DIXIE – LAKESHORE
(MARIE CURTIS PARK & AREA)

Region of Peel	**NAI Area # 3524, 3526, 4177**	**Toronto and Region Conservation Authority; Credit Valley Conservation**
City of Mississauga	**Size: 36 hectares**	**Watershed: Etobicoke Creek; Lake Ontario Shoreline East Tributaries**
Con 3 SDS, Lots 4, 5	**Ownership: 13% private, 87% public (TRCA, Region of Peel)**	**Subwatershed: Lower Etobicoke Creek**

General Summary

This is an urban site at the mouth of Etobicoke Creek where it meets Lake Ontario. It is comprised predominantly of deciduous forest and culturally impacted communities (meadow, savannah, thicket, woodland, plantation), with some shallow marsh, sand dune and beach. This area occupies a key location at the junction of two major wildlife movement corridors, the Lake Ontario shoreline and the valley of Etobicoke Creek.

This area is large for an urban area and surprisingly biologically rich in spite of its extensive disturbance history. The site, or adjacent land, has seen historic industrial use, habitation/cottage use, and extensive changes to the course of the creek and it sustains high recreational use. The site still supports a large mature deciduous forest, a provincially rare community, several species at risk and some regionally rare species. Part of the area is fragmented by manicured parkland.

TRCA ELC surveyors, botanists and ornithologists have provided complete data coverage for the core NAI inventories (vegetation communities, plant species, breeding birds) plus incidental observations of other fauna over the delineated area (Table 1). TRCA ecologists have also surveyed frog species in this area.

Table 1: TRCA Field Visits

Visit Date	Inventory Type
09 Sept. 1999	Flora
06 July 2000	Fauna
01 May 2003	Fauna
07 May 2003	ELC, Flora
16 June 2003	ELC, Flora
19 June 2003	Fauna
09 July 2003	Fauna
22 May 2007	Fauna
26 June 2007	Fauna

Physical Features

This area is in the Iroquois Plain physiographic region; characterized by a gentle slope toward Lake Ontario and a thin layer of sandy and silty sand soils. The shoreline of glacial Lake Iroquois was higher than the current Lake Ontario shoreline, so this area is old lake bottom.

This site slopes from a plateau alongside Lakeshore Rd., down to the Lake Ontario shore. At the west end of the site, a small creek has cut a deep ravine into the slope. This creek is in CVC's jurisdiction. Most of the site is in TRCA's jurisdiction, containing the lowest part and mouth of Etobicoke Creek, which empties into Lake Ontario.

DIXIE – LAKESHORE (MARIE CURTIS PARK & AREA)

Human History

This natural area has a rich history. Situated at the mouth of Etobicoke Creek at Lake Ontario, it was used frequently by native people, who called it “Etobicoke”, meaning the “place where wild alders grow”. It is believed that the natives had a trail through this natural area which later became the “Road to York”, also known as the old route of Lakeshore Rd. It is believed native people may have used this land as far back as the Early Archaic period (circa 7500-3000 B.C.) and, according to TRCA’s Greening Our Watershed report, artifacts, “may rest about 10 to 20 metres beyond the current shoreline at the mouths of the creeks” (Etobicoke, and also Mimico Creek).

In 1805, this land, part of a larger parcel, was sold to the British Crown. In 1806, land including this natural area, was granted to Colonel Samuel Smith, a Loyalist from New York who fought in the Revolutionary War. By this time, Lakeshore Rd. had been moved to its current route. Colonel Smith cleared part of the forest near the mouth of Etobicoke Creek and built his house there (Harrison, 2010; Toronto and Region Conservation Authority, 2006).

Throughout most of the 1800’s the land was agricultural. In the early 1900’s, the land along Lake Ontario shoreline and at the mouth of the creek was subdivided into lots for summer cottages, some of which were built on stilts to protect against frequent flooding along the floodplain. At this time, the creek had two channels surrounding an island just upstream from the mouth of the creek. When the channels met below the island, the creek then did a sharp 90 degree turn before reaching Lake Ontario. The sharp bend in the creek formed a beach bar between the creek and the lake. Both the island and the bar were used by cottagers (Guy, 2005).

By the late 1940’s, there were at least 277 residences in what was called the “Etobicoke Flats” (*ibid*). Just outside of this natural area, and within Marie Curtis Park, there was a small arms manufacturing company that operated during World War II. Manufacturing and testing was done on site, leading to recent contaminant remediation work (Toronto and Region Conservation Authority, 2003; Toronto and Region Conservation Authority, 2006; Toronto and Region Conservation Authority, 2010)

Etobicoke Creek flooded badly in 1948 and prompted the Etobicoke River Conservation Authority to make an offer to purchase houses in the area to develop a park with flood controls. Local residents refused to sell (Guy, 2005).

The mouth of Etobicoke Creek was altered in 1949 through the building of the Long Branch Diversion Channel that removed the 90 degree bend and allowed creek water and ice to flow in a straight path into Lake Ontario. In 1954, Hurricane Hazel hit the GTA and within 24 hours, 28 centimetres of rain fell, leading to the death of 7 area residents and the destruction of at least 56 residences (numbers for the GTA as a whole were much higher). New flood protection measures led to the acquisition of 164 properties near the mouth of Etobicoke Creek, the removal of cottages on the “Etobicoke Flats” and the creation of Marie Curtis Park in 1959. The park was named after former Reeve Marie Curtis of Long Branch for her role in forming a regional parkland system. Around this time the creek’s path was again reconfigured and fill was used as part of this process (Guy, 2005; Toronto and Region Conservation Authority, Undated; Toronto and Region Conservation Authority, 2006).

This natural area is now part of Marie Curtis Park and is widely used for passive public recreation. The park is bordered by Lakeshore Rd. (a busy arterial road) to the northwest, by Fortysecond St. (a residential street) to the northeast and faces onto Lake Ontario to the southeast. Within the park, manicured recreational land as well as vacant past-industrial land is adjacent to the natural communities and manicuring fragments some parts of the natural area. Cultural meadows over 2 ha in size support the functions and biodiversity of this natural area. Surrounding land use to the southwest is industrial (sewage treatment facility). Across the roads land use is residential (high-rise apartments and single-unit homes).

DIXIE – LAKESHORE
(MARIE CURTIS PARK & AREA)

Vegetation Communities
The general community types present here are open beach bar (4%), treed sand dune (1%), deciduous forest (28%), marsh (2%), cultural meadow (49%), cultural savannah (8%), cultural thicket (2%), cultural woodland (4%) and plantation (4%).

Twenty-three plant communities were mapped for this area, representing 17 different vegetation types (Table 2). The Cottonwood Treed Sand Dune community (SDT1-1, S-rank S1) is provincially rare. Three of the communities are considered to be TRCA regional Communities of Conservation Concern: Mineral Open Beach / Bar Ecosite (BBO1 TRCA L-rank L3), Cottonwood Treed Sand Dune (SDT1-1, TRCA L-rank L2) and Fresh-Moist Oak - Beech Deciduous Forest (FOD9-A, TRCA L-rank L3).

Two of the community types present at this site, Dry-Fresh Oak - Hardwood Deciduous Forest (FOD 2-4) and Fresh-Moist Oak - Beech Deciduous Forest (FOD9-A), are producers of abundant mast (nuts) and serve as important food resources for a variety of wildlife species.

Table 2: ELC Vegetation Communities

Map reference *	Vegetation type	Size in hectares	% of natural area
BBO1	Mineral Open Beach / Bar Ecosite	1.3	3.56
SDT1-1	Cottonwood Treed Sand Dune **PROVINCIALLY RARE S-rank S1**	0.24	0.66
FOD2-4	Dry-Fresh Oak - Hardwood Deciduous Forest	0.37	1.01
FOD7-3	Fresh-Moist Willow Lowland Deciduous Forest	2.44	6.73
FOD9-A	Fresh-Moist Oak - Beech Deciduous Forest	7.21	19.87
MAS2-1A	Broad-leaved Cattail Mineral Shallow Marsh	0.13	0.36
MAS2-1B	Narrow-Leaved Cattail Mineral Shallow Marsh (2 communities)	0.61	1.68
CUM1-b	Exotic Cool-season Grass Old Field Meadow (2 communities)	2.1	5.82
CUM1-c	Exotic Forb Old Field Meadow (5 communities)	15.59	42.99
CUS1-b	Exotic Cultural Savannah	2.85	7.87
CUT1-A2	Native Mixed Sapling Cultural Thicket	0.49	1.34
CUT1-c	Exotic Cultural Thicket	0.26	0.71
CUW1-A3	Native Deciduous Cultural Woodland	1.37	3.78
CUP1-5	Silver Maple Deciduous Plantation	0.43	1.19
CUP2-G	Ash – Conifer Mixed Plantation	0.46	1.27
CUP3-3	Scotch Pine Coniferous Plantation	0.15	0.41
CUP3-G	White Cedar Coniferous Plantation	0.29	0.80
	TOTAL AREA INVENTORIED	**36.29**	

* Note: The map reference code refers to the vegetation type shown on mapping for this area and also to the Appendix list of species typically encountered in this vegetation type.

Species Presence
Vascular Plants
A total of 136 species of vascular plants are present in this natural area, of which 91 (67%) are native. One of these, Butternut (*Juglans cinerea*) is Endangered both nationally and provincially, as well as being provincially rare (S-rank S3?; Table 3). Two additional species are regionally rare (Table 4). Nine of the vascular plant species are TRCA regional Species of Conservation Concern and an additional 18 plant species are TRCA regional Species of Urban Conservation Concern (Table 4).

DIXIE – LAKESHORE (MARIE CURTIS PARK & AREA)

Breeding Birds

A total of 40 species of breeding birds have been observed at this site, of which 36 (90%) are native. Three of these are Species At Risk (Table 3). The Bobolink (*Dolichonyx oryzivorus*) and the Chimney Swift (*Chaetura pelagica*) are both Threatened nationally and provincially, and the Barn Swallow (*Hirundo rustica*) is Threatened nationally. Two of the species of breeding birds present here are considered to be TRCA regional Species of Conservation Concern and an additional 13 species are TRCA regional Species of Urban Conservation Concern.

The large area of open successional habitat at this site provides sufficient space for six grassland bird species to breed here, including Bobolink, Brown Thrasher (*Toxostoma rufum*), American Kestrel (*Falco sparverius*), Eastern Kingbird (*Tyrannus tyrannus*), Savannah Sparrow (*Passerculus sandwichensis*) and Willow Flycatcher (*Empidonax traillii*). Of these grassland birds, two species (Bobolink and Savannah Sparrow), are area-sensitive. Two species of colonial-nesting birds, Barn Swallow and Northern Rough-winged Swallow (*Stelgidopteryx serripennis*), use this area. Mallard (*Anas platyrhynchos*) may also be nesting at this site.

Herpetofauna

Three species of frogs/toads occur in the wetlands of this area. All are native and none are provincially rare. One species is considered to be a TRCA regional Species of Conservation Concern and the other two species are TRCA regional Species of Urban Conservation Concern (Table 4).

Mammals

A total of four mammal species were observed incidentally at this site, all native and all common. Two of the mammals are considered to be a TRCA regional Species of Urban Conservation Concern (Table 4). Other mammal species are likely present but targeted inventories would be required to detect them.

Table 3: Designated Species At Risk

Scientific name	Common name	COSEWIC	COSSARO	S rank	G rank
VASCULAR PLANTS					
Juglans cinerea	Butternut	END	END	S3?	G4
BIRDS					
Hirundo rustica	Barn Swallow	THR		S5B	G5
Dolichonyx oryzivorus	Bobolink	THR	THR	S4B	G5
Chaetura pelagica	Chimney Swift	THR	THR	S4B, S4N	G5

Table 4: Regionally Rare Species (shown in bold), TRCA Regional Species of Conservation Concern (L1-l3), and TRCA Regional Species of Urban Conservation Concern (Kaiser, 2001; Toronto and Region Conservation Authority, 2007)

Scientific name	Common name	S rank	G rank	L-rank
VASCULAR PLANTS				
Acer rubrum	Red Maple	S5	G5	L4
Acer saccharinum	Silver Maple	S5	G5	L4
Anaphalis margaritacea	Pearly Everlasting	S5	G5	L3
Anemone quinquefolia	Nightcaps	SU	G5T4T5	L3
Eurybia macrophylla	Large-leaf Wood Aster	S5	G5	L4
Betula alleghaniensis	Yellow Birch	S5	G5	L4
Betula papyrifera	Paper Birch	S5	G5	L4
Boehmeria cylindrica	False Nettle	S5	G5	L4
Bolboschoenus fluviatilis	**River Bulrush**	**S4S5**	**G5**	**L3**

DIXIE – LAKESHORE
(MARIE CURTIS PARK & AREA)

Carpinus caroliniana	Blue Beech	S5	G5	L4
Carya ovata	Shag-bark Hickory	S5	G5	L3
Cornus rugosa	Roundleaf Dogwood	S5	G5	L4
Diervilla lonicera	Northern Bush-honeysuckle	S5	G5	L4
Fagus grandifolia	American Beech	S4	G5	L4
Geranium maculatum	Wild Crane's-bill	S5	G5	L4
Hamamelis virginiana	American Witch-hazel	S5	G5	L3
Juglans cinerea	Butternut	S3?	G4	L3
Lonicera dioica	Mountain Honeysuckle	S5	G5	L3
Maianthemum canadense	Canada Mayflower	S5	G5	L4
Penstemon hirsutus	**Hairy Beardtongue**	**S4**	**G4**	**L3**
Picea glauca	White Spruce	S5	G5	L3
Pinus strobus	Eastern White Pine	S5	G5	L4
Quercus rubra	Northern Red Oak	S5	G5	L4
Rosa blanda	Smooth Rose	S5	G5	L4
Thuja occidentalis	Eastern White Cedar	S5	G5	L4
Tsuga canadensis	Eastern Hemlock	S5	G4G5	L4
Typha latifolia	Broad-leaf Cattail	S5	G5	L4
BIRDS				
Falco sparverius	American Kestrel	S5B	G5	L4
Hirundo rustica	Barn Swallow	S5B	G5	L4
Dolichonyx oryzivorus	Bobolink	S4B	G5	L3
Toxostoma rufum	Brown Thrasher	S4B	G5	L3
Chaetura pelagica	Chimney Swift	S4B	G5	L4
Geothlypis trichas	Common Yellowthroat	S5B	G5	L4
Tyrannus tyrannus	Eastern Kingbird	S5B	G5	L4
Dumetella carolinensis	Gray Catbird	S5B	G5	L4
Colaptes auratus	Northern Flicker	S4B	G5	L4
Stelgidopteryx serripennis	Northern Rough-winged Swallow	S4B	G5	L4
Vireo olivaceus	Red-eyed Vireo	S5B	G5	L4
Passerculus sandwichensis	Savannah Sparrow	S4B	G5	L4
Actitis macularius	Spotted Sandpiper	S5B	G5	L4
Tachycineta bicolor	Tree Swallow	S4B	G5	L4
Empidonax traillii	Willow Flycatcher	S5B	G5	L4
HERPETOFAUNA				
Bufo americanus	American Toad	S5	G5	L4
Rana clamitans	Green Frog	S5	G5	L4
Rana pipiens	Northern Leopard Frog	S5	G5	L3
MAMMALS				
Tamias striatus	Eastern Chipmunk	S5	G5	L4
Ondatra zibethicus	Muskrat	S5	G5	L4

Site Condition and Disturbances

This natural area has an extensive and intensive disturbance history. In spite of the disturbances, the area still supports good biodiversity including some rare species and a rare community. The quality of the environment is indicated by its ability to support flora and fauna species that are conservation concerns in urban areas.

DIXIE – LAKESHORE (MARIE CURTIS PARK & AREA)

As a city park, this area has light to severe disturbance from trails, with moderate to severe disturbance the norm. The large mature deciduous community is severely impacted by trails and trampling, whereas the wetland and beach-related communities and some of the cultural meadows are moderately impacted by trails and trampling.

The ravine sustains light disturbance from flooding.

Trash and dumping here causes light to severe disturbance, with the most impacted parts being the beach-related and mature Oak-Beech deciduous forest communities. The ravine-associated communities are moderately disturbed by trash and dumping. Most of the remaining communities have light disturbance from trash.

Light to moderate disturbance from fill occurs in the small communities at the sloping edge of what was the previous industrial use of the area.

Disturbance from invasive species occurs throughout this natural area. The large, mature deciduous community is least impacted. The ravine communities are severely impacted by invasive species, as are the area along the Etobicoke Creek banks and inside the beach bar, where the old cottages would have stood. The beach bar itself is only moderately disturbed by invasive species, possibly due to the harsher (drier, gravel/sandy substrate and more exposed) conditions of this community. Four communities are dominated by exotic species.

Contamination from a former small arms manufacturer that was located next to this natural area was recently remediated.

Ecological Features and Functions

With forest communities greater than 2 ha this natural area has the potential to support and sustain biodiversity, healthy ecosystem functions and to provide long-term resilience for the natural system. The riparian area provides a transitional zone between terrestrial and aquatic habitats, helping to maintain the water quality of the river and providing a movement corridor for plants and wildlife.

By containing a relatively wide variety of habitat types, this natural area supports biodiversity, particularly for species that require more than one habitat type for their life needs. This natural area contains a provincially rare vegetation community, and thus has the potential to support additional biodiversity above and beyond that found in common community types.

The Etobicoke Creek valley is naturally vegetated upstream of this site. Lakeshore Rd., bordering this area on the northwest side, bridges the river and a narrow terrestrial strips on each bank of the river, allowing wildlife a means of moving along the valley corridor. Otherwise, the road is very busy and wide and poses a barrier for all but the most mobile wildlife species. If wildlife could cross safely, there is a narrow treed corridor between some of the houses and the apartment complex. This corridor connects, across a railway line, to a golf course with treed islands between manicured greens. The relatively close proximity of other areas of natural habitat creates above-average potential for wildlife movement between natural areas, species dispersal and recovery from disturbance, creating additional resilience for the ecosystem.

Etobicoke Creek runs through this area and thus this natural area supports the connectivity function of this watercourse and its tributaries. This area also lies along the Lake Ontario shoreline and thus supports the connectivity function of the shore by providing a natural habitat corridor that facilitates the cross-regional movement of wildlife along this corridor between major provincial corridors.

This area contains one provincially rare community.

DIXIE – LAKESHORE
(MARIE CURTIS PARK & AREA)

This area supports four Species At Risk (one plant species, three bird species), one provincially rare plant species and two regionally rare plant species.

This area supports six species of grassland birds, of which two are area-sensitive. Also, two species of colonial-nesting birds and one species of waterfowl breed here.

Wetlands of this area support amphibian breeding.

As a natural area on the Lake Ontario shore, this site may serve as an important stopover or staging area for migratory birds, butterflies or bats.

Based on the above features, this area should be evaluated to determine if significant wildlife habitat is present in accordance with the Provincial Policy Statement, Region of Peel Official Plan, and area municipal Official Plan.

This area supports a Fresh-Moist Oak - Beech Deciduous Forest (FOD9-A) community that is an abundant producer of mast (nuts), which is an important food source for a variety of wildlife.

Opportunities

Efforts should be made to mitigate against trails and trampling damage. Ensuring that trails are clear, well-constructed to make their use attractive and to discourage off-trail walking or trail widening and that they are routed to avoid sensitive areas and features wile still providing an interesting walk, will help to accomplish this.

While flooding events cannot be controlled, allowing a broad buffer of natural vegetation to develop along both banks of the river may help to mitigate against erosion.

The extensive public use of Marie Curtis Park presents a good opportunity to both convey public education messages about the effects of trash, dumping and invasive species on natural areas and to involve the public in remediation efforts such as trash removal and invasive species control.

The only light disturbance of the mature deciduous forest community from exotic species presents an opportunity to prevent the invasion of this community by exotic species. Trail re-routing from the interior to the perimeter of the community (and closing of interior trails) would help to reduce the chance of introducing invasive species deep into the forest via pedestrians. Focusing on this community as a priority for monitoring of invasive species would also be beneficial.

The health of Butternut trees present at this site could be assessed by a Butternut Assessor to determine if they might be candidates for inclusion in the Butternut recovery program.

Increasing the size of the natural area by allowing succession would benefit the health of the natural area as a whole. Allowing some succession to tree communities adjacent to existing treed patches could improve the shape of treed communities, from linear to compact, possibly providing interior forest habitat. Other parts of regenerating land could be maintained as meadows by periodic mowing (every 3-5 years) to prevent succession to treed communities, providing habitat for grassland birds.

The linkage to other natural areas upstream should be maintained or enhanced if possible. Currently connectivity is under the Lakeshore Rd. bridge and the space around the bridge is manicured. Allowing the riverbank on at least one side to naturalize would improve the corridor for wildlife movement.

Since some of the forest communities are mature, they could be checked for characteristics of old growth, which may be considered a significant habitat feature.

DIXIE – LAKESHORE
(MARIE CURTIS PARK & AREA)

Additional inventories of dragonflies/damselflies and butterflies and some mammal groups (e.g. bats, small mammals) may be productive since this area provides suitable habitat for these groups.

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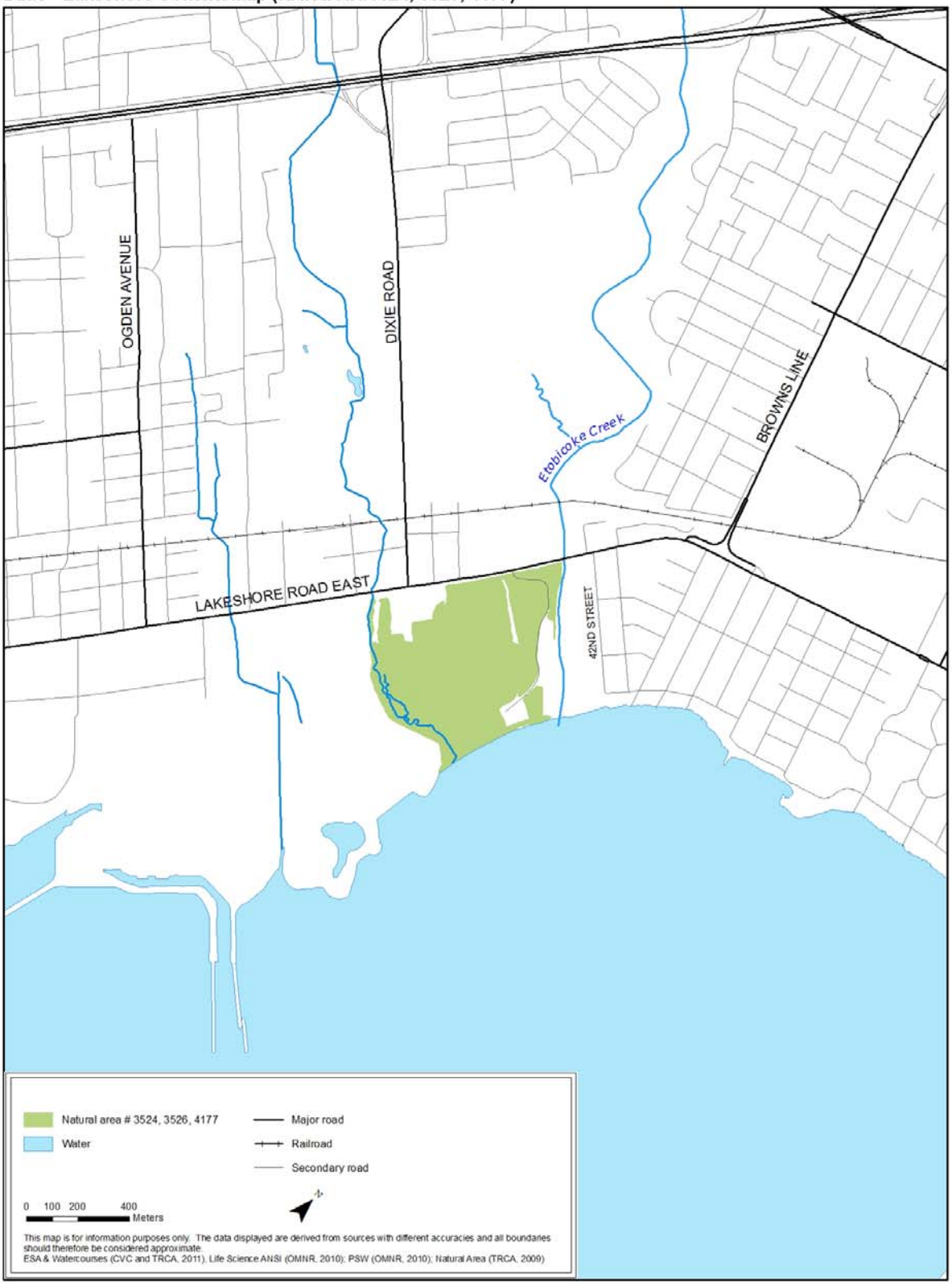
DIXIE – LAKESHORE
(MARIE CURTIS PARK & AREA)

Dixie - Lakeshore Context Map (NAI Area #3524, 3526, 4177)



DIXIE – LAKESHORE
(MARIE CURTIS PARK & AREA)

Dixie - Lakeshore Vegetation Communities Map (NAI area # 3524, 3526, 4177)