

# West London Dyke Flood Control Structure Master Plan









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# **Executive Summary**

# **Introduction**

The purpose of the Master Plan is to set out design recommendations, which are intended to guide detailed design development for the various phases of the West London Dyke and Thames Valley Parkway upgrade and replacement. Preparation of the Master Plan was undertaken after careful examination of existing conditions and findings gathered through a consultation process.

#### Background

The West London Dyke and Thames Valley Parkway upgrade and replacement has come about because of structural deficiencies in the dyke itself, as identified in 2005. Thus, it is necessary to bring this flood control structure up to current technical standards.

The current dyke structure in the location between Queens Avenue and Rogers Avenue only protects against the 1:100 year flood event, while regulations require that the flood control structure protect against the 1:250 year flood event.

Public input was solicited at a Public Information Centre meeting held on May 25, 2006. A design option review, which outlined how each design alternative ranked within several categories, was also conveyed to the public during the meeting. Public input from this meeting was incorporated into the final preliminary design report.

After consideration and evaluation of various alternatives, it was determined that a near-vertical, pre-cast reinforced earth system was the preferred alternative for Phase 1 of the replacement as it best met requirements relating to pathway integration, aesthetics, ability to provide required flood protection and constructability due to existing site constraints.

#### Context

The West London Dyke study area reaches from the Oxford Street Railway Bridge, south along the west side of the Thames River, to Cavendish Park. Descriptions of the dyke and pathway system have been broken down into four distinct sections, Oxford Street to Blackfriars Bridge, Blackfriars Bridge to Labatt Park, Labatt Park to Wharncliffe Road and Wharncliffe Road to Cavendish Park.

#### **Design Charrette**

Representatives from adjacent neighbourhood associations, the arts community, Friends of Labatt Park, users of the Thames River, and City and Council representatives were invited to a Design Charrette, held on November 21, 2006. A total of 14 representatives participated in the

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charrette. The primary issues, concerns and ideas that were most commonly shared or generated the most discussion at the Design Charrette were developed into recommendations. Ideas and themes regarding the wall/face of dyke pathway, lighting and site furnishings river access vegetation and landscaping Blackfriars neighbourhood Labatt Park transition of old dyke structure to new dyke structure were developed into recommendations.

#### **Design Guidelines**

Design Guidelines have been prepared to provide guidance for detailed design of the West London Dyke and Thames Valley Parkway redevelopment, extending from Oxford Street to Cavendish Park. Subjects discussed include vision, areas of use, wall structure, natural environment, heritage, safety, access to river and gateways.

#### Area of Use

The four distinct areas along the West London Dyke have been identified as having different uses: Oxford Street to Blackfriars Bridge; Blackfriars Bridge to Labatt Park; Labatt Park to Wharncliffe Road; and Wharncliffe Road to Cavendish Park. The dyke and the land surrounding it has many uses for people, which include biking, running, walking, fishing, sitting, bird watching, playing, commuting and dog walking. Improvements for these uses and expanding the range of uses are important and necessary, but certain sections are better suited for particular activities.

## **Wall Structure**

The wall structure will have the most visual impact upon the area because of its sheer vertical size. Creating an aesthetically pleasing and interesting view from the east side of the river has been identified as a major consideration, as well as creating continuity throughout the structure and creating interest from across the river. The selection of wall material should be based on the overall vision for the dyke. An interesting, aesthetically pleasing culturally significant structure should be created by the use of banding, plantings and lighting.

The transition should continue the theme of natural looking materials, native plant material, and discreet, informal design. The use of a third material for the transition would make it stand out, act as a buffer between residences and pathway users and would move attention away from the sharp contrast between the old and new wall.

#### **Natural Environment**

The naturally vegetated areas along the riverbank and the native trees existing at the top of the wall are significant to the character of the dyke. The trees give shelter from the wind, shade from the sun, homes for wildlife, and provide a colourful and varied backdrop through the four seasons. Existing significant vegetation must be preserved and protected.

An attempt should be made to plant native aquatic material at the toe of the dyke structure that will soften hard surfaces and stabilize soils. An effort should be made to create habitat for

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aquatic and terrestrial life along the edge of the river where conditions allow for self-sustaining habitat.

An urban tree management program should be implemented to document trees of significance, identification of areas in need of maintenance, and plantings and/or removals.

Native plant material should be used throughout to create continuity and protect the natural environment, but varying layouts can identify the intended use. Year round form and colour should be taken into consideration at the planting design stage. Planting should also be used to emphasize significant views.

There is an opportunity to expand the existing interpretive signage program to incorporate information on natural systems and natural heritage in the area. Trail information signage should also be incorporated throughout the trail system.

Several significant views were identified as having connections with the river and natural heritage. These views should be preserved and enhanced.

The opportunity for users to participate in passive recreation activities was established as an important attribute of the trail system. Activities such as sitting, reading, people watching, bird and butterfly watching and walking are all considered types of passive recreation.

#### <u>Heritage</u>

The West London Dyke and the surrounding area have a strong historic character. The dyke replacement is an opportunity to create a place, which provides information on the area's rich history while meeting the current needs of users. It was determined that the area's character should be preserved through the use of historic site lighting and furnishings, expanding of the existing interpretive signage program for the dyke and pathway system and enhancement of significance view along the dyke and pathway system. Creating a controlled view into Labatt Park from the pathway, with interpretive signage about its role in the City's History, would bring an interesting element to the dyke replacement and create further visibility to the Park. This baseball park has a long-standing history in London of which many City residents are unaware.

#### **Safety**

The existing pathway system crosses five major streets, without any form of traffic control to give users the right-of-way. As the pathway is redeveloped, its design should be consistent with City of London Standard Multi-Use Pathway to improve circulation, safety, and create continuity.

The existing lighting system is not consistent and leaves dark patches due to the presence of overgrown vegetation or a lack of light posts and fixtures. A well-lit pathway will encourage people to make use of it during evening hours. In the evening hours lighting will not only create continuity, but will have a direct impact on the safety of the pathway system.

Existing vegetation and proposed planting should adhere to CPTED (Crime Prevention Through Environmental Design) principles.

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A reduction in vandalism can be achieved through appropriate lighting and site design. CPTED principles should be considered during design development in order to reduce occurrences of vandalism. Vandal-resistant site furnishings are available and should be used wherever possible.

#### Access to the River

Access to the river is very important to users, whether it is just to be near the edge to look into the water or to fish, feed the geese or canoe. Access currently provided at Cummings Avenue, the Kiwanis Senior's Centre and at Cavendish should be preserved and enhanced. The area north of the Blackfriars Bridge has been suggested as a possible location for access to the river by alterations to the design of the wall structure.

#### Gateways

Gateways have been identified on the concept plan at various locations where the pathway system intersects major roadways. These specific nodes have the opportunity to identify where the pathway system connects with major streets, while being aesthetically pleasing.

#### **Implementation**

General recommendations and Phase 1 recommendations detailed in the design guidelines section are provided for implementation during various phases of the redevelopment.

#### **General Recommendations**

The general recommendations found below detail how to specifically implement design recommendations, which apply to all phases of development.

- Options for creating a functional and interesting dyke layout and structure should be investigated during each Phase of the redevelopment and accordingly be detailed in each set of tender documents:
- Confirm the suitability of naturalization plantings at the toe of the dyke for potential environmental enhancement throughout all phases of development;
- Investigate opportunities for naturalization planting areas for environmental enhancement during design development;
- Investigate opportunities for terrestrial and aquatic habitat creation during design development;
- Seating should be incorporated into the pathway system at regular intervals throughout all phases of redevelopment;
- Lighting and furnishing design, including signage, should consider design guidelines and be determined through design development;
- Significant views / lookout locations should be identified and confirmed at the site design scale, during design development for each phase of redevelopment;

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- Investigate opportunities to implement pedestrian underpasses under all bridges within the study area where appropriate;
- Lighting design for all phases of the redevelopment should have consistent lighting types and levels to increase safety and should be adjusted to suit adjacent land uses;
- CPTED principles when preparing planting plans for all phases of redevelopment;
- CPTED principles should be considered for all phases of redevelopment to reduce the occurrences of vandalism and increase safety for its users;
- Investigate all opportunities during each phase of the redevelopment to provide access to the river for a broad range of activities.
- Functionality and aesthetics should be key design considerations for any transitions in all phases of development;
- The buffer between residences and the pathway system should be maximized during all phases of design development;
- The wall layout determined through the design development stage should consider both technical requirements and the recommendations given in the design guidelines regarding shape and composition. Where possible it should be varied to create interest and give adequate room at the top of wall for things such as lookouts, buffers and gathering spaces;
- Public input should be solicited for each phase of the dyke replacement.

#### **Phase 1 Recommendations**

The recommendations outlined in this section are specific to implementation of Phase 1 of the dyke and pathway replacement.

- The wall material selection should be investigated and selected during detailed design for Phase 1 of the redevelopment based on functional capability as well as aesthetic appeal, and be specified in the tender documents;
- Detailed design for Phase 1 of the redevelopment should look at the functionality and aesthetics of the transition specifically;
- The urban tree management program should be initiated as soon as possible, so that an approach for all phases can be reached prior to construction of Phase 1;
- A native plant list should be prepared during design development for Phase 1 and be consistent through future phases of redevelopment;
- Site lighting and furnishings including seating, trash receptacles, railing and interpretive signage are to be vandal resistant, detailed during the detail design stage and be included in the tender documentation for Phase 1;
- Investigate opportunities to create a lookout and interpretive area in front of Labatt Park;
- Ensure all lighting has full cut-off optics, is documented during design development and is included in the tender documents for Phase 1;
- Consistent and identifiable gateways should be designed for all major roadway crossings and be included in the tender documents for Phase 1.

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# 1.0 Introduction

#### 1.1 PURPOSE

This Master Plan sets out design recommendations, which will guide detailed design development for the various phases of the West London Dyke and Thames Valley Parkway upgrade and replacement. Preparation of the Master Plan was undertaken after careful examination of existing conditions and findings gathered through the consultation process.

The Master Plan report format is structured as follows:

- Overview of the background leading to the initiation of the Master Planning process for the West London Dyke;
- Goals and objectives;
- Description of the existing context to provide readers with an understanding of the current conditions, opportunities and constraints;
- Summary of the design charrette which was held to obtain input and design ideas from key stakeholders;
- Recommendations and design guidelines relating to various components of the West London Dyke and adjacent pathway system, such as wall structure, activity / use areas, natural environment, heritage features and interpretation, safety, access, etc.
- Implementation recommendations and process.

#### 1.2 BACKGROUND

The West London Dyke is primarily an engineered structure, which protects life and property during periods of extreme river flows. According to the Upper Thames Conservation Authority (UTRCA), construction of the West London Dyke began in the 1880s, with extensions, reinforcements and height increases occurring at least twice by the early 1900s. The dyke was raised in sections west of Queens Avenue after the 1937 flood and before another major flood in 1947. Despite the fact that the flood of 1937 overtopped portions of the dyke, it has and continues to serve a critical flood control function as well as being an integral component of the City's recreational pathway system.

In 2004, a 'condition assessment' of London's flood control structures identified a need for repairs to sections of the dyke, with the highest priority being in the area north of Queens Avenue. However, in 2005 while undertaking the initial stages of the concrete repair program for the West London Dyke between the Queens Ave Bridge and Rogers Ave, it was determined that this section needed to be replaced rather than repaired due to structural deficiencies. A

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preliminary design process was then undertaken by Stantec Consulting Limited to determine the type of replacement structure best suited to the technical and regulatory requirements for this section of the dyke. The current dyke structure in this location only protects against the 1:100 year flood event, while regulations require that the flood control structure protect against the 1:250 year flood event (Fig. 1.1, pg. 1.2). Public input was solicited at a Public Information Centre meeting held on May 25, 2006. An introduction to the history of the dyke and background information on how the design alternatives had been arrived at were presented. A design option review, which outlined how each design alternative ranked within several categories, was also conveyed to the public during the meeting. Public input from this meeting was incorporated into the final preliminary design report. After consideration and evaluation of various alternatives, it was determined that a near-vertical, pre-cast reinforced earth system was the preferred alternative for phase 1 of the replacement as it best met requirements relating to pathway integration, aesthetics, ability to provide required flood protection and constructability due to existing site constraints.

In addition to the functional flood protection requirements, a number of other major design considerations were addressed in the preliminary design report including the need to minimize impacts on the environment, maintain / enhance recreational use of the dyke, and consider aesthetics given the high visibility of the structure and its proximity to the downtown core. A conceptual illustration of the phase 1 preferred alternative is shown below. Additional information regarding the technical investigation and other alternatives that were evaluated is provided in Appendix A.

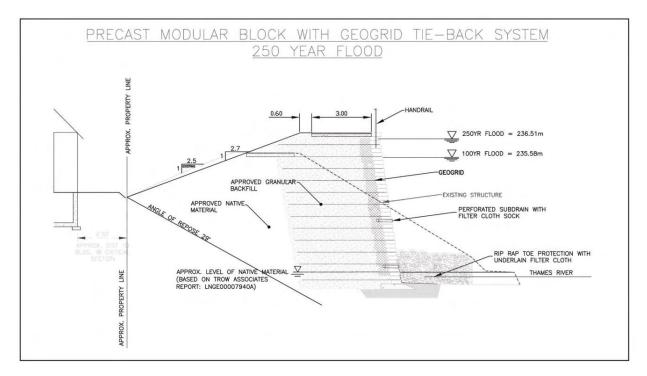


Fig. 1.1 Cross-section of proposed dyke solution for Phase 1 of development.

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Benefits of the selected alternative for Phase 1 identified through the evaluation included the following:

- It can be built to either the 1:100 or 1:250 Regulatory Flood Level within the available footprint;
- Various aesthetic options (colour, texture and block size) are available for the modular blocks, allowing for greater design flexibility;
- Near vertical face allows for construction of pathway to City standards for width, while also maintaining appropriate slope to adjacent property lines;
- Constructability and staging of construction are considered easier than some other options considered;
- No curing time is required for pre-manufactured products, as would be required for a poured in place structure;
- It is the least cost option.

#### Other benefits include:

- More efficient use of limited publicly owned space;
- More flexibility with the use of space at the top of the dyke i.e. planting, multi-use pathway system;
- The pathway can be moved further away from private residences allowing for enhanced neighbour privacy;
- Potential for ecological enhancement at the toe of the dyke structure;

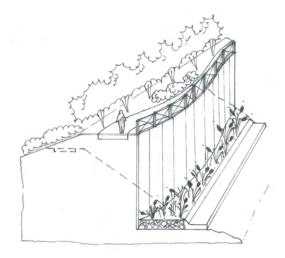


Fig. 1.2 Isometric sketch of what proposed pathway might look like.

- New design will allow for pathway to move under bridge structures;
- Improved aesthetics, as existing damaged site furnishings and materials will be replaced.

Although the initial section of the dyke requiring replacement extends from the Queens Avenue Bridge to Rogers Avenue, it is anticipated that over a period of years, additional sections will also need to be replaced. The pathway at the top of the dyke will then also need to be replaced with appropriate integration and transitions made between the existing and new path systems. The UTRCA, City and Stantec recognized that the dyke replacement program presented a unique opportunity to look at long-term design options for the Thames Valley Pathway system in this area. Approval was given by the City of London and UTRCA for Stantec to prepare a Conceptual Master Plan for the section of the dyke and pathway extending from Oxford Street

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to Cavendish Park so that design enhancements for the dyke and pathway system could be considered during the detailed engineering design for the flood control structure.

# 1.3 GOALS AND OBJECTIVES

Specific goals and objectives of the design enhancement program, as established in the staff report to the Environment and Transportation Committee to seek approval for the project are as follows:

**Goal** - Optimize the aesthetic and functional contribution that replacement of the dyke can provide to the surrounding landscape.

# **Objectives and Principles**

- Meet functional requirements as a flood control structure;
- Not significantly increase cost or approval time frame for Phase 1;
- Incorporate linkages to ensure continuity and accessibility to City's trail and pathway system;
- Take advantage of public viewpoints and access to river's edge to encourage public use;
- Complement Forks of Thames parkland and open space enhancements;
- Incorporate aesthetic enhancements through variety in form and texture;
- Provide an attractive interface with land uses to west;
- Accommodate opportunities for re-naturalization at river's edge, where feasible.

#### 1.4 MASTER PLAN DEVELOPMENT

Key steps taken in the development of this Master Plan include the following:

- On-site field visits and photo documentation to gain an in-depth appreciation of the dyke and pathway system and to identify opportunities and constraints;
- Review of existing cultural and historical material;
- Preparation of preliminary design concepts for discussion purposes;
- Organized and held a Design Charrette with key stakeholders;
- Preparation of the draft Master Plan;
- Circulated draft document for comments;
- Finalized Master Plan Document.

#### 2.0 Context

The subject area reaches from the Oxford Street Railway Bridge, south along the west side of the Thames River, to Cavendish Park. A context map (Fig. 2.4) can be found on page 2.2. Descriptions of the dyke and pathway system have been broken down into four distinct sections and can be found below.

# 2.1 OXFORD STREET TO BLACKFRIARS BRIDGE

The dyke and pathway system between Oxford Street and Blackfriars Bridge abuts a mixture of residential and park space. This section of path and dyke has quite an open character with more expansive views to both Blackfriars Bridge and Oxford Street and the railway bridges (Fig. 2.1, pg. 2.1), as well as to the east side of the river which is quite heavily treed directly across (Fig. 2.2, pg. 2.1). The pathway is particularly narrow in this section. There is little vegetation at the base of this section of dyke, with the exception of the area directly adjacent to the Oxford Street Bridge. This fact, combined with generally more open views, results in the existing dyke structure being very visible from the pathway and from the Oxford Street Bridge.



Fig. 2.1 View North towards Oxford Street Bridge.

#### 2.2 BLACKFRIARS BRIDGE TO LABATT PARK

The area between Blackfriars Bridge and Labatt Park is adjacent to residential land use. Characteristics along this section of the pathway range from fairly open views that highlight Blackfriars Bridge as a focal point, to relatively narrow sections shaded by trees and shrubbery on both sides, creating a more intimate experience (Fig. 2.3, pg. 2.1). A number of extremely



Fig. 2.2 View North-East from Blackfriars Bridge.



Fig. 2.3 View North on pathway between Leslie Street and Carrothers Avenue.

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Fig. 2.4 Context Map – dyke and pathway extend from Cavendish Park to the Oxford St. railway bridges.

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old cottonwood trees are situated along the west side of the pathway, primarily between Labatt Park and Leslie Street, shading both the pathway and residences. The path in this section is slightly narrower than the City's standard width of 3 metres, and access via stairs or ramps exist at all abutting streets. Sections of the railing along the pathway are in relatively poor condition and do not meet current standards (Fig. 2.6, pg. 2.7). They are interspersed by old cast iron streetlight bases (Fig. 4.12, pg. 4.8), which have an attractive design and historical pedigree, but are generally in poor repair (rusting, chipped paint, broken fronts) and tend to be used for garbage.

There is a significant amount of vegetation at the base of the dyke along the section between Leslie Street and Blackfriars Bridge (Fig. 2.5, pg. 2.3), and much of the dyke in this area is only faintly visible. A small, relatively hidden, informal access path to the river is situated approximately one block south of Blackfriars Bridge. In general, this



Fig. 2.5 Access to the river at the bend in Cummings Avenue.

section of the pathway and dyke presents a softer, more natural edge along the river due to the mix of vegetation along both the west side of the path and the base of the dyke. A small playground is located at the bend in Cummings Avenue.

The section of pathway between Leslie Street and Labatt Park offers views into Harris Park and conversely is very visible from Harris Park (Fig. 4.3, pg. 4.6, Fig. 4.23, pg. 4.11). Events occurring in Harris Park tend to draw crowds of onlookers to this section of pathway.

#### 2.3 LABATT PARK TO WHARNCLIFFE ROAD

The area between Labatt Park and Wharncliffe Road abuts Labatt Park and the open space surrounding the Kiwanis Senior's Centre. Labatt Park is North America's oldest operating baseball park and is a historical feature along the pathway. The baseball park is obscured from the dyke and pathway system by a cedar hedge (Fig. 2.6, pg. 2.3) except for one small gap in the hedge.

The City of London is in the process of extending the Forks of the Thames development into its fourth phase, which will be located on the west side of the river, south of the Queens Avenue and Dundas Street



Fig. 2.6 View North on pathway. Cedar hedge outside Labatt Park to the left.

bridges. The West London Dyke pathway will pass through this space and is identified on the Master Plan Concept (Fig. 4.1, pg. 4.2).

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The hard structure gives way to a natural edge between the Dundas Street and Wharncliffe Road bridges (Fig. 2.7, pg. 2.4). Pathway connections across the two bridges are currently at grade and include both ramps and stairs.

#### 2.4 WHARNCLIFFE ROAD TO CAVENDISH PARK

The stretch from Wharncliffe Road to Cavendish Park is the only portion with an unpaved pathway. This section of path has a more natural character, given the vegetation and pathway surface (Fig. 2.8, pg. 2.4). This section runs next to a residential area, which leads into Cavendish Park and the Cavendish Nature Trail (Fig. 2.9, pg. 2.4). The crossing at the Wharncliffe Bridge is also at grade (Fig. 4.26, pg. 4.12).



Fig. 2.7 Pathway East of Kiwanis Senior's Centre, looking West to the Wharncliffe Road Bridge.



Fig. 2.9 View West into Cavendish Park and the start of the Nature Trail.



Fig. 2.8 Unpaved pathway, view East towards Wharncliffe Road.

# 3.0 Design Charrette

#### 3.1 PURPOSE

The Project Team (UTRCA, The City of London and Stantec Consulting Ltd.) felt it was important to involve key stakeholders in the Master Plan process, not only to keep them informed, but more importantly to obtain the benefit of their creativity and insight into specific issues and concerns. Representatives from adjacent neighbourhood associations, the arts community, Friends of Labatt Park, users of the Thames River, and City and Council representatives were invited to a Design Charrette, held on November 21, 2006. A total of 14 representatives participated in the charrette and assisted in:

- Confirming goals and objectives;
- Identifying opportunities, needs, issues and concerns;
- Sharing ideas for the design of the dyke and pathway system;
- Providing feedback on three preliminary concept plans;
- · Creating and refining design concepts.

#### 3.2 PROCESS

The design team prepared for the Charrette by reviewing background information, completing site walks and preparing design concepts. At the Charrette, the design team introduced the project by explaining the purpose of the Charrette, giving an overview of background information and a photo-tour of the study area. An opportunity for discussion was given to allow the group to identify preliminary opportunities and challenges. Three preliminary design concepts were then presented to stimulate responses, help generate additional ideas and/or form a basis for further plan refinement. The three concepts were intended to present a range of general options / themes and visual examples. The next section outlines key findings from the Charrette.

#### 3.3 RESULTS

The Charrette generated a great deal of discussion from those in attendance. The primary issues, concerns and ideas that were most commonly shared or generated the most discussion are listed below:

- Importance of considering the view of the wall from across the Thames River, as the dyke is a big, tall expanse of retaining wall;
- Need to create interest on the wall face;

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- Need for longevity of the design and materials and need for a "template for the design vocabulary";
- Timing, sequence and location of future replacement sections and the implications on transition areas and overall continuity;
- Retention and preservation of mature trees and existing vegetation at the top and bottom of the dyke structure;
- Consideration of wildlife habitat on / along dyke structure and opportunities to maintain or create habitat;



Fig. 3.1 Brainstorming session during the West London Dyke Design Charrette.

- Impacts of the project on the adjacent neighbourhood, particularly as it relates to zoning and future development potential/threats in the Blackfriars neighbourhood as a result of the increase in height;
- Concern that economics was the driving factor in the selection of the dyke replacement alternative;
- Phase I is a very visible section and aesthetics should be a primary consideration;
- The need for access to the river for both humans and wildlife;
- The retention/enhancement of significant views;
- The need/opportunity to preserve and enhance natural and cultural heritage in the area.

## 3.4 DESIGN IDEAS

The following is a summary of some of the ideas and themes that came out of the individual group discussions. A detailed summary of Charrette results, specifics on individual group discussions and copies of the three preliminary concepts are provided in Appendix B. Refer to Appendix C for responses to issues.

#### Wall / Face of Dyke

- Build the new structure "for the ages";
- Limit number of materials used and utilize natural or natural-looking materials;
- Product selected should be relatively neutral, available long term and have a large module with texture and depth;

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- Create interest on the wall potential ideas included 'breaking up' the wall both vertically
  and horizontally, adding colour or texture banding in the wall to depict significant flood
  events, designing the wall so that the bottom half is angled and top half vertical;
- Incorporate planting at the toe of slope;
- Add steps / sloped wall sections for wildlife to access the river.

# **Pathway**

- Minimize footprint of pathway, maintain existing width;
- Discourage active recreation / gathering places adjacent to residential areas;
- West of Wharncliffe maintain footpath do not pave.

#### **Lighting and Site Furnishings**

- Install lighting on the river side of the walkway and direct light downwards so it doesn't affect residences;
- Add more benches, sitting areas and trash receptacles;
- Uplight the wall at night to add interest;
- Select site furnishings that can withstand vandalism.

#### **River Access**

- Do not add formal docks between Oxford Street and Queens Avenue, but maintain pedestrian access to the river;
- Add steps / sloped wall sections for wildlife to access the river;
- Enhance access to the river at appropriate locations.

# **Vegetation and Landscaping**

- Extremely important to preserve and minimize impact on existing trees and vegetation;
- Implement an Urban Tree Management Program;
- Utilize native vegetation for new planting



Fig. 3.2 Brainstorming session during the West London Dyke Design Charrette.

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#### areas;

- Incorporate planting at the toe of slope to enhance natural elements and create habitat;
- Retain, emphasize and augment natural environment at and near Cavendish;
- Plant more native vegetation between Blackfriars and Oxford to create more open and closed views for interest.

# **Blackfriars Neighbourhood**

- Preserve the sense of individual/unique residential neighbourhood through Blackfriars area
   keep intimate;
- Maintain/provide access from all streets, but not necessarily ramped access at all connections;
- Replicate or reuse historical elements such as the streetlight bases and railing;
- Implement historical interpretive signage / plaques at key locations.

# **Labatt Park**

- At Labatt Park maintain the 'wall of green' with one open vista;
- Locate an interpretive signage feature or plaque near gap in the hedge.

# Transition of Old Dyke Structure to New Dyke Structure

- Add a 'lookout' at the end of Rogers Ave. to ease the transition zone maintain 'lookout' when next section is installed;
- Consider cantilevered viewing areas to help with transition.

# 4.0 Design Guidelines

The Design Guidelines have been prepared to provide guidance for detailed design of the West London Dyke and Thames Valley Parkway redevelopment, extending from Oxford Street to Cavendish Park. Examples and illustrations are provided to help give direction, but are not intended to presuppose specific design solutions, materials or products that are to be determined during the detailed design stages. The Master Plan Concept is provided on the following page (Fig. 4.1).

This section discusses the following subjects:

- Vision;
- Areas of use:
- Wall structure;
- Natural environment;
- Heritage;
- Safety;
- Access to the river;
- · Gateways.

#### 4.1 VISION

The vision statement below was prepared after examination of existing site conditions and the results of the consultation process. The vision will be achieved through implementation of the design guidelines.

The West London Dyke is directly connected with both the culture and environment of the Forks of the Thames area in London. The natural processes of the river have been intertwined with culture throughout the City's history and they continue to play a part in everyday lives. In addition to the obvious need for improved flood control, the vision for the West London Dyke is to preserve the natural environment, historic character and cultural connections to the river, while creating a usable, attractive and distinct place within the City.

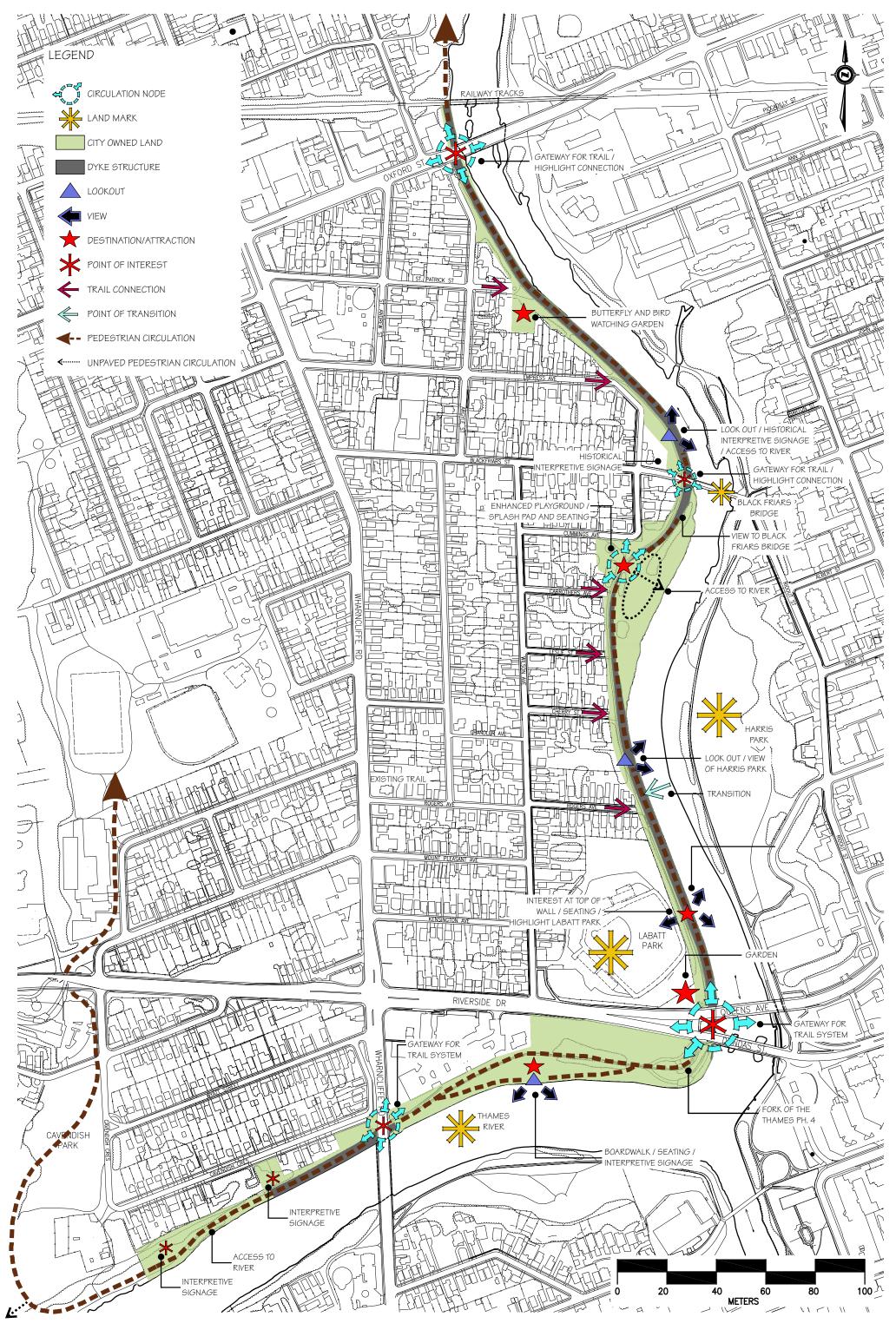


Fig. 4.1 Master Plan Concept

# WEST LONDON DYKE FLOOD CONTROL STRUCTURE MASTER PLAN

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#### 4.2 AREAS OF USE

The dyke and the land surrounding it has many uses for people, which include biking, running, walking, fishing, sitting, bird watching, playing, commuting and dog walking. Improvements for these uses and expanding the range of uses are important and necessary, but certain sections are better suited for particular activities. Four distinct areas along the West London Dyke have been identified as having different uses and are listed below:

- Oxford Street to Blackfriars Bridge
- 2. Blackfriars Bridge to Labatt Park
- 3. Labatt Park to Wharncliffe Road
- 4. Wharncliffe Road to Cavendish Park

# 4.2.1 Oxford Street to Blackfriars Bridge

The top of the dyke between Oxford Street and Blackfriars Bridge abuts a mixture of residential and park space. The areas adjacent to open space have been identified as having potential as gathering spaces. Access to the river and variations in the wall structure are desirable. Areas, which are in close proximity to houses, should be sensitive to such uses and minimize the potential for activities that would generate excessive noise or impact resident privacy.

# 4.2.2 Blackfriars Bridge to Labatt Park

The section between Blackfriars Bridge and Labatt Park abuts only residential land use. Because of the limited space and close proximity to houses this section should keep much of its existing character. The following points describe the items that can help achieve this.

- Maximize the landscape buffer to residences;
- Minimize the number of gathering spaces and locate gathering spaces away from residential buildings / in higher visibility areas;



Fig. 4.2 Playground at Cummings Avenue.

- Use of natural looking materials is preferred where it is practical and feasible;
- Implement informal native planting;
- Preserve existing trees.

The only existing gathering space is a small playground located at the bend in Cummings Avenue (Fig. 4.2, pg. 4.3). Serving an expanded use for play would make better use of this space.

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# 4.2.3 Labatt Park to Wharncliffe Road

The portion of the dyke and pathway system between Labatt Park and Wharncliffe Road has been identified as a section that suits higher use because it runs next to Labatt Park and the open space around the Kiwanis Senior's Centre. As mentioned previously, the pathway will pass through Phase 4 of the Forks of the Thames project. As the Forks of the Thames will have a very different character and appearance from the dyke, the West London Dyke and Thames Valley Parkway redevelopment can be an extension of what will be high volume usage and should cater to people with a variety of interests. Look outs, gardens, interpretive and seating areas should be incorporated. Where the hard structure gives way to a natural edge, access to the river is desirable, but the existing edge condition should be preserved (Fig. 4.6, pg. 4.5).

#### 4.2.4 Wharncliffe Road to Cavendish Park

The area between Wharncliffe Road and Cavendish Park is the only portion with an unpaved pathway. This section abuts a residential area and the pathway leads into Cavendish Park and the Cavendish Nature Trail. The paved pathway should blend into the open space system making the required community linkages and support the recommendations of the recreational routes of the City of London Bicycle Master Plan. Unpaved side trails will be maintained in this area to preserve the character of the natural space (Fig. 4.29, pg. 4.14).

#### 4.3 WALL STRUCTURE

The West London Dyke structure is primarily an engineered structure to protect life and property during periods of extreme river flows. As such there are many technical considerations, which determine its functional design. Therefore, the design concept presented in this section is intended to complement the overall design and not to take precedence over functional considerations. The wall structure will have the most visual impact upon the area because of its sheer vertical size. Creating an aesthetically pleasing and interesting view from the east side of the river has been identified as a major consideration, as well as creating continuity throughout the structure and creating interest from across the river (Fig. 4.3, pg. 4.4).

# 4.3.1 Wall Material

The wall material should be selected based on the overall vision for the dyke replacement. The material must have a natural appearance and give the greatest chance for long-term availability to ensure continuity throughout the phases of the structure replacement process. To create this natural look, large, gray, roughly textured blocks that resemble natural stone are preferable. The use of large wall blocks/modules rather than small will also help to reduce the perceived scale of the wall. Wall material selection should also consider how



Fig. 4.3 View west from Harris Park towards dyke.

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evenly each material weathers to ensure a natural appearance as it ages. Figures 4.4 and 4.5 (pg. 4.5) show examples of the type of pre-cast wall material that is being considered for Phase 1 of the redevelopment. Because the dyke will be replaced in phases there is a possibility that the same wall material will not be available at such time that the next section is ready for construction. Accordingly, it is strongly suggested that sections are replaced in sequence to

give the appearance of a seamlessly constructed structure

or else replaced in sections allowing for logical termination points, i.e. bridges, natural edge areas, etc.



Creating an interesting, aesthetically pleasing and culturally significant structure is key to achieving the vision for the dyke. The wall should be visually varied, horizontally and vertically. Horizontal and/or vertical banding, possibly to indicate significant flood levels, could be considered. Planting at the toe of the slope would shorten the wall



Fig. 4.4 Pre-cast wall material.



Fig. 4.5 Pre-cast wall material.

visually and give some softness to the hard structural components (Fig. 4.7, pg. 4.5). The use of lighting on the wall face would give interest at night, but lighting should not shine directly on water, so it does not adversely affected wildlife. The application of shape and form to create interest should be strongly considered in the context of technical requirements of the wall construction. A smooth, natural curve to the wall (Fig. 4.6, 4.7, pg. 4.5), creating platforms at the top of wall or closer in elevation to the water would accomplish this (refer to Section 4.7, pg. 4.13). Large shade trees, plantings, railings and lighting will give interest and texture to the top of the wall and offset its overall dominance.



Fig. 4.6 Natural curve observed in existing structure.

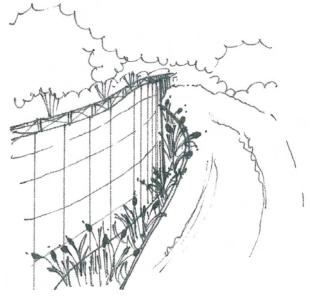


Fig. 4.7 Curved wall gives varying amounts of space between wall and toe structure.

#### WEST LONDON DYKE FLOOD CONTROL STRUCTURE MASTER PLAN

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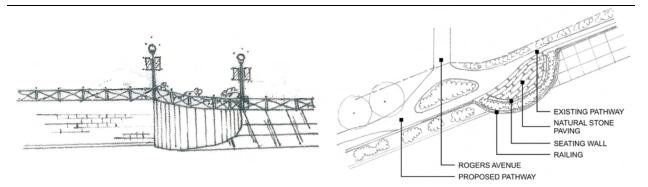


Fig. 4.8 Sketch illustrates integration of old and new wall structure.

Fig. 4.9 Concept sketch of transition (plan view).

#### 4.3.3 Transition

The transition is the point where the first phase of reconstruction ends and must meet the existing structure. Again, it is important that an aesthetically pleasing, semi-permanent solution be implemented. The change in grades and pathway alignment, and change to the shape of the structure presents a challenge for design development. The transition should continue the theme of natural looking materials, native plant material, and discreet, informal design. As the transition is at the end of Rogers Avenue, the view from the street must be appealing and the view of the trees on the other bank should be obscured as little as possible. The shape of the transition shown in the concept sketch above (Fig. 4.8 and 4.9, pg. 4.6) offers more of a buffer between residences and pathway users and allows viewers of events in Harris Park to step off the pathway. Introducing a third wall material for the transition would make it stand out and would move attention away from the sharp contrast between the old and new wall.

#### 4.4 NATURAL ENVIRONMENT

The naturally vegetated areas along the waters edge and the native trees existing at the top of the wall are significant to the character of the dyke. The trees give shelter from the wind, shade from the sun, homes for wildlife, and provide a colourful and varied backdrop through the four seasons. Existing significant vegetation must be preserved and protected. Where appropriate the shape of the wall and/or pathway alignment should be altered to save trees of significance.

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#### 4.4.1 Environmental Enhancement

An attempt should be made to plant native aquatic material at the toe of the dyke structure that will soften hard surfaces and stabilize soils. Vegetation will introduce itself by means of erosion and deposition, so establishing desirable, non-invasive native species is valuable. An effort should be made to create habitat for aquatic and terrestrial life along the edge of the river where conditions allow for self-sustaining habitat. It is important to preserve and enhance all existing natural edges for this reason (Fig. 4.10, pg. 4.7). If these remaining natural edges become unstable, bioengineering should be considered as a method of stabilization. Management of vegetation to remove invasive species will go a long way to reestablishing native plant diversity.

## 4.4.2 Urban Tree Management

Through the consultation process it was determined that there is a need for an urban tree management program. There should not only be documentation of trees of significance, but also identification of areas in need of maintenance, plantings and/or removals.

#### 4.4.3 Plant Design

Informal, natural plantings are suited for areas of lower use, particularly where the site borders on residential land use. Areas identified as gathering spaces should make



Fig. 4.10 Natural edge condition between Dundas Street and Wharncliffe Road.

use of more formal plantings to create emphasis. Native plant material should be used throughout to create continuity and protect the natural environment, but varying layouts can identify the intended use. Year round form and colour should be taken into consideration at the planting design stage. Planting should also be used to emphasize significant views. The creation of these views is discussed further in Section 4.4.5 and 4.5.3.

# 4.4.4 Signage

There is an opportunity to expand the existing interpretive signage program to incorporate information on natural systems and natural heritage in the area. Refer to section 4.5.2 (pg. 4.10) where the interpretive signage program is discussed further. Trail information signage should also be incorporated throughout the trail system. Suitable locations for signage are identified on the Master Plan Concept (Fig. 4.1, pg. 4.2).

# 4.4.5 Views

Several significant views were identified as having connections with the river and natural heritage. These views should be preserved and enhanced. They have been identified in Section 4.5.3 (pg. 4.10) along with suggestions for preservation and enhancement.

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#### 4.4.6 Bird and Butterfly Garden

The opportunity for users to participate in passive recreation activities was established as an important attribute of the trail system. Activities such as sitting, reading, people watching, bird and butterfly watching and walking are all considered types of passive recreation. A portion of the small open space at the end of St. Patrick Street is currently used as a community garden (Fig. 4.1, pg. 4.2). It seems natural that this area be expanded to incorporate a seating area and a garden that attracts birds and butterflies (Fig. 4.11, pg.

4.8). This would serve as a destination along the pathway.



Fig. 4.11 Highbush Cranberry – native shrub with berries that are liked by birds.

#### 4.5 HERITAGE

The West London Dyke and the surrounding area have a strong historic character. The most significant features to recognize are the existing Dyke itself, the Thames River, Labatt Park and Blackfriars Bridge. In addition, Eldon House and the Old Courthouse are important heritage buildings in the area. The dyke replacement is an opportunity to create a place, which provides information on the area's rich history while meeting the current needs of users.

#### 4.5.1 Lighting and Site Furnishings

Through the consultation process it was determined that site lighting and furnishings should be consistent with the dyke's strong links to cultural heritage. The existing light post base design should be used as inspiration for new light posts (Fig. 4.12, pg. 4.8). Figure 4.13 (pg. 4.8) shows the historic style of post and fixture found in front of the Nancy Campbell Institute and fits with the character of the post base.



Fig. 4.12 Historic light base incorporated into existing dyke railing.



Fig. 4.13 Historic light post in front of Nancy Campbell (London, ON).

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Figure 4.15 (pg. 4.9) illustrates what the proposed light post might look like. All furnishings should be durable, vandal resistant and cohesive with the area's cultural heritage. The existing railing was also recognized as significant to the identity of the dyke (Fig. 4.14, pg. 4.9). This railing should be used as inspiration for the new railing design (Fig. 4.16, pg. 4.9) that will meet safety codes. In addition, trash receptacles, additional benches and more consistent lighting are needed. Figures 4.17 and 4.18 (pg. 4.9) show site furnishings that are consistent with the historic style of the light post, light base and railing. The use of public art within destination areas or incorporating art within site furnishing design should be considered.



Fig. 4.14 Existing dyke railing.

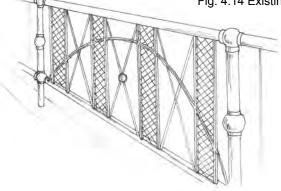


Fig. 4.16 Railing sketch.



Fig. 4.17 Wrought iron bench in Victoria Park (London, ON)

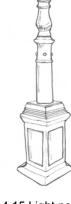


Fig. 4.15 Light post sketch.



Fig. 4.18 Bollard in Victoria Park (London, ON).

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# 4.5.2 Signage

An interpretive signage program for the dyke and pathway system exists and it is seen to be an inherent element to incorporate into and expand on in such a culturally rich area. The content of the existing interpretive signage program should be carried through, but it is suggested that a new format and unique appearance be implemented throughout the dyke and pathway system. This altered signage program should be in keeping with site lighting and furnishings, be durable, unique in appearance and vandal resistant. Consideration should be given to incorporating signage into the design of site elements, i.e. railings and pavement. Unique signage will assist in establishing the distinct character of the dyke. Suitable locations for interpretive signage are identified on the Master Plan Concept (Fig. 4.1, pg. 4.2). As noted in Section 4.4.4 (pg. 4.7) trail information signage is valuable and should be incorporated throughout the pathway system as well.

#### 4.5.3 Views

It was determined that views of significance along the dyke and pathway system have direct links with cultural and natural heritage in the area. Significant views are identified below, along with suggested approaches to preserve/enhance these views.

- View of the Wharncliffe Road Bridge, Thames River and the Fork of the Thames from Kiwanis – marked by lookout, seating area and interpretive signage (Fig. 4.10, pg. 4.7);
- View of Dyke structure and Thames River from the Queens Avenue Bridge – implement attractive wall structure and a discrete, aesthetically pleasing

transition (Fig. 4.19, pg. 4.10);

 View of the Queens Avenue Bridge and the Fork of the Thames from outside of Labatt Park – look out and interpretive signage to remark on significant features (Fig. 4.20, pg. 4.10);



Fig. 4.19 West side of dyke, looking North from the Queen St. Bridge.



Fig. 4.20 View of Queens Avenue Bridge and the Fork of the Thames.

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- View into Labatt Park allow controlled view into the park, mark with interpretive signage and seating area (Fig. 4.21, pg. 4.11);
- View of Harris Park look out and interpretive signage to allow users to stop along pathway (Fig. 4.22, Fig 4.23 pg. 4.11);
- View of Blackfriars Bridge from the South

   should not be obscured
   (Fig. 4.24, pg. 4.11);

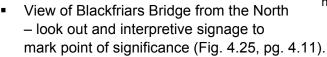




Fig. 4.21 View into Labatt Park, through cedar hedge, from pathway.



Fig. 4.22 View of river and Harris Park from dyke.



Fig. 4.24 View of Blackfriar's Bridge from South.



Fig. 4.23 View into Harris Park from top of dyke.



Fig. 4.25 View of Blackfriar's Bridge from North.

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#### 4.5.4 Labatt Park

This baseball park has a long-standing history in London that many residents are unaware of. Creating a controlled view into the Park from the pathway, with interpretive signage about its role in the City's History, would bring an interesting element to the dyke replacement and create further visibility to the Park. Fig. 4.21 (pg. 4.11) shows the break in vegetation that inspired the idea. This location provides an opportunity to create a gathering space that is a destination along the trail. The line of cedars that shield the park from those on the pathway has been identified as a positive element because it creates an intimate feel, and natural appearance. This green backdrop should be a component in the proposed design whether it is preserved or reintroduced.

#### 4.6 SAFETY

Improved site features and pathway system improvements will increase the number of users. With this increase, improved safety becomes a very necessary consideration. Circulation, visibility, lighting and vandalism are among those items that must be addressed.

#### 4.6.1 Circulation

The existing pathway system crosses five major streets, without any form of traffic control to give users the right-of-way. Not only is this dangerous, but it is inconvenient for pathway users. Access under the bridges would increase safety for pedestrians and cyclists and improve circulation for those who choose to use the pathway functionally as a green method of transportation. A continuous path encourages users, especially cyclists, to make use of a pathway system because of its convenience. For the reasons noted above, implementing pathways under each bridge should be given serious consideration. The existing pathway also varies in width and material. As the pathway is redeveloped, its design should be consistent with City of London Standard Multi-Use Pathway to improve circulation, safety, and create continuity.



Fig. 4.26 View West to the Wharncliffe Road crossing.

#### 4.6.2 Lighting

As noted earlier, lighting can aid in creating continuity and cultural connections with the dyke system in the daylight. In the evening hours lighting will not only create continuity, but will have a direct impact on the safety of the pathway system. A well-lit pathway will encourage people to make use of it during evening hours. The existing lighting system is not consistent and leaves dark patches due to the presence of overgrown vegetation or a lack of light posts and fixtures. The dyke system requires consistent lighting throughout. The use of full cut-off optics will help decrease light pollution to adjacent areas. Light post placement and the use of housing shields should be given careful consideration when adjacent to residential areas.

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#### 4.6.3 Vegetation

Vegetation can play a role in how safe a pathway system is and how safe users perceive it to be. Existing vegetation and proposed planting should adhere to CPTED (Crime Prevention Through Environmental Design) principles.

#### 4.6.4 Vandalism

The existing dyke and pathway system has been subject to numerous acts of vandalism over the years (Fig. 4.27, pg. 4.13). A reduction in vandalism can be achieved through appropriate lighting and site design. CPTED principles should be considered during design development in order to reduce occurrences of vandalism. Vandal-resistant site furnishings are available and should be used wherever possible.



Fig. 4.27 Existing signage has been badly damaged by vandals.

#### 4.7 ACCESS TO THE RIVER

It was identified that access to the river is very important to users, whether it is just to be near the edge to look into the water or to fish, feed the geese or canoe. Although the river can be more readily accessed from the east side of the river there are still several existing access points. Access is provided at Cummings Avenue (Fig. 2.5, pg. 2.7), the Kiwanis Senior's Centre (Fig. 2.7, pg. 2.8) and at Cavendish (Fig. 4.29, pg. 4.14) and should be preserved/enhanced as described below. It becomes challenging to provide access when the wall structure exists.

# 4.7.1 Cummings Avenue

Access to the water is currently available, but not encouraged at Cummings Avenue. As noted previously, the natural vegetation in this area should be preserved and maintained. A wood chip path or gravel path should be provided to encourage users to stay on the path, and to reduce soil compaction and damage to plant material. Steps should be taken during design development to ensure that the water's edge is protected from pedestrian traffic. Access to cyclists should be restricted to protect the natural area from damage. Providing seating at the water's edge would allow for sitting, reading and fishing and should be incorporated.

#### 4.7.2 Blackfriars Bridge

The area north of the bridge has been suggested as a possible location for access to the river by alterations to the design of the wall structure. This area has more room to work with than many other locations along the dyke.

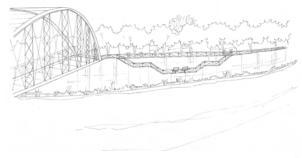


Fig. 4.28 Sketch illustrating possible outlook at Blackfriars bridge.

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Figure 4.28 (pg. 4.13) illustrates this concept.

#### 4.7.3 Kiwanis Senior's Centre

The stretch between the Queens Avenue Bridge and the Wharncliffe Bridge currently gives access to the river and has a natural edge condition. This natural edge should be maintained but this section has been identified as a place that would suit higher usage. There is potential for a discreet and unobtrusive boardwalk and lookout with seating and interpretive signage. Implementing a dock into the lookout for canoes and kayaks would expand the number of recreational activities in the area. Seating would allow for reading, people-watching and observing wildlife.



Fig. 4.29 Pathway looking West towards Cavendish Park.

#### 4.7.4 Cavendish

There is currently access to the river between Cavendish Park and east to where the hard structure of the dyke begins (Fig. 4.29, pg. 4.14). This natural edge condition should remain in its present state or be enhanced. The existing edge gives an opportunity for fishing.

#### 4.8 GATEWAYS

Gateways have been identified on the concept plan at various locations where the pathway system intersects major roadways. These specific nodes have the opportunity to identify where the pathway system connects with major streets, while being aesthetically pleasing. The gateways should be in keeping with the aesthetic of the pathway system and dyke redevelopment initiatives. As these connections are where many pedestrians and cyclists enter the pathway, these are ideal locations for trail information signage.

### 5.0 Implementation

The following notes outline how the recommendations detailed in the design guidelines section should be implemented during various phases of the redevelopment.

#### 5.1 GENERAL RECOMMENDATIONS

The general recommendations found below detail how to specifically implement design recommendations, which apply to all phases of development. All recommendations, which apply, should be addressed during each phase of development.

- Options for creating a functional and interesting dyke layout and structure should be investigated during each Phase of the redevelopment and accordingly be detailed in each set of tender documents;
- Confirm the suitability of naturalization plantings at the toe of the dyke for potential environmental enhancement throughout all phases of development;
- Investigate opportunities for naturalization planting areas for environmental enhancement during design development;
- Investigate opportunities for terrestrial and aquatic habitat creation during design development;
- Seating should be incorporated into the pathway system at regular intervals throughout all phases of redevelopment;
- Lighting and furnishing design, including signage, should consider design guidelines and be determined through design development;
- Significant views / lookout locations should be identified and confirmed at the site design scale, during design development for each phase of redevelopment;
- Investigate opportunities to implement pedestrian underpasses under all bridges within the study area where appropriate;
- Lighting design for all phases of the redevelopment should have consistent lighting types and levels to increase safety and should be adjusted to suit adjacent land uses;
- Consider Crime Prevention Through Environmental Design (CPTED) principles when preparing planting plans for all phases of redevelopment;
- CPTED principles should be considered for all phases of redevelopment to reduce the occurrences of vandalism and increase safety for its users;

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- Investigate all opportunities during each phase of the redevelopment to provide access to the river for a broad range of activities.
- Functionality and aesthetics should be key design considerations for any transitions in all phases of development;
- The buffer between residences and the pathway system should be maximized during all phases of design development;
- The wall layout determined through the design development stage should consider both technical requirements and the recommendations given in the design guidelines regarding shape and composition. Where possible it should be varied to create interest and give adequate room at the top of wall for things such as lookouts, buffers and gathering spaces.
- Public input should be solicited for each phase of the dyke replacement.

#### 5.2 PHASE 1 RECOMMENDATIONS

The recommendations outlined in this section are specific to implementation of Phase 1 of the dyke and pathway replacement. Each item should be addressed during design development.

- The wall material selection should be investigated and selected during detailed design for Phase 1 of the redevelopment based on functional capability as well as aesthetic appeal, and be specified in the tender documents;
- Detailed design for Phase 1 of the redevelopment, should look at the functionality and aesthetics of the transition specifically;
- The urban tree management program should be initiated as soon as possible, so that an approach for all phases can be reached prior to construction of Phase 1;
- A native plant list should be prepared during design development for Phase 1 and be consistent through future phases of redevelopment;
- Site lighting and furnishings including seating, trash receptacles, railing and interpretive signage are to be vandal resistant, detailed during the detail design stage and be included in the tender documentation for Phase 1;
- Investigate opportunities to create a lookout and interpretive area in front of Labatt Park;
- Ensure all lighting has full cut-off optics, is documented during design development and is included in the tender documents for Phase 1;
- Consistent and identifiable gateways should be designed for all major roadway crossings and be included in the tender documents for Phase 1.

#### 6.0 Conclusion

The West London Dyke and Thames Valley Parkway upgrade and replacement has come about because of structural deficiencies in the dyke itself, as identified in 2005. Thus, it is necessary to bring this flood control structure up to current technical standards. The dyke replacement gives the rare opportunity to create a dyke and pathway system that preserves and enhances the natural environment, historic character and cultural connections to the river, while improving safety and usability, and establishing an attractive and identifiable place within the City of London.

The process in developing the Master Plan document has involved:

- Review of background information including, technical investigation and PIC process;
- Review of site conditions and photo documentation;
- Analysis of existing conditions;
- Development of preliminary goals and objectives;
- Preparation of design concepts;
- Information gathering from key stakeholders during the design charrette process;
- Identification of primary issues, concerns and ideas generated at the charrette;
- Development of a vision and design guidelines for the dyke and pathway system;
- Refinement of the Master Plan Concept;
- Preparation of specific recommendations for implementation of design guidelines.

As noted in Section 1.2, a condition assessment identified that the portion of the dyke in the most need of replacement was between the Queens Avenue Bridge and Rogers Avenue. A preferred alternative was selected for Phase 1 of the redevelopment after careful evaluation of design alternatives. Specific benefits of the wall design selected for Phase 1 include more efficient use of public space and more flexibility in uses at the top of dyke, replacement of damaged site furnishings, the potential for pathways under existing bridges and for ecological enhancement at the top and toe of the dyke structure. Design recommendations need to be applied to Phase 1 to ensure that a cohesive dyke and pathway system is achieved.

The design guidelines and implementation recommendations within this document are intended to guide detailed design and to create continuity throughout all phases of the redevelopment. It is imperative that public consultation be solicited with each phase of the redevelopment. Through the creativity and insight of the community and the design team the vision for the West London Dyke and Thames Valley Parkway can be achieved.

# West London Dyke Flood Control Structure Master Plan Appendix A





#### **Introduction**

The West London Dyke 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 of the Wharncliffe Road Bridge.

Construction began on the West London Dyke in the 19<sup>th</sup> century in order to minimize flood damage in the West London area which was prone to flooding. Historical records indicate that portions of the earth embankments which form the underlying support of the current dyke structure generally consists of material deposited from street sweepings and excess soil from excavation work.



Fig –1 Photo from the 1930's showing the concrete Dyke being formed.

Beginning in the mid 1910's, the City began to undertake reconstruction of the dyke system to include additional placement of fill and a concrete facing as a means of additional protection against erosion. However, it wasn't until after the 1937 flood that the present concrete facing material was placed.

The City of London owns the dyke structure and undertakes minor maintenance activities. Through an agreement with the Upper Thames River Conservation Authority (UTRCA), the UTRCA undertakes major maintenance activities.

#### **Background**

In 2004, Stantec Consulting Ltd. undertook a condition assessment of flood control structures within the City of London including the West London Dyke. Approximately 350 m of the dyke structure from the Queens Avenue Bridge to Rogers Avenue was identified as being the highest priority for repair.

In April 2005, Stantec undertook an investigation to determine the requirements to repair this area of the dyke. Based on the investigation that included coring of the structure and geotechnical review by a soils consultant, it was concluded that this section of the dyke has come to the end of its useful life. Therefore, it needs to be replaced rather than repaired.





#### **General Information**

**Existing Structure -** The current dyke can generally be described as a gravity structure consisting of earth fill with a poured in place concrete facing supported by a concrete toe. Large precast concrete blocks are also located along sections of the toe within the river to add additional support and to minimize erosion.

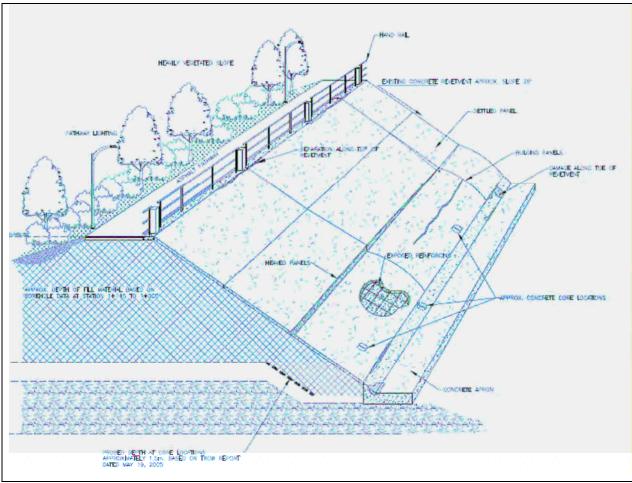


Fig –2 Typical cross section of the existing West London Dyke in the study area

**Current Flood Protection** -The section in the study area at present provides the lowest level of flood protection compared to other portions of the West London Dyke. In general, the elevation of the dyke is between the Regulatory Flood Line (1:250 year flood) and the 1:100 year flood event. On average, the structure is approximately 0.7 m below the Regulatory Flood Line within the project area.





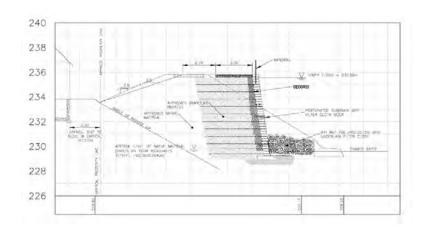
#### **Preliminary Engineering**

#### **Major Design Considerations**

- Provide flood protection to at least the 1:100 year flood level as presently provided and if practical/economical to the 1:250 year flood level;
- Minimize impacts on environment (therefore replacement structure is to be within the existing dyke footprint);
- Provide a design that can work in restricted areas of the dyke within project area and in other segments of the West London Dyke requiring future replacement;
- Given the cost, complexity and potential inconveniences during construction, the major components of the replacement dyke structure should be designed for a life expectancy of 75 years;
- Maintain/enhance recreational use of the dyke;
- Incorporate a pathway structure from the bottom of the Queens Avenue Bridge to the top of the dyke structure; and
- Given the high visibility of the structure and its proximity to the downtown core, aesthetics to be considered in the selection of the preferred structure.

**Design Alternatives for Replacement of the Dyke** - A tabular decision matrix listing the various options for replacement of the dyke structure was prepared (see display board). In total, eleven (11) design alternatives were submitted for review by the City and UTRCA. Based on the decision matrix developed four alternatives were shortlisted for further review. These are:

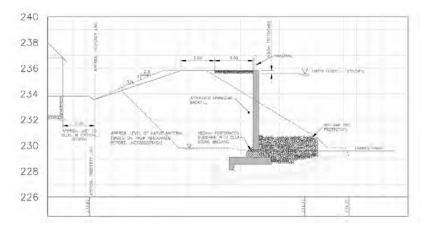
Option A: Pre-cast reinforced earth system;



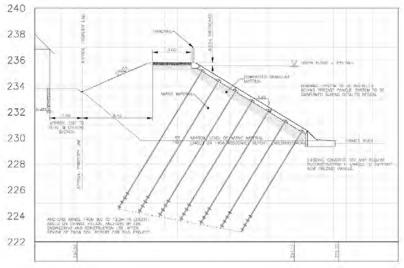


# UPPER THAMES RIVER CONSERVATION AUTHORITY

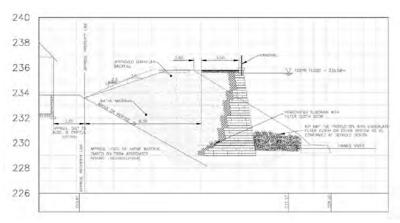
Option B: Reinforced concrete cantilever wall (retaining wall);



Option C: Pre-cast concrete Revetment; and



Option D: Pre-cast concrete modular block structure.







**Shortlisted Design Option Review** - The following were considered in undertaking a comparative analysis of the shortlisted options:

- Capital Cost;
- Aesthetics;
- Function (including the potential to integrate a pedestrian pathway from beneath the bridges to the top of dyke);
- Constructability; and
- Durability.

Table 1 summarizes the rankings for the shortlisted options:

Table 1 – Ranking of Options							
OPTION	Α	В	С	D	Weight		
Construction Cost*	\$2,100,000	\$2,900,000	\$4,200,000	\$2,500,000	* Based upon a structure to meet the 1:100 year flood		
Cost **	20.0	14.5	10.0	16.8	20		
Aesthetics	10.0	2.5	5.0	10.0	10		
Function	5	10	2.5	5	10		
Constructability	10	5	2.5	10	10		
Durability	5	10	2.5	5	10		
Total Score	50.0	42.0	22.5	46.8	60		
Ranking	1	3	4	2			

<sup>\*\*</sup> Ranking based on inverse ratio of the cost of option divided by the lowest cost option. 1:100 year used as basis as Option C cannot be built to 1:250 year.

Option A was selected as the preferred alternative design by the City of London and UTRCA as it best met the requirements for the project, including consideration for cost, provision of adequate pathway integration, aesthetics, ability to provide either the 100 or 250 year flood level and general constructability issues given the site constraints previously identified. The City of London and UTRCA have decided to have the dyke built to the 250 year flood level.

#### **Other Considerations**

**Pathway Integration** - The City is considering providing a pedestrian connection along the west bank of the Thames River in order to minimize pedestrian crossings of Queens Avenue and Riverside Drive in this area. Two options (continuous and zigzag) were developed to integrate a pathway from beneath the Queens Avenue Bridge to the top of the dyke. The continuous pathway was selected as the preferred design. The final decision on the pathway will be based upon funding availability and subject to additional investigation to determine the integration of the pathway in the vicinity of the bridge supports and to work completed as part of the Phase IV of the Forks of the Thames Phase Revitalization Project.





Class Environmental Assessment - This project falls under the jurisdiction of the *Municipal Class Environmental Assessment, Municipal Engineers Association June 2000* process, as the City of London is the Proponent. The project falls under the category of a Municipal Water and Wastewater Project; as a Stormwater Management Project. Based upon a review of the project schedules, this project should be considered a Schedule A (pre-approved) project. This schedule best fits with this project's work scope which is to replace approximately 350 m of the West London Dyke as it has come to the end of its useful life and needs to be replaced rather than repaired.

**Approvals** - This project may require various permits from local, provincial and federal agencies. Verification as to the required approvals will be subject to the completion of detailed design.

#### **Total Project Cost**

The project cost estimate to complete this project is presented in Table 2. This includes replacement to the 1:250 protection level and the inclusion of the pedestrian pathway (in the project area).

Table 2 – Project Cost Estimate						
Description	Replacement Dyke	Pedestrian Pathway	Total			
Construction (1:250 year protection)	\$2,300,000	\$220,000	\$2,520,000			
Detailed Design & Contract	\$241,500.00	\$23,100.00	\$151,200			
Administration (10.5% of Construction)						
Soils and Material Testing (1% of	\$23,000.00	\$2,200.00	\$25,200			
Construction)						
Subtotal	\$2,564,500	\$245,300	\$2,809,800			
Contingency (20% of Subtotal)	\$512,900	\$512,900	\$561,960			
Total	\$3,077,400	\$294,360.00	\$3,371,760			

#### Comments

Comments are welcome and may be directed to:

Rick Goldt, C.E.T. Supervisor, Water Control Structures Upper Thames River Conservation Authority 1424 Clarke Rd.

London ON N5V 5B9 Tel: (519) 451-2800 x244 Fax: (519) 451-1188

Email: goldtr@thamesriver.on.ca

Scott Mathers, B. A. Sc., (Eng)
Wastewater and Drainage Engineering
Environmental and Engineering Services
Department, City of London
300 Dufferin St., Room 910
London, ON N6A 4L9
Tel: (519) 661-2500 x5472

Fax: (519) 661-2355 Email: <a href="mailto:smathers@london.ca">smathers@london.ca</a>





# THE CORPORATION OF THE CITY OF LONDON UPPER THAMES RIVER CONSERVATION AUTHORITY NOTICE OF PUBLIC INFORMATION CENTRE

The West London Dyke is 2374 m long 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.

In 2004, the UTRCA undertook a condition assessment of 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 19<sup>th</sup> century in order to minimize flood damage in the West London area with the present concrete revetment dating to the 1930s.

In 2005 while undertaking the initial stages of a concrete repair program on this section, the UTRCA and the City 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. Therefore, a preliminary design report was undertaken by an engineering consultant to assist the City and the UTRCA to determine:

- The requirements for the performance of a replacement structure;
- The required life expectancy of the replacement structure; and
- The recommended replacement structure to be used.

The City and the UTRCA have received a draft preliminary design report and based on its findings have arranged for a Public Information Centre. This event is an opportunity for interested persons to learn more about this project and to provide input and comment to the City and the UTRCA. The Public Information Centre details are as follows:

Date: Thursday May 25, 2006

Time: 4:30–8:30 p.m.

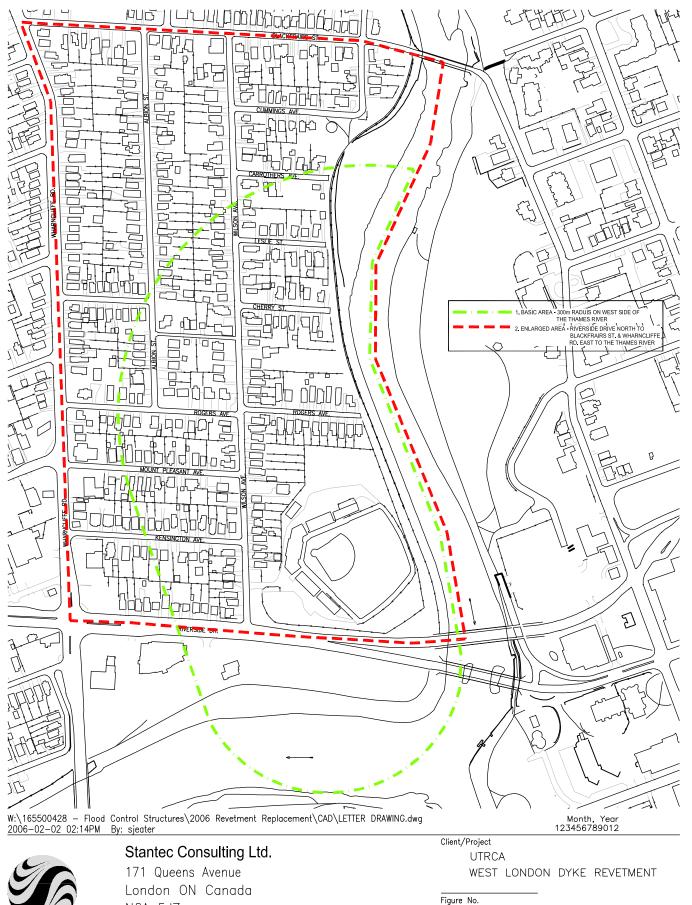
Location: Kiwanis Community Centre, 78 Riverside Drive

Inquiries are welcome and may be directed to:

Rick Goldt, C.E.T. Supervisor, Water Control Structures Upper Thames River Conservation Authority 1424 Clarke Rd. London ON N5V 5B9

Tel: (519) 451-2800 x244 Fax: (519) 451-1188 Scott Mathers, B. A. Sc., (Eng)
Wastewater and Drainage Engineering
Environmental and Engineering Services
Department, City of London
300 Dufferin St., Room 910
London, ON N6A 4L9

Tel: (519) 661-2500 x5472 Fax: (519) 661-2355



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Fax. 519.645.6575

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#### **Send PIC Notice to:**

Martyn Curtis, Fish Habitat Biologist Department of Fisheries and Oceans 201 N. Front Street, Suite 703 Sarnia, ON N7T 8B1

Suzanne Shea, Navigable Waters Protection Officer Transport Canada – Marine 201 N. Front Street, Suite 703 Sarnia, ON N7T 8B1

Neal Ferris Ministry of Citizenship, Culture & Recreation Archaeology & Heritage Planning 659 Exeter Road London, ON N6E 1L3

Dan Elliott Area Supervisor/Officer in Charge Aylmer District Ministry of Natural Resources 353 Talbot Street West

Ron Griffiths, Environmental Assessment Coordinator Ministry of Environment 2<sup>nd</sup> Floor 733 Exeter Road LONDON, Ontario N6E 1L3

Erick Boyd, Municipal/Planning Advisor Ministry of Municipal Affairs and Housing Regional Operations Branch 2<sup>nd</sup> Floor 659 Exeter Road London, ON N6E 1L3

Allan Van Damme, Manager of Engineering London Hydro Inc. 111 Horton Street London, ON N6A 4H6

#### **West London Dykes**

May 16, 2006

### Information Centre Notice sent to the following organizations:

Advisory Committee on the Environment, City of London

Carolinian Canada

Ducks Unlimited, London Chapter

Environmental and Ecological Planning Advisory Committee, City of London

Friends of Oxbow Creek

Friends of Sifton Bog

Friends of the Coves

Friends of Dingman Creek

Global Action Plan for the Earth

London Canoe Club

London Sport Fishery Association Limited

McIlwraith Field Naturalists

Middlesex Western Rowing Club

Natural Outdoor Activity Heritage Conservation Club

Ontario Federation of Anglers and Hunters, Zone J

Thames Region Ecological Association

Thames River Anglers Association

Thames Valley Trail Association

Tri County Bass Masters

Urban League of London

Western Ontario Fish and Game Protective Association





# West London Dyke Replacement Project (Queens Ave Bridge to Rogers Ave)

### **Public Information Centre**

Thursday, May 25, 2006

### **Attendance Sheet**

<u>Name</u>	<u>Address</u>	Affiliation (Homeowner, etc.)
John Tyrrell	Presenter	Stanter
Jeff Green	11 Napier St	Homeower
Jason Jordan	1-60 Blacksfravs St	Rontos
Pat Donnell	0	Git of harden
' //	10 Carrothers Ave	Homeowner
J.E. Johnston ANDRE LAWRIN	98 Wilson Ave	Honeganer
GLADYS RAMBAY	115 WHARNCLIFFE RD N	Home onwer
Christine Andreas	6 St. Patrick St.	Honeoconer
Grace Hoekstra	77 Albion St	owner.
Torn Copaland	300 Differen	Cityoflan.
Sarah Copelland	38 ski valley Cres.	Lordon.
KIRTLEY JARVIS	11 ROGERSAVE	romon
Nancy Martin	14 Rogars Ava	Landon
DONNA ROWN	14 Roberts Ave	Lorsen





# West London Dyke Replacement Project (Queens Ave Bridge to Rogers Ave)

### **Public Information Centre**

Thursday, May 25, 2006

### Attendance Sheet

	Attendance Sneet	
<u>Name</u>	<u>Address</u>	Affiliation (Homeowner, etc.)
Larry + Linda Mines	, 3 Leslie St.	Domeowners
Larry Linda Mines Andy Ander 609	49 ALBION ST.	
NANCYMETROY		
' '	10 NAPHERST	L
ا م		
Shirley + John Clenet	2 Carrotters ave.	
	•	

# West London Dyke Flood Control Structure Master Plan Appendix B



# **West London Flood Control Structure Design Charrette Summary**

# **West London Flood Control Structure Design Charrette Summary**

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# WEST LONDON FLOOD CONTROL STRUCTURE DESIGN CHARRETTE SUMMARY

### 1.0 Design Charrette Invitation / Attendance Summary

INVITED	ATTENDED
Friends of Labatt Park	Stephen Harding, Art Lierman
Blackfriars Neighbourhood Association	Chris Pehlke. Shirley Clement, Jan Delaney, Bruce Dunn
North Talbot Community Association	Gene DiTrolio
Riverforks Community Organization	Kevin Curtis-Norcross
City of London Director of Planning	Rob Panzer
Urban League of London	Jack Groom
London Arts Council	John Nicholson
River Project Art Group	Kevin Bice
London Canoe Club	Simon Tanner
Thames River Heritage Group	Tara Tchir (UTRCA)
City of London Heritage Planner	Unable to attend due to illness
Kiwanis Seniors Centre	Unable to attend
Thames River Anglers Association	No response
Oxford Park Resident's Association	No one available or interested
Downtown Neighbourhood Association	Association is no longer active
Mayor, All Councillors and Controllers	None

#### 1.1 PROJECT TEAM

- UTRCA Rick Goldt
- City of London Parks Planning Andrew Macpherson, David Antonson
- City of London EESD Scott Mathers
- Stantec Robin Campbell, Haley Sadler, John Tyrrell, Dan Weagant, Maureen Zunti

# WEST LONDON FLOOD CONTROL STRUCTURE DESIGN CHARRETTE SUMMARY

### 2.0 Group Discussion of Opportunities, Challenges & Needs

(Prior to Group Workshop / Brainstorming Session)

- Consider the view from the Thames River looking up at the wall it's a big, tall expanse of retaining wall
- Possibly add a pattern or combine materials to create interest in the wall face
- Retain/preserve mature trees and existing vegetation at the top and bottom of the dyke structure
- Concerns relating to the timing replacement of the wall continuation including the transition zone and creating overall continuity
- Impacts of the project to the adjacent neighbourhoods and London
- Is it possible for the 'floodplain' zoning to be removed from the Blackfriars area if the wall is installed at a 250yr. storm height?
- Add curves to the wall profile to 'soften' the overall appearance
- Think of the entire project as a whole and build the wall to last forever
- Consider wildlife that lives in and around the dyke structure possibly maintain and/or create habitat
- Be aware of the root systems of new vegetation
- At the toe of slope plant and create habitat
- What is the modularity of the retaining wall system? How big is the block?
- Is a natural wall material an option?
- Don't favour the vertical wall option as it is not aesthetically pleasing
- Don't base decision on economics
- The wall option presented is not 'naturalizing' the river and limits access to the river
- Try to emphasize the river and natural environment and minimize focus on the wall
- Phase I is a very visible section and aesthetics should be a primary consideration

# WEST LONDON FLOOD CONTROL STRUCTURE DESIGN CHARRETTE SUMMARY

### 3.0 Summary of Individual Group Design Ideas

#### 3.1 **WALL**

- Build the new structure for the ages
- Limit number of materials used
- Utilize natural materials
- Do not cap wall by overlapping/overhanging top coping layer
- Break up the wall both vertically and horizontally grades?
- Add interest to the wall
- Important to select a product that is relatively neutral but available long term
- Consider options for wall structure, i.e. bottom half angled and top half vertical
- Use big wall blocks with texture and depth regular concrete colour
- Possibly add banding in the wall to depict significant flood events and/or elevations
- Add steps / sloped wall sections for wildlife to access the river
- Incorporate planting at the toe of slope

#### 3.2 PATHWAY

- Minimize footprint of pathway, maintain existing width
- Encourage active recreation only on other side of river
- Use 'grills' in cantilevered viewports to allow views down to the river
- West of Wharncliffe maintain footpath do not pave

#### 3.3 LIGHTING AND SITE FURNISHINGS

- Install lighting on the river side of the walkway
- Direct light downwards so it doesn't affect residences
- Add more benches and trash receptacles
- Improve lighting
- Uplight the wall at night to add interest
- Vandalism concerns
- Don't need concrete slabs under benches
- Consider more contemporary site furnishings
- Blend lighting with the adjacent land uses not too bright beside neighbourhoods
- Add sitting areas

### WEST LONDON FLOOD CONTROL STRUCTURE DESIGN CHARRETTE SUMMARY

#### 3.4 RIVER ACCESS

- Do not add formal docks between Oxford and Queen Street
- Add steps / sloped wall sections for wildlife to access the river
- Enhance access to the river

#### 3.5 VEGETATION AND LANDSCAPING

- Preserve
- Implement an Urban Tree Management Program
- Manage vegetation remove invasive species and enhance native vegetation
- Utilize native vegetation for new planting areas
- Minimize impact to existing trees
- Preserve vegetation Cottonwoods significant
- Incorporate planting at the toe of slope
- Enhance natural elements/habitat
- Limit access to natural area at edge of river opposite Carrothers Ave. maintain as walking/nature trail
- Use native plantings
- Retain, emphasize and augment natural environment at and near Cavendish
- Plant more native vegetation between Blackfriars and Oxford to create more open and closed views for interest

#### 3.6 BLACKFRIARS NEIGHBOURHOOD

- Preserve the sense of individual/unique residential neighbourhood through Blackfriars area

   keep intimate
- Maintain/provide access from all streets, but not necessarily ramped access at all connections
- Don't want significant change like the area as is
- Proposed 3.0m wide pathway seems excessive through this area
- Replicate or reuse historical elements incl. light bases and railing
- Implement historical interpretive signage plagues

#### 3.7 LABATT PARK

- At Labatt Park maintain the 'wall of green' with one open vista
- Locate an interpretive signage feature plaque

### WEST LONDON FLOOD CONTROL STRUCTURE DESIGN CHARRETTE SUMMARY

#### 3.8 TRANSITION OF OLD WLD TO NEW WLD

- Add a 'lookout' at the end of Rogers Ave. to ease the transition zone maintain 'lookout' when next section is installed
- Consider cantilevered viewing areas to help with transition

#### 3.9 SIGNAGE

Implement historical interpretive signage at key locations

#### 3.10 OVERALL / GENERAL COMMENTS

- Create a template for the design 'vocabulary'
- Build the new structure for the ages
- · Limit number of materials used
- Vandalism concerns
- Utilize natural materials
- Don't like 'bump-out' idea

# WEST LONDON FLOOD CONTROL STRUCTURE DESIGN CHARRETTE SUMMARY

### 4.0 Summary of Comments Received via E-Mail and Fax

Comments Provided by: Nancy Martin and Donna Renn, Ted Halwa, Stephen Harding, Art Lierman, Shirley and John Clement, Kirtley Jarvis and Judy Bryant

- Reflect importance and prominence of the first section to be replaced in the design
- Concerns relating to the timing of replacement of the wall continuation including the transition zone and creating overall continuity
- Inventory of trees should be conducted to identify heritage trees
- Consider planting larger replacement trees to mitigate sudden loss of large trees
- Add garbage receptacles and regular pick up by City
- Keep vehicles off pathway
- Is it necessary to increase the height of the wall?
- Reproduce light posts with historic light bases
- Provide a plaque with historic information about Labatt Park at the break in the cedar hedge
- Create platforms or balconies off pathway for spectators at events cantilevered
- More benches and space for temporary seating
- Make use of gravel as a choice of material in harmony with the river
- Naturalize banks Use bioengineering for slope stabilization where possible
- Use cast iron lamp posts, keep with 1930's look for site furnishings
- Create easy access from pathway to river
- Preserve trees (Mulberry) and provide signage to identify those that are significant
- Install interpretive signage and plaques
- Highlight Eldon House, the old courthouse, Blackfriar's Bridge and Labatt Park as heritage features along pathway
- Pathway in itself is a heritage feature that links these areas
- Recognize pathway as a significant environmentally friendly, low cost, clean method of transportation
- Do not use design used at the Fork of the Thames (railings, hard surfaces, gabions, armour stone, paved surfaces, splash pad), keep trail as a restful oasis of quiet
- Select a wall material that looks like large blocks of stone
- Consider a cast iron/wrought iron replica of railing that meets safety codes
- Use shadows as a consideration in selecting a railing material
- Make use of Robert Greene's Saw Edge Roadway style within design
- Will historic artifacts be preserved during construction?
- · Consider design in keeping with Forks of the Thames renewal
- Design competition for railing design?
- Make it a Riverside Sculpture project (list St. Peters' Riverside Sculpture Project in Sunderland England) – sculpted railings and lamp posts, raised seating

### WEST LONDON FLOOD CONTROL STRUCTURE DESIGN CHARRETTE SUMMARY

- Of the 4 proposals "solution A" is the most ugly. The vertical wall is intimidating to look at and dangerous to boaters
- The Thames status as a Heritage River has not been given much consideration.
- The proposal does not promote habitat enhancement. This should be a key element
- UTRCA concerns about endangered species were dismissed by Stantec's engineer
- The proposal does not facilitate access to the river from the walkway. This also makes rescue of people from the river is difficult
- The process has been seriously flawed by not having wide participation from the public or on going discussion in the media. The Creative City approach has not been applied in this process
- The proposal appears to have been chosen on cost (cheapest) and as the easiest to implement from the engineering perspective.
- I felt the charrette avoided dealing with the big picture: how the embankment would appear from Harris Park or from a vantage point on the Queens Ave. bridge
- The consultant did not present any concept drawings that show how solution "A" or the other
  proposals would actually look as part of the landscape. They had several months to prepare
  them

# WEST LONDON FLOOD CONTROL STRUCTURE DESIGN CHARRETTE SUMMARY

### 5.0 Group Comments on Next Steps

- Organize comments/notes/results of this meeting and circulate to all participants
- Continue consultation with stakeholders
- Bring the proposed MasterPlan back to this group for review and comment prior to submitting to City Council
- Bring photos and brochures for possible wall options to stakeholders for their review and input
- Bring 3D view of the new WLD and old WLD wall including transition area to the stakeholders for their review and input
- Emphasize common themes including:
  - No manicured spaces
  - Maintaining existing pathway width

# WEST LONDON FLOOD CONTROL STRUCTURE DESIGN CHARRETTE SUMMARY

### 6.0 Workshop/Brainstorming Session - Group 1

Group Members: Art Lierman, Jack Groom, Kevin Curtis-Norcross, Rob Panzer and Maureen Zunti

#### **LIGHTING**

- Light should be directed downwards
- Consider reducing number of light standards
- Consider uplighting on wall to focus on specific features
- Don't have too much light shining down on river (for wildlife reasons)

#### WALL

- Wall should have texture and variation consider colour or banding variation to show historical flooding events, or have sections of wall protrude a little more (e.g. – 6") to depict flood events
- Wall module should be large for scale of overall dyke and should offer relief and shadow play
- Important to select a product that is relatively neutral but available long term
- Consider some tiered areas / sloped sections (see sketch) to help wildlife access to and from the river and/or for pockets to plant vegetation/shrubbery

#### **LABATT PARK**

- Retain treed backdrop along the path adjacent to Labatt Park need to "reinvigorate" cedar hedge along Labatt Park
- If replacement of cedar hedge is necessary, they should continue to be evergreens
- Keep a small opening to view Labatt Park as currently exists, with a small lookout/"pausing moment" on inside (Labatt Park side) of path for people to take a look inside
- Don't make gap in hedge any bigger
- Locate an interpretive feature / plaque beside gap to inform people about history of park

#### **RIVER ACCESS**

- Retain access to River near Blackfriars Bridge improve it slightly, but don't formalize it too much – path should continue to be gravel / mulch, not paved
- Add interpretive signage along access to river to educate about natural environment, river, native vegetation
- Should have "understated, natural access to river, but a little more awareness of access to river"
- Access point to river should have a structure to restrict cyclists from using it
- Should also have an access to river between Queens and Wharncliffe should also be more of a naturalized access

### WEST LONDON FLOOD CONTROL STRUCTURE DESIGN CHARRETTE SUMMARY

#### **NATURAL ENVIRONMENT / VEGETATION**

- Retain vegetation along river near Blackfriars Bridge and augment with larger native specimens along pathway
- Toe structure should incorporate plantings such as grasses, willows, shrubbery that can withstand flooding, but will provide additional wildlife habitat
- Increase naturalization between Queens and Wharncliffe
- Cavendish is a "gem" should be left natural phase asphalt path to a more natural path surface as you get to Cavendish Park
- Build on the natural amenities along the path

#### **ACCESS TO NEIGHBOURHOOD**

- Access is required from all streets to pathway system, but pick and choose most appropriate
   / logical points where mobility access is most suitable
- Don't need ramps at every street connection

#### **GENERAL**

- Retain the sequence of open and closed views along the pathway, as currently exists between Queens and Blackfriars
- Viewpoints along path should be on outside (river side) of trail, except for beside Labatt Park where they should be inside (beside Labatt Park / viewing gap in hedge) to maximize views and vistas and enhance safety
- Between Oxford and Blackfriars, could pull the path slightly away from the edge of the dyke and add some native plantings to help create more open and closed views for interest as it is currently quite open
- Create safe pedestrian/cyclist 'loops'/connections across Wharncliffe to other side of river, preferably under the bridge
- Install signs identifying various walking loops, with distances, landmarks, points of interest
- Place water fountains along the pathway
- Need some viewing areas / seating areas consider cantilevered sections at top of wall for seating / viewing – would also assist with transition between old and new wall sections
- Consider a grille / grid for surface of cantilevered viewpoints rather than concrete, so can stand and look down right over top of river and to minimize concrete
- The railing is a critical element
- Pathway has its own unique personality need to retain is character and continuity, but also needs to integrate with other parts of path system – consider using one element (e.g. – lights, railing, materials, street furnishings) the same as exists on path system across river along the new dyke section to provide cohesiveness
- Don't 'over design' or make area something it is not (i.e. trying to curve wall, path, etc. too much) focus on simplicity, quality and emphasis on natural environment.

# WEST LONDON FLOOD CONTROL STRUCTURE DESIGN CHARRETTE SUMMARY

### 7.0 Workshop/Brainstorming Session - Group 2

Group Members: Kevin Bice, Gene D'Trolio, Shirley Clement, Rick Goldt and Haley Sadler

(all comments relate to the Blackfriars area)

- Preserve the sense of individual/unique residential neighbourhood through Blackfriars area

   keep intimate
- Minimize footprint of pathway, maintain existing width
- Minimize hard surfaces i.e. don't need concrete slabs under benches
- Transition point a major concern important to look at all possibilities to make the transition smooth and look attractive
- Improve lighting, but don't over light near residences
- Preserve existing vegetation and natural look Cottonwoods significant
- Replace any trees removed use native species
- Implement an Urban Tree Management Program
- Manage all vegetation remove invasive species and enhance native vegetation
- Maintain natural area at edge of river opposite Carrothers Ave. as walking/nature trail
- Add more benches and trash receptacles vandal resistant
- Implement discrete historical interpretive signage at major connections
- Encourage active recreation on East Side of river and more passive on West side
- Don't like 'bump-out' idea
- Do not add formal docks between Oxford and Queen Street
- Consider options for wall structure, i.e. replacement wall has bottom half angled and top half vertical
- View from Blackfriar's residences to the river is important
- Maintain/provide access from all streets, but not necessarily ramped access at all connections
- Implement ramps at connections that are as natural and discrete as possible
- Consider allowing residents to maintain plant material at connection points
- Incorporate colour and texture into the wall something distinctive to create interest
- Sloped structure makes the wall more visible

# WEST LONDON FLOOD CONTROL STRUCTURE DESIGN CHARRETTE SUMMARY

### 8.0 Workshop/Brainstorming Session - Group 3

Group Members: Chris Pehlke, Jan Delaney, John Nicholson, Simon Tanner, Tara Tchir, John Tyrrell and Dan Weagant

- Different stretches of the study area demand different approaches
- What is needed is an approach/visual treatment
- Natural materials
- Lighting on River side of pathway breaks up railing
- Keep it simple : Do it well
- Interpret/apply building code be as flexible as possible (railing)
- Can wall be visually broken up, and how?
  - o Split the wall in two?
  - o Transition path by slope
  - Set a template for the design 'vocabulary'
  - Build for the ages
  - Limit the materials
  - Use natural materials for the wall if possible
  - Do not change stretch of path from Wharncliffe Rd. to Cavendish Park
- Do not 'cap' wall with overlapping/overhanging ledge

# WEST LONDON FLOOD CONTROL STRUCTURE DESIGN CHARRETTE SUMMARY

### 9.0 Workshop/Brainstorming Session - Group 4

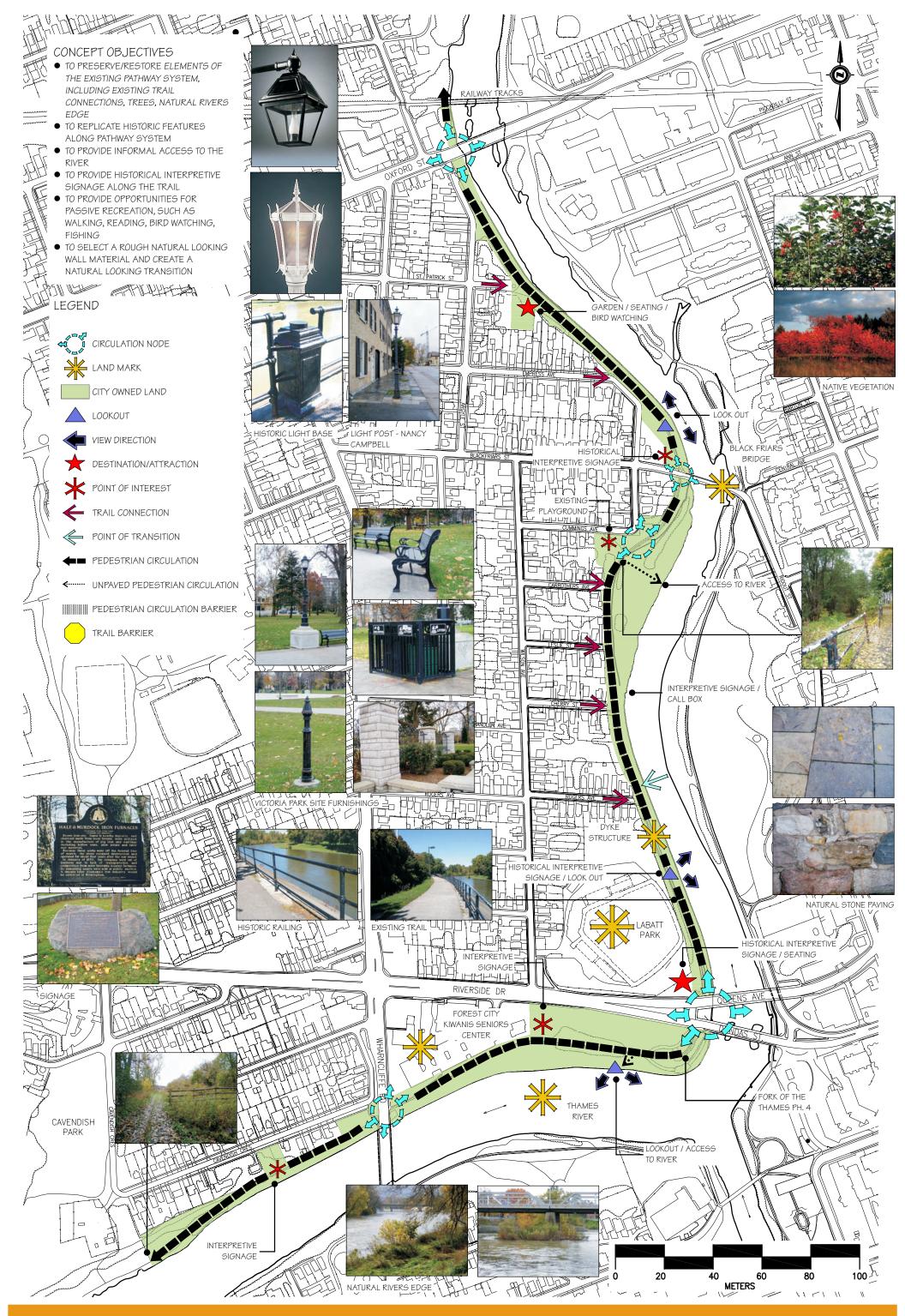
Group Members: Bruce Dunn, Stephen Harding (left early), David Antonsen, Scott Mathers and Robin Campbell

(all comments relate to the Blackfriars area)

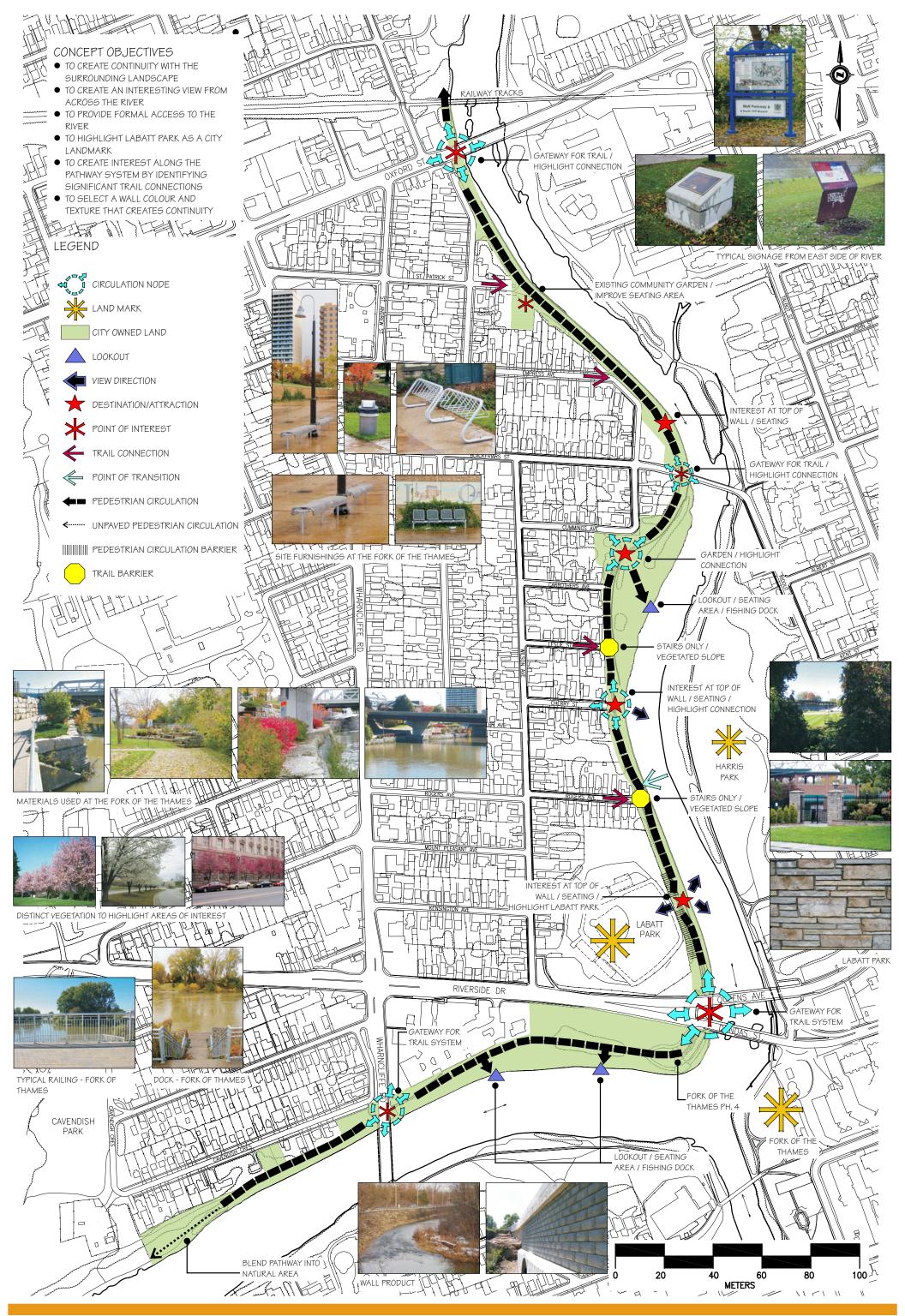
- 'The Blackfriars section of pathway is a unique and wonderful entity that should be maintained and preserved'
- Don't want significant change like the area as is
- Possibly add phone/call boxes into the lamp bases is a good safety feature but shouldn't be a focal point
- Remember that Blackfriars is a residential community
- Path should be accessible to everyone maintain access to path from all streets, but not all need ramps, possible just two
- Don't overdo a theme and make the pathway 'hokey'
- Proposed 3.0m wide pathway seems excessive from Oxford to Queens Ave.
- Minimize path width to save as much vegetation as possible
- Blackfriars is an important historical community preserve a significant amount of what's there
- Use the existing character of the area and maintain/enhance it
- Like general thoughts presented on Concept 1
- Would like to maintain/reuse existing railing don't like aluminum railing at the Forks of the Thames
- Vandalism and destruction of amenities is a concern
- How does the City plan to discourage graffiti on the wall?
- Plant toe of slope if possible what will survive?
- Is it possible to add vines to the wall to soften the overall appearance and deter graffiti?
- Like the old lamp bases possibly replicate or reuse
- If not being reused find a creative/artistic use for existing elements
- Wall build-out should continue from the starting point and not be undertaken in miscellaneous pieces/sections
- There are different areas or sections of pathway in the overall study area the same treatment may not apply to all, but restoration, naturalization and focus on historical elements is important to the Blackfriars community
- Implement historical interpretive signage that is in keeping with the character/theme of the neighbourhood like the blue and bronze heritage building plaques

### WEST LONDON FLOOD CONTROL STRUCTURE DESIGN CHARRETTE SUMMARY

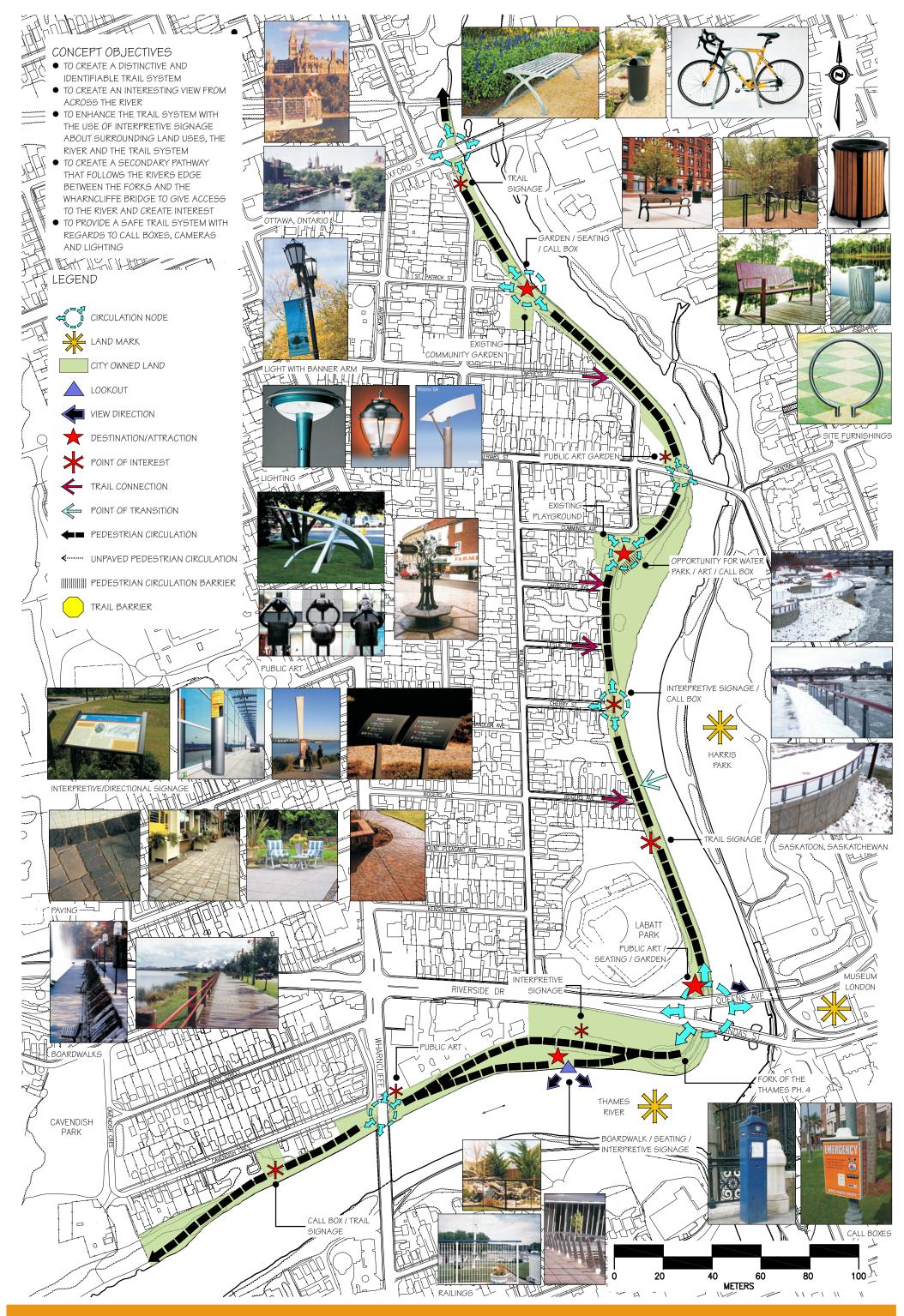
- Have signage identify historical features and events maintain the signage so that it is not a vandalized eye-sore
- Don't like standard City of London signs (eg. Harris Park made of weathering steel)
- Don't make this section of the path the same as the Forks of the Thames this is a neighbourhood with homes directly adjacent to the pathway, it is important to protect the quality of life for the Blackfriars residents
- Encourage passive recreation on this section of pathway
- At Labatt Park the cedar hedge is part of the overall character
- No 'bump-outs' along the dyke not in keeping with the tone of the neighbourhood
- Regular consultation with the neighbourhood is imperative during the design process













# West London Dyke Flood Control Structure Master Plan Appendix C

### **Response to Issues**

	ISSUE		RESPONSE
	Wall		
•	Is a natural wall material possible?	•	A natural wall material has not been recommended after review of the technical findings in previous studies because of its irregularity in form, which would allow water to permeate and compromise the integrity of the structure
•	The proposed wall is not 'naturalizing' to the river	•	Recommendations outline ways to soften the hard structure, which includes a wall layout that has natural curves and allows for plantings at the top and bottom of the wall
•	The proposed wall limits access to the river	•	Permissible access to the water is currently limited and although people access the river from the slope of the existing structure it is a safety concern and has likely played a part in the deterioration of the structure and railing
		•	Recommendations identify the importance of providing safe access to the water and the master plan concept indicates specific locations where access should be considered
•	Try to emphasize the river and natural environment and minimize the focus on the wall	•	The vision and associated recommendations have outlined the natural environment as key to the character of the dyke
		-	Recommendations outline ways that the natural environment can be preserved and enhanced
•	Phase 1 is a very visible section and aesthetics should be a primary consideration	•	The vision and guidelines indicate the importance of creating a usable, attractive and unique dyke and pathway system that enhances natural and cultural heritage
•	Utilize natural materials	•	Recommendation indicate that natural materials should be used where possible, especially in feature areas
		•	It is recommended that the wall structure should have a natural, rough appearance
		•	The pathway system will be constructed from asphalt as is the City standard for multi-use pathways

•	Do not cap wall by	•	The recommendations do not address this
	overlapping/overhanging top coping layer		comment specifically because it is something to be determined during design development and in part will be determined by technical requirements
		•	Recommendations indicate that interest be created with the wall structure and layout, and that the wall have a rough natural appearance
•	Consider options for wall structure - break up the wall both vertically and horizontally	•	The basic wall structure for Phase 1, as a single faced vertical structure, was determined through a previous design process
		•	Recommendations indicate that variations in the wall structure should be considered for all phases of design to create interest and provide for a variety of activities
•	Use big wall blocks with texture and depth and a regular concrete colour	•	Recommended that the wall material appear as close to natural stone as possible
•	Incorporate planting at the toe of wall	•	Recommended that planting be incorporated at the toe of the wall where technically feasible
•	Be aware of the root systems of proposed vegetation	•	This item will be dealt with during design development
•	Consider wildlife that lives in and around the dyke structure - add steps / sloped wall sections for wildlife to access the river	•	Opportunities for human access have been identified where considered most appropriate, and will also serve the needs of wildlife in those areas
		•	Recommendations for plantings at toe of wall will provide additional refuge and habitat for wildlife.
•	Creation of wildlife habitat	•	Recommended that this be considered during design development through use of native plant species and plantings at toe of slope.
	Pathway System		
•	Encourage active recreation only on other side of the river	•	Recommended that the pathway and dyke system provide for a variety of activities, encouraging both passive and active recreation, to encourage City wide use
•	Use 'grills' in cantilevered view areas to allow views down to the river	•	This comment is not addressed specifically or discussed within the recommendations
		•	Viewing areas in appropriate locations have been suggested and that these viewing areas be designed to fit with the character of the dyke and provide for various activities, such as views of the river

•	Do not pave the pathway West of Wharncliffe Road	•	Recommended that paving continue past Wharncliffe Road, but that paving end with the hard structure to transition the multi- use pathway system into the Cavendish Park Nature Trail
•	Limit the number of materials used	•	The recommendations do not specifically address this comment
		•	Recommendations indicate that natural materials should be used and materials used should be consistent throughout the dyke and pathway replacement
	Lighting and Site Furnishings		
-	Add more benches and trash receptacles	•	It is recommended that there is a need for more benches and trash receptacles
•	Up-light the wall at night to add interest	•	Recommended that lighting be considered as a method of adding interest to the wall
•	Vandalism is a concern	•	Vandalism is identified as a concern and recommendations are given to reduce occurrences of vandalism
•	Reduce hard surfaces - don't need concrete slabs under benches	•	Recommended that hard surfaces are minimized in areas other than gathering spaces
		•	Installation of concrete under benches is a City standard for universal accessibility and to reduce occurrences of theft and vandalism
•	Consider more contemporary site furnishings	•	Contemporary site furnishings were considered (as can be seen in Concepts 2 and 3)
		•	The vision for the dyke with regards to the strong historic character of the area directed design recommendations for furnishings
•	Add sitting areas	•	Recommendations incorporate additional gathering/sitting spaces along the pathway system
	River Access	•	
•	Enhance natural elements / habitats	•	Included in recommendations
•	Limit access to natural area at edge of river opposite Carrothers Ave. – maintain as a walking/nature trail	•	Recommended that access to the river be established opposite Carrothers Ave. because of current use despite railing blocking access
			Recommended that actions be taken to protect the area from soil compaction and erosion

	Vegetation and Landscaping		
•	Retain, emphasize and augment natural environment at and near Cavendish Park	-	Recommended that natural river's edge be preserved and enhanced and that vegetation be managed  Recommended that interpretive signage about the natural environment be located in this area
•	Plant more native vegetation between Blackfriars and Oxford to create more open and closed views	•	Recommendations identify significant views to be preserved/enhanced  Vegetation may be used as a means of enhancing views during design development
	Blackfriars Neighbourhood		
•	Provide access from all streets, but not necessarily ramped access at all connections	•	Recommended that ramped access be implemented at all street connections for universal accessibility
•	Replicate or reuse historical elements including light bases and railings	•	Recommended that existing light bases and railings be used as inspiration for proposed design
•	Implement historical interpretive signage	•	Recommended that interpretive signage commenting on natural and cultural heritage be used throughout study area
•	At Labatt Park maintain the 'wall of green' with one open vista	•	Recommended that a controlled view into the Park be considered during design development and that the green backdrop has been identified as significant
•	Locate an interpretive signage feature at Labatt Park	•	Included in recommendations
	Transition	ı	
•	Consider cantilevered viewing areas to help with transition	•	Recommendations made regarding transition areas – specific form of transitions will be determined at detailed design stage, based on site context
	Overall / General Comments		
•	Create a template for the design 'vocabulary'	•	Design guidelines relating to materials, site furnishings, native plantings and other components are intended to provide the 'design vocabulary' to create a consistent and visually attractive feature as dyke replacement proceeds
	The wish for the entire project to be considered as a whole	•	The master plan document identifies the extent of the project area, lays out the vision and design recommendations to achieve this vision, and specific actions to take during implementation

•	Concern that the view of the vertical wall structure from across the river will be a massive, imposing, unattractive expanse of		Recommendation to create variation in form, shape and texture to create interest within the wall structure
	retaining wall	•	Recommendation to incorporate plant material at the base and top of the wall to soften the hard structure
•	Importance of preserving/minimizing impact on existing plant material at the top and bottom of the dyke and preserving significant trees – implement an urban tree	•	Recommendation to implement an urban tree management program and to adjust wall location where possible to save significant trees
	management program	•	Recommendation to replace any vegetation lost with plant material that is deemed to suitable
		•	Recommendation to preserve/restore all plant material at the bottom of the wall
•	Concern with creating continuity in the wall structure because of the intention to replace in sections	•	Recommendation to replace sections in sequence to give the greatest chance for continuity, but technical requirements may out-way appearance
		•	Recommendation to consider weathering and longevity of company and product when selecting wall material