel Jebakumar |
| 5) | Knightswood Road & Doncliffe Drive | Jim Simpson | Les Arishenkof |
| 6) | Plymbridge Road & Maytree Road | Christine Iamonaco-Dagg | Jim Weir |

Break-Out Group #1 – Donino Avenue Drainage Area

Facilitator: Liora Zion Burton

Technical Staff: Brian Worsley

of Area Residents: 6

1. Suggested Alternatives:

- Reverse Crown with Shallow Curb, Small Storm Sewer
- Conventional Crown with Shallow Curb, Large Storm Sewer
- Reverse Crown with Shallow Curb, Underground Storage Tank and Large Outlet Sewer
- Do Nothing

2a. Focus Question: *What do you like about each alternative?*

Reverse Crown: greater stormwater carrying capacity;
less tendency for blockage by leaves;
reduced ice/puddles at roadway sides.

Conventional Crown: easier maintenance

2b. Focus Question: *What do you dislike about each alternative?*

Reverse Crown: water/ice accumulation in the roadway; maintenance difficulties

Conventional Crown: blockage of drains by leaves

2c. Focus Question: *Should another Alternative be considered?*

Reverse Crown option with roadway narrower than 7.5 meters (e.g.: 6.5 metres).

(*Brian Worsley:* this provides reduced room for road-side parking.)

2d. Focus Question: *Which alternative do you prefer?*

Residents in favour of Reverse Crown cross-section: 2

Residents in favour of Conventional Crown cross-section: 3

3. Alternative Suggestions from Group Participants

Drainage grates in the roadway with opening running perpendicular to the direction of travel.

(*Brian Worsley:* this provides limited water drainage capacity and is susceptible to blockage by frost.)

4. Other Comments

The two Reverse Crown options were viewed as alike from an appearance point-of-view, and were discussed as a single Alternative.

There was split opinion on the 'Do Nothing' Alternative: Donino Court and Donino Avenue representatives, where flooding occurs, were adamantly against it; Ivor Road and Donwoods Drive residents, on higher ground and largely not afflicted with flooding, were in favour of it.

Can remedial action (road and sewer works) be limited in scope to those areas experiencing flooding?

Break-Out Group #1 – Donino Avenue Drainage Area

5. Consensus Points

Work should be prioritized into areas experiencing flooding and drainage problems. Unaffected area should be given a low priority, or no work done at all.

The Selected Alternative should be the least disruptive possible to the current character of the area: no sidewalks; no curbs, or lowest/shallowest possible curbs needed for stormwater management; and, maintaining the road surface and right-of-way use as narrow in width as possible.

Break-Out Group #2 – Campbell Crescent Drainage Area

Facilitator: David Nagler

Technical Staff: Bill Snodgrass

of Area Residents: 2

1. Suggested Alternatives:

- Reverse Crown with Curb, Small Storm Sewer
- Conventional Crown with Standard Curb and Gutter, Small Storm Sewer
- Conventional Crown with Shallow Curb, Large Storm Sewer
- Do Nothing

2a. Focus Question: *What do you like about each alternative?*

Reverse Crown with Curb, Small Storm Sewer:

- best drainage in centre of road
- no loss of roadside greenery
- retains existing sidewalk on west side of road
- “everything”

2b. Focus Question: *What do you dislike about each alternative?*

Conventional Cross-Section with Standard Curb and Gutter, Small Storm Sewer:

- drainage at side of roadway
- curbs remove “rural” aspect of area and interfere with “70-year old bushes”

Conventional Cross-Section with Shallow Curb, Large Storm Sewer:

- “illogical”; majority of drainage originates on east side of roadway
- large storm sewer

2c. Focus Question: *Should another Alternative be considered?*

None suggested.

2d. Focus Question: *Which alternative do you prefer?*

Reverse Crown with Curb, Small Storm Sewer

3. Alternative Suggestions from Group Participants

None provided.

4. Other Comments

Currently, flooding occurs in basements and at ground level on the west side of the street.

*“At the eastern ridge of Campbell Crescent (no address was given) there exists a grate which is connected with a large pipe to the ditch in front of the property. Water collecting in the grate runs through the underground pipe, through the ditch to the culvert in front of **7 Campbell Crescent**. It proceeds underneath the road between the houses on the west side of Campbell Crescent over land in the park and into the West Don River”*

(Dave Maunder: This information may be unknown to City staff.)

5. Consensus Points

Preserve existing “half sidewalk” along west side of Campbell Crescent.

Losing trees is “unacceptable.”

Break-Out Group #3 – York Valley Crescent Drainage Area

Facilitator: Uwe Mader

Technical Staff: Penelope Palmer

of Area Residents: 3

1. Suggested Alternatives:

- Reverse Crown with Curb
- Conventional Crown with Standard Curb and Gutter
- Conventional Crown with Shallow Curb, Larger Storm Sewer
- Do Nothing

2a. Focus Question: *What do you like about each alternative?*

Reverse Crown with Curb, Small Storm Sewer:

- keeps side of road dry
- “neat” (aesthetics)
- 3-inch curb

Conventional Cross-Section with Standard Curb and Gutter

- better street cleaning/maintenance (than reverse crown)

Conventional Cross-Section with Shallow Curb, Larger Storm Sewer

- better street cleaning/maintenance (than reverse crown)

2b. Focus Question: *What do you dislike about each alternative?*

Do Nothing is “unacceptable”

Reverse Crown with Curb, Small Storm Sewer:

- may make Operations and Maintenance difficult

Conventional Cross-Section with Standard Curb and Gutter

- the high curb

2c. Focus Question: *Should another Alternative be considered?*

None suggested.

2d. Focus Question: *Which alternative do you prefer?*

| | |
|--|---|
| Do Nothing: | 0 |
| Reverse Crown with Curb, Small Storm Sewer: | 1 |
| Conventional Cross-Section with Standard Curb and Gutter | 2 |
| Conventional Cross-Section with Shallow Curb, Larger Storm Sewer | 3 |

3. Alternative Suggestions from Group Participants

None provided.

4. Other Comments

Do not remove any trees!

“Anything that can make the road safer – especially in winter – is preferable.”

The catch basin in front of brick wall on Picture #74 is, “always blocked with leaves.”

There is flooding in front yard of 5 Green Valley Road, “whenever it rains.”

Mixed opinions on sidewalks (pro: 1; con: 1; “other side of street”: 1)

Break-Out Group #3 – York Valley Crescent Drainage Area

5. Consensus Points

Do Nothing is “unacceptable”

Break-Out Group #4 – Donwoods Drive Drainage Area

Facilitator: Ann Marie Weselan

Technical Staff: Samuel Jebakumar

of Area Residents: ~15

1. Suggested Alternatives:

- Reverse Crown with Shallow Curb and Gutter
- Conventional Cross-Section with Shallow Curb and Gutter
- Reverse Crown with Shallow Curb and Gutter, 2 Underground Storage Tanks
- Do Nothing

2a. Focus Question: *What do you like about each alternative?*

No response provided.

2b. Focus Question: *What do you dislike about each alternative?*

Reverse Crown with Shallow Curb and Gutter: “doesn’t look nice”

2c. Focus Question: *Should another Alternative be considered?*

None suggested.

2d. Focus Question: *Which alternative do you prefer?*

Consensus on Conventional Cross-Section with Shallow Curb and Gutter

3. Alternative Suggestions from Group Participants

Consideration should be given to an Alternative with swales or ditches rather than curbs.

(*Samuel Jebakumar:* This configuration would not convey sufficient stormwater during major events, and would result in the removal of trees within the right-of-way.)

4. Other Comments

Only a few participants indicated experiencing flooding problems.

Preference expressed for “bumpy texture” of existing roads as a traffic calming measure.

Curbs might help alleviate damage to lawns and roadway edges from frequent heavy truck traffic in the area due to house (re)construction and landscaping.

| | | |
|------------------------------|---------|---------|
| Preferences regarding curbs: | No | 7 votes |
| | Shallow | 7 votes |
| | Full | 0 votes |

Keep St. Margaret’s Drive as narrow as possible to minimize tree loss.

5. Consensus Points

Avoid, or minimize as much as possible, removal of trees in the right-of-way.

NO sidewalks.

Direct stormwater “underground” rather than onto the roadway.

Preferred Alternative: Conventional Cross-Section with Shallow Curb and Gutter

Break-Out Group #5 – Kingtswood Road Drainage Area

Facilitator: Jim Simpson

Technical Staff: Les Arishenkoff

of Area Residents: 6

1. Suggested Alternatives:

- Conventional Crown with Shallow Curb, Small Storm Sewer
- Conventional Crown with Shallow Curb, Large Storm Sewer
- Reverse Crown with Shallow Curb
- Do Nothing

2a. Focus Question: *What do you like about each alternative?*

No response provided.

2b. Focus Question: *What do you dislike about each alternative?*

Reverse Crown with Shallow Curb: unacceptable since Doncliffe Drive joins area arterial roadways.

2c. Focus Question: *Should another Alternative be considered?*

None suggested.

2d. Focus Question: *Which alternative do you prefer?*

The participants identified two distinct, different sub-areas within this Drainage Area – one centred around Knightswood Road to the east, and the other centred around Doncliffe Drive to the west.

Knightswood Road sub-area

Strong preference expressed for the “Do Nothing” Alternative. In the alternative, a “reverse crown with no curbs and large sewer” might be acceptable.

Doncliffe Drive sub-area

Preference expressed for “Conventional Crown with Shallow Curb, Large Storm Sewer” Alternative.

3. Alternative Suggestions from Group Participants

None provided.

4. Other Comments

The participants identified two distinct, different sub-areas within this Drainage Area – one centred around Knightswood Road to the east, and the other centred around Doncliffe Drive to the west.

Knightswood Road sub-area

Participants were predominantly residents on the south side of the road, abutting the Rosedale Golf Club. They repeatedly stressed they had no history of flooding problems. In their opinion, any flooding that does occur is a local problem, and should be rectified by the affected property owner.

A resident of 30 Knightswood Road attested to occasional basement and surface flooding.

Comment was repeatedly offered that the consultants’ analyses of flooding problems in this sub-area of the Drainage Area was inaccurate, and that there had been little or no communication by the Study Team with the sub-area residents/property owners (in attendance).

Break-Out Group #5 – Knightswood Road Drainage Area

Doncliffe Drive sub-area

Residents indicated the current roadway is “old and crumbling” and has no curbs. They reported frequent clogging of sewer grates due to silt from erosion of unprotected roadside vegetated areas.

Leave existing sidewalk in situ (q.v. photo #97), with existing trees remaining untouched in a boulevard between the sidewalk and the roadway.

5. Consensus Points

There are two distinct, different sub-areas within this Drainage Area– one to the east centred around Knightswood Road, and the other centred around Doncliffe Drive to the west.

Break-Out Group #6 – Plymbridge Road / Maytree Road Drainage Area

Facilitator: Christine Iamonaco-Dagg

Technical Staff: Jim Weir

of Area Residents: ~10

1. Suggested Alternatives:

Plymbridge Road Sub-Area

- Reverse Crown with Shallow Curb, Storage Tank, Large Storm Sewer Outlet
- Conventional Crown with Shallow Curb, Storage Tank, Large Storm Sewer Outlet
- Conventional Crown with Shallow Curb, Large Storm Outlet Sewer
- Do Nothing

Maytree Road Sub-Area

- Reverse Crown with Shallow Curb, Small Storm Sewer
- Conventional Crown with Shallow Curb, Large Storm Sewer
- Conventional Crown with Swale (No Curb), Large Storm Sewer
- Do Nothing

2a. Focus Question: *What do you like about each alternative?*

No response provided.

2b. Focus Question: *What do you dislike about each alternative?*

No response provided.

2c. Focus Question: *Should another Alternative be considered?*

Reverse-crown cross-section without a curb.

2d. Focus Question: *Which alternative do you prefer?*

Broadest preference was for the Do Nothing Alternative.

If that were not possible, the general preferences were for:

- no curb, or, if absolutely necessary, a shallow curb; and,
- a reverse crown cross-section.

3. Alternative Suggestions from Group Participants

None provided.

4. Other Comments

No clear consensus regarding sidewalks

(rationales offered: "pro/yes" – enhanced safety; "con/no" – preserve country-like aesthetic)

Sidewalks already present near 55 Plymbridge Road.

Flooding at 34 Plymbridge Crescent could easily be addressed by installing a culvert.

Following the roadwork, property-owners should be given top-soil to re-build their front yards to the level they were prior to damage caused by erosion.

Considering "texturing" of pavement finishes so the asphalt does not look "too new" and the "country look" of the area is retained.

Break-Out Group #6 – Plymbridge Road / Maytree Road Drainage Area

Include contact information for Ann Marie Weselan with the Summary Notes so that further information regarding the “no sidewalk” petition process can be accessed.

Traffic Calming measures are much needed.

- (– intersection of Plymbridge Road and Plymbridge Crescent
- (– along Brookfield Road
- (– near 54-58 Plymbridge Road
- (– near 25-29 Plymbridge Road

5. Consensus Points

None noted.