

1. Introduction and Background

1.1 Introduction

The Thames River (Thames) is one of the largest river systems in Southern Ontario and is an important natural, cultural and recreational feature that flows through the City of London (the City). In May 2016, London City Council directed that a terms of reference be developed for a “One River Master Plan Environmental Assessment (EA) Study” that would determine the feasibility of implementing various projects being considered within the One River study area of the Thames River from the Boler Road bridge to the Forks of the Thames and Harris Park. The objective of the One River EA was to conduct the Municipal Class Environmental Assessment Master Plan Study as described as “Approach #1” in Appendix 4 - Master Plans of the Municipal Engineers Association document (MEA, 2015). Approach #1 involves the preparation of a Master Plan report that documents Phases 1 and 2 of the Municipal Class EA process.

The terms of reference for the One River EA was developed by the City in consultation with agencies and First Nations communities. The terms of reference for the EA directed that the study was to be developed in conjunction with a number of ongoing efforts of the City that would impact the river such as the Pollution Prevention and Control Plan (PPCP) and would take into consideration policy and planning documents such as The London Plan and the Thames Valley Corridor Plan in order to ensure that important aspects of the health of the Thames were incorporated into the EA. The EA was also required to integrate the “Back to the River” initiative that produced the award winning design for improvements to the Forks of the Thames.

At the start of the EA, the City adopted a two stage approach for completion of the One River study. Stage one would begin with the development of background information relevant to the recreational use, ecology and stability of the river within the study area and then evaluate options relevant to the future of the Springbank Dam. Stage two would, based on the decision made in Stage one in regard to the future of Springbank Dam, evaluate either potential reinstatement or decommissioning alternatives within a Schedule B component of the study. Stage two would also develop and evaluate the alternatives for development of the “Back to the River” designs within a Schedule B component of the EA and integrate both the dam and forks outcomes with an overall One River Management Plan that addresses the cultural, recreational and ecological health of the river system within the study area.

This report presents the background information, details the results of studies undertaken to support the EA process for One River, and documents the decision-making steps that were taken to determine the overall One River Master Plan Strategy recommendations in this report.

1.2 General Study Area Description

The Thames River, which flows through the City of London, is one of the largest river systems in Southern Ontario. The north and south branches of the Thames River converge near the City’s downtown area at a location commonly referred to as “The Forks”. The Thames River at The Forks drains an area of over 3,000 km². The City established the One River Master Plan study area illustrated in Figure 1-1 to encompass the Thames River and adjacent valley corridor from Harris Park, The Forks and downstream to the Boler Road bridge. Covering over 9 km of the river, the upstream and downstream boundaries are defined by the Blackfriars Bridge on the North Thames River, the Hunt Weir on the South Thames River, and the Boler Road Bridge downstream of Springbank Dam on the main branch of the Thames River.

1.2.1 Social/Cultural Environment

The City of London is currently one of Ontario’s largest urban centers with a variety of important cultural and environmental resources shaping the City’s history and identity. The Thames Valley Corridor is widely recognized as one of the City’s most important natural, cultural, recreational and aesthetic resources. The Thames River was also recognized as a Canadian Heritage River in 2000 on the basis of its cultural

heritage and recreational attributes (London, 2011). The Thames River has shaped the City's development pattern and subsequently influenced the existing land use in, and adjacent to, the Thames Valley Corridor.

Within the Thames Valley Corridor itself, land use consists of nature-oriented parkland, valley land, open space, and a system of multi-use pathways. These land uses provide excellent opportunities to support healthy lifestyles and promote wellness. They offer affordable and unstructured recreational pursuits, increase tourism, and facilitate cultural and natural heritage appreciation.

The existing developed park areas provide recreational facilities including playing fields and picnic areas which provide opportunities for community and neighborhood social gatherings and for sporting events. The valley lands along the Thames River and its tributaries provide primary open space resources including a continuous linear network of multi-use pathways connecting communities within a system of natural areas, parks, activity areas and built facilities. The Forks itself provides an important and central social, economic and recreational location within downtown London. This park space is within walking distance to important social and cultural amenities, including the London Museum, shops and retail in downtown London. This area is also serviced directly by local road connections and transit, crossing the river.

The Thames River within the study area also provides opportunities for additional recreational activities that include canoeing and kayaking and sport fishing. The river has a long history of providing exceptional opportunities for people to enjoy boating and angling along this stretch of the Thames. Currently, however, there are few locations along the Thames Valley corridor for interaction with the Thames River. These locations include: Springbank Pumphouse area, Riverside Boat Launch, the rowing club, the canoeing club, and fishing docks as well as several locations where informal river access has been created.

1.2.2 Natural Heritage Environment

The natural environment of the Thames River can be best described as a truly unique system known not only for its ability to sustain a great variety of aquatic species, but also for its biological diversity that includes various terrestrial and aquatic wildlife species. The Thames River is known as the only true Carolinian River in Canada and is one of the main reasons that many species at risk (SAR) and species of special concern have been identified within the Study area. Accordingly, this unique setting hosts species whose northern ranges are limited or nonexistent in other parts of Ontario and Canada. The steep forested valleys and wide, shallow watercourse provides habitat areas for many species to occupy, migrate and interact within the system.

Aquatic habitat upstream of the Springbank Dam has historically been impacted by the seasonal (May to October) operation of the dam which resulted in backwater upstream for several kilometers, creating a lentic (still water) ecosystem. This low energy environment limited sediment movement which, in turn, resulted in a more uniform, less diverse habitat for aquatic life. Since the non-operation of the dam, the river and riparian corridor (the vegetated areas along the river banks) have continued to diversify following the new flow and sediment regimes, trending toward a new, more dynamic equilibrium. The riparian corridor has also been expanding and creating a larger functional habitat area along the river channel.

Although the Thames River flows through urban and rural agricultural lands and is largely a warm water, flow-controlled system, its southerly location within the Carolinian zone provides habitat for SAR whose ranges are restricted and endemic to Southwestern Ontario. Over 30 species listed as endangered, threatened, or of special concern under the Species at Risk Act (SARA) and/or the Endangered Species Act (ESA) have been found in the study area. Many of these species have benefited from the free-flowing system that has occurred over the past ten years and will continue to inhabit and migrate freely through the study area under free-flowing conditions.

1.2.3 Archeological and Built Heritage

The Thames River is recognized as a Canadian Heritage River for its significant cultural heritage resources and contribution to the settlement history of south-western Ontario (London, 2011). The interaction of First Nations people with the Thames River and settlement along the Thames River has continued over centuries. The valley lands within the study area encompass numerous archaeological sites, heritage structures, and cultural landscapes that are significant aspects of the City's history.

1.2.4 The Forks of the Thames

An initiative was undertaken at The Forks of the Thames to support a revitalization of the Thames River in London. "Back to the River" was an international design competition initiated by the London Community Foundation in partnership with the City of London and Upper Thames River Conservation Authority (UTRCA) to revitalize a five kilometer stretch of the river radiating from The Forks in three directions: north to the intersection of Oxford Street bridge and the Thames River, west to the Wharnccliffe Road Bridge and south to the intersection of the London to Port Stanley railway bridge and the Thames River.

The Back to the River "Ribbon of the Thames" award-winning design incorporated several elements that supported a river vision that has been called bold and exciting. The design focused on bringing people back to the River to enjoy a significant cultural and heritage resource and to engage in activities that reflect the river's beauty and cultural significance. To achieve this objective, the design included options for a prominent lookout, as well as park terracing down to the river's edge. These design details accommodated many opportunities for recreation and leisure uses and connections to the Forks, as well as creating an important gathering space for social and economic activity in the central area of the City's downtown.

1.2.5 First Nations

First Nations communities are an essential component of the One River EA study process. The perspectives and stories of First Nations with respect to their history, knowledge and identity through Aboriginal Traditional Knowledge, as it relates to the Thames River, are important to the study process. First Nations peoples have a unique perspective and relationship with the lands and waters within the watershed that include assertions of Aboriginal title, Treaty rights and Aboriginal rights. First Nations have expressed concern about actions they perceive may influence title claims, as well as the health and economic well-being through impacts to drinking water, hunting, fishing, recreation and tourism. Oneida Nation of the Thames, Munsee-Delaware and Chippewas of the Thames First Nation rely on the Thames River as an indirect source of drinking water, sustenance in the way of fish, gathering and harvesting of ceremonial and medicinal plants and recreation. The watershed is an important hunting ground and is essential to archival and oral traditions, history, knowledge and identity.

1.3 Background

1.3.1 The Thames River Heritage Status

The North and South Branches of the Thames River converge near the City's downtown area at a location commonly referred to as "The Forks". In 2000, the Thames was recognized as a Canadian Heritage River and is acknowledged to be a river of great natural, cultural, and recreational importance (London, 2011). The overall goal of the Canadian Heritage River designation is to increase the appreciation, enjoyment and stewardship of the natural, cultural heritage and recreational opportunities of the River and its watershed through community cooperation and involvement. Through this effort, the river will continue to be an integral part of the City's current and future culture and heritage. The river serves as a key resource for recreation and an important feature of a strong and healthy social, economic, and ecological environment within the City.

1.3.2 Impacts of Springbank Dam

The Thames River was dammed from the 1870's until 2005 and served to provide consistent high summer water levels, allowing for a range of uses including recreational canoeing and boating. The current Springbank Dam structure was constructed in 1929 and was used to increase the water level in the river for approximately 7 kilometers upstream (extending to The Forks). In 2000, Springbank Dam was overtopped during a flood event, which prompted safety concerns. A Schedule "B" Class Environmental Assessment was initiated by the City to rehabilitate the dam, following an engineering study, which recommended that erosion protection works and sluice gate replacements would be required (Acres, 2003). The Springbank Dam rehabilitation EA was completed in 2003, and construction began in 2006. The Springbank Dam rehabilitation finished in 2008 with the installation of new steel gates. One of the four steel gates in the new design failed during commissioning and the Thames River has been free flowing through the Springbank Dam structure since that time. In 2015, the City reached a legal settlement in regard to the failure of the dam allowing the City to examine the future role for the Springbank Dam through this EA.

Over the past 13 years, water levels, sediment, and vegetation have modified the aquatic environment upstream of the dam structure allowing for the free movement of aquatic life. Also, over the years since the Springbank Dam has been out of operation, the water levels through the center of the City have been substantially lower during the summer months when the dam was traditionally in operation and, as a result, the vistas of the river and visual character of the Thames through London's downtown have changed.

1.3.3 Previous Studies

A number of prior studies and policies were important considerations in the development of the One River EA. These included:

- **The London Plan:** This City's Official Plan (OP) document contains Council's objectives and policies guiding the short and long-term development of lands within the municipal boundary to 2035. It captures the community's aspirations for London's future. There are 50 OP policies or sub-policies that have been identified that relate to the One River EA. The OP is an important consideration in the development of the One River EA, the outcomes of the One River EA were required to be consistent with, and in support of, the OP.
- **Thames Valley Corridor Plan:** In 2012 City Council endorsed the Thames Valley Corridor Plan (TVCP) which establishes the overall concept plan for the Thames River and the associated corridor lands and is linked directly to parts of the OP. The TVCP recommendations relate directly to the riverfront environment, accessibility and recreational use and identifies the Thames River as an important natural, cultural, recreational and aesthetic resource. The TVCP provides recommendations and a future vision for the Thames River corridor. The One River EA supported implementation of the TVCP recommendations and vision by completing environmental investigations and recommending specific projects in support of the plan.
- **Thames River Clear Water Revival:** Formed in 2011, the Thames River Clear Water Revival (TRCWR) is a partnership formed between all levels of government, Conservation Authorities, First Nations, and local communities to improve water quality in the Thames and ultimately improve water quality in Lake St. Clair and Lake Erie. This is a broad watershed approach that considers interactions of land, water, plants, animals, and people with a focus on water quality and quantity. A key objective of the partnership is to reduce phosphorous loads to Lake Erie.
- **Pollution Prevention and Control Plan:** In 2017, the City completed the PPCP. The objective of the PPCP is to reduce and mitigate the impact of Sanitary Sewer Overflows (SSOs) and bypasses on the Thames River while maintaining protection against basement flooding during extreme rainfall events. The PPCP forms a comprehensive long-term strategy for infrastructure improvements to achieve these objectives.

Other studies that were ongoing or completed within the study area concurrent to the One River EA included:

- **West London Dyke Repair Plan:** There are seven flood protection dykes within the City, with a combined length of 5.1 km (UTRCA, 2017). The West London Dyke runs along the west bank of the North Thames River from Oxford Street to The Forks and along the north bank of the Main Thames River from Wharncliffe Road Bridge to Cavendish Park. It is an engineered structure which protects approximately 1,200 structures from flooding during periods of extreme river flows. It is also an important component of the City's pathway network. The dyke is owned by the City and the UTRCA. In 2016, the City and the UTRCA completed the West London Dyke Master Repair Plan which laid out future plans for repairs and replacement for portions of the dyke.
- **West London Dyke Erosion Control EA:** Erosion and scour conditions in two areas of the West London Dyke have been identified that may compromise the Dyke structure. An EA was initiated to identify solutions to address and mitigate the erosion and scour conditions at these sites. The solutions looked at included works at Harris Park and Ann Street. The preferred solutions recommended through the West London Dyke EA are a consideration in the outcome of the One River EA.
- **Riverview EA:** In July 2018 the UTRCA and City initiated a Schedule B EA to identify alternatives to manage the long-term stability of the Riverview Evergreen Dyke. The preliminary preferred alternative is to raise and extend the Riverview Evergreen Dyke to protect against a 250-year flooding event. This involves the construction of a new Dyke structure along the southern bank of the Thames between the existing Riverview Evergreen Dyke and Wharncliff Road South. The recommendations in the Riverview EA are a consideration in the outcome of the One River EA.
- **Labatt Sanitary Siphon:** The Labatt Siphon carries sanitary sewer flows from the North East of London, crossing the Thames from Riverside Park to Ivey Park at The Forks of the Thames. In 2012, it was recommended that the City should construct redundant siphons prior to rehabilitating the Labatt Siphon.

The pre-consultation efforts of the City during the development of the EA terms of reference, existing City policies, and other related studies all provided context for the development of the One River Strategy.

