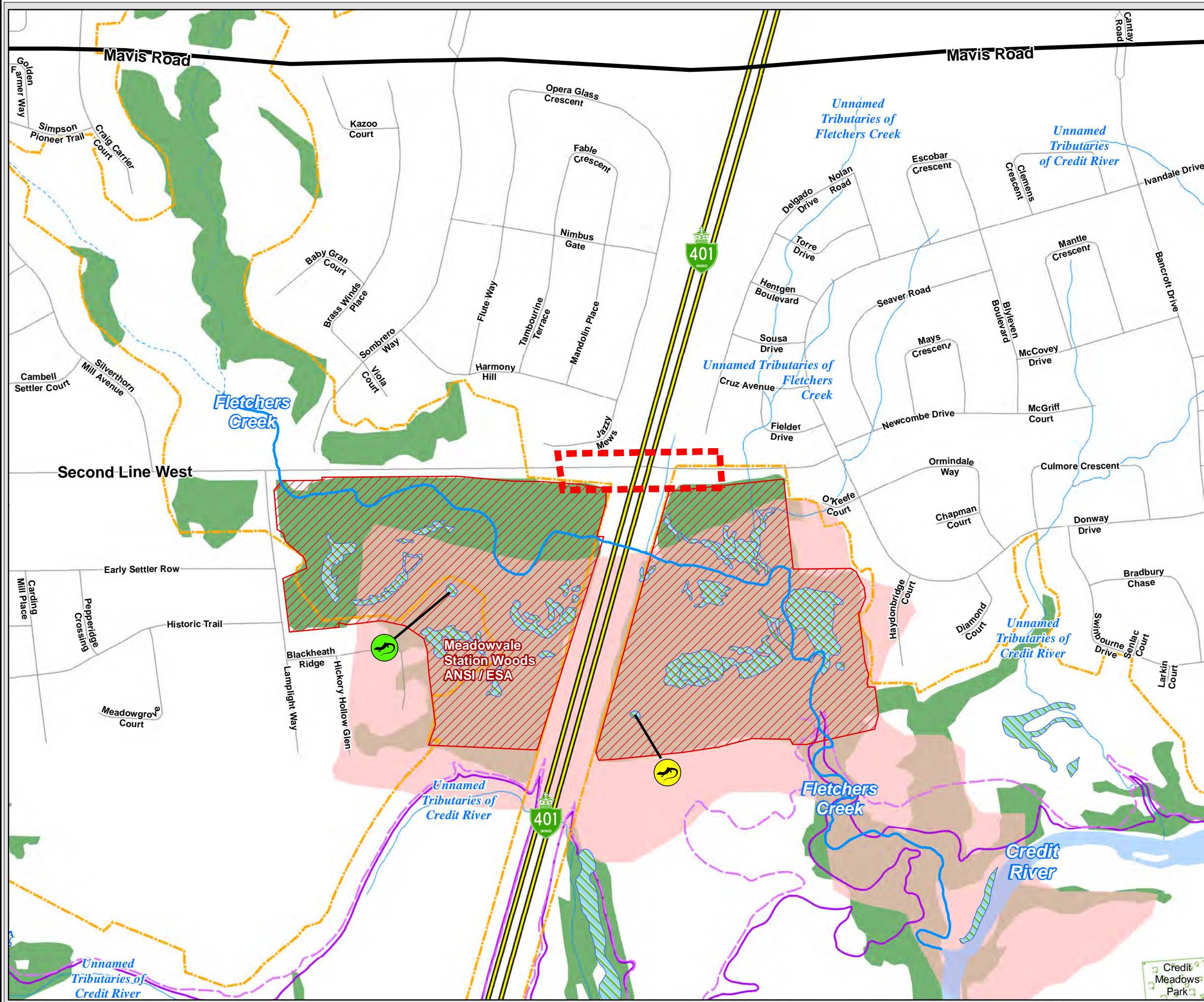


Appendix B

Natural Environment

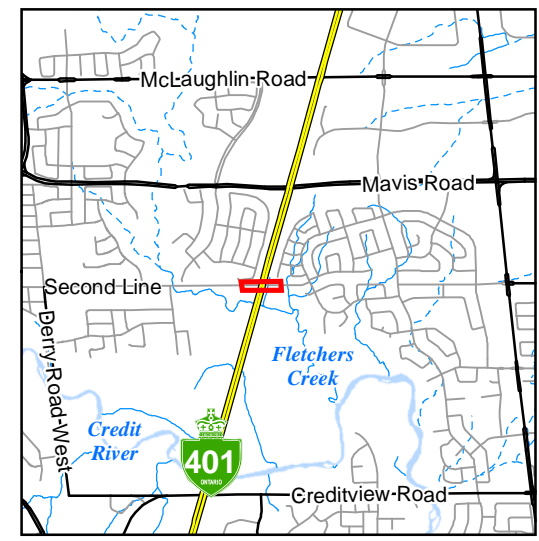


LEGEND

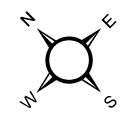
- Study Area
- Mississauga Municipal Hazard Land Limit
- 100-Year floodline
- Regulatory floodline
- Waterbody
- City Park
- Areas of Natural and Scientific Interest (ANSI)
- Wetland
- Environmentally Sensitive Areas (ESA)
- Confirmed Species-at-Risk - Jefferson Salamander
- Possible Species-at-Risk - Jefferson Salamander

Roads

- Freeway
- Major Road
- Local Road



Basemapping from Ontario Ministry of Natural Resources Orthophotography:



1:6,000

Co-ordinate System: NAD 1983 UTM Zone 17N
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Second Line West Crossing of Highway 401 Environmental Assessment

Natural Environment Existing Conditions

March, 2014
60213979



Memorandum

To	Mirjana Osojnicki	Page	1
CC			
Subject	Terrestrial Field Investigation for Second Line West Crossing of Hwy 401 Environmental Assessment		
From	James Kamstra, Olga Hropach		
Date	July 21, 2014	Project Number	60213979

1. Introduction

The Second Line Bridge structure over the Highway (Hwy) 401 is proposed to be removed and replaced with a pedestrian/cyclist crossing in order to accommodate the widening of Hwy 401. The study area is located in the City of Mississauga, Ontario. It is located adjacent to the Meadowvale Station Woods, which is designated as part of the Regionally Significant Meadowvale Station Woods Life Science Area of Natural and Scientific Interest (ANSI) and Environmentally Sensitive Area (ESA). Terrestrial investigations were conducted on May 23 and July 14, 2014 to document the existing terrestrial conditions in the vicinity of the proposed development and identify any potential impacts to the terrestrial environment. The findings of this investigation and recommendations are provided below.

Currently Second Line is a two lane paved road approximately 10 m in width and the bridge over Highway 401 is approximately 11 m wide. The road is associated with an earthen embankment on either side of the bridge to elevate it sufficiently above the level of Highway 401.

2. Methods

A terrestrial field investigation took place on May 23, 2014 within the study area and focused on identifying vegetation in areas immediate to and on either side of Second Line Bridge crossing Hwy 401. The investigation on July 14, 2014 looked at the woodlot AECOM Biologists walked along the length of Second Line and recorded dominant vegetation present within approximately 20 m of Second Line on either side.

3. Results

The results of the terrestrial field investigation are broken down into four areas for simplicity and are described as follows:

- Southwest corner – south of Hwy 401 and west of Second Line;
- Southeast corner – south of Hwy 401 and east of Second Line;
- Northwest corner – north of Hwy 401 and west of Second Line; and

- Northeast corner – north of Hwy 401 and east of Second Line; and
- Woodlot east of Second Line south of Sombrero Way.

Descriptions of the vegetation composition present at each of the four areas are provided below. Vegetation compositions in the vicinity of Second Line Bridge are shown on Figure 1.

Southwest Corner

Meadowvale Station Woods is located in the southwest corner approximately 20 m from Second Line Road and 30 m from the current bridge. Meadowvale Station Woods is described in the City of Mississauga's Natural Areas Survey (NAS) as a mature deciduous forest and was confirmed as such in the field. According to the NAS (City of Mississauga 2012), the vegetation community closest to Second Line is characterized as a dry-fresh Sugar Maple deciduous forest type (FOD5-1). It was confirmed during the field investigation that the majority of the forest edge is dominated by Sugar Maple (*Acer saccharum*); however, trees located along the woodlot edge, closest to the Second Line Bridge consist of Red Oak (*Quercus rubra*), Bur Oak (*Quercus macrocarpa*) and American Beech (*Fagus grandifolia*).

A small wetland area occurs at the bottom of the slope on the south side of Hwy 401 and west side of Second Line. This wetland area consists of a dense Common Reed (*Phragmites australis*) marsh surrounded by several Crack Willows (*Salix fragilis*). There is a steep embankment associated with the Bridge. The slope consists of disturbed cultural meadow that is occasionally mowed as part of roadside maintenance. The main ground cover species, include Canada Bluegrass (*Poa compressa*), Wild Carrot (*Daucus carota*), White Sweet Clover (*Melilotus alba*), Wild Teasel (*Dipsacus fullonum*), Ox-eye Daisy (*Leucanthemum vulgare*), goldenrod (*Solidago sp.*), fescue (*Festuca sp.*) and Canada Thistle (*Cirsium arvense*). A grove of Austrian Pine (*Pinus nigra*) is present on the top of the embankment near the Second Line Bridge.

Southeast Corner

Much of the vegetation in the southeast corner has been anthropogenically influenced and cleared in the past. Regenerating vegetation in the field adjacent to Second Line Road consists mostly of ground cover species including Awnless Brome (*Bromus inermis*), grasses (*Festuca sp.* and *Poa sp.*) and Wild Teasel. A few Common Buckthorns (*Rhamnus cathartica*), Tartarian Honeysuckles (*Lonicera tatarica*), White Elms (*Ulmus americana*) and Red Cedars (*Juniperus virginiana*), approximately 1-2 m tall, are scattered throughout the field. A few planted Colorado Spruces (*Picea pungens*) are present along the Highway 401 right-of-way near Second Line Bridge.

Northwest Corner

The edge of Meadowvale Station Woods is located approximately 35 m northwest of the current bridge and 15 m back from Second Line Road. According to the NAS (City of Mississauga 2012), the vegetation community closest to Second Line is characterized as Dry-Fresh Sugar Maple – Oak Deciduous Forest Type (FOD5-3). It was confirmed during the field investigation that the forest edge was dominated largely by Sugar Maple with lesser amounts of Red Oak and American Basswood (*Tilia americana*). A steep embankment associated with the Second Line Bridge is also present at the northwest corner and consists of similar ground cover species present on the embankment in the

southwest corner. A marsh located in a ditch north of Hwy 401 and west of Second Line is similarly dominated by Common Reed.

Northeast Corner

The northeast corner has also been anthropogenically influenced and cleared in the past. Regenerating ground cover species are similar to those identified in the southeast corner. There are several Colorado Spruces located along Hwy 401 and several Red Cedars, Common Apples (*Malus Pumila*) and Common Buckthorns located in the Second Line road right-of-way. There is one Russian Olive (*Elaeagnus angustifolia*) beside Second Line that is noted to be approximately 4 m tall.

Woodlot south of Sombrero Way

This small woodlot is a medium deciduous forest largely dominated by Sugar Maple. Old senescing Scots Pines (*Pinus sylvestris*) are present in the middle indicating that it was once a plantation that eventually succeeded to deciduous forest. Trees along the woodlot edge along Second Line consist mainly of Black Walnut (*Juglans nigra*) with some Sugar Maple, Bur Oak and Green Ash (*Fraxinus pennsylvanica*). The walnuts at the north end are large and have a diameter at breast height of 30 to 40 cm. A developing Staghorn Sumac thicket occurs along Second Line on the south side of this woodlot.

Fletcher's Creek

Fletcher's Creek is a permanent stream that occurs approximately 120 m west of the Second Line Bridge where it is crossed by Highway 401. The Credit Valley Conservation (CVC) has identified a meander belt from the stream that is approximately 40 m west of the Second Line Bridge.

4. Conclusions and Recommendations

The current Second Line Bridge over Highway 401 will be removed and replaced with a pedestrian/cyclist bridge. This bridge will be approximately 5 m wide and at the same level as the existing Second Line bridge. Most of Second Line extending to both north and south of the bridge will be replaced with a paved pedestrian/cyclist trail. As such the proposed bridge and trail are considerably narrower than the existing road. It is assumed that construction will require some grading around the immediate bridge site but that the current embankment contours leading up to the bridge will remain essentially the same as existing. Some removal of trees and shrubs may be likely in the immediate vicinity of the bridge. This would consist primarily of Austrian Pines on the southwest corner, Colorado Spruce on the northeast and southeast, and White Elm, Common Buckthorn and Red Cedar on the southeast corner. These are either roadside plantings or successional species that have seeded in on their own. They occur in the highly disturbed road right-of-way and have low habitat value.

It is anticipated that the construction of the crossing will be limited to within the current area of Second Line Road. Meadowvale Station Woods is a highly significant feature within the study area as it supports a core habitat for a diversity of plant and animal and provides a wildlife movement corridor. Given its distance from Second Line Road, the proposed works are not anticipated to adversely affect Meadowvale Station Woods since no vegetation removal is required within this sensitive natural area.

The remaining vegetation surrounding the Second Line Bridge crossing Hwy 401 has been disturbed and provides lower quality of habitat for plants and animals compared to Meadowvale Station Woods. It is important that no intrusion or disturbance of any kind occur within 10 m from the dripline of Meadowvale Station Woods. A temporary construction fence shall be erected 10 m from the dripline to ensure that this limit is respected. The woodlot on the south side of Sombrero Way is not part of Meadowvale Station Woods, and therefore is less significant but has a similar structure and provides a buffer between the ESA and residential development to the east. It will also provide visual seclusion for the future trail and therefore removal of trees from this woodlot should be avoided if possible.

If vegetation removal is required and occurs during the breeding bird season (May 1st to July 31st), nest search surveys must be conducted by a qualified Biologist prior to removal to ensure that nests of migratory birds are not destroyed, which would otherwise be a contravention of the *Birds Migratory Convention Act, 1994*.

5. References

City of Mississauga, 2012. Natural Areas Survey 2012 Update. Available at:
http://www5.mississauga.ca/research_catalogue/K_23_NAS_2012%20Update.pdf