UPPER THAMES RIVER
CONSERVATION AUTHORITY

West London Dyke Master Repair Plan

Public Information Centre #1
Wednesday, June 16, 2010 6-9PM

This Public Information Centre is the 1st of 2.
Its purpose is to inform the public and to receive input with regards to the West London Dyke Master Repair Plan.
The following panels describe the *history*, *recent work* and the *purposes* of this project.

Please feel free to take a handout, along with a comment sheet, which you can fill out at your convenience. Questions relating to a panel or in regards to the project in general can be answered by either City of London, Upper Thames River Conservation Authority or Stantec staff.

INTRODUCTION

The West London Dyke is 2374 m long, comprises of both a concrete and earthen revetment, and runs along the west bank of the North Branch of the Thames River from Oxford Street to the forks of the Thames River and then along the west bank of the main branch to the west side of the Wharncliffe Road Bridge. The City of London owns the dyke and through an agreement, the Upper Thames River Conservation Authority (UTRCA) undertakes major maintenance activities.

PROBLEM OPPORTUNITY STATEMENT

The UTRCA and the City of London are undertaking a Master Repair Plan covering the next 20-year period to address aging infrastructure, flood protection, public use, and integration of other City initiatives. This study is being conducted in accordance with requirements of Phases 1 and 2 of the Municipal Class Environment Assessment (Class EA) which is an approved process under the Environmental Assessment Act.

The intent of the Master Repair Plan is to develop the required strategic plan to allow the UTRCA and the City to have a method for determining when a trigger point for repair and/or replacement of a portion of the dyke is required.

Historical Information

- When London was settled in the early 1800s, the Thames River offered water, a means of transportation and a power source for mills. Both natives and early settlers had used the low riverside land to the west of the Forks for farming.
- By the late 1800s, the small settlements of London West and Kensington were growing on the banks of the Thames River from their beginnings surrounding water-powered mills. The communities experienced several floods, such as the catastrophic July 1883 flood that killed 17 people. Rather than resettling away from the hazardous areas, the response was to build a formalized dyke system.
- Construction of the West London Dyke, the first of the City's seven dykes to be built, began in the late 1880s. By the early 1900s, the dyke had been reinforced, extended and raised at least twice. The flood of April 1937 overtopped the reinforcements, though, and flooded the communities behind the dyke. Additional raising of the dyke occurred after the 1937 flood on the main branch section and before the 1947 flood. In 1947 some overtopping of the dyke on the North Branch section required evacuations, although flooding was not as deep as in 1937.
- The UTRCA was formed following the 1947 Flood and resulted in a watershed management partnership between the Province of Ontario and watershed member municipalities (including the City of London) to carry out a comprehensive watershed flood control program. Besides the London Dyke system that had existed for some time, additional flood control dams, flood plain management, and land stewardship programs were implemented to further ease the flood pressure on the dykes.

Forks of the Thames, July 2000 Flood

West London Dyke, April 1947 Flood

Source: UTRCA

Forks of the Thames, July 2000 Flood

Previous Work/Rehabilitation

- 1980's Investigations & Repairs
  - Geotechnical Investigation undertaken in October 1982 revealed sections of revetment (dyke) in poor condition with noticeable shifting and tilting. Abrupt changes in slope of facing noted with cracking along concrete surface.
  - Based on investigations undertaken, repair of select sections of dyke including grouting behind panels and improvements to toe structure were completed between 1983 and 1985.
- 2004 Inspection
  - In 2004, the UTRCA undertook a condition assessment of the Thames River dykes within the City, including the West London Dyke. Approximately 350 m of the dyke north from the Queens Avenue Bridge were identified as being the highest priority for repair. This portion was originally built in the 19th century in order to minimize flooding in the West London area.
- 2005 Concrete Repair Program
  - In 2005, while undertaking the initial stages of a concrete repair program on the 350 m segment identified in the 2004 study, it was concluded that a significant portion of this section had come to the end of its useful life and needed to be replaced rather than repaired.
- 2007 Phase I Dyke Replacement
  - The first phase of the project (July to December, 2007) replaced a 300 metre section of the dyke north from Queens Avenue, adjacent to Labatt Park. The new dyke structure is located entirely within the footprint of the previous dyke and provided some improvement to flood height protection.
  - Phase 1 was funded by the MNR Water and Erosion Control Infrastructure Program and the City of London. The total cost of the Phase 1 construction project was $3,600,000.

1980's Repair Work

1980's Repair Work

2005 Concrete Repair Program

2007 Phase I Dyke Replacement

EA Process / Public & Agency Input*

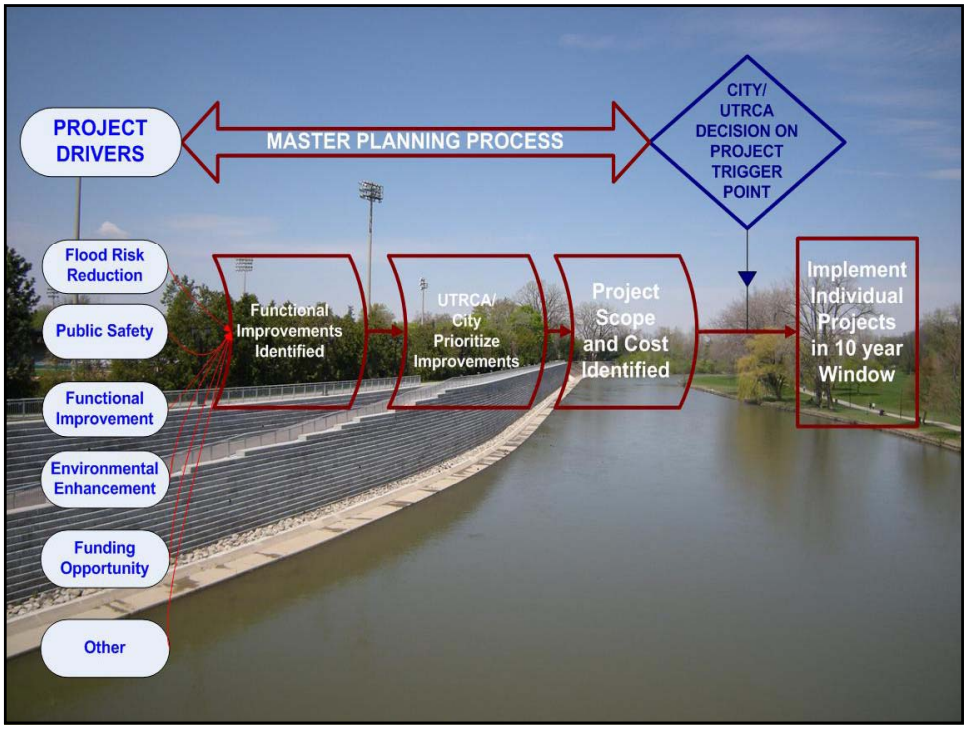
- The purpose of the Ontario Environmental Assessment Act (EA Act) is "the betterment of the people of the whole or any part of Ontario by providing for the protection, conservation and wise management in Ontario of the environment". Environment is applied broadly and includes the natural, social, cultural, built and economic components.

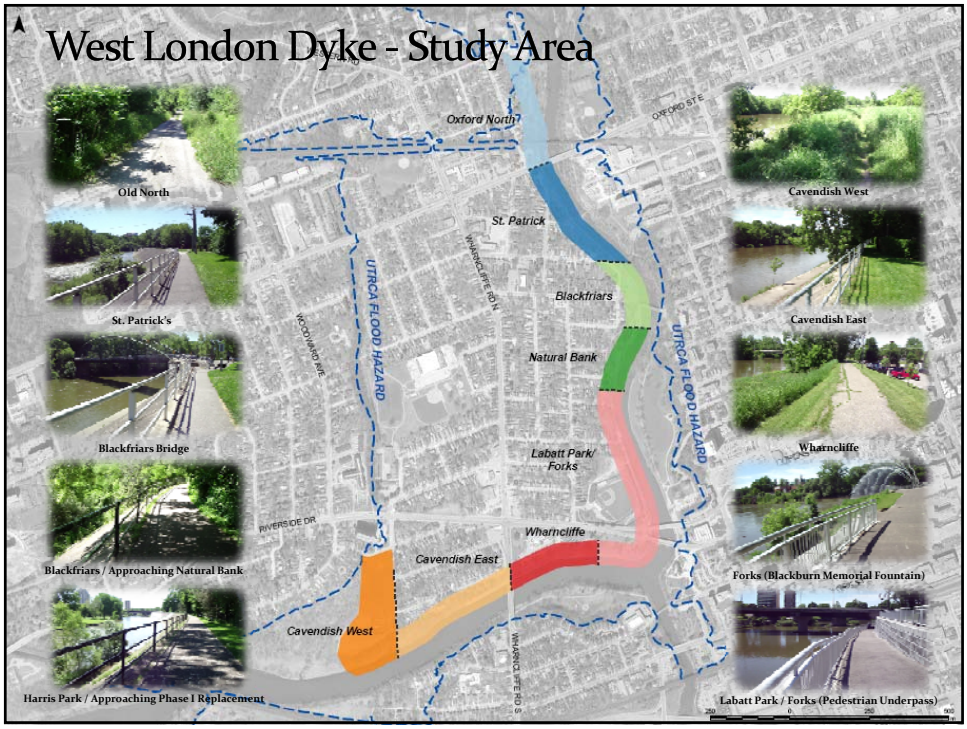
- Environmental Assessment (EA) is a decision making process to promote good environmental assessment planning. The key features are:
  - Early consultation
  - Consideration of reasonable range of alternatives
  - Assessment of environmental effects
  - Systematic evaluation of alternatives
  - Clear documentation and traceable decision making

- Public Involvement
  - The role of those members of the public with an interest in a study is to provide background information to advise the proponent (City of London / UTRCA) of their support and concerns, and to review and provide comments and input about the study findings (as the project progresses – Public Information Centre (PIC) 1 and PIC 2).
  - Members of the public with an interest in the study can ask to be placed on the mailing list to receive notification of the consultation opportunities for the project.

- Municipal Class EA
  - This study is being conducted in accordance with the requirements of Phases 1 and 2 of the Municipal Class EA which is an approved process under the EA Act.
  - It is anticipated to be a Schedule B Class EA.

** As referenced in the Municipal Class EA Document*


PROJECT DRIVERS
MASTER PLANNING PROCESS
CITY/ UTRCA DECISION ON PROJECT TRIGGER POINT
Flood Risk Reduction
Public Safety
Functional Improvement
Environmental Enhancement
Funding Opportunity
Other
Functional Improvements Identified
UTRCA/ City Prioritize Improvements
Project Scope and Cost Identified
Implement Individual Projects in 10 year Window

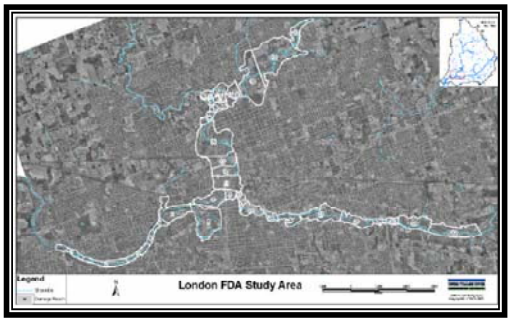

West London Dyke - Study Area
Old North
St. Patrick's
Blackfriars Bridge
Blackfriars / Approaching Natural Bank
Harris Park / Approaching Phase I Replacement
Oxford North
St. Patrick
Blackfriars
Natural Bank
Labatt Park/ Forks
Wharncliffe
Cavendish East
Cavendish West
UTRCA FLOOD HAZARD
UTRCA FLOOD HAZARD
WHARNCLIFFE RD N
WHARNCLIFFE RD S
WOODWARD AVE
RIVERSIDE DR
OXFORD ST E
Cavendish West
Cavendish East
Wharncliffe
Forks (Blackburn Memorial Fountain)
Labatt Park / Forks (Pedestrian Underpass)

Flood Risk Reduction & Public Safety

Project Driver 1 & 2

- Flood Risk Reduction
  - Master Plan will review entire structure as a whole.
  - Flood Damage Estimation in the Upper Thames River Watershed was published in August 2005. Master Plan will provide update to damage cost estimates.
  - Based upon 100 and 250 year design flows and the study area shown in the figure below, the following dollar amounts associated with total estimated flood damages are described below:
    - 100 Year Design Storm ~ $23,000,000 (2005 $'s)
    - 250 Year Design Storm ~ $42,000,000 (2005 $'s)

    ***Work completed in 2007 raised the level of the dyke and may have mitigated/lessened damage amounts*
  - In addition to assessing damage costs, existing dyke elevations will be reviewed in comparison to flood levels to determine areas that may need to be raised.



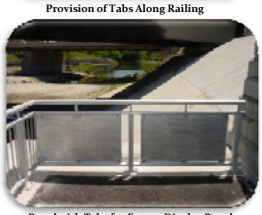
Flood Damage Estimate Map

Functional Improvements

Project Driver 3

- Master Repair Plan will involve Integration of Other City Initiatives:
  - Bicycle Master Plan
  - Future Pedestrian Pathways (i.e. future Wharncliffe Bridge Underpass)
  - Thames Valley Corridor Study
  - Previous 2007 Master Plan
  - Panel with tabs for provision of future panel displays
- Consideration will need to be given to the following when determining replacement or rehabilitation work in the future:
  - Amenity
  - Function
  - Durability
  - Constructability
  - Capital Cost & Future Maintenance

Provision of Tabs Along Railing



Panel with Tabs for Future Display Panels

Top of Dyke Pathway Access

Top of Dyke Look-Out

Pedestrian Walkway

Environmental Enhancements

Project Driver 4

- Vegetation Management Plan (Dougan & Associates, 2006):
  - Carried out to identify and prioritize vegetation that currently poses a threat to the structural integrity of the dykes
  - Suggest appropriate removal and remediation methods for the hazard vegetation
  - Develop a plan for the future management of vegetation along the dyke
- Planning must also consider potential implementation of environmental features along and within the areas surrounding the dyke structure, such as:
  - Tree & Shrub Planting
  - Maintenance of existing vegetated areas
  - Aquatic Plantings
- Implement concepts from other planning projects and initiatives (i.e. 2007 Master Plan Document)

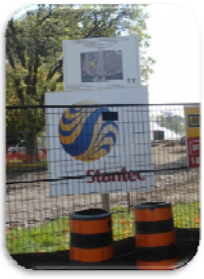
Top of Dyke Vegetation

Vegetation at Toe of Dyke

Funding Opportunities

Project Driver 5

- Availability of Capital Funding
  - Provincial / Federal Funding Opportunities & Grants
  - Municipal Funding
- May be replacement, rehabilitation, or extension
- Trigger point to implement future project may be reached sooner on availability of funding (i.e. stimulus funding programs)



Project Sign Boards

Next Steps

- Public Consultation
  - Review of public and agency comments
- Comments from the public are welcomed. Please take a few minutes to complete the 'Comment Sheet' that accompanies the handout you received.
- Technical Review
  - Planning / Environment Review
  - Hydraulic Review
  - Engineering Review of each section of dyke
- Next PIC (tentatively set for late October 2010) to present recommendations
  - Determination of potential future works (repair or replacement)
  - Costing (Planning, Design, Implementation, Maintenance) of each works
  - Trigger Point Determination

Rick Goldt, C.E.T.
Supervisor, Water Control Structures
Upper Thames River Conservation Authority
1424 Clarke Road
London ON N5V 5B9
Tel: (519) 451-2800 x 244
Fax: (519) 451-1188

Billy Haklander, P.Eng.
Environmental Services Engineer Stormwater Management Unit
Environmental and Engineering Services Department
City of London
300 Dufferin Avenue, 9th Floor
London ON N6A 4L9
Tel: (519) 661-2500 x5862
Fax: (519) 661-2355

Michele Oxlade, B.Sc., EMX
Environmental Coordinator
Stantec Consulting Ltd.
800-171 Queens Avenue
London ON N6A 5J7
Tel: (519) 6445-2007 x240
Fax: (519) 645-6575

For additional information throughout the duration of this project, please visit
http://www.london.ca/d.aspx?s=/Sewer_and_Wastewater/default.htm

West London Dyke Master Repair Plan
Municipal Class EA

Public Information Centre #1
June 16, 2010

COMMENT SHEET

Name:

Mailing Address:

Interest (*i.e.* property owner, agency):

1. **Do you live within the proposed study area? Yes / No**

2. **Along with protection of life and property, what other features of the dyke are important to you? (Please <u>circle</u> on a scale of 1 – 5, with 1 being least important and 5 being most important.)**

Accessibility	1	2	3	4	5
Amenity	1	2	3	4	5
Architecture	1	2	3	4	5
Heritage/History	1	2	3	4	5
Lighting/Security	1	2	3	4	5
Other _____	1	2	3	4	5

3. **What is your opinion on the works completed to date?**
Phase 1 Dyke Replacement (2007), Blackburn Memorial Fountain (2008), Dundas/Queens Pedestrian Underpass (2009), etc.

4. **Other comments or concerns.**

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Municipal Class EA

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COMMENT SHEET

Please place comments in the box provided or submit comments to the following:

Michele Oxlade, B.Sc., EMX
Environmental Assessment Coordinator
Stantec Consulting Ltd.
800 - 171 Queens Avenue
London ON N6A 5J7
Phone: (519) 645-2007
Fax: (519) 645-6575
michele.oxlade@stantec.com

This comment sheet will be included as part of the Municipal Class EA process and handled in accordance with MFIPPA requirements.