



# SERVICING BRIEF

FOR

**BRADFORD HIGHLANDS JOINT VENTURE**

PROPOSED

**BRADFORD HIGHLANDS  
RESIDENTIAL SUBDIVISION**

**PART OF LOT 13, CONCESSION 5**

**TOWN OF BRADFORD-WEST GWILLIMBURY  
COUNTY OF SIMCOE**

15011.100

FEBRUARY 2, 2017

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## **1.0 INTRODUCTION**

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Urban Ecosystems Limited, on behalf of Bradford Highlands Joint Venture, has prepared this Servicing Brief for the subject lands, known as the Bradford Highlands Golf Course lands, located on the south side of 6<sup>th</sup> Line, to the east of Brownlee Drive and immediately adjacent to the Bradford Capital residential subdivision in the Green Valley Community Plan area of the Town of Bradford-West Gwillimbury.

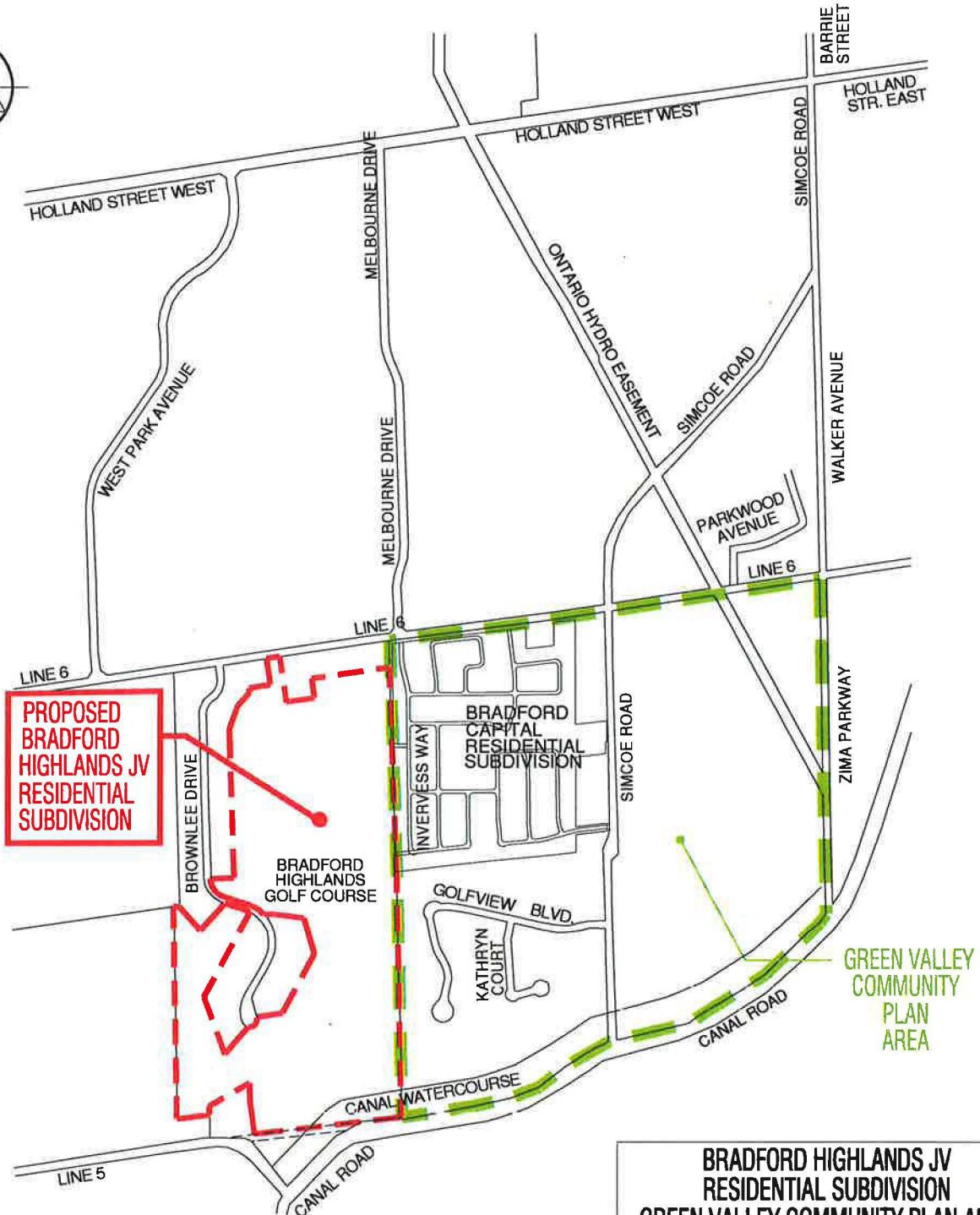
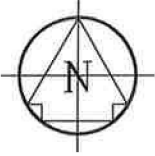
This Servicing Brief summarizes the development scheme proposal and demonstrates that the proposed development can be serviced with municipal sanitary sewers, storm sewers, water distribution system and stormwater management facilities.

## **2.0 SITE DESCRIPTION AND LOCATION**

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The subject lands are bounded by 6<sup>th</sup> Line to the north, the rear yards of the Bradford Capital Subdivision residential homes to the east, existing Brownlee Drive residential homes to the west and the existing Canal watercourse to the south, as illustrated in Figure No. 1. The subject lands include approximately 37 meters of direct frontage onto 6<sup>th</sup> Line and the benefit of access, through existing road allowance blocks, to Inverness Way located within the Bradford Capital Subdivision to accommodate two future road extensions into the subject lands.

The subject lands, further described as having two distinct drainage areas, generally drain in a northwest to southeasterly direction with an overall grade differential of approximately 30 meters. The southerly half of the lands drain towards the existing Canal watercourse. The northerly half of the lands drain through existing storm sewers located within the Bradford Capital Subdivision, to the east of the subject lands, to an existing culvert crossing Simcoe Road and ultimately outletting to Tributary Watercourse No. 1.



**PROPOSED  
BRADFORD  
HIGHLANDS JV  
RESIDENTIAL  
SUBDIVISION**

**BRADFORD HIGHLANDS JV  
RESIDENTIAL SUBDIVISION  
GREEN VALLEY COMMUNITY PLAN AREA**

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**SITE LOCATION**

DATE <b>JANUARY 2017</b>	PROJECT No. <b>15011</b>	FIGURE <b>FIGURE 1</b>
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## **2.0 SITE DESCRIPTION AND LOCATION (con't)**

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A 300 mm diameter municipal watermain currently exists within the 6<sup>th</sup> Line road allowance and a 250 mm diameter municipal watermain exists within the Inverness Way road allowance of the Bradford Capital Subdivision to service this development.

A 300 mm diameter municipal sanitary sewer currently exists within the Inverness Way road allowance of the Bradford Capital Subdivision to service this development.

The downstream municipal infrastructure is currently existing to accommodate the development of the subject lands.

## **3.0 PROPOSED DEVELOPMENT**

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### **ROADS**

All internal roadways will be fully urbanized with sodded boulevards, concrete curb and asphalt pavement. It is anticipated that the roadways proposed for this development can be designed to match closely with the existing topography and in conformity with the existing drainage pattern while providing sufficient cover for the storm and sanitary sewer systems compatible with the available outlet sewer depths. Major system overland flow routes along the roadway can be achieved while minimizing extensive earthworks.

Road access to the proposed development will occur at several points including one proposed road connection to 6<sup>th</sup> Line, a proposed road connection to 5<sup>th</sup> Line, a proposed road connection to Brownlee Drive, and two proposed road connections to Inverness Way located within the Bradford Capital Subdivision.

### **3.0 PROPOSED DEVELOPMENT (con't)**

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#### **WATER**

A 300 mm diameter watermain connection to 6th Line and two 250 mm diameter watermain connections Inverness Way, located within the Bradford Capital Subdivision, are proposed to service this development. A pressure reducing valve at the 6<sup>th</sup> Line watermain connection will also be required in the design of the water distribution network system for the subject lands. This preliminary water distribution system layout provides a looped system to ensure security of supply.

#### **SANITARY**

A 300 mm diameter sanitary sewer connection to the existing Inverness Way sanitary sewer within the Bradford Capital Subdivision is proposed to service this development. The northerly half of the subject lands are proposed to be serviced by internal gravity sanitary sewers varying in size from 250 mm diameter and 300 mm diameter and discharging directly to the Inverness Way sanitary sewer connection.

The southerly half of the subject lands are proposed to be serviced by 250 mm internal gravity sanitary sewers discharging to a local pumping station which will pump sewage flows to the Inverness Way sanitary sewer connection.

#### **STORM**

The storm sewer system will be designed to convey the 10 year minor design storm in an underground piped network system. Surface runoff along the street will be conveyed via a roadside curb and gutter system and captured by a series of street catchbasins that are directed into an underground piped sewer system. External surface runoff along the west limit of the subject lands will be conveyed via drainage side yard swales and captured by a series of rear yard catchbasins that are directed into an underground piped system. The proposed road layout and grading design preserves the existing drainage patterns and minimizes the amount of earthworks and disturbances to the adjacent properties.

### **3.0 PROPOSED DEVELOPMENT (con't)**

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#### **STORMWATER MANAGEMENT**

Stormwater management facility blocks are proposed to address stormwater runoff, outlet treatment and conveyance for this development site. The primary objective of the best management plan is to provide post development control to pre-development levels and to ensure that the quality of the runoff discharging from the site and the flood hazards (upstream, downstream or within the subject property) are not adversely impacted as a result of the proposed development.

It is anticipated that the storm sewer system will be divided into north and south drainage catchment areas with inlets into two Stormwater management facility blocks.

The North SWM Pond will accommodate approximately 49 ha of the northerly part of the proposed subdivision including an external drainage area to the west. The South SWM Pond will accommodate approximately 40 ha of the southerly part of the proposed subdivision including an external drainage area to the west.

Flows exceeding the capacity of the minor drainage piped underground system, up to the 100 year storm event, will be conveyed overland. These flows will be contained within side yard swale easements and road allowances and will generally follow the minor storm sewer system to the SWM pond. The minor drainage and major drainage system flows will ultimately outlet into the SWM pond where they will be controlled to pre-development levels.

The controlled northerly SWM pond flows will then discharge into the existing Inverness Way storm sewer within the Bradford Capital Subdivision and ultimately outletting via a Simcoe Road culvert crossing to existing Tributary No. 1 watercourse located on the east side of Simcoe Road.

### **3.0 PROPOSED DEVELOPMENT (con't)**

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The controlled southerly SWM pond flows will discharge into the existing valley land area to the south of this development and ultimately outletting to the existing Canal watercourse.

Stormwater Management Ponds are proposed to provide water quality level 1 treatment and erosion control of the stormwater run-off from the subject lands. In addition to quality control, the stormwater management facilities will also control post development drainage flows to pre-development levels.

The proposed development will result in a decrease in the groundwater recharge due to the impact of the increased areas associated with roadways, rooftops and driveways.

Therefore, rainwater leaders and sump pump outlet pipes will discharge on to the rear grassed areas of the lots via splash pads to reduce groundwater loss. It is also anticipated that the changes in the water balance between pre-development and post-development may be addressed by the introduction of infiltration galleries throughout the development lands. In addition to water balance, an evaluation of the anticipated changes in phosphorus loadings between pre-development and post-development will also be required including recommendations on how the phosphorus loadings can be minimized.



#### 4.0 CONCLUSION



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Based on the foregoing evaluation, it is the opinion of this firm that the proposed development site can be effectively serviced from the existing municipal infrastructure in compliance with the latest Town of Bradford-West Gwillimbury design criteria and standards.

The proposed grading, servicing and storm water management concepts are compatible with the existing site conditions and characteristics and all available current Town of Bradford-West Gwillimbury municipal servicing information criteria.

No adverse environmental impacts are anticipated as result of this development.

Respectfully Submitted,

Rosario Sacco, P.Eng.