Natural Environment Report (DRAFT)

King Township Water/Wastewater and Stormwater Master Plan

July 2015

Prepared for:

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1 INTRODUCTION

Savanta was retained by The Municipal Infrastructure Group (TMIG) to prepare the Natural Environment Report in support of the Municipal Class Environmental Assessment (Class EA) Study for the King Township Water/Wastewater and Stormwater Master Plans located in the Township of King, Regional Municipality of York. The EA study involves the review and analysis of water, wastewater and stormwater services in King City, Nobleton and Schomberg to support projected growth scenarios outlined in the Growth Plans and to ensure systems are adequate for the existing communities

The Study Area (**Figure 1**, Appendix A) is comprised of four communities: Schomberg, Nobleton, King City, and Ansnorveldt. The community of Schomberg is generally bounded by Highway 9 to the north, 8th Concession to the east, Lloydtown/Aurora Road to the south and 10th Concession in the west. The community of Nobleton is generally bounded by 15th Sideroad to the north, 8th Concession to the east, King-Vaughan Road to the south and 10th Concession to the east, King-Vaughan Road to the north, Dufferin Street to the east, King-Vaughan Road to the south and 10th Concession to the south and Jane Street to the west. Finally, the community of Ansnorveldt is generally located east and west of Dufferin Street between Wilhelmena Road and King Street.

A number of land uses comprise each community ranging from agricultural to commercial, institutional and residential. Each community contains a number of natural heritage features such as watercourses, wetlands (both significant and unevaluated), Areas of Natural and Scientific Interest (ANSIs), Environmentally Sensitive Areas (ESAs), woodlands and identified significant woodlands, as well as designations under the Oak Ridges Moraine Conservation Plan, 2001 and the Greenbelt Plan, 2005.

1.1 Purpose of Report

This report presents a landscape level review of the existing natural heritage features and designations that have been defined through a review of secondary sources, and it provides some general guidance regarding the importance of these resources in the context of the water/wastewater and stormwater master plan infrastructure installation proposed by King Township.

2 NATURAL HERITAGE CONSIDERATIONS

This compilation of natural heritage resources has been assembled from a variety of sources, and related background reports (Section 5, References). Relevant provincial, municipal, conservation authority policy materials include:

- The 1970 Township of King Parent Official Plan, Office Consolidation 2005;
- The 2001 Oak Ridges Moraine Conservation Plan;
- The 2005 Greenbelt Plan;
- The Toronto and Region Conservation Authority (TRCA);
- Pubic Policy Statement

Table 1 provides a summary of the ecological features/areas identified within and surrounding the Study Area. The locations of these features/areas are shown on (**Figures 1 - 4**, Appendix A).

Ecological Features/Areas	Description				
Little Pottageville Wetland Complex	A provincially significant wetland complex located approximately 600 m north of Schomberg that is made up of 43 individual wetlands totaling approximately 750 ha in size. The wetlands are primarily comprised of swamp, marsh and fen (TRCA, 2009a).				
Dufferin Wetland Complex Wetland	The Dufferin Marsh is a 5 ha wetland in the center of Schomberg. It is a remnant feature of the Schomberg River and is comprised of marsh, swamp and wet meadow. The wetland supports over 50 species of birds, 8 species of frogs and toads and the rare Hill's Pond Weed and Torrey's Manna Grass. (Township of King, 2011)				
Holland Marsh Low Lands Environmentally Significant Area	The Holland Marsh lies entirely within the Holland River watershed and consists of 2,900 ha of poorly drained organic peat moss (TRCA, 2009b). The surrounding area of the marsh contains several glaciated landforms including drumlins and eskers (TRCA, 2009b). The marsh provides significant ecological, cultural and economic value to the Holland River watershed.				
Ansnorveldt Wetland Complex Wetland	This wetland complex is located in the northern part of King Township and is bounded by the Holland Marsh to the east and northeast (TRCA, 2009a). The wetland complex is located on the edge of the Holland Marsh; its southern extent reaches the northern slopes of the Oak Ridges Moraine.				
Black Duck Wetland Complex	This wetland complex is generally located in the northeast portion of Nobleton.				
Nobleton Wetland Complex Wetland	This wetland complex is made up of 35 wetlands and is approximately 43 ha in size (TRCA, 2009a).				
East Humber River Wetland Complex	Portions of the East Humber River Wetland Complex occur within the south-east corner of the community of Nobleton.				

 Table 1: Ecological Features/Areas Identified Within and Surrounding the Study Area.



Ecological Features/Areas	Description				
Mary-Eaton Hall Lakes Area of Scientific and Natural Interest	This ANSI is located north of King City.				
Hall-Thompson Lake Kettle Area of Natural and Scientific Interest	This ANSI is located generally north of Nobleton.				
King-Vaughan Wetland Complex	This complex consists of 23 individual wetlands, totaling approximately 39.1 ha in size (City of Vaughan, 2010). The wetland is primarily comprised of swamp and marsh.				
Maple Uplands & Kettles Area of Natural and Scientific Interest	The dry sandy moraine soils found in the Maple Uplands support a mixture of upland woodlands, kettle wetlands, old fields and shrub thickets (TRCA, 2009).				
Eaton Hall-Mary Hachet Lakes Wetland Complex	This is a large wetland system that is connected by streams, forested uplands and agricultural fields. This complex contains the largest and most diverse wetlands within the Oak Ridges Moraine and hosts a number of kettle lakes (TRCA, 2009a).				
East Humber River	The East Humber River subwatershed drains from St. George Lake to Pine Grove, an area of approximately 200 km^2 and contains approximately 257 km or 20% of the watercourse in the watershed (TRCA, 2005).				
Holland River	This river flows north towards Cooks Bay and originates on the Oak Ridges Moraine.				
North and South Schomberg Creek	The North and South Schomberg Rivers are tributaries of the Holland River and generally flow north.				

2.1 Township of King Parent Official Plan, Office Consolidation

The Township of King is currently undertaking an Official Plan (OP) review that will replace the King Parent Official Plan (1970). That review will address conformity issues with Provincial and Regional plans and will address longer-term growth management issues to 2031. However, Schedule 2: Natural Heritage System and Landform Conservation Areas of the current OP identifies the Oak Ridges Moraine Plan area, King's Natural Heritage System and Landform Conservation Areas within the Township of King. These designations are subject to the policies set forth in the OP, the King City Community Plan and the Nobleton Community Plan. Schedule 3: Natural Environment Plan within the OP identifies natural heritage features, their significance as well as their associated minimum vegetation protection zones (MVPs) and minimum area of influence (MAIs).

2.2 Oak Ridges Moraine Conservation Plan

The Ontario Legislature passed the Oak Ridges Moraine Conservation Act in 2001. The accompanying 2001 Oak Ridges Moraine Conservation Plan (ORMCP) provides land use and resource management planning direction in order to protect the Moraine's ecological and hydrological features and functions. The Plan divides the Moraine into four land use

designations: Natural Core Areas, Natural Linkage Areas, Countryside Areas and Settlement Areas. A brief description of each designation is provided below:

- **Natural Core Areas** protect those lands with the greatest concentration of key natural heritage features, which are critical to maintaining the integrity of the Moraine as a whole. Only existing uses and very restricted new resource management, agricultural, low intensity recreational, home businesses, transportation and utility are allowed in these areas.
- **Natural Linkage Areas** protect critical natural and open space linkages between the Natural Core Areas and along rivers and streams. The only uses that are allowed are those in Natural Core Areas, plus some aggregate resource operations.
- **Countryside Areas** provide an agricultural and rural transition and buffer between the Natural Core Areas and Natural Linkage Areas and the urbanized Settlement Areas. Prime agricultural areas as well as natural features are protected. Most of the uses typically allowed in the agricultural and other rural areas are allowed here.
- Settlement Areas reflect a range of existing communities planned by municipalities to reflect community needs and values. Urban use and development as set out in municipal official plans are allowed.

2.3 The Greenbelt Plan

The Ontario Legislature passed the Greenbelt Plan in 2005. The Plan identifies where urbanization should not occur within the Golden Horseshoe in order to provide permanent protection to the agricultural land base and the ecological features and functions occurring on this landscape. This includes lands within the plan area, and builds upon the ecological protections provided by, the Niagara Escarpment Plan (NEP) and the ORMCP.

The Plan identifies the Natural System within the plan area. This system is made up of a Natural Heritage System and a Water Resource System. Protected Countryside within the plan contains a Natural System that provides a continuous and permanent land base necessary to support human and ecological health within the plan area and beyond. The Natural Heritage System includes area of Protected with the highest concentration of the most sensitive and/or significant natural features and functions.

The Natural System policies protect areas of key natural heritage features (KNHFs) and Key Hydrological Features (KHFs). Key natural heritage features include:

- Significant habitat of endangered species, threatened species and special concern species;
- Fish habitat;
- Wetlands;
- Life Science Areas of Natural and Scientific Interest (ANSIs);
- Significant valleylands;
- Significant woodlands;

• Significant wildlife habitat;

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- Sand barrens, savannahs and tallgrass prairies; and
- Alvars.

Key hydrologic features include:

- Permanent and intermittent streams;
- Lakes (and their littoral zones);
- Seepage areas and springs; and
- Wetlands.

The Natural System policies state that new development and or site alteration must have no negative effects on KNHFs and KHFs or their functions, connectivity between KNHFs and KHFs must be maintained or enhanced, removal of KNHFs and KHFs should be avoided and disturbed areas of any site may not exceed 25 percent, and the impervious surface may not exceed 10 percent, of the total developable area.

2.4 Conservation Authority Regulation Limits

The Study Area includes lands within both the Toronto and Lake Simcoe conservation authority jurisdictions. Both are responsible for the definition and permitting of land use changes within Regulation Limits. Hazardous lands, wetlands, shorelines and areas susceptible to flooding, and associated allowances are included within the Regulation Limit.

Pursuant to the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (Ontario Regulation 166/06), any development in or on areas defined in the Regulation (e.g. river or stream valleys, hazardous land, wetlands) requires permission from the Conservation Authority. The Conservation Authority may grant permission for development in or on these areas if, in its opinion, the control of flooding, erosion, dynamic beaches, pollution or the conservation of land will not be affected by the development. The Regulation also states that it is prohibited to straighten, change, divert or interfere in any way with the existing channel of a river, creek, stream or watercourse or change or interfere in any way with a wetland without permission from the Conservation Authority.

There are a number of wetlands, both significant and unevaluated, throughout the Study Areas along with the presence of the East Humber River, the Holland River and number of smaller systems including the North and South Schomberg River and Ansnorveldt Creek.

3 NATURAL FEATURES AND DESIGNATIONS BY COMMUNITY

3.1 Community Areas and Natural Features

Table 2 below lists the natural heritage features and designations present within the four communities.

	Significant Wetlands	Woodlands	Greenbelt Natural Heritage System (NHS)	Greenbelt Protected Countryside	Oak Ridges Moraine (ORM)	Environmentally Sensitive Areas (ESAs)	Areas of Natural and Scientific Interest (ANSIs)	Oak Ridges Moraine Natural Core Area
Schomberg	1	1	1	1	1			
Ansnorveldt	1		1	1	1	1		
Nobleton	1	1	<i>\</i>		1		~	
King City	1	\		~		1	~	1

 Table 2: Natural Features and Designations Within and Surrounding the Study Area.

3.2 Study Areas Discussion

3.2.1 Schomberg

The community of Schomberg contains the significant Dufferin Wetland Complex. It is located in the center of Schomberg Village and although small, provides habitat to a number of birds, mammals and locally rare flora. In addition to the Dufferin Wetland Complex, the Little Pottageville Wetland is located directly north of the community plan boundary. This wetland is unlikely to provide direct constraints to infrastructure development in the community, as it is located over 1.5 km from the Sub-Study Area.

Both the North and South branches of the Schomberg River flow through the Sub-Study Area. The Northern branch flows centrally through Schomberg, while the southern branch flows partially along the northeastern portion of the community. A large segment of the north Schomberg River flows through woodlands identified by the Ministry of Natural Resources and Forestry (MNRF). In the northeastern corner of the Schomberg Study Area, an MNRF identified woodland is located directly adjacent to the South Schomberg River (Figure 2, Appendix 1).

The community of Schomberg also contains Greenbelt Natural Heritage System designations throughout the majority of the area and Protected Countryside designations along the eastern boundary of the area (Figure 2, Appendix 1). The community of Schomberg is also located within the ORMCP area.

3.2.2 Ansnorveldt

The community of Ansnorveldt is wholly within the Holland Marsh Lowlands ESA. The South Canal of the Holland River abuts the southern portion of the Study Area (Figure 3, Appendix 1). Four canals associated with the Holland River to the west are within the Study Area extending westward from Dufferin Street. These canals are utilized for agricultural purposes.

The Ansorveldt Wetland Complex is found immediately south of the community plan boundary.

The community of Ansnorveldt is predominantly designated Greenbelt Protected Countryside with a small area in the south designated as Greenbelt Natural Heritage System. The Ansnorveldt Study Area is also located within the ORMCP area.

3.2.3 Nobleton

The community of Nobleton contains a number of natural heritage features concentrated in the northeast corner of the area. Two significant wetlands are located along the northern boundary of Nobleton Study Area: the Nobleton Wetland Complex and the Black Duck Wetland Complex. All wetlands associated with these complexes have been mapped MVPZs along with MAI's as per the Nobleton Community Plan within King's OP. Portions of the East Humber River Wetland Complex are located in the southeastern portion of the Nobleton Study Area within an Unnamed ESA and on adjacent lands to the east. The East Humber River and its associated valleys and tributaries flow primarily in a north-south direction within the east side of the Nobleton Study Area (Figure 4, Appendix 1). The river appears to flow through portions of the Black Duck Wetland Complex and the Nobleton Wetland Complex. The Hall-Thompson Lakes Kettles ANSI is located in the northwestern portion of the Nobleton community and along the northeast corner of the area and along the East Humber River throughout the community. Significant woodlands identified in the northeast corner of Nobleton are afforded MVPZs and MAIs as per the Nobleton Community Plan within the Township of King's OP.

The majority of the Nobleton Study Area is designated Greenbelt Natural Heritage System and is within the ORMP area. The exception is the northeast corner, which is designated Greenbelt Settlement Area, and is outside of the ORMCP area.

3.2.4 King City

The community of King City features a number of urban land uses alongside sensitive natural heritage features. Portions of the significant King-Vaughan Wetland Complex and the Eaton Hall-Mary Hachet Lakes Wetland Complex appear throughout the city (Figure 5, Appendix 1). The East Humber River and its associated valleys flow throughout the King City Study Area with the majority of MNRF identified woodlands occurring along watercourse. The southern portion of the Study Area contains unnamed ESAs, along with the Maple Uplands & Kettles ANSI. This portion of the Study Area also contains Oak Ridges Moraine Natural Core Area designations. The King City Study Area is also located within the ORMCP area.

4 CONCLUDING REMARKS

Each of the four King Township communities contains a mix of Greenbelt and ORMCP designations along with a number of other designations pertaining to the natural heritage features found within their boundaries. These designations have a basis in legislation and associated guidelines at the provincial, municipal, and conservation authority levels. The King City Study Area contains the highest concentration of designations, while the Schomberg Study Area contains the lowest concentration of features and designations within its boundaries. The community of King City contains two significant wetlands and two ESAs, while King contains a higher occurrence of wooded watercourses associated with the East Humber River. The community of Nobleton has three significant wetlands and two ESAs, most of which are concentrated towards the east half of the Study Area.

Some commentary is provided in this report regarding the source of designated feature information and permitted uses noted in Official Plan documents. This information is provided to inform plans and decisions regarding infrastructure master plan development. Additional more detailed information can be generated at a more local scale as input to Master Planning. That work (including primary data collection) would allow for the verification of known features and for the more fulsome consideration of natural heritage features and functions, not readily available for some characteristics (e.g., significant wildlife habitat, species at risk occurrences).

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Signatures to be added to final report

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5 **REFERENCES**

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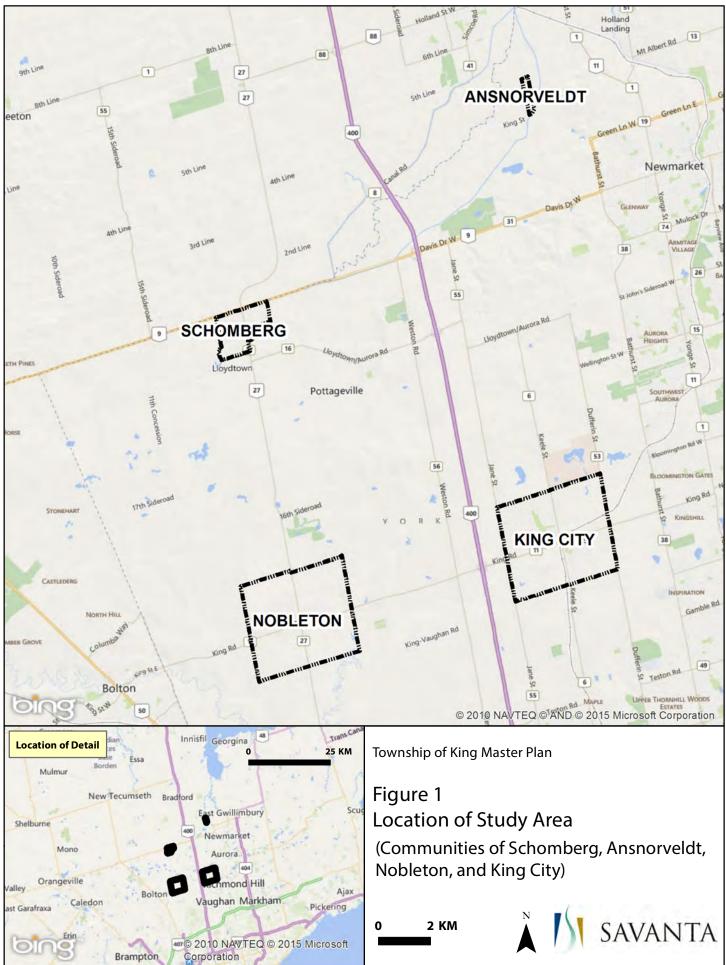




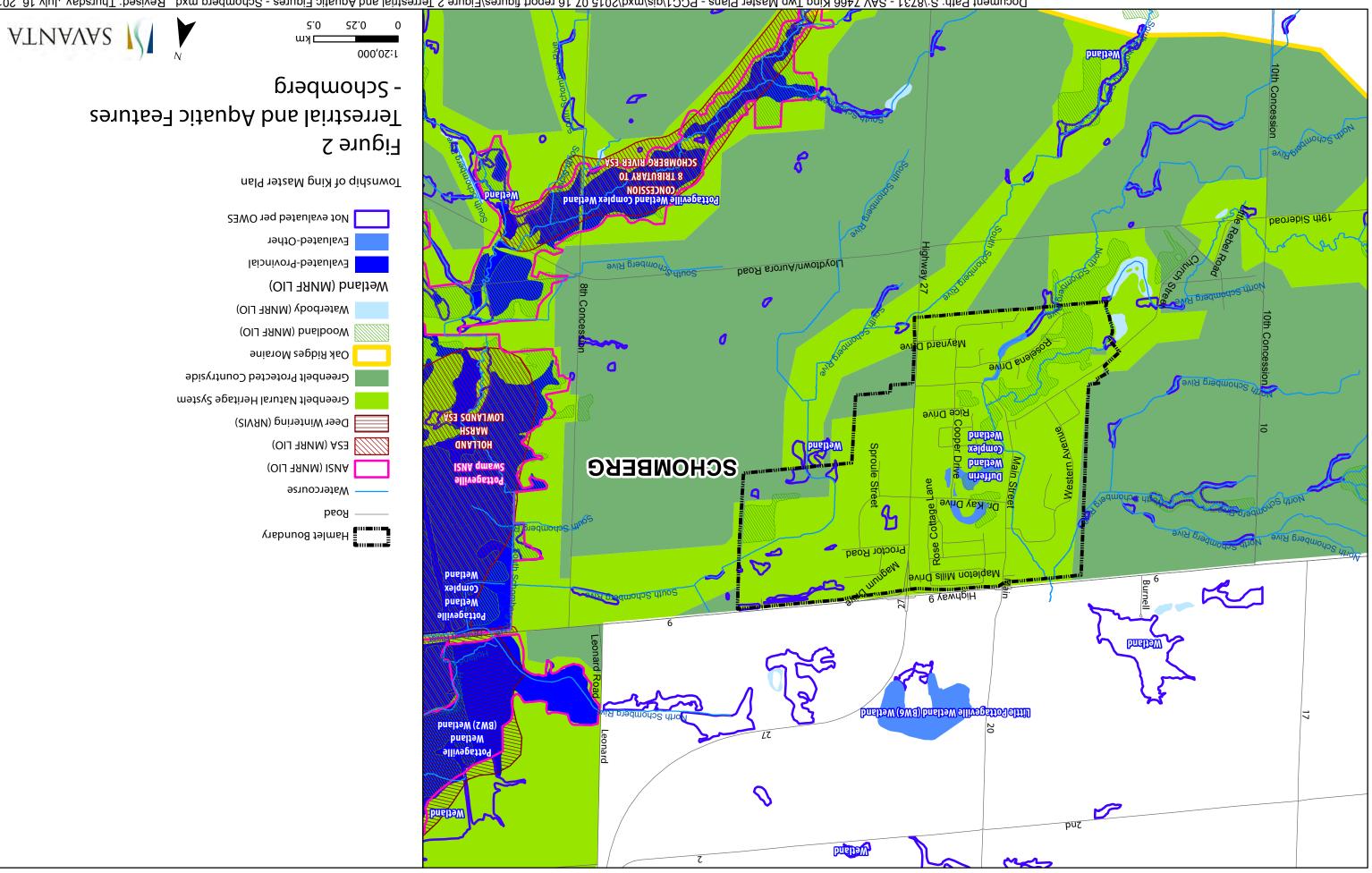
APPENDIX A – FIGURES

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- Figure 3 Terrestrial and Aquatic Features Ansnorveldt
- Figure 4 Terrestrial and Aquatic Features Nobleton
- Figure 5 Terrestrial and Aquatic Features King City

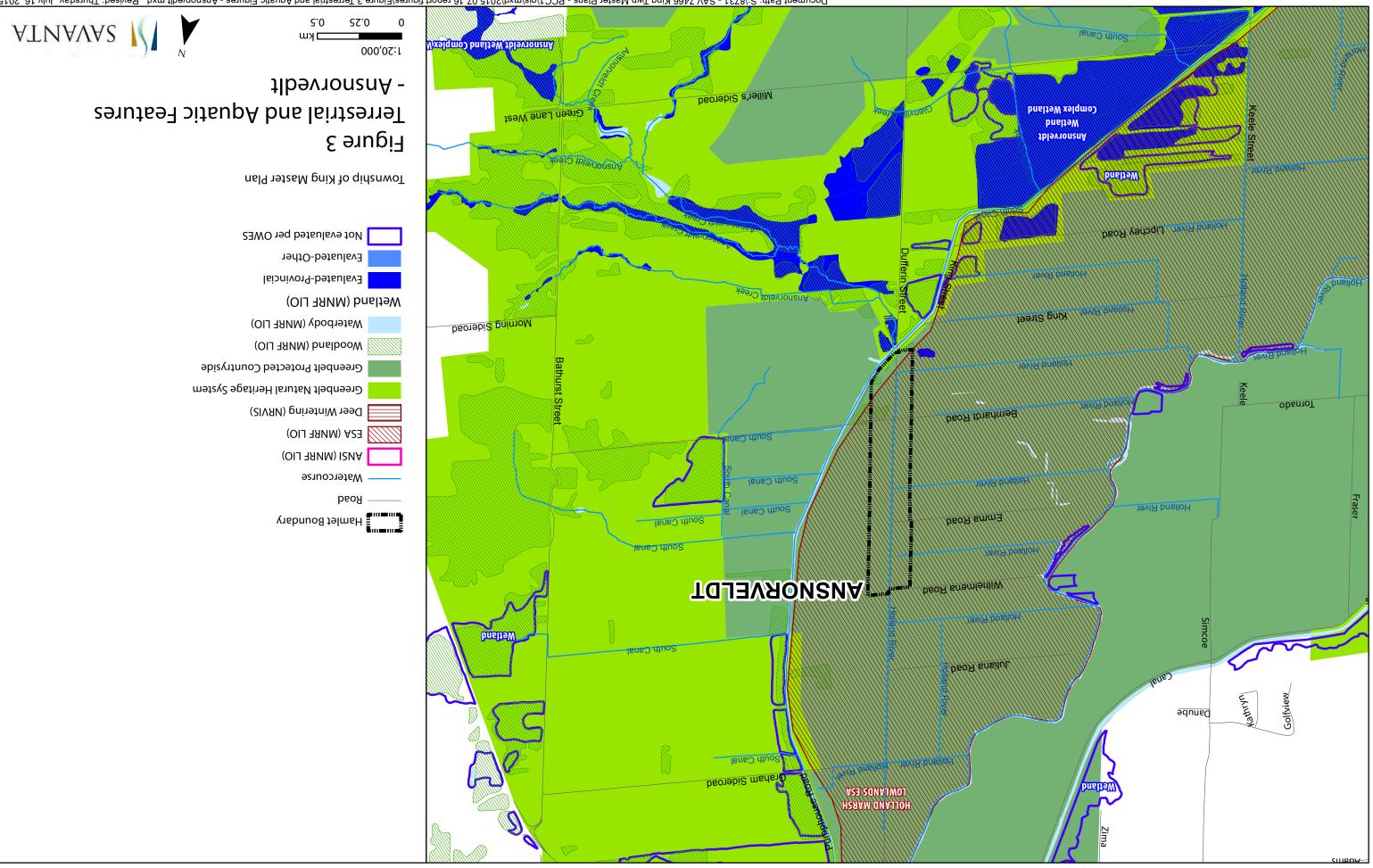




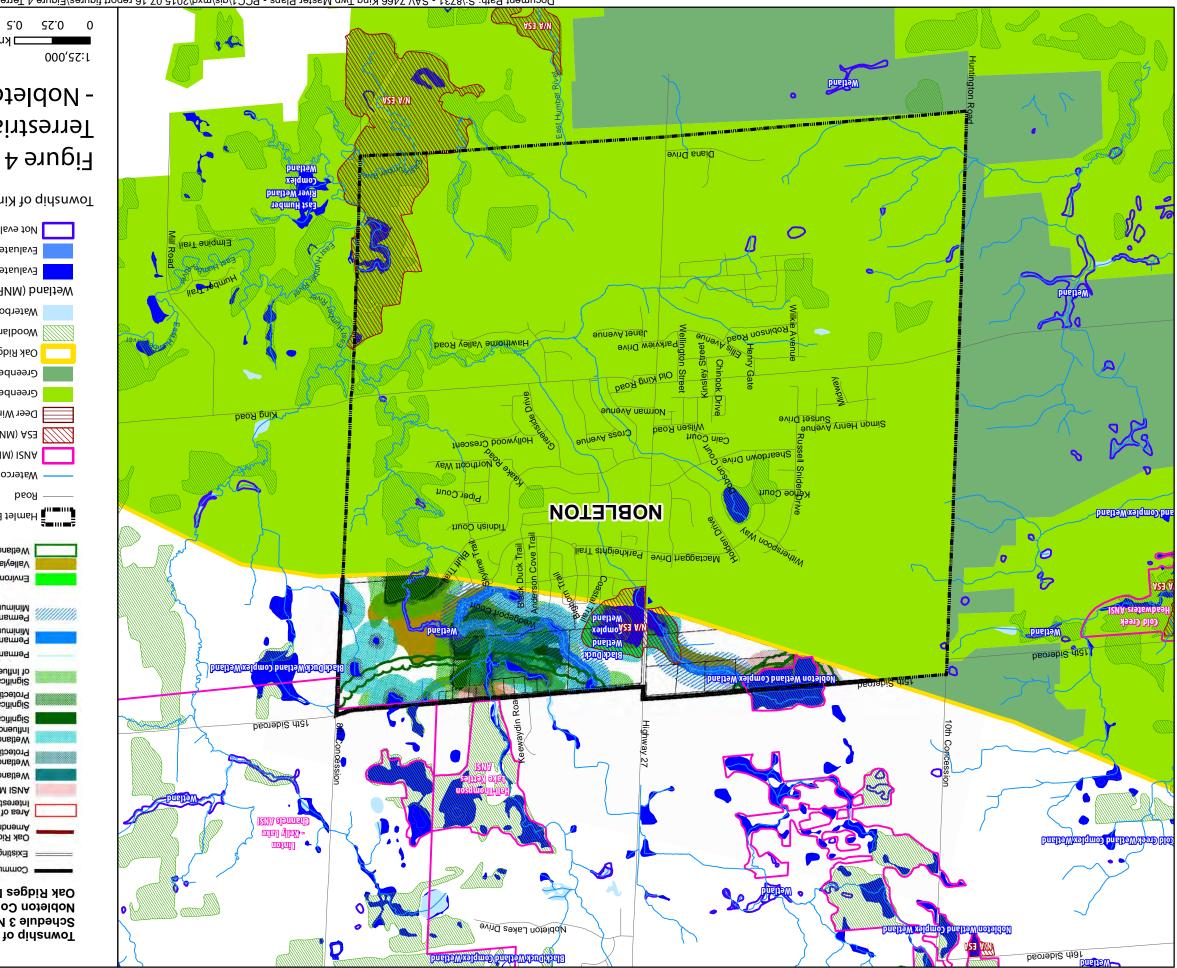
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Waterbody (MNRF LIO) (OIJ 38NM) brelbooW

Oak Ridges Moraine

Deer Wintering (NRVIS)

ESA (MNRF LIO)

Watercourse

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(OIJ JANM) ISNA

Yamlet Boundary

Wetland Complexes valleylands

of Influence (MAI)

Significant Woodlands

(IAM) ecned (IAM) to senA muminiM sbnsheW Protection Zone (MVPZ) Wetlands Minimum Vegetation

Wetlands

Existing Roads

Township of King

Community Plan Boundary Oak Ridges Moraine Plan Area Nobleton Community Plan

Environmentally Significant Area (ESA)

Permanent and Intermittent Streams Minimum Area of Influence (MAI)

Significant Woodlands Minimum Significant Woodlands Minimum Vegetation Protection Zone (MVPZ)

> (IAM) sonsulful to sara muminim ISNA Area of Natural Scientific Interest - Life Science (ANSI) Amendment Boundary

Dak Ridges Moraine Plan Area and

Schedule 3 Natural Environment Plan

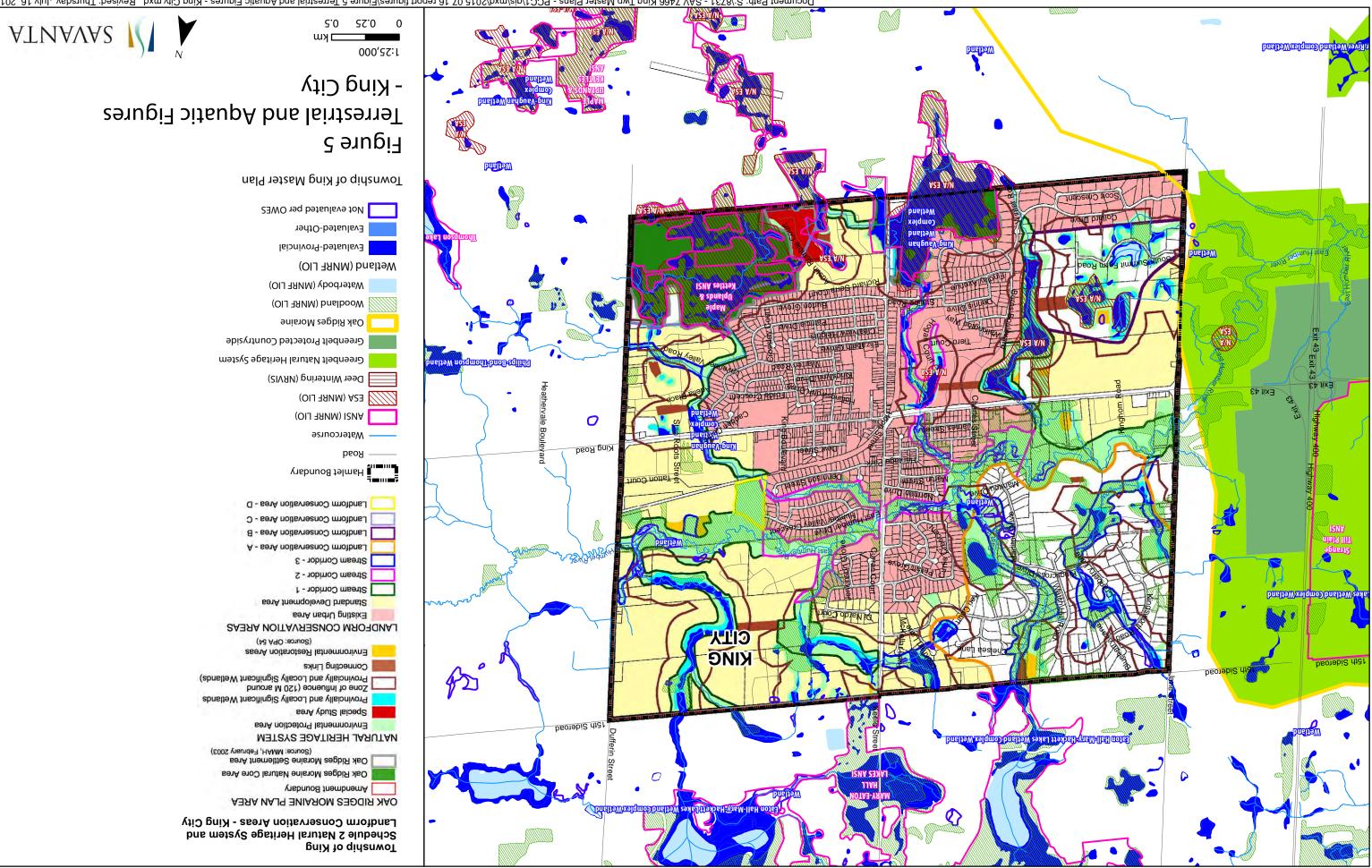
Permanent and Intermittent Streams Minimum Vegetation Protection Zone (MVPZ) Permanent and Intermittent Streams

(Source: MMAH, February 2003)

Greenbelt Protected Countryside

Greenbelt Natural Heritage System

(OIJ 78NM) bristew



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