ONE RIVER MASTER PLAN ENVIRONMENTAL ASSESSMENT

Forks EIS and Springbank Dam Decommissioning EIS (Matrix Solutions, Dec. 2018)

Received at EEPAC at its December 12, 2018 meeting

Reviewed by S. Hall, B. Krichker, S. Levin

EEPAC would like to acknowledge that the Environmental Impact Study (EIS) Report for the One River Master Plan Springbank Dam Decommissioning Municipal Class Environmental Assessment (EA) Study, Schedule 'B' for the Thames River prepared by Matrix Solution Inc. is well prepared report that provides:

- comprehensive evaluations of the existing ecological/environmental system conditions;
- assessments of viable solution alternatives; and
- the preferred project alternative of the partial Springbank Dam Decommissioning.

EEPAC would also like to acknowledge that the Environmental Impact Study (EIS) Report for the One River Master Plan Forks of the Thames Municipal Class Environmental Assessment (EA) Study, Schedule 'B' for the Thames River prepared by Matrix Solution Inc. is a well prepared report that provides:

- comprehensive evaluations of the existing ecological/environmental system conditions;
- assessments of viable solution alternatives

HIGHLIGHTS

Note there is no EIS material provided for the area between the Dam Study Area and this Study Area.

Recommendation 1: EEPAC feels the Master Plan is incomplete without additional information on the area between the Dam study Area and the Forks Study Area. An EIS would provide additional helpful information for any future projects including the proposed new pathway and access points.

p. iv of Forks EIS

Matrix combined information gathered from the ecological field studies with relevant information from previous background studies to characterize the natural heritage setting and identify significant features within the Study Area. ***The results of the significance and sensitivity analysis indicated the presence of several natural heritage features and functions, including Significant Valleylands, Significant Wildlife Habitat (SWH), fish and aquatic habitat, and Species at Risk (SAR) within the Study Area.***

Eight species were identified as potentially occurring within the Study Area, and four species were confirmed (Figure 5.1).

SARA (Federal) would only apply to SAR migratory birds, **fish, and mussels** for this project.

Under ESA (Ontario) Permits related to habitat destruction of threatened or endangered species would require an Overall Benefit Permit.

RECOMMENDATION 2: Even if an Overall Benefit Permit is not required, the City should demonstrate that this project provides an overall benefit, not just no net loss.

FORKS EIS

DETAILED COMMENTS (highlighting is **ed.,** *italics are materials taken from the document*)

p. 19.

Detailed hydraulic and geomorphic characterization for the Thames River in the Master Plan Study Area is provided in "River Characterization Report" (Matrix 2018). Field assessments and hydraulic modelling have been completed to evaluate sediment movement, bedform evolution, and channel hydraulics under a range of flow conditions to understand the current aquatic habitat condition and how it may adjust over time with changes in the flow regime.

At EEPAC's most recent meeting slides showed the impact of a much freer flowing river on the development of new sand bars etc. Will it also have an impact at the Forks?

RECOMMENDATION 3: EEPAC be provided with this Matrix report for review.

iv-v

Strategic *accessibility, monitoring, and signage is recommended during the detailed design phase to direct the public away from any sensitive areas within the Thames River. No SAR or Species of Conservation Concern are expected to be directly impacted by the design; however, it is important to* ***direct access to the river away from sensitive areas*** *to avoid any indirect impacts from the public. It is recommended that consultation and permitting/approvals discussion with the appropriate regulatory authorities be conducted before any construction work is commenced*

RECOMMENDATION 4: EEPAC agrees with the recommendation for consultation and permitting discussions but would extend that discussion to include the locating of any access points and new pathways. It is unclear to EEPAC if the access points and additional pathway construction shown in the proposed preferred alternative are actually necessary or would increase risk to sensitive species and their habitats as there is no information is this or the Dam EIS.

p. 24

The majority of land use within the immediate vicinity of the Study Area is urban, and local surface runoff is largely conveyed to the river through existing urban drainage infrastructure (i.e., sewer systems and outfalls). Within the Study Area, there are seven outfalls, including ***two sanitary****. With the exception of one outfall along the western bank of the South Thames River, all outfalls are located along the eastern banks*.

Are these outfalls subject to sanitary system overflows and if so, wouldn't it be a good idea to address these first? Is there information on the number of system overflows? Page 42, Table 4.5 indicates that substantial pollution is likely. It seems counterintuitive to invite residents and visitors to an area subject to sanitary system overflows following rain events.

RECOMMENDATION 5: The City address sanitary overflows at the Forks prior to completing any of the proposed projects in this location.

Figure 4.3/4.4 notes lots of Manitoba Maple and some dog strangling vine as well as periwinkle and garlic mustard.

RECOMMENDATION 6: EEPAC would appreciate knowing how much funding will be provided to remove and remediate non-natives and invasives. Given the location in a highly urbanized setting, EEPAC asks the city to consider that the money would be better spent on invasive species management in ESAs and Significant Woodlands.

p. 44

The SWH assessment identified three candidate seasonal concentration areas of animals

- turtle overwintering habitat
- bat maternity colonies
- snake hibernacula

Candidate turtle overwintering habitat is located within the Project Site. Turtle species utilize large, deep pools to overwinter. These pools are a critical part of the turtle's habitat and life cycle. Several turtle species have been documented within the Study Area; however, it has not been confirmed whether or not these turtles are utilizing the large, deep pool located at the Forks of the Thames River.

Should this be done? If so, when and by who?

Hibernacula for snakes can be present within any ecosite which contains burrows, rock crevices, and other naturalized areas below the frost line. There are rock crevices along the eastern shoreline of the Thames river, which may host snake species. Spring and fall congregation studies should occur to confirm snake hibernacula.

When would the studies be done and by who? It is possible the gabion baskets are hibernacula! The EIS on page iv indicated that the gabion baskets would be removed:

The removal of the gabion baskets along the eastern edge of the river will improve the connection between the aquatic and terrestrial environment, as well as provide more stable slope conditions along the bank.

5.2.2 Specialized Habitats of Wildlife

One confirmed specialized habitat of wildlife was identified during the SWH assessment, which included turtle nesting areas.

Two turtle nesting areas were identified by UTRCA staff within 1 km of the Study Area.

This was noted in the Dam EIS as well. Given the one Km can be towards the Dam, it is important that the UTRCA species at risk biologist be involved in the decision and detail design.

RECOMMENDATION 7: Consultation prior to detail design be carried out with the Species at Risk Ecologist at the UTRCA who specializes in turtle and snake species at risk

FISH/MUSSEL SAR SPECIES AND THEIR HABITAT

As noted on page 39:

The fish compositions will change throughout the year during spawning migrations within the Thames River. It is therefore important to consider spring and fall spawning timing windows to ensure that larger fish species are not impeded from accessing spawning grounds.

It does not appear to be any assessment of the mussel / fish relationship given that mussels rely on certain fish species to carry their eggs/larvae.

Page 46 here and in the Dam EIS, it is suggest that there is a likelihood of other species at risk being present in the study area. Given the comment on page 39, EEPAC suggests it is a **high** likelihood one or more of these other SAR species are present where there is suitable habitat.

RECOMMENDATION 8: An Overall Benefit Permit be obtained for these projects. If not required, the projects should demonstrate an overall benefit.

The City should show leadership in this project by providing an ecological benefit, not just no net loss.

p. 47 re Silver Shiner

Silver Shiner is designated as Threatened under the ESA, 2007 and Special concern under SARA. This aquatic species utilizes deep riffles and pools of large rivers to carry out its lifecycle. The ESA, 2007 general habitat protection identifies three categories of protection which ranges from the lowest tolerance to alteration (Category 1) to the highest tolerance to alteration (Category 3). Category 1 habitats have been identified as flowing pools, run, and riffles in occupied reaches, Category 2 has been identified as shallow, nearshore habitats, and areas with aquatic vegetation in occupied reaches, and Category 3 has been identified as floodplains and riparian edges adjacent to occupied reaches (MNRF 2018e. This species was captured within the Study Area during the two rounds of fisheries assessments in 2017. For this reason, it is assumed that this species is present within the Study Area year-round.

Neither this EIS, nor the Dam EIS indicate which category of tolerance.

RECOMMENDATION 9: The EIS clarify the category of tolerance for this species at risk

CONSTRUCTION IMPACTS

EEPAC agrees with the restrictions noted on p. 51 (see below) – however, we reiterate that the gabion baskets may be snake hibernacula depending on whether they are submerged during high water events or not.

P. 53 indicates *No negative effects are anticipated during this activity or long term if the correct mitigation measures are put in place.* However, it is unclear what the "correct" mitigation measures might be.

RECOMMENDATION 10: Greater detail as to what "correct mitigation measures" be included in the EIS prior to it being finalized. This information should be included in the EIS so that it does not get lost between now and detailed design.

- *Access to the eastern bank will utilize the existing paved pathways.*
- *Staging and laydown areas are assumed to occur within the cleared pathways and open areas within the park.*
- *Vegetation removal will be limited to the eastern bank of the Project Site.*
- *No access or construction will be completed on the north or south banks of the project site.*
- *Limited in-water works will be required for construction.*
- *Timing of work will be coordinated to minimize disturbance to the natural environment.*
- *Tree preservation fencing to protect as many native trees where possible.*
- *Temporary wildlife exclusion fencing as required.*
- *Sediment and erosion control fencing to protect the Thames River.*
- *Planting native trees and shrubs in the softscape bank terracing areas to enhance shoreline habitat over current condition of gabion baskets.*

INVASIVE AND NON-NATIVE SPECIES AND TREE PRESERVATION

p. 51 It is assumed that the ELC polygon MEMM4 (Fresh-Moist Mixed Meadow) will be permanently altered along the eastern bank during construction, and will likely become an extension of the existing Parkland (CGL_2) community. MEMM4 is currently composed of non-native and invasive species, and it is the intent of this project to replace these species with native trees and shrubs as part of the City's invasive species management objectives. The treed shoreline (SHTM1-2 community) will be protected by the design under the Tree Preservation Plan.

What about the invasives in SHTM1-1?

Re SHTM1-2 - why Manitoba Maple, a non-native species would be protected? There is also common buckthorn in the understory (p.29). Also Norway Maple is an invasive species. p. iv states that “non-native and invasive species will be removed as part of the *London Invasive Plant Management Strategy* and replaced with native trees and shrub plantings throughout the park as part of the softscape design.” The question is to what extent?

MITIGATION MEASURES AND MONITORING

- Develop a monitoring plan to ensure mitigation and contingency measures are implemented and performance objectives are being met.

Who prepares the monitoring plan and when? Who cares it out?

p. 57 (re 4D) – Invasive Species Management Plan

EEPAC questions when the invasive species management plan would be drafted and by who.

RECOMMENDATION 11: EEPAC requests to be involved in the discussions leading up to the preparation of the Invasive Species Management Plan. It is our preference that all non-native and invasives be removed.

RECOMMENDATION 12: EEPAC's preference is that the Invasive Species Management Plan be drafted by Matrix now given it has done the field work with the plan and that the plan be included as a requirement for the winning bidder to implement. Money must be included in the contract budget for monitoring, and monitoring shall be carried out by an ecologist hired by the contractor to the satisfaction of the City and the UTRCA.

p. 54 indicates increased pedestrian activity and that it should be directed to the south. It is unclear how this is possible when there are pathways along the east heading north and along the Dyke. Therefore, it is unclear what areas are to be avoided and what access to the River in addition to the existing fishing dock is proposed and why.

RECOMMENDATION 13: A clear monitoring plan be developed including who does, when it begins and ends, and its objectives. This could be shown on a timeline scale given the start date is unknown.

p. 56 – 5C

RECOMMENDATION 14: Before construction, information on species at risk identification including photos posted in construction trailer during construction. Ideally, this will reduce or avoid mortality

RECOMMENDATION 15: The phone number of the Species at Risk Biologist from UTRCA be posted prominently so that turtle and snake sightings can be reported. When sightings occur, work must cease until the species at risk biologist has given the go ahead for work to start up again.

<u>MISC</u>

p. 11 wording of the second paragraph is unclear "… with the Technical advisory included … (?)

P. 14 vegetation surveys were done too late for any spring ephemerals. No clear explanation of why surveys were not done earlier.

No surveys of amphibians. No clear explanation of why not done.

<u>SPRINGBANK DAM DECOMMISSIONING EIS</u>

The partial Springbank Dam Decommissioning recommended alternative, in EEPAC'S opinion, represents the most effective option for improving the ecological and environmental conditions of the Thames.

p. 3

It is not accurate to say the Terms of Reference were approved by EEPAC. We have no approval authority. It would be more accurate to say EEPAC participated in the review of the Terms of Reference that were approved by the City.

I would also suggest the same is true of the UTRCA "approval." Again, I don't believe the city EIS requirements require approval by the UTRCA.

RECOMMENDATION 1: Section 2.3.2 on page 10 is an accurate description and should replace the relevant text on page 3

It appears that the earliest vegetation survey would have missed any spring ephemerals.

Figure 3.1 Benthic sampling. Why was there only one site downstream of the dam and not a second, upstream?

The presented Benthic sampling is not representative, because in accordance with Fig. 3.1, the report identified only one location. In our opinion, the Benthing Monitoring Sampling would be considered more accretive and representative to reflect the existing ecological/environmental conditions, at the minimum at other 2 locations (the upstream location and a chosen control location) if it would be monitored for this Benthic monitoring program. Also, it is not typical that this monitoring work has not being supported by the basic chemistry water quality monitoring that generally should be conducted together with the Benthic sampling.

RECOMMENDATION 2: Additional sampling be done before the EIS is accepted. Alternatively, if there is existing sampling data that would be representative, it can be used instead of additional sampling.

HIGHLIGHTS

p. 31 figure 4.4, note garlic mustard and buckthorn concentration on the SOUTH side. Inventory also noted purple loosestrife, but no SAR.

p. 46 Figure 5.1, entire north shore appears to be SWH!

p. 49 anticipates no work on the north side during decommissioning. The problem is, most of the SAR are aquatic.

p. 32, notes 7 large Norway maples.

RECOMMENDATION 3: These should be removed as part of any invasive species management plan for the study area.

A number of SAR fish mussels, and herps including Spiny Softshell

p. 44 The species indicated as potentially occurring within the Study area include Black Redhorse, Round Pigtoe, and Wavy-rayed Lampmussel. These species were not observed during the 2017 and 2018 surveys conducted by Matrix; however, **there is still likelihood** that they could be present based on previous observations as well as suitable habitats within the Study area. On page 37, the following is noted which argues that **it is highly likely one or more of these are present. This is over and above the species confirmed, Silver Shiner and Spiny Softshell (which is endangered).** Each of these species are given species and general habitat protection under the ESA, 2007.

See page 37: *The species captured during the 2017 and 2018 studies represent a portion of the potential species present within the Study area. The fish compositions will change throughout the year during*

spawning migrations within the Thames River; therefore, it is important to consider spring spawning timing windows to ensure that larger fish species are not impeded from accessing spawning grounds.

RECOMMENDATION 4: Any work be done under an Overall Benefit permit

p. 42

5.2.1 Seasonal Concentration Areas of Animals

The SWH assessment identified four candidate seasonal concentration areas of animals:

- *turtle overwintering habitat*
- *Raptor wintering area*
- *Bat maternity colonies*
- *Snake hibernacula*

Three of the SWH types (Raptor wintering areas, bat maternity colonies, and Snake hibernacula) are located within the northern forested valleyland within the Study area.

One SWH (turtle overwintering habitat) types is located within the Project Site. Turtle species utilize large, deep pools to overwinter. These pools are a critical part of the turtle's habitat and life cycle. Several turtle species have been documented within the Study area; however, it has not been confirmed whether or not these turtles are utilizing the large, deep pool beneath the Springbank Dam.

The question is where will this be captured in a to-do list for the decommissioning project? It is not noted in section 7.2 Mitigation Measures on page 53.

It is not clear what the implications are for the proposed project if the pool is being used for overwintering.

RECOMMENDATION 5: Surveys be completed prior to awarding a bid in order to determine if there are species and overwintering habitat within the pool.

5.2.2 Specialized Habitats of Wildlife

One confirmed and one candidate specialized habitat of wildlife was identified during the SWH assessment, which included turtle nesting areas. Candidate and confirmed turtle nesting areas were observed within 1 km of the Study area.

5.2.3 Habitat of Species of Conservation Concern

A total of eight SCC were confirmed within the Study area, with an additional seven SCC which were considered to have candidate SWH within the Study area. SWH applies to the ELC communities, each of the species were observed, and/or where candidate habitat exists (Table 5.2, Figure 5.1).

p. 44-45 discusses the 3 categories of general habitat protection Threatened and Endangered fish species like the Silver Shiner receive. However, there is no mention of the category in which the study area is in, nor what other areas of the Thames studied by Matrix. Carving up the EISs into tiny pieces is

contrary to ecosystem planning and is not helpful to understanding of the impacts of changes proposed by the Back to the River project. This is important because even if the proposed project impacts are monitored, it is unlikely they will be removed if the findings show a negative impact on SAR species and their habitat.

p.53 Mitigation measures

The Sediment Erosion Control plan is a critical component for the proposed work to protect the existing ecological/environmental features, functions and habitats conditions. The proposed Erosion Sediment Control Plan needs to ensure the required protection of existing natural habitats and water resources measures will be provided, as well any potential adverse impacts should be identified and proposed measures to minimize these effects be identified and listed in this EIS.

RECOMMENDATION 6: The Erosion Sediment Control Plan's major objectives and major issues needs to be incorporated in this EIS.

This page is also unclear as to dewatering requirements or coffer dam requirements for the project. These can be disruptive if the work continues through a spawning season.

RECOMMENDATION 7: The proposed dewatering procedure needs to identify in more detail what would be incorporated in the proposed protective measures to minimize the estimated potential adverse impacts, the estimated time periods that the existing environmental/ecological system may be effected from these impacts and a list of specific mitigation measures are required to be identified in EIS.

EEPAC has a number of suggested additional mitigation measures

RECOMMENDATION 8: Before construction, information on species at risk identification including photos posted in construction trailer during construction. Ideally, this will reduce or avoid mortality

RECOMMENDATION 9: The phone number of the Species at Risk Biologist from UTRCA be posted prominently so that turtle and snake sightings can be reported. When sightings occur, work must cease until the species at risk biologist has given the go ahead for work to start up again.

p. 55 (re 4D) – Invasive Species Management Plan) EEPAC questions when the invasive species management plan would be drafted and by who.

RECOMMENDATION 10: Our preference is that it be drafted by Matrix now given it has done the field work with the plan included as a requirement for the winning bidder to implement. Money must be included in the contract budget for monitoring, and monitoring shall be carried out by an ecologist hired by the contractor to the satisfaction of the City and the UTRCA.

p. 56 states no long term impacts are anticipated. The ultimate question is what would long term impacts be? Loss of species? Over what period of time? And how would changes be definitively linked to the project impacts?

RECOMMENDATION 11: The EIS should include what long term impacts might be so that any compensatory mitigation measures could be implemented at a future date and charged back to the project.

page 57 indicates there should be additional consultation with UTRCA to identify any additional studies needed for this project. It is unclear at what stage these consultations would take place and what sort of information the consultants feel is required.

RECOMMENDATION 12: The noted additional consultation with the UTRCA take place prior to finalizing the EIS.

P. 58, EEPAC would like to know why a permit is not required for other SAR species likely in the area but not found in sampling. As stated earlier, it is highly likely the other SAR species such as Wavy Ray Lampmussel and Round Pigtoe (Appendix J p. 2-3) are present. As we are unclear if the permit is species specific or not therefore, we suggest that a permit for impacts to all SAR mussel species and habitat within 1 Km be required. We assume that one permit could cover all. The challenge is that most mussels have specific fish hosts for their eggs/larvae and it would be beneficial to add to the EIS a list of all of the SAR and SCC mussels in the MNRF list and their host fish species to better identify what SAR permits should be obtained. The fisheries specialist at the UTRCA can assist in this.

To authorize and issues various permits for the City to undertake the recommended work, MNRF and DFO, generally require that the Consultant together with City staff will develop and provide some type of Mitigation and Compensation Plans associated with the proposed work to ensure all required protection of various habitats and existing ecological/environmental conditions in accordance with the applicable Federal and Provincial Acts. The magnitude and specific conditions of the recommended work, suggest that these plans would include very substantial mitigation and compensation works.

RECOMMENDATION 13: The major issues; measures and the considered locations for the Mitigation and Compensation Plans needs to include in this EIS.

RECOMMENDATION 14: In order to ensure that all proposed work and mitigation/compensation/restoration work is working, in addition to all recommended monitoring, EEPAC recommends that the post-construction monitoring also include Benthic and Basic Chemistry Water Quality Monitoring at the minimum 3 locations - upstream, immediately downstream of these works and further at the location app.100 m downstream of the proposed work.

ACCESS POINTS AND PATHWAYS

EEPAC is concerned about the additional access points and pathways on the north side of the River south of Riverside Drive and west along the River. Without any supporting EIS work, we cannot support the proposed alternative 3 at this time. We look forward to reviewing the studies that concluded such works would have no negative impacts on the natural heritage system or species at risk and their habitat.

P. 34/44 - CHIMNEY SWIFTS (FROM A MEMBER OF THE LOCAL SWIFT WATCH)

Clarification is needed as to which Study Area the draft EIS paragraph applies to; if the Dam Decommissioning Study Area (outlined in blue on the map), wording needs to be revised to indicate the burned-down chimney is not within this Study Area. A perusal of the area outlined in blue on the map does not suggest there are any potentially suitable swift chimneys extant within the area.

If the paragraph refers to the orange-outlined One-River Study Area, wording needs to be revised to indicate that there are a number of known as well as potential swift chimneys within the Study Area. Of the occupied and potential swift chimneys in the full One-River Study Area, it appears unlikely that any would be negatively affected by the decommissioning of the Springbank Dam.

Swifts roost communally in chimneys not only during the breeding season but also during spring and fall migration. (Swifts are present in London from approximately late April to early October, during which time they spend nights in chimneys. Swifts also occupy chimneys during the daytime when carrying out activities associated with nesting and the raising of a family.)

Swifts are incapable of perching (due to the design of their feet), so the statement about swifts perching on top of the chimney of an abandoned home since destroyed by fire, is presumed to be inaccurate. Swifts may well have been occupying the chimney that burned down, but, if they were, they would drop in directly and not perch on top of the chimney. Swift use of a chimney is usually confirmed by observation of an actual entry into or exit from the chimney.

It is useful to retain the observation that swifts are using the airspace above the river and its adjacent banks as a place to forage for airborne insects. It is likely that many of the insects caught by swifts in the Springbank area spent their immature stages in the river or on vegetation growing near the river. Habitat that produces food for swifts is essential to the species' survival.

Swifts will forage as far as 3 or more km from their home chimneys, so, even if there is no longer a suitable swift chimney within the blue-outlined study area, swifts are likely to continue to use this area for foraging. There are a number of known swift chimneys within the orange-outlined study area, as well as many other chimneys within that area and outside it that may well also host swifts.

When swifts first return in the spring, the airspace above the river corridor along Springbank Park is particularly significant as a foraging area.

In considering impacts on swifts of activities within the Study Area, it is important to include impacts to the habitat that produces the food on which swifts forage.

MISC

p. 48 **layout of impacts. EEPAC would like to see this as a requirement for assessment of impacts for ALL projects (add to update of EMG) expressed as a matrix for each impact and its type (4 x 3 matrix)**

Both direct and indirect impacts on natural heritage features and functions can occur as a result of the preferred alternative. Impacts and residual effects on natural heritage features were assessed based on the following criteria:

- Duration - long or short-term
- Extent - localized or expansive
- Permanent - permanent or temporary
- Severity - positive or negative