Kilally South, East Basin
Class Environmental Assessment

Environmental and Ecological Planning Advisory Committee (EEPAC)
Review of Existing Conditions and Evaluation of Preferred Alternative

September 19, 2019

Kilally Class EA – EEPAC Presentation
Meeting Outline

1. Introductions
2. Study Area
3. Problem Statement
4. Proposed Evaluation Criteria
5. Existing Conditions Review
   - Surface Water
   - Natural Heritage
   - Hydrogeology
6. Preferred Stormwater Management Concept
7. Discussion
8. Next Steps

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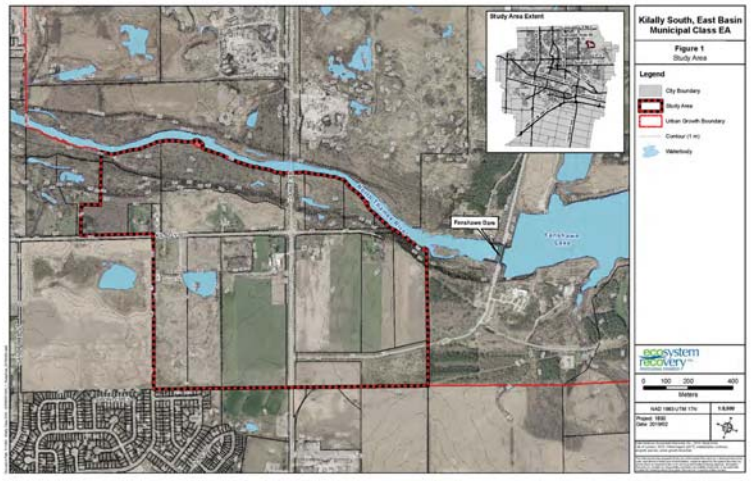
Existing Drainage Pattern



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Problem Statement

The stormwater servicing alternative identified in the 2003 Kilally South Environmental Assessment for the Kilally South, East Basin study area is outdated and no longer meets current policy and stormwater design objectives.

A preferred stormwater management approach for the South, East Basin area is to be assessed with consideration for a holistic stormwater management approach to support both environmental and development goals.

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Stormwater Management Service - Evaluation Criteria

Category	Criteria	Indicator
Socio - Cultural Environment	Archaeology & Cultural Heritage	• Impacts to known archaeological resources • Impacts to built heritage and cultural landscapes
Socio – Economic Environment	Land Use	• Property requirements (area required, access, flooding, erosion) • Temporary construction impacts (noise, access, dust) • Opportunity to integrate stormwater with neighbourhood amenity space
Natural Environment	Terrestrial Environment	• Effects on terrestrial environment including habitat and tree removal • Habitat enhancement and opportunities to create linkages to existing Natural Heritage Features
	Aquatic Environment	• Effects on aquatic environment including habitat and species at risk • Impacts to groundwater quality and quantity
	Floodplain	• Loss or disturbance to North Thames River Floodplain • Slope stability and riverine erosion hazards
Technical Environment	Design/Function	• Ability to address problem statement • Water Quality: Level 1 water quality control required for all discharges to the Thames River (80% TSS removal, MOE 2003). • Erosion Control: Demonstrate that erosion criteria are met such that conveyance to the Thames River does not create or exacerbate stream stability issues. • Peak Flow Control: Demonstrate that flows do not pose flood risk can be safely conveyed. • Mimic natural hydrologic response to rainfall and runoff (water balance) to protect existing natural habitat conditions.
	Construction & Implementation	• Constructability (staging, grading constraints, utility conflicts) • Maintenance/access considerations • Opportunity to coordinate future infrastructure works and planned land use changes (Clarke Rd EA, VMP Extension)
	Approvals & Compliance	• Permitting requirements, including complexity (UTRCA, DFO, MNRF) • Compliance with Thames Valley Areas Study recommendations • Meets MECP direction for LID implementation • Climate change and infrastructure resiliency
Economic Environment	Cost	• Capital Costs (total project costs - design/construction) • Operation & maintenance costs • Land Costs

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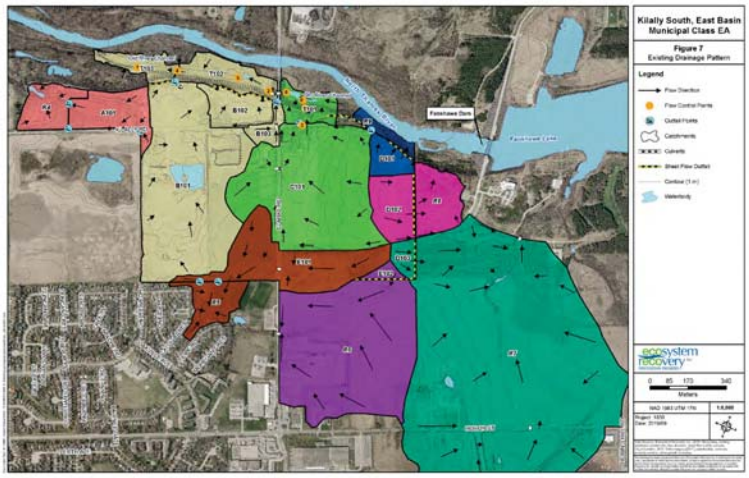
Existing Drainage Pattern



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Natural Heritage

Field Program

- Three season vegetation survey;
- Migratory waterfowl and breeding bird surveys;
- Amphibian call surveys;
- Incidental wildlife observations; and
- Incorporation of data from adjacent ongoing studies and previous investigations.

Deliverables

- Subject Land Status Report (informs evaluation of alternatives); and
- Environmental Impact Study (informs preferred alternative development, mitigation, compensation and future monitoring program).

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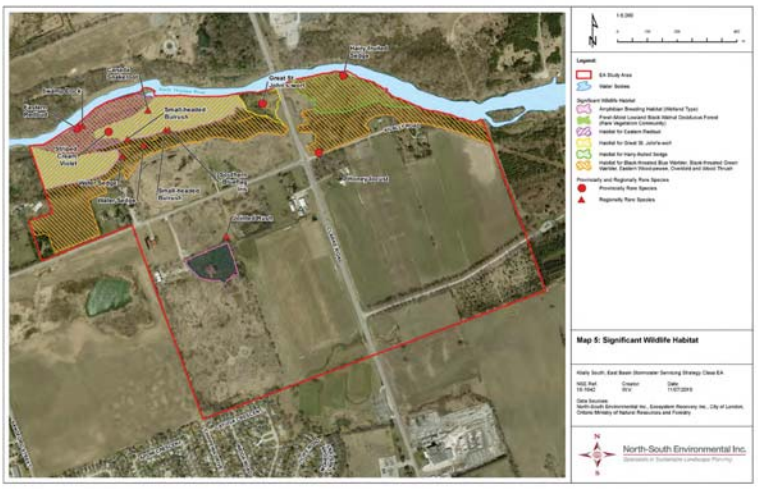
Natural Heritage – Significant Wildlife Habitat



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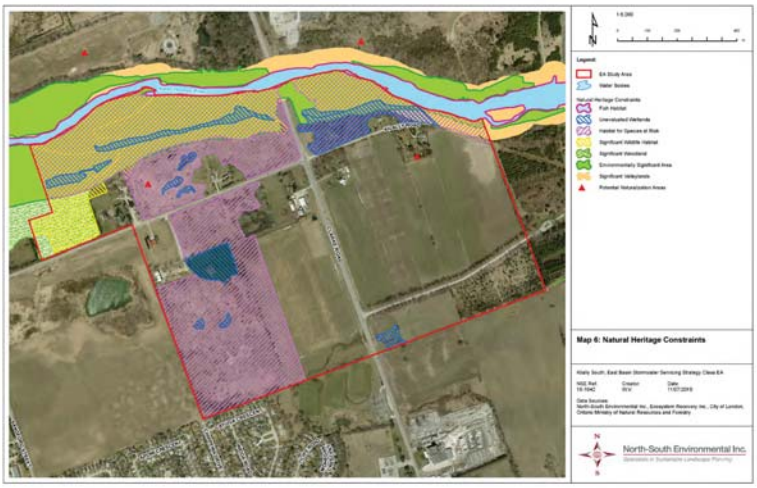
Natural Heritage – Constraints



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Hydrogeology

Field Program

- Four monitoring wells;
- Two nested monitoring well pairs - deep and shallow wells;
- Four piezometers;
- Groundwater level monitoring;
- Groundwater quality monitoring;
- Monitoring Period January 16th 2019 to June 19th 2019; and
- Incorporation of data from ongoing adjacent work and previous investigations as appropriate.

Deliverables

- Hydrogeology Assessment Report

(informs evaluation of alternatives, preferred alternative development, mitigation, and future monitoring program).

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Hydrogeology – Field Program

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Hydrogeology – Cross Sections and Seepage Locations

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Hydrogeology – Groundwater Elevation

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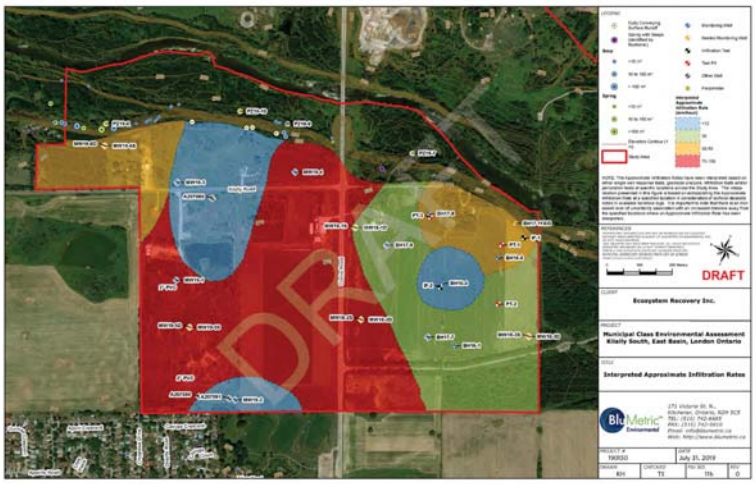
Hydrogeology – Interpreted Infiltration Rates



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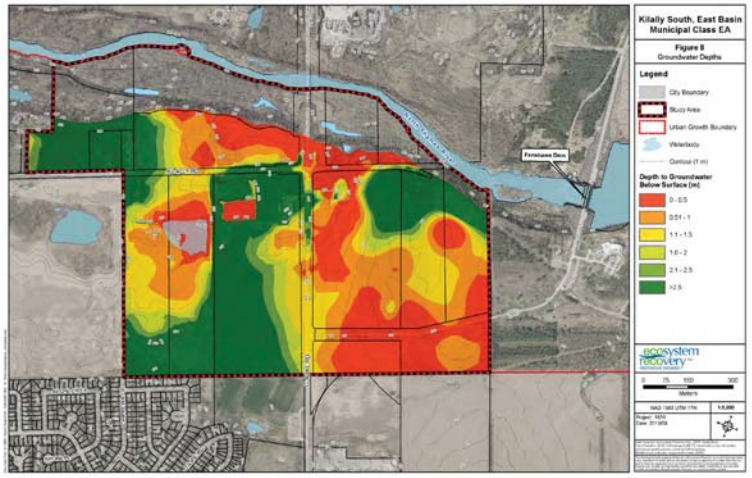
LID Screening – Groundwater Depths



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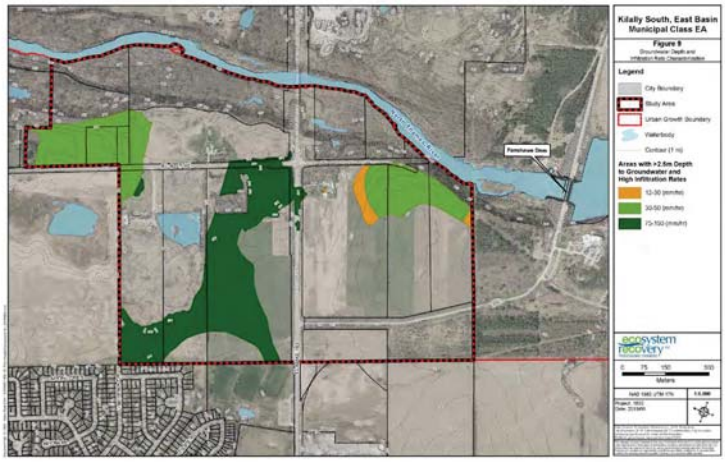
LID Screening – Groundwater Depth and Infiltration Rate



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Long List of Alternatives

Proposed Alternate	Description	Evaluation Result
Alternate 1:	Do Nothing	✓ Carried forward • Does not address the problem opportunity statement.
Alternate 2:	2003 Recommended (single wet pond facility)	X Screened out • Does not provide water balance benefits or LID implementation.
Alternate 3:	Catchment wide LID (LID only)	X Screened out • Areas of the study area are not favourable for LID due to high groundwater table and low permeability soils.
Alternate 4:	Single wet pond SWM facility (2003 Enhanced) (with LID where feasible)	X Screened out • Can only provide partial water balance benefits.
Alternate 5:	Single infiltration and attenuation facility (with LID where feasible)	✓ Carried forward • Can only provide partial water balance benefits.
Alternate 6:	Two infiltration and attenuation facilities (with LID where feasible)	✓ Carried forward – Preferred • Water balance benefits can be achieved through catchment LIDs supplemented by end-of-pipe infiltration facilities.

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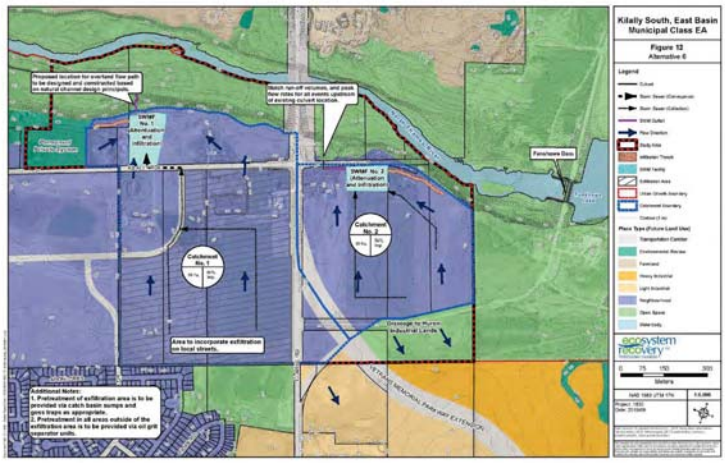
Preferred Alternative



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Next Steps

1. PIC – October 10th 6:00 to 8:00 pm;
2. Prepare Project File Report – Fall 2019;
3. File Project File Report – Fall 2019;
4. Detailed Design – 2020; and
5. Construction – 2022.