



Highway 48 Vision

Appendix B Natural Environment Overview Memorandum

MEMORANDUM

To: Wai Ying DiGiorgio The Planning Partnership
From: Brad Bricker PLAN B Natural Heritage
Date: February 4, 2020
Re: Highway 48 Corridor Vision – Town of Whitchurch-Stouffville - Natural
Environment Overview

Introduction & Background

The following memorandum provides an overview of the existing natural environment conditions and opportunities/constraints within the Highway 48 Corridor Vision study area. The study area is bounded by Stouffville Road on the north, a tributary of Little Rouge Creek on the east, 19th Avenue on the south and McCowan Road on the west (Figure 1). The study area is located within a rural/agricultural area of the Town of Whitchurch-Stouffville. The study area also includes rural lands within the City of Markham, located to the north of 19th Avenue.

Existing Conditions

The study area is mainly comprised of cultivated, agricultural land. Willowgrove Creek, a tributary of the Little Rouge Creek, flows through the western part of the study area in a north-south fashion. A tributary of Willowgrove Creek flows through the southeast corner of the study area. As noted above, a tributary of Little Rouge Creek forms the eastern boundary of the study area. Remnant woodlands, wetlands, and hedgerows occur in association with the tributary valleylands and on tablelands, primarily in the centre of the study area. Woodlands within the study area are mainly comprised of deciduous forest associations and conifer plantations. Wetland communities consist of deciduous swamp, thicket swamp, and marsh. Cultural meadow/thicket vegetation occurs in association with the tributary valleylands and abandoned farmland/farmsteads. Woodland and wetland features within the study area are mapped on Figures 2 and 3, respectively. The majority of the wetlands in the study area have not been evaluated by MNRF following the Ontario Wetland Evaluation System (OWES). Wetlands associated with the Little Rouge Creek at Stouffville Provincially Significant Wetland (PSW) Complex are located along the eastern edge of the study area. It should be noted that the “unevaluated” wetlands within the study area likely qualify for inclusion as part of the larger PSW complex due to their hydrological and hydrogeological connections.



Species at Risk

The remnant natural features within the study area have the potential to support habitat for species at risk protected under the *Endangered Species Act* (e.g. grassland birds, forest interior birds). Watercourses within the study area have the potential to support habitat for Endangered Reside Dace (refer to Figure 4). All watercourses within the study area should be treated as direct or indirect habitat for Redside Dace. The habitat regulations for this species require a 30 m buffer from the meander belt width of watercourses that provide a direct or indirect habitat function.

Hydrogeology

The norther portion of the study area is located within an area of high aquifer vulnerability, as defined by the ORMCP (Figure 5). Highly vulnerable aquifer conditions, as defined in the York Region Official Plan, occur along the Willowgrove Creek corridor and in the southeast and northeast corners of the study area (Figure 6). The areas of high aquifer vulnerability generally coincide with areas of well-drained soils (refer to Figure A for soil type mapping).

Topography and Landform Conservation Areas (ORMCP)

The study area gently slopes from the north to the south. Defined valleyland features are associated with certain reaches of the main watercourses. An area of steeper slopes occurs at the upper end of Willowgrove Creek. This portion of the study area is located within the Oak Ridges Moraine Conservation Plan jurisdiction. The slopes associated with the western edge of the Willowgrove Creek are identified as Category 2 -Landform Conservation Area (Figure 7). Under the current Town of Whitchurch-Stouffville Official Plan policies, *an application for development or site alteration with respect to land in a landform conservation area (Category 2) shall: a) Maintain significant landform features such as steep slopes, kames, kettles, ravines and ridges in their natural undisturbed form; b) Limit the portion of the net developable area of the site that is disturbed to not more than 50 per cent of the total area of the site; and, c) Limit the portion of the net developable area of the site that has impervious surfaces to not more than 20 per cent of the total area of the site.* The goal of this policy is to maintain the character of the topographic feature and its groundwater recharge functions.

Town of Whitchurch-Stouffville and City of Markham Official Plans

Environmental land use designations within the study area, based on the local official plans, are shown on Figure 8. Regulatory floodplain is associated with the major creeks in the study area. Willowgrove Creek and its eastern tributary are identified as Significant Environmental Areas in the Town of Whitchurch-Stouffville Official Plan. The large woodland feature in the centre of the study area is designated as a Tableland Woodlot. Valleylands within the City of Markham portion of the study area are designated as Greenway and Natural Heritage.

The York Region Greenlands System and Greenlands System Vision is shown on Figure 9. The Greenlands System coincides with the valleyland features within the study area (i.e. Willowgrove Creek and Little Rouge Creek systems) and includes “enhancements” and “buffers” to core area features and species dispersal corridors. The York Region Greenlands System within the study area is based on the Greenbelt Plan Natural Heritage System.

Greenbelt Plan and Oak Ridges Moraine Conservation Plan

Land use designations associated within the Greenbelt Plan and the Oak Ridges Moraine Conservation Plan (ORMCP) are shown on Figure 10. Protected Countryside and Natural Heritage System land use designations are associated with the main valleyland features within the study area. The ORMCP portion of the study area contains Countryside, Settlement Area, and Natural Area Linkage. The Natural Area Linkage is associated with the upper reaches of Willowgrove Creek. A Category 2 Landform Conservation Area (Figure 7) is associated with the upper valley slopes of Willowgrove Creek. The Countryside land use designation applies to rural/agricultural lands in the Town of Whitchurch-Stouffville and the City of Markham Official Plans.

Composite Natural Heritage System

A composite Natural Heritage System (NHS) for the study area is shown on Figure 11. The NHS is based on the following features, as describe above:

- ORMCP Natural Area Linkage;
- Greenbelt Plan Natural Heritage System;
- Town of Whitchurch-Stouffville Significant Environmental Area, Floodplain and Tableland Woodlot;
- City of Markham Floodplain, Greenway and Natural Heritage Features;
- Provincially Significant Wetlands, Unevaluated Wetlands;
- Watercourses, including potential habitat for Endangered Reside Dace¹; and,
- 30 m buffers from core features and corridors.

Enhancement opportunities to protect, restore and enhance the NHS for the *long-term* are also shown on Figure 11. The enhancement opportunities are associated with tableland hedgerows and open fields that provide a connection between core features such as woodlands and valleylands. The ORMCP

¹ The NHS shown on Figures 11 and 12 may not include the meander belt width plus 30 m buffer requirement for this species (i.e. habitat regulation under the *Endangered Species Act*).

Category 2 Landform Conservation Area is overlaid on the NHS figure as there are limitations on the type and form of future development that can occur in this area (see above).

It should be noted that the study area contains several woodlands (i.e. woodlots, plantations, hedgerows) identified in the York Region Official Plan that are not part of a Provincial, Regional or Municipal NHS (refer to Figure 11a). These woodlands, however, require detailed site level investigations to determine if they meet the York Region Official Plan policy tests for protection. According to Regional policies, the current area of woodland within the study area should not decrease in order to meet the Region's goal of 25% minimum woodland cover. This goal can be achieved through a combination of existing feature protection and "ecological off-setting" for features that can be removed, as determined through site level investigations.

Growth Plan NHS

The Growth Plan NHS is shown on Figure 12. It generally coincides with the Greenbelt Plan and ORMCP natural heritage systems within the study area. One location where the Growth Plan NHS is smaller than the Greenbelt Plan NHS occurs in the southeast corner of the study area, in the City of Markham. The area in question was previously under appeal and it is not clear if the Board decision is reflected in the Growth Plan NHS mapping. The City of Markham should be contacted to confirm the results of the Board hearing and determine whether there have been any revisions to the City's Greenway system mapping in this part of the study area.

Closure

If you have any questions or concerns with our environmental overview and opportunities/constraints assessment, please do not hesitate to contact the undersigned.

Respectfully submitted by,

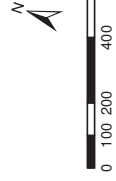
PLAN B Natural Heritage

A handwritten signature in dark ink, appearing to read "Brad Bricker", written in a cursive style.

Brad D. Bricker, M.Sc.
Certified Senior Ecologist (ESA)

Legend

- Study Area
- Watercourse
- Townline



Data Source
- The Regional Municipality of York

PLAN B Natural Heritage
 Landscape Ecology & Natural Heritage Planning
 176 Falgout Crescent
 Waterdown, ON
 L9T 2H3

**Highway 48 Corridor Vision
 Whitchurch - Stouffville
 Study Area**

Project #	2019-187	Figure #	1
Date	January 2020		
Scale	1 : 15,000		
Prepared By	JJJ	Verified By	BDB





Data Source
- The Regional Municipality of York

PLAN B Natural Heritage
Landscape Ecology & Natural Heritage Planning
176 Fallowes Crescent
Waterdown, ON
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Highway 48 Corridor Vision
Whitchurch - Stouffville
Woodlands

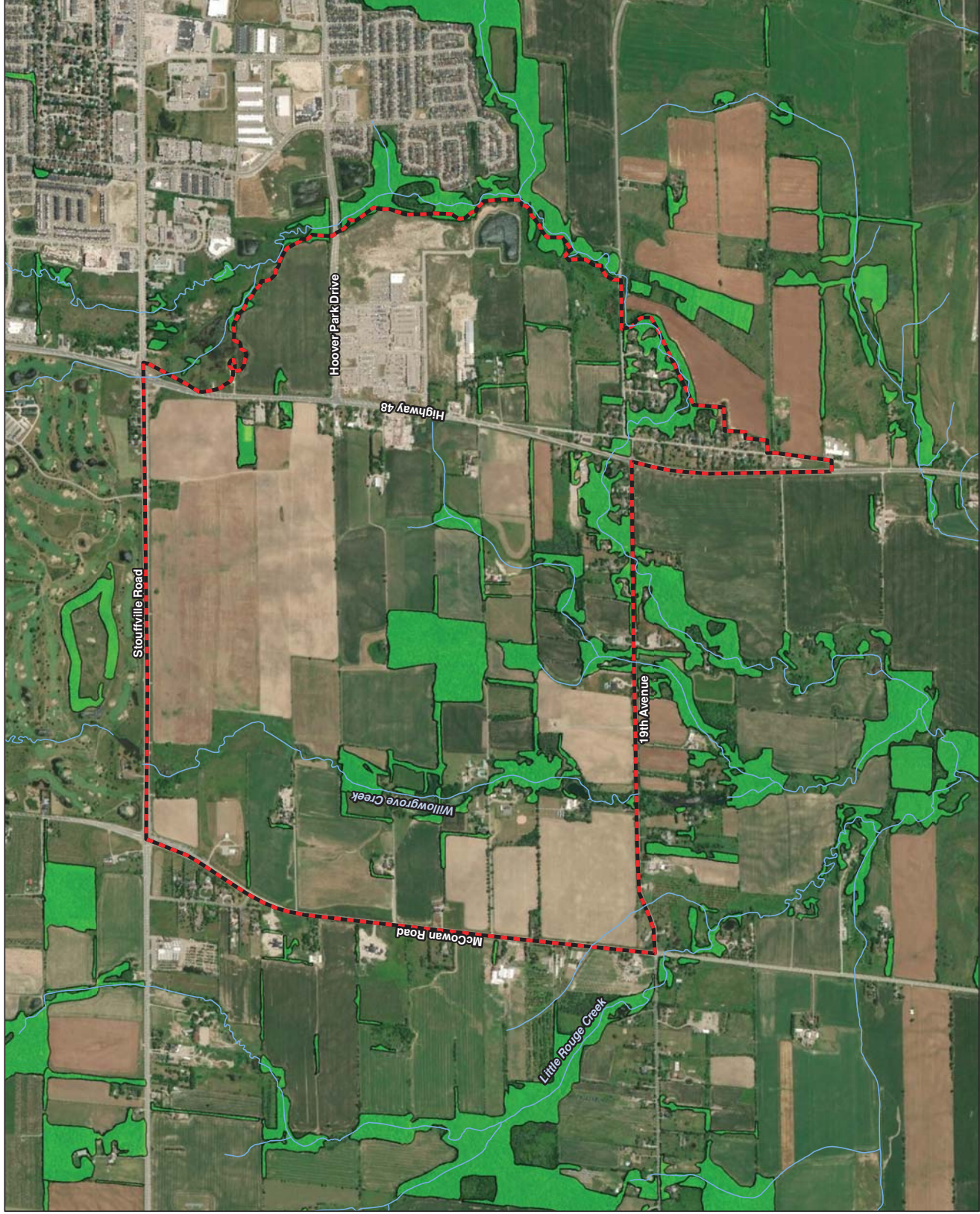
Project # 2019-187 Figure #

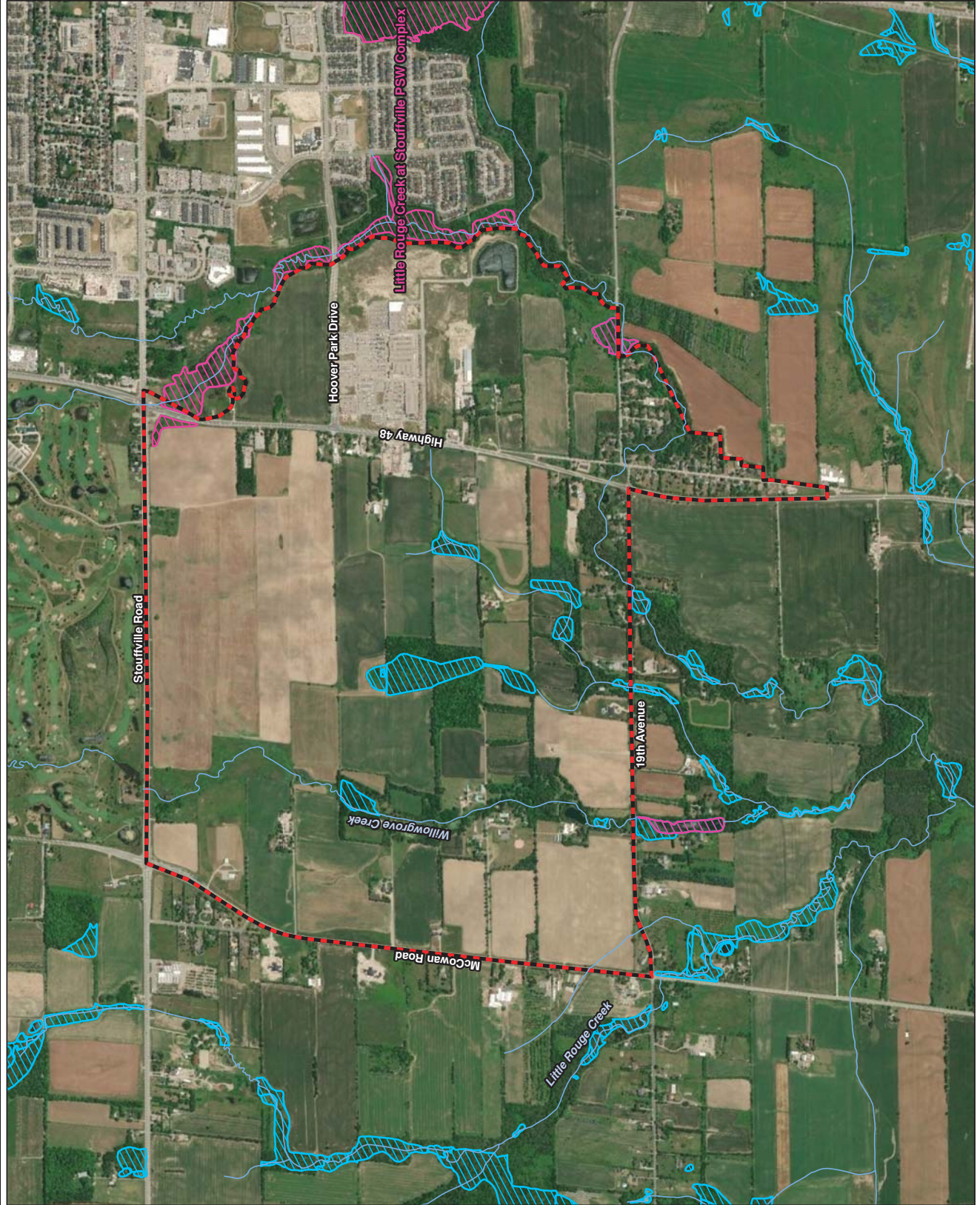
Date January 2020

Scale 1 : 15,000

Prepared By: JJJ Verified By: BDB

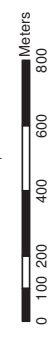
2





Legend

- Study Area
- Watercourse
- Unevaluated Wetland
- Provincially Significant Wetland



Data Source
 - Geo Data's Printer for Ontario, 2020
 - The Regional Municipality of York

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Highway 48 Corridor Vision Whitchurch - Stouffville Wetlands

Project #	2019-187	Figure #	3
Date	January 2020		
Scale	1 : 15,000		
Prepared By:	JJJ	Verified By:	BDB



Legend

- Study Area
- Watercourse
- Potential Habitat for Aquatic Endangered Species – Redside Dace



0 100 200 400 600 800 Meters

Data Source
- The Regional Municipality of York

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Highway 48 Corridor Vision
Whitchurch - Stouffville
Aquatic Species at Risk

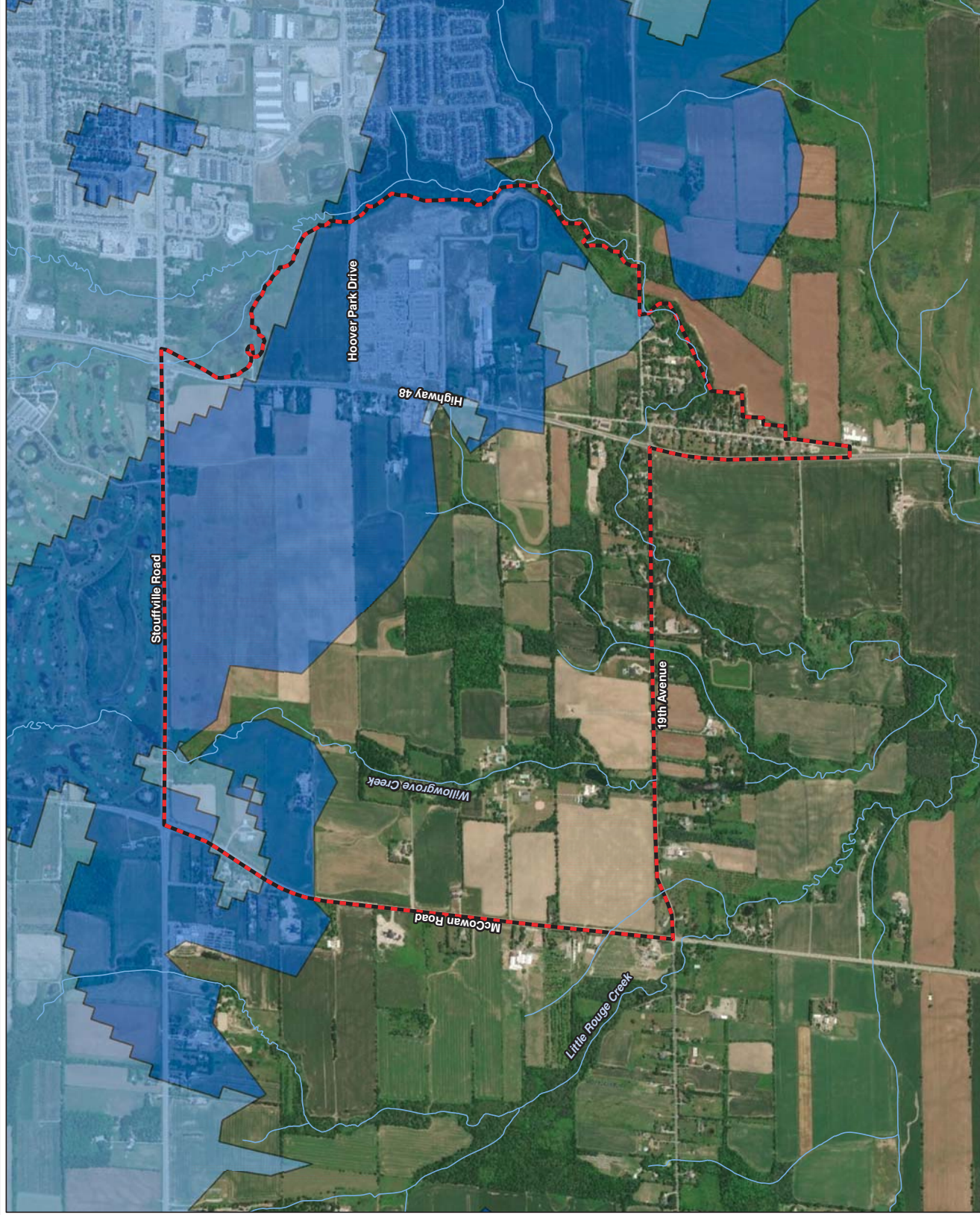
Project # 2019-187 Figure #

Date January 2020

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4



Legend

- Study Area
- Watercourse
- Area of High Aquifer Vulnerability
- Area of Low Aquifer Vulnerability

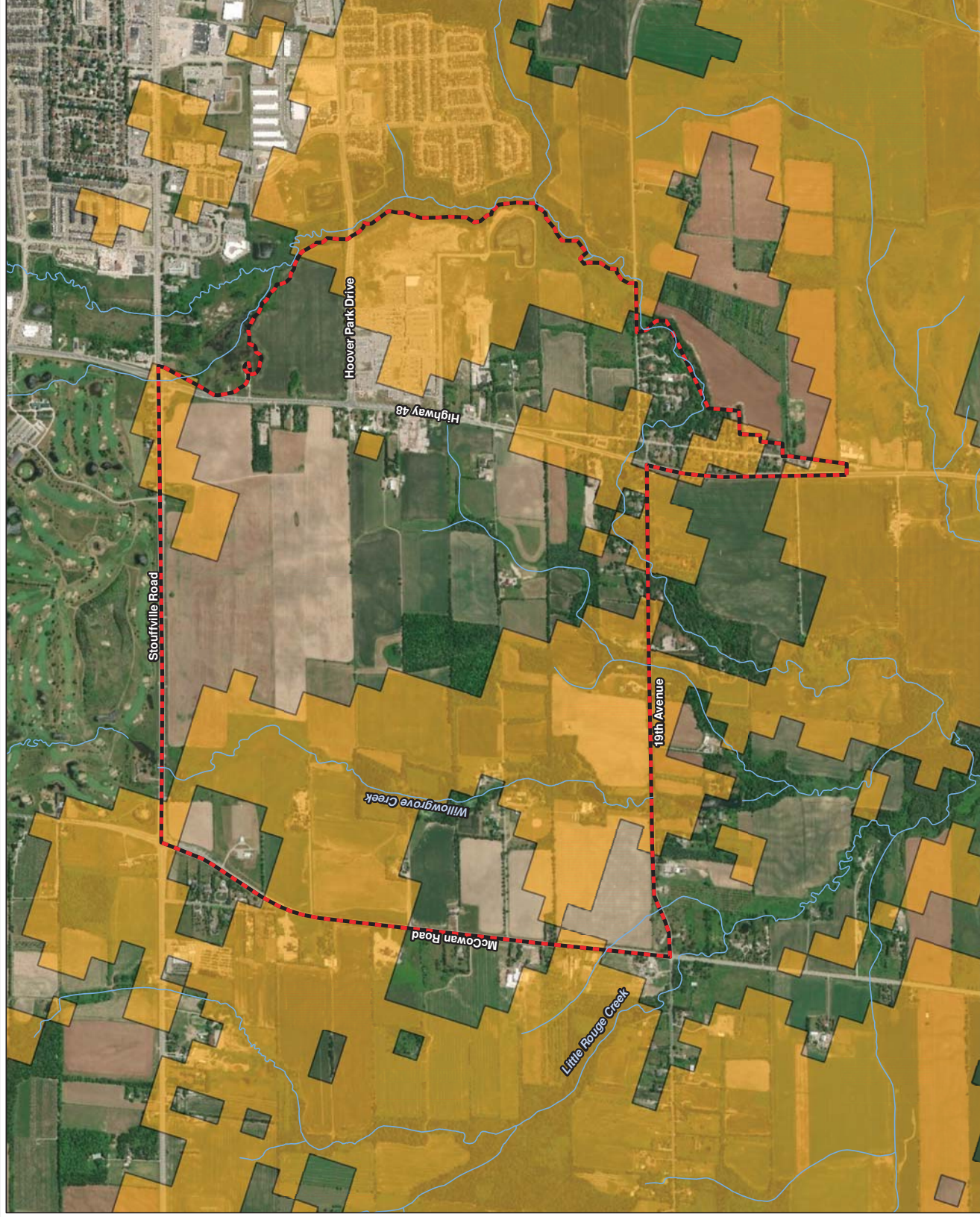


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Highway 48 Corridor Vision Whitchurch - Stouffville Aquifer Vulnerability

Figure #	
Project #	2019-187
Date	January 2020
Scale	1 : 15,000
Prepared By: JJJ Verified By: BDB	



Legend

- Study Area
- Watercourse
- Highly Vulnerable Aquifer



0 100 200 400 600 800 Meters

Data Source
- The Regional Municipality of York

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Highway 48 Corridor Vision
Whitchurch - Stouffville
Highly Vulnerable Aquifers

Project # 2019-187 Figure #

Date January 2020

Scale 1 : 15,000

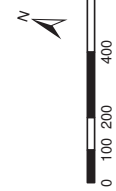
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6



Legend

- Study Area
- Watercourse
- Contour Line (5 m interval)
- ORMCP Landform Conservation Area Category 2

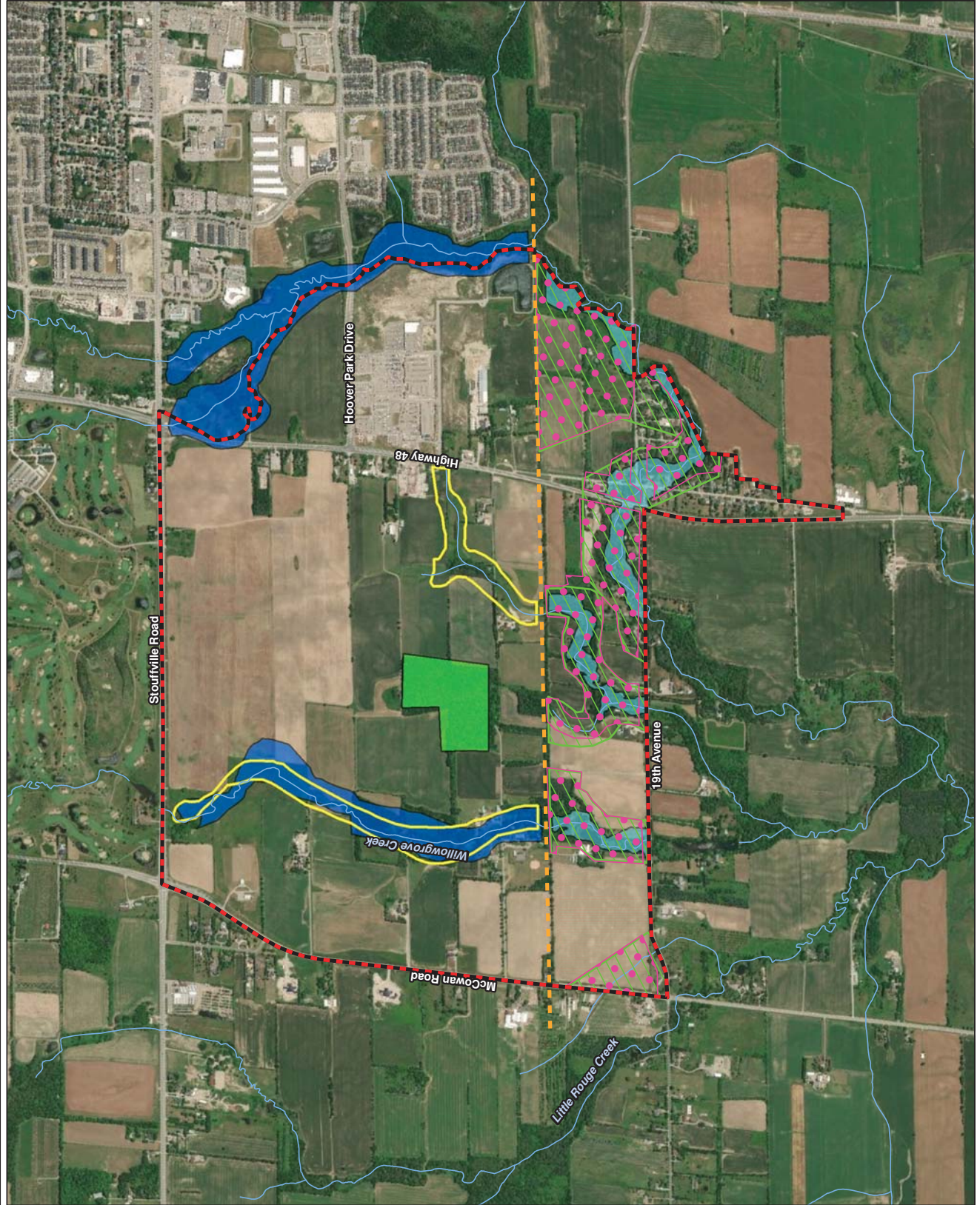


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**Highway 48 Corridor Vision
Whitchurch - Stouffville
Topography and Landform Conservation Areas**

Project #	2019-187	Figure #	7
Date	January 2020		
Scale	1 : 15,000		
Prepared By: JJJ	Verified By: BDB		



Legend

- Study Area
- Watercourse
- Townline
- Significant Environmental Area (WS)
- Tableland Woodlot (WS)
- Floodplain (WS)
- Greenway (Markham)
- Floodplain (Markham)
- NHS Features (Markham)

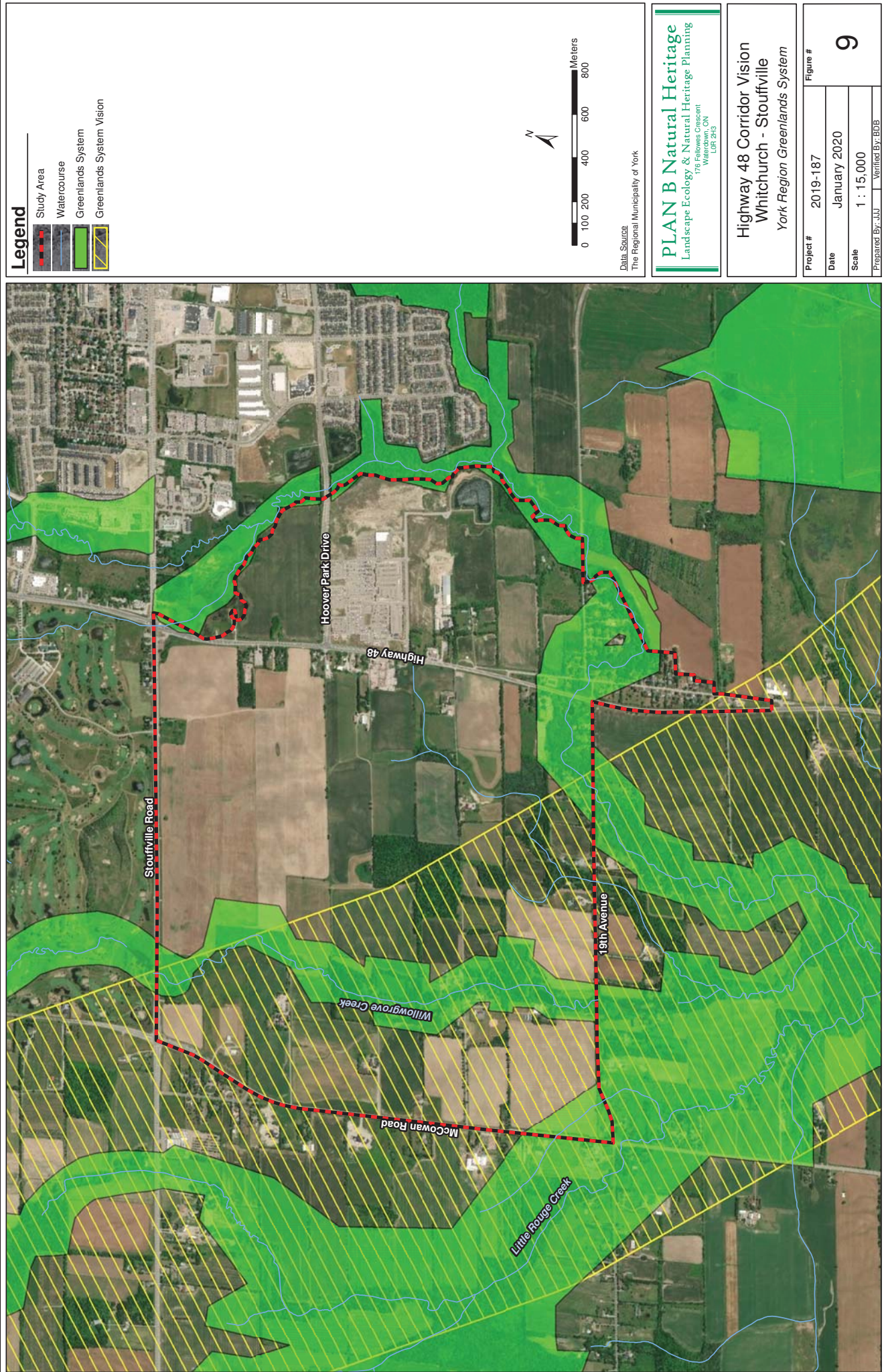


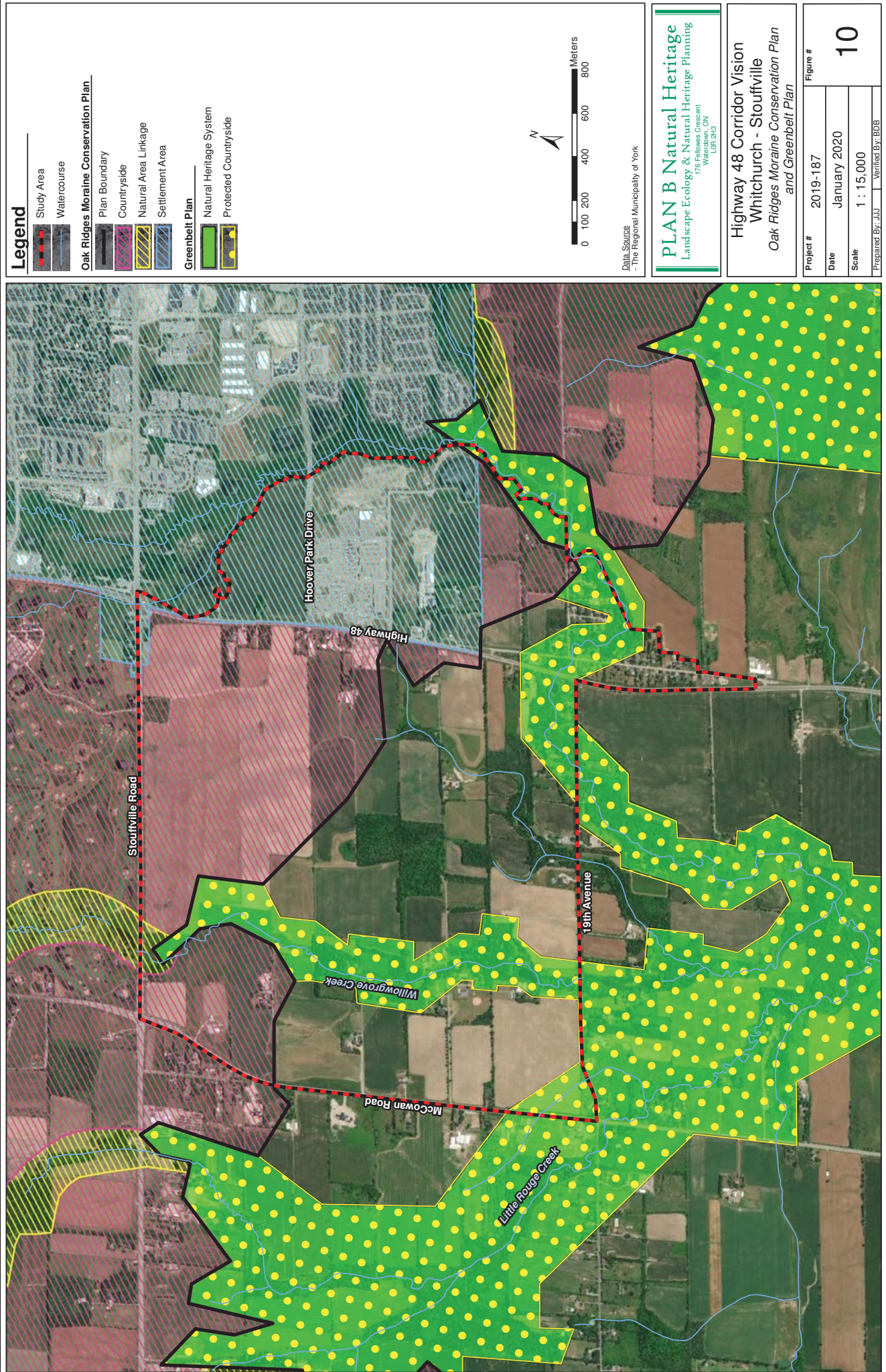
Data Source
- The Regional Municipality of York
- The Township of Markham
- Plan B Natural Heritage

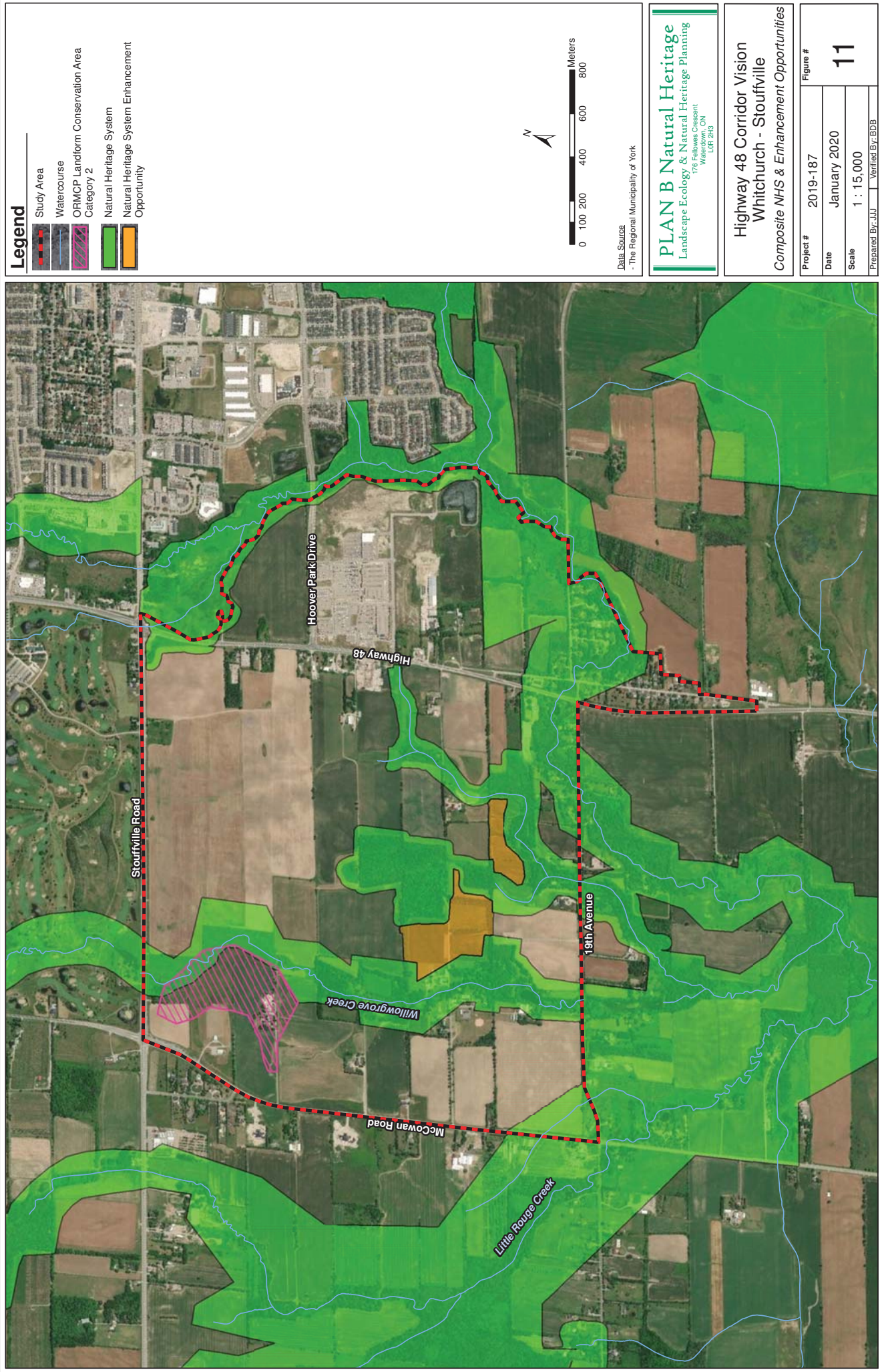
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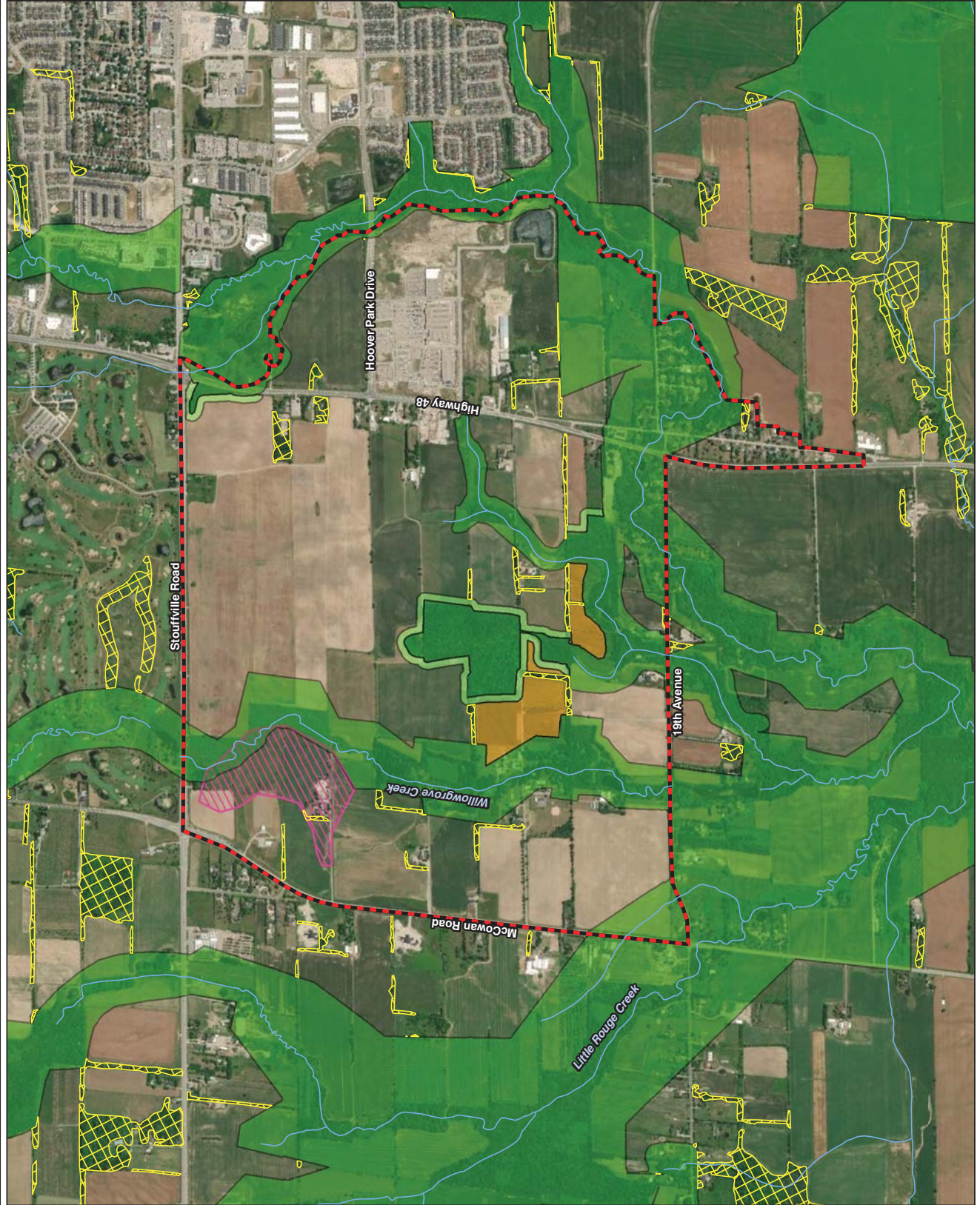
Highway 48 Corridor Vision
Whitchurch - Stouffville/
City of Markham
Natural Heritage Features

Project #	2019-187	Figure #	8
Date	January 2020		
Scale	1 : 15,000		
Prepared By: JJJ	Verified By: BDB		









Legend

- Study Area
- Watercourse
- Woodland Situated Outside of the NHS
- ORMCP Landform Conservation Area Category 2
- Natural Heritage System
- 30 m Setback
- Natural Heritage System Enhancement Opportunity



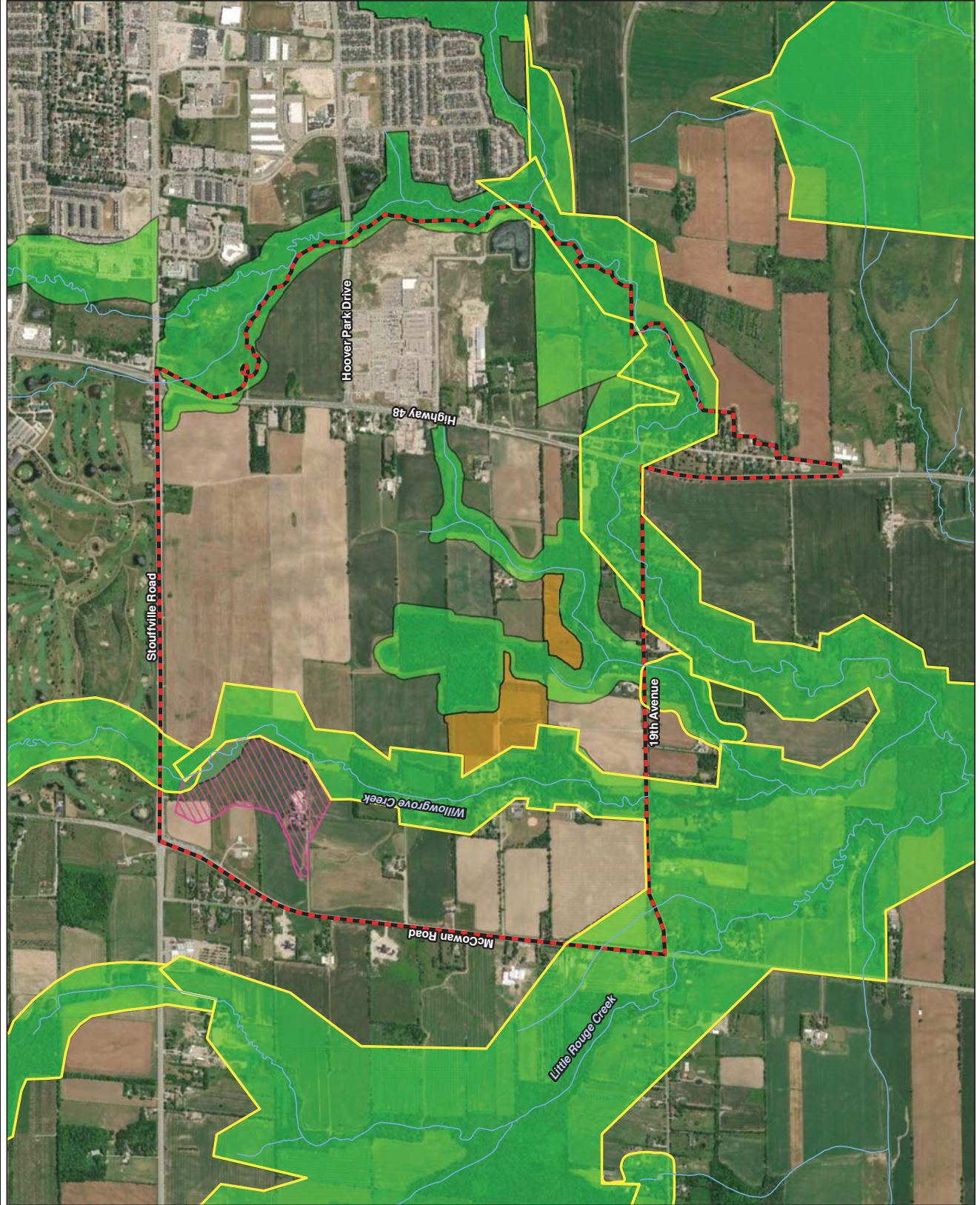
Data Source
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Highway 48 Corridor Vision
Whitchurch - Stouffville
Composite NHS & Enhancement Opportunities

Figure #	
Project #	2019-187
Date	January 2020
Scale	1 : 15,000
Prepared By: JJJ Verified By: BDB	

11a



Legend

- Study Area
- Watercourse
- ORMCP Landform Conservation Area Category 2
- Natural Heritage System
- Natural Heritage System Enhancement Opportunity
- Growth Plan NHS

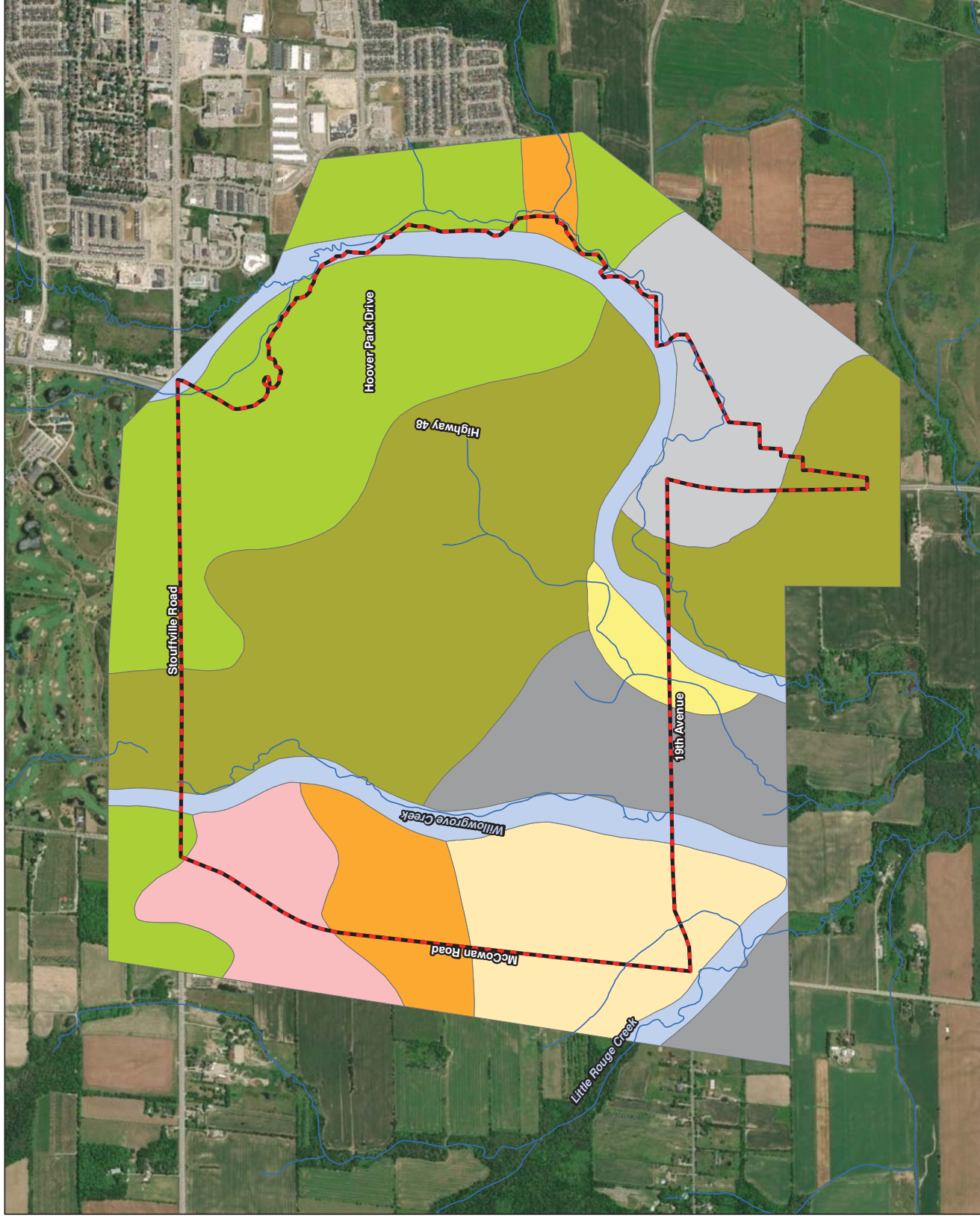


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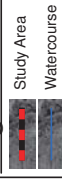
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Highway 48 Corridor Vision
Whitchurch - Stouffville
Composite NHS & Enhancement Opportunities

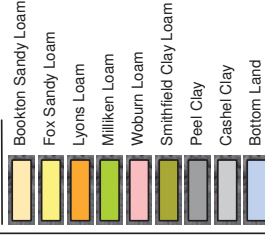
Project #	2019-187	Figure #	12
Date	January 2020		
Scale	1 : 15,000		
Prepared By: JJJ	Verified By: BDB		



Legend



Soil Type



Data Source:
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Highway 48 Corridor Vision
Whitchurch - Stouffville
Soil Types

Project # 2019-187 Figure #

Date January 2020

Scale 1 : 15,000

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A