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NATURAL AREAS SURVEY

UPDATE
2000 December

(Part 3 of Volume 3 of 3)

NOTE:

This Part 3 of Volume 3 of 3, Natural Areas Survey Update, 2000 December, is to be read in conjunction with the Natural Areas Survey Report, 1996 September, (Volume 1 of 3) and Natural Areas Survey Appendices, 1996 September, (Volume 2 of 3) and the Updates of 1999 December and 1998 February.

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NATURAL AREAS SURVEY UPDATE - PART 3 OF VOLUME 3 of 3

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1.0 INTRODUCTION

A Natural Areas Survey for the City of Mississauga was undertaken during 1995 and 1996 (Natural Areas Survey, 1996 September). One hundred and forty-four natural areas were identified that represented the best remaining natural features in the City. Of these 144 natural areas, 141 were classified as either Significant Natural Sites, Natural Sites, or Natural Green Space and three were classified as Residential Woodlands. Together, the 141 natural sites comprised 7.10% of the total area of the City. Also identified were 55 Special Management Areas (SMAs) and 40 Linkages. Definitions for these classifications are given in the Natural Areas Survey, 1996 September.

Since completion of the Natural Areas Survey in 1996 a number of development projects have been initiated within or adjacent to the natural areas identified in the 1996 survey. Programs to update the Natural Areas Survey were undertaken in 1998, 1999 and 2000. This current report documents the third year of updates. The intent of updating the Natural Areas Survey is to review the current status of natural areas and update information on floristics, fauna, impacts, boundary changes and management needs. The intent is to review natural areas within a different quadrant of the City each year. In 1998, the update was conducted on the natural areas in Wards 5 and 6. In 1999, Wards 1 and 2 were similarly updated. This year, Wards 3, 4 and 7 were updated as well as additional natural areas throughout the City that were identified as having possible changes. This report documents the methods used, summarizes changes to the natural areas, and provides some recommendations for the mitigation of impacts and management considerations.

2.0 METHODS

2.1 Background Review

The primary focus of this update was the 25 natural areas located in Wards 3, 4 and 7. Also reviewed were 8 additional natural areas in the City that had been the subject of recent Environmental Impact Studies (EISs) or where capital projects had been undertaken since 1995 by the City Transportation and Works Department. Information from the reports reviewed was incorporated into the NAS database and are listed in Appendix 1.

The background review was undertaken by a careful review of aerial photograph analysis and review of reports (inventory reports, EISs, *etc.*) on natural areas undertaken since 1996. Black and white aerial photographs from 2000 were used to identify impacts to natural area boundaries. Detailed field checks were made to natural areas where changes to boundaries were noted, or where there was a change in land use within 500 m of a natural area boundary, subject to obtaining access. Where necessary, new natural area boundaries were delineated on aerial photographs. These new boundaries were verified in the field and subsequently mapped on mylar plots provided by the City. All natural sites within Wards 3, 4 and 7 were, at minimum, the subject of a "drive by" inspection, even if there was no indication of impacts from the aerial photograph analysis.

Using this protocol, a list of 33 natural areas were identified as requiring field investigation for updating (Appendix 2). This includes: 25 natural areas that occur in Wards 3, 4 and 7, one Community Services project, four projects undertaken by the Transportation and Works Department, and four sites that were subject to Environmental Impact Studies (Note: some sites fell into more than one of the above categories thus they add up to more than 33).

2.2 Fieldwork

Field visits were made to 31 of the 33 natural areas identified. CRR8 and RW1 did not receive a field visit because access was not available to these natural areas. Appendix 2 lists the type and date when fieldwork was conducted for each of the 31 natural areas. If there was no development within or adjacent to a natural area or change in the boundaries (identified through aerial photograph interpretation and literature review) a site inspection from the road was conducted. A brief field visit was conducted in three natural areas (AW1, AW3, AW4) scheduled for road visits that were not visible from the road. A complete field evaluation was conducted at all natural areas where the boundaries had changed based on the aerial photographs or where development had occurred either within or adjacent to the site. Landowner contact for natural areas in private ownership was undertaken by the City Planning and Building Department.

The following information was collected for each natural area that received a field visit:
- all flora and fauna species observed were recorded, and specimens collected;
- vegetation community descriptions were updated where necessary;
- evidence of disturbance, regeneration and management needs were noted;
- field data sheets were filled out; and
- the overall condition was qualitatively rated in comparison to other sites in the City.

A copy of the field notes and field data sheets were provided to the City under separate cover for inclusion

in the natural area files.

2.3 Analysis

The City of Mississauga database records and fact sheets for each natural area were updated based on the literature review and fieldwork carried out in 2000. The provincial and regional rarity ranks of floral and faunal species were also reviewed to determine the need for updating. Provincial rarity status was updated based on the following literature, Bakowsky (1996) and NHIC (1999a, 1999b, 1999c, 1999d, 1999e). Regional rarity status was updated based on site records in the databases. The natural areas summary table for the City (Table 4 in the Natural Areas Survey, 1996 September, Volume 1 of 3) was updated to allow a comparison of the revised sites within the entire City (see Table 1, page 7).

In response to the Terms of Reference three additional tasks were undertaken in this update:
- the Ecological Land Classification (ELC) vegetation communities (Lee *et al.* 1998) were incorporated into the database where applicable;
- the Credit Valley Conservation "species of conservation interest" were incorporated into the database for fauna records to provide a measure of wildlife rarity in the City; and
- the database was reformatted to allow for easier access to the flora and fauna attribute tables.

The Floristic Quality Indices (FQI) were updated for natural areas where the floral inventory changed between 1996 and 1999. The Floristic Quality Assessment System for Southern Ontario (Oldham *et al.* 1995) adapted for use within the City of Mississauga was used for this purpose. For a summary of the methodology and interpretation of the Floristic Quality Assessment see the Natural Areas Survey (1996 September, Volume 1 of 3). Overall, the ranking of the native mean coefficients (high > 4.00, medium = 3.3 to 3.99, low < 3.3) and Floristic Quality Indices (FQIs) (high > 40, medium = 30 to 39.99, low < 30) remained the same as in 1996.

Recent disturbances, threats and management needs were noted where they changed from the 1996 (Geomatics 1996), 1998 (Geomatics 1999) or 1999 (North-South Environmental 1999) reports. Recommendations for the mitigation of real or potential impacts that resulted from recent developments, including naturalization projects were identified.

2.4 Mapping

Boundary changes identified for natural areas were updated on mylar plots provided by the City. Boundary delineation followed the approach used in the Natural Areas Survey (1996 September, Volume 1 of 3). These revisions were subsequently digitized using MicroStation GeoGraphics format and supplied to the City in digital form (see Appendix 3 for detailed description of digital mapping protocols). Updated surficial areas (hectares and acres) for the natural areas and vegetation communities were determined using GIS and incorporated into the database. Updated UTM coordinates for the natural areas and vegetation communities were also incorporated into the database.

3.0 NATURAL AREAS FRAMEWORK

Table 1 (page 7) summarizes the current information available for each natural area in the City of Mississauga. This table updates Table 4 from 1996 September, Volume 1 of 3, and summarizes the following information:

- the classification of the natural areas;
- designation of the natural area as a significant feature (ANSI, ESA, evaluated wetland);
- size of the natural area in hectares and acres;
- the number of flora species;
- the proportion of the flora that are non-native;
- the native FQI and native mean coefficient;
- the number of vegetation communities;
- the number of provincially and regionally significant flora and fauna species;
- the number of birds, mammals, and herptiles;
- the number of Credit Valley Conservation species of conservation interest; and
- the condition of the natural areas. Appendix 4 documents the changes that occurred in natural areas between 1996 and 1999 using the same categories.

Figure 1 (see page 17) shows the location of natural areas, Special Management Areas, Residential Woodlands (RW) and Linkages. This figure updates Figure 2 from 1996 September, Volume 1 of 3. Due to the scale of mapping, Significant Natural Sites (SNS), Natural Sites (NS) and Natural Green Space (NGS) are not discriminated on this map, are all labelled as "natural area". The location of "minor natural features" and "shoreline reaches" are the same as in the 1996 September, Volume 1 of 3 report.

3.1 Summary of Changes

Table 2 (see page 13) summarizes the changes to natural area classification. The total number of natural areas has increased from 141 in 1996 to 142 in 2000. This is the same number of natural areas as in 1999. The total area of the City identified as part of the natural area system in 2000 is 6.91%, this is smaller than the 7.10% reported in 1996, 6.92% in 1998, and 6.94% in 1999. This decrease represents an overall reduction of 69.73 ha (171.29 a.). The three Residential Woodlands remain, however they are reduced in area from 252 ha (621.67 a.) to 237.42 ha (586.49 a.), as a result of the redesignation of a portion of the Cooksville residential woodland, CV2 to Natural Site. One natural area, NE2, was deleted in 2000 as a result of development.

Three Special Management Areas were removed from the system, bringing the 2000 total down to 49. The update surveys have shown that the number of Special Management Areas has decreased from the original number of 55 identified in 1996. The Special Management Area associated with natural area ETO5 was removed due to the installation of a twin trunk sewer. The natural area NE2 and the associated Special Management Area were removed for industrial development. The Special Management Area associated with natural area MY1 was reclassified as old field due to naturalization efforts undertaken by the City. The Linkage between MV12 and MV14 was removed due to residential development, reducing the total number of Linkages to 36.

One site, AW4, was upgraded from Natural Green Space to Natural Site owing to the addition of a regionally significant plant to its inventory. MI17 was upgraded from Natural Site to Significant Natural Site due to

a high FQI ranking (42.20). Two sites were downgraded from Significant Natural Site to Natural Site due to the removal of the provincial rarity status for butternut (*Juglans cinera*) in 1998. All other natural areas retained the same designations as in 1999. It is worth noting that one area has been substantially reduced in size as a result of development (MV12), and may have lost species which would result in its redesignation. However, because it is difficult to demonstrate that a plant has been lost from an area, this site has been retained for the time being. If in future years, repeated inventory fails to find significant species previously recorded for the site, this areas should be re-evaluated.

Table 3 (see page 13) shows the number and size of natural areas associated with the three major landform types in the City. Most of the natural areas, 76 areas or 79.1% of the natural areas system, are associated with valley systems, which is up from 73 (approximately 78.4%) in 1996 and 1998. The number of natural areas located on the tablelands was 60 in 1996 and is now 58 with the addition of natural area CV6 in 2000 and the removal of natural areas HO2 in 1998, EC10 in 1999, both for residential development and NE2 in 2000 for industrial development. Tableland natural areas are generally very small (mean size of 5.3 ha or 13.2 a.) when compared to the valleyland areas (mean size of 20.2 ha or 49.9 a.). The mean size of all three landscape types has been decreasing since 1996 due to the removal of portions of natural areas for development.

Based on the three years of updating the 1996 Natural Areas Survey, a few trends may be emerging. The size of natural areas within all categories has been decreasing (although there was a slight increase in tablelands between 1999 and 2000 owing to the addition of the CV6). Also, from 1996 to 1999 the proportion of the natural area system that is valleyland has been increasing, 78.3%, 78.5%, and 79.9% respectively. Except for 2000, which saw a decrease in the proportion of valleyland (79.1%). The proportion that is tableland has been decreasing (16.4%, 16.2%, 14.8%). Except for 2000, with a slight increase in the proportion of tableland (15.8%). This slight increase is due in part to a decrease in the size of some valleyland areas. This trend is also reflected in the amount of tableland that is protected in the City, with steady decreases from 1.16% in 1996 to 1.09% in 2000. Wetlands remain more or less constant, with the proportion in the natural area system (5.0%, 5.0%, 4.9%, 4.9%), and in the City overall (0.36%, 0.34%, 0.34%, 0.34%).

Tableland natural areas (which are mainly wooded) tend to be discrete islands that have limited connections to other remnant natural features. Valleylands are better connected by virtue of the linearity of the landform and historically have been better protected from development. From a City-wide perspective, in 2000 only 1.09% of the landbase is represented in tableland natural areas, down 0.07% from 1996. This reinforces the need for careful management and protection of the remaining tableland features present within the City.

Figure 1: Legend For Natural Area Framework for the City of Mississauga

(Note: There are 142 natural areas and 3 Residential Woodlands identified on Figure 1, however 150 areas are listed below because 5 areas span two planning districts and are thus listed twice).

SOUTHDOWN
1. SD1
2. SD4
3. SD5 (Meadowwood)
150. SD7 (Lakeside)

CLARKSON-LORNE PARK
4. CL52 (Meadowwood)
5. CL1 (Meadowwood)
6. CL9 (Rattray Marsh)
7. CL8
8. CL15
9. CL16 (Jack Darling Park)
10. CL17 (Lorne Park Estates)
11. CL13
12. CL43
13. CL42
14. CL21 (Birch Glen)
15. CL39 (Whiteoaks)
16. CL22
17. CL30 (Lorne Park Prairie)
18. CL31 (Lornewood Creek Trail)
19. CL24 (Tecumseh)
20. CL26
24. CRR9 (Credit River Flats)

PORT CREDIT
21. PC1 (Rhododendron Gardens)
22. PC2 (Port Credit Memorial)
23. PC3

MINEOLA
24. CRR9 (Credit River Flats)
25. MI4
26. MI1
151. MI17 (Mary Fix)
152. MI7

LAKEVIEW
27. LV3 (Adamson Estate)
28. LV4 (Helen Molasy Memorial)
29. LV5
30. LV2
31. LV1
32. ETO8
33. LV14 (Lakeview Golf Course)
34. LV6
35. LV7 (Cawthra Woods)
36. ETO7

SHERIDAN PARK
37. SP1
38. SP3

SHERIDAN
39. SH6
40. CRR7
41. CRR8

ERINDALE
40. CRR7
41. CRR8
42. ER6
43. CRR6

COOKSVILLE
44. CV1 (Iroquois Flats)
45. CV2
46. CV12 (Richard Jones)
47. CV10
48. CV8 (Camilla)
153. CV6 (Stillmeadow)

DIXIE
36. ETO7
49. ETO6
50. AW1 (Willowcreek)

WESTERN BUSINESS PARK
51. WB1 (Erin Mills Twin Arena)

ERIN MILLS
52. EM30 (Tom Chater Memorial)
53. EM6 (King's Masting)
54. EM2 (South Common)
55. EM10
56. EM14
57. EM4
58. EM5 (Glen Erin Trail)
43. CRR6
59. EM21 (Richard F.C. Mortensen)

CREDITVIEW
60. CR1

FAIRVIEW
61. FV1
62. FV3

CITY CENTRE
63. CC1 (Bishopstoke Walk)

MISSISSAUGA VALLEY
64. MY1 (Mississauga Valley)
65. MY3 (Stonebrook)

APPLEWOOD
50. AW1 (Willowcreek)
66. AW4 (Applewood Hills)
67. AW3 (Applewood Hills)
68. ETO5
49. ETO6

RATHWOOD
69. ETO4
70. RW5 (Applewood Hills)
71. RW6 (Applewood Hills)
72. RW4 (Rathwood District)
73. RW1
74. RW2 (Woodington Green)

CHURCHILL MEADOWS
75. CM7
76. CM9
77. CM11
78. CM12
79. CM17
80. CM13

CENTRAL ERIN MILLS
81. CE7 (Sugar Maple Woods)
82. CE9 (Quenippenon Meadows)
83. CE10 (Erin Wood)
84. CE5
85. CE1 (Woodland Chase Trail)
86. CE12 (Bonnie Brae)
87. CRR5
88. CRR4

STREETSVILLE
89. SV12 (Bonnie Brae)
90. SV10
88. CRR4
91. SV1 (Turney Woods)
92. CRR3
93. CRR2

EAST CREDIT
87. CRR5
88. CRR4
92. CRR3
93. CRR2
94. EC22
96. EC13
97. EC1

HURONTARIO
98. HO1
100. HO3 (Staghorn Woods)
101. HO6
102. HO7
103. HO9 (Britannia Woods)

NORTHEAST
104. NE4
105. NE3
107. NE1
108. NE6
109. NE5
110. NE7
69. ETO4
111. ETO3
112. NE8
113. NE10
114. NE11
115. NE12
116. ETO2
117. ETO1
118. NE9 (Wildwood)

LISGAR
119. LS1 (Lisgar Meadow Brook)
120. LS2
121. LS3 (Trelawny Woods)

MEADOWVALE
122. ME10 (Eden Woods)
123. ME12 (Lake Wabukayne)
124. ME11 (Lake Aquitaine)
125. ME9 (Maplewood)
126. ME8 (Windrush Woods)

MEADOWVALE BUSINESS PARK
127. MB9
128. MB7 (Mullet Creek)
129. MB8
130. MB3
131. MB5
132. MB4
133. MB6 (Totoredaca)
134. MB2
135. MB1

MEADOWVALE VILLAGE
136. MV19
137. CRR1 (Meadowvale C.A.)
138. MV18
139. MV2
140. MV3
141. MV12
142. MV14
143. MV11
144. MV15
93. CRR2

GATEWAY
145. GT1
146. GT3
147. GT2
148. GT4 (Brittania Woods)

MALTON
149. MA1

4.0 NATURAL ENVIRONMENT OVERVIEW

4.1 Vegetation Communities

The 48 vegetation communities described for the City (see Table 2 in 1996 September, Volume 1 of 3) were compared between 1996 and 2000 (see Table 4, page 20). One new vegetation community, oak-white pine forest, was added in 1999, making 49 vegetation communities in total. The 49 vegetation communities described for the City were updated in 2000 based on the Ecological Land Classification (ELC) (Lee *et al.* 1998). A list of the City's vegetation communities and their corresponding ELC vegetation community classification is provided in Appendix 5. In some cases, more than one ELC community corresponds to a City community designation. For example sugar maple forest (CC) corresponds to dry-fresh sugar maple-basswood deciduous forest, dry-fresh sugar maple-hickory deciduous forest, dry-fresh sugar maple-white ash deciduous forest, and dry-fresh sugar maple deciduous forest. In addition, there are a number of City community designations that do not correspond to any ELC designations. These are primarily the anthropogenic City communities (*e.g.*, manicured, golfcourse, *etc*.). Due to these discrepancies, and to facilitate the comparison of vegetation communities between updates the City designations will be discussed in this report. The ELC designations can be reviewed in the database.

The vegetation communities have been grouped into six broad categories to facilitate discussion; valleylands, woodlands, successional, wetlands, anthropogenic and other. The category other was used for three communities (tall grass prairie, beach and unknown) that did not easily fit into one of the other five categories. The most prevalent communities within the City remain those in the valleyland category. Table 5 identifies those valleyland vegetation communities that changed in area since 1996. The tall grass prairie community is still considered the only provincially rare vegetation community within the City.

Table 5: Changes to Area of Valleyland Vegetation Communities 1996-2000

Vegetation Community	Natural Areas surveyed in 2000	Extent of Change and Reason
Wooded Slope	ETO6	Decreased 8.03 ha (19.84 ac.) in 2000. Wooded slope removed in ETO6 for installation of twin trunk sewer.
Floodplain	N/A	Unchanged from 1998 to 2000, reasons for 1998 changes provided in Table 1 of the 1998 update report (1998 February, Volume 3 of 3).
Wooded Non-native Valleylands	N/A	Unchange from 1998 to 2000. Increased marginally from 1996 to 1998. Increased 5.91 ha (14.6 ac.) in 1999. See 1998 and 1999 update reports for reasons (1998 February and 1999 December, Volume 3 of 3).
Open with Open Slopes Valleylands	RW2, CV10	Increased marginally by 0.12 ha (0.30 ac.) in 2000. An increase in size of RW2 due to naturalization was offset by removal of a portion from CV10 for commercial development. Decreased 18.44 ha (45.57 ac.) in 1998. Increased 6.92 ha (17.1 ac.) in 1999.

Valleylands

Valleylands includes nine vegetation communities (listed in Table 4). Even though this category is termed valleylands, the boundaries of these vegetation communities do not necessarily follow floodplain boundaries. For example wooded slope could occur on valley slopes or above the top of bank (tableland). This category saw a continued decrease in area from 1301.77 ha (3215.37 a.) in 1996, to 1253.23 ha (3096.68 a.) in 1998, to 1265.99 ha (3128.30 a.) in 1999, to 1257.98 (3108.42) in 2000, for a total decrease of 43.79 ha (approximately 107 a.). The substantial changes to this category documented in 1998 are provided in last year's report (1999 December, Volume 3 of 3). One valleyland community that changed substantially between 1996 and 2000, wooded slope (A) decreased from 347.36 ha (857.98 a.) to 340.69 ha (841.84 a.) owing to the removal of portions of this community from ETO6 for the installation of a twin trunk sewer line. One other valleyland community changed marginally between 1999 and 2000. Open with open slopes valleyland increased by 0.12 ha (0.30 a.). An increase in the size of this community in RW2 due to naturalization efforts by the City was offset by the removal of a portion of the community from CV10 for commercial development. Four of the vegetation communities in this category are still the most widespread in the City: wooded slope, floodplain, wooded non-native, and open with open slopes.

Woodlands

Woodlands includes twenty vegetation communities (Table 4), all of which occur outside of valleylands, although intermittent streams may be present within. Between 1996 and 2000 this category was reduced in size by 9.57 ha (23.53 a.) to 414.73 ha (1024.80 a.), or 1.4% of the total City area. Thirteen of the vegetation communities in this category (see Table 4 for a complete list) are considered uncommon in the City, each occupying less than 1% of the total area of natural areas or containing an uncommon "working-group" (Krahn *et al.* 1995). Five woodland areas showed substantial changes in 2000. Sugar maple - white ash (EE) decreased by 0.45 ha (1.11 a.) due to the removal of a portion of this community from MV12 for the

installation of Mavis Road. Sugar maple - red oak (FF) decreased by 1.84 ha (4.55 a.) due to the removal of natural area NE2 for industrial development. Oak - ash (RR) increased by 2.59 ha (6.40 a.) owing to the addition of natural area CV6. Red ash-American elm (BB) decreased by 0.19 ha (0.47 a.) with the removal of a portion of this community for a townhouse development. Oak-hickory (SS) decreased by 0.24 ha (0.59 a.) with the removal of a portion of FV1 and FV3 for residential development.

Successional
The successional category has six vegetation communities (Table 4). This category has decreased in size by 3.62 ha (8.95 a.) between 1996 and 2000. In 2000, this category comprised 131.56 ha (325.08 a.) or 0.46 % of the total City area. Early successional forest (E) decreased by 1.84 ha (4.55 a.) due to the removal of a portion of this community from MV12 for residential development. Old field (C) decreased marginally by 0.03 ha (0.07 a.), owing to the deletion of a portion of this community from CV12 and MV2. These losses were partially offset by the addition of this community to MY1 and CV1. Five vegetation communities in this category are still considered to be uncommon in the City occupying less than 1% of the total area of natural areas.

Wetland
The wetland category is composed of six vegetation communities (Table 4). Between 1996 and 2000 this category decreased in size by 0.9 ha (2.2 a.) to a size of 74.9 ha (185 a.), or 0.25% of the total City area. This category remained unchanged from 1998. Each of the vegetation communities in this category continue to be considered uncommon in the City occupying approximately 1% of the total area of natural areas (open water marsh is 1% and cattail marsh is 1.2%).

Anthropogenic
Anthropogenic is composed of five vegetation communities (Table 4). The size of this category increased between 1996 and 1998 by 2.75 ha (6.8 a.) to 355.75 ha (879 a.), or 1.2 % of the total City area, but decreased in 1999 to 344.12 ha (850.31 a.) representing 1.17 of the total area of the City. In 2000, this community continued to decrease to 342.87 (847.23 a.). This is an overall decrease of 10.14 ha (24.7 a.) since 1996. Manicured (F) increased by 1.12 ha (2.77 a.) due to the addition of this community to CV12. Wooded residential decreased by 2.5 ha (6.18 a.) with the redesignation of a portion into natural area CV6. Woodland residential is still considered to be one of the largest communities in the City.

Other
The other category is composed of three vegetation communities (Table 4): beach, tall grass prairie and unknown. This category remained substantially unchanged from 1996-2000, decreasing slightly by 0.15 ha (0.37 a.).

4.2 Flora

The flora in the City of Mississauga database was updated in 2000 according to the Vascular Plant Flora of the Region of Peel and the Credit Valley Conservation (Kaiser 2000). This included updating the native status and occurrence of plants recorded for the City. The nomenclature used for the plants of Mississauga continues to follow Oldham *et al.* (1995) to allow for the calculation of Floristic Quality Indicies. The order of plant families in the database was updated to follow the Ontario Plant List (Newmaster *et al.* 1998). A discrepancy that remains between the Vascular Plant Flora of the Region of Peel (Kaiser 2000) and the flora of Mississauga is that the latter includes a large number of plant species that have been planted in various natural areas. With an ability to record these planted species in the database, valuable information will be provided for future management initiatives in the City (*e.g.*, Norway maple control, *etc*.).

Changes to the flora of Mississauga are summarized in Table 6. A total of five new species were added to

the flora of the City, based on Kaiser (2000), thus the total number of species stands at 1105. In 1999 the total number of species for the City was reported as 1104. This discrepancy is likely a result of errors in the database that were corrected by the updating that occured this year. All five of the new species are considered non-native in both Mississauga and Ontario. In addition 15 plants changed their native status based on the Peel Flora (Kaiser 2000). Nine of these species changed their status from native to non-native (Table 6) and six species changed their status from non-native to native. One of these species tansy ragwort (*Senecio jacobaea*) was re-identified as sticky groundsel (*Senecio viscosus*) (Kaiser 2000). The total number of native species in Mississauga stands at 664 (61% of the flora) and non-natives number 427 (39% of the flora).

Definitions of rarity status can be found in the Natural Areas Survey, Appendix 4 (1996 September, Volume 2 of 3). There were no changes to the provincial rarity ranks, thus Appendix 5 from the 1998 update report (1998 February, Volume 3 of 3) is considered to be current and is not provided in this report. There were no changes in the regional rarity rankings for any plant species in 2000. Of the 664 native species in the Mississauga flora, 427 (65%) are rare or uncommon in the City, and 237 (36%) are common. This is unchanged from 1998.

Table 6: Changes to the Flora of the City of Mississauga Resulting from the 2000 Update Study

Common Name	Scientific Name	Non-native (2000)	Non-native (1999)	Comments
balsam fir	*Abies balsamea*	Yes	No	all records are planted specimens
Manitoba maple	*Acer negundo*	No	Yes	Peel Flora status
creeping bent	*Agrostis stolonifera*	No	Yes	Peel Flora status
wall rock cress	*Arabis alpina*	Yes	No	Peel Flora status
horseradish	*Armoracia rusticana*	Yes	No	Peel Flora status
water-arum	*Calla palustris*	No	Yes	Peel Flora status
long-beaked sedge	*Carex sychnocephala*	No	Yes	Peel Flora status
dwarf chickweed	*Cerastium pumilum*	Yes		addition based on Peel Flora
ridge-seeded spurge	*Chamaesyce*	Yes	No	Peel Flora status
toothed spurge	*Euphorbia dentata*	Yes		addition based on Peel Flora
common juniper	*Juniperus communis*	No	Yes	Peel Flora status
round-leaved tod-	*Kickxia elatine*	Yes		addition based on Peel Flora
corn mayweed	*Matricaria perforata*	Yes		addition based on Peel Flora
whorled carpetweed	*Mollugo verticillata*	Yes		addition based on Peel Flora
Kentucky bluegrass	*Poa pratensis*	No	Yes	Peel Flora status
purslane	*Portulaca oleracea*	Yes	No	Peel Flora status
silvery cinquefoil	*Potentilla argentea*	Yes	No	Peel Flora status
creeping yellow	*Rorippa sylvestris*	Yes	No	Peel Flora status
pearlwort	*Sagina procumbens*	Yes	No	Peel Flora status
sticky groundsel	*Senecio viscosus*	Yes	No	updated based on Peel Flora - previously documented as *Senecio jacobaea*

4.3 Floristic Quality Assessment

Table 1 (page 7) provides the FQI and native mean coefficient for all natural areas that were assessed and Appendix 4 summarizes changes. In 1996, 107 of the 144 natural areas were assessed. FQIs ranged from 2.68 to 80.10 and the native mean coefficients ranged from 1.20 to 4.82. In 2000, 129 of the 145 natural areas were assessed. Currently, the FQIs range from 2.68 to 79.83 and the native mean coefficients range from 1.20 to 4.73. Between 1996 and 2000 there has been a slight decrease in both the maximum FQI and native mean coefficients. In 1996, the majority of natural areas fell in the medium range of native mean coefficients (3.3 to 3.99) and in the low range for the FQIs (<30.00). This is still the case in 2000, with 86 natural areas having low FQIs and 53 natural areas having medium native mean coefficients.

FQIs and native mean coefficients were re-calculated for 20 natural areas in 2000; *e.g.*, for those natural areas that had a change in their floral inventories. Of the natural areas evaluated in 2000, most (10) have low mean coefficients, 8 have medium values, and 2 are high. However, most sites (16) have low FQI values, with 4 being medium and none being high. High, medium and low values are defined in the 1996 Natural Areas report (page 28) (1996 September, Volume 1 of 3).

Of the 20 natural areas re-evaluated, fifteen natural areas increased their FQI, and five natural areas had no change in their FQI. None of these increases resulted in a change in FQI rank (*e.g.,* from medium to high). Increases in FQIs at these 15 natural areas are the result of more complete inventories of flora species and are probably closer reflections of actual conditions.

Of the 20 natural areas re-evaluated, six natural areas saw an increase in their native mean coefficient, and ten natural areas saw a decrease. None of the changes were sufficiently large to change the status (high, medium, low) of these areas. Similar to the new FQI values these new native mean coefficients probably more accurately reflect the floral species composition of these natural areas. A decrease in the native mean coefficient indicates an increase in the number of native species with low coefficients documented for a natural area. An increase in the native mean coefficient is the result of the documentation of additional conservative species within natural areas. The Natural Areas report (1996 September, Volume 1 of 3) has a complete explanation of native mean coefficients.

4.4 Fauna

There were no changes to the provincial rankings for fauna, thus Appendix 6 in the 1998 update report (1998 February, Volume 3 of 3) is considered current and is not provided here. A summary of the significant fauna for the City can be found in the 1998 update (1998 February, Volume 3 of 3). The Credit Valley Conservation has in recent years developed a list of species of conservation interest for fauna within the Credit River watershed (Credit Valley Conservation undated). This list was used in 2000 as the basis for assigning regional rarity status for fauna in the City. Appendix 6 lists the species of conservation interest documented for the City, including migrant and wintering species. Appendix 4 lists the nine natural areas which are documented as having resident species of conservation interest.

In 2000, some of the natural areas had additional faunal records documented and added to the database, however, no new species were documented for the City of Mississauga. The faunal information for the City is still very limited and additional surveys of the fauna that use the City's natural areas need to be conducted.

4.5 Significant Features

There are no changes to Areas of Natural and Scientific Interest (ANSIs) since they were last updated by the MNR, as reported in the 1998 update report (1998 February, Volume 3 of 3). Cawthra Woods (LV7) was evaluated as wetland during the 1999 update study. The wetland evaluation has been accepted by the MNR and Cawthra Woods is now designated as a provincially significant wetland in addition to its Environmentally Significant Area and ANSI status.

5.0 CONDITION OF NATURAL AREAS

5.1 Condition

Generally, the natural areas within the City that were surveyed continue to be in fair condition (see Table 1). Natural areas in fair condition have moderate disturbances (few trails, limited dumping, some trampling, *etc*.) and an average number of non-native flora species. The condition of the natural areas visited in 2000 remained largely unchanged from previous studies. The drier than usual conditions that persisted from 1998 through the winter and spring of 1999 affected many natural areas, in particular tableland woodlots. The most prevalent effect was smaller populations of many native ground cover species. Other impacts included dry soil conditions, an increase in exposed soil, an apparent increase in the populations of non-native species and a loss of leaves in canopy trees. Normal to above normal levels of precipitation in 2000 appear to have ameliorated many of the drought impacts. However, since most of natural areas visited for fieldwork in 2000 were valleylands, a direct comparison cannot be made with drought impacts seen on tablelands in the previous two years.

5.2 Disturbances

As with the all of the other surveys, the most common disturbances within natural areas are those associated with an increased use of natural areas following development in adjacent areas. Examples of these disturbances include: the creation of *ad hoc* trails, the use of mountain bikes (including the construction of some elaborate racing circuits), the presence of garbage, boundary encroachment, and vandalism (tree carving, tree cutting, spray paint). These disturbances have become more prevalent at all of the natural areas surveyed this year. In particular, an elaborate racing circuit for mountain bikes (including ramps) was observed in the floodplain of Cooksville Creek (CV8), north of the pedestrian path that runs between Camilla Road and Sherobee Road.

5.3 Development

Direct impacts from development have resulted in the removal of portions of natural areas. Eight of the 33 natural areas surveyed in 1999 had decreased in overall size due to development. Some of the associated in-direct impacts that resulted from the removal of portions of natural areas included: increased light penetration in the remainder of the area, and changes in the vegetation structure. Other potential long-term impacts that could occur are changes in the moisture (soil and air), temperature and precipitation within the natural area, as well as the less well documented impacts of increased light and noise pollution.

5.4 Non-native Species

There has been a continual increase in the proportion of non-native to native plant species in the natural areas surveyed between 1996 and 2000 (see Appendix 4). An increase in the presence and dominance of non-native species within the City's natural areas is a serious management concern. Without active management species such as Norway maple (*Acer platinoides*), garlic mustard (*Alliaria petiolata*), European buckthorn (*Rhamnus cathartica*), and others will result in a continued loss of native plant species in a number of natural areas. A City-wide strategy to deal with non-native species impacts needs to be formulated and management plans developed to remove the most invasive exotic species as soon as possible.

As noted in previous studies, the dumping of discarded horticultural plants, largely as a result of

encroachment where residents use the natural areas behind their house for compost and dumping yard waste, is a common vector for the introduction of non-native plants to natural areas. This was especially prevalent in the older residential areas visited during this update.

6.0 RECOMMENDATIONS

1. Continue restoration initiatives, in particular the native planting scheme for Jack Darling Park and the prescribed burns at Lorne Park Prairie. Consider similar prairie and savannah initiatives for the other natural areas that contain remnants of the Lorne Park Prairie: CL24, CL31 and CL22. In particular, White Oak Woods park (CL39) is an excellent candidate for restoration of the indigenous savannah community of that area.

2. The analysis of trends in section 4.0 notes that tableland natural areas continue to decrease within the natural areas system. This trend reinforces the observation and recommendation made in the 1996 report that the tableland woodlands of Mississauga are seriously threatened and every effort should be made to maintain the remaining tableland natural areas and restore other areas that may contribute to this vegetation type.

3. Initiate a greater control over natural areas to reduce impacts related to human use. This is best achieved through site-specific conservation plans. Issues addressed in the conservation plans should include, but not be limited to: access, encroachment, appropriate activities, non-native plant control, and restoration initiatives (see 1996 September, Volume 1 of 3 for a complete description of conservation plan requirements).

4. Initiate a public education program in concert with community-based stewardship initiatives to involve local citizens in the conservation and management of natural areas, as outlined in the Natural Areas Survey (1996 September, Volume 1 of 3).

5. Develop a City-wide strategy and site specific management plans to deal with invasive non-native species, especially: Norway maple, garlic mustard, purple loosestrife (*Lythrum salicaria*), dog-strangling vine (*Vincetoxicum rossicum*), white poplar (*Populus alba*), Japanese knotweed (*Polygonum cuspidatum*) and white mulberry (*Morus alba*). At a minimum the City should immediately adopt policies to restrict or prevent the planting of invasive non-native plants within the City, and provide encouragement and a mechanism for the City and the community to work together to remove such plants.

6. Naturalization projects have been initiated at a number of the natural areas visited in 2000. In most cases, this involves leaving an area of unmowed grass to regenerate naturally. While, this method will increase the overall size of the natural area in question, the lack of management makes these areas susceptible to a number of invasive weeds such as purple loosestrife or dog-strangling vine. Appropriate conservation plans that outline restoration methods would contribute to the development of native vegetation communities.

7.0 REFERENCES CITED

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Kaiser, J. 1999. A Vascular Plant Flora of the Region of Peel and the Credit River Watershed - Preliminary List. Draft report prepared for Credit Valley Conservation.

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North-South Environmental Inc. 1999. City of Mississauga Natural Survey - Update. Report prepared for Planning and Building Department, City of Mississauga. 56pp.

Oldham, M.J., W.D. Bakowsky, and D.A. Sutherland. 1995. Floristic Quality Assessment System for Southern Ontario. Natural Heritage Information Centre, Ontario Ministry of Natural Resources. 17 pp. + app.

Appendix 1: Reports Examined for Background Review

The format of this appendix follows Appendix 2 in the Natural Areas Survey (1996 September, Volume 2 of 3). The numbers correspond to those used in the database for literature references.

202 Ursic, K. and T. Farrell. 2000. List of plants observed at the Lorne Park Prairie, Mississauga, Ontario on October 26, 1999 by K. Ursic and J. Dougan.

203 Rudan, D. and P. Rudan. 2000. Letter to the City Re: Birds observed in the backyard and Cooksville Creek floodplain of 1291 Mineola Gardens, Mississauga.

204 Gregory, D. 2000. Meadowvale Woodlot, Scoped Environmental Impact Statement. Prepared for Mavis Developments Inc.

205 Dougan & Associates. 2000. Environmental Impact Statement, Draft Plan No. 21T-99014, City of Mississauga. Draft. Prepared for East Woodbridge Developments Ltd.

206 Dillon Consulting Limited. 1999. Stavebank Road Proposed Development. Environmental Overview. Prepared for Gorlea Investments Inc.

207 AGRA Earth & Environmental Limited. 1999. Fletchers Creek Business Park Stormwater Management Facility Scoped Environmental Impact Study. Prepared for Cosburn Patterson Mather.

Appendix 3: Summary of MicroStation GeoGraphics Updates

Work Performed on NAS 2000 Dataset
for the City of Mississauga and North-South Environmental Inc.
by Anthony Bonnici, GeoData Resources Inc. (Oct/Nov 2000)

The City's Natural Area Survey was updated in 2000 from field surveys conducted by the staff of North-South Environmental (NSE). GeoData Resources incorporated those updates into the City of Mississauga's (the City) MicroStation GeoGraphics dataset.

The work performed on the dataset consisted of updating the NAS database in Microsoft Access, and revisions to the map features in the NAS MicroStation design file provided by the City (including cartographic work on the separate NASMAP file used to produce the 11x17 hardcopy maps).

This document is a summary of the changes made to the NAS 2000 project. All steps are listed in chronological order so that this document can serve as a workflow outline in the future. Relevant details are included in bulleted lists with each step. An indication of which part of the dataset was affected appears like so: DB (database work) and MAP (map work). A description of the deliverables is also provided.

Workflow Preparation

1. Created MicroStation GeoGraphics **project**
   - created a new NAS2000 folder
   - created the PRJ project folder under it with the minimum number of required GeoGraphics project subfolders: DGN, IDX, SEED, and IMA, and a DBASE subfolder.
   - did not set up or use the key map, work map, or Map Manager
   - created user configuration file, and project shortcut

2. DB: Copied the nas99_oracle.mdb database to NAS00.mdb
   - put NAS00.mdb in the PRJ folder's DBASE subfolder
   - compacted the database in Access (Tools > Database Utilities > Compact Database) and reduce its size from 5.0 to 2.7 Mb.
   - created "NAS" ODBC data source to point to the new database

3. MAP: Copied the existing NAS99.dgn map file to **NAS00.dgn** for use in this project.

4. Attached the following reference files:
   - majrds.dgn
   - cvasriver.dgn
   - rvrlarbn.dgn
   - (nasmap.dgn and nasarea.dgn also attached but not used)

Map Revision

5. MAP: Created **Saved Views** in the map file for convenient display in MicroStation of all areas to be changed.
   - The names of the saved views follow this convention: 00aSSx, where 00=2000, a=area, SS=mylar sheet number (one or two digits), and x=sub-sheet letter where more than one scan was required (e.g. 00a5b).

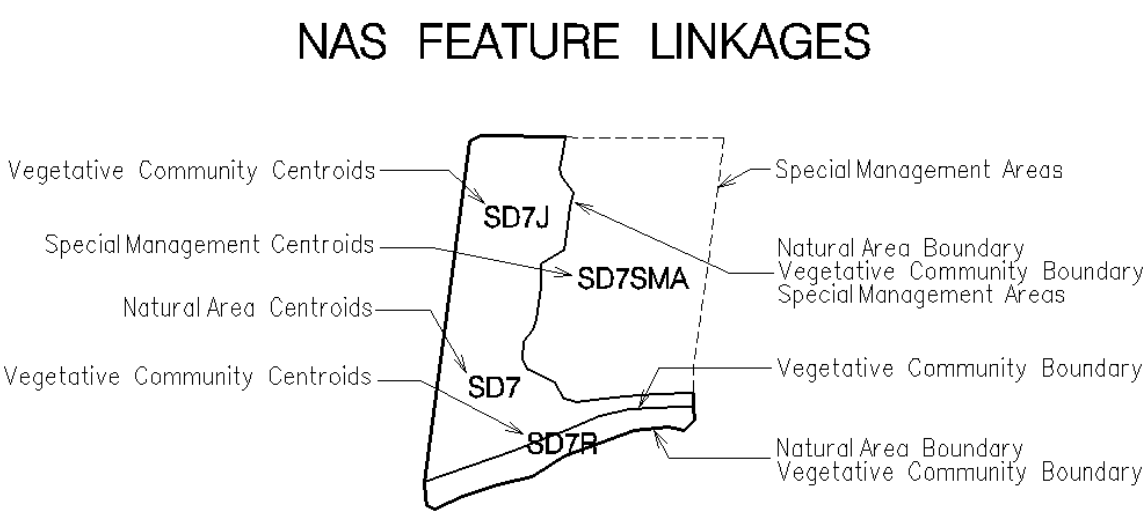
6. MAP: All additions and revisions were scanned from the mylar manuscripts.
   - The mylars were scanned (at 100 dpi) as 24-bit TIFF images, and then reduced to 1-bit monochrome images (with PaintShop Pro).
   - Each was attached to the map file as raster references, and warped using the Affine transformation.
   - The raster images are provided in the project's IMA subfolder with filenames that follow the same convention as the Saved Views (see step 4).

7. MAP: **Revised** the Natural Area, Vegetative Community, Special Management, and Linkage **map features** with changes shown on mylar manuscripts provided by NSE. The Natural Area identifier for each revised area appears in the following list, (together with the number of the mylar manuscript sheet in brackets). The subordinate Vegetative Community and Special Management features were also revised although they are not specifically included in the list.
   - *Added* the following new area: **CV6** (mylar sheet 5)
   - *Revised* boundaries on these existing areas: **CV1** (mylar sheet 5), **CV2** (5), **CV8** (6), **CV10** (6), **CV12** (7), **ER6** (5), **ETO5** (8), **ETO6** (8), **FV1** (5), **FV3** (5), **MV2** (18), **MV3** (18), **MV12** (Fax), **MY1** (7), and **RW2** (13)
   - *Removed* the entire **NE2** area (mylar sheet 8), the Linkage between **MV12** and **MV14** (Fax), and the **ETO5SMA** special management area.

8. MAP: **Created plots** of each of the revised natural areas to send to NSE for checking purposes.
   - used a plot scale of 1:8 025, or **204** metres per inch, to match the mylar manuscripts
   - used **NASpen.tbl** to convert all output to black, weight 2

Feature Linkage Revisions

9. MAP: Revised **Feature Linkages** (association between map features and feature definitions in the database) as necessary due to:
   - some "coincident" features (a single map element with multiple definitions, e.g. Natural Area Boundary and Vegetative Community Boundary) were not properly designated (see following figure)
   - replaced Woodlot feature linkage on CV6RR with Vegetative Community Boundary and Natural Area Boundary
   - NOTE: the NAS 2000 update focused specifically on the revisions generated by North-South Environmental; the entire dataset was *not* examined for other potential feature linkage problems, since that seemed to be outside the current project's mandate. Complete quality assurance on the entire dataset can be included in this or future projects if requested by the City of Mississauga.



Topology Cleanup

10. DB/MAP: Validated and repaired **Topology** for the specific Natural Area Boundary and Centroids, Vegetative Community Boundary and Centroids, and Special Management Areas and Centroids included in the revisions generated by North-South Environmental.
    - deleted duplicate linework and created coincident features as explained above
    - fixed boundaries with redundant breaks (using the Connect Linear tool)
    - deleted duplicate centroids (on level 34) in the area of CRR9 (although not part of the NAS 2000 project; duplicate boundaries, and what seems to be a redundant boundary between two instances of CRR9W, still exist in this area!)
    - NOTE: the entire dataset was *not* examined for other potential topology problems, since that seemed to be outside the current project's mandate. Complete quality assurance on the entire dataset can be included in this or future projects if requested by the City of Mississauga.

Natural Areas Attribute Processing

11. MAP: **Linked** new Natural Areas **CV6** to a new NAS_LNK attribute record (using the DB Text Manager's Join function; could also copy and revise an existing centroid with the Database Linkage Mode set to New).

12. DB/MAP: **Updated attribute records** for revised Natural Areas, i.e. the following columns in the NAS_LNK table:
    - Area (m^2) – using Load Area facility
    - Cent_X and Cent_Y (mE, mN) – using Load Origin facility or by manually editing the database record based on coordinates displayed with a tentative point
    - MapID – manually updated as 104
    - MSlink – automatically updated when linked
    - ExistsOnMap – manually updated to 1 (true)
    - Site_Num – not updated

13. DB: **Processed attribute records** for revised Natural Areas, i.e. the following columns in the NAS_LNK table:
    - Area - first needed to reset the data type for the Area column from Text to Number (Double) in order for the queries to work
    - Hectares - Calculated total Hectares for each Natural Area, summing up individual areas of disjoint polygons belonging to a single Natural Area, using **NAS_Hectares 1…** and **NAS_Hectares 2…** update queries (1 ha = 10,000 m^2)
    - Acres - Calculated from Hectares using **NAS_Hectares 3…** update query (1 ha = 2.47 acres)
    - Area, Cent_X, Cent_Y, Hectares, Acres – rounded using **NAS_Hectares 4…** update query

14. DB: **Flagged attribute records** for Natural Areas in NAS_LNK table for the **NE2** Natural Area that was deleted from the map.
    - the MSlink column value is set to "-99"

Vegetative Communities Attribute Processing

15. DB/MAP: **Created attribute records** in VEGCOM_LNK table for **CV6RR**, **CV8C**, **MY1C** (replaced MY1SMA), **CY12F** and **CV12T** (derived from CV12C which they replaced) Vegetative Communities and linked them to corresponding map features (using the DB Text Manager's Insert function which also populates Centroid and MSlink columns).

16. DB/MAP: **Updated attribute records** for revised Vegetative Communities, i.e. the following columns in the VEGCOM_LNK table:
    - Area (m^2) – using Load Area facility, and manually rounded the resultant values
    - Cent_X and Cent_Y (mE, mN) – using Load Origin facility or by manually editing the database record based on coordinates displayed with a tentative point
    - NAS_Lnk – manually updated with MSlink value from corresponding record in NAS_LNK table
    - MapID – manually updated with 104
    - Community_Code – manually updated with suffix of Centroid value
    - MSlink – automatically updated when linked
    - ExistsOnMap – manually updated to 1 (true)

Special Management Areas Attribute Processing

17. DB: **Flagged attribute records** in the SMA_LNK table for the following Special Management Areas that were deleted or replaced on the map:
    - **NE2SMA** - the MSlink column value is set to "-99"
    - MY1SMA - the MSlink column value is set to "-999"
    - **ETO5SMA** - the MSlink column value is set to "-9999"

18. DB/MAP: **Updated attribute records** for revised Special Management Areas, i.e. the following columns in the SMA_LNK table:
    - Area (m^2) – using Load Area facility, and manually rounded the resultant values
    - Cent_X and Cent_Y (mE, mN) – using Load Origin facility or by manually editing the database record based on coordinates displayed with a tentative point

NAS Hardcopy Map Preparation

19. to follow

Relationships between Legend Categories on hardcopy map and NAS GeoGraphics features.

Legend Category	*GeoGraphics Features*		*Comments*
Natural Area	Natural Area Boundary	Natural Area Centroids	All Natural Areas except Residential Woodland below
Residential Woodland	Natural Area Boundary	Natural Area Centroids	NAS_LNK Classification column set to "Residential Woodland"
Special Management Area	Special Management Area	Special Management Centroids	
Minor Natural Feature	Woodlots	N/A	Excluded if boundaries approximately coincide with Natural Area
Linkage	Linkages	N/A	

Please contact me with any questions or concerns regarding the above.

Sincerely,

A.M. (Tony) Bonnici
GeoData Resources Inc.
Peterborough, 15 November 2000
Summary00.doc

Deliverables

This is a listing of all items delivered at the conclusion of this project.

Files on CD

Docs folder
- Summary00.doc - a digital copy of this document.
- Nas99fig.tif – the image inserted into this document

Prj folder
- NAS00.mdb – the project database, with all NAS 2000 updates incorporated

Dgn sub-folder
- NAS00.dgn - MicroStation map file, cleaned and linked as explained in report.
- Figure.dgn – original design file for figure included in report.
- Other map files – used for reference but not revised or updated

Ima sub-folder
- TIFF images – scanned from mylar manuscripts and referenced to NAS00.dgn in order to incorporate revisions

Idx and Seed sub-folders
- Folders required for a MicroStation GeoGraphics project - empty

Map folder
- NasMap.dgn – revised design file for hardcopy plots
- NasMajRd.dgn – revised reference map of street network
- NasMap.tbl - colour table for above
- NasMap98.dgn – original design file
- NasMap98.tbl - original colour table
- NASpen.tbl - simple plotter pen table for check plots

Source folder
- Nas99_oracle.zip – contains system database tables provided by City.
- Summary99final.doc - a copy of previous year's document.
- Used to generate the above, returned in their original state.

Hardcopy Documents

Summary Report
- this document
- also including nine 8.5" x 11" plots of revisions to Natural Area boundaries

Plots of the Natural Area Survey map, 11" x 17"
- two sample colour copies
- two sample gray-scale copies

Please see the next page for Design Specifications for these maps.

Design Specifications (1999 version)

NasMap.dgn

Level	*Contents*	*Colour*	*Fill*	*Style*	Weight	*Font*	*Size*
1	Natural Area shapes	130	148	0	0		
4	S.M.A. shapes	207	204	0	0		
5	Residential Woodland shapes	130	126	0	0		
10	Natural Area Site numbers	0	--	0	0	43	125
(38)	Centroids (temporary)	(not plotted)					
39	Linkage shapes	143	165	0	0		
41	Minor Natural Feature shapes	193	188	0	0		
47	Shoreline Reach lines	74	--	0	6		
48	Shoreline Reach numbers	74	--	0	0		
50	Legend						
(60)	Fence Limit element	(not plotted)					
(61)	Retired Minor Natural Features	(not plotted)					
62	Minor Rivers	74	--	0	0		
(63)	Roads						

NasMajRd.dgn

Level	*Contents*	*Colour*	*Fill*	*Style*	Weight	*Font*	*Size*
1	Title	(not plotted)					
2	Minor Roads	9	0	0			
3	Minor Roads Text	9	0	0		57	105
4	Major Roads	0	0	3			
5	Major Roads Text	0	0	0	57	125	
6	Railroads	9	2	0			
7	Railroads Text	9	0	0	57	105	
8	Airport	9	0	0			
10	River, Shoreline	77	0	0			
11	River Text	77	0	0	58	120	
12	City Limits	230	3	9			
13	Neighbouring Town Text	0	0	0	23	150	
14	Lake Ontario Text	77	0	0	23	150	

Appendix 6: Credit Valley Conservation Species of Conservation Interest

Credit Watershed Bird Species of Conservation Interest documented from the City of Mississauga including migrant and wintering species. G Rank and S Rank are defined in Appendix 4 of the Natural Areas Survey (1996 September, Volume 2 of 3).

Common Name	Scientific Name	G Rank	S Rank
pied-billed grebe	*Podilymbus podiceps*	G5	S4B
black-crowned night-heron	*Nycticorax nycticorax*	G5	S3B
American bittern	*Botaurus lentiginosus*	G4	S4B
least bittern	*Ixobrychus exilis*	G5	S3B
great blue heron	*Ardea herodias*	G5	S5B
common merganser	*Mergus merganser*	G5	S5B
American black duck	*Anas rubripes*	G4	S4
green-winged teal	*Anas crecca*	G5	S4
gadwall	*Anas strepera*	G5	S4B
hooded merganser	*Lophodytes cucullatus*	G5	S3S4N,S5B
turkey vulture	*Cathartes aura*	G5	S4B
red-shouldered hawk	*Buteo lineatus*	G5	S4B
Coopers hawk	*Accipiter cooperii*	G5	S4B
northern goshawk	*Accipiter gentilis*	G5	S4B
sharp-shinned hawk	*Accipiter striatus*	G5	S4B
broad-winged hawk	*Buteo platypterus*	G5	S5B
northern harrier	*Circus cyaneus*	G5	S4B
osprey	*Pandion haliaetus*	G5	S4B
peregrine falcon	*Falco peregrinus*	G4	S2B
common moorhen	*Gallinula chloropus*	G5	S4B
American coot	*Fulica americana*	G5	S3S4
killdeer	*Charadrius vociferus*	G5	S5B
common snipe	*Gallinago gallinago*	G5	S5B
upland sandpiper	*Bartramia longicauda*	G5	S4B
Caspian tern	*Sterna caspia*	G5	S3B
herring gull	*Larus argentatus*	G5	S5
common tern	*Sterna hirundo*	G5	S4B
black tern	*Chlidonias niger*	G4	S3B
barred owl	*Strix varia*	G5	S4
northern saw-whet owl	*Aegolius acadicus*	G5	S4S5B
short-eared owl	*Asio flammeus*	G5	S2N
common nighthawk	*Chordeiles minor*	G5	S4B
chimney swift	*Chaetura pelagica*	G5	S5B

Appendix 6: continued .....

Common Name	Scientific Name	G Rank	S Rank
belted kingfisher	*Ceryle alcyon*	G5	S5B
red-headed woodpecker	*Melanerpes erythrocephalus*	G5	S3B
pileated woodpecker	*Dryocopus pileatus*	G5	S4S5
hairy woodpecker	*Picoides villosus*	G5	S5
yellow-bellied sapsucker	*Sphyrapicus varius*	G5	S5B
least flycatcher	*Empidonax minimus*	G5	S5B
eastern wood-pewee	*Contopus virens*	G5	S5B
eastern kingbird	*Tyrannus tyrannus*	G5	S5B
alder flycatcher	*Empidonax alnorum*	G5	S5B
Acadian flycatcher	*Empidonax virescens*	G5	S2B
horned lark	*Eremophila alpestris*	G5	S4N
purple martin	*Progne subis*	G5	S4S5B
barn swallow	*Hirundo rustica*	G5	S5B
cliff swallow	*Hirundo pyrrhonota*	G5	S5B
bank swallow	*Riparia riparia*	G5	S5B
red-breasted nuthatch	*Sitta canadensis*	G5	S5
brown creeper	*Certhia americana*	G5	S5B
winter wren	*Troglodytes troglodytes*	G5	S5B
marsh wren	*Cistothorus palustris*	G5	S4S5B
Carolina wren	*Thryothorus ludovicianus*	G5	S3
veery	*Catharus fuscescens*	G5	S5B
golden-crowned kinglet	*Regulus satrapa*	G5	S5B
wood thrush	*Hylocichla mustelina*	G5	S5B
blue-gray gnatcatcher	*Polioptila caerulea*	G5	S4B
gray catbird	*Dumetella carolinensis*	G5	S5B
brown thrasher	*Toxostoma rufum*	G5	S5B
northern mockingbird	*Mimus polyglottos*	G5	S3S4
loggerhead shrike	*Lanius ludovicianus*	G5	S2B
blackburnian warbler	*Dendroica fusca*	G5	S5B
yellow-rumped warbler	*Dendroica coronata*	G5	S5B
American redstart	*Setophaga ruticilla*	G5	S5B
blue-winged warbler	*Vermivora pinus*	G5	S4B
Nashville warbler	*Vermivora ruficapilla*	G5	S5B
Connecticut warbler	*Oporornis agilis*	G4	S4B
vesper sparrow	*Pooecetes gramineus*	G5	S5B
dark-eyed junco	*Junco hyemalis*	G5	S5B

Appendix 6: continued .....

Common Name	Scientific Name	G Rank	S Rank
chestnut-sided warbler	*Dendroica pensylvanica*	G5	S5B
eastern meadowlark	*Sturnella magna*	G5	S5B
black-and-white warbler	*Mniotilta varia*	G5	S5B
bobolink	*Dolichonyx oryzivorus*	G5	S4B
grasshopper sparrow	*Ammodramus savannarum*	G4	S4
white-throated sparrow	*Zonotrichia albicollis*	G5	S5B
northern waterthrush	*Seiurus noveboracensis*	G5	S5B
black-throated blue warbler	*Dendroica caerulescens*	G5	S5B
golden-winged warbler	*Vermivora chrysoptera*	G4	S4B
orchard oriole	*Icterus spurius*	G5	SZB
Canada warbler	*Wilsonia canadensis*	G5	S5B
clay-colored sparrow	*Spizella pallida*	G5	S4B
magnolia warbler	*Dendroica magnolia*	G5	S5B
mourning warbler	*Oporornis philadelphia*	G5	S5B
ovenbird	*Seiurus aurocapillus*	G5	S5B
pine warbler	*Dendroica pinus*	G5	S5B
black-throated green warbler	*Dendroica virens*	G5	S5B
Savannah sparrow	*Passerculus sandwichensis*	G5	S5B
common grackle	*Quiscalus quiscula*	G5	S5B
purple finch	*Carpodacus purpureus*	G5	S5B
evening grosbeak	*Coccothraustes vespertinus*	G5	S5B
pine siskin	*Carduelis pinus*	G5	S5B

Table 1: Summary of Natural Area Features, Significant Features and Condition

This table represents an update of Table 4 in the Natural Areas Survey (1996 September, Volume 1 of 3). Classification abbreviations are as follows: SNS = Significant Natural Site, NS = Natural Site, NGS = Natural Greenspace, and RW = Residential Woodland. Native FQI and native mean C are defined in the Natural Areas Survey (1996 September, Volume 1 of 3). Definitions for provincially significant species (prov. sig. species) and regionally significant species (reg. sig. species) are in the Natural Areas Survey (1996 September, Volume 1 of 3) with updates as discussed in this report (section 2.4). See Appendix 6 for definitions of Credit Valley Conservation (CVC) Species of Conservation Interest. Condition is explained in Appendix 1 of the Natural Areas Survey (1996 September, Volume 2 of 3). Abbreviations used in this table are as follows: n/a = not available. ˆ Areas evaluated in 2000. ˜ Areas evaluated that changed between 1996 and 2000 (see Appendix 3 for a summary of the changes).

Site Number	Site Code	Classification	Designation	Area		Flora							Fauna					Condition
				(ha)	(acres)	total	# non-native (% non-native)	native FQI	native mean C	# vegetation communities	prov. sig. species	reg. sig. species	# birds	# mammals	# herptiles	prov. sig. species	CVC	
1	SD1	NS		19.35	47.78	96	27 (28.13%)	30.22	3.64	6		5	13	4	2			Fair
2	SD4	NS		26.59	65.67	65	14 (21.54%)	26.14	3.73	1		2						n/a
3	SD5	SNS		10.14	25.05	48	7 (14.58%)	28.74	4.49	3		3	3	1				Good
4	CL52	NGS		6.69	16.53	44	23 (52.27%)	15.21	3.4	1			11	1	2			Poor
5	CL1	SNS		3.59	8.86	48	7 (14.58%)	28.74	4.49	1		3	3	1				Good
6	CL9	SNS	ESA,ANSI, wetland	46.81	115.63	495	161 (32.53%)	79.83	4.37	13	1	130	200	22	21		8	Good
7	CL8	SNS	wetland	11.28	27.86	73	19 (26.03%)	22.94	3.15	8		5	14	10	1			Good
8	CL15	NS		0.83	2.05	46	9 (19.57%)	22.12	4.17	1		3	2	2				Fair
9	CL16	NS		8.52	21.04	147	44 (29.93%)	37.95	3.96	5		14	38	17			5	Fair-Poor
10	CL17	RW		33.48	82.70	71	14 (19.72%)			1		18			4			n/a
11	CL13	NS		8.42	20.79	61	34 (55.74%)	13.47	2.59	3		1	5					Poor
12	CL43	NS		4.15	10.26	71	12 (16.90%)	29.27	3.88	2		5	5	1				Fair-Poor
13	CL42	NS		8.88	21.93	115	33 (28.70%)	37.33	4.15	3		12	4	1				Fair-Poor
14	CL21	SNS	ESA,wetland	9.36	23.11	97	21 (21.65%)	38.91	4.49	3		20	2		1			Fair-Poor
15	CL39	SNS		12.90	31.87	266	76 (28.57%)	56.46	4.14	2		43	25	5	8			Fair
16	CL22	SNS	ESA,ANSI	17.78	43.92	134	46 (34.33%)	37.74	4.07	1	1	13	2	1	6			Good
17 ˜	CL30	SNS	ESA,ANSI	0.06	0.14	80	31 (38.75%)	28	4	1	1	20						Fair
18	CL31	SNS	ESA,ANSI	2.61	6.45	59	25 (42.37%)	19.32	3.36	1		2	4					Poor
19	CL24	SNS	ESA,ANSI	7.80	19.27	236	61 (25.85%)	59.23	4.5	4		37	10	1				Good
20	CL26	NS		4.76	11.75	178	65 (36.52%)	34.52	3.29	2		17	18	7				Fair

Table 1: continued .....

Site Number	Site Code	Classification	Designation	Area		Flora							Fauna					Condition
				(ha)	(acres)	total	# non-native (% non-native)	native FQI	native mean C	# vegetation communities	prov. sig. species	reg. sig. species	# birds	# mammals	# herptiles	prov. sig. species	CVC	
21	PC1	NS		1.09	2.68	92	45 (48.91%)	26.56	3.83	1		7	68	1				Poor
22	PC2	NGS		4.37	10.79	18	9 (50.00%)			1			5					Poor
23	PC3	NS		1.77	4.36	11	3 (27.27%)			1								n/a
24	CRR9	SNS	ESA,ANSI, wetland	25.63	63.30	37	14 (37.84%)	17.1	3.57	3		12	10	1	5			Fair
25	MI4	RW		153.28	378.61	28	16 (57.14%)			1		1						Fair
26	MI1	NS		6.31	15.59	9	4 (44.44%)			1			50					Fair
27	LV3	NS		3.55	8.76	83	33 (39.76%)	25.43	3.63	3		1	20	3				Fair
28	LV4	NS		1.09	2.68	44	25 (56.82%)	10.61	2.5	1		2	5					Poor
29	LV5	NGS		0.95	2.34					1								Poor
30	LV2	NS		2.09	5.17	26	10 (38.46%)	11.62	3	1			3					Poor
31	LV1	NS		14.22	35.12	93	37 (39.78%)	24.54	3.31	5		1	8					Fair
32	ETO8	SNS		16.67	41.17	86	33 (38.37%)	26.05	3.65	3		4	2	4	1			Fair
33	LV14	NGS		1.95	4.82	40	20 (50.00%)	13.76	3.16	1			1					Poor
34	LV6	NS		2.03	5.01	64	19 (29.69%)	25.48	3.84	1		4	1	1				Fair
35	LV7	SNS	ESA,ANSI, wetland	21.56	53.26	331	107 (32.33%)	62.84	4.25	2		61	67	7	5	1	3	Good
36	ETO7	SNS	ESA	21.14	52.29	96	36 (37.11%)	25.1	3.21	2		5	11	2	11	2	1	Fair
37	SP1	NS		9.04	22.34	108	25 (23.15%)	33.99	3.8	5		11	4	1				Fair
38	SP3	SNS		8.84	21.83	134	29 (21.64%)	41.09	4.05	5		11	5	2	1			Good
39	SH6	NS		6.44	15.91	80	37 (46.25%)	23.3	3.6	2		2	6	1				Poor
40 ⇌	CRR7	SNS	ESA,ANSI	88.94	219.69	92	23 (25.00%)	34.68	4.21	3	1	9	4	1	6			Good
41 ⇌	CRR8	SNS	ESA,ANSI, wetland	110.60	273.23	50	3 (6.00%)			4	1	30	8	1	4			Good
42 -	ER6	NS		1.31	3.24	46	18 (39.13%)	18.33	3.46	1			5	1				Poor
43 ⇌	CRR6	SNS	ESA,ANSI	213.22	526.64	281	91 (32.38%)	65.03	4.73	4	3	72	87	8	17	1	8	Good
44 -	CV1	NS		1.71	4.23	52	25 (48.08%)	14.05	2.7	2			6	1				Fair
45 -	CV2	RW		50.66	125.18	143	41 (28.67%)	41.71	4.19	1		10	6	1				Fair
46 -	CV12	NS		6.99	17.27	213	92 (43.19%)	38.34	3.5	3		16	4	1				Fair
47 -	CV10	NS		4.26	10.53	51	22 (43.14%)	15.04	2.79	2		1	6	1				Poor

Table 1: continued .....

Site Number	Site Code	Classification	Designation	Area		Flora							Fauna					Condition
				(ha)	(acres)	total	# non-native (% non-native)	native FQI	native mean C	# vegetation communities	prov. sig. species	reg. sig. species	# birds	# mammals	# herptiles	prov. sig. species	CVC	
48 -	CV8	NS		8.04	19.85	60	25 (41.67%)	15.72	2.66	4		2	7	2				Poor
49 -	ETO6	SNS		9.52	23.52					3								Poor
50 -	AW1	NS		7.98	19.71	75	28 (37.33%)	22.17	3.23	3		2	10	1				Poor
51	WB1	NS		7.12	17.58	53	9 (16.98%)	25.93	3.91	5			4		1			Fair
52	EM30	NS		5.57	13.75	52	5 (9.62%)	29.61	4.32	2		6	5	8				Good
53	EM6	NS		1.07	2.65	53	11 (20.75%)	25	3.86	1		1	6	1				Fair
54 -	EM2	NS		4.90	12.09	63	12 (19.05%)	28.85	4.04	1			8	1				Fair
55	EM10	NS		3.99	9.86	43	9 (20.93%)	21.78	3.74	2			4	2				Fair
56	EM14	NS		9.61	23.74	49	22 (44.90%)	15.4	2.96	2			4					Poor
57	EM4	SNS	ESA,ANSI	43.18	106.65	235	62 (26.38%)	56.28	4.3	8	2	31	67	5	6			Good-Fair
58	EM5	NS		1.87	4.63	49	17 (34.69%)	22.27	3.94	1			4					Fair
59	EM21	NS		1.13	2.80	42	8 (19.05%)	21.27	3.65	1			2	1				Fair
60	CR1	SNS	ESA	4.90	12.10	47	3 (6.38%)	29.55	4.45	2		6	2	1				Fair
61 -	FV1	NS		2.11	5.22	54	11 (20.37%)	22.72	3.47	1		2	2					Fair
62 -	FV3	NS		6.76	16.71	100	39 (39.00%)	27.69	3.52	3			16	2				Fair
63 -	CC1	NS		3.18	7.84	145	49 (33.79%)	36.84	3.76	1		9	10	1				Fair
64 ➔	MY1	NS		13.44	33.24	133	42 (31.58%)	36.36	3.85	2		7	9	1				Fair
65 ➔	MY3	NGS		3.71	9.16	41	26 (63.41%)	6.68	1.79	1		1						Poor
66 -	AW4	NS		11.71	28.92	42	28 (66.67%)	8.29	2.21	1		2	3					Poor
67 -	AW3	NGS		7.92	19.57	52	30 (57.69%)	13.22	2.82	2			8	1				Poor
68 -	ETO5	SNS		9.12	22.56	53	32 (60.38%)	10.91	2.38	2		2	8	1				Poor
69 ➔	ETO4	SNS	ESA	58.00	143.27	141	36 (25.53%)	43.93	4.31	3		15	24	3	5		2	Fair
70 ➔	RW5	NS		3.51	8.68	54	26 (48.15%)	13.66	2.63	1		2	7	1				Poor
71 ➔	RW6	NS		7.31	18.06	51	28 (54.90%)	14.28	3.05	1		1	11	1				Poor
72 -	RW4	NS		1.09	2.68	44	7 (15.91%)	24.99	4.11	1			7	1				Fair
73 ➔	RW1	SNS		2.11	5.21	69	12 (17.39%)	34.04	4.51	1		3		1				Fair

Table 1: continued .....

Site Number	Site Code	Classification	Designation	Area		Flora							Fauna					Condition
				(ha)	(acres)	total	# non-native (% non-native)	native FQI	native mean C	# vegetation communities	prov. sig. species	reg. sig. species	# birds	# mammals	# herptiles	prov. sig. species	CVC	
74 ˜	RW2	NGS		3.90	9.63	34	20 (58.82%)	9.89	2.64	1			4					Poor
75	CM7	SNS		11.38	28.12	88	18 (20.45%)	34.78	4.16	3		3	15	1	5			Excellent
76	CM9	NS		3.37	8.34	62	12 (19.35%)	27.58	3.9	2		3	8	2				Good
77	CM11	NS		2.24	5.53	22	1 (4.55%)	18.33	4	1			1					Good
78	CM12	NS		8.21	20.28	76	15 (19.74%)	29.96	3.84	2		3	14	5	6			Good
79	CM17	NS		8.39	20.71	25	4 (16.00%)	16.8	3.67	1			5					Fair
80	CM13	NGS		0.77	1.91	37	14 (37.84%)	16.26	3.39	1			1	1				Poor
81	CE7	SNS		10.08	24.90	88	28 (31.82%)	30.47	3.93	2		4	2	1	7			Good
82	CE9	NS		4.83	11.94	76	16 (21.05%)	32.29	4.2	3		5	10	2				Fair
83	CE10	SNS		18.20	44.95	99	19 (19.19%)	37.9	4.24	3		9	13	2	2			Good-Fair
84	CE5	NGS		5.47	13.50	13	8 (61.54%)	2.68	1.2	1								Poor
85	CE1	NGS		16.93	41.82	50	23 (46.00%)			2			3		5			Poor
86	CE12	NS		17.62	43.51	91	38 (41.76%)	22.19	3.08	2		1	13	3	1			Fair
87	CRR5	SNS		21.22	52.41	64	26 (40.63%)	21.37	3.51	2			5		1			Fair
88	CRR4	SNS	ESA,ANSI	24.69	60.97	11	2 (18.18%)			3		1			7			Good
89	SV12	NS		1.72	4.25	91	38 (41.76%)	22.19	3.08	1		1	13	3	1			Fair
90	SV10	NGS		3.93	9.71	29	13 (44.83%)	9.55	2.47	1			1		1			Poor
91	SV1	NS		4.63	11.44	94	21 (22.34%)	34.77	4.1	2		5	9	2				Fair
92	CRR3	SNS		68.94	170.28	74	25 (33.78%)	25.26	3.65	4		3	7		8			Fair
93	CRR2	SNS	ESA,ANSI	91.29	225.50	100	30 (30.00%)	32.99	3.97	8		2	14		10			Good
94	EC22	NS		2.32	5.73	72	9 (12.50%)	30.62	3.86	1		6	4	1				Fair-Poor
95	EC10	REMOVED		0.00	0.00	46	10 (21.74%)	19.98	3.53	2		1	2					REMOVED
96	EC13	SNS	wetland	4.61	11.39	168	27 (16.07%)	53.01	4.5	4		65	86	6	11		12	Excellent
97	EC1	SNS	ESA,wetland	2.63	6.50	10	4 (40.00%)	4.9	2	1		1	6		2			Poor
98	HO1	NS		1.20	2.97	23	5 (21.74%)	17.44	4.11	1			3	1				Fair-Poor
99	HO2	REMOVED		0.00	0.00	24	3 (12.50%)	18.77	4.1	2			3					REMOVED
100	HO3	NS		14.41	35.59	56	10 (17.86%)	25.79	3.84	3			12	2				Fair
101	HO6	NGS		8.50	21.00					1								Poor
102	HO7	NS		2.11	5.21	72	15 (20.83%)	29.13	3.89	2		4	6					Fair-Poor

Table 1: continued .....

Site Number	Site Code	Classification	Designation	Area		Flora							Fauna					Condition
				(ha)	(acres)	total	# non-native (% non-native)	native FQI	native mean C	# vegetation communities	prov. sig. species	reg. sig. species	# birds	# mammals	# herptiles	prov. sig. species	CVC	
103	HO9	SNS	ESA	11.94	29.48	204	53 (25.98%)	51.2	4.19	1		22	17	2	1			Good-Poor
104	NE4	NS		13.43	33.17	106	19 (17.92%)	34.31	3.68	5		9	8					Excellent
105	NE3	NGS		2.59	6.40	29	10 (34.48%)			2								Poor
106	NE2	REMOVED		0.00	0.00	55	10 (18.18%)	28.49	4.3	1		4	5					REMOVED
107	NE1	NGS		0.95	2.35	62	26 (41.94%)	17	2.83	1			4					Fair
108	NE6	NS		4.34	10.72	60	15 (25.00%)	24.27	3.66	2		1	4	1				Good
109	NE5	NGS		12.75	31.50					1								Poor
110	NE7	NGS		2.76	6.82					1								Poor
111	ETO3	SNS		112.22	277.18	400	165 (41.25%)	56.47	3.7	4	1	58	7	5	5		3	Fair-Poor
112	NE8	NGS		6.25	15.45					1								Poor
113	NE10	NGS		8.27	20.42					1								Poor
114	NE11	NGS		5.72	14.13					1								Poor
115	NE12	NGS		6.49	16.02					1								Poor
116	ETO2	SNS		13.01	32.14	20	12 (60.00%)	3.54	1.25	1			2	1				Poor
117	ETO1	SNS		9.13	22.55	37	10 (27.03%)	15.3	3	4		1	3	1				Fair-Poor
118	NE9	NS		43.66	107.84	67	26 (38.81%)	20.55	3.25	4		5	12	1	1			Fair
119	LS1	SNS	wetland	28.92	71.42	63	14 (22.22%)	27.14	3.88	3		6	4					Good-Poor
120	LS2	NS		1.27	3.13	45	13 (28.89%)	22.09	3.97	1			2					Fair
121	LS3	NS		3.00	7.40	66	22 (33.33%)	23.94	3.65	2		2	1	1	2			Fair
122	ME10	SNS		4.18	10.33	55	15 (27.27%)	24.67	3.9	1		2	4					Fair
123	ME12	NGS		2.90	7.16	49	27 (55.10%)	12	2.62	1			7	2	7			Poor
124	ME11	NGS		4.36	10.78	51	22 (43.14%)	16.17	3.11	1		3	5	2	4			Poor
125	ME9	NS		2.39	5.90	44	11 (25.00%)	25.59	4.45	1		2	2	1				Fair
126	ME8	SNS		5.82	14.38	88	24 (27.27%)	30.25	3.78	1		4	3	3	4			Fair
127	MB9	NGS		6.60	16.31					1					2			Poor
128	MB7	NGS		10.45	25.80					1								Poor
129	MB8	SNS		10.17	25.11	88	24 (27.27%)	30.25	3.78	2		4	3	3	4			Fair
130	MB3	NGS		7.11	17.55					1					1			Poor
131	MB5	NS		0.90	2.22	42	5 (11.90%)	23.67	3.89	1								Poor

Table 1: continued .....

Site Number	Site Code	Classification	Designation	Area		Flora							Fauna					Condition
				(ha)	(acres)	total	# non-native (% non-native)	native FQI	native mean C	# vegetation communities	prov. sig. species	reg. sig. species	# birds	# mammals	# herptiles	prov. sig. species	CVC	
132	MB4	NS		1.94	4.78	40	11 (27.50%)	19.31	3.59	1								Poor
133	MB6	SNS		23.76	58.68	84	14 (16.67%)	30.7	3.7	2		6	1	1	2			Good
134	MB2	NS		1.34	3.31	41	6 (14.63%)	23.66	4	1		1	1					Poor
135	MB1	NS		0.94	2.33	34	6 (17.65%)	22.87	4.32	1								Fair
136	MV19	SNS		22.66	55.96	207	53 (25.60%)	52.06	4.19	3		30	20	6	4			Good
137	CRR1	SNS	ESA	71.40	176.36	76	23 (30.26%)	26.65	3.66	5		5	6	2	1			Fair
138	MV18	NS		3.14	7.76	19	1 (5.26%)			2		1	2					Fair
139 ¯	MV2	SNS	ESA,ANSI	78.38	194.61	215	68 (31.63%)	47.59	3.94	4		19	59	12	2		6	Good-Fair
140 ¯	MV3	NS		2.11	5.20	57	17 (29.82%)	23.4	3.7	1			6	2				Fair
141 ¯	MV12	NS		11.08	27.41	121	35 (28.93%)	36.23	3.91	3		7	8	4				Fair
142	MV14	NGS		4.56	11.25					1								Poor
143	MV11	NS		2.90	7.17	24	4 (16.67%)	17.44	3.9	1			1					Fair
144	MV15	NS		10.70	26.44	53	24 (45.28%)	14.74	2.79	2		1	7	1				Poor
145	GT1	NS		1.95	4.82	41	10 (24.39%)	18.5	3.32	1		1	2					Fair
146	GT2	NS		7.20	17.78	56	10 (17.86%)	26.24	3.87	6		6	9	3	1			Good
147	GT3	NS		2.67	6.59	43	11 (25.58%)	19.04	3.42	2		1	1					Fair
148	GT4	SNS	ESA	4.16	10.27	204	53 (25.98%)	51.2	4.19	1		22	17	2	1			Good-Poor
149	MA1	NS		24.06	59.42	50	24 (48.00%)	14	2.8	1		3	2					Poor
150	SD7	NGS		2.01	4.97	34	16 (47.06%)			2				1				Poor
151 ¯	MI17	SNS		6.04	14.92	145	44 (30.34%)	42.2	4.22	2		15	5	2	3			Fair
152	MI7	SNS		5.95	14.69	125	38 (30.40%)	39.9	4.3	2		7	1	4				Poor
153 ¯	CV6	NS		2.71	6.69	57	13 (22.81%)	20.8	3.14	1		1	2	1				Fair

Table 2: Comparison of Natural Area Classes for the City of Mississauga Between 1996 and 2000

Classification	Number of Sites				Total Area (ha)				Total Area (acres)				Proportion of Natural Areas System				Proportion of the City			
	1996	1998	1999	2000	1996	1998	1999	2000	1996	1998	1999	2000	1996	1998	1999	2000	1996	1998	1999	2000
Significant Natural Site (SNS)	51	45	46	45	1530.17	1423.39	1425.44	1416.56	3779.52	3517.15	3522.33	3499.98	74%	70%	70%	70%	5.23%	4.91%	4.87%	4.84%
Natural Site (NS)	59	64	68	70	349.92	426.35	445.66	456.57	864.30	1053.50	1101.25	1127.75	17%	21%	22%	23%	1.2%	1.41%	1.52%	1.56%
Natural Green Space (NGS)	31	31	28	27	197.05	171.55	160.18	148.86	486.71	423.89	395.81	367.69	9%	9%	8%	7%	0.67%	0.60%	0.55%	0.51%
Residential Woodland (RW)	3	3	3	3	252	252	239.93	237.42	621.67	621.67	592.88	586.49	-	-	-	-	-	-	-	-
TOTAL	144	143	145	145	2329.14	2273.29	2271.21	2259.41	5752.20	5616.21	5612.27	5580.91	100%	100%	100%	100%	7.10%	6.92%	6.94%	6.91%

* NOTE: Residential Woodlands were not used in the calculations for proportion of natural areas system or proportion of the City.

Table 3: Comparison of Natural Areas by Major Landform Type Between 1996 and 2000

Landform Type	No. of Sites				Size (ha)				Size (acres)				Mean Size (ha)				Mean Size (acres)				Proportion of Natural Area System				Proportion of entire City			
	1996	1998	1999	2000	1996	1998	1999	2000	1996	1998	1999	2000	1996	1998	1999	2000	1996	1998	1999	2000	1996	1998	1999	2000	1996	1998	1999	2000
valleylands and associated tablelands	73	73	76	76	1626.3	1588	1622.1	1594.8	4017	3923.9	4008.2	3939.2	22.3	21.8	21.3	20.2	55.0	53.7	52.7	49.9	78.3%	78.5%	79.9%	79.1%	5.6%	5.43%	5.55%	5.45%
tablelands	60	59	58	58	339.9	328.5	301.6	319.7	839.5	811.6	745.3	789.5	5.7	5.6	5.2	5.3	14.0	13.8	12.9	13.2	16.4%	16.2%	14.8%	15.8%	1.16%	1.12%	1.03%	1.09%
wetlands and associated valleyland	6	6	6	6	103.7	100.4	100.3	100.3	256.1	248.1	247.9	247.8	17.3	16.7	16.7	16.7	42.7	41.3	41.3	41.3	5.0%	5.0%	4.9%	4.9%	0.36%	0.34%	0.34%	0.34%
TOTAL *	139	138	140	140	2069.9	2016.9	2024.0	2014.7	5112.6	4983.6	5001.5	4976.5	-	-	-	-	-	-	-	-	99.7%	99.7%	99.7%	99.8%	7.1%	6.9%	6.92%	6.88%

* NOTE: two small areas that did not readily fall into these three categories and the residential woodlands were omitted from this analysis so figures differ slightly from those provided elsewhere in the report.

Table 4: A Comparison of the Vegetation Communities Mapped for the City of Mississauga in 1996 and 2000

(grouped according to six broad categories), their areas, their proportion of the total vegetation area and their proportion of the total City area [communities are based on classifications of Bakowsky (1995) and Kavanaugh and McKay-Kuja (1992) see 1996 September, Volume 1 of 3]. See Appendix 5 for a comparison of the vegetation communities with the Ecological Land Classification (Lee *et al.* 1998).

Code	Vegetation Community	# Occurrences				Area								Proportion of Natural Areas (%)				Proportion of City Area (%)			
		1996	1998	1999	2000	1996		1998		1999		2000		1996	1998	1999	2000	1996	1998	1999	2000
						(ha)	(acres)	(ha)	(acres)	(ha)	(acres)	(ha)	(acres)								
	Valleylands																				
A	wooded slope	19	20	20	20	347.36	857.98	348.54	861.23	348.72	861.70	340.69	841.84	14.92	15.33	15.35	15.08	1.19	1.19	1.19	1.16
B	floodplain	22	21	21	21	458.42	1132.30	426.21	1053.15	426.10	1052.91	426.10	1052.89	19.69	18.75	18.76	18.86	1.57	1.46	1.46	1.46
G	golf course	4	4	4	4	101.18	249.91	101.19	250.04	101.19	250.05	101.13	249.89	4.35	4.45	4.45	4.48	0.35	0.35	0.35	0.35
J	wooded non-native valleylands	18	18	20	20	93.43	230.77	94.36	233.16	100.27	247.77	100.22	247.64	4.01	4.15	4.42	4.44	0.32	0.32	0.32	0.34
K	open with open slopes valleylands	31	32	33	33	229.02	565.68	210.58	520.34	217.50	537.45	217.62	537.74	9.84	9.26	9.58	9.63	0.78	0.72	0.74	0.74
L	wooded native valleylands	5	5	5	5	39.77	98.23	39.78	98.29	39.64	97.95	39.64	97.95	1.71	1.75	1.75	1.75	0.14	0.14	0.14	0.14
M	open with wooded slopes valleylands	2	2	2	2	5.26	12.99	5.25	12.97	5.25	12.97	5.25	12.97	0.23	0.23	0.23	0.23	0.02	0.02	0.02	0.02
N	open with manicured slopes valleylands	2	2	3	2	22.16	54.74	22.15	54.73	22.15	54.73	22.15	54.73	0.95	0.97	0.97	0.98	0.08	0.08	0.08	0.08
O	manicured with wooded slopes valleylands	1	1	1	1	5.17	12.77	5.17	12.77	5.17	12.77	5.17	12.77	0.22	0.23	0.23	0.23	0.02	0.02	0.02	0.02
	Totals					1301.77	3215.37	1253.23	3096.68	1265.99	3128.30	1257.98	3108.42	55.92	55.12	55.74	55.68	4.47	4.30	4.32	4.30
	Woodlands																				
BB	red ash-American elm forest	14	15	15	15	35.32	87.24	35.61	87.99	37.35	92.29	37.16	91.82	1.52	1.57	1.64	1.64	0.12	0.12	0.12	0.13
CC	sugar maple forest	7	7	7	7	14.79	36.53	13.12	32.42	13.12	32.42	13.12	32.42	0.64	0.58	0.58	0.58	0.05	0.04	0.04	0.04
DD	sugar maple-American beech forest	15	16	16	17	108.35	267.62	102.44	253.13	100.07	247.28	100.07	247.28	4.65	4.51	4.41	4.43	0.37	0.35	0.34	0.34
EE	sugar maple-white ash forest	9	9	9	9	63.06	155.76	62.18	153.64	62.18	153.64	61.73	152.53	2.71	2.74	2.74	2.73	0.22	0.21	0.21	0.21
FF	sugar maple-red oak forest	10	10	10	9	42.48	104.93	44.96	111.09	44.96	111.09	43.12	106.55	1.82	1.98	1.98	1.91	0.15	0.15	0.15	0.15
GG	sugar maple-eastern hemlock forest	1	1	1	1	16.03	39.59	16.07	39.71	16.07	39.71	16.07	39.71	0.69	0.71	0.71	0.71	0.05	0.05	0.05	0.05
II	sugar maple-black cherry forest	1	1	1	1	1.93	4.77	1.94	4.79	1.94	4.79	1.94	4.79	0.08	0.08	0.08	0.09	0.01	0.01	0.01	0.01
KK	sugar maple-American beech-	5	5	5	5	29.46	72.77	29.46	72.77	29.46	72.77	29.46	72.77	1.27	1.30	1.30	1.30	0.1	0.1	0.1	0.1

Table 4: A Comparison of the Vegetation Communities Mapped for the City of Mississauga in 1996 and 2000

(grouped according to six broad categories), their areas, their proportion of the total vegetation area and their proportion of the total City area [communities are based on classifications of Bakowsky (1995) and Kavanaugh and McKay-Kuja (1992) see 1996 September, Volume 1 of 3]. See Appendix 5 for a comparison of the vegetation communities with the Ecological Land Classification (Lee *et al.* 1998).

Code	Vegetation Community	# Occurrences				Area								Proportion of Natural Areas (%)				Proportion of City Area (%)			
		1996	1998	1999	2000	1996		1998		1999		2000		1996	1998	1999	2000	1996	1998	1999	2000
						(ha)	(acres)	(ha)	(acres)	(ha)	(acres)	(ha)	(acres)								
	red oak forest																				

Table 4: continued .....

Code	Vegetation Community	# Occurrences				Area								Proportion of Natural Areas (%)				Proportion of City Area (%)			
		1996	1998	1999	2000	1996		1998		1999		2000		1996	1998	1999	2000	1996	1998	1999	2000
						(ha)	(acres)	(ha)	(acres)	(ha)	(acres)	(ha)	(acres)								
LL	sugar maple-American beech-eastern hemlock forest	1	1	1	1	4.44	10.97	4.45	11.00	4.44	10.97	4.45	10.97	0.19	0.20	0.19	0.20	0.02	0.02	0.02	0.02
MM	white pine-eastern hemlock-sugar maple forest	1	1	1	1	6.77	16.72	6.77	16.72	5.69	14.06	5.69	14.06	0.29	0.30	0.25	0.25	0.02	0.02	0.02	0.02
NN	eastern hemlock forest	3	3	3	3	4.09	10.10	4.11	10.16	4.11	10.16	4.11	10.16	0.18	0.18	0.18	0.18	0.01	0.01	0.01	0.01
OO	red maple-red oak forest	5	6	6	6	30.24	74.69	30.24	74.69	30.42	74.69	30.42	74.69	1.30	1.33	1.33	1.35	0.10	0.10	0.10	0.10
PP	American beech forest	1	1	1	1	2.56	6.32	2.56	6.32	2.56	6.32	2.56	6.32	0.11	0.11	0.11	0.11	0.01	0.01	0.01	0.01
QQ	bur oak-American beech forest	1	1	1	1	2.24	5.53	2.24	5.53	2.24	5.53	2.24	5.53	0.10	0.10	0.10	0.10	0.01	0.01	0.01	0.01
RR	oak-ash forest	8	9	9	10	28.61	70.67	28.57	70.60	24.75	61.16	27.34	67.56	1.23	1.26	1.09	1.21	0.10	0.10	0.10	0.09
SS	oak-hickory forest	5	7	7	7	24.20	59.77	23.56	58.22	23.55	58.19	23.31	57.60	1.04	1.04	1.04	1.03	0.08	0.08	0.08	0.08
TT	ash-hickory forest	3	3	3	3	6.94	17.14	6.68	16.51	6.68	16.51	6.68	16.51	0.30	0.29	0.29	0.30	0.02	0.02	0.02	0.02
VV	black cherry-eastern hemlock-white ash forest	1	1	1	1	2.02	4.99	2.03	5.02	2.03	5.02	2.03	5.02	0.09	0.09	0.09	0.09	0.01	0.01	0.01	0.01
WW	bur oak-black walnut forest	1	1	1	1	0.90	2.22	0.90	2.22	0.90	2.22	0.90	2.22	0.04	0.04	0.04	0.04	0.00	0.00	0.00	0.00
ZZ	oak-white pine forest	0	0	2	2	0	0	0	0	2.35	5.81	2.35	5.81	0.00	0.00	0.1	0.10	0.00	0.00	0.00	0.01
	Totals					424.43	1048.33	417.89	1032.53	414.87	1025.14	414.73	1024.80	18.25	18.41	18.25	18.36	1.45	1.41	1.40	1.42
	Successional																				
C	old field	26	27	27	27	88.45	218.47	95.33	235.56	95.33	235.56	95.30	235.49	3.80	4.19	4.19	4.22	0.30	0.33	0.33	0.33
D	hedgerow	5	5	4	4	7.68	18.97	7.01	17.32	6.95	17.17	6.95	17.17	0.33	0.31	0.31	0.31	0.03	0.02	0.02	0.02
E	early successional forest	9	10	10	10	21.68	53.55	14.66	36.22	14.66	36.22	12.82	31.68	0.93	0.65	0.65	0.57	0.07	0.05	0.05	0.04
P	hawthorn thicket	4	4	4	4	14.54	35.91	14.35	35.46	14.35	35.46	14.35	35.45	0.62	0.63	0.63	0.64	0.05	0.05	0.05	0.05
XX	birch forest	1	1	1	1	0.46	1.14	0.46	1.14	0.46	1.14	0.46	1.14	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00
YY	poplar forest	1	2	2	2	2.37	5.85	1.69	4.18	1.69	4.18	1.69	4.18	0.10	0.07	0.07	0.07	0.01	0.01	0.01	0.01
	Totals					135.18	333.89	133.50	329.88	133.44	329.73	131.56	325.08	5.80	5.87	5.87	5.82	0.46	0.46	0.46	0.46
	Wetland																				
V	cattail marsh	13	14	14	14	27.73	68.49	26.99	66.69	26.99	66.69	26.99	66.69	1.19	1.19	1.19	1.19	0.09	0.09	0.09	0.09
W	open water marsh	6	6	6	6	22.70	56.07	22.70	56.07	22.70	56.07	22.70	56.07	0.97	1.00	1.00	1.00	0.08	0.08	0.08	0.08
X	willow-buttonbush swamp thicket	1	1	1	1	2.77	6.84	2.77	6.84	2.77	6.84	2.77	6.84	0.12	0.12	0.12	0.12	0.01	0.01	0.01	0.01
Y	wet meadow	1	3	3	3	3.43	8.47	3.72	9.19	3.72	9.19	3.72	9.19	0.15	0.16	0.16	0.16	0.01	0.01	0.01	0.01

Table 4: continued .....

Code	Vegetation Community	# Occurrences				Area								Proportion of Natural Areas (%)				Proportion of City Area (%)			
		1996	1998	1999	2000	1996		1998		1999		2000		1996	1998	1999	2000	1996	1998	1999	2000
						(ha)	(acres)	(ha)	(acres)	(ha)	(acres)	(ha)	(acres)								
Z	willow-ash forest	2	2	2	2	0.55	1.36	0.56	1.38	0.56	1.38	0.56	1.38	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00
AA	silver maple forest	5	5	5	5	18.59	45.92	18.14	44.82	18.14	44.82	17.58	43.44	0.80	0.80	0.80	0.78	0.06	0.06	0.06	0.06
	Totals					75.77	187.15	74.88	184.99	74.88	184.99	74.32	183.64	3.25	3.29	3.29	3.29	0.25	0.25	0.25	0.25
	Anthropogenic																				
F	manicured	11	11	11	12	72.41	178.85	75.16	185.71	75.16	185.71	76.28	188.49	3.11	3.31	3.31	3.38	0.25	0.26	0.26	0.26
H	urban lake	2	2	2	2	7.26	17.93	7.26	17.93	7.26	17.93	7.26	17.93	0.31	0.32	0.32	0.32	0.02	0.02	0.02	0.02
I	wooded residential	3	3	3	3	251.59	621.43	251.59	621.67	239.93	592.88	237.43	586.69	10.81	11.07	10.56	10.51	0.86	0.86	0.82	0.81
T	plantation	11	11	11	13	21.58	53.30	21.57	53.30	21.60	53.37	21.73	53.69	0.93	0.95	0.95	0.96	0.07	0.07	0.07	0.07
UU	black walnut grove	1	1	1	1	0.17	0.42	0.17	0.42	0.17	0.42	0.17	0.42	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
	Totals					353.01	871.93	355.75	879.03	344.12	850.31	342.87	847.23	15.17	15.66	15.15	15.18	1.20	1.21	1.17	1.17
	Other																				
R	beach	3	3	4	4	2.36	5.83	1.96	4.84	2.18	5.39	2.18	5.39	0.10	0.09	0.10	0.10	0.01	0.01	0.01	0.01
S	tall grass prairie	1	1	1	1	0.06	0.15	0.06	0.15	0.06	0.15	0.06	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
U	unknown	5	3	3	3	35.65	88.06	35.64	88.06	35.68	88.17	35.68	88.17	1.53	1.57	1.57	1.57	0.12	0.12	0.12	0.12
	Totals					38.07	94.04	37.66	93.05	37.92	93.71	37.92	93.71	1.63	1.66	1.67	1.67	0.13	0.13	0.13	0.13

Appendix 2: Fieldwork Identified for Natural Areas and Date Completed

Fieldwork identified for natural areas based on aerial photograph interpretation and literature review. Natural Areas are grouped into categories based on the type of change identified either within or adjacent to the natural area. Fieldwork indicates the type of visit the natural area received, a field visit or a road side visit (see section 2.2 for an explanation). Ownership indicates whether the natural area is privately owned and therefore required access permission or whether it was a City owned site (*i.e.*, parkland or greenbelt).

Natural Area	Impacts (Based on Review of Aerial Photographs and Literature)	Fieldwork	Ownership	Date Completed
Minor Development Adjacent to Natural Areas				
ETO4	development on east side of Etobicoke Creek south of Eglinton Avenue East	fieldwork	parkland	14/08/00
RW1	parking lot addition adjacent to western edge	fieldwork	no access	-
ER6	townhouse development to the north	fieldwork	parkland/private	03/08/00
Major Development Adjacent to Natural Areas				
FV1	new development to the north and south	fieldwork	parkland	24/07/00
FV3	new development to the west	fieldwork	parkland	24/07/00
MV2	new residential development south of Derry Road West, west of Hurontario Street	road visit	private	24/07/00
Minor Development Within Natural Areas				
NE3	development within natural area associated with industry and sports arena	road visit	greenbelt	14/08/00
CC1	possible swimming pool addition north of Burnhamthorpe Road	fieldwork	parkland	24/07/00
CV10	parking lot expansion north of the Queensway	fieldwork	parkland	03/08/00
CV8	development at north end and apartment building at south end of natural area	fieldwork	parkland	03/08/00
Major Development Within Natural Areas				
NE2	natural area removed	road visit	private	14/08/00
MV3	Mavis Road extension; this area is the subject EIS that says nothing is to remain within the new development	road visit	private	24/07/00
ETO5	installation of twin trunk sewer in Fleetwood Park and Markland Wood Golf and Country Club south of Burnhamthorpe Road East along Etobicoke Creek	fieldwork	parkland/private	14/08/00

Appendix 2: continued .....

Natural Area	Impacts (Based on Review of Aerial Photographs and Literature)	Fieldwork	Ownership	Date Completed
ETO6	installation of twin trunk sewer in Markland Wood Golf and Country Club south of Bloor Street along Etobicoke Creek	road visit	private	14/08/00
CV2	new developments along Stavebank Road and Grange Drive, evaluate natural area statis for Still Meadow Park and Gordon Park	fieldwork	parkland/private	03/08/00
No Change				
NE1	no change, tableland woodlot not visited since 1995	fieldwork	private	05/09/00
NE4	no change, tableland woodlot not visited since 1995	fieldwork	private	05/09/00
AW1	no change	road visit	parkland	14/08/00
AW3	no change	road visit	parkland	14/08/00
AW4	no change	road visit	parkland	14/08/00
RW5	no change, visited in 1999	road visit	parkland	24/07/00
RW6	no change, visited in 1999	road visit	parkland	24/07/00
RW2	transportation and works (Cooksville Creek)	fieldwork	parkland	24/07/00
MY1	no change, visited in 1999	road visit	parkland	24/07/00
MY3	no change, visited in 1999	road visit	parkland	24/07/00
CV1	no change, tableland woodlot not visited since 1995	fieldwork	parkland	03/08/00
CV12	no change, look at possible expansion along Cooksville Creek to the west	fieldwork	parkland	03/08/00
CRR6	Transportation and Works (Conliffe Court) investigated in 1999	road visit	parkland	03/08/00
CRR7	Transportation and Works (Loyalist Creek at Mississauga Road) investigated in 1999	road visit	greenbelt/private	03/08/00
CRR8	Transportation and Works (Shardawn Creek)	no access	greenbelt/private	-
CL30	Community Services Work	fieldwork	parkland	05/09/00

Appendix 2: continued .....

Natural Area	Impacts (Based on Review of Aerial Photographs and Literature)	Fieldwork	Ownership	Date Completed
Proposed Development No Change on Aerial Photograph				
MV12	proposed development adjacent to and within MV12	road visit	private	24/07/00
Possible Expansion to Natural Areas				
RW4	appears to be regeneration occurring along edges of natural area	fieldwork	parkland	24/07/00

Appendix 4: Comparison of Changes at Natural Areas Between 1996 and 2000

Blank cells represent no change from the previous year. Abbreviations as follows: SNS = Significant Natural Site, NS = Natural Site, NGS = Natural Green Space, Increase = ↑, Decrease = ↓. Native FQI and native mean coefficient as well as definitions for provincially and regionally significant species are defined in the Natural Areas Survey (1996 September, Volume 1 of 3). Condition is explained in the Natural Areas Survey (1996 September, Volume 1 of 3). See Section 4.4 for a discussion of Credit Valley Conservation (CVC) Species of Conservation Interest.

Site #	Site Code	Year	Classification	Designation	Area		Flora							Fauna					Condition
					(ha)	(acres)	total	# non-native (proportion)	native FQI	native mean C	# veg. comm.	prov. sig. species	reg. sig. species	# birds	# mammals	# herptiles	prov. sig. species	CVC	
6	CL9	96	SNS	ESA,ANSI,wetland	46.89	115.82	491	156 (31.4%)	80.1	4.38	13	2	125	200	23	22	1	0	Good
		98					↑ 496	↑ 161 (32.3%)				↓ 0	↑ 132						
		99					↑ 495		↓ 79.83	↓ 4.37			↑ 131						
		00			↓ 46.81	↓ 115.63						↑ 1	130		↓ 22	↓ 21	↓ 0	↑ 8	
9	CL16	96	NS		8.52	21.04	119	33 (26.9%)	37.63	4.06	5	0	11	37	16	0	0		Fair-Poor
		98					↑ 134	↑ 42 (30.6%)	↑ 38.47	↓ 4.01			↑ 13	↑ 38	↑ 17				
		99					↑ 138	↑ 46 (33.3%)	↑ 37.95	↓ 3.96			↑ 14						
		00					↑ 147	↓ 44 (29.93%)										↑ 5	
17	CL30	96	SNS	ESA,ANSI	0.06	0.15	24	8 (33.3%)	n/a	n/a	1	2	11	0	0	0	0	0	Poor
		98					↑ 46	↑ 16 (34.8%)	25.56	4.67		↓ 1							↑ Fair-Poor
		99					↑ 51	↑ 18 (35.3%)	↓ 25.29	↓ 4.58			↑ 14						↑ Fair
		00					↑ 80	↑ 31 (38.75%)	↑ 28	↓ 4			↑ 20						
26	MI1	96	NS		6.31	15.59	9	5 (44.4%)	0	0	1	0	0	0	0	0	0	0	Fair
		98																	
		99																	
		00						↓ 4 (44.44%)						↑ 50					
35	LV7	96	SNS	ESA,ANSI	21.56	53.25	292	101 (33.9%)	57.67	4.17	2	0	46	65	6	3	1	0	Good
		98					↑ 300	↑103 (34.0%)	↑ 58.71	↑ 4.18			↑ 49	↑ 68	↑ 7	↑ 5			
		99		↑ESA,ANSI,wetland			↑ 331	↑110 (33.2%)	↑ 62.84	↑ 4.25			↑ 60						
		00						↓ 107 (32.33%)				↑ 61	↓ 67				↑ 3		
36	ETO7	96	SNS	ESA	27.18	67.13	84	35 (39.3%)	21.39	3.04	2	0	2	11	2	11	2	0	Fair
		98																	
		99			↑ 27.36	↑ 67.59	↑ 96	35 (36.5%)	↑ 25.1	↑ 3.21			↑ 4						
		00			↓ 21.14	↓ 52.29		↑ 36 (37.11)					↑ 5					↑ 1	

Appendix 4: continued .....

Site #	Site Code	Year	Classification	Designation	Area		Flora							Fauna					Condition
					(ha)	(acres)	total	# non-native (proportion)	native FQI	native mean C	# veg. comm.	prov. sig. species	reg. sig. species	# birds	# mammals	# herptiles	prov. sig. species	CVC	
42	ER6	96	SNS		1.56	3.85	36	13 (36.1%)	16.26	3.39	1	1	0	1	0	0	0	0	Poor
		98																	
		99																	
		00	↓ NS		↓ 1.31	↓ 3.24	↑ 46	↑ 18 (39.13%)	↑ 18.33	↑ 3.46		↓ 0		↑ 5	↑ 1				
43	CRR6	96	SNS	ESA,ANSI	213.66	527.74	269	88 (32.3%)	63.63	4.73	4	4	65	87	8	17	1	0	Good
		98			↓ 213.22	↓ 526.86	↑ 277	↑ 91 (32.5%)	↑ 64.67	↑ 4.74		↓ 3	↑ 73						
		99					↑ 281	↑ 92 (32.7%)	↑ 65.03	4.73			↑ 72						
		00						↓ 91 (32.38%)										↑ 8	
44	CV1	96	NS		1.48	3.66	29	9 (31.0%)	13.86	3.1	1	0	0	5	1	0	0	0	Fair
		98																	
		99																	
		00			↑ 1.71	↑ 4.23	↑ 52	↑ 25 (48.08%)	↑ 14.05	↓ 2.7	↑ 2			↑ 6					
45	CV2	96	RW		53.17	131.33	143	43 (29.6%)	41.71	4.19	1	0	12	6	1	0	0	0	Fair
		98											↓ 10						
		99																	
		00			↓ 50.66	↓ 125.18		↓ 41 (28.67%)											
46	CV12	96	SNS		6.99	17.27	199	89 (44.2%)	37.19	3.55	3	1	13	2	1	0	0	0	Fair
		98	↓ NS				↑ 201					↓ 0	↑ 14						
		99																	
		00					↑ 213	↑ 92 (43.19%)	↑ 38.34	↓ 3.5			↑ 16	↑ 4					
47	CV10	96	NS		4.59	11.34	20	9 (40.0%)	8.74	2.64	2	0	0	2	0	0	0	0	Poor
		98																	
		99																	
		00			↓ 4.26	↓ 10.53	↑ 51	↑ 22 (43.14%)	↑ 15.04	↑ 2.79		↑ 1	↑ 6	↑ 1					
48	CV8	96	NS		7.87	19.44	39	18 (43.6%)	13.53	2.95	4	0	1	1	0	0	0	0	Poor
		98																	
		99																	
		00			↑ 8.04	↑ 19.85	↑ 60	↑ 25 (41.67%)	↑ 15.72	↓ 2.66			↑ 2	↑ 7	↑ 2				
49	ETO6	96	SNS		11.39	28.13	0	0	0	0	3	0	0	0	0	0	0	0	Poor
		98																	
		99																	
		00			↓ 9.52	↓ 23.52													

Appendix 4: continued .....

Site #	Site Code	Year	Classification	Designation	Area		Flora							Fauna					Condition
					(ha)	(acres)	total	# non-native (proportion)	native FQI	native mean C	# veg. comm.	prov. sig. species	reg. sig. species	# birds	# mammals	# herptiles	prov. sig. species	CVC	
50	AW1	96	SNS		7.98	19.71	51	18 (35.0%)	18.45	3.21	3	1	1	5	1	0	0	0	Poor
		98	NS ↓									↓ 0							
		99																	
		00					↑ 75	↑ 28 (37.33%)	↑ 22.17	↑ 3.23			↑ 2	↑ 10					
54	EM2	96	SNS		4.9	12.09	63	12 (19.05%)	28.85	4.04	1	1	0	8	1	0	0	0	Fair
		98																	
		99																	
		00	NS									↓ 0							
61	FV1	96	NS		2.23	5.51	38	7 (18.5%)	18.50	3.32	1	0	0	0	0	0	0	0	Fair
		98					↑ 46	↑ 9 (19.6%)	↑ 20.55	↑ 3.38			↑ 1	↑ 2					
		99																	
		00			↓ 2.11	↓ 5.22	↑ 54	↑ 11 (20.37%)	↑ 22.72	↑ 3.47			↑ 2						
62	FV3	96	NS		7	17.29	50	15 (22.0%)	25.63	3.86	3	0	0	15	2	0	0	0	Fair
		98					↑ 59	↑ 15 (23.7%)											
		99																	
		00			↓ 6.76	16.71	↑ 100	↑ 39 (39.00%)	↑ 27.69	3.52				↑ 16					
63/64	CC1/ MY1	96	NS		15.33	37.87	129	43 (32.6%)	35.58	3.84	2	0	5	8	1	5	0	0	Fair
		98					↑ 130						↑ 7						
		99					↑ 133	↑ 44 (33.1%)	↑ 36.36	↑ 3.85				↑ 9		0**			
		00			16.62	↑ 41.08	↑ 145	↑ 49 (33.79%)	↑ 36.84	↓ 3.76			↑ 9	↑ 10					
66	AW4	96	NGS		11.71	28.92	0	0	0	0	1	0	0	0	0	0	0	0	Poor
		98																	
		99																	
		00	↑ NS				↑ 42	↑ 28 (66.67%)	↑ 8.29	↑ 2.21			2	↓ 3					
67	AW3	96	NGS		7.92	19.57	33	21 (60.6%)	0	0	2	0	0	4	1	0	0	0	Poor
		98																	
		99																	
		00					↑ 52	↑ 30 (57.69%)	↑ 13.22	↑ 2.82				↑ 8					
68	ETO5	96	SNS		9.12	22.56	0	0	0	0	2	0	0	0	0	0	0	0	Poor
		98																	
		99																	
		00					↑ 53	↑ 32 (60.38%)	↑ 10.91	↑ 2.38			↑ 2	↑ 8	↑ 1				

Appendix 4: continued .....

Site #	Site Code	Year	Classification	Designation	Area		Flora							Fauna					Condition
					(ha)	(acres)	total	# non-native (proportion)	native FQI	native mean C	# veg. comm.	prov. sig. species	reg. sig. species	# birds	# mammals	# herptiles	prov. sig. species	CVC	
69	ETO4	96	SNS	ESA	58.00	143.32	128	35 (26.6%)	42.31	4.39	3	0	14	23	2	9	0	0	Fair
		98					↑ 141	↑ 37 (26.2%)	↑ 43.93	4.31			↑ 15	↑ 24	↑ 3				
		99																	
		00						↓ 36 (25.53%)								↑ 5		↑ 2	
72	RW4	96	NS		1.09	2.68	32	7 (18.2%)	22.36	4.38	1	0	0	3	0	0	0	0	Fair
		98																	
		99																	
		00					↑ 44	7 (15.91%)	↑ 24.99	↓ 4.11				↑ 7	↑ 1				
74	RW2	96	NGS		3.50	8.64	0	0	0	0	1	0	0	0	0	0	0	0	Poor
		98																	
		99																	
		00			3.90	↑ 9.63	↑ 34	↑ 20 (58.82%)	↑ 9.89	↑ 2.64				↑ 4					
96	EC13	96	SNS	wetland	4.61	11.39	162	29 (16.7%)	50.73	4.4	4	0	68	89	6	11	0	0	Excellent
		98					↑ 168		↑ 53.01	↑ 4.5			↓ 65						
		99																	
		00						27 (16.07%)						↓ 86				↑ 12	
104	NE4	96	NS		13.43	33.17	95	22 (23.0%)	33.04	3.79	5	0	8	5	0	0	0	0	Excellent
		98					↑ 96						↑ 9						
		99																	
		00					↑ 106	↓ 19 (17.92%)	↑ 34.31	↓ 3.68				↑ 8					
106	NE2	96	NS		1.85	4.57	55	11 (18.2%)	28.49	4.3	1	0	5	5	0	0	0	0	Fair
		98																	
		99																	
		00	**Removed**																
107	NE1	96	NGS		0.95	2.35	54	26 (48.1%)	14.93	2.82	1	0	0	3	0	0	0	0	Fair
		98																	
		99																	
		00					↑ 62	26 (41.94%)	↑ 17	↑ 2.83				↑ 4					
111	ETO3	96	SNS		134.93	333.28	405	169 (41.2%)	57.09	3.72	4	2	60	7	5	5	0	0	Fair
		98			↓ 112.22	↓ 277.29	↑ 406					↓ 1	↑ 61						↓ Fair-Poor
		99					↓ 400	↓ 167 (41.8%)	↓ 56.47	↓ 3.7			↓ 58						
		00																↑ 3	

Appendix 4: continued .....

Site #	Site Code	Year	Classification	Designation	Area		Flora							Fauna					Condition
					(ha)	(acres)	total	# non-native (proportion)	native FQI	native mean C	# veg. comm.	prov. sig. species	reg. sig. species	# birds	# mammals	# herptiles	prov. sig. species	CVC	
139	MV2	96	SNS	ESA,ANSI	80.18	198.04	200	60 (29.5%)	46.99	3.97	4	1	20	58	10	2	0	0	Good-Fair
		98			↓ 78.38	↓ 193.61	↑ 215	↑ 69 (31.6%)	↑ 47.59	3.94				↑ 59	↑ 12		↑ 1		
		99																	
		00						↓ 68 (31.63%)					↓ 19					↑ 6	
140	MV3	96	NS		2.67	6.59	46	13 (27.7%)	21.61	3.71	1	0	0	0	0	0	0	0	Fair
		98																	
		99																	
		00			↓ 2.11	↓ 5.20	↑ 57	↑ 17 (29.82%)	↑ 23.4	↓ 3.7				↑ 6	↑ 2				
141	MV12	96	NS		13.38	33.06	103	32 (30.1%)	33.94	4.03	3	0	6	5	3	0	0	0	Fair
		98					↑ 115	35 (30.4%)	↑ 35.33	↓ 3.95				↑ 8					
		99																	
		00			↓ 11.08	↓ 27.41	↑ 121	35 (28.93%)	↑ 36.23	↓ 3.91			↑ 7		↑ 4				
151	MI17	96																	
		98																	
		99	NS		6.04	14.92	145	45 (31.0%)	42.2	4.22	2	0	15	6	2	3	0	0	Fair
		00	↑ SNS					↓ 44 (30.34%)						↓ 5					
153	CV6*	96																	
		98																	
		99																	
		00	NS		2.71	6.69	57	13 (22.81%)	20.8	3.14	1	0	1	2	1	0	0	0	Fair

* This natural area was newly designated in 2000.
** The five herptile species documented for this site in 1996 were a transcription error.

Appendix 5: Comparison of Vegetation Communities with ELC

A comparison of the vegetation communities mapped for the City of Mississauga (NAS) originally based on the classifications of Bakowsky (1995) and Kavanaugh and McKay-Kuja (1992) and the Ecological Land Classification (ELC) (Lee *et al.* 1998). N/A represents either a NAS community for which there is no comparable ELC community (*e.g.*, manicured, golf course) or a NAS community that has not been visited for fieldwork (*e.g.*, unknown).

NAS	NAS Community Name	ELC	ELC Community Name
A	wooded slope	FOD5-8	dry-fresh sugar maple - white ash deciduous forest type
A	wooded slope	FOD7-3	fresh-moist willow lowland deciduous forest type
A	wooded slope	FOD5	dry-fresh sugar maple deciduous forest ecosite
A	wooded slope	FOD2-1	dry-fresh oak - red maple deciduous forest type
AA	silver maple forest	SWD3-1	silver maple mineral deciduous swamp type
B	floodplain	FOM7-2	fresh-moist white cedar - hardwood mixed forest type
B	floodplain	FOD7-3	fresh-moist willow lowland deciduous forest type
B	floodplain	SWD4-3	white birch - poplar mineral deciduous swamp type
BB	red ash-American elm forest	FOD7-2	fresh-moist ash lowland deciduous forest type
C	old field	CUM1-1	dry-moist old field meadow type
CC	sugar maple forest	FOD5-6	dry-fresh sugar maple - basswood deciduous forest type
CC	sugar maple forest	FOD5-5	dry-fresh sugar maple - hickory deciduous forest type
CC	sugar maple forest	FOD5-8	dry-fresh sugar maple - white ash deciduous forest type
CC	sugar maple forest	FOD5-1	dry-fresh sugar maple deciduous forest type
D	hedgerow	n/a	n/a
DD	sugar maple-American beech forest	FOD6-5	fresh-moist sugar maple - hardwood deciduous forest type
DD	sugar maple-American beech forest	FOD5-2	dry-fresh sugar maple - beech deciduous forest type
E	early successional forest	FOD9-3	fresh-moist bur oak deciduous forest type
E	early successional forest	FOD3-1	dry-fresh poplar deciduous forest type

Appendix 5: continued .....

NAS	NAS Community Name	ELC	ELC Community Name
EE	sugar maple-white ash forest	FOD6-1	fresh-moist sugar maple - lowland ash deciduous forest type
EE	sugar maple-white ash forest	FOD5-8	dry-fresh sugar maple - white ash deciduous forest type
EE	sugar maple-white ash forest	FOD6-5	fresh-moist sugar maple - hardwood deciduous forest type
F	manicured	n/a	n/a
FF	sugar maple-red oak forest	FOD9-1	fresh-moist oak - sugar maple deciduous forest type
FF	sugar maple-red oak forest	FOD5-3	dry-fresh sugar maple - oak deciduous forest type
G	golf course	n/a	n/a
GG	sugar maple-eastern hemlock forest	FOM3-2	dry-fresh sugar maple - hemlock mixed forest type
H	urban lake	OAO	open aquatic
I	wooded residential	FOD9-1	fresh-moist oak - sugar maple deciduous forest type
II	sugar maple-black cherry forest	FOD5-7	dry-fresh sugar maple - black cherry deciduous forest type
J	wooded non-native valleylands	FOD7-3	fresh-moist willow lowland deciduous forest type
K	open with open slopes valleylands	CUM1-1	dry-moist old field meadow type
KK	sugar maple-American beech-red oak forest	FOD6-5	fresh-moist sugar maple - hardwood deciduous forest type
KK	sugar maple-American beech-red oak forest	FOD5-2	dry-fresh sugar maple - beech deciduous forest type
L	wooded native valleylands	FOM3-1	dry-fresh hardwood - hemlock mixed forest type
L	wooded native valleylands	FOD5-3	dry-fresh sugar maple - oak deciduous forest type
L	wooded native valleylands	n/a	n/a
L	wooded native valleylands	FOD2-4	dry-fresh oak - hardwood deciduous forest type
L	wooded native valleylands	FOM8-2	fresh-moist white birch mixed forest type
LL	sugar maple-American beech-eastern hemlock forest	FOM6-1	fresh-moist sugar maple - hemlock mixed forest type
M	open with wooded slopes valleylands	n/a	n/a
MM	white pine-eastern hemlock-sugar maple forest	FOC3-1	fresh-moist hemlock coniferous forest type
N	open with manicured slopes valleylands	n/a	n/a

Appendix 5: continued .....

NAS	NAS Community Name	ELC	ELC Community Name
NN	eastern hemlock forest	FOC3-1	fresh-moist hemlock coniferous forest type
NN	eastern hemlock forest	FOM3-1	dry-fresh hardwood - hemlock mixed forest type
O	manicured with wooded slopes valleylands	n/a	n/a
OO	red maple-red oak forest	FOD2-1	dry-fresh oak - red maple deciduous forest type
OO	red maple-red oak forest	FOM3-1	dry-fresh hardwood - hemlock mixed forest type
P	hawthorn thicket	CUS1-1	hawthorn cultural savannah type
PP	American beech forest	FOD4-1	dry-fresh beech deciduous forest type
QQ	bur oak-American beech forest	FOD9-3	fresh-moist bur oak deciduous forest type
R	beach	BBT1	mineral treed beach/bar ecosite
RR	oak-ash forest	FOD9-3	fresh-moist bur oak deciduous forest type
RR	oak-ash forest	FOD2-4	dry-fresh oak - hardwood deciduous forest type
S	tall grass prairie	TPO1-1	dry tallgrass prairie type
SS	oak-hickory forest	FOD9-4	fresh-moist shagbark hickory deciduous forest type
SS	oak-hickory forest	FOD2-2	dry-fresh oak - hickory deciduous forest type
SS	oak-hickory forest	FOD9-1	fresh-moist oak - sugar maple deciduous forest type
T	plantation	CUP3	coniferous plantation ecosit
T	plantation	CUP3	coniferous (Norway spruce) plantation ecosite
T	plantation	CUP3-1	red pine coniferous plantation type
T	plantation	CUP3-9	Norway spruce - European larch coniferous plantation type
T	plantation	CUP2	mixed plantation ecosite
T	plantation	CUP3-2	white pine coniferous plantation type
T	plantation	CUP3-3	Scots pine coniferous plantation type
TT	ash-hickory forest	FOD9-4	fresh-moist shagbark hickory deciduous forest type
U	unknown	n/a	n/a
UU	black walnut grove	CUP1-3	black walnut deciduous plantation type

Appendix 5: continued .....

NAS	NAS Community Name	ELC	ELC Community Name
V	cattail marsh	MAS2-1	cattail mineral shallow marsh type
V	cattail marsh	MAS3-1	cattail organic shallow marsh type
V	cattail marsh	MAS3-8	bur-reed organic shallow marsh type
VV	black cherry-eastern hemlock-white ash forest	FOD4-2	dry-fresh white ash deciduous forest type
W	open water marsh	MAS2-9	forb mineral shallow marsh type
W	open water marsh	SAM1-4	pondweed mixed shallow aquatic type
W	open water marsh	MAS3-4	broad-leaved sedge organic shallow marsh type
W	open water marsh	SAF1-3	duckweed floating-leaved shallow aquatic type
WW	bur oak-black walnut forest	FOD7-4	fresh-moist black walnut lowland deciduous forest type
X	willow buttonbush swamp thicket	SWT3-2	willow organic thicket swamp type
XX	birch forest	FOD3-2	dry-fresh white birch deciduous forest type
Y	wet meadow	MAM2-6	broad-leaved sedge mineral meadow marsh type
YY	poplar forest	FOD3-1	dry-fresh poplar deciduous forest type
YY	poplar forest	FOD8-1	fresh-moist poplar deciduous forest type
Z	willow-ash forest	SWD4-1	willow mineral deciduous swamp type
ZZ	oak-white pine forest	FOM2-1	dry-fresh white pine - oak mixed forest type