THORNHILL STORM DRAINAGE IMPROVEMENT STUDY

Municipal Class Environmental Assessment

WELCOME TO THE PUBLIC INFORMATION CENTRE #2

Tuesday, December 11TH, 2007

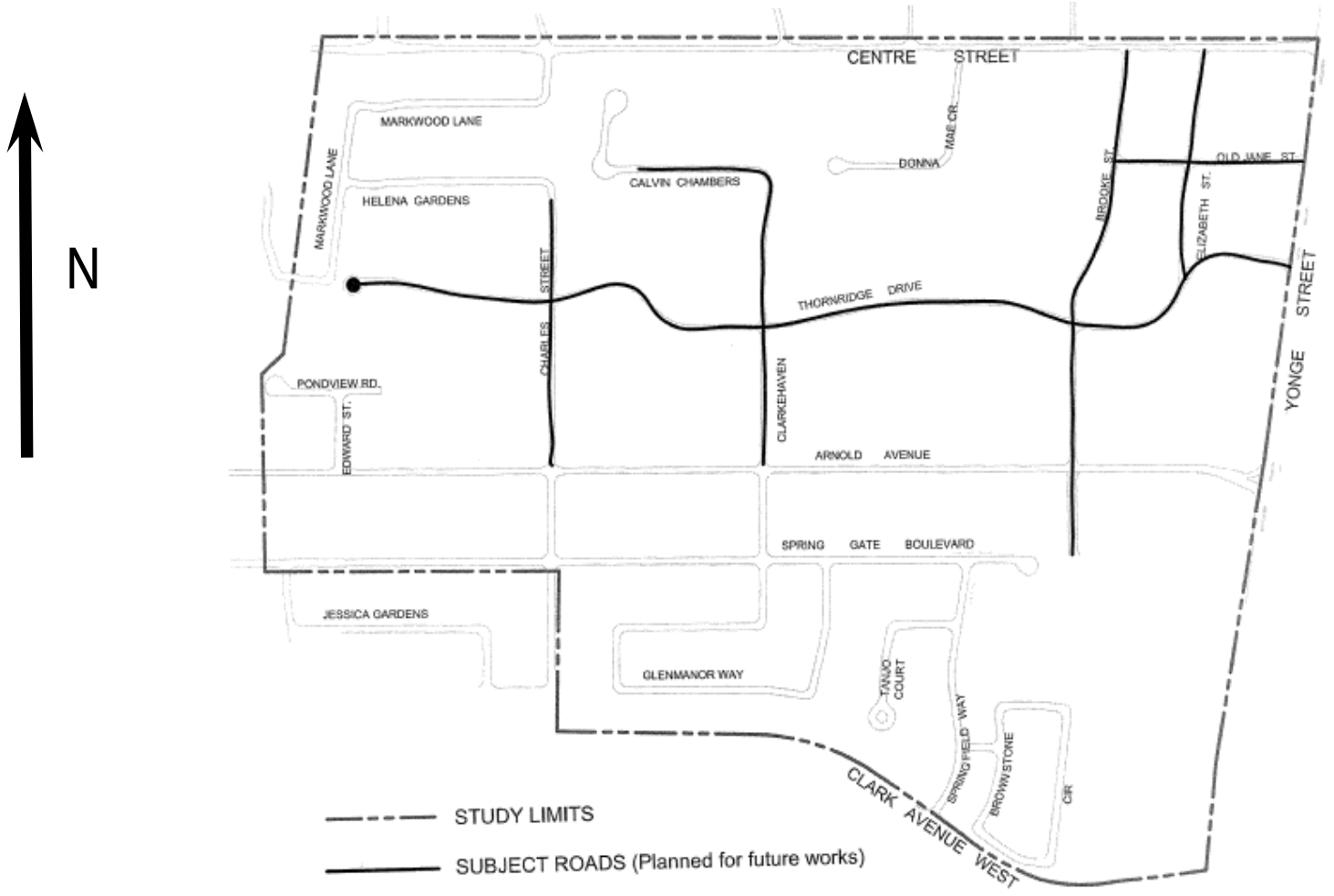
Agenda

7:00 – 8:15 PM	Open House and Formal Presentation by Consultant Team	Overview of the Study purpose, objectives, background info, Class EA process and work completed including presentation of the Preliminary Preferred Solution.
8:15 – 9:00 PM	Open Forum and Individual Discussion	Please circulate around the room, view the displays and speak to City staff & members of Consultant Team.

Presentation Overview

- PROBLEM STATEMENT
- STUDY OBJECTIVES
- CLASS ENVIRONMENTAL ASSESSMENT PROCESS
- BACKGROUND
- PUBLIC INFORMATION CENTRE #1
- PROBLEM AREAS
- DEVELOP AND EVALUATE ALTERNATIVE SOLUTIONS
- PRELIMINARY PREFERRED SOLUTION
- QUESTIONS

Study Area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CENTRE STREET
MARKWOOD LANE
MARKWOOD LANE
HELENA GARDENS
CALVIN CHAMBERS
DONNA
MAE CR.
BROOKE ST.
OLD JANE ST.
ELIZABETH ST.
CHARLES STREET
THORNRIDGE DRIVE
CLARKEHAVEN
YONGE STREET
PONDVIEW RD.
EDWARD ST.
ARNOLD AVENUE
SPRING GATE BOULEVARD
JESSICA GARDENS
GLENMANOR WAY
TANJO COURT
SPRINGFIELD WAY
BROWNSTONE CIR
CLARK AVENUE WEST
STUDY LIMITS
SUBJECT ROADS (Planned for future works)

Problem Statement

Recurring Surface Flooding and Road Overtopping within the Study Area during Heavy Storm Conditions.

City of Vaughan plans to reconstruct some of the local roads and needs a drainage and stormwater management plan to enable road reconstruction.

Study Objectives

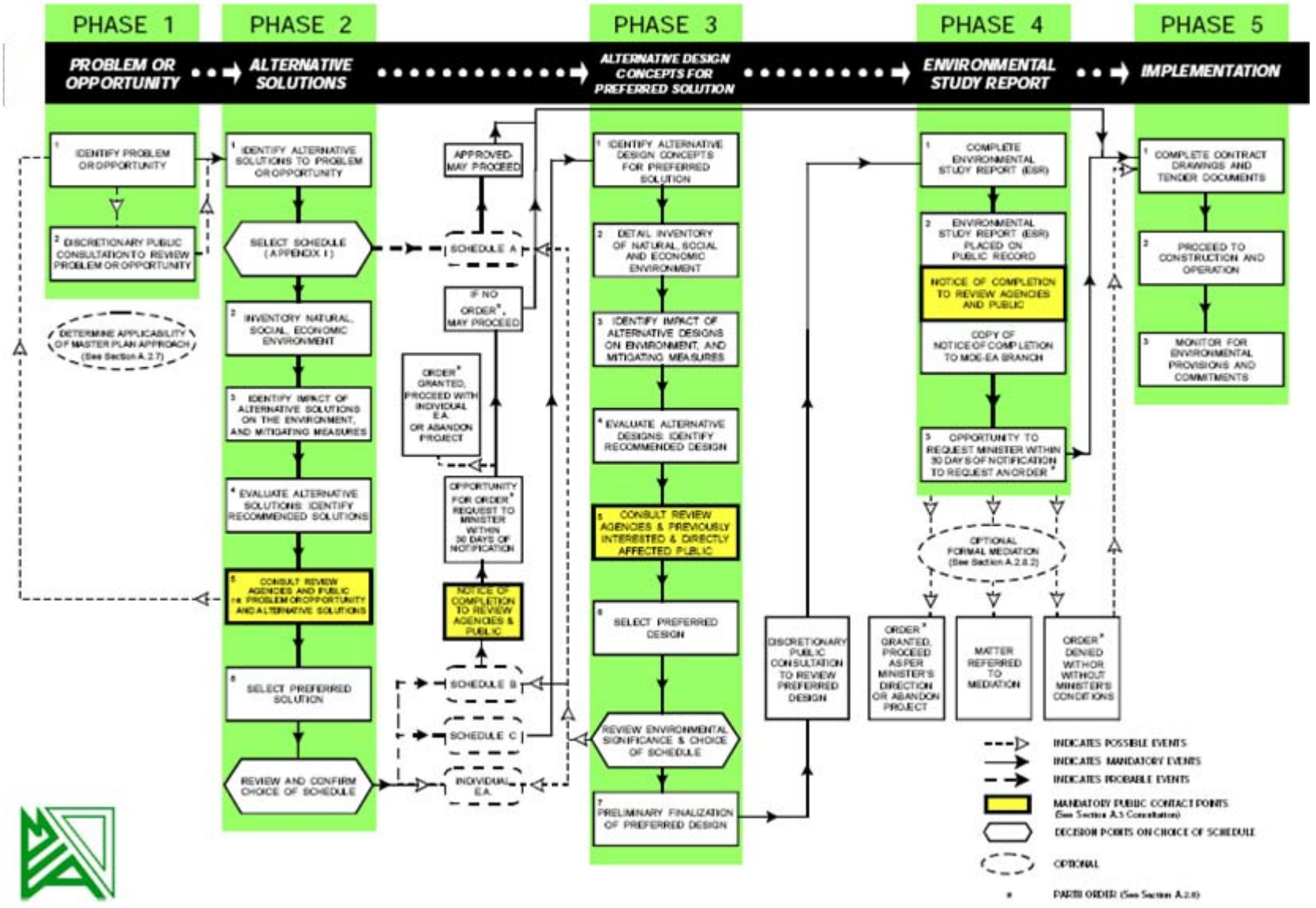
The primary objectives of the Study are to:

- Identify historical and potential surface flooding and road overtopping problems
- Assess adequacy of existing drainage system
- Determine causes of surface flooding and road overtopping
- Evaluate and develop Stormwater Management Plan alternatives
- Select Preliminary Preferred Stormwater Management Plan

Overview – Class Environmental Assessment Process

- The *Municipal Class EA process* enables the planning of municipal infrastructure projects in accordance with a proven procedure for the protection of the environment.
- The Study is being undertaken in accordance with the planning and design process for a Schedule 'B' project (see flow chart).
- The Schedule 'B' Class EA process includes public and review agency consultation, an evaluation of alternatives, an assessment of the effects on the environment and identification of reasonable measures to mitigate any adverse effects.

Municipal Class EA Planning & Design Process



Drainage Patterns

There are 3 main drainage courses within the study area:

➢ ***Drainage Course #1:*** **Serves the north portion of the study area.**

- **starts at stormwater management pond at westerly end of Thornridge Dr.**
- **flows easterly, then northerly through private property and conveyed under City roads through culverts**
- **flows through culvert under Centre Street just east of Oakbank Rd, then flows easterly within north side Centre St road ditch**
- **crosses under Centre St and flows easterly through private property to an existing underground box culvert near Old Jane St and Yonge St.**

Drainage Pattern

➢***Drainage Course #2:*** **Serves south west and middle portions of study area.**

- **starts from south side Arnold Ave road ditch and crosses through culvert to north side road ditch (west of Charles St) then flows easterly within north side road ditch**
- **easterly through private property, conveyed under City roads through culverts, then flows south east through private property towards Brooke St north of Arnold Ave.**
- **ditch inlet catch basin located on west side of Brooke St partially captures flow and conveys it in a large trunk storm sewer under Brooke St.**
- **major storm flows overtop Brooke St and flood area east of Brooke St.**
- **overland flows eventually drain to a storm sewer that crosses Yonge St.**

Drainage Pattern

Drainage Course #3: **Serves the south portion of the study area.**

- **starts from south side road ditch of Arnold Ave. near Charles St.**
- **flows easterly within south side ditch of Arnold Ave.**
- **ditch inlet catch basins located at south west corner of Brooke St and Arnold Ave. intersection receives ditch flow and discharges to trunk sewer under Brooke St.**

Tasks Completed To Date

The following tasks have been completed:

- Notice of Study Commencement
- Background information collected and reviewed
- Preliminary field investigations
- Preliminary hydrologic analysis to calculate flows at key locations for various design storm events
- Preliminary hydraulic analysis to assess adequacy of key drainage elements
- Identified “Problem Areas ”
- Developed/evaluated alternative solutions
- Selected preliminary preferred solution

Drainage Course #1:

No deficiencies in drainage capacity associated with City of Vaughan municipal infrastructure were identified along Drainage Course #1.

Some municipal road culverts should be replaced at time of road reconstruction due to poor condition.

Some complaints from individual property owners regarding re-development and re-grading on private properties that directs runoff onto adjacent properties

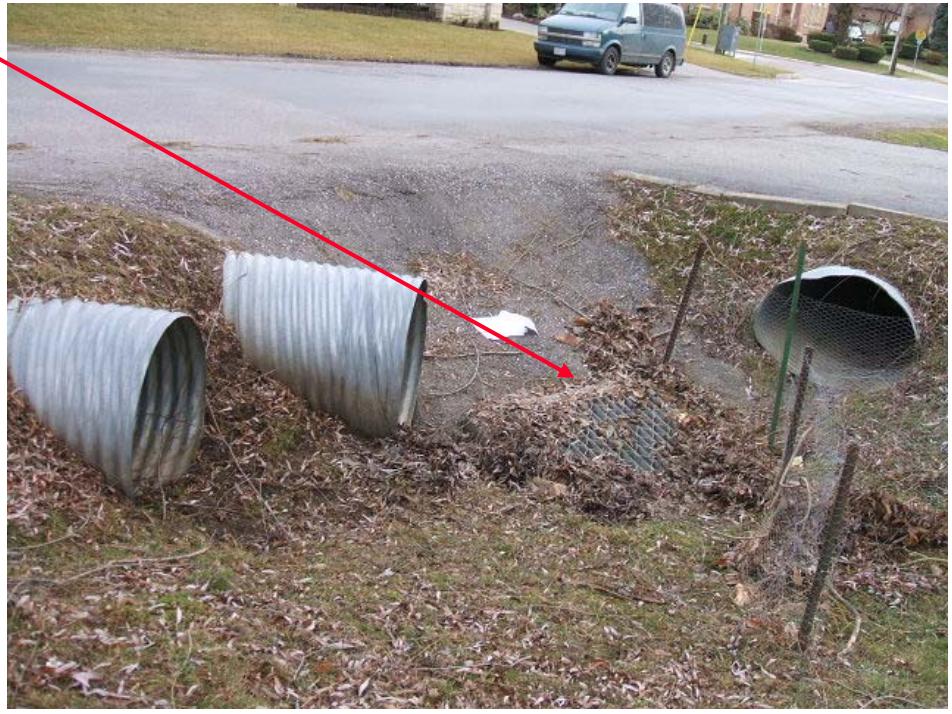
Drainage Course #2:

Problem Area 1: **Existing driveway culvert at 132 Arnold Street is undersized (600mm CSP).**

Drainage Course #2 (cont.):

Problem Area 2: **Ditch inlet and storm sewer connection in front of 36 Brooke St have inadequate capacity to capture and convey major storm events.**

Ditch inlet is connected to Brooke St. trunk storm sewer, which becomes severely surcharged during major storm events



Drainage Course #2 (cont.):

Problem Area 3: **discontinuous overland flow route downstream from Brooke St.**

Problem Area 4: **discontinuous overland flow route between 23 and 27 Thornridge Dr.**

Drainage Course #2 (cont.):

Problem Area 5: **Existing culvert (450mm CSP) at the north side of Elizabeth St. and Thornridge Dr. intersection in poor condition and completely deformed.**

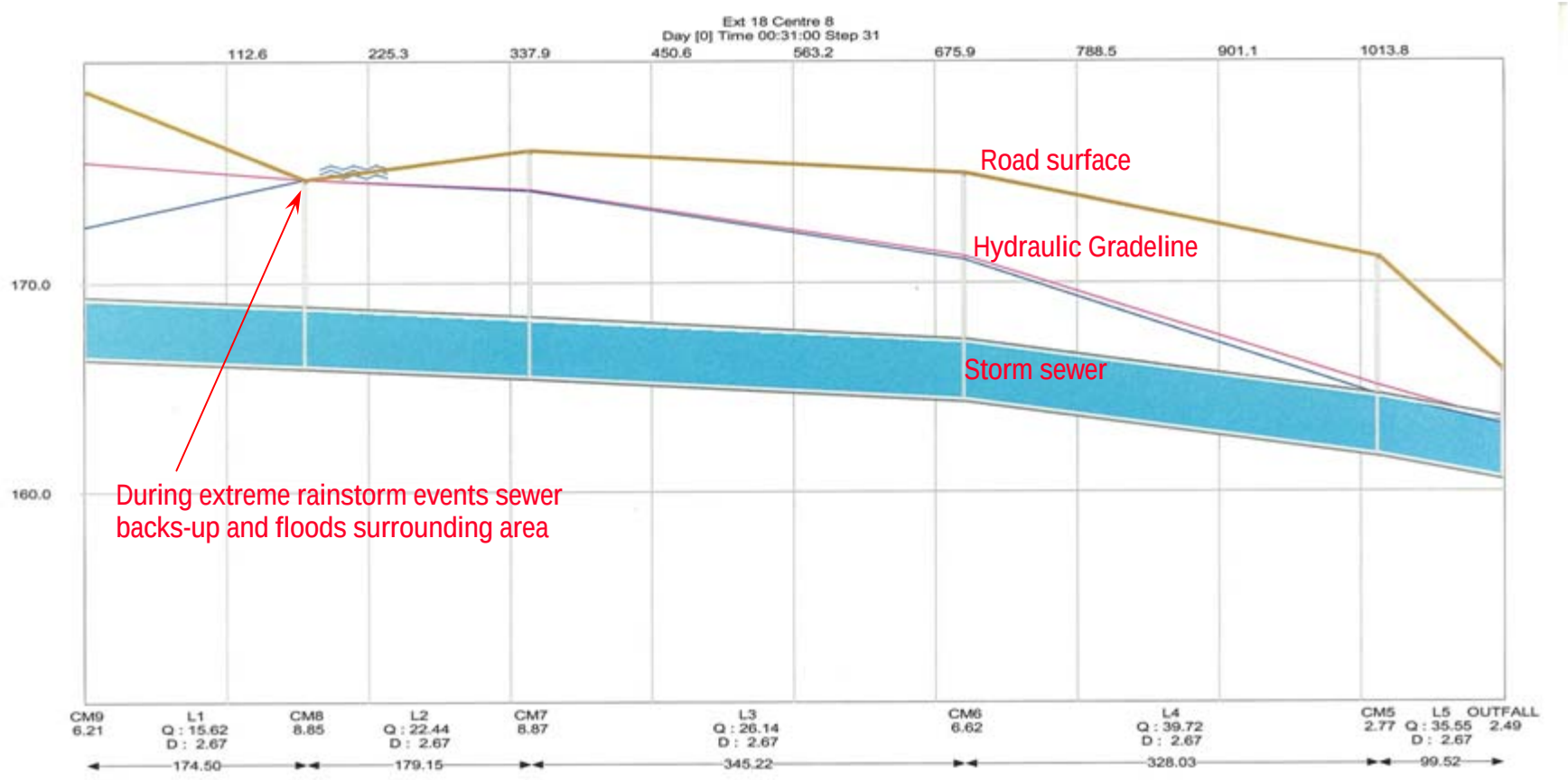
Drainage Course #2 (cont.):

Problem Area 6: **Existing culvert crossing Thornridge Dr. in poor condition and restricts flow. Entrance culvert just downstream of crossing culvert is undersized (300mm CSP).**

Drainage Course #3:

Problem Area 7: **Existing ditch inlet catch basins and storm sewer connection to the trunk storm sewer do not have adequate capacity to convey major storm events (SW corner of Brooke St. and Arnold Ave.)**

Under Existing Conditions:



Problem Areas

In addition to these problem areas, there are a number of other drainage deficiencies in the study area generally related to:

- **Ditch inlets and culverts that are either silted or clogged with leaves and debris.**
- **Some localized sections of road side ditches have inadequate capacity.**
- **Re-development and re-grading on private properties – directing runoff onto adjacent properties.**
- **Insufficient (or unknown) outlet capacity of major drainage system**

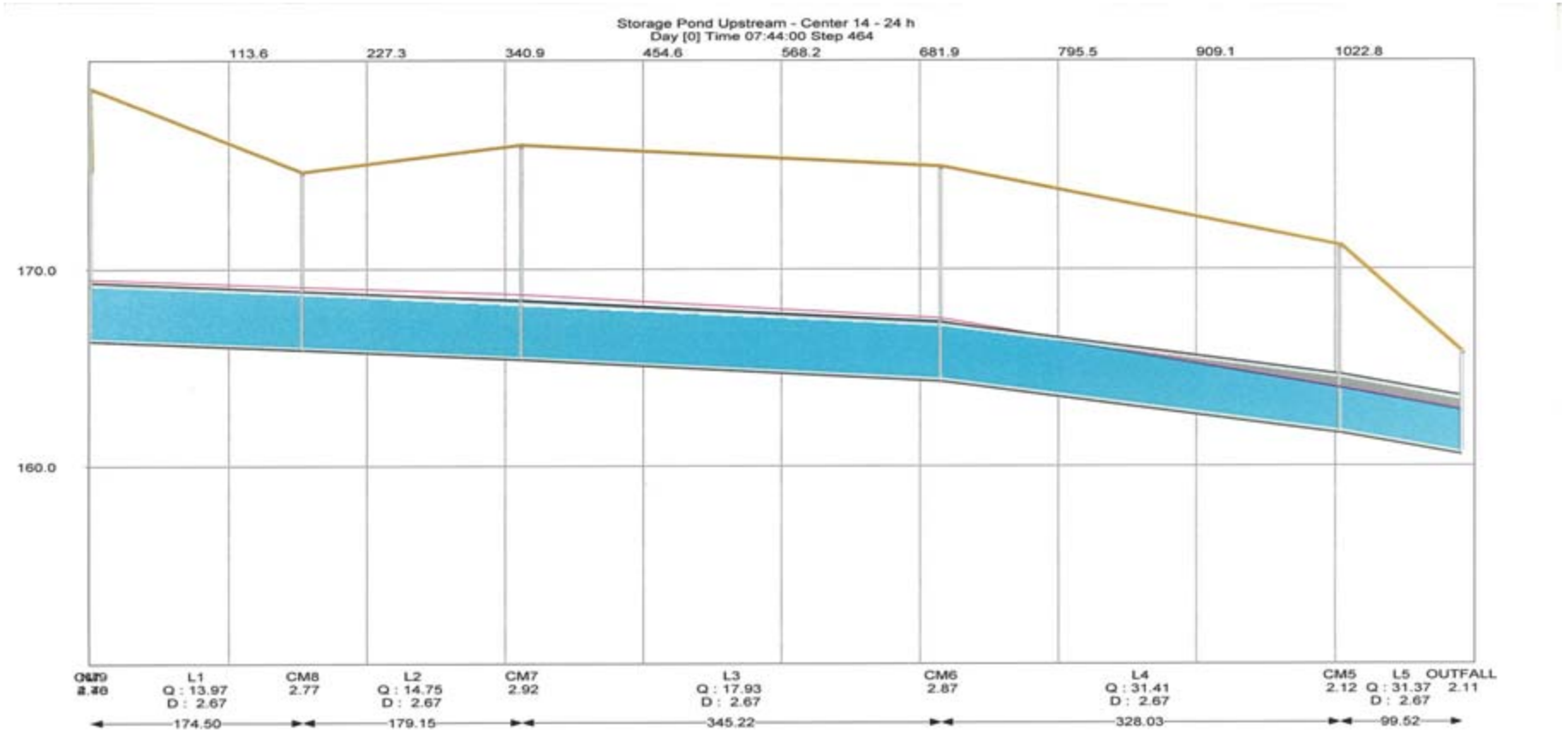
Alternative Solutions

A number of alternative solutions were investigated, which included the following:

- **New storm sewer system**
- **Expansion or upgrading of existing storm drainage system.**
- **Rehabilitate existing storm drainage system.**
- **Implement Stormwater Management Controls.**
- **Do Nothing**

Brooke St. Trunk Analysis

After Constructing SWM Pond:



Preliminary Preferred Solution

- Replace deficient culverts at various locations
- Improve ditch inlet capture capacity
- Construct storm sewer along Thornridge Drive from house # 53 to Brooke St. and connect to Brooke St. trunk sewer.
- Construct a Stormwater Management Facility in G Park
  - ✓ Option 1: All the above + Open SWM pond (5m deep)
  - ✓ Option 2: All the above + Open SWM pond (2m deep) + underground storage (3m deep)

Preliminary cost estimate is:

Option 1	$1.2M - $1.5M
Option 2	$3.0M - $3.2M

Next Steps – To Study Completion

- **Receive input from public and agencies with regard to the Preliminary Preferred Solution and continue consultation process with:**
  - **Public**
  - **Review Agencies (TRCA, MOE, MNR, DFO, etc.).**
- **File Environmental Assessment Screening Document**
- **Allow 30 days for Public review**

Public Participation

Your Input is Valued and Needed

We encourage you to provide us with your comments and suggestions

Please complete and return the Questionnaire and Evaluation Form.

Please inform us of any information you may have that would benefit our Study. Submit your comments to us (phone, fax, e-mail).

For additional information, please contact:

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THANK YOU