

## 9. Recommendations Summary

### 9.1 One River Strategy

The goal of the One River EA is to develop a strategy for the Thames River that would provide guidance on the future of the Springbank Dam, the Forks of the Thames and the river corridor itself within the City of London. The One River Strategy includes the vision of a free-flowing Thames River, the path forward for the updated award-winning design at Forks of the Thames and a long-term plan for the river corridor that provides opportunities for recreational use of the Thames River and the protection of sensitive habitats.

### 9.2 Recommendations

Many recommendations are being put forward as part of the One River Master Plan EA and the River Characterization, Springbank Dam EIS and Forks of the Thames EIS supporting studies. Many of these recommendations have been incorporated into the implementation plan put forward in Section 7 of this report. Those recommendations and the additional supporting recommendations from the One River Master Plan EA and the other studies are categorized and summarized here.

#### 9.2.1 Springbank Dam

- It is recommended that the City begin the detailed design of the partial removal of the Springbank Dam. To complete the detailed design, it is anticipated that a petrographic inspection will be performed to fully inspect the dam's concrete structures and support detailed design. A Stage 3 archeological study will be required if construction activities encroach on the pre-contact site found within the study area.
- The detailed design should include identified short-term maintenance items including sealing of the top deck, replacement of expansion joints, as well as remove the removal of hydraulic equipment, gates and the control room. The City should consider including cathodic protection in the detailed design to benefit from the resulting corrosion protection and extend the life of the dam superstructure.
- It is recommended that the construction phase include recommended maintenance items including the removal of vegetation on the north bank crib wall face.
- Construction monitoring, long-term monitoring, compensation plans, and adaptive management plans are to be developed as part of the design. Long-term monitoring should at a minimum include monitoring of natural heritage features consistent with the EIS recommendations (Appendix A-5), and water quality.
- Consultation with City staff and the UTRCA during detailed design regarding permitting will be necessary.

The following items are recommendations for mitigation of impacts during the construction and post-construction phase. Additional detail on these recommendations can be found in the Springbank Dam EIS Report located in Appendix A-5. Refer to Appendix B-11 for additional supporting details on these recommendations provided by the MECP, MCTS, and MNR during the 30-day public comment period.

- Mitigate effects on the aquatic and terrestrial habitats by removing trees outside of the breeding bird window (April 1 to August 25), keep construction activity to the minimum area necessary, restricting in-water work to the allowable window (July 1 to March 31), and completing in-channel work during 'dry' conditions.
- Apply best construction practices including controls on equipment maintenance and refueling (minimum of 30 m away from watercourses and natural heritage features), implement surface protection measures to minimize soil compaction, manage materials storage, enlisting an environmental monitor onsite to advise the contractor, implement a stormwater management plan to

maintain drainage patterns, implement a spill response plan, and implement a “clean equipment protocol for industry” (Halloran et al., 2013).

- Take preventive measures during construction to reduce disturbance and mortality of wildlife by marking habitat areas, implementing on-site traffic limits, installing fencing to prevent wildlife from entering the site, implementing daily inspections of the construction area for wildlife, educate workers to raise awareness of wildlife, and maintain a log and report on incidents of wildlife injury or mortality.
- Take preventive measures during construction to reduce disturbance and destruction of terrestrial features including identifying setbacks from natural features and tree protection fencing, minimize constructing disturbance as much as possible, develop a tree preservation plan to protect healthy native trees, implement an invasive species management plan, implement a dust management plan, and restore temporarily disturbed areas with native vegetation.
  - The invasive species management plan should follow an adaptive management approach and include 3-years of monitoring.
  - Restored vegetation should be monitored during and after construction in accordance with the UTRCA and City’s specifications.
  - Removed trees should be replaced at a three to one ratio.
- Take preventive measures during construction to mitigate the potential for fish mortality by installing intake screening at all pumps, netting and releasing trapped fish during dewatering, and limiting heaving equipment from entering wetted areas.
- Implement erosion and sedimentation control measures which include developing an erosion and sediment control (ESC) plan, install ESC measures before groundbreaking, delineate storage and staging areas prior to construction, install sediment control fencing along channel margins, discharge pumps to a sediment basin or dewatering filter bag before releasing to the watercourse, material cleaned out from sediment basins or filter bag should be disposed of off-site, and construction monitoring should include checking ESC measures are in place and effective weekly and after major rainfall events. ESC measures should be removed following the completion of construction and disturbed areas have stabilized.

**Future considerations:**

- This Schedule B EA allows for flexibility regarding the future use of the remaining dam superstructure. To accommodate public access to the dam, improvements will be necessary to address safety concerns.
- This Master Plan EA recognizes that in the long-term, the Springbank Dam structure will reach the end of its useful life. At the end of its useful life it is anticipated that the dam structure will be fully remove and the shoreline and riverbed will be restored.

**9.2.2 Forks of the Thames**

- Under the MEA guidelines, the EIS completed for the Forks of the Thames is valid for five years after the completion of the One River EA. It is recommended that the “Back to the River” partners including the City, the London Foundation and the UTRCA explore opportunities that will enable the commencement of detailed design of the Forks of the Thames concept and the commencement of construction before 2023, when the five year EA window concludes.
- The improvements at the Forks of the Thames as described in the One River Strategy includes space for First Nations communities. It is recommended that First Nations communities be actively engaged in the siting and definition of this space early in the detailed design phase.
- Construction monitoring, long-term monitoring, compensation, and adaptive management plans are to be developed as part of the design. A preliminary cost estimate for the design and construction of the preferred alternative is available in Appendix A-10.

The following items are recommendations for mitigation of impacts during the construction and post-construction phase. Additional detail on these recommendations can be found in the Forks of the Thames EIS Report located in Appendix A-4. Refer to Appendix B-11 for additional supporting details on these recommendations provided by the MECP, MCTS, and MNR during the 30-day public comment period.

- Spring and fall ecological studies are recommended prior to commencing construction to identify snake winter dens within the project site.
- Mitigate effects on the aquatic and terrestrial habitats by removing trees outside of the breeding bird window (April 1 to August 25) or complete a detailed bird survey of the construction impacted areas, keep construction activity to the minimum area necessary, restricting in-water work to the allowable window (July 1 to March 31), and completing in-channel work during 'dry' conditions.
- Apply best construction practices including controls on equipment maintenance and refueling (minimum of 30 m away from watercourses and natural heritage features), implement surface protection measures to minimize soil compaction, manage materials storage, enlisting an environmental monitor onsite to advise the contractor, implement a stormwater management plan to maintain drainage patterns, implement a spill response plan, and implement "Clean equipment protocol for industry" (Halloran et al., 2013).
- Take preventive measures during construction to reduce disturbance and mortality of wildlife by marking habitat, implementing on-site traffic limits, install fencing to prevent wildlife from entering the site, daily inspect the construction area for wildlife, educate workers to raise awareness of wildlife, and maintain a log and report incidents of wildlife injury or mortality.
- Take preventive measures during construction to reduce disturbance and destruction of terrestrial features including identifying setbacks from natural features and tree protection fencing, minimize constructing disturbance as much as possible, develop a tree preservation plan to protect healthy native trees, implement an invasive species management plan, implement a dust management plan, and restore temporarily disturbed areas with native vegetation.
  - The invasive species management plan should follow an adaptive management approach and include 3-years of monitoring.
  - Restored vegetation should be monitored during and after construction in accordance with the UTRCA and City's specifications.
  - Removed trees should be replaced at a three to one ratio.
- Take preventive measures during construction to mitigate the potential for fish mortality by installing intake screening at all pumps, netting and releasing trapped fish during dewatering, and limiting heaving equipment from entering wetted areas.
- Implement erosion and sedimentation control measures which include developing an erosion and sediment control (ESC) plan, install ESC measure before groundbreaking, delineate storage and staging areas prior to construction, install sediment control fencing along channel margins, discharge pumps to a sediment basin or dewatering filter bag before releasing to the watercourse, material cleaned out from sediment basins or filter bag should be disposed of off-site, and construction monitoring should include checking ESC measures are in place and effective weekly and after major rainfall events. ESC measures should be removed following the completion of construction and disturbed areas have stabilized.

### 9.2.3 River Management Plan

- It is recommended that the elements identified in the River Management Plan be prioritized according to the timing identified within the detailed implementation plan outlined in Section 8 of this Master Plan report and within the context of the City's wider planning efforts.
- The River Management Plan identified fourteen areas of erosion and bank instability requiring remediation in the future. These sites are illustrated in Figure 7-2. The detailed implementation plan prioritizes the erosion areas by severity. As remediation of these sections of shoreline and riverbank

will require Schedule B EAs and the related environmental investigations, it is recommended that the City consider grouping erosion sites with other nearby studies and works where possible.

- The RMP is consistent with, and in support of, existing approved City of London master plans, such as the Cycling Master Plan. It is recommended that any future One River Master Plan updates continue to be consistent with, and in support of, City of London master plans that are associated with the river corridor.
- The River Corridor is continuing to stabilize and transition with the continued in-operation of the Springbank Dam Therefore:
  - It is typical for Master Plans to be updated on a regular interval. Due to the anticipated changes in the river corridor as the Thames River stabilizes following the partial removal of the Springbank Dam, it is anticipated that the City will update this Master Plan on a 10-year cycle.
  - Access locations illustrated included in the River Management Plan (illustrated in Figure 6-6) are sited generally and will be reviewed to define exact location during implementation to optimize the protection of sensitive habitat areas and to accommodate changing geomorphology of the River.
  - In the long-term it is anticipated that elements of RMP Alternative 4 will align with the future vision of the One River Strategy and should continue to be considered in One River Master Plan Updates.

The following recommendations are related to remediation or repair of erosion sites identified through the river characterization study completed for this Master Plan EA which can be found in Appendix A-1. Refer to Appendix B-11 for additional supporting details on these recommendations provided by the MECP, MTCS, and MNRF during the 30-day public comment period.

- The planned work on the North Thames scour pools should include bank improvements along Harris Park. These improvements should focus on increasing the channel capacity and providing a more naturalized and stable connection between the park floodplain and the river channel.
- An attempt should be made to avoid scour to the West London Dyke by designing adequate flow deflectors, which can also act as a form of channel training or passive design. The observed sediment accumulated on the concrete ledge at the toe of the dyke suggests that a natural type of bank could be constructed with over hanging vegetation to provide instream habitat and shading.
- Five (5) erosion sites were identified within the study area on the southern branch of the Thames. Improvements can be made along the banks which will improve slope stability and provide setbacks for pathways where they encroach on the top of bank. Steep slopes are hazardous and formal access points should help to redirect recreational traffic away from areas with steep slopes.
- Several outfalls discharging to the Thames River were classified as “poor condition” and identified for upgrades. These outfalls should be cross-referenced with the prioritized SSOs identified in the City’s PPCP and be incorporated into the City’s prioritized works database.
- The City should consider the removal or remediation of the crumbling boat launch near the Mud Creek confluence to improve river conditions at the site.
- The City should consider regrading or benching of the left bank erosion along Greenway Park. to improve river conditions while reducing the risk of failure of the upper slope. This erosion site is close to an existing pathway located on the top of bank. Bank remediation should be designed to complement the ongoing natural evolution of the Thames River.
- It is recommended that the City address the safety concerns at the location identified as Site 12 (see Figure 7-2) by removing the stairs and creating a naturalized bank. Erosion Site 13 should be addressed by adding toe protection and channel training features. Geotechnical investigations should occur ahead of remediation works on banks adjacent to residential properties.
- It is recommended that the City address erosion and slope instability at Site 14 through stabilization of the bank toe, channel training techniques, and slope remediation. Detailed studies to review the level of risk along the multi-use pathway for the entire length of the left bank (park side) of reach M4.

The drop in base water level has elevated this pathway relative to the channel bed and normal water surface. Vegetation can provide some additional stability to banks now above typical water levels, more mature trees along the upper slope should be inspected and removed if necessary. Channel training techniques to concentrate flows toward the center of the channel are recommended to encourage natural variability in the river bed.

- It is recommended that erosion sites 15 and 16 be addressed to prevent bank failure and undercutting of existing infrastructure. It is recommended that the City consider bioengineering and deflectors that can be implemented to redirect flow away from these sites. If boat access to the river is to be maintained, then a more stable bank slope and formal access should be constructed to allow easier movement between the river and multi-use pathways.