Baker Lands
Environmental Impact Study

Terms of Reference

The following Terms of Reference detail the work plan for the investigations and assessments required to complete an Environmental Impact Study for the Baker Lands in south London.

1.0 Study Area Location

The Baker Lands ("subject lands") are situated immediately south of the Forest City Industrial Park on Wilton Grove Road just east of Highbury Avenue in the south part of London. The subject lands contain portions of the Tenant's Pond Environmentally Significant Area (ESA) and the Westminster Provincially Significant Wetland (PSW) complex. The subject lands are within the Dingman Creek Subwatershed and drain southeast to Dingman Creek just southeast of the subject lands.

Attachment "A" provides a figure indicating the boundaries of the subject lands with an aerial photograph showing natural features, buildings and roadways.

2.0 Official Plan Designations

Schedule A to the City of London Official Plan - Land Use identifies a majority of the subject lands as "Agriculture" with the portions containing natural heritage features identified as "Open Space" and "Environmental Review". Schedule B-1 to the City of London Official Plan - Natural Heritage Features identifies Tenant's Pond ESA, the Westminster PSW, an Unevaluated Corridor with an overlay of "Big Picture Meta-Cores and Meta-Corridors. Also include within the subject lands is "Potential naturalization" triangle.

Attachment "B" provides Schedule "A" and Schedule "B" maps for the subject lands.

3.0 Requirements for an Environmental Impact Study

The requirement for the preparation of an Environmental Impact Study (EIS) in accordance with the City of London's Official Plan Policy 15.5.1 is triggered by the presence of portions of the Tenant's Pond ESA, the Westminster PSW as delineated on Schedule B-1 and the Environmental Review lands as delineated on Schedule A.

The Environmental Impact Study (EIS) for the Baker Lands will be prepared in accordance with the City of London's Environmental Management Guidelines (2007) and the "Draft" Environmental Impact Study Requirements document (June 27, 2013). Furthermore, these Terms of Reference will be submitted to the City of London's Environmental and Parks Planning Department (E&PP) and the Upper Thames River Conservation Authority for review and comment.

4.0 Background

The subject lands and the natural heritage features within and adjacent to the subject lands have been investigated as part of a number of studies including the "Forest City Industrial Park Stormwater Works Environmental Impact Study (Earth Tech (now AECOM), November 2002).

5.4.2 ***Amphibian Call Surveys*** - Three anuran call surveys will be conducted at the predetermined locations within the study area. These surveys will be conducted following the Ontario Marsh Monitoring Program (Bird Studies Canada 2008). The Marsh Monitoring Program's survey protocol provides standardized field methods for audio-surveys of breeding anurans (i.e. frogs and toads) within the province. In order to detect both early and late anuran breeders, three site visits are to be conducted at the survey locations during the breeding season. In accordance with this protocol, surveys will not begin until at least one-half hour after sunset and will be completed before midnight. In addition, surveys will only be conducted during suitable weather conditions which included winds less than 19 km/hr and a minimum night-time air temperatures of at least 5°C for the first survey, 10°C for the second survey and 17°C for the third survey. It should be noted that surveys can be conducted at lower temperatures if there is strong calling activity observed. Species observed and call frequency will be recorded during each three minute point count. The frequency categories of anuran calls are as follows: 0 - None heard, 1 - Individuals can be counted, calls not overlapping, 2 - Numbers of some individuals can be estimated or counted, others overlapping, 3 - Full chorus, calls continuous and overlapping, and individuals not distinguishable.

5.4.3 ***Aquatic Habitat Assessments*** – AECOM aquatic biologists will conduct aquatic habitat assessments of the Cameron Award Drain and the Piper Drain within the subject lands and for areas downstream of the subject lands. Investigations will include the determination of drainage patterns within the subject lands and adjacent lands and determination of the status of watercourses. The protocols for data collection on fish and fish habitat will be based on the MTO Environmental Guide for Fish and Fish Habitat (Fish Guide). Data collection has also been scoped to characterize features at a reach scale. Data collection in 2015 will include: Channel type (natural or channelized); Channel morphology (width, depth); Flow characteristics; Substrates; Instream cover; Specialized habitat present; Bank and riparian community characteristics, and Valley form characteristics.

5.4.4 ***Cavity Tree Surveys*** - In order to survey for the presence of suitable bat habitat, a bat cavity tree assessment will be completed in order to determine the snag density within onsite forest communities. The bat cavity tree assessment will be conducted within suitable habitat (FOD, FOM, FOC, SWD, SWM and SWC) following Bat and Bat Habitat Surveys of Treed Habitats protocol (OMNRF 2014). This survey includes recording observed cavity trees within approximately ten 12.6m plots within the identified habitat. Within each plot, the number of snag/cavity trees greater or equal to 25 cm diameter at breast height (DBH) will be recorded. Information collected for each snag included tree species, number of cavities, decay class, UTM coordinates and representative photos. Using the information collected, the number of snags per hectare will be calculated to determine the snag density within the study area. Further investigations (i.e cavity tree mapping, acoustic monitoring) may be required during the Environmental Impact Study Stage.

5.4.5 ***Snake Cover Board and Area Searches*** – Surveys for snakes and potential snake habitat within the study area will be conducted in order to determine potential for SAR snake species. These surveys will include cover board and area searches completed during daytime bat habitat assessment, ELC and floral investigations, as well as breeding bird surveys. Cover boards placed within suitable habitat, will be surveyed as follows: i) Approximately 5 daytime searches

5.4.10 ***Significant Wildlife Habitat Surveys*** - A Significant Wildlife Habitat screening exercise will be conducted using the Wildlife Habitat Ecoregion Criteria Schedule 7E (OMNR 2012) to determine the presence of Candidate SWH within the study area. The presence of candidate habitat for all five SWH categories will be determined by comparing existing conditions, based on ELC site investigations, to criterion listed within the 7E schedule. This assessment will be completed to help inform the need to conduct species specific surveys within the study area.

Field Investigations and surveys will meet or exceed the City of London's Data Collection Standards for Ecological Inventories as documented in the City of London Environmental Management Guidelines (Revised 2007).

5.5 ***Assessment and Evaluation of Information/Data*** - AECOM will assess data obtained during field investigations in comparison with appropriate city, county, provincial and federal rankings and status for significance and rarity. Rankings will be assessed at both the species and community levels. The following evaluations are anticipated based on the features known to-date:

5.5.1 ***Species at Risk Habitat Assessment*** as noted above in point 3.0.

5.5.2 ***Evaluation of Significant Wildlife Habitat*** using the MNRF Technical Guide for Significant Wildlife Habitat (Draft 2000) & Ecoregion Criterion Schedule for Ecoregion 7E.

5.5.3 ***Evaluation of Significant River, Stream and Valley Corridors*** *in accordance with the criteria outlined in the City of London's Official Plan Policy 15.4.6 "Corridors".*

5.5.4 ***Schedule A & B-1 Recommendations*** - A recommendation(s) will be made regarding the most appropriate designation for the Environmental Review (ER) lands in accordance with the City of London's Official Plan policies. If the ER lands are determined to meet criteria for incorporation into the City of London's Natural Heritage System, the identified area will be delineated using the City of London's Boundary Delineation Guidelines (EMG 2007).

5.5.5 ***Natural Heritage Areas Delineation*** - AECOM will stake the areas identified as components of the City of London's Natural Heritage System along the natural vegetation drip-line. Following the staking, an agency site walk, with the City of London E&PP Department and the UTRCA, will be held to review and agree upon the boundary delineation. The agreed upon delineation will be surveyed immediately following the agency site walk.

6.0 ***Impact Assessment*** - AECOM will conduct a Net Effects Analysis based on the issues identified, data gathered during field investigations and development design parameters from the land use concept.

7.0 ***Environmental Management Plan*** - An Environmental Management Plan based on the identified natural heritage features and functions, potential impacts and proposed mitigation measures will be prepared as part of the EIS document.

8.0 ***Reporting*** – The tasks described above will be documented in an Environmental Impact Study Report to be submitted to the City of London, the City of London's Environmental and Parks Planning Department and the Upper Thames River Conservation Authority for review and approval.

Environmental Impact Study
ISSUES SUMMARY CHECKLIST REPORT

Application Title: Baker Lands EIS

Date Submitted: October 5th, 2015

Proponent: City of London

Qualifications

Primary Consultant: AECOM

Key Contact Person: Gary Epp

Other Consultants/field personnel:

Hydrogeology / Hydrology: TBD

Geotechnical: n/a

Biological - Flora: AECOM

Biological – Fauna: AECOM

Other:

Context for Background Information

Subwatershed : DINGMAN

Tributary Fact Sheet Number :

Planning/Policy Area:

Technical Advisory Review Team

- ☑ Ecologist Planner
- ☑ Planner for the File
- ☑ EEPAC
- ☑ Conservation Authority: UTRCA
- ☑ Ministry of Natural Resources
- ☐ Ministry of Energy and Environment
- ☐ Ministry of Municipal Affairs and Housing
- ☐ Ministry of Agriculture and Food

Other Review Groups (eg. Community Associations, Field Naturalists)

1.0 DESCRIPTION OF THE ENVIRONMENT (Features)

Purpose: To have a clear understanding of the current status of the land, and the proposed "development" or land use change.

1.1 Mapping (Location and Context)

(current aerial photographs, preferably ortho-images, 1:2000 Ontario Base Map, NTS 1:50,000 maps)

- ☑ Land Use - Excerpts of the Official Plan for the City of London Ontario Schedules A, B, showing a 5-10km radius of subject site
- ☑ Terrain setting @ 1:10,000 – 1:15,000 scale showing landscape features, subwatershed divides
- ☑ Existing Environmental Resources @ 1:2,000 -1:5,000 showing Vegetation, Hydrology, contours, linkages
- ☑ Environmental Plan or Strategy from Subwatershed reports (tributary fact sheet), Community (Area) Plans, or other

1.2 Description of Site, Adjacent lands, Linkage with Natural Heritage System

List all supporting studies and reports available to provide background summary (e.g. *sub-watershed, hydrological, geo-technical, natural heritage etc.); check the first box if it is relevant to the subject area and surrounding landscape, and check the second box if it is determined that sufficient information is available.*

AECOM. 2002. Forest City Stormwater Works Environmental Impact Study "Draft".

1.2.1 Terrain Setting

☑	☑ Soils (surface & subsurface)
☐	☑ Glacial geomorphology- landform type
☐	☑ Sub-watershed
☐	☑ Topographic features
☐	☑ Ground water discharge
☐	☑ Shallow ground water/baseflow
☐	☑ Ground water recharge/aquifer
☐	☑ Aggregate resources

1.2.2 Hydrology

☐	☑ Hydrological catchment boundary
☐	☑ Surface drainage pattern
☐	☑ Watercourses (Permanent, Intermittent)
☐	☑ Stream order (Headwater, 1st, 2nd, 3rd or higher)
☐	☑ Agricultural drains
☐	☑ Downstream receiving watercourse

1.2.3 Natural Hazards

- ☐ ☑ 100 year Erosion Line
- ☐ ☑ Floodline mapping
- ☐ ☑ Fill line mapping

1.2.4 **Vegetation**

- ☑ Vegetation Patch number 10156 and 10158
- ☐ ☐ System (Terrestrial , Wetland, Aquatic)
- ☐ ☐ Cover (Open, Shrub, Treed)
- ☐ ☐ Community Type(s)
- ☐ ☐ ELC Community Class (Bluff, Forest, Swamp, Tallgrass Prairie, Savannah & Woodland, Fen, Bog, Marsh, Open Water, Shallow Water)
- ☐ ☐ ELC Community Series
- ☐ ☐ Rare Vegetation Communities

1.2.5 **Flora**

- ☐ ☐ Flora (inventory dates, source)
  Floral inventories to be undertaken as part of this work during 2015 – 2016.

- ☐ ☐ Rare flora (National, Provincial, Regional)
  Floral inventories to be undertaken as part of this work during 2015 – 2016.

1.2.6 **Fauna**

- ☐ ☐ Fauna (inventory dates; source)
  Incidental surveys being undertaken as part of 2015 field program.

- ☐ ☐ Breeding Birds
  Breeding bird surveys to be conducted in 2016.

- ☐ ☐ Migratory Birds
  Breeding bird surveys to be conducted in 2016.

- ☐ ☐ Amphibians
  Surveys to be conducted as part of 2016 field program.

- ☐ ☐ Reptiles

Incidental surveys being undertaken as part of 2015 field program; Coverboard surveys to be conducted in 2016.

☐ ☐ Mammals
Incidental surveys being undertaken as part of 2015 field program.

☐ ☐ Butterflies
Surveys to be undertaken as part of 2016 field program.

☐ ☐ Odonata
Surveys to be undertaken as part of 2016 field program.

☐ ☐ Other SWH will be assessed
☐ ☐ Bird Species of Conservation Priority
Breeding bird surveys to be conducted as part of 2016 field program.

☐ ☐ Rare Fauna
Floral surveys to be conducted as part of the 2016 field program.

1.2.7 **Wildlife habitat**

☐ ☐ Species-At-Risk critical habitat mapping
☐ ☐ Winter habitat for deer, wild turkey
☐ ☐ Waterfowl Habitat (wetlands, poorly drained landscape – bottomlands, beaver ponds, seasonally flooded areas, staging areas, feeding areas)
☐ ☐ Colonial Birds Habitat
☐ ☐ Hibernaculua
☐ ☐ Habitat for Raptors
☐ ☐ Forests with springs or seeps
☐ ☐ Ephemeral ponds
☐ ☐ Wildlife trees (snags, cavities, x-large trees > 65 cm dbh)
☐ ☐ Forest Interior Birds
☐ ☐ Area-sensitive birds]

All of the above will be verified during 2016 assessment. A significant Wildlife Habitat Assessment to be completed in 2016. MNR has been contacted and have yet to receive information.

1.2.8 **Aquatic Habitat**
(*SWS Aquatic Resources Management Reports*)

☐ ☐ Fish communities
Downstream – Dingman Creek.

☐ ☐ Fish spawning areas
☐ ☐ Fish migration routes
☐ ☐ Thermal refuge for fish
☐ ☐ Thermal Regime (cold, cool, warm)
☐ ☐ Benthic inventory
☐ ☐ Substrate
☐ ☐ Riparian habitat (extent and type)
All of the above will be based on background information for Dingman Creek.

1.2.9 **Linkages and Corridors**
(The diversity of natural features in an area, and the natural connections between them should be maintained, and improved where possible. Provincial Policy Statement 2.3.3).

☐ ☐ Valleylands
☐ ☐ Significant Watercourses (Thames River, Stoney Creek, Medway Creek, Dingman Creek, Pottersburg Creek, Wabuno Creek, Mud Creek, Stanton Creek (Drain), Kelly Creek (Drain)
☐ ☐ Upland Corridors / migration routes
☐ ☐ Big Picture Cores and Corridors
☐ ☐ Linkages between aquatic and terrestrial areas (riparian habitat, runoff)
☐ ☐ Groundwater connections
☐ ☐ Patch clusters (mosaic of patches in the landscape)

1.3 Social Values

1.3.1 **Human Use Values**

☐ ☐ Recreational linkages for hiking, walking
☐ ☐ Nature appreciation, aesthetics
☐ ☐ Education, ,research
☐ ☐ Cultural / traditional heritage
☐ ☐ Social (parks and open space)
☐ ☐ Resource Products (e.g. timber, fish, furbearers, peat)
☐ ☐ Aggregate Resources

1.3.2 **Land Use-Cultural**

- ☐ ☐ Archaeological (pre 1500)
- ☐ ☐ Historical (post 1500-present)
- ☐ ☐ Adjacent historical and archeological
- ☐ ☐ Future

1.3.3 **Land Use-Active**

- ☐ ☐ Current
- ☐ ☐ Historical (past 50-100 years)
- ☐ ☐ Adjacent lands
- ☐ ☐ Future

1.3.4 **Other**

2.0 EVALUATION OF SIGNIFICANCE

Components of the Natural Heritage System
The policies in Section 15.4 apply to recognized and potential components Of the natural heritage system as delineated on Schedule "B", or features that may be considered for inclusion on Schedule "B". They also address the protection of environmental quality and ecological function with respect to water quality, fish habitat, groundwater recharge, headwaters and aquifers.

1.1 Environmentally Significant Areas

☑ Identified Environmentally Significant Areas (*Recognized in Official Plan (Schedule "B" and/or Section 15.4.1.1*
Name:

☐ Potential Environmentally Significant Areas – Expansion of (*Recognized in Section 15.4.1.2 and Schedule "B")*
Name

☐ Potential Environmentally Significant Areas (*Recognized in Section 15.4.1.5 and Schedule "B")*
Name

1.2 Wetlands

- ☑ Provincially Significant Wetlands
- ☐ Locally Significant Wetlands
- ☐ Unevaluated Wetlands

1.3 Areas of Natural and Scientific Interest

- ☐ Provincial Life Science ANSI
- ☐ Regional Life Science ANSI
- ☐ Earth Science ANSI

1.4 Habitat of Species-At-Risk (SAR)
- ☑ Endangered
- ☑ Threatened
- ☑ Vulnerable

1.5 Woodlands
- ☑ Significant Woodlands
- ☐ Unevaluated Vegetation Patches

2.6 Corridors and Linkages
- ☑ River, Stream and Ravine Corridors
- ☑ Upland Corridors
- ☑ Naturalization and Anti-fragmentation Areas

3.0 IDENTIFICATION AND DESCRIPTION OF FUNCTIONS

Ecological Functions *The natural processes, products or services that species and non-living environments provide or perform within or between ecosystems and landscapes. Check those functions that will be required to assess for the study (key and supporting functions).*

3.1 Biological Functions
- ☐ habitat (provision of food, shelter for species)
- ☐ limiting habitat
- ☐ species life histories (reproduction and dispersal)
- ☐ habitat guilds
- ☐ indicator species
- ☐ keystone species
- ☐ introduced species
- ☐ predation / parasitism
- ☐ population dynamics
- ☐ vegetation structure, density and diversity
- ☐ food chain support
- ☐ productivity
- ☐ diversity
- ☐ carbon cycle
- ☐ energy cycling
- ☐ succession and disturbance processes (natural and man-made)
- ☐ relationships between species and communities

3.2 Hydrological and Wetland Functions
- ☐ ground water recharge and discharge (hydrogeology)
- ☐ water storage and release (fluvial geomorphology)
- ☐ maintaining water cycles (water balance)
- ☐ water quality improvement
- ☐ flood damage reduction
- ☐ shoreline stabilization / erosion control
- ☐ sediment trapping

- ☐ nutrient retention and removal / biochemical cycling
- ☐ aquatic habitat (fish, macroinvertebrates)

3.3 Landscape Features and Functions

- ☐ size
- ☐ connections, corridors and linkages
- ☐ proximity to other areas / natural heritage features (e.g. woodlands, wetlands, valleylands, water, etc.)
- ☐ fragmentation

3.4 Functions, Benefits and Values of Importance to Humans

- ☐ contributing to healthy and productive landscapes
- ☐ improving air quality by supplying oxygen and absorbing carbon dioxide
- ☐ converting and storing atmospheric carbon
- ☐ providing natural resources for economic benefit
- ☐ providing green space for human activities
- ☐ aesthetic and quality-of-life benefit
- ☐ environmental targets and/or environmental management strategies