APPENDIX D
NATURAL ENVIRONMENT

Appendix D - Existing Conditions Fisheries Summary Table

Table 1. Existing Conditions Summary Table for those watercourses supporting Direct Fish Use within the study limits.

Culvert Number, Watercourse, Chainage, Culvert details	Watershed, CH Regulation Status, and Flow Direction/Permanency	General Description Channel form/Dimensions	Morphology, Substrates and Channel Dimensions	Vegetation (Riparian and Instream) Cover	General comments, incl. barriers to movement	Fish Use/Community Classification/ Composition
Culvert 9 Shoreacres Tributary #2 16+995 2.4m x2.4m Concrete Box, 58.7m long	Shoreacres Watershed Regulated by CH Intermittent. Low velocity-stagnant flows ATOS	Originates in woodland at base of Niagara Escarpment, draining southeast through agricultural lands, under Highway 407 ERT and then meandering to the south of Dundas Street. Upstream of Dundas, channel confined between two large berms isolating flows from Highway 407. Immediately upstream of 407, drains through series of adjacent culverts under an access road and over a gabion basket drop into Highway 407 culvert. Reach from 407 to Dundas Street has been realigned (natural channel design) adjacent to SWM pond. Downstream of Dundas, flows through lowland forest and then more open habitat where channel choked with Reed Canary Grass. Outfalls to Shoreacres Tributary # 1 ~ 200m downstream of Dundas Street where small channel section has also undergone some realignment.	***Upstream*** –morphology dominated by flats through modified section of channel. Substrates consist of silt and clay. Bankfull widths within this altered section average 5m wide, with an average bankfull depth of 0.4m. Channel gradient is low-moderate. ***Downstream*** –morphology consists of a mix of riffles, pools and flats, with higher proportion of flats further downstream. Substrates composed of a mix of silt, gravel and sand in riffles, and mainly silt in pool and flat features. Average bankfull width through this reach is 1.6m, with an average bankfull depth of 0.3m. Channel gradient is low-moderate, increasing moving downstream.	***Upstream*** –cultural meadow species including Red-osier Dogwood, Common Milkweed, Queen Anne's Lace, as well as grass, goldenrod, sedge and aster species. Instream cover consists of instream and overhanging vegetation including *Phragmites*, cattail, plantain, rushes, and Common Milkweed. ***Downstream*** –woody species including White Spruce, Silver Maple, and willow and ash species and an understory of Reed Canary Grass, Teasel, Vervain, Purple Loosestrife and aster species. Instream cover consists of dense growths of similar graminoid and plant species including *Phragmites*, Purple Loosestrife, and Reed Canary Grass.	The drop structure (gabion baskets) upstream of 407 crossing poses permanent barrier to upstream movement north of Dundas St.	**Seasonal Warmwater forage/baitfish community** Carp & Minnow Species (1997). No fish caught in 50m reach upstream of Dundas (Sept 99). Ecoplans confirmed seasonal baitfish use in April 2011 upstream of Dundas Street culvert.
Culvert 10 Shoreacres Tributary #1 17+095 1.8m x 1.5m Concrete Box, 41.7m long	Shoreacres Watershed Regulated by CH Intermittent (potential localized groundwater influx in downstream reach (iron floc)).	Watercourse originates in the forested lands at base of the escarpment. From here it flows in a southeasterly direction through agricultural lands towards the Highway 407 ERT. The channel then meanders south to flow between the 407 and Dundas Street. Downstream of Dundas the channel flows south to outfall of Shoreacres Tributary 2, then to flow southeast, eventually outletting to Lake Ontario. Upstream of Dundas the channel has been realigned and relocated ~ 70m west of its original location. The old channel appears to still convey some local groundwater to the new channel immediately upstream of the culvert crossing. Downstream of Dundas the watercourse is channelized in a relatively straight section between the cemetery and commercial properties on the south side of the road. ~15 downstream of existing Dundas Street crossing there is a 0.5m drop over a concrete weir structure. ~90m downstream of Dundas Street crossing this feature merges with Shoreacres Tributary 2 and flows combined for another ~80m before passing under Headen road through a ~140m long bent culvert, eventually day-lighting again south of Headon Forest Drive.	***Upstream*** –morphology dominated by flats with some shallow pools along the outside of meander bends. Substrates composed of clay and silt with some scattered pockets of sand and cobble near the culvert. Realigned reach has average bankfull width of 2.3m, with average bankfull depth of 0.3m. The channel is low gradient throughout reach, although there is a steep change in gradient upstream of the 407 crossing. ***Downstream*** –morphology consists of mainly flats, and substrates composed of silt and detritus. Bankfull widths within open portions of reach range from 3.0-4.0m, with average bankfull width of 0.4m. Channel gradient is low, with shallow flows observed throughout.	***Upstream*** –cultural meadow species including Teasel, Red Clover, and goldenrod and grass species, with a few small willow shrubs. Minimal overhead cover. Instream cover consists of cobbles, woody debris, and instream and overhanging vegetation (cattail, Phragmites, and Water Plantain). ***Downstream*** –cultural and common wetland species including cattails, willow shrubs and Teasel. Instream cover consists of instream and overhanging vegetation (cattail, *Phragmites*, and Purple Loosestrife), chocked near confluence with Shoreacres Tributary #2.	The 0.5m drop structure ~15m downstream of culvert creates barrier to upstream movement. Steep change in elevation upstream of 407 crossing also poses seasonal barrier. Bird nests were observed in the culvert ATOS.	**Warmwater forage/baitfish community** Carp & Minnow Species (1997). No fish caught at 407 (Sept 99). Ecoplans confirmed seasonal baitfish use in April 2011 upstream of Dundas Street culvert.

Appendix D - Existing Conditions Fisheries Summary Table

Culvert 11 Shoreacres Creek (East Branch) 17+733 3m x 1.5m Concrete Box, 37.4m long.	Shoreacres Watershed Regulated by CH Permanent flow	Watercourse originates at the base of escarpment as overland flows and groundwater seepage. From here it flows in a southeasterly direction under Highway 407, and then through agricultural fields towards the 407 carpool lot just east of the highway. Here the channel meanders east and then south along the outside of the parking lot and driveway to Dundas Street, where it then meanders east to flow along the ditchline for ~180m before turning south to flow under Dundas Street. Downstream of Dundas Street the channel flows through a highly confined channel and valley between residential and commercial parcels, crossing under Walkers line to eventually outlet to Shoreacres Creek ~1.75km downstream of Dundas (south of Millcroft Park drive). Upstream channel reaches along reach parallel to Northhampton Blvd/adjacent to 407 carpool lot and along Dundas ditchline are channelized and confined in ditchline by road embankment and agricultural lands to north. Downstream of Dundas the channel is also channelized, flowing through a narrow corridor between development blocks. Although the channel itself shows very little meandering, the overall channel corridor bends through the residential plots throughout remainder of channel to its outlet with Shoreacres West Branch at Millcroft Park Drive.	***Upstream*** –morphology dominated by flats and substrates dominated by silt with gravel patches near highway, and clay near Northhampton Blvd. Bankfull width ranges from 1.9m - 2.7m wide, with average bankfull depth of 0.5m. Moderate – low gradient. ***Downstream*** – channel morphology dominated by flats with substrates composed of silt in the vegetated sections, rip rap near culvert and Terrafix materials with cobble and boulders downstream. Bankfull width ranges from 0.5-1.5m, with average bankfull depth of 0.3m. Channel gradient is low-moderate throughout reach.	***Upstream*** –cultural species including New England Aster, Teasel, grass, goldenrod, and nightshade species with some small maple trees near ROW fenceline). Instream cover provided by instream and overhanging vegetation (*Phragmites*). ***Downstream*** – riparian vegetation consists of cultural species including Queen Anne's Lace, Teasel, goldenrod, grass, and clover species). Further back from bank: planted rows of Austrian Pine, Manitoba Maple also present. Instream cover consists of cobble and boulders rip rap, and instream and overhanging vegetation (*Phragmites*, grass and cattail species, and Vervain.	Several potential seasonal barriers to upstream movement including heavy rip rap near culvert outlet, concrete drop structure and associated drop of ~0.25m ~ 25m downstream of outlet, and steep change in gradient immediately upstream of 407 crossing. The downstream portion of the culvert was extended in 2003.	**Warmwater forage/baitfish community** Creek Chub, Fathead Minnow (2004)- US ditchline 'Carp & Minnow' Species (Sept 99) DS of Dundas Baitfish observed by Ecoplans in reaches not choked by vegetation (in upstream reach only).
Culvert 12 Appleby Creek 18+570 2.5m x2.5m Concrete Open Foot, 37.0m long (kink in culvert)	Appleby Creek Watershed Regulated by CH Permanent flow (stagnant upstream, slow-moderate velocity downstream).	This watercourse originates as agricultural drainage in the fields ~2.2km north of Dundas Street, upstream of Sideroad 1. From here the channel flows through agricultural and residential lands towards Dundas. Channel crossed 3 times between its origins and Dundas by Hwy 407, Palladium Way and Thomas Alton Blvd. The channel flows alongside a SWM pond immediately west of the valley; SWM pond outlets to Appleby Creek ~ 10m upstream of Dundas crossing. Downstream of Dundas, watercourse flows along highly confined channel between residential properties and the Millcroft Golf Course holes to its outlet to Lake Ontario downstream of project. Upstream of Dundas the watercourse has been realigned using natural channel design principles between residential properties. The channel displays some channel meandering, but generally flows in a southeasterly direction to Dundas. Downstream of Dundas the creek is well defined and relatively straight. The banks are altered/manmade with boulders and cobble lining, providing some bank protection against erosion and plantings in floodplain beyond. This downstream reach is modified by golf course use.	***Upstream*** –morphology dominated by flats with some slow riffle sections. Substrates consist of cobbles lining SWM outlet reach and a mixture of silt, organics and muck throughout rest of reach. Average bankfull widths ~ 3.7m upstream, with average bankfull depth of 0.5m. Channel gradient through reach is low-moderate. ***Downstream*** – morphology consists of riffle/ run/flats with 2 pools near Dundas. Substrates consist of a mix of gravel, sand, cobble and boulders throughout reach and hard pan clay through sections of reach. Average bankfull width is 3.75m, with an average bankfull depth of 0.5m. Channel gradient through reach is low-moderate.	***Upstream*** –cultural meadow with Riverbank Grape, Reed Canary Grass, Great Angelica, and aster and goldenrod species with woody vegetation consisting of shrub willow and Basswood. Instream cover composed of cobbles, instream woody debris and instream and overhanging vegetation (Reed Canary Grass, cattail and plantain species). ***Downstream*** –cultural species including mainly Vervain and goldenrod species, with woody species including Crack Willow, Common Hawthorn, young ash and dogwood species. Instream cover consists of cobbles and boulders, and instream and overhanging vegetation (Reed Canary Grass, cattail and short grass species).	Modifications to watercourse downstream of Dundas in golf course, including various online ponds, may pose seasonal barriers to upstream migration.	**Warmwater forage/baitfish community** 'Carp and Minnow' species (Sept 98) within 50m DS of Dundas. Baitfish observed by Ecoplans in upstream reach.

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Culvert 13 Sheldon Creek ('W2') 19+363 2.5m x 1.6m Concrete Box, 36.6m long	Sheldon Creek Watershed Regulated by CH Permanent flow.	This watercourse originates as agricultural drainage upstream of the project limits, north of Highway 407 ~ 2km north of Dundas Street. From here the channel flows through a short section of agricultural fields before entering residential developments where it flows within a tightly meandering, confined valley for ~1.5km, being crossed by 5 bridges before outletting into the large SWM pond immediately upstream of Dundas. South of Dundas the watercourse flows through Millcroft Golf Course and residential lots, eventually outletting to Lake Ontario downstream. Upstream of Dundas the feature outfalls from the on-line SWM pond via a 750 mm pipe into a large pool upstream of the Dundas culvert. This inlet pool measures ~12m long x 6m wide, with a maximum depth of 0.65m ATOS. Downstream of Dundas the channel is confined within a narrow, tightly meandering valley through golf course, draining through on-line SWM ponds.	***Upstream*** – channel morphology dominated by pools and riffles, with cobble and gravel substrates dominant through natural channel and cobbles, gravel, sand, silt and boulders within the inlet pool immediately upstream of Dundas. The natural channel section upstream of the SWM pond has a bankfull depth ranging from 2.2-3.5m, with an average bankfull depth of 0.45m. Channel gradient is low to moderate upstream of the SMW pond and stagnant downstream. ***Downstream*** – channel morphology dominated by flat features, with a few small riffles and on-line ponds. Substrates composed of silt and clay mixture. Bankfull width ranges from 2.0-4.5m, with an average bankfull depth of 0.3m. The gradient downstream is low, affected by the series of online ponds the watercourse flows through.	***Upstream*** – riparian vegetation consists of mainly cultural species including Black-eyed Susan, Smartweed, Purple Loosestrife, Teasel, Brome Grass, and clover and aster species, with young willow, Back Cherry and some planted Eastern White Cedar along the banks. Instream cover upstream of SWM pond includes cobble and boulders, instream and overhanging vegetation (cattail and Reed Canary Grass). ***Downstream*** – riparian vegetation consists of Crack Willow, Norway Spruce, and pine species with grasses/herbs (cattail, Teasel, Common Milkweed, and grass and goldenrod species). Instream cover consists of mainly cattail species, with some instream and overhanging woody debris.	The channel upstream of the pond has been realigned using Natural Channel Design principles. It appears that the watercourse is cut through/driven across in some reaches. The watercourse flows through several online ponds through the golf course property. These SWM ponds provide refuge habitat.	**Warmwater forage/baitfish community.** Pumpkinseed, Fathead Minnow, White Sucker, Green Sunfish, Brook Stickleback and 'Carps & Minnows' (sampled between 1997 and 2004 between 300m upstream to 1 km downstream of Dundas) were also captured. Fish community indicative of pond community consistent with on-line ponds. Baitfish observed by Ecoplans in the inlet pool in 2009.
Culvert 15 Sheldon Creek 19+785	Sheldon Creek Watershed. Regulated by CH. Intermittent flow.	Watercourse appears to originate as agricultural drainage upstream of project limits and has been historically altered through the Alton Community upstream of Dundas Street. Immediately upstream of Dundas the original channel has been redesigned through natural channel design principles to create a graded outlet into a SWM pond associated with the development of the Alton Community. In addition a secondary channel has been realigned along the east side of Appleby Line, which then flows downstream of Dundas (Culvert 16) and then west to outlet to this watercourse on the south side of Dundas Street. Downstream of Dundas this merged watercourse continues in a southeasterly direction through residential and commercial land in a tightly meandering pattern through a historically altered valley system further south. Upstream of Dundas there is a short section of natural channel draining the SWM pond through Dundas Street. Downstream of Dundas the watercourse has been historically altered through the subdivision on the south side of the Dundas. A crossing structure and outlet channel has been recently installed on the western bank, conveying flows from the east (C16) under the commercial lot to Sheldon Creek.	***Upstream*** – channel morphology beyond SWM pond is mainly flats along ditchlines, with some scattered shallow pools. Substrates consist mainly of sand and silt, with scattered sections of rip rap/river stone lining the banks in the modified sections of the watercourse. ***Downstream*** – channel morphology dominated by flats, with some short riffles and shallow pools scattered throughout naturalized channel section downstream. Substrates consist mainly of sand and silt, with some gravel and rip rap in the riffle sections. Bankfull dimensions are affected by the modified nature of the system both within the SWM and the altered channel and ditch drainage.	***Upstream*** –mainly cultural and common wetland species within ditchline (grass and cattail species) with some landscape plantings along the modified section of Sheldon Creek to the east of Appleby Line. Instream cover consists of dense instream vegetation (cattails and grass species). ***Downstream*** –mainly cultural meadow species including scattered woody species like shrub willow, Red-osier Dogwood and spruce species and ground cover of mainly grass species, with some cattails, sedge and goldenrod species. Instream cover consists of rip rap/river stone, and instream and overhanging vegetation (cattails and grass species).	The steep gradient of the watercourse outfall into the SWM pond may pose a seasonal barrier to upstream movement.	**Warmwater forage/baitfish community.** DFO SAR Mapping delineate this feature as potential **Silver Shiner** habitat; however MNR confirmed that this watercourse does not support Silver Shiner.

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Culvert 16 Sheldon Creek at Appleby Line 20+037	Sheldon Creek Watershed. Regulated by CH. Intermittent/seasonal flows	Watercourse appears to originate as agricultural drainage ~2.15km upstream of study area (upstream of Hwy 407) and has recently been altered for the recent commercial development and widening of Appleby Line near its intersection with Dundas Street. From its origins the channel flows along the ditchline east of Appleby Line in a straight planform to the Dundas crossing. Immediately downstream of the culvert outlet the channel flows west along the south ditchline to its confluence with the other Sheldon Creek tributary immediately downstream of Culvert 15. Upstream of Dundas the entire length of channel to the north has been altered and channelized within the eastern ditchline. There is also a small SWM pond to the west of east of the channel that outlets via a rip rap lined overflow area into the feature immediately upstream of the Dundas crossing. Downstream of Dundas the watercourse has been historically altered by the road widening and works at the Dundas Street/Appleby Line intersection. The feature flows in a westerly direction within the ditchline via a naturally designed channel planform to its outlet. It is crossed by 2 entrance laneways and Appleby Line.	***Upstream*** – channel morphology consist of a mix of pools and short riffles, progressing to long sections of flats near the culvert inlet. Substrates composed of sand and silt in the pools and flats, with some placed rip rap/river stone in the riffle features. Bankfull dimensions affected by modified nature of system. Bankfull width range from 3.0-6.0m, with average bankfull depth of 0.3m. Channel is low gradient, with stagnant pool sections throughout modified channel. ***Downstream*** – channel morphology consists of mainly flats and pools and substrates composed mainly of sand and silt, with a little gravel near downstream end of culvert. Bankfull dimensions are modified by the ditchline section, with a bankfull width ranging from 2.0-4.0m, and an average bankfull depth of 0.4m. Channel gradient is low through this reach; with stagnant pool areas present ATOS.	***Upstream*** – mainly cultural species including goldenrod, aster and grass species, with some woody plantings including maple and willow species. Instream cover consists of rip rap, and dense instream vegetation including cattails and Reed Canary Grass. ***Downstream*** –minimal riparian vegetation along the channel, including only cultural species such as goldenrod, aster and short grass species. There was no instream cover observed ATOS, most likely resulting from the recent channel works along the south side of Dundas Street.	No barriers to upstream movement evident.	Potential seasonal Warmwater forage/baitfish community associated with this features direct connection to C15 further west. DFO SAR mapping delineates this feature potential **Silver Shiner** habitat, however MNR confirmed that this watercourse does not support Silver Shiner.
Tansley Bridge Bronte Creek	Bronte Creek Watershed Regulated by CH Permanent flow.	This watercourse originates in a provincially significant wetland (PSW) ~21km upstream of Dundas Street, north of Hwy 401. Bronte Creek flows as a large meandering river through deep valley. Numerous islands/sand bars within upstream reach; riffle/pool habitat in channels. A deep pool exists along north bank upstream of bridge, ~25m long. Drainage channel flows down eastern slope on downstream side, within steep gully (cut into shale). Upstream of Dundas the channel meanders in a southeasterly direction towards bridge crossing through an incised valley with steep eroding slopes Immediately upstream there is a large lateral bar along the western side of the highway. Downstream of Dundas the watercourse meanders in a southwesterly direction again through deeply incised, eroding valley. The old bridge crossing immediately downstream of the Dundas bridge is in the wetted width of the channel.	***Upstream*** – channel morphology consists of mainly riffles, with some pools and runs. Substrates composed of boulders, cobble, sand, gravel and some exposed shale near upstream end. The average bankfull width through the reach is 19.9m, with an average bankfull depth of 0.6m. ***Downstream*** – channel morphology consists of mainly runs, with some riffle and pools scattered throughout. Substrates composed of cobble, sand, gravel and some shale in the runs further downstream. The bankfull width of the channel ranges from 14.0-23m, with an average bankfull depth of 0.5m.	***Upstream*** –maple/oak forest on valley slopes, and floodplain vegetation comprised of cultural, meadow and common wetland species including goldenrod species, Brome Grass, Burdock, Crack Willow, Manitoba Maple and Reed Canary Grass. Instream cover consists of instream and overhanging woody debris, boulders, and instream and overhanging vegetation (Watercress, Water Speedwell, Canada Waterweed, and Blue Flag). ***Downstream*** – Oak/Black Walnut valley slope forest and lowland-willow, Manitoba Maple, Black Walnut, and ash species in floodplain. Instream cover consists of cobbles and boulders, and instream and overhanging vegetation (grass species).	No barriers to fish movement noted. Steep shale valley slopes exhibit erosion/slumping along both sides of river ~100m upstream and downstream of bridge. Bank erosion also noted along outside bends (sand/shale). Old bridge piers located a short distance downstream of the existing bridge pier on the southwest bank instream (measuring ~3m wide, 8m long) Scour pool formed around pier.	**Migratory Coldwater** **With Silver Shiner (DFO mapping 2013 and verified by CH).** Smallmouth Bass, Migratory Rainbow Trout, Lake-run Brown Trout, Chinook Salmon, White Sucker (CH records). Potential staging pool noted in backwater pooling area upstream. Numerous Chinook Salmon carcasses observed during Nov 2009 survey and active spawning observed at the bridge crossing during 2014 agency site visit.

Appendix D - Existing Conditions Fisheries Summary Table

Culvert 22 14 Mile Creek West 23+059 3.7m x 2.5m Concrete Box, 43.7m long	14 Mile Creek Watershed Regulated by CH Permanent flow.	The watercourse flows through agricultural land upstream of Dundas. A side channel connects a large pond to the main channel within ~580m upstream of Dundas. The main channel is narrow and fairly linear supporting mainly riffle/runs before entering a lowland reach where the stream meanders. The main channel then enters a confined/channelized reach ~30m upstream of Dundas (contained within concrete walls). Within the meandering reach, debris jams cause braided flow. Downstream of Dundas, the watercourse flows through a forested valley supporting mainly flat morphology. The channel flows through a steep valley. Upstream of Dundas the channel displays both natural meandering sections as well as a channelized section. The channelized section is confined within concrete barrier walls on either side of the channel for a length of ~50m immediately upstream of the culvert inlet. Downstream of Dundas the channel meanders to the southeast immediately downstream of the existing culvert outlet, and meanders generally in a south-easterly direction downstream. The banks are natural and display bank erosion and slumping along the outside of meander bends.	***Upstream*** – channel morphology dominated by pools and flats through channelized reach, and riffle/run/pool morphology through natural channel section. Substrates consist of a mix of fragmented shale, scattered cobble, gravel and silt. Bankfull widths range from 1.0-3.0m with average bankfull depth of 0.4m. Channel gradient is low-moderate with abundant woody debris jams present within channel. ***Downstream*** – channel morphology dominated by flats, with some scattered pools and riffles throughout reach. Substrate consists of a mix of silt, clay, gravel, fragmented shale, and some cobble. Bankfull widths range from 2.7-5.9m, with average bankfull depth of 0.4m. The channel gradient through this reach starts out low and increases as channel progresses downstream.	***Upstream*** – riparian vegetation consists of mainly trees (Crack Willow, Sugar Maple, White Elm) and some cultural meadow species (grass and herb species). Instream cover consists of instream and overhanging woody debris, and instream and overhanging vegetation (cultural grasses/herbs). ***Downstream*** – Riparian vegetation consists of Ash, Grey Dogwood, Black Walnut, White Grape, Wild Blackberry and coltsfoot. Instream cover consists of overhanging trees (lowland forest) and vegetation (grass species).	The watercourse originates upstream of Hwy 407 and used to flow online through a pond. An old channel was noted in the field east of where the existing watercourse now lies. Bank erosion is prominent in downstream reach (state of channel widening), and undercut banks and some bank erosion were noted upstream. The existing culvert is kinked and perched ~17cm, about halfway through the culvert, and perched ~35 cm at outlet. 20 cm shale step located immediately upstream of channelized reach. Possible fish barriers during seasonal conditions. Culvert inlet and outlet pools are thought to provide refuge habitat for baitfish (including Redside Dace). Redside Dace sampled here in previous surveys.	**Warmwater forage/baitfish community.** **DFO- mapping 2013 indicates Redside Dace, and CH verified presence upstream of Dundas St. (2010 sampling period).** Based on several sampling events (between 215m upstream of Dundas, D/S to Richview Golf Course. (1998-2007) : Blacknose Dace, Bluntnose Minnow, Brassy Minnow, Brook Stickleback, Brown Bullhead, Common Shiner, Creek Chub, Fantail Darter, Fathead Minnow, Goldfish, Largemouth Bass, White Sucker
Culvert 23 14 Mile Creek West Tributary ?? 23+534 Concrete Box	14 Mile Creek Watershed Regulated by CH Permanent flow.	Watercourse originates in agricultural fields upstream of the study area limits, and then flows through a moderately sized shallow valley setting through Dundas Street, eventually connecting with the Main Branch of 14 Mile Creek near the QEW. Watercourse is a highly meandering system set in a wide valley displaying good riffle-pool sequencing. Limited woody vegetation cover, but abundant vascular plant cover along valley. Upstream of Dundas, the channel meanders through the valley and appears to leave its banks during high flow events (evidence of flashy flows and bankfull dimensions hard to measure). Wetted widths ranged from 0.45-2.7m, and wetted depths ranged from 0.03-0.36m. Downstream of Dundas the channel meanders through a valley setting, splitting into two channels around a large vegetated island. Wetted widths range from 0.7-2.0m, and wetted depths range from 0.02-0.55m (pools).	***Upstream*** – channel displays good riffle-flat morphology with some small pools scattered through and at the culvert inlet. Substrate materials consist of cobble and gravel in the riffles and sand, silt and gravel in the pools. Bankfull widths ranged from 0.75 upwards to 10m, although again this was hard to determine. Bankfull depths range from 0.2-0.5m. ***Downstream*** – channel displays mainly riffle morphology with some flats and pool features. One large outlet pool immediately downstream of crossing. Substrate materials consist of cobble and gravel in the riffles and sand, silt and gravel in the pools. Bankfull widths range from 1.0-2.0m and bankfull depths range from 0.15-0.7m.	***Upstream*** –dominated by meadow vegetation including grass sp., *Phragmites*, cattails, Teasel, goldenrod sp., Milkweed, aster sp., and woody species including White Elm, shrub willow, and dead stands of elm. Instream cover consists of large and small woody debris, overhanging grasses and woody debris, and scattered cobbles. ***Downstream*** **-** riparian vegetation consists of cultural meadow species including aster sp., cattails, goldenrod and thistle sp., and woody vegetation consisting of White Elm, White Ash, Wild Pear and shrub species. Instream cover includes Reed Canary Grass, rush species, and scattered pockets of cobble.	No barriers to fish movement noted. The existing culvert has a joint/bend in it, but this is minor and does not appear to create any issues with woody debris jamming or seasonal barrier issues.	**Warm/cool water forage/baitfish community with Redside Dace.** **Redside Dace were captured ~ 50m upstream of Dundas street in 2004.** Based on several sampling events (1998-2004) between 500m upstream of Dundas to 50m downstream of Dundas St.: Blacknose Dace, Bluntnose Minnow, Brook Stickleback, Common Shiner, Creek Chub, Fathead Minnow, Goldfish, Longnose Dace, White Sucker

ATOS – At Time of Survey

Appendix D - Existing Conditions Fisheries Summary Table

Table 2. Existing Conditions Summary Table for those watercourses supporting Indirect Fish Use within the study limits.

Culvert Number, Watercourse and Location, Chainage, Culvert details	Watershed Affiliation, CH Regulated, and Flow Direction/Permanency	Channel form/Dimensions	Morphology and Substrate Type	Vegetation (Riparian and Instream) Cover	General habitat comments, barriers to movement and downstream connectivity.	Fish Habitat Potential/Fish Community Classification/ Composition
No culvert Number Unnamed 1 just west of Brant/Cedar Springs Road No Chainage 1000m CSP culvert.	Tuck Creek Watershed Not regulated by CH. Localized ephemeral drainage.	This feature originates in the young cultural woodlot and deciduous forest on north side of highway. Channel flows in southern direction for ~130m before losing channel definition in the residential areas south of Dundas Street. System flows through low area between berms/embankments associated with Brant St. and private property (fenced area). Upstream of Dundas this feature shows variable channel definition and moderate-steep gradient through forested area. Within the existing highway ROW the channel bends 90˚ and flows parallel to the highway from ~40m, then eventually into the culvert. Downstream of highway crossing the drainage feature flows through residential development before eventually outletting to a drop structure upstream of Beaufort Drive.	***Upstream*** **-** limited morphology (swale/wetland dominant), likely riffles/runs associated with steepness of channel. Gravel, sand and cobble substrates present in reach. Bankfull width ranging between ~0.45m- 1.7m with a bankfull depth ranging from 0.1 -0.15 m. Feature was dry ATOS. ***Downstream*** – channel dominated by riffles and runs with a scattering of small pools in between. Gravel, sand and cobble are present in the reach. Bankfull widths range from 1.25-1.45m, with an average bankfull depth of 0.45m.	***Upstream*** – riparian vegetation dominated by cultural woodland and deciduous forest with abundant Common Buckthorn. Within the highway ROW the drainage feature flows through cultural species dominated by teasel, goldenrod, Sow Thistle, and grass species. ***Downstream –*** riparian vegetation dominated by cultural species within the residential lands including teasel, goldenrod, Sow Thistle, and grass species. Instream vegetation consists of Purple Loosestrife and cattails.	Watercourse outlets into a drop structure located just north of Beaufort Drive, ~200m downstream of Dundas Street posing permanent barrier to upstream movement. Watercourse may 'daylight' again between ~450-750m further downstream near Brant Hills Park (not confirmed).	**Indirect fish habitat** Isolated habitat given steep gradient of the channel upstream and loss of definition downstream. Localized contribution of nutrients and allochthanous inputs to the watercourse further downstream (near Brant Hills Park).
No culvert Number Unnamed 2 just east of Brant/Cedar Springs Road No Chainage 650mm plastic culvert.	Tuck Creek Watershed Not regulated by CH. Localized ephemeral drainage.	This feature originates in the wooded area north of Dundas Street. Only a trickle of flow ATOS. Downstream of highway watercourse flows through cultural meadow lands for ~170m before joining with a secondary tributary flowing from the west. Immediately downstream of this confluence, (upstream of Cavendish Road) the feature outlets into a drop structure. Upstream of Dundas the feature flows in a relatively straight, tight meandering pattern towards the Dundas Street. Channel gradient is moderate, and banks are low-lying, displaying bank erosion and scour. Downstream of Dundas Street the feature is a narrow, confined channel with steep banks displaying moderate basal scour and erosion.	***Upstream*** – channel morphology dominated by riffles and flats with some small pools. Substrates composed of sand, gravel and the odd cobble scattered throughout the reach. Bankfull widths through reach average 1.3m with an average bankfull depth of 0.4m. ***Downstream*****-** channel displays mainly riffle and run morphology, with some scattered small pools. Substrates composed of a mixture of mainly gravel with some sand and cobbles intermixed. Channel gradient is low-moderate and average bankfull width is 0.6m, with an average bankfull depth of 0.3m.	***Upstream*** – riparian vegetation includes a dense mixed hardwood forest with an understory of grass, aster and goldenrod species, Wild Raspberry, Teasel, and Sow Thistle. Instream cover provided by instream and overhanging woody debris, and overhanging vegetation (mainly grasses). ***Downstream*** - Riparian vegetation consists of Cattail, Purple Loosestrife, aster sp., teasel, White Clover, Crab Apple, Crack Willow, Wild Raspberry, and Sow Thistle. Instream cover consists of minimal woody debris near culvert outlet.	Watercourse outlets into a drop structure located north of Cavenish Drive, and ~200m downstream of the existing Dundas Street crossing posing permanent barrier to upstream movement. The tributary may 'daylight' again between ~450-750m further downstream near Brant Hills Park (not confirmed).	**Indirect fish habitat.** No direct fish use within the road ROW. Localized contribution of nutrients and allochthanous inputs to watercourse downstream of piped/buried section (Brant Hills Park).

Appendix D - Existing Conditions Fisheries Summary Table

Culvert 1 Tributary #8 of Tuck Creek. 14+440 900 mm CSP, 36.9m long (crushed at outlet)	Tuck Creek Watershed Regulated by CH. Intermittent drainage with stagnant/slow flows ATOS.	This drainage feature originates as a swale in dense forest/woodlot on north side of highway ~380m east of Brant Street. From here channel flows through road ditchline on north side for ~190m before turning south to flow under the roadway, eventually outletting to a storm sewer ~100m south of existing Dundas Street crossing. Upstream of Dundas watercourse flows as a swale in forested are, and then as ditchline drainage before entering culvert. Downstream of Dundas feature outlets from culvert and dissipates into a dense patch of Phragmites, transitioning to an open channel reach before entering drop structure ~100m southeast of culvert.	***Upstream*** – channel morphology composed of flat features with stagnant flows. Substrates composed of silt and clay. Bankfull width ranging from 0.85 to 2.0m, and an average bankfull depth of 0.3m. Channel gradient progresses from moderate in forested reach to low within road ditchline where velocities become stagnant. ***Downstream*** – channel morphology dominated by flats, with two riffle features at the gabion baskets (knick points) and a small scour pool downstream of second basket. Substrates composed of silt and clay through channel and rip rap n gabion baskets. Bankfull widths range from 2.15-3m, with an average bankfull depth of 0.3m. Low-moderate gradient throughout reach, modified by a series of knick point/drop structures created by gabion baskets across channel (~ 60m and ~80m respectively) downstream of existing crossing.	***Upstream*** – riparian vegetation consists of mixed forest dominated by Walnut and Ash species, and Silver Maple with scattered White Elm and Grey Dogwood. In addition, aster and goldenrod sp., Queen Anne's Lace, Brome Grass, and Reed Canary Grass also present. Instream cover includes instream vegetation (Reed Canary Grass). ***Downstream*** – riparian vegetation consists of cultural meadow species including Phragmites, Purple Loosestrife, grass sp., Queen Anne's Lace, Vetch, Teasel, and Sow Thistle. Instream cover includes instream vegetation (cattail, Phragmites, Purple Loosestrife).	Watercourse outlets into a drop structure located ~100m downstream of Dundas Street posing permanent barrier to upstream movement. Additional barriers include knick points created by the gabion baskets (40 cm high drop at 1st basket, 45 cm drop at second basket).	**Indirect fish habitat.** No direct fish use within the road ROW; localized contribution of nutrients and allochthanous inputs to watercourse downstream of piped/buried section.

Appendix D - Existing Conditions Fisheries Summary Table

Culvert 2 Tributary #7 of Tuck Creek 14+694 1000mm Arched CSP, 30.2m long	Tuck Creek Watershed Regulated by CH Intermittent flows with permanent standing water in wetland feature.	Watercourse originates as overland flow and groundwater seepage at base of Escarpment north of study limits. From here feature flows through dense woodland and meadow features before passing under existing roadway. South of Dundas Street channel flows west to east within existing highway ditchline, eventually dissipating in a large cattail marsh feature ~280m east of existing culvert outfall. Flows are assumed to eventually outlet to storm sewer associated with Culvert 3 (Tributary #6 of Tuck Creek). The channel is highly impacted by several culvert crossings for private laneways both upstream and downstream of Dundas. Upstream of Dundas watercourse is well defined with low lying banks that are stable. Downstream of Dundas watercourse flows parallel to Dundas within ditchline, becoming incised near Eaglesfield Drive ~30m east of culvert outlet. Downstream of Eaglesfield Drive channel widens and banks become increasingly unstable, shows signs of recent bank slumping along north side/road embankment.	***Upstream*** – channel morphology dominated by riffles with flats and a few small pools. Substrates composed of a mix of cobbles, gravel and coarse sand with the odd boulder scattered throughout reach. The average bankfull width measures 1.65m wide, with an average bankfull depth of 0.25m. This reach displays a low to moderate gradient with slow moving flows. ***Downstream*** – channel morphology dominated by riffles, with runs and small pools scattered throughout reach. Substrates composed of mix of sand, gravel and a few boulders. Bankfull widths range from 0.4-2.8m with an average bankfull depth of 0.3m. ~280m east of existing culvert outlet flows dissipate into a large cattail wetland feature along south side of highway. This downstream reach displays a low gradient with slow flows with standing water pockets during drier periods.	***Upstream*** – riparian vegetation composed of a mixed forest with Walnut, Norway Spruce, and ash species and cultural meadows with Honeysuckle, Wild Raspberry, Reed Canary Grass, Wild Grape and aster species. Instream cover consists of boulders, instream woody debris and instream vegetation (jewelweed, Reed Canary Grass). ***Downstream*** – riparian vegetation dominated by manicured lawns within road ROW and cattails near its outlet to storm sewer ~ 430m further east. Instream cover consists of instream vegetation (sedge, rushes, and grass species).	Watercourse outlets into a drop structure located south of Culvert 3 (see column below). Other barriers include naturally occurring knickpoints in both upstream and downstream reaches (45, 30 cm high). Old/broken concrete culvert in channel upstream of highway likely a seasonal barrier to upstream movement. A lack of a defined channel east of Eaglesfield Road also creates barrier issue.	**Indirect fish habitat .** No direct fish use within the highway ROW; localized contribution of nutrients and allochthanous inputs to watercourse downstream of piped/buried section.

Appendix D - Existing Conditions Fisheries Summary Table

Culvert 3 Tributary #6 of Tuck Creek. 15+095 1.9m x 0.9m Concrete Box x 32.6m long (with CSP extensions on either side of highway). *Drainage flows through driveway culvert which connects to inside of CSP extension at inlet.	Tuck Creek Watershed Regulated by CH Permanent watercourse drainage groundwater from escarpment.	The watercourse originates as groundwater seepage and overland flows near base of escarpment upstream (north) of study limits. It then flows through pockets of natural forest and hedgerow to Dundas Street. ~330m upstream (northwest) of road crossing there is an online pond with a controlled outlet that contributes permanent flow to downstream reaches. This online pond likely used for irrigation for greenhouse industrial and nursery plots surrounding watercourse. Upstream of Dundas channel flows as a well-defined, relatively straight feature with tight meander bends within forest/hedgerow. The banks are unstable, displaying abundant bank erosion, basal scour and bank undercutting. Within 5m of Dundas watercourse meanders 90̊, and flows east in ditchline parallel to north side of Dundas for ~80m before crossing under a private laneway via a CSP culvert which outlets directly to culvert under Dundas Street. Downstream of Dundas channel flows in a relatively straight, tightly meandering planform for ~50m through cultural meadow and scrub thicket before outletting to a large storm grate south of Dundas.	***Upstream*** – channel morphology dominated by riffles in forested portion of reach and flats through road ditchline. Substrates composed of mix of fine and coarser substrates in upstream forested section, and finer silt detritus and gravel at culvert. Bankfull widths range from 0.85m in ditchline to 1.8m within more natural forested section further upstream. The average bankfull depth through this reach is 0.2m. Channel gradient progresses from moderate upstream to low through Dundas Street ditchline. ***Downstream*** – channel morphology dominated by riffles, with some flats intermixed. Substrates composed of a mix of fine and coarser materials from detritus to scattered boulders. Bankfull widths range from 1.5-4m, with an average bankfull depth of 0.2m. Channel gradient within this reach is low-moderate eventually outletting to storm grate.	***Upstream*** – riparian vegetation composed of a mixed forest with Eastern White Cedar, Black Walnut and White Pine, as well as a section through ditchline surrounded by cultural species including Wild Grape, Jewelweed, Poison Ivy, and Herb Robert. Instream cover consists of instream and overhanging woody debris, and instream vegetation (Jewelweed). ***Downstream*** – riparian vegetation contain cultural species including Wild Grape, goldenrod species, Burdock, Teasel, Jewelweed, and aster and nightshade species with a scattering of woody species near culvert (Silver Maple, Walnut and sumac). Instream cover provided by boulders, instream and overhanging woody debris, and instream vegetation (Narrow-leaved Cattail, Purple Loosestrife and Wild Mint).	Watercourse outlets into a drop structure ~50m downstream of Culvert 3 outlet. Tributary appears to re-surface at Ireland Park, located downstream of Guelph Line and Hwy 407. Other barriers include 2 possible seasonal barriers to upstream movement at road culvert (0.16m drop into box culvert from driveway culvert) and the man-made gradient change over boulders placed in downstream channel (~40 cm drop).	**Indirect fish habitat .** No direct fish use within the road ROW; localized contribution of nutrients and allochthanous inputs to watercourse downstream of piped/buried section.

Appendix D - Existing Conditions Fisheries Summary Table

Culvert 7 Tributary 2 of Tuck Creek. 15+996 1.8m x 1.2m Concrete Open Foot, 40.4m long	Tuck Creek Watershed Regulated by CH Intermittent/seasonal flows.	This drainage feature originates in agricultural fields ~1.3km to northwest of Dundas Street crossing, west of Guelph Line. From its origins feature flows in a south-easterly direction through forested, residential and agricultural lands before crossing Dundas. Downstream of crossing drainage feature continues in a south-easterly direction through mainly cultural and forested sections, merging with Trib. # 1 of Tuck Creek ~170m downstream of Dundas. ~ 300m downstream of road crossing channel enters a long culvert under residential properties, eventually outletting over 800m further downstream, east of Vista Drive and Hwy 407 ERT. Upstream of Dundas feature flows through a lowland forest and residential properties. There is a short section of reach surrounded by concrete walls immediately upstream of Dundas. There is also a narrow walking bridge across channel immediately upstream of concrete lined section. Downstream of Dundas channel flows through cultural woodland/thicket, outletting to Tributary #1 of Tuck Creek ~165m downstream of Dundas. Downstream channel prone to erosion (exposed banks).	***Upstream*** – channel morphology dominated by flats with some scattered pools throughout reach. Substrates dominated by sand and gravel, with a short section covered by boulders within ~20m upstream of culverts. Bankfull widths range from 1.8-3.0m, with an average bankfull depth of 0.2m. Channel was dry ATOS and gradient progresses from low to high (highest immediately upstream of culvert). ***Downstream*** – channel morphology dominated by flats with some scattered pools, including outlet pool. Substrates dominated by sand in pools and a mixture of sand, gravel and cobbles in flats. Bankfull width ranges from 1.0-2.4m, with an average bankfull depth of 0.3m. There were dry sections and stagnant pools observed in reach ATOS. The reach displays low-moderate gradient to Driftwood Drive.	***Upstream*** – riparian vegetation consists of a mix of woody species including Manitoba Maple, Black Cherry, ash and sumac species, and an understory of Wild Grape, Jewelweed, and aster species. Instream cover provided by instream woody debris, boulders and the walking bride. ***Downstream*** – riparian vegetation consists of a mix of shrubs and herbaceous sp., Crack Willow, ash and Norway Maple. Instream cover consists of woody debris and detritus.	Instream barriers present in upstream reach include debris jams (seasonal) and high gradient nature of reach immediately upstream of culvert. Also knickpoints downstream of Dundas will pose seasonal barriers. Tributary is piped downstream of Driftwood Drive (500m underground reach).	**Indirect fish use.** No direct fish use within road ROW; localized contribution of nutrients and allochthanous inputs to watercourse downstream of piped/buried section. MNR 1999 sampling downstream of Dundas- no fish caught.
Culvert 8 Tributary #1 of Tuck Creek. 16+096 1.5m x 1.5m Concrete Open Foot, 42.1m long	Tuck Creek Watershed Regulated by CH Intermittent (possibly small permanent baseflow). Some iron floc observed ~60m upstream of highway crossing.	The drainage feature originates ~ 820m upstream of Dundas and west of Guelph Line in forested section near base of escarpment. From here channel flows through agricultural, residential/commercial, and forested sections as a well-defined channel to Dundas Street crossing. Immediately upstream of Dundas channel flows beside an old gas station. Downstream of Dundas channel flows through cultural meadow and manicured lawns towards its confluence with Trib. #2 of Tuck Creek ~ 85 further downstream of Dundas. Upstream of Dundas the well-defined channel flows in a relatively straight planform along paved section of the gas station. The banks here are man-made; lined by broken chunks of concrete and boulders installed to limit bank erosion through this straight section. Downstream of Dundas channel flows through cultural meadow outletting to Trib. #2 of Tuck Creek ~85m downstream of Dundas. Downstream channel loses definition near existing ROW, and meanders through dense vegetation downstream of this point. Channel becomes more defined and open near tributary confluence.	***Upstream*** – channel morphology dominated by riffles, with some scattered flats throughout reach. Substrates dominated by boulders and gravel with some cobble and sand intermixed. Average bankfull width observed is ~2m, with an average bankfull depth of 0.4m. Channel gradient is low-moderate through residential/commercial lands. ***Downstream*** – channel morphology dominated by flats. Substrates composed of silt with some sand and gravel sections. Bankfull width ranges from 2.0-4.0m with an average bankfull depth of 0.4m. Channel gradient is low-moderate, becoming steeper near confluence with Trib. #2 of Tuck Creek.	***Upstream*** – riparian vegetation contains narrow forested sections with Norway Maple, White Spruce, Manitoba Maple and Ash species. Understory contains Reed Canary Grass, Jewelweed aster species. Instream cover consists of cobbles and boulders, and instream (Reed Canary Grass) and overhanging vegetation (Reed Canary Grass and other cultural species). ***Downstream*** – riparian vegetation consists of woody species including Grey Dogwood, Crack Willow, as well as ash and walnut species with an understory of Vervain, Reed Canary Grass, Purple Loosestrife and cattails. Instream cover consists of instream (cattails, P. Loosestrife and Reed Canary Grasses) and overhanging vegetation (woody species and cultural species).	Instream barriers in upstream reach include debris jams created by poured and fragmented concrete pieces. Tributary is piped downstream of Driftwood Drive (500m underground reach), posing barrier to upstream movement.	**Indirect fish habitat .** No direct fish use within road ROW; localized contribution of nutrients and allochthanous inputs to watercourse downstream of piped/buried section. MNR 1999 sampling downstream of Dundas- no fish caught.

Appendix D - Existing Conditions Fisheries Summary Table

No culvert number associated with this feature. Sutton Drive Tributary 0.95m wide concrete open-footed culvert	Sheldon Creek Watershed Not Regulated by CH Intermittent/seasonal flow.	Drainage feature originates in a large SWM pond ~180m upstream (north) of Dundas Street between Dundas Street and CN Rail line. From here feature drains through a shallow ditchline/swale feature to east and then south to outlet into a storm drain/catch basin immediately south of Dundas Street and west of Sutton Drive. Upstream of Dundas feature flows as a poorly defined channel through a vegetated ditch and dense Phragmites/cattails along north side of Dundas. Downstream of Dundas channel flows through a short section of ditchline/swale before outletting into a catch basin drop structure.	***Upstream*** – channel morphology dominated by flats with some scattered stagnant pools. Substrates assumed to be sand and silt, although dense instream vegetation made substrate composition hard to determine. Average bankfull width of ~2.15m, with an average bankfull depth of 0.2m. Channel gradient is very low with stagnant pool sections observed ATOS. ***Downstream*** – there is no channel downstream of Dundas, and no exposed soils ATOS. Average bankfull width of 1.5m, with an average bankfull depth of 0.2m.	***Upstream*** – riparian vegetation consists of mainly cultural species including Burdock, Thistle and grass species. Instream cover composed of dense instream vegetation (Phragmites, cattail and grass species). ***Downstream*** – riparian vegetation consists of manicured lawn with scattered Eastern White Cedar, Silver Maple, Manitoba Maple, and ash species. Instream cover consists of some instream vegetation (Purple Loosestrife, asters, cattail).	Drainage feature outlets into a drop structure/catch basin ~100m downstream of Dundas, posing a permanent barrier to upstream movement.	**No direct fish habitat within Dundas ROW reaches.** Possible isolated baitfish use in pond upstream of Dundas, however no fish likely through remainder of reach given poorly defined (swale) nature of feature.
Culvert 18 Tributary of Bronte Creek 21+266 800 mm CSP, 43.87m long	Bronte Creek Watershed Not regulated by CH Intermittent/seasonal flow.	Drainage feature originates in wide meadow upstream of Dundas Street. May also received roadside drainage from east on north and south sides of Dundas Street. Upstream of Dundas there is no defined drainage feature or flow path, just culvert inlet and a wide meadow. Downstream of Dundas drainage feature flows along highway ditchline ~90m before flowing over top of steep valley embankment to its outlet to Bronte Creek further southwest. The channel is incised and cut deep into shale/bedrock substrate.	***Upstream*** – no defined drainage or morphological features. Substrates consistent with meadow (sand, silt). No defined drainage feature or flow path, just culvert inlet and a wide meadow. ***Downstream*** – channel morphology dominated by step-pool/ riffle morphology. Substrates consist of fragmented shale, gravel, sand and silt. Bankfull widths range from 0.5-1.5m, with an average bankfull depth of 0.3m. The channel gradient starts out low, but increased to a very steep change in elevation near its outlet with Bronte Creek.	***Upstream*** – riparian vegetation dominated by cultural meadow species including Joe-pye Weed, Teasel, Wild Grape, Queen Anne's Lace, and grass and sedge species with some shrub and tree cover scattered throughout meadow. No instream cover ATOS. ***Downstream*** – similar to upstream reach the riparian vegetation dominated by cultural species including Teasel, Wild Grape, Queen Anne's Lace, goldenrod, grass and sedge species with some shrub and tree cover scattered throughout meadow. No instream cover, most likely a result of the high energy flows experienced through reach.	The steep gradient of the drainage feature at its confluence with Bronte Creek, including a steep change in gradient over a shale knick point (step pools) throughout reach extent, poses permanent barrier to upstream movement.	**Indirect fish habitat** No direct fish use within road ROW as a result of very steep gradient at merging of this feature with Bronte Creek.

Appendix D - Existing Conditions Fisheries Summary Table

Culvert 20 Unnamed watercourse (tributary of 14 Mile Creek) 22+031 900 mm CSP, 42m long02	14 Mile Creek Watershed Regulated by CH (D/S of Dundas only). Intermittent/seasonal flow.	Feature originates as a swale upstream of Dundas (through agricultural field), flowing through a cattail choked flooded area (undefined) downstream of Dundas, formed between 2 berms/ mounds. Feature displays swale characteristics with small sections of defined channel noted from ~100m downstream. Upstream of Dundas there is some standing water noted within 35m of ROW. Low area measures ~6m wide (bankfull) and wetted dimensions of 4.7m wide. Portions of the feature have been recently driven through upstream of more defined section. Downstream of Dundas there is some standing water present in valley feature between berms.	***Upstream*** – no channel morphology (swale). Substrates consist of silt and clay (where exposed). Low area measures ~6m wide (bankfull) ***Downstream*** – channel morphology dominated by flats with some pools. Substrates consist of silt and clay. Defined channel sections (where present) display a bankfull width of ~1.5m with an average bankfull depth of 0.2m. Feature was mainly dry ATOS.	***Upstream*** – Riparian area contains a soybean field, with narrow bank of cultural grasses/herbs. Instream vegetation dominated by cattails, plantain, Purple Loosestrife. ***Downstream*** – Riparian area contains Weeping Willow, Reed Canary Grass, asters, and cultural grasses/herbs. Instream cover provided by dense instream vegetation including cattails with some Reed Canary Grass, and Purple Loosestrife.	Tributary outlets to another small tributary ~235m downstream of Dundas, which then outfalls eventually flows to main 14 Mile Creek (C21) ~2.2 km downstream of Dundas. Poor channel definition (mainly swale habitat), and at grade vehicle crossings ~100m upstream of Dundas present barriers to fish movement.	**Indirect fish habitat** No direct fish use within road ROW due to a lack of defined flow and water seasonally; localized contribution of nutrients and allocthanous input to more defined channel sections downstream of Dundas. No fish data available; Ecoplans' staff dip-netted feature in spring 2011 but nothing captured.
Culvert 21 Unnamed tributary of 14 Mile Creek. (Swale A)	14 Mile Creek Watershed Not Regulated by CH Intermittent/seasonal flow.	No feature noted upstream of Dundas through pasture. Swale may be present further upstream of property (suggested on air photo). Some localized pooling exists at culvert inlet. Downstream of Dundas the feature starts out defined and progresses to a less defined feature downstream of confluence with C20 tributary. Upstream of Dundas there is no channel definition present; feature is a swale. Downstream of Dundas channel flows through a short defined section of channel before losing definition further downstream of culvert.	***Upstream*** – No feature present. ***Downstream*** – channel morphology dominated by flats, with clay, silt and detritus substrates, where exposed. Bankfull with ranges from 2.2-8.7m wide with an average bankfull depth of 0.3.	***Upstream*** – No feature present. ***Downstream*** –riparian area contains cultural grasses/herb species (asters, goldenrod, teasel, grasses). Instream cover consists of dense instream vegetation (choked) dominated by cattail.	The tributary outlets to C20 tributary ~100m downstream of Dundas. As noted, system eventually flows into main 14 Mile Creek (C21) ~ 2.2 km downstream of Dundas. Lack of channel definition presents barrier to fish through ROW reaches.	**Indirect fish habitat** No direct fish use within road ROW due to a lack of defined flow and water seasonally; localized contribution of nutrients and allocthanous input to the more defined channel sections downstream of Dundas.

Appendix D Table 2. Vegetation Communities

Unit Number, ELC code and/or General Description	Dominant Component Species (generally listed in order or decreasing abundance)	Age/Size	Sensitivities and Designations
Unit N3 Fresh – Moist Black Walnut Lowland Deciduous Forest (FOD7-4) Lowland deciduous forest community surrounded by rural residential properties to the east and west. Tributary #8 of Tuck Creek flows through the unit and into the roadside ditch along the north side of Dundas Street. Unit is located approximately 350 m east of Cedar Springs Road.	**Canopy/Sub-canopy:** A relatively open canopy and sub-canopy composed of abundant Black Walnut with frequent Green Ash associates, especially surrounding the 2 intermittent watercourses on the east and west borders of the unit. Occasional Red Maple and Manitoba Maple are present along the banks of the watercourses. **Understory:** The understory is generally open, with moderately dense pockets surrounding the watercourses. Species observed include Gray Dogwood, Black Raspberry, Riverbank Grape, Rambler Rose, Thicket creeper, and Tartarian Honeysuckle. **Ground layer:** Ground layer coverage is greater than 60% throughout the unit. Grasses, Timothy, hawkweed, and Canada Goldenrod are frequent components of the ground layer in the more upland portions of the unit. Garlic Mustard is also present, but is not abundant or widespread. Low-lying areas surrounding the watercourses include a mix of the above mentioned species with sedge species, Spotted Jewel-weed, Virginia Strawberry, and bedstraw.	Young community dominated by tree with dbh <20 cm. Occasional trees to approximately 50 cm dbh are also present.	FOD7-4 community type is ranked as S2S3 (imperiled-vulnerable) in Ontario by NHIC. Within the Niagara Escarpment Protection Area under the Niagara Escarpment Plan (NEP). Within the Greenbelt Plan Area. Within the Halton Natural Heritage System Area (NHSA). Part of the Nelson Escarpment Woods Environmentally Sensitive Area (ESA #6).
Unit N4 Mineral Cultural Woodland (CUW1) A woodland patch of cultural origin with natural regeneration of native and exotic tree and shrub species. The east branch of Tuck Creek Tributary # 8 flows through the unit and is conveyed across Dundas Street via Culvert #1.	**Canopy/Sub-canopy:** The canopy is open, especially near Dundas Street, Common Apple, Green Ash, Black Walnut, Sugar Maple, Manitoba Maple, and Buckthorn. A hedgerow with White Spruce and Silver Maple runs along the west side of an abandoned driveway. **Understory:** Shrub regeneration is dense in some areas and includes Riverbank Grape, Rambler Rose, Tartarian Honeysuckle, Western Poison Ivy and Allegheny Blackberry. **Ground layer:** The dense ground layer vegetation is dominated by Canada Goldenrod, with grass, Garlic Mustard, Common Motherwort, Dame's Rocket, Panicled Aster, Ciliolate Aster, Virginia Strawberry, and Wild-lily-of-the-valley.	Young to mid-aged trees.	Within the Niagara Escarpment Protection Area under the Niagara Escarpment Plan (NEP). Within the Greenbelt Plan Area. Within the Halton NHSA.
Unit N5a Fresh-Moist Lowland Deciduous Forest (FOD7) A narrow band of lowland deciduous forest vegetation surrounding Tributary #7 of Tuck Creek. Located north of Dundas Street just west of Terra Greenhouses.	**Canopy/Subcanopy:** The canopy/sub-canopy is dominated by Black Walnut, with Bur Oak, White Ash, and Norway Spruce. **Understory:** The understory includes hawthorn, with Red-osier Dogwood surrounding the watercourse. **Ground layer:** The dense ground layer is dominated by grass.	Primarily young trees with some larger specimens approaching approximately 60 cm dbh.	Within the Niagara Escarpment Protection Area under the Niagara Escarpment Plan (NEP). Within the Greenbelt Plan Area.
Unit N6 Fresh-Moist White Cedar Coniferous Forest (FOC4) A broad naturalized hedgerow surrounding a channelized portion of Tributary #6 of Tuck Creek along the north side of Dundas Street, east of Terra Greenhouses. A small orchard area associated with the Terra Greenhouses property is located north of the unit.	**Canopy:** The portion of the unit adjacent to Dundas Street has a partially closed canopy dominated by Northern White Cedar, with Black Walnut and Eastern White Pine also present. **Understory:** Occasional young Green Ash saplings, Riverbank Grape and Guelder-rose Viburnum are present within the open understory. **Ground layer:** The ground layer is dominated by a thick cover of Spotted Jewel-weed. A mix of wetland and upland species was also observed including Herb-robert, Panicled Aster, Northern Bugleweed, Bittersweet Nightshade, Narrow-leaved Cattail, Devil's Beggar's Ticks, Rice Cutgrass, Small-fruit Bulrush, and sedges.	Young to Mid-aged, average dbh of canopy trees approximately 20 cm.	Within the Niagara Escarpment Protection Area under the Niagara Escarpment Plan (NEP). Within the Greenbelt Plan Area.

Unit Number, ELC code and/or General Description	Dominant Component Species (generally listed in order or decreasing abundance)	Age/Size	Sensitivities and Designations
Unit N7 Mineral Cultural Woodland (CUW1) A woodland patch of cultural origin comprised of several hedgerows with natural regeneration surrounding a dug pond. Tributary #5 of Tuck Creek flows along the roadside ditch along the south side of the unit and is conveyed beneath Dundas Street via Culvert #4 south of the unit. Located north of Dundas Street, opposite the Blackwood Drive and Dundas Street intersection.	**Canopy/Sub-canopy:** A hedgerow of young Norway Spruce runs parallel to Dundas Street at the top of a deep, steep sided roadside ditch. The dug pond north of the hedgerow is surrounded by an open canopy of White Willow, Green Ash, and Manitoba Maple. Occasional trees found within the drainage ditch adjacent to Dundas Street include Black Locust, Silver Maple, Black Walnut, and Green Ash. **Understory:** Saplings of the canopy species noted above are dense in spots north of the hedgerow, with Riverbank Grape and Thicket Creeper also present. Within the drainage ditch shrubs include willow, Riverbank Grape and Staghorn Sumac. **Ground layer:** The ground layer north of the hedgerow is sparse and patchy. Species observed include Garlic Mustard, grass and Bittersweet Nightshade. The ground layer within the ditch is dense and lush, and includes abundant grass, Garlic Mustard, and Spotted Jewel-weed, with Panicled Aster, Lesser Burdock, Canada Goldenrod and Bittersweet Nightshade also present.	Young trees up to approximately 20 cm dbh.	Within the Niagara Escarpment Protection Area under the Niagara Escarpment Plan (NEP). Within the Greenbelt Plan Area.
Unit N8 Mineral Cultural Thicket (CUT1) Mineral Cultural Woodland (CUW1) A narrow Black Locust hedgerow and occasional patches of trees associated with a drainage ditch north of Dundas Street. Two tributaries of Tuck Creek (Tributaries #3 and #4) flow into the roadside ditch and are conveyed beneath Dundas Street via Culverts C5 and C6. An online pond feature is located ~80 m north of Dundas Street along Tributary #3 (beyond the study area).	**Canopy:** The open canopy is composed of patches of shrub regeneration and occasional trees. Species include Common Apple, Black Locust, Buckthorn, Eastern Red Cedar, Common Lilac, Rambler Rose, Staghorn Sumac, Gray Dogwood and Riverbank Grape. Combined shrub and tree cover within the vegetation strip is approximately 50%. **Ground layer:** The ground layer is dominated by grasses and Garlic Mustard, with pockets of Common Reed, Reed Canary Grass, and Narrow-leaved Cattail in the roadside ditch and along the tributary channels.	Young regenerating shrubs and trees up to approximately 20 cm dbh.	Within the Niagara Escarpment Protection Area under the Niagara Escarpment Plan (NEP). Within the Greenbelt Plan Area.
Unit N9 Mineral Cultural Woodland (CUW1) A small, disturbed woodland patch in the northwest quadrant of the Dundas Street and Guelph Line intersection.	**Canopy/Sub-canopy:** The open canopy is dominated by Black Locust, with Manitoba Maple and Buckthorn also present. **Understory:** The understory is dense in spots and includes Gray Dogwood, Riverbank Grape, Staghorn Sumac, and Thicket Creeper. **Ground layer:** The ground layer is dominated by Garlic Mustard and grass.	Young	Within the Niagara Escarpment Protection Area under the Niagara Escarpment Plan (NEP). Within the Greenbelt Plan Area.
Unit N10 Fresh – Moist Lowland Deciduous Forest (FOD7) A narrow band of lowland forest vegetation surrounding Tributary #2 of Tuck Creek that flows between residential properties north of Dundas Street, just east of Guelph Line. The tributary is conveyed beneath Dundas Street via culvert C7 at the south end of the unit.	**Canopy:** The open canopy is dominated by Manitoba Maple, with White Ash, White Willow, Crack Willow, Silver Maple, Sugar Maple, Black Walnut and Quaking Aspen also noted. A single specimen of the problematic invasive Tree-of-heaven (*Ailanthus altissima*) is located just east of the watercourse on the manicured lawn of a residential property. **Sub-canopy:** The sub-canopy is composed of frequent Staghorn Sumac and occasional Choke Cherry and Buckthorn. **Understory:** Dense in spots with Staghorn Sumac, Thicket Creeper, Riverbank Grape, Buckthorn, European Privet, and currant. **Ground layer:** The ground layer is composed of a mix of upland, wetland, and non-native invasive species including abundant Spotted Jewel-weed with Western Poison Ivy, Canada Goldenrod, Japanese Knotweed, Garlic Mustard, Purple loosestrife, Wild Mock-cucumber, Devil's Beggar's Tick, and New England Aster.	Young to Mid-aged with some large White Ash specimens.	Within the Halton NHSA.

Unit Number, ELC code and/or General Description	Dominant Component Species (generally listed in order or decreasing abundance)	Age/Size	Sensitivities and Designations
Unit N11 Fresh-Moist Lowland Deciduous Forest (FOD7) A very narrow band of lowland deciduous forest vegetation surrounds Tributary #1 of Tuck Creek north of Dundas Street, midway between Guelph Line and the Highway 407 ramp.	**Canopy/Sub-canopy:** The canopy and sub-canopy unit are composed of Black Walnut, Siberian Elm, Manitoba Maple, Norway Maple, Quaking Aspen and a single White Spruce that is likely planted. Some natural regeneration of the above noted species was observed in the adjacent old-field meadow. **Understory:** The understory includes saplings of the tree species listed above with Tartarian Honeysuckle and Western Poison Ivy. **Ground layer:** The ground layer is dominated by grass with typical old-field species.	Young	Within the Halton NHSA.
Unit N12 N12a: Dry-Moist Old-field Meadow (CUM1-1) N12b: Cattail Mineral Shallow Marsh (MAS2-1) Two recently realigned tributaries of Shoreacres Creek (Tributary #1 and #2) flow from north to south through the unit and are conveyed beneath Dundas Street via culverts C9 and C10. The east branch of Shoreacres Creek flows into the roadside ditch east of an MTO carpool lot and is conveyed beneath Dundas Street via culvert C11. The cattail marsh community is associated with a small SWM pond east of the Highway 407 eastbound on-ramp.	**Canopy/Sub-canopy:** The site is predominantly open with occasional hedgerows and patches of young woody regeneration. The westernmost hedgerow is relatively continuous and contains young to Mid-aged Bur Oak and Black Walnut with abundant Buckthorn. Other hedgerows are patchy and comprised of young trees and shrubs typical of the rest of the site. Typical young woody species found occasionally throughout the site include Manitoba Maple, Staghorn Sumac, American Elm, Black Locust and Riverbank Grape. **Ground layer:** The ground layer is dominated by grass with typical old-field species. Tributary channels also include occasional facultative and obligate wetland species, however old-field species generally dominate. Wetland species noted include Common Reed, cattail, and Purple Loosestrife. Cattails dominate the small SWM pond feature (Unit 12b).	Pioneer / Young community with some mid-aged trees in hedgerows.	Within the Halton NHSA.
Unit N12c Mineral Cultural Thicket (CUT1) A narrow band of naturalization plantings and naturally regenerating vegetation surrounding a recently constructed SWM pond and a realigned portion of Appleby Creek north of Dundas Street and west of Tim Dobie Drive.	**Canopy/Sub-canopy:** Very sparse open grown Quaking Aspen, Eastern Cottonwood, Silver Maple, Manitoba Maple, American Basswood and Eastern White Pine are found along the banks of Appleby Creek. **Understory:** A mix of regenerating and planted shrubs and saplings including Snowberry, Fragrant Sumac, Gray Dogwood, and Speckled Alder are located along the banks of the SWM pond and watercourse, with dense pockets of willow shrubs in the watercourse channel. **Ground layer:** Dominated by grass, goldenrods, and asters, with Reed Canary Grass in and around the watercourse channel.	Predominantly planted saplings with sparse naturally regenerating trees up to approximately 30 cm dbh.	Within the Halton NHSA.
Unit N12d Mineral Cultural Thicket (CUT1) Dry-Moist Old-field Meadow (CUM1-1) Cattail Mineral Shallow Marsh (MAS2-1) A narrow band of naturalization plantings and regenerating vegetation surrounding recently constructed SWM ponds and a realigned portion of Sheldon Creek north of Dundas Street and east of Cornerstone Drive. A tributary of Sheldon Creek flows into the larger SWM pond from the west via a cattail choked channel. Culverts C13, C14 and C15 convey SWM outflows across Dundas Street south of the unit.	**Canopy/Sub-canopy:** Very sparse open grown Quaking Aspen, Eastern Cottonwood, Silver Maple, Manitoba Maple, American Basswood and Eastern White Pine are found along the banks of Appleby Creek. **Understory:** A mix of regenerating and planted shrubs and saplings including Snowberry, Fragrant Sumac, Gray Dogwood, and Speckled Alder are located along the banks of the SWM pond and watercourse, with dense pockets of willow shrubs in the watercourse channel. **Ground layer:** Dominated by grass, goldenrods, and asters, with Reed Canary Grass in and around the watercourse channel. MAS2-1 vegetation restricted to the banks of the SWM ponds and the tributary of Sheldon Creek.	Pioneer community comprised largely of planted native species.	Within the Halton NHSA.

Unit Number, ELC code and/or General Description	Dominant Component Species (generally listed in order or decreasing abundance)	Age/Size	Sensitivities and Designations
Unit N12e Mineral Cultural Woodland (CUW1) Mineral Meadow Marsh (MAM2) A small assemblage of semi-natural vegetation communities associated with the Sutton Drive Tributary.	**Canopy/Sub-canopy:** A small cluster of naturalized mid-aged European Ash with Black Locust is located along the banks of the tributary east of the pond. Several mid-aged White Willow are found along the edge of the dug pond. **Ground layer:** Dominated by tolerant facultative and obligate wetland species including Reed Canary Grass, Narrow-leaved Cattail and Common Reed.	Pioneer/young	No known sensitivities or designations.
Unit N13 Mineral Cultural Woodland (CUW1) A small and disturbed young cultural woodland community on the valley rim west of the Bronte Creek and north of Dundas Street. The bridge embankment is generally open old-field meadow.	**Canopy/Sub-canopy:** Partially closed canopy composed primarily of White Ash, with White Willow, American Elm and Manitoba Maple. Sparse Black Walnut regeneration was noted within the meadow inclusion. **Understory:** Approximately 20% shrub cover includes a mix of Staghorn Sumac, Tartarian Honeysuckle, Red-osier Dogwood, Alternate-leaf Dogwood, Choke Cherry, hawthorn and Riverbank Grape. **Ground layer:** The ground layer is composed of a mix of tolerant forest and non-native species with approximately 60% cover. Species include Western Poison Ivy, Enchanter's Nightshade, Herb-robert, Virginia Strawberry, Colt's Foot, Garlic Mustard, Lesser Burdock, Sulphur Cinquefoil, Queen Anne's Lace, Yellow Rocket, Spreading Dogbane and aster.	Young to mid-aged. Dominant size class of trees is approximately 20 cm dbh, with occasional White Willow greater than 50 cm dbh.	Within the Greenbelt Plan Area. Within the Halton NHSA. Within the Bronte Creek Valley Environmentally Sensitive Area (ESA #10).
Unit N14 Dry-Fresh White Cedar Mixed Forest (FOM4) A mid-aged mixed forest community occupying the very steep valley slope west of Bronte Creek and North of Dundas Street.	**Canopy/Sub-canopy:** Canopy cover is approximately 60% with frequent gaps. Northern White Cedar dominates, with occasional American Elm, Sugar Maple, Eastern Hemlock, Paper Birch and American Basswood. **Understory:** The understory is sparse and includes regenerating canopy species with Staghorn Sumac, Alternate-leaf Dogwood, Tartarian Honeysuckle, Purple-flowering Raspberry and Glaucous Honeysuckle. **Ground layer:** Ground layer cover is approximately 30% and is generally restricted to areas beneath canopy gaps. Species include Colt's Foot, aster, Tall Meadowrue, grass, sedge and Wild Columbine.	Mid-aged	Within the Greenbelt Plan Area. Within the Halton NHSA. Within the Bronte Creek Valley Environmentally Sensitive Area (ESA #10).
Unit N15 Dry-Moist Old Field Meadow Type (CUM1-1) CUM1-1 is present on disturbed slopes of the Bronte Creek valley and within the floodplain adjacent to and beneath the Dundas Street bridge.	**Canopy/Sub-canopy:** Several young Crack Willow and White Ash are present within this community. **Understory:** Sparse shrub cover includes Thicket Creeper, European Spindle-tree and Purple-flowering Raspberry. **Ground layer:** The ground layer is dominated by a dense mix of grasses including bluegrass species, Blue-joint Reedgrass, Smooth Brome, Reed Canary Grass and other unidentified grass species. Herbaceous species include jewel-weed, Sensitive Fern, Stinging Nettle, Ostrich Fern, Colt's Foot, Ground Ivy, Policeman's Helmet, Field Horsetail, Cow-parsnip and Common Burdock.	Pioneer.	Within the Greenbelt Plan Area. Within the Halton NHSA. Within the Bronte Creek Valley Environmentally Sensitive Area (ESA #10).

Unit Number, ELC code and/or General Description	Dominant Component Species (generally listed in order or decreasing abundance)	Age/Size	Sensitivities and Designations
Unit N16 Dry-Fresh Sugar Maple-Oak Deciduous Forest (FOD5-3) A mature closed canopy deciduous forest community on the east slope of the Bronte Creek valley. Abuts the north side of the Dundas Street ROW. The deciduous forest is separated from the Dundas Street bridge by an approximately 10 m wide band of younger more disturbed tree regeneration.	**Canopy/Sub-canopy:** Canopy cover is approximately 70% with occasional gaps and is dominated by Northern Red Oak and Sugar Maple. Additional canopy/sub-canopy species include Shagbark Hickory, White Oak, Black Cherry, Black Maple, Bitternut Hickory, Eastern Hop-hornbeam, and Black Walnut. A narrow band of Crack Willow and White Ash are present at the base of the slope along the river. **Understory:** Understory cover is approximately 30% and includes serviceberry, Choke Cherry, Climbing Bittersweet, American Witch-hazel and Downy Arrow-wood with regenerating Sugar Maple and Black Maple saplings. Hawthorn, Staghorn Sumac and regenerating White Ash were noted along the forest edge adjacent to Dundas Street. **Ground layer:** The ground layer includes a moderately diverse mix of species including Western Poison Ivy, Spreading Dogbane, Large-leaved Aster, False Solomon's Seal, Early Meadowrue, Wild Geranium, Common Speedwell, Hairy Beardtongue, Broad-leaved Goldenrod, Kidney-leaved Buttercup, Dwarf Raspberry and Round-lobed Hepatica. A thin strip dominated by Reed Canary Grass occurs along the banks of Bronte Creek.	Mid-aged to Mature forest community. Average tree size is 24-50 cm dbh. Occasional trees greater than 50 cm dbh noted.	Within the Greenbelt Plan Area. Within the Halton NHSA. Within the Bronte Creek Valley Environmentally Sensitive Area (ESA #10).
Unit N17 Unit N17a: Mineral Cultural Woodland (CUW1) Unit N17b: Forb Mineral Meadow Marsh (MAM2-10) A disturbed cultural woodland community located immediately east of the Bronte Creek valley, north of Dundas Street. A small meadow marsh community dominated by Purple Loosestrife is located east of the forest.	**Canopy/Sub-canopy:** Canopy cover is approximately 60% with frequent gaps. Black Walnut dominates, with White Ash, Swamp White Oak, Large-tooth Aspen, Quaking Aspen, Manitoba Maple and willow also noted. Many trees with crown dieback. **Understory:** Understory cover is approximately 30% and includes hawthorn, regenerating American Elm, Choke Cherry, Thicket Creeper, Staghorn Sumac, Tartarian Honeysuckle, Allegheny Blackberry and Riverbank Grape. Occasional Red-osier Dogwood are present within N17b. **Ground layer:** Ground layer cover is dense and is dominated by grass with Calico Aster, Stinging Nettle, Dame's Rocket, Enchanter's Nightshade, and Jack-in-the-pulpit. Purple Loosestrife dominates within N17b, other species present include Spotted Jewel-weed and Hairy Willow-herb.	Young trees averaging approximately 10 cm dbh dominate, with occasional larger trees to ~25 cm dbh.	Within the Greenbelt Plan Area. Within the Halton NHSA.
Unit N18 Unit N18a: Black Walnut Deciduous Plantation (CUP1-3) Unit N18b: Mineral Cultural Woodland (CUW1) Unit N18c: Hedgerow (parallel to Dundas Street, east and west of the plantation and woodland) A mature and naturalizing Black Walnut plantation (N18a) abutting the north side of the Dundas Street ROW. A small Cultural Woodland (N18a) with several very large Black Walnut surrounding an abandoned residence abuts the ROW at the east end of the unit.	**Canopy/Sub-canopy:** Near Dundas Street, Canopy cover is approximately 60% with frequent gaps. Black Walnut dominates, with White Ash and Sugar Maple also noted. Many of the larger Black Walnut have some crown dieback. Mature hedgerows run parallel to Dundas Street east and west of the plantation. Dominant species include Black Walnut and Norway Maple. Overall condition of mature trees within the unit is fair, with some canopy dieback of Black Walnut noted. **Understory:** The understory is comprised of a dense cover of Allegheny Blackberry and regenerating Black Walnut and White Ash. **Ground layer:** Ground layer cover is approximately 60% and includes Smooth Brome, Cleavers, Enchanter's Nightshade, Garlic Mustard, False Solomon's Seal and goldenrod.	Mature plantation with average tree size of approximately 40 cm dbh. Trees range in size from 20 to 80 cm dbh. A cluster of mature Black Walnut with ~90 cm dbh are located within the cultural woodland.	Within the Halton NHSA.

Unit Number, ELC code and/or General Description	Dominant Component Species (generally listed in order or decreasing abundance)	Age/Size	Sensitivities and Designations
Unit N19 Mineral Shallow Marsh (MAS2-1) A narrow band of vegetation surrounding an unnamed tributary of 14 Mile Creek which flows through an active agricultural field at the northwest quadrant of Dundas Street and Tremaine Road before being conveyed beneath Dundas Street via culvert C20.	**Ground layer:** The agricultural field is plowed to the edge of the watercourse feature. Watercourse feature vegetation includes a mix of cattail, willow-herb, Purple Loosestrife, grass and Leafy Spurge.	Pioneer	Within the Halton NHSA.
Unit N20 Fresh-Moist Willow Lowland Deciduous Forest (FOD7-3) A narrow and disturbed band of lowland deciduous forest surrounding a channelized section of 14 Mile Creek West, just west of Zenon Drive. The creek is conveyed beneath Dundas Street via culvert C22 south of the unit. Non-native species dominate.	**Canopy/Sub-canopy:** Canopy cover is approximately 50% with frequent gaps. Crack Willow dominates, with Norway Maple, American Elm and Black Walnut also noted. **Understory:** Understory cover is patchy and includes Riverbank Grape, Thicket Creeper, Red Raspberry, Gray Dogwood, Tartarian Honeysuckle and Buckthorn. **Ground layer:** Ground cover varies with canopy cover, with more dense and vigorous growth beneath canopy gaps. Species include a mix of old-field and wetland plants. Wetland species are generally restricted to a narrow band surrounding the watercourse. Prevalent species include Smooth Brome, Redtop, Purple Loosestrife, Panicled Aster, Reed Canary Grass, Garlic Mustard, Dames Rocket, Rice Cutgrass.	Mid-aged, with some Crack Willow up to approximately 50 cm dbh.	Within the Halton NHSA.
Unit N20X Unit N20Xa: Hedgerow (L-shaped, running both parallel to and perpendicular to Dundas Street) Unit N20Xb: Duckweed Floating-leaved Shallow Aquatic (SAF1-3) Unit N20Xb is associated with a dug pond feature (N20Xb) located approximately 25 m from the existing Dundas Street.	**Canopy/Sub-canopy:** Unit N20Xb is comprised of young White Ash, American Elm and Buckthorn. One large White Oak approaching approximately 70 cm dbh is located in the portion of the hedgerow that runs perpendicular to Dundas Street, approximately 15 m from the Dundas Street ROW fence. **Ground layer:** Lesser Duckweed dominates the pond surface (N20Xb). Typical old-field species dominate the ground layer along the naturalized hedgerow (N20Xa)	Pioneer	No known sensitivities or designations.
Unit N21 Mineral Cultural Woodland (CUW1) Dry-Moist Old-field Meadow (CUM1-1) Cattail Mineral Shallow Marsh (MAS2-1) Unit N21 is a disturbed portion of the Fourteen Mile Creek Valley. Young Cultural Woodland vegetation is restricted to the moderately steep valley walls. The broad floodplain is predominantly Old-field Meadow, with a small patch of Cattail Mineral Shallow Marsh abutting the ROW fence near the base of the east valley wall.	**Canopy/Sub-canopy:** Tree and shrub species are generally restricted to the moderately steep valley slopes, with only sparse young open grown trees and shrubs present within the broad floodplain. The west valley slope is dominated by young Black Locust. The east valley wall includes a mix of young White Ash, Sugar Maple and Black Cherry. **Understory:** The west valley slope lacks understory cover. The east valley slope includes a dense cover of Tartarian Honeysuckle, hawthorn, Staghorn Sumac, Common Lilac, and Red Raspberry. **Ground layer:** Ground layer vegetation on the west valley slope and floodplain is dominated by a dense cover of Smooth Brome and typical old-field species including Garlic Mustard, Canada Thistle, asters and goldenrods. Ground layer vegetation is sparse beneath the dense understory on the east valley slope. Species observed here include Virginia Strawberry and Garlic Mustard. The MAS2-1 inclusion is dominated by Broad-leaf Cattail and Narrow-leaved Cattail, with Great-hairy Willow-herb, Purple Loosestrife, Panicled Aster, sedge, Northern Bugleweed, Broad-leaved Water-plantain and Common Reed also noted.	Young tree regeneration on valley slopes up to approximately 20 cm dbh.	Within the Halton NHSA.

Unit Number, ELC code and/or General Description	Dominant Component Species (generally listed in order or decreasing abundance)	Age/Size	Sensitivities and Designations
Unit S2 Unit S2a: Mineral Meadow Marsh (MAM2) Unit S2b: Cattail Mineral Shallow Marsh (MAS2-1) Two low-lying areas (**Units S2a and S2b**) dominated by facultative and obligate wetland species. Unit S2b is associated with Tuck Creek Tributary #8 which is conveyed beneath Dundas Street via culvert C1 and flows through the unit.	**Ground layer:** Unit S2a is completely dominated by Common Reed to a height of 3 m. The ground layer of Unit S2b is variably dominated by a dense cover of Common Reed and Narrow-leaved Cattail up to 3 m tall. Other species include frequent Great-hairy Willow-herb and Purple Loosestrife, with some old-field species also noted including Common Teasel, Queen Anne's Lace and Field Sowthistle.	Pioneer	No known sensitivities or designations.
Unit S4 Cattail Mineral Shallow Marsh (MAS2-1) Tuck Creek Tributary #7 flows from the roadside ditch into a broad low lying area dominated by cattails along the south side of Dundas Street east of Eaglesfield Drive. Tuck Creek Tributary #6 is conveyed beneath Dundas Street via culvert C3 near the east end of the unit, and the confluence of the two tributaries occurs near the east end of the unit. A strip of cultural meadow is located along the south side of the marsh.	**Canopy:** Scarce Crack Willow, Green Ash and Black Locust are present along the periphery of the unit. **Ground layer:** This unit is dominated by Narrow-leaved Cattail, with. abundant Reed Canary Grass also present. Other species observed include Climbing Nightshade and Purple Loosestrife.	Young.	No known sensitivities or designations.
Unit S5 Unit S5a: Cattail Mineral Shallow Marsh (MAS2-1) Unit S5b: Mineral Cultural Woodland (CUW1) A wet depressional feature surrounded by young tree and shrub regeneration located at the south west quadrant of the Dundas Street and Blackwood Drive intersection.	**Canopy/sub-canopy:** Patches of dense young tree cover dominated by Black Locust are found on either side of the marsh feature. **Ground layer:** The marsh is dominated by Narrow-leaved Cattail. Occasional Spotted Jewel-weed is present beneath the dense cattail cover. The ground layer throughout the rest of the unit is dominated by typical old-field species.	Young trees to approximately 20 cm dbh.	No known sensitivities or designations.
Unit S6 Mineral Cultural Woodland (CUW1) **Inclusions:** Reed-canary Grass Mineral Meadow Marsh (MAM2-2) A disturbed assemblage of communities surrounding Tuck Creek Tributary #4 and extending along the south side of Dundas Street, east of Blackwood Drive. The dominant community type is cultural woodland, with a small MAM2-2 patch and a narrow band of FOD7 along the banks of the Tributary.	**Canopy/Sub-canopy:** The CUW1 community has a partially closed canopy/sub-canopy with frequent gaps. Dominant species are Black Locust and Manitoba Maple, with White Ash, Common Apple, Buckthorn, hawthorn, and Green Ash in the sub-canopy. **Understory:** The understory includes Staghorn Sumac, Guelder-rose Viburnum, Heart-leaved Willow, Gray Dogwood, Tartarian Honeysuckle and Riverbank Grape. **Ground layer:** The ground layer is dominated by typical old field species. The MAM2-2 inclusion (along the banks of the tributary) is dominated by Reed Canary Grass, with Rice Cut-grass, Narrow-leaved Cattail, Spotted Jewel-weed, Blue Vervain, and Devil's Beggar's Ticks also noted.	Young community with average dbh <24 cm.	No known sensitivities or designations.

Unit Number, ELC code and/or General Description	Dominant Component Species (generally listed in order or decreasing abundance)	Age/Size	Sensitivities and Designations
Unit S7 Mineral Cultural Woodland (CUW1) A disturbed woodland unit located in the south west quadrant of the Guelph Line and Dundas Street intersection.	**Canopy/Sub-canopy:** The relatively open canopy includes frequent Black Locust with White Ash, Eastern Cottonwood, Black Walnut, Honey Locust, and Crack Willow. **Understory:** The understory is dense in spots with a mix of ornamental and native species including Buckthorn, Common Lilac, American Basswood, Amur Maple, Black Pine, Gray Dogwood, Black Raspberry, and Running Strawberry-bush. **Ground layer:** Grass dominates, with abundant Garlic Mustard and asters.	Young community with average dbh <24 cm.	No known sensitivities or designations.
Unit S8 Unit S8a: Mineral Cultural Thicket (CUT1) Unit S8b: Fresh – Moist Lowland Deciduous Forest (FOD7) A cultural thicket area south of Dundas Street and east of Guelph Line, with a narrow band of lowland deciduous forest surrounding the confluence of two tributaries of Tuck Creek. A dense sumac thicket is found along the west edge of the unit, with a more open central thicket between the 2 tributaries of Tuck Creek.	**Canopy:** An open canopy of White Willow, Crack Willow, Black Walnut, White Ash, Manitoba Maple, and Red Maple surrounds the tributaries. Several Eastern Cottonwoods and willows are present within the sumac thicket at the west end of the unit. **Sub-canopy:** Buckthorn and Staghorn Sumac are found throughout the unit, and are especially dense west of Tuck Creek Trubutary # 2. Frequent willow shrubs are restricted to the banks of the tributaries. Occasional Choke Cherry also noted. **Understory:** Gray Dogwood occurs frequently throughout the unit with European Privet and Rambler Rose also noted occasionally. **Ground layer:** The ground layer along the banks of Tuck Creek includes Reed Canary Grass, Spotted Jewel-weed, Panicled Aster, Purple Loosestrife, Grass-leaved Goldenrod and Peppermint. Cattails are frequent within the channel. Typical old field species dominate the ground layer elsewhere in the unit.	Young community with average dbh approximately 20 cm dbh.	No known sensitivities or designations.
Unit S9 Mineral Cultural Woodland (CUW1) Inclusion: Raspberry Cultural Thicket (CUT1-5) A disturbed woodland and thicket with occasional wet pockets located south of Dundas Street just west of the Highway 407 interchange.	**Canopy/ Sub-canopy:** The canopy is partially closed with occasional gaps. Dominated by Manitoba Maple, with Black Walnut, Black Locust, White Ash and Buckthorn. **Understory:** The understory is dense under canopy gaps, and is composed of frequent Gray Dogwood, Riverbank Grape and Thicket Creeper, with Tartarian Honeysuckle and Guelder-rose Viburnum also present. Occasional wet depressions include Red-osier Dogwood. The small thicket inclusion abutting the playground west of the unit is dominated by Black Raspberry. **Ground layer:** Garlic mustard is abundant and widespread throughout the unit. Other species observed include New England Aster, Canada Goldenrod and White Avens. Purple Loosestrife, Panicled Aster, Devil's Beggar's Tick and willow-herb are present within occasional wet pockets.	Young community with average dbh <24 cm.	No known sensitivities or designations.
Unit S10 Mineral Meadow Marsh (MAM2) A band of meadow marsh vegetation and occasional trees occupying the shallow valley and floodplain of Shoreacres Creek Tributary #2 south of Dundas Street just east of the Highway 407 interchange.	**Canopy/Sub-canopy:** Sparse canopy cover is provided by trees generally restricted to the valley walls, with some standing snags within the floodplain. Species observed include hawthorn, Norway Spruce, Green Ash, American Elm, White Willow, Silver Maple, Eastern Cottonwood and Manitoba Maple. **Understory:** Willow shrubs and Riverbank Grape are present in the floodplain and valley walls. **Ground layer:** The floodplain is dominated by Common Reed, with grass, goldenrods and Catnip found on the valley walls.	Young trees to approximately 15 cm dbh.	Within the Halton NHSA.

Unit Number, ELC code and/or General Description	Dominant Component Species (generally listed in order or decreasing abundance)	Age/Size	Sensitivities and Designations
Unit S11 Mineral Cultural Thicket (CUT1) Inclusion: Cattail Mineral Shallow Marsh (MAS2-1) A cluster of small trees and shrubs surrounding a branch of Shoreacres Creek Tributary #1 south of Dundas Street and east of the Highway 407 interchange. Cattail shallow marsh vegetation is restricted to the channel of the tributary.	**Canopy:** A sparse mix of planted and regenerating woody vegetation occupies the banks of the watercourse. Species observed include Black Pine, Norway Maple, Northern White Cedar, and Russian Olive. **Understory:** The understory is composed of occasional Gray Dogwood, Rambler Rose, and willow shrubs. **Ground layer:** A dense stand of Common Reed occupies the roadside ditch at the culvert, with Purple Loosestrife and Narrow-leaved Cattail also observed.	Young trees to approximately 15 cm dbh.	Within the Halton NHSA.
Unit S12 and S12X (a and b) Mineral Cultural Thicket (CUT1) Recently realigned/restored riparian corridors associated with the shallow valley of Appleby Creek (S12), Shoreacres Creek (S12Xa) Sheldon Creek (S12Xb) south of Dundas Street.	**Canopy:** A large Crack Willow provides the only canopy shading within the Appleby Creek valley. **Understory:** Species typically planted for restoration in all 3 watercourses include White Spruce, Choke Cherry, White Ash, Northern White Cedar, hawthorn and Staghorn Sumac. **Ground layer:** Reed Canary Grass, Blue Vervain and Broad-leaf Cattail were typically restricted to the channel of the watercourse features. The ground layer outside of the channel is dominated by typical old field species.	Planted saplings.	Within the Halton NHSA.
Unit S13 and S13a Mineral Cultural Woodland (CUW1) Unit S13 is a band of disturbed young to mid-aged deciduous Cultural Woodland that occupies a portion of the west valley slope south of the existing Dundas Street bridge previously disturbed by construction activities within the valley. Unit S13a occupies the valley rim west of the Bronte Creek valley. Species composition is similar to unit S13 but the canopy is more open and includes a mature tree component.	**Canopy/Sub-canopy:** Canopy composition is variable. S13 has a relatively dense canopy/sub-canopy with occasional gaps. Manitoba Maple is the most prevalent species. Other species observed include Black Locust, Black Walnut, White Ash, Sugar Maple, American Basswood, White Willow and Northern Catalpa. S13a has a more open canopy with frequent gaps. Black Walnut is the most prevalent species. **Understory:** Understory cover is variable. S13a is predominantly open, with occasional patches of regenerating canopy species. S13 has a dense understory of regenerating canopy species with Staghorn Sumac, Common Lilac, cherry species and Tartarian Honeysuckle also noted. **Ground layer:** S13a has dense and vigorous ground layer vegetation dominated by grasses and goldenrods. Other species present include Garlic Mustard, Dame's Rocket, European Lily-of-the-valley, Enchanter's Nightshade, and Hound's-tongue. S13 has a similar species composition but generally has a lower percent cover. Additional species not observed in S13 that were not present in S13a include May Apple and Jack-in-the-pulpit.	Variable. S13 is young to mid-aged with average dbh of 15-20 cm. S13a includes a mix of young trees averaging ~15 cm dbh, with occasional mature trees up to 70 cm dbh.	Within the Greenbelt Plan Area. Within the Bronte Creek Provincial Park Nature Reserve Life Science ANSI. Within Bronte Creek Provincial Park. Within the Halton NHSA. Within the Bronte Creek Valley Environmentally Sensitive Area (ESA #10).
Unit S14 Fresh-Moist Willow Lowland Deciduous Forest (FOD7-3) A mid-aged floodplain forest community with frequent canopy gaps, a dense and vigorous ground layer, and relatively high botanical diversity.	**Canopy/Sub-canopy:** Canopy cover is approximately 60% with frequent gaps. No single species dominates. Crack Willow is the most frequent species present. Other canopy/sub-canopy species observed include White Ash, Black Walnut, Manitoba Maple and American Elm. **Understory:** Understory cover is approximately 40% and includes a mix of regenerating canopy species (especially Manitoba Maple) with Thicket Creeper, Riverbank Grape, Allegheny Blackberry, Virginia Virgin-bower, and Trumpet Creeper. **Ground layer:** Ground layer vegetation is dense and vigorous and includes a relatively high diversity of species. Jewel-weed is the most abundant species present. Other species include Wood Nettle, Stinging Nettle, Reed Canary Grass, Ostrich Fern, Horse Gentian, Jack-in-the-pulpit, Ground Ivy, Dame's Rocket, Tall Meadowrue, Wild Geranium, Moneywort, asters and goldenrods. Non-native, invasive species such as Garlic Mustard are Moneywort are widespread.	Mid-aged trees up to approximately 50 cm dbh.	Within the Greenbelt Plan Area. Within the Bronte Creek Provincial Park Nature Reserve Life Science ANSI. Within Bronte Creek Provincial Park. Within the Halton NHSA. Within the Bronte Creek Valley Environmentally Sensitive Area (ESA #10).

Unit Number, ELC code and/or General Description	Dominant Component Species (generally listed in order or decreasing abundance)	Age/Size	Sensitivities and Designations
Unit S15 Dry-Fresh Sugar Maple Deciduous Forest (FOD5-1) A mature closed canopy deciduous forest community occupies the steep east slope of the Bronte Creek valley. The northern edge of the unit adjacent to the existing Dundas Street bridge is younger and more disturbed.	**Canopy/Sub-canopy:** Canopy cover is approximately 70% with occasional gaps and is dominated Sugar Maple. Additional canopy/sub-canopy species include Shagbark Hickory, Black Cherry, Black Maple, Bitternut Hickory, Eastern Hop-hornbeam, and Black Walnut. The north edge of the unit adjacent to the existing Dundas Street bridge is younger and more disturbed. Similar species are present but Manitoba Maple and White Ash are more dominant. **Understory:** Understory cover is approximately 30% and includes regenerating canopy species with Choke Cherry, and Purple-flowering Raspberry. Staghorn Sumac, Manitoba Maple, Riverbank Grape and regenerating Sugar Maple and Black Maple are present along the north edge of the unit adjacent to the existing Dundas Street Bridge. **Ground layer:** The ground layer has relatively low coverage and diversity compared to the valley slope forest on the north side of Dundas Street (N16). Species observed include Western Poison Ivy, False Solomon's Seal, Large-leaved Aster and Garlic Mustard.	Mid-aged to Mature forest community.	Within the Greenbelt Plan Area. Within the Bronte Creek Provincial Park Nature Reserve Life Science ANSI. Within Bronte Creek Provincial Park. Within the Halton NHSA. Within the Bronte Creek Valley Environmentally Sensitive Area (ESA #10).
Unit S16 Mineral Cultural Thicket (CUT1) A narrow regenerating strip of shrubs and young trees along the south side of Dundas Street, east of the Bronte Creek valley.	**Canopy/Sub-canopy:** Trees observed in the unit include Manitoba Maple, Whtie Ash, Sugar Maple, Black Walnut, Common Apple, Norway Spruce, Siberian Elm, Scotch Pine and Eastern Red Cedar provide sparse canopy cover. **Understory:** Understory layer cover is approximately 50%. Understory species include Tartarian Honeysuckle, Buckthorn and Riverbank Grape. **Ground layer:** Ground layer vegetation cover is approximately 50% and includes grass species, Enchanter's Nightshade, and Calico Aster.	Dominated by shrubs with occasional mid-aged to mature planted trees and young woody regeneration.	Within Bronte Creek Provincial Park. Within the Halton NHSA.
Unit S17 Cattail Mineral Meadow Marsh (MAS2-1) A small wet depression that receives flows from the roadside ditch located on the south side of Dundas Street.	**Canopy/Sub-canopy:** Not Applicable **Understory:** Not Applicable **Ground layer:** The marsh is dominated by a dense and cover of Narrow-leaved Cattail, with Purple Loosestrife also noted. Slender Rush and goldenrods dominate the periphery of the unit.	Pioneer	Within Bronte Creek Provincial Park. Within the Halton NHSA.
Unit S18 Mineral Cultural Woodland (CUW1) A regenerating rural fringe area associated with two vacant residential properties succeeding to natural vegetation cover. A small pond is present in the foundation of the east properties.	**Canopy/Sub-canopy:** Canopy/sub-canopy cover of approximately 60% with frequent gaps. Species present are a mix of predominantly deciduous species including American Basswood, Black Walnut, Paper Birch, American Elm and White Ash and Black Walnut. Black Pine, Norway Spruce and Scotch Pine are restricted to the narrow hedgerow portion that runs parallel to Dundas Street. **Understory:** Understory cover is sparse and includes a mix of regenerating canopy species with Staghorn Sumac and Common Lilac. **Ground layer:** Typical old field species dominate with Enchanter's Nightshade and Garlic Mustard also noted.	Young, trees up to approximately 20 cm dbh.	Within Bronte Creek Provincial Park. Within the Halton NHSA.

Unit Number, ELC code and/or General Description	Dominant Component Species (generally listed in order or decreasing abundance)	Age/Size	Sensitivities and Designations
Unit S19 Unit S19a: Mosaic of: Reed-canary Grass Mineral Meadow Marsh (MAM2-2) and Cattail Mineral Shallow Marsh (MAS2-1) Unit S19b: Willow Mineral Deciduous Swamp (SWD4-1) A predominantly open drainage feature that extends south and east along two unnamed tributaries of 14 Mile Creek.	**Canopy/Sub-canopy:** Unit S19a is predominantly open. A patch of mid-aged Crack willow (S19b), constituting the SWD4-1 community (S19b), is located approximately 40 m from the existing edge of pavement, near the edge of the study area. **Understory:** Not Applicable **Ground layer:** The dense ground layer is dominated by Reed Canary Grass and Narrow-leaved Cattail. Other species present include willow-herb and Purple Loosestrife.	Pioneer, with mid-aged Willow trees up to ~50 cm dbh.	Within Bronte Creek Provincial Park. Within the Halton NHSA.
Unit S20 Mineral Cultural Woodland(CUW1) A small woodland associated with the Bronte Creek Provincial Park Horse Trail access point at the west end of the unit.	**Canopy/Sub-canopy:** Canopy cover is approximately 70% and is dominated by young Black Locust, with some Norway Spruce. Regenerating woody vegetation within the rest of the unit includes Black Locust, Scotch Pine, White Ash, and Staghorn Sumac. **Understory:** The moderately dense understory within the woodland is dominated by regenerating Black Locust. **Ground layer:** The dense ground layer is dominated by Smooth Brome with Lesser Burdock and typical old-field species.	Young community with average dbh approximately 10-15 cm dbh.	Within Bronte Creek Provincial Park. Within the Halton NHSA.
Unit S21 Mineral Meadow Marsh (MAM2) A small wet depression surrounded by agricultural fields, the existing Dundas Street ROW, and a rural residential property.	**Canopy/Sub-canopy:** Not applicable **Understory:** Not applicable **Ground layer:** Dominated by a dense cover of Common Reed.	Pioneer	Within Bronte Creek Provincial Park. Within the Halton NHSA.
Unit S22 Unit S22a: Dry-Fresh Oak-Maple-Hickory Deciduous Forest (FOD2) Unit S22b: Fresh-Moist Black Walnut Lowland Deciduous Forest (FOD7-4) A moderately disturbed portion of 14 Mile Creek West with a defined valley/floodplain structure. The FOD2 community occupies the valley slopes. The east valley slope has a narrow strip of mid-aged deciduous forest cover with approximately 70% canopy cover. The west valley slope is much more disturbed with frequent large canopy gaps. The FOD7-4 community occupies the floodplain.	**Canopy/Sub-canopy:** The east valley species include Northern Red Oak, Shagbark Hickory, White Ash, Sugar Maple, Black Cherry, and Eastern Hop-hornbeam. Trees on both the east and west valley slopes adjacent to Dundas Street show signs of stress including moderate branch dieback. The floodplain canopy is relatively open, with approximately 50% canopy cover comprised of young Black Walnut and occasional Manitoba Maple. **Understory:** Understory cover is variable. The east valley slope has a relatively open understory comprised of regenerating canopy species with Tartarian Honeysuckle and Western Poison Ivy. The west valley slope has a dense understory dominated by Tartarian Honeysuckle and Riverbank Grape. The floodplain is predominantly open, with occasional patches of Staghorn Sumac, Tartarian Honeysuckle and Western Poison Ivy. **Ground layer:** Valley slopes have a sparse ground layer that includes grass species, Lesser Burdock, Garlic Mustard and Enchanter's Nightshade. The Floodplain is dominated by old-field grasses and herbs typical of old-field meadow areas throughout the Dundas Street corridor, with occasional pockets of facultative and obligate wetland species along the banks of the watercourse. Prevalent old-field species include Smooth Brome, Dame's Rocket, Western Poison Ivy, Canada Goldenrod, Garlic Mustard, and Queen Anne's Lace. Occasional wetland species include Reed Canary Grass, Narrow-leaved Cattail, Purple Loosestrife, Woolgrass Bulrush and sedge species.	Mid-aged trees up to approximately 30 cm dbh. Occasional Black Walnut approaching 30 cm dbh are generally further from the existing Dundas Street ROW near the limit of the surveyed area.	FOD7-4 community type is ranked as S2S3 (imperiled-vulnerable) in Ontario by NHIC. Within the Halton NHSA.

Unit Number, ELC code and/or General Description	Dominant Component Species (generally listed in order or decreasing abundance)	Age/Size	Sensitivities and Designations
<u>Unit S24</u> Mineral Cultural Woodland (CUW1) A broad, shallow and disturbed portion of the Fourteen Mile Creek valley. The East valley slope supports a mid-aged community, possibly of natural origin, while the west valley slope was more recently disturbed. .Some branch and tree dieback was noted adjacent to the existing Dundas Street ROW.	**Canopy/Sub-canopy:** The east valley slope canopy/sub-canopy species include Northern Red Oak, Shagbark Hickory, Sugar Maple, Black Cherry, and Eastern Hop-hornbeam. Adjacent to the Dundas Street ROW it is dominated by Largetooth Aspen and White Poplar. The floodplain is predominantly open with occasional open grown young to mid-aged trees. Species include White Willow, American Elm, and Green Ash. **Understory:** The east valley slope includes regenerating canopy species and patches of Tartarian Honeysuckle and Staghorn Sumac. The west valley slope has a sparse cover of Buckthorn, with patches of Russian Olive adjacent to the existing Dundas Street ROW. The floodplain is predominantly open with occasional patches of Riverbank Grape and American Elm saplings. **Ground layer:** The east valley slope has a relatively sparse ground layer that includes grass species, Lesser Burdock, Garlic Mustard and Enchanter's Nightshade. The Floodplain and west valley slope are dominated by grasses and herbs typical of old-field meadow areas throughout the Dundas Street corridor, with occasional pockets wetland species along the floodplain. Species include Smooth Brome, goldenrod, Garlic Mustard, and Queen Anne's Lace, with occasional Reed Canary Grass, Narrow-leaved Cattail, and Purple Loosestrife.	Variable. Valley slope trees up to approximately 40 cm dbh. Floodplain trees generally younger, ranging from 10-40 cm dbh.	Within the Halton NHSA.

Plant List

Scientific Name	Common Name	Grank[2]	Srank[3]	MNR[5]	COSEWIC[4]	SARA Status[6]	Schedule[6]	Halton Region[7]
Acer ginnala	Amur Maple	G?	SE1					
Acer negundo	Manitoba Maple	G5	S5					X
Acer nigrum	Black Maple	G5Q	S4?					X
Acer platanoides	Norway Maple	G?	SE5					X
Acer rubrum	Red Maple	G5	S5					X
Acer saccharinum	Silver Maple	G5	S5					X
Acer saccharum var. saccharum	Sugar Maple	G5T?	S5					X
Aesculus hippocastanum	Horse Chestnut	G?	SE2					X
Agrostis gigantea	Redtop	G4G5	SE5					X
Ailanthus altissima	Tree-of-heaven	G?	SE5					
Alliaria petiolata	Garlic Mustard	G?	SE5					X
Alnus incana ssp rugosa	Speckled Alder	G5T5	S5					X
Ambrosia artemisiifolia	Annual Ragweed	G5	S5					X
Amelanchier sp	Serviceberry Species							
Anemone canadensis	Canada Anemone	G5	S5					X
Apocynum androsaemifolium ssp androsaemifolium	Spreading Dogbane	G5T?	S5					X
Aquilegia canadensis	Wild Columbine	G5	S5					X
Arctium minus	Lesser Burdock	G?T?	SE5					X
Arctium sp	Burdock Species							
Arisaema triphyllum ssp triphyllum	Jack-in-the-pulpit	G5T5	S5					X
Asclepias syriaca	Common Milkweed	G5	S5					X
Barbarea vulgaris	Yellow Rocket	G?	SE5					X
Betula papyrifera	Paper Birch	G5	S5					X
Bidens frondosa	Devil's Beggar's Ticks	G5	S5					X
Bromus inermis ssp inermis	Smooth Brome	G4G5T?	SE5					X
Calamagrostis canadensis	Blue-joint Reedgrass	G5	S5					X
Carex sp	Sedge Species							
Carya cordiformis	Bitternut Hickory	G5	S5					X
Carya ovata	Shagbark Hickory	G5	S5					XU
Catalpa speciosa	Northern Catalpa	GU	SE1					
Celastrus scandens	Climbing Bittersweet	G5	S5					X
Chenopodium album var album	White Goosefoot	G5T5	SE5					X
Circaea lutetiana ssp canadensis	Enchanter's Nightshade	G5T5	S5					X
Cirsium arvense	Canada Thistle	G?	SE5					X
Cirsium sp	Thistle Species							
Cirsium vulgare	Bull Thistle	G5	SE5					X
Clematis virginiana	Virginia Virgin-bower	G5	S5					X
Convallaria majalis	European Lily-of-the-valley	G5	SE5					X
Cornus alternifolia	Alternate-leaf Dogwood	G5	S5					X
Cornus racemosa	Gray Dogwood	G5	S5					X
Cornus sericea	Red-osier Dogwood	G5	S5					X

Plant List

Scientific Name	Common Name	Grank[2]	Srank[3]	MNR[5]	COSEWIC[4]	SARA Status[6]	Schedule[6]	Halton Region[7]
Crataegus sp	Hawthorn Species							
Cynoglossum officinale	Hound's-tongue	G?	SE5					X
Dactylis glomerata	Orchard Grass	G?	SE5					X
Daucus carota	Queen Anne's Lace	G?	SE5					X
Dipsacus fullonum	Common Teasel	G?T?	SE5					X
Echinocystis lobata	Wild Mock-cucumber	G5	S5					X
Echium vulgare	Common Viper's-bugloss	G?	SE5					X
Elaeagnus angustifolia	Russian Olive	G?	SE3					X
Elymus sp	Wild-rye Species							
Epilobium hirsutum	Great-hairy Willow-herb	G?	SE5					X
Epilobium sp	Willow-herb Species							
Equisetum arvense	Field Horsetail	G5	S5					X
Equisetum sp	Horsetail Species							
Erigeron philadelphicus var. philadelphicus	Philadelphia Fleabane	G5T?	S5					X
Euonymus europaea	European Spindle-tree	G?	SE2					X
Euonymus obovatus	Running Strawberry-bush	G5	S5					X
Euphorbia esula	Leafy Spurge	G5	SE5					X
Eurybia macropylla	Large-leaved Aster	G5	S5					X
Euthamia graminifolia	Grass-leaved Goldenrod	G5	S5					X
Forsythia viridissima	Golden-bells	G?	SE2					
Fragaria virginiana ssp virginiana	Virginia Strawberry	G5T?	S5					X
Fraxinus americana	White Ash	G5	S5					X
Fraxinus pennsylvanica	Green Ash	G5	S5					X
Galium aparine	Cleavers	G5	S5					XU
Galium mollugo	White Bedstraw	G?	SE5					X
Galium sp	Bedstraw Species							
Geranium maculatum	Wild Geranium	G5	S5					X
Geranium robertianum	Herb-robert	G5	SE5					X
Geum aleppicum	Yellow Avens	G5	S5					XU
Geum canadense	White Avens	G5	S5					X
Geum sp	Avens Species							
Glechoma hederacea	Ground Ivy	G?	SE5					X
Gleditsia triacanthos	Honey Locust	G5	S2					X
Grass sp	Grass Species							
Hamamelis virginiana	American Witch-hazel	G5	S5					X
Helianthus tuberosus	Jerusalem Artichoke	G5	SE5					XU
Hepatica nobilis var. obtusa	Round-lobed Hepatica	G?	S5					XU
Heracleum maximum	Cow-parsnip	G5	S5					R5
Hesperis matronalis	Dame's Rocket	G4G5	SE5					X
Hieracium caespitosum	Field Hawkweed	G?	SE5					X
Hieracium sp	Hawkweed Species							
Hydrophyllum virginianum	Virginia Waterleaf	G5	S5					X
Hypericum perforatum	St. John's-wort	G?	SE5					X

Plant List

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Impatiens capensis	Spotted Jewel-weed	G5	S5					X
Impatiens glandulifera	Policeman's Helmet	G?	SE4					X
Impatiens sp	Jewel-weed Species							
Iris sp	Iris Species							
Juglans nigra	Black Walnut	G5	S4					X
Juncus tenuis	Slender Rush	G5	S5					X
Juniperus virginiana	Eastern Red Cedar	G5	S5					R5
Laportea canadensis	Wood Nettle	G5	S5					X
Leersia oryzoides	Rice Cutgrass	G5	S5					XU
Leonurus cardiaca ssp. cardiaca	Common Motherwort	G?T?	SE5					X
Leucanthemum vulgare	Oxeye Daisy	G?	SE5					X
Ligustrum vulgare	European Privet	G?	SE5					X
Linaria vulgaris	Butter-and-eggs	G?	SE5					X
Lonicera dioica	Glaucous Honeysuckle	G5	S5					X
Lonicera tatarica	Tartarian Honeysuckle	G?	SE5					X
Lotus corniculatus	Bird's-foot Trefoil	G?	SE5					X
Lycopus uniflorus	Northern Bugleweed	G5	S5					X
Lysimachia nummularia	Moneywort	G?	SE5					X
Lythrum salicaria	Purple Loosestrife	G5	SE5					X
Maianthemum canadense	Wild-lily-of-the-valley	G5	S5					X
Maianthemum racemosum ssp. racemosum	False Solomon's Seal	G5T	S5					X
Malus pumila	Common Apple	G5	SE5					X
Malus sp	Apple Species							
Matteuccia struthiopteris	Ostrich Fern	G5	S5					X
Melilotus officinalis	Yellow Sweet Clover	G?	SE5					X
Mentha x piperita	Peppermint	HYB	SE4					X
Myosotis arvensis	Rough Forget-me-not	G?	SE4					
Nepeta cataria	Catnip	G?	SE5					X
Onoclea sensibilis	Sensitive Fern	G5	S5					X
Ostrya virginiana	Eastern Hop-hornbeam	G5	S5					X
Oxalis stricta	Upright Yellow Wood Sorrel	G5	S5					X
Parthenocissus vitacea	Thicket Creeper	G5	S5					X
Pastinaca sativa	Wild Parsnip	G?	SE5					X
Penstemon hirsutus	Hairy Beardtongue	G4	S4					X
Phalaris arundinacea	Reed Canary Grass	G5	S5					X
Phleum pratense	Timothy	G?	SE5					X
Phragmites australis	Common Reed	G5	SE5					X
Phragmites australis ssp. australis	European Reed Grass	GNR	SNR					
Picea abies	Norway Spruce	G?	SE3					XSR
Picea glauca	White Spruce	G5	S5					XU
Pinus nigra	Black Pine	G?	SE2					
Pinus strobus	Eastern White Pine	G5	S5					X

Plant List

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Pinus sylvestris	Scotch Pine	G?	SE5					X
Poa palustris	Fowl Bluegrass	G5	S5					X
Poa pratensis ssp. pratensis	Kentucky Bluegrass	G5T	S5					X
Poa sp	Bluegrass Species							
Podophyllum peltatum	May Apple	G5	S5					X
Polygonum cuspidatum	Japanese Knotweed	G?	SE4					X
Polygonum sp	Smartweed Species							
Populus alba	White Poplar	G5	SE5					X
Populus deltoides ssp. monilifera	Eastern Cottonwood	G5T?	S5					X
Populus grandidentata	Large-tooth Aspen	G5	S5					X
Populus tremuloides	Quaking Aspen	G5	S5					X
Potentilla recta	Sulphur Cinquefoil	G?	SE5					X
Potentilla simplex	Old-field Cinquefoil	G5	S5					X
Prunus serotina	Wild Black Cherry	G5	S5					X
Prunus sp	Cherry Species							
Prunus virginiana var. virginiana	Choke Cherry	G5T?	S5					X
Quercus alba	White Oak	G5	S5					X
Quercus bicolor	Swamp White Oak	G5	S4					R1
Quercus macrocarpa	Bur Oak	G5	S5					X
Quercus rubra	Northern Red Oak	G5	S5					X
Ranunculus abortivus	Kidney-leaved Buttercup	G5	S5					X
Ranunculus acris	Tall Buttercup	G5	SE5					X
Ranunculus sp	Buttercup Species							
Rhamnus cathartica	Buckthorn	G?	SE5					X
Rhus aromatica	Fragrant Sumac	G5	S5					R3
Rhus typhina	Staghorn Sumac	G5	S5					X
Ribes americanum	Wild Black Currant	G5	S5					X
Ribes sp	Currant Species							
Robinia pseudo-acacia	Black Locust	G5	SE5					X
Rosa multiflora	Rambler Rose	G?	SE4					X
Rosa sp	Rose Species							
Rubus allegheniensis	Allegheny Blackberry	G5	S5					X
Rubus idaeus ssp. idaeus	Red Raspberry	G5T5	SE1					X
Rubus occidentalis	Black Raspberry	G5	S5					X
Rubus odoratus	Purple-flowering Raspberry	G5	S5					X
Rubus pubescens	Dwarf Raspberry	G5	S5					X
Rubus sp	Rubus Species							
Rumex crispus	Curly Dock	G?	SE5					X
Salix alba	White Willow	G5	SE4					X
Salix eriocephala	Heart-leaved Willow	G5	S5					X
Salix fragilis	Crack Willow	G?	SE5					
Salix sp	Willow Species							
Saponaria officinalis	Bouncing-bet	G?	SE5					X

Plant List

Scientific Name	Common Name	Grank[2]	Srank[3]	MNR[5]	COSEWIC[4]	SARA Status[6]	Schedule[6]	Halton Region[7]
Scirpus atrovirens	Woolgrass Bulrush	G5?	S5					X
Solanum dulcamara	Climbing Nightshade	G?	SE5					X
Solidago canadensis	Canada Goldenrod	G5	S5					X
Solidago flexicaulis	Broad-leaved Goldenrod	G5	S5					X
Solidago gigantea	Smooth Goldenrod	G5	S5					R5?
Solidago sp	Goldenrod Species							
Sonchus arvensis ssp arvensis	Field Sowthistle	G?T?	SE5					X
Symphoricarpos albus	Snowberry	G5	S5					X
Symphyotrichum lanceolatum ssp. lanceolatum	Panicled Aster	G5T?	S5					XU
Symphyotrichum lateriflorum var. lateriflorum	Calico Aster	G5T5	S5					
Symphyotrichum novae-angliae	New England Aster	G5	S5					X
Symphyotrichum cordifolium	Heart-leaved Aster	G5	S5					X
Symphyotricum sp	Aster Species							
Syringa vulgaris	Common Lilac	G?	SE5					X
Taenidia integerrima	Yellow Pimpernell	G5	S4					XU
Taraxacum officinale	Common Dandelion	G5	SE5					X
Thalictrum dioicum	Early Meadowrue	G5	S5					X
Thalictrum pubescens	Tall Meadowrue	G5	S5					X
Thuja occidentalis	Northern White Cedar	G5	S5					X
Tilia americana	American Basswood	G5	S5					X
Toxicodendron radicans ssp. negundo	Poison Ivy (vine)	G5T	S5					X
Toxicodendron rydbergii	Western Poison Ivy	G5T	S5					X
Trifolium sp	Clover Species							
Triosteum aurantiacum	Horse Gentian	G5	S5					X
Tsuga canadensis	Eastern Hemlock	G5	S5					X
Tussilago farfara	Colt's Foot	G?	SE5					X
Typha angustifolia	Narrow-leaved Cattail	G5	S5					X
Typha latifolia	Broad-leaf Cattail	G5	S5					X
Ulmus americana	American Elm	G5?	S5					X
Ulmus pumila	Siberian Elm	G?	SE3					
Urtica dioica ssp. dioica	Stinging Nettle	G5T?	SE2					
Verbena hastata	Blue Vervain	G5	S5					X
Veronica officinalis	Common Speedwell	G5	SE5					X
Viburnum lentago	Nannyberry	G5	S5					X
Viburnum opulus	Guelder-rose Viburnum	G5	SE4					X
Viburnum rafinesquianum	Downy Arrow-wood	G5	S5					X
Vicia cracca	Tufted Vetch	G?	SE5					X
Vitis riparia	Riverbank Grape	G5	S5					X

Appendix E Table 3. Wildlife List – Species observed by Ecoplans staff in the greater Dundas Street study area (Brant Street to Oak Park Boulevard).

Common Name	*Scientific Name*	G-Rank[1]	S-Rank[2]	COSEWIC[3]	MNR[4]	Halton Region (1993)[6]	MNR Area Sensitive[7]	Habitat Use[8]
Birds								
American Goldfinch	*Spinus tristis*	G5	S5B					E
American Kestrel	*Falco sparverius*	G5	S4					E
American Robin	*Turdus migratorius*	G5	S5B					E
Baltimore Oriole	*Icterus galbula*	G5	S4B					E
Barn Swallow	*Hirundo rustica*	G5	S4B	THR	THR			
Belted Kingfisher	*Ceryle alcyon*	G5	S4B					
Brown-headed Cowbird	*Molothrus ater*	G5	S4B					E
Blue Jay	*Cyanocitta cristata*	G5	S5					I/E
Bobolink	*Dolichonyx oryzivorus*	G5	S4B	THR	THR			E
Canada Goose	*Branta canadensis*	G5	S5			I		M/F
Common Grackle	*Quiscalus quiscula*	G5	S5B					E
Downy Woodpecker	*Picoides pubescens*	G5	S5					I/E
European Starling	*Sturnus vulgaris*	G5	SNA			I		E
Great Blue Heron	*Ardea herodias*	G5	S4					S/B, M/F
House Sparrow	*Passer domesticus*	G5	SNA			I		E
Indigo Bunting	*Passerina cyanea*	G5	S4B					E
Killdeer	*Charadrius vociferus*	G5	S5B,S5N					
Mallard	*Anas platyrhynchos*	G5	S5					S/B, M/F
Mourning Dove	*Zenaida macroura*	G5	S5					E
Northern Cardinal	*Cardinalis cardinalis*	G5	S5					I/E
Northern Flicker	*Colaptes auratus*	G5	S4B					I/E
Ring-billed Gull	*Larus delawarensis*	G5	S5B,SZN					
Rock Dove	*Columba livia*	G5	SNA			I		
Red-tailed Hawk	*Buteo jamaicensis*	G5	S5	NAR	NAR			E
Red-winged Blackbird	*Agelaius phoeniceus*	G5	S4					E
Savannah Sparrow	*Passerculus sandwichensis*	G5	S4B				X	
Song Sparrow	*Melospiza melodia*	G5	S5B					E

Common Name	*Scientific Name*	G-Rank[1]	S-Rank[2]	COSEWIC[3]	MNR[4]	Halton Region (1993)[6]	MNR Area Sensitive[7]	Habitat Use[8]
Tree Swallow	*Tachycineta bicolor*	G5	S4B					E
Turkey Vulture	*Cathartes aura*	G5	S5B					
Willow Flycatcher	*Empidonax traillii*	G5	S5B, SZN			U		
Yellow Warbler	*Dendroica petechia*	G5	S5B					E
Herpetiles								
American Toad	*Anaxyrus americanus*	G5	S5			A		
Green Frog	*Lithobates clamitans*	G5	S5			A		
Northern Leopard Frog	*Lithobates pipiens*	G5	S5	NAR	NAR	A		
Spring Peeper	*Pseudacris crucifer*	G5	S5			A		
Mammals								
Eastern Chipmunk	*Tamias striatus*	G5	S5			C		
Eastern Cottontail	*Sylvilagus floridanus*	G5	S5			C		
Grey Squirrel	*Sciurus carolinensis*	G5	S5					
Meadow Vole	*Microtus pennsylvanicus*	G5	S5			C		
Raccoon	*Procyon lotor*	G5	S5			C		
Virginia Opossum	*Didelphis virginiana*	G5	S4			C		
White-tailed Deer	*Odocoileus virginianus*	G5	S5			C		
Insects								
Cabbage White	*Pieris rapae*	G5	SNA					
Silvery Blue	*Glaucopsyche lygdamus*	G5	S5			C		

Legend

[1]G-Rank (global)

Global ranks are assigned by a consensus of the network of Conservation Data Centres (CDCs), scientific experts, and the Nature Conservancy to designate a rarity rank based on the range-wide status of a species, subspecies, or variety.

(Global Status from MNR Biodiversity Explorer May 2011)

G1 Extremely rare - usually 5 or fewer occurrences in the overall range or very few remaining individuals; or because of some factor(s) making it especially vulnerable to extinction.

G2 Very rare - usually between 5 and 20 occurrences in the overall range or with many individuals in fewer occurrences; or because of some factor(s) making it vulnerable to extinction.

G3 Rare to uncommon - usually between 20 and 100 occurrences; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.

G4 Common - usually more than 100 occurrences; usually not susceptible to immediate threats.

G5 Very common - demonstrably secure under present conditions.

[2]S-Ranks (provincial)

Provincial (or Subnational) ranks are used by the Natural Heritage Information Centre (NHIC) to set protection priorities for rare species and natural communities. These ranks are not legal designations. Provincial ranks are assigned in a manner similar to that described for global ranks, but consider only those factors within the political boundaries of Ontario.

(*Provinical Status from MNR Biodiversity Explorer May 2011*)

S1 Critically Imperiled - Critically imperiled in the nation or state/province because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province.

S2 Imperiled - Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.

S3 Vulnerable - Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.

S4 Apparently Secure - Uncommon but not rare; some cause for long-term concern due to declines or other factors.

S5 Secure - Common, widespread, and abundant in the nation or state/province.

S#S# Range Rank - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).

SX Presumed Extirpated - Species or community is believed to be extirpated from the nation or state/province. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered.

SH Possibly Extirpated (Historical) - Species or community occurred historically in the nation or state/province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years. A species or community could become NH or SH without such a 20-40 year delay if the only known occurrences in a nation or state/province were destroyed or if it had been extensively and unsuccessfully looked for. The NH or SH rank is reserved for species or communities for which some effort has been made to relocate occurrences, rather than simply using this status for all elements not known from verified extant occurrences.

SNR Unranked - Nation or state/province conservation status not yet assessed.

SU Unrankable - Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.

SNA Not Applicable - A conservation status rank is not applicable because the species is not a suitable target for conservation activities.

[3]COSEWIC (Committee on the Status of Endangered Wildlife in Canada)

(federal status from COSEWIC May 2011)

EXT Extinct - A species that no longer exists.

EXP Extirpated - A species no longer existing in the wild in Canada, but occurring elsewhere.

END Endangered - A species facing imminent extirpation or extinction.

THR Threatened - A species likely to become endangered if limiting factors are not reversed.

SC Special Concern (formerly vulnerable) - A species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.

NAR Not At Risk - A species that has been evaluated and found to be not at risk of extinction given the current circumstances.

DD Data Deficient (formerly Indeterminate) - Available information is insufficient to resolve a species' eligibility for assessment or to permit an assessment of the species' risk of extinction.

[4]OMNR (Ontario Ministry of Natural Resources)

(provincial status from MNR June 8 2011)

The provincial review process is implemented by the MNR's Committee on the Status of Species at Risk in Ontario (COSSARO).

EXT Extinct - A species that no longer exists anywhere.

EXP Extirpated - A species that no longer exists in the wild in Ontario but still occurs elsewhere.

END Endangered - A species facing imminent extinction or extirpation in Ontario which is a candidate for regulation under Ontario's Endangered Species Act (ESA) (END-R designations are no longer relevant as species are covered under new ESA April 2009)

THR Threatened - A species that is at risk of becoming endangered in Ontario if limiting factors are not reversed.

SC Special Concern (formerly Vulnerable) - A species with characteristics that make it sensitive to human activities or natural events.

NAR Not at Risk - A species that has been evaluated and found to be not at risk.

DD Data Deficient (formerly Indeterminate) - A species for which there is insufficient information for a provincial status recommendation.

[6] Regional Status - Halton Region

From : Halton Natural Areas Inventory (Dwyer 2006)

A = Abundant >125 Stations

C = Common 36-125 Stations

U = Uncommon 15-35 Stations

R= Rare < 15 Stations

E = Extirpated no longer present in Halton Region

I = Introduced an introduced species not native to Ontario

Uncertain = Uncertain if species is present in Halton Region

LS = Locally Significant

M = Migration

[7] MNR Significant Wildlife Habitat Technical Guide Area Sensitive Species

Area Sensitivity is defined as species requiring large areas of suitable habitat in order to sustain population numbers

From: Ministry of Natural Resources. 2000. Significant Wildlife Habitat Technical Guide. Fish and Wildlife Branch, Wildlife Section. Science Development and Transfer Branch, Southcentral Science Section. 151pp. + appendices.

[8] Habitat Use

I=interior species, I/E=interior edge species, E=edge species (Freemark and Collins, 1989); M/F=Marsh/Fen, S/B=Treed Swamp/Bog. Interior bird species require habitat which is often found 100m from the forest edge while Interior/Edge species are found within both interior and edge habitat. Often Interior and Interior/Edge are more sensitive to urban encroachment as they require these large, relatively undisturbed forest habitats to support viable populations. The increasing urbanization of rural areas often results in increased parasitism and predation as well as disturbance from human recreational activities (e.g. illegal bike trails, dumping and pets.) (Freemark, K. and Collins, B. 1989. *Landscape ecology of birds breeding in temperate forest fragments*. – In: Hagan III, J. M. and Johnston, D. W. (eds), Ecology and conservation of neotropical migrant landbirds. Smithsonian Inst. Press, pp. 443–454)

Table 4-1: Species of Conservation Concern with Potential to Occur or Habitat Potential in the Study Area.

Species	Source	SRANK[2]	COSEWIC[3]	MNR[4]	SARA Status[5]	Schedule[5]	Halton Region Significance[6]	Preferred Habitat Description	Project-Specific: Conditions within the Study Area[1]		
									Habitat Suitability	MMM Survey Results and Other Confirmed Records	Conclusion - Likelihood for Species to be Present or Use Habitat Present
SAR Plants											
Butternut (*Juglans cineria*)	A (2003), B, C	S3?	END	END	END	1	X	Grows best in rich, moist, and well-drained soils often found along streams, well-drained gravel sites, especially those made up of limestone and seldom found on dry, rocky and sterile soils [3]. Butternut is a shale intolerant species, which prefers rich, moist and well-drained soils, and is often found along the edges of streams and rivers. It can grow alone or in small groups in deciduous forests. Young seedlings and saplings can tolerate up to 60% crown closure. Common associates include basswood, black cherry, beech, black walnut, elm, hickory, oak, red maple, sugar maple, white ash and yellow birch[23]. *Present in Halton[6].	**Suitable habitat present** within hedgerows, woodlands and forests in the study area. If present, there is limited potential for regeneration in adjacent old field meadow habitats.	Not found in the study area during MMM surveys (2008, 2009, and 2014). Recorded by LGL (2009): One pure (non-hybrid) Butternut was confirmed beyond the Study Area (~100m north of Dundas Street on the west valley rim). Four additional Butternut were confirmed to be hybrids, and are therefore not of conservation concern. Found in Bronte Creek Valley ESA (ESA #10)[2] in 1993 and 1999 (Dwyer 2006). Found in Nelson Escarpment Woods (ESA #6)[3] in 2003 (Dwyer 2006).	Not anticipated to occur in the study area, since this species is fairly distinct, and was not observed during the field surveys by MMM and no pure Butternut was reported by LGL (2009).
Flowering Dogwood (*Cornus florida*)	A (2004), B, G	S2	END	END	END	1	XU	Grows as an understory species in open dry-mesic oak-hickory to mesic maple-beech eastern deciduous or mixed forests [3]. The forests where it is found are generally mid-age to mature. It can also occur along roadsides and fencerows. It occurs on soils that range from moist, deep soils to light-textured, well-drained upland soils. Most commonly it occurs on coarse to medium-textured acidic soils such as sand and sandy loams, although it can occur on clay loam soils [5]. *Present in Halton[6].	**Suitable habitat present** in forested portions of Bronte Creek Valley, in the study area, beyond the ROW. No suitable habitat present in other portions of the study area.	Not found in the study area during MMM surveys (2008, 2009, and 2014). Found in Bronte Creek Valley ESA (ESA #10) pre-1993 (Dwyer 2006). Found in Nelson Escarpment Woods ESA (ESA #6) in 2003-2004 (Dwyer 2006).	Although not observed during the field surveys by MMM or LGL (2009), there is some limited potential for this species to occur in undisturbed, forested portions of Bronte Creek Valley within the study area and beyond, outside of the ROW, especially on the northeast slope.
Spiked Blazing Star syn. Dense Blazing Star (*Liatris spicata*)	B, G	S2	THR	THR	THR	1	-	Found mainly in moist prairies, savannahs, dune swales and abandoned fields in coarse sand or sandy loam soils. It does not tolerate shade and is thus usually found in areas that have been disturbed by fire, flooding, drought or grazing [4]. *Present in Halton[6].	**Limited habitat potential** in old field meadow habitats in the ROW and adjacent study area (including those in the vicinity of Bronte Creek Valley).	Not found in the study area during MMM surveys (2008, 2009, and 2014). Found in Bronte Creek Valley ESA (ESA #10) in 1998 (Dwyer 2006).	Not anticipated to occur in the study area, since this species is fairly distinct, and was not observed during the field surveys by MMM or LGL (2009).

[1] The Study Area is defined as the right-of-way (ROW), and 50 m north and south of the ROW, along Dundas Street, between Brant Street and Bronte Road. Details of the study / survey methods and other project information (e.g., existing natural environment conditions, proposed works, impacts and mitigation) can be found in the report text.
[2] Bronte Creek Valley ESA (ESA#10) extends along Bronte Creek Valley from north of Britannia Road, south to Lake Ontario. This ESA includes the vegetation units associated with Bronte Creek Valley in the Study Area.
[3] Nelson Escarpment Woods ESA (ESA #6) includes a portion of the Niagara escarpment and a large wooded area below the main escarpment slopes in the City of Burlington. A small lobe of this ESA is included in the Study Area at vegetation Unit N3.

Appendix D: Table 4: Species of Conservation Concern Screening

Species	Source	SRANK[2]	COSEWIC[3]	MNR[4]	SARA Status[5]	Schedule[5]	Halton Region Significance[6]	Preferred Habitat Description	Project-Specific: Conditions within the Study Area[1]		
									Habitat Suitability	MMM Survey Results and Other Confirmed Records	Conclusion - Likelihood for Species to be Present or Use Habitat Present
SAR Birds											
Bank Swallow (*Riparia riparia*)	D	S4B	THR	THR	No Status	No Schedule	-	Habitat includes open and partly open situations, frequently near flowing water. Nests are in steep sand, dirt, or gravel banks, in burrows dug near the top of the bank, along the edge of inland water, or along the coast, or in gravel pits, road embankments, etc. Both sexes construct the nest burrow. Pairs usually dig a new burrow each year, but sometimes they use old bank swallow burrows or abandoned cavities of the belted kingfisher. Individuals tends to return to same nesting area in successive years, though they may move several kilometers away, especially if nesting was unsuccessful the previous year; yearlings often return to the natal area or nearby [10].	**Suitable nesting habitat is present** in Bronte Creek Valley, where steep, exposed banks exist (e.g., cliff observed ~100m north of existing ROW on the west valley rim); foraging habitat is present throughout Bronte Creek Valley, within the study area and beyond.	Found nesting in cliff habitat located beyond the Study Area (~100 m north of Dundas Street) on the west valley slope of Bronte Creek during an MMM field survey in June 2009.	Observed during field surveys; however, no nesting habitat is present in the study area.
Barn Swallow	C, G	S4B	THR	THR	No Status	No Schedule	-	Ability to adapt to nesting in a variety of artificial structures (barns, bridges, etc.) and able to exploit foraging opportunities in open, human-modified, rural landscapes such as cliffs, caves, rock niche [3] Breeding habitat usually contains open areas (fields, meadows) for foraging, nest site that includes a vertical or horizontal substrate (often enclosed) underneath some type of roof or ceiling, and a body of water that provides mud for nest-building [13].	**Suitable nesting habitat is present** on the Bronte Creek bridge (Tansley Bridge), as well as in cliff habitat present in the valley beyond the study area (e.g., cliff observed ~100m north of existing ROW on the west valley rim); foraging habitat is present throughout Bronte Creek Valley, within the study area and beyond. **Potentially suitable nesting habitat is present** in some culverts in the study area; foraging habitat is present in old field meadow habitats in the study area.	Not found in the study area during MMM surveys (2008, 2009 and 2014). Recorded by LGL (2009). Species was 'not at risk' at the time of the LGL study, so no detailed information was provided on the Barn Swallow location or habitat usage.	Although not observed during field surveys by MMM, Barn Swallow was recorded previously (LGL 2009) in the general vicinity of Bronte Creek, and although no nests were observed on the bridge in 2014, there is potential for Barn Swallow to nest on it some years. Similarly, although none of the culverts was used for nesting in 2014, it is possible some of the larger culverts might be used some years.
Bobolink (*Dolichonyx oryzivorus*)	G	S4B	THR	THR	No Status	No Schedule	-	Habitat consists mainly of hayfields, pastures, and meadows which are dominated by a mixture of grasses and broad-leaved forbs. It also occurs in wet prairie, graminoid peatlands, abandoned fields, no-till cropland, small-grain fields, and reed beds. Do not nest in annual row crops like corn and soybean. Positively associated with habitats where grass cover is dominant. Density is significantly higher in areas with high grass-to-legume ratios (e.g., hayfields ≥ 8 yr old) and low alfalfa cover and total legume cover. Prefer moderate grass-litter depth (generally 2-5 cm), avoiding with thick litter layer or areas with bare ground. Nest tends to be sited in moist habitats, transitional between drier soils and areas providing poor drainage. Nest is always on ground, often at base of large forbs such as meadow rue, golden alexander, clover, etc. Will occupy fields with scattered shrubs or fence posts that are used as perches but avoid fields where the cover of woody shrubs and saplings >25%. They also respond negatively to the presence of nearby forest edges. Bobolink is sensitive to habitat patch size, preferring larger grasslands (i.e., generally >10 ha). Although relatively small grasslands (e.g., 5-10 ha) in fragmented landscapes can provide suitable breeding habitat for Bobolink, these sites represent poor habitat if surrounded by forest[16, 3].	**Suitable habitat present** in the agricultural and old field meadow areas in/adjacent to the study area, beyond the ROW, depending on how the fields are managed year-to-year (i.e., hayfields, grassland and lightly grazed pasture are ideal, whereas row crops are not).	Not found in the study area during MMM surveys (2008, 2009 and 2014). No other records.	Although not observed during field surveys by MMM or LGL, Bobolink is known to occur in the broader landscape, and there is some potential for this species to use hay or grass fields and old field meadow habitat areas that extend into the study area.

Appendix D: Table 4: Species of Conservation Concern Screening

Species	Source	SRANK[2]	COSEWIC[3]	MNR[4]	SARA Status[5]	Schedule[5]	Halton Region Significance[6]	Preferred Habitat Description	Project-Specific: Conditions within the Study Area[1]		
									Habitat Suitability	MMM Survey Results and Other Confirmed Records	Conclusion - Likelihood for Species to be Present or Use Habitat Present
Chimney Swift (*Chaetura pelagica*)	C	S5B, SZN	THR	THR	THR	1	U	Appears more concentrated in urban areas where there are large concentrations of chimneys for nest sites and communal roosts. Most sightings occur in cities, towns, or small villages or open habitats near human settlement. However, in some relatively unpopulated areas, this species may still nest in hollow trees, tree cavities, or caves. Forages in a variety of habitats, even over forests, but most common over open country; above ponds and lakes, where insects concentrate; and residential areas [13].	**Limited nesting habitat potential** associated with some of the houses, other anthropogenic structures, and chimneys in the study area.	Not found in the study area during MMM surveys (2008, 2009, and 2014). Recorded by LGL (2009) – 17 individuals observed foraging within Bronte Creek Valley; however no nesting sites found/confirmed.	Although not observed during field surveys by MMM, Chimney Swift was recorded previously (LGL 2009) in Bronte Creek Valley, and there is some potential for this species to use anthropogenic structures in the study area for nesting in some years.
Common Nighthawk (*Chordeiles minor*)	C	S4B, SZN	THR	SC	THR	1	R	Nests in open habitats, in forests and urban areas. It prefers rock outcrops, alvars, sand barrens, lakeshores, bogs, fens, and in forests, openings created by clearcuts and burns. In the agricultural south, it has nested in grasslands, agricultural fields, gravel pits, prairies, alvars, and at airports. In cities, it nests mostly on flat, gravelled roofs but occasionally in urban parks or on gravel roads, railways, and footpaths. Nesting occurs on the ground on a bare site in an open area [10, 6].	**Suitable habitat present** in open habitats, forested areas, and urban areas in the study area and vicinity.	Not found in the study area during MMM surveys (2008, 2009, and 2014). Recorded by LGL (2009) – one individual observed foraging within Bronte Creek Valley; however no nesting sites found/confirmed. Found in Bronte Creek Valley ESA (ESA #10) pre-1993 (Dwyer 2006).	Although not observed during field surveys by MMM, Common Nighthawk was recorded previously (LGL 2009) in Bronte Creek Valley, and there is some potential for this species to use habitat present in/adjacent to the study area (outside of the ROW).
Eastern Meadowlark (*Sturnella magna*)	F, G	S4B	THR	THR	No Status	No Schedule	-	The Eastern Meadowlark is most common in pastures, followed by hayfields, native grasslands, and savannahs. It also nests in a wide variety of other grassland habitats, including weedy meadows, young orchards, golf courses, restored grasslands on surface mines, grassy roadside verges, young oak plantations, grain fields, herbaceous fencerows, and grassy airfields. It rarely nests in row crops such as corn and soybean, except perhaps when grassed waterways are present. At the field scale, the Eastern Meadowlark's response to vegetation structure varies among studies. Optimal nesting habitat generally contains moderately tall (25 to 50 cm) grass with abundant litter cover, a high proportion of grass cover (>80% is optimal; <20% is inadequate), moderate forb density, low proportions of shrub and woody vegetation cover (<5%; >35% is too dense), and low percent cover of bare ground. Litter cover, plant diversity and vegetation patchiness increase, whereas total plant cover, legume cover, and vegetation height decrease. Grass-dominated hayfields are preferred over Alfalfa fields. The Eastern Meadowlark is not especially area-sensitive; nevertheless, large tracts of grasslands are generally preferred over smaller ones. The minimum size required is about five hectares.	**Suitable habitat present** in the agricultural and old field meadow areas in the study area and vicinity, beyond the ROW, depending on how the fields are managed year-to-year (i.e., hayfields, grassland and lightly grazed pasture are ideal, whereas row crops are not).	Not found in the study area during MMM surveys (2008, 2009, and 2014). Recorded by MNRF (Correspondence 2012) in the vicinity of the greater Dundas Street project areas (Brant Street to Oak Park Boulevard).	Although not observed during field surveys by MMM or LGL, Eastern Meadowlark is known to occur in the broader landscape, and there is some potential for this species to use hay or grasses and old field meadow habitats that extend into the Study Area (outside of the ROW).

Appendix D: Table 4: Species of Conservation Concern Screening

Species	Source	SRANK[2]	COSEWIC[3]	MNR[4]	SARA Status[5]	Schedule[5]	Halton Region Significance[6]	Preferred Habitat Description	Project-Specific: Conditions within the Study Area[1]		
									Habitat Suitability	MMM Survey Results and Other Confirmed Records	Conclusion - Likelihood for Species to be Present or Use Habitat Present
Hooded Warbler (*Wilsonia citrina*)	C	S3B, SZN	NAR	SC	THR	1	R	Inhabits a variety of forested habitats including small (2.5 ha) isolated fragments. Territories usually include small clearings where a shrub understory is available for nesting. Females often place nests in shrubs close to vegetation edges (old trails, patch edges, etc.). Typically inhabits mature forests where trees are large enough to create significant tree fall gaps. Commonly invades selectively logged deciduous forests, as well as pine plantations, 1–5 yr after harvesting, and remains as long as there are suitable understory shrubs for nesting. Often associated with moist woodlands and ravines. Deciduous forests occupied usually dominated by maple (*Acer*), beech (*Fagus grandifolia*), or oak (*Quercus*). S. Ontario population occupied a deciduous forest with a canopy height of 28 m, canopy cover of 88%, and shrub cover of 87%. This site consisted of several dominant species in shrub layer: maple-leaf viburnum, red and black raspberry, white ash (*Fraxinus americana*), choke cherry (*Prunus virginianus*), and red maple (*Acer rubrum*) [13].	**Limited habitat potential** in mature portions of the Bronte Creek Valley in the study area, beyond the ROW. No suitable habitat present in other portions of the study area.	Not found in the study area during MMM surveys (2008, 2009, and 2014). Recorded by LGL (2009) – two individuals observed in the LGL study area (exact location not known), however no confirmed nesting.	Although not observed during field surveys by MMM, Hooded Warbler was recorded previously (LGL 2009) in the general vicinity of the study area, and there is some very limited potential for it to use habitat that extends into the study area (outside of the ROW).
SAR Mammals											
Eastern Small-footed Myotis (syn. Little Brown Myotis) (*Myotis lucifugus*)	H	S4	END	END	No Status	No Schedule	C	Has adapted to using human-made structures for resting and maternity sites; also uses caves and hollow trees. Foraging habitat requirements are generalized; usually forages in woodlands near water. In winter, a relatively constant temperature of about 1-5 C and 80-100% relative humidity is required within the hibernacula (uses caves, tunnels, abandoned mines, and similar sites). Maternity colonies commonly are in warm sites in buildings and other structures; also infrequently in hollow trees. Narrow microclimate is suitable for raising young, and availability of suitable maternity sites may limit abundance and distribution [10].	**Suitable maternity habitat present** in man-made structures and mature, hollow trees in the Study Area, beyond the ROW. Foraging habitat is present in wooded riparian habitats in the study area.	Not found in the study area during MMM surveys (2008, 2009, and 2014). No other records.	Although not observed during field surveys by MMM or LGL, Eastern Small-footed Myotis was common in Halton Region (Dwyer 2006) prior to the on-set of White Nose Syndrome, and there is some limited potential for this species to use habitats in the study area for foraging and maternity sites.
Northern Long-eared Bat (syn. Northern Myotis) (*Myotis septentrionalis*)	H	S3	END	END	No Status	No Schedule	C	Generally associated with forested communities. Hibernates in caves, mines, and tunnels from late fall through early spring. Hibernators frequently roost in crevices, drill holes, and similar sites, but roosting in the open is not uncommon. The principal requirements of a suitable hibernation site are winter-long, low temperatures above freezing, high humidity, and lack of disturbances, both natural (floods) and anthropogenic (visitation). Caves, mines, and quarry tunnels are used as night roosts. Daytime roosting observations typically are of individuals in crevices or hollows or under loose bark on trees and in a variety of small spaces associated with buildings and other structures. Nursery colonies include barns, cabins, with the majority likely occurring under the loose bark of trees. Small, highly fragmented, or young forests that provide limited areas of subcanopy foraging habitat may not be suitable. Young forests may also lack appropriate nursery sites. A lack of suitable hibernacula may prevent occupancy of areas that otherwise have adequate habitat [10].	**Limited habitat potential** in mature forested areas of Bronte Creek Valley that extend into the study area, beyond the ROW. No suitable habitat present in other portions of the study area due to immaturity of forests and fragmentation of potential habitats.	Not found in the study area during MMM surveys (2008, 2009, and 2014). No other records.	Although not observed during field surveys by MMM or LGL, Northern Long-eared Bat was common in Halton Region (Dwyer 2006) prior to the on-set of White Nose Syndrome, and there is some potential for this species to use mature forested habitats in Bronte Creek Valley that extend into the study area, beyond the ROW.

Appendix D: Table 4: Species of Conservation Concern Screening

Species	Source	SRANK[2]	COSEWIC[3]	MNR[4]	SARA Status[5]	Schedule[5]	Halton Region Significance[6]	Preferred Habitat Description	Project-Specific: Conditions within the Study Area[1]		
									Habitat Suitability	MMM Survey Results and Other Confirmed Records	Conclusion - Likelihood for Species to be Present or Use Habitat Present
Woodland Vole (*Microtus pinetorum*)	G	S3?	SC	SC	SC	1	R	Lives in a wide variety of habitats, but appears to be closely associated with mature deciduous forests along Lake Erie where there is a thick layer of loose sandy soil and deep humus suitable for burrowing. In Ontario, preferred habitat is most common within the Carolinian Forest. Grasslands, meadows and orchards with groundcover of duff or grass[2] ...associated with deciduous forests in areas of soft, friable, often sandy soil beneath deep humus, where it can burrow easily[4]. Spends most of time underground in shallow burrow systems. Young are born in nests built beneath logs, below surface litter, or underground [11; 10].	**Limited habitat potential** in old field meadow areas, in the study area; however, these generally lack dense grass / duff cover.	Not found in the study area during MMM surveys (2008, 2009, and 2014). No other records.	Not anticipated to occur within the study area due to disturbed nature of habitat available.
SAR Herpetiles											
Eastern Ribbonsnake (*Thamnophis sauritus*)	G	S3	SC	SC	SC	3	R	The Eastern Ribbonsnake is semi-aquatic and frequents the edges of ponds, marshes, streams, bogs, wet meadows, seasonally flooded prairies, lake shorelines, or can be found in swamps and moist forests. Rarely found in upland areas. Usually this snake is in or near vegetative cover (often shrubs or clumps of sedges or grasses) in sun-exposed sites along the edge of standing or flowing water. Wetland and shoreline habitats are generally near forests. This species basks along shorelines in vegetation or on logs or low shrubs. They hibernate underground in small mammal burrows, ant mounds, or crevices in rock outcroppings [3; 10; 12].	**Suitable habitat is present** in lowland areas (marshes, swamps and moist fields) associated with riparian habitats present in the Study Area and vicinity.	Not found in the Study Area during MMM surveys (2008, 2009, and 2014). Found in Bronte Creek Valley ESA (ESA #10) in 1977 and 1979 (Dwyer 2006). Found in Nelson Escarpment Woods (NAI-6) in 1984 (Dwyer 2006).	Although not observed during field surveys by MMM or LGL, there is some potential for Eastern Ribbonsnake to use parts of the larger habitat mosaic that extend s into the Study Area. No specific habitat feature was noted in Study Area that is not also present in the broader landscape.
Milksnake (*Lampropeltis triangulum*)	G	S3	SC	SC	SC	1	C	Habitats vary greatly among different geographic regions: semiarid to wet, lowland valleys to mountains, grasslands and shrublands to forests and forest edges, primary forest to secondary forest, sand dunes to rocky areas, and wilderness to semi-agricultural and suburban. Habitats include: Bare rock/talus/scree, Cliff, Cropland/hedgerow, Desert, Coniferous, Hardwood, or Mixed Forest or Woodland, Grassland/herbaceous, Old field, Sand/dune, Savannah, Shrubland/chaparral, Suburban/orchard. It can live in almost any habitat that provides shelter and a source of food. Milksnakes are usually found under cover objects including planks, debris, stumps, decaying logs, rocks and rock piles, stones, bark, rubbish, tar paper, iron sheets, and damp trash. This species hibernates underground in mammal burrows, old building foundations, old wells and cisterns, stone walls, gravel and dirt banks, hollow logs, rotting stumps, or rock crevices. Eggs are laid in rotting stumps or logs, small mammal burrows, piles of manure, leaf mounds, sawdust piles, compost, sand, under boards, logs, or in loose soil. [3; 10; 12].	**Suitable habitat is present** in in agricultural, old field meadow, cultural thicket, cultural woodland, forest and suburban areas (including composters, old sheds, and debris piles), which are present in the study area.	Not found in the study area during MMM surveys (2008, 2009, and 2014). Found in Bronte Creek Valley ESA (ESA #10) in 1973, 1985, 1988, and “pre-1993” (Dwyer 2006). Found in Nelson Escarpment Woods (NAI-6) in 1988 (Dwyer 2006).	Although not observed during field surveys by MMM or LGL, there is some potential for Milksnake to use parts of the larger habitat mosaic that extend s into the study area. No specific habitat feature was noted in study area that is not also present in the broader landscape.
Snapping Turtle (*Chelydra serpentine*)	A (2010), G	S3	SC	SC	SC	3	C	Snapping turtles occupy all types of freshwater habitats (streams, bogs, rivers, lakes, reservoirs, ponds, marshes, swamps), especially those with slow-moving waters, soft mud bottoms, and abundant aquatic vegetation or submerged brush and logs. Preferred nesting areas are open and sunny with moist well-drained sand or soil. Females generally nest on sand and gravel embankments, but muskrat houses, abandoned beaver lodges, road shoulders, fissures in rocky shorelines, sawdust heaps, freshly dug soil, gardens, lawns, and forest clearings will also be utilized. Turtles hibernate in small streams, along lakeshores, or in wetlands either buried in substrate or wedged beneath or adjacent to submerged logs or woody debris [3; 9; 10].	**Limited habitat potential** in Bronte Creek, especially in areas where current is slow-moving and woody debris and in-stream vegetation is abundant, beyond the ROW. No suitable habitat present in other portions of the study area.	Not found in the study area during MMM surveys (2008, 2009, and 2014). No other records.	Although not observed during field surveys by MMM or LGL, there is some potential for Snapping Turtle to use habitat present in/along Bronte Creek generally. No specific habitat feature was noted in study area that is not also present in the broader landscape.

Appendix D: Table 4: Species of Conservation Concern Screening

Species	Source	SRANK[2]	COSEWIC[3]	MNR[4]	SARA Status[5]	Schedule[5]	Halton Region Significance[6]	Preferred Habitat Description	Project-Specific: Conditions within the Study Area[1]		
									Habitat Suitability	MMM Survey Results and Other Confirmed Records	Conclusion - Likelihood for Species to be Present or Use Habitat Present
SAR Fish											
Redside Dace (*Clinostomus elongates*)	A (1998), E, G	S3	END	END	SC	3	-	The Redside Dace is a coolwater species found in pools and slow-moving areas of small streams and headwaters with a gravel bottom. They are generally found in areas with overhanging grasses and shrubs. Undercut banks, which are an important part of their habitat, as are instream boulders and large woody debris [2]. During spawning, they can be found in shallow parts of streams, which are also popular spawning areas for other minnow species [5]. Redside Dace inhabits slow moving sections of connected streams of 2nd, 3rd and 4th orders. They commonly occur in streams with overhanging vegetation flowing through open meadows with scattered trees and shrubs [5].	**Suitable habitat is present** in the Fourteen Mile Creek West and Tributary. No suitable habitat present in other portions of the study area.	MNRF and CH confirmed presence in Fourteen Mile Creek West and Tributary within the study area. CH has recent records at C22 from 2010, and ~50m upstream of Dundas Crossing at C23 in 2004.	Confirmed presence in study area in Fourteen Mile Creek West and Tributary. MNRF confirmed that this species is not present in any of the other watercourses along the study area.
Silver Shiner (*Notropis photogenis*)	A (1983), E, G	S2S3	THR	THR	SC	3	-	The Silver Shiner is found primarily in large streams with widths usually greater than 20 m. Here it is found in deep riffles or pools adjacent to riffles. Little is known about its spawning habitat, but the limited data available suggests that they may migrate upstream and spawn in deep riffles, perhaps in association with other shiners or chubs.	Suitable habitat for this species along the study area is only present in Bronte Creek within ROW reaches. The other watercourses are too small.	MNRF and CH (2011) confirmed presence in Bronte Creek within the ROW reaches.	Confirmed in Bronte Creek within the ROW reaches. MNRF confirmed that this species is not present in any of the other watercourses along the study area.
SAR Insects											
West Virginia White (*Pieris virginiensis*)	A	S3	NAR	SC	No Status	No Schedule	LS/E	The West Virginia White lives in moist, deciduous woodlots. This butterfly requires a supply of toothwort, a small, spring-blooming plant that is a member of the mustard family, since it is the only food source for larvae [5].	**Limited habitat potential** – suitable forests present in the study area. Toothwort (only food source for larvae), was recorded in upland forest areas of Bronte Creek Valley that are present in the study area (LGL 2009), and there is potential for this plant to be present in other woodlands in the study area.	Not found in the study area during MMM surveys (2008, 2009, and 2014). No other records.	Although not observed during field surveys by MMM or LGL, there is some potential for West Virginia White to use forest habitat present in the Study Area.
Monarch (*Danaus plexippus*)	A	S4	SC	SC	SC	3	-	Monarchs in Canada exist primarily wherever milkweed (Asclepius) and wildflowers (such as Goldenrod, asters, and Purple Loosestrife) exist. This includes abandoned farmland, along roadsides, and other open spaces where these plants grow. Monarch wintering habitats include Eucalyptus trees along the Californian coast, and the Oyamel Fir forest in central Mexico [4]. Throughout their life cycle, Monarchs use three different types of habitat. Only the caterpillars feed on milkweed plants and are confined to meadows and open areas where milkweed grows. Adult butterflies can be found in more diverse habitats where they feed on nectar from a variety of wildflowers [5].	**Suitable habitat is present** in old field meadow areas in and beyond the Study Area that extend into the ROW.	Not found in the study area during MMM surveys (2008, 2009, and 2014). Found in Bronte Creek Valley ESA (ESA #10) in 1973, 1993, 1999 and 2003, and in NAI-10A in 1991 (Dwyer 2006). Found in Nelson Escarpment Woods (NAI-6) in 2003 (Dwyer 2006).	Although not observed during field surveys by MMM or LGL, there is good potential for Monarch to use the old field habitats present in the Study Area and vicinity, some of which extend into the ROW.

Appendix D: Table 4: Species of Conservation Concern Screening

Species	Source	SRANK[2]	COSEWIC[3]	MNR[4]	SARA Status[5]	Schedule[5]	Halton Region Significance[6]	Preferred Habitat Description	Project-Specific: Conditions within the Study Area[1]		
									Habitat Suitability	MMM Survey Results and Other Confirmed Records	Conclusion - Likelihood for Species to be Present or Use Habitat Present
Non-SAR SCC Plants											
Brainerd's Hawthorn (*Crataegus brainerdii*)	A (1981)	S2	-	-	-	-	R1	Open savannas, sandy roadsides and bluffs, river banks, fields and pastures; usually in dry ground, rarely in moist places. Michigan plants are mostly *var. brainerdii*, with 20 stamens; a few collections are *var. scabrida* (Sarg.) Eggleston (*C. scabrida* Sarg.), which differs in having mostly ca. 10 stamens[20]. *Present in Halton[19].	**Suitable habitat is present** in old field meadow areas in the study area, including the ROW.	Not found in the study area during MMM surveys (2008, 2009, and 2014). No other records.	Not present in the ROW. Not anticipated to occur in the study area, since this species was not found during the field surveys by MMM or reported by LGL (2009) or other background sources.
Kansas Hawthorn (*Crataegus coccinoides*)	A (1980)	S2	-	-	-	-	R1	Kansas hawthorn is best adapted to dry uplands on limestone hillsides. While it can succeed in partial shade and various soil types it prefers full sun and well drained loamy soils[21].	**Limited habitat potential** in old field meadow areas in the study area, including the ROW; however, landscape is fairly flat.	Not found in the study area during MMM surveys (2008, 2009, and 2014). No other records.	Not present in the ROW. Not anticipated to occur in the study area, since this species was not found during the field surveys by MMM or reported by LGL (2009) or other background sources and potential is habitat very limited.
Northern Hawthorn (*Crataegus pruinosa var. dissona; C. dissona*)	A (1981, 1982)	S3	-	-	-	-	R3	Sandy open upland forests as well as richer forested banks, stream borders, forested hills, river bluffs; roadsides, fencerows, fields, meadows, pastures[20]. *Present in Halton[19].	**Suitable habitat present** in riparian areas, hedgerows and woodlands, along roadsides and in old fields meadows, in the study area.	Not found in the study area during MMM surveys (2008, 2009, and 2014). No other records.	Not present in the ROW. Not anticipated to occur in the study area, since this species was not found during the field surveys by MMM or LGL (2009).
Virginia Bluebells syn.Virginia Lungwort (*Mertensia virginica*)	A (1982), B, C	S3	-	-	-	-	R2	Moist deciduous woods and thickets, usually on floodplains. Sometimes cultivated and some populations may have originated as garden escapes[19]. *Present in Halton[19].	**Limited habitat potential** in wooded riparian habitats present in the study area, beyond the ROW.	Not found in the study area during MMM surveys (2008, 2009, and 2014). Found in Bronte Creek Valley ESA (ESA #10) in 1974, 1976 and 1982 (Dwyer 2006).	Not present in the ROW. Not anticipated to occur in the study area, since this species is fairly distinct and was not observed during the field surveys by MMM or LGL (2009).
White-tinged Sedge (*Carex albicans var. albicans*)	A (1980)	S3	-	-	-	-	-	Mostly acidic, dry soils of sandstone and granite, also calcareous regions, wooded slopes, sandstone ridges, woodland clearings, in partial shade of deciduous forests, under cedars[22]. *Present in Halton[19].	**Limited habitat potential** in forest and woodland habitats present in the study area, beyond the ROW.	Not found in the study area during MMM surveys (2008, 2009, and 2014). No other records.	Not present in the ROW. Not anticipated to occur in the study area, since this species is fairly distinct, and was not observed during the field surveys by MMM or reported by LGL (2009) or other background sources.
Woodland Flax (*Linum virginianum*)	A (1976)	S2	-	-	-	-	R2	Dry, open woods and fields	**Limited habitat potential** in old field meadow and cultural woodland areas in the study area, including the ROW.	Not found in the study area during MMM surveys (2008, 2009, and 2014). Found in Bronte Creek Valley ESA (ESA #10) in 1976, "pre-1993" and 2003 (Dwyer 2006).	Not present in the ROW. Not anticipated to occur in the study area, since this species is fairly distinct, and was not observed during the field surveys by MMM or reported by LGL (2009) or other background sources.

Appendix D: Table 4: Species of Conservation Concern Screening

Species	Source	SRANK[2]	COSEWIC[3]	MNR[4]	SARA Status[5]	Schedule[5]	Halton Region Significance[6]	Preferred Habitat Description	Project-Specific: Conditions within the Study Area[1]		
									Habitat Suitability	MMM Survey Results and Other Confirmed Records	Conclusion - Likelihood for Species to be Present or Use Habitat Present
Non-SAR SCC Insects											
Mottled Duskywing (*Erynnis martialis*)	A (2000)	S2	-	-	-	-	-	Grassland, herbaceous, shrubland, chaparral and deciduous / coniferous / mixed woodlands (including oak or pine savannas and woodlands, pine barrens, shrubby foothills, grassy openings and river embankments). Larvae eat leaves of several species of *Ceanothus* (Rhamnaceae), including *C. americanus, C. ovatus, C. fendleri* (Scott, 1986, Schweitzer et al. 2011). Reports of other foodplants in older literature are incorrect. Adults sip nectar of flowers, including *Ceanothus*, knapweed (in New York) and many others. Like most Erynnis, males are often seen sipping moist soil.[10].	**Limited habitat potential** in old field meadow, cultural thicket, and cultural woodland areas in the study area, including the ROW; however, no larval food source plants were found.	Not found in the study area during MMM surveys (2008, 2009, and 2014). Found in Bronte Creek Valley ESA (ESA #10) in 2003 (Dwyer 2006).	Although not observed during field surveys by MMM or LGL, there is some potential for Mottled Duskywing to use cultural habitats present in the study area.

Table 4-2: Other Species of Conservation Concern: Species with No Habitat Potential in the Study Area (50 m north and south of the ROW along Dundas Street from Brant Street to Bronte Road).

Species	Source	SRANK[2]	COSEWIC[3]	MNR[4]	SARA Status[5]	Schedule[5]	Halton Region Significance[6]	Reason for Exclusion from Screening Table
American Chestnut (*Castanea dentata*)	A (1993), G	S2	END	END	END	1	R3	Not present in study area, based on limitation of suitable habitat to the Bronte Creek Valley (where this species has not been recorded, despite extensive recent surveys by MMM and background sources),
American Columbo (*Frasera caroliniensis*)	G	S2	END	END	END	1	R3	Not present in study area, based on limitation of suitable habitat to the Bronte Creek Valley (where this species has not been recorded, despite extensive recent surveys by MMM and background sources),
American Ginseng (*Panax cinquefolius)*	A	S3	END	END	END	1	R6	Not present in study area, based on limitation of suitable habitat to the Bronte Creek Valley (where this species has not been recorded, despite extensive recent surveys by MMM and background sources),
Bowman's-root (*Gillenia trifoliate*)	A	SX	-	-	-	-	R1	Not present in study area, based on status as Extirpated.
Broad Beech Fern *(Phegopteris hexagonoptera)*	G	S3	SC	SC	SC	3	-	Not present in study area, based on limitation of suitable habitat to the Bronte Creek Valley (where this species has not been recorded, despite extensive recent surveys by MMM and background sources),
Burning Bush (Wahoo) (*Euonymus atropurpureus var. atropurpureus*)	A (1973)	S3	-	-	-	-	R3	Not present in study area, based on historical nature of record (NHIC 1973).
Clinton's Club-rush (*Trichophorum clintonii*)	A (1954)	S2S3	-	-	-	-	-	Not present in study area, based on historical nature of record (NHIC 1954).
Downy Yellow False Foxglove (*Aureolaria virginica*)	A (1957)	S1	-	-	-	-	R1	Not present in study area, based on historical nature of record (NHIC 1957).
Hart's-tongue Fern (*Asplenium scolopendrium americanum*)	G	S3	SC	SC	SC	1	R2	Not present in study area, based on restricted habitat range associated with the Niagara Escarpment.
Hoary Mountain-mint (*Pycnanthemum incanum*)	G	S1	END	END	END	1	R2	Not present in study area, based on extremely restricted habitat range and lack of suitable habitat (open-canopied deciduous woods on warm slopes) and associate species (prairie grasses).
Large Round-leaved Orchid (*Platanthera macrophylla*)	A (1978)	S2	-	-	-	-	R1	Not present in study area, based on historical nature of record (NHIC 1978).

Appendix D: Table 4: Species of Conservation Concern Screening

Species	Source	SRANK[2]	COSEWIC[3]	MNR[4]	SARA Status[5]	Schedule[5]	Halton Region Significance[6]	Reason for Exclusion from Screening Table
Perfoliate Bellwort (*Uvularia perfoliata*)	A (2001)	S1	-	-	-	-	R2	Not present in study area, based on limitation of suitable habitat to the Bronte Creek Valley (where this species has not been recorded, despite extensive recent surveys by MMM and background sources),
Pignut Hickory (*Carya glabra*)	A (1957)	S3	-	-	-	-	R2	Not present in study area, based on historical nature of record (NHIC 1957).
Red Mulberry (*Morus rubra*)	G	S2	END	END	END	1	R1	Not present in study area, based on species rarity and restricted range, in addition to limitation of suitable habitat to the Bronte Creek Valley (where this species has not been recorded, despite extensive recent surveys by MMM and background sources),
Shiny Wedge Grass (*Sphenopholis nitida*)	A (1957; 1905)	S1	-	-	-	-	R2	Not present in study area, based on historical nature of record (NHIC 1905).
Slim-flowered Muhly (*Muhlenbergia tenuiflora*)	A (1973)	S2	-	-	-	-	R1	Not present in study area, based on historical nature of record (NHIC 1973) and description as “historically present” in Halton [19].
Cerulean Warbler (*Dendroica cerulean*)	G	S3B,SZN	END	THR	SC	1	-	Not present in the study area, based on lack of suitable habitat (large mature forest tracts – area sensitive).
Henslow’s Sparrow (*Ammodramus henslowii*)	A (2000), G	SHB	END	END	END	1	-	Not present in the study area, based on lack of suitable habitat (old field meadow habitat does not meet requirements for thick thatch layer or lack of trees and shrubs).
Jefferson Salamander (*Ambystoma jefersonianum*)	A (2002), G	S2	END	END	THR	1	U	Note present in the study area, based on lack of suitable breeding habitat (vernal pools in forested areas).
Least Bittern (*Ixobrychus exilis*)	G	S3B,SZN	THR	THR	THR	1	-	Not present in the study area, based on lack of suitable habitat (large tracts of wetland – area sensitive).
Louisiana Waterthrush (*Seiurus motacilla*)	G	S3B,SZN	SC	SC	SC	1	R	Not present in the study area, based on lack of suitable habitat (high gradient, low order, closed canopy perennial streams).
Northern Bobwhite (*Colinus virginianus*)	A (1904)	S1	END	END	END	1	I	Not present in the study area, based species rarity and restricted range.
Peregrine Falcon (*Falco peregrinus anatum/tundrius*)	G	S3B	SC	THR	No Status	No Schedule	-	Not present in the study area, based on lack of suitable habitat (high cliffs or buildings for nesting sites).

Appendix D: Table 4: Species of Conservation Concern Screening

Species	Source	SRANK[2]	COSEWIC[3]	MNR[4]	SARA Status[5]	Schedule[5]	Halton Region Significance[6]	Reason for Exclusion from Screening Table
Prothonotary Warbler (*Protonotaria citrea*)	G	S1B	END	END	END	1	-	Not present in the study area, based on lack of suitable habitat (large tracts of swamp / lowland forest – area sensitive) and location of Study Area outside of known range for this species.
Blanding's Turtle (*Emydoidea blandingii*)	G	S3	THR	THR	THR	1	R	Not present in study area, based on lack of suitable habitat (wetland, pond or slow-moving water habitat).
Common Five-lined Skink (*Eumeces fasciatus*)	G	S3	SC	SC	SC	1	-	Not present in the study area, based on location of Study Area outside of known range for this species.
Northern Map Turtle (*Graptemys geographica*)	G	S3	SC	SC	SC	3	R	Not present in the study area, based on lack of suitable hibernation habitat (deep pools) , in addition to limitation of suitable foraging habitat to Bronte Creek (where this species has not been recorded, despite extensive recent surveys by MMM and background sources),
Spiny Softshell (*Apalone spinifera spinifera*)	G	S3	THR	THR	THR	1	R	Not present in the study area, based on location of Study Area outside of known range for this species.
Stinkpot Turtle (Eastern Musk Turtle) (*Sternotherus odoratus*)	G	S3	THR	THR	THR	1	R	Not present in the study area, based on lack of suitable habitat (wetland, pond, or slow-moving water habitat).
Rusty-patched Bumble Bee (*bombus affinis*)	G	S1	END	END	No Status	No Schedule	-	Not present in the study area, based on location of Study Area outside of known range for this species.
Lake Sturgeon (*Acipenser fulvescens*)	G	S2	THR	THR	No Status	No Schedule	-	Not present in the study area, based on lack of suitable habitat (watercourses too narrow and shallow to support species).
Arrowhead Spiketail (*Cordulegaster oblique*)	A (1931)	S1	-	-	-	-	-	Not present in study area, based on historical nature of record (NHIC 1931).

Sources

A – MNRF NHIC Database
B – Other Studies from LGL Report plant list
C – Observed by LGL
D – Observed by MMM during field surveys
E – DFO Species at Risk Mapping (2011)
F – MNRF Correspondence
G – MNRF Halton Region List
H – Halton Natural Areas Inventory Species Lists (Dwyer 2006)

Habitat Description References

Appendix D: Table 4: Species of Conservation Concern Screening

[1] N/A as used in the Critical Habitat Definition column indicates that no Recovery Strategy or Action Plan exists for the species; therefore no Critical Habitat definition is available yet.
[2] Significant Wildlife Habitat Guide (Ministry of Natural Resources 2000)
[3] COSEWIC Species Assessment Report
[4] Species at Risk Public Registry http://www.sararegistry.gc.ca
[5] MNR SAR Website
[6] http://www.rom.on.ca/ontario/
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Table Legend

[2]S-Ranks (provincial)
Provincial (or Subnational) ranks are used by the Natural Heritage Information Centre (NHIC) to set protection priorities for rare species and natural communities. These ranks are not legal designations. Provincial ranks are assigned in a manner similar to that described for global ranks, but consider only those factors within the political boundaries of Ontario.
(Provincial Status from MNR Biodiversity Explorer May 2011)

S1 Critically Imperiled - Critically imperiled in the nation or state/province because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province.
S2 Imperiled - Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.
S3 Vulnerable - Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
S4 Apparently Secure - Uncommon but not rare; some cause for long-term concern due to declines or other factors.
S5 Secure - Common, widespread, and abundant in the nation or state/province.
S#S# Range Rank - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).
SAN Non-breeding accidental.
SE Exotic - not believed to be a native component of Ontario's fauna.
SZN Non-breeding migrants/vagrants.
SZB Breeding migrants/vagrants.

[3]COSEWIC (Committee on the Status of Endangered Wildlife in Canada)
(federal status from COSEWIC May 2011)

EXT Extinct - A species that no longer exists.
EXP Extirpated - A species no longer existing in the wild in Canada, but occurring elsewhere.
END Endangered - A species facing imminent extirpation or extinction.
THR Threatened - A species likely to become endangered if limiting factors are not reversed.

SC Special Concern (formerly vulnerable) - A species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.
NAR Not At Risk - A species that has been evaluated and found to be not at risk of extinction given the current circumstances.
DD Data Deficient (formerly Indeterminate) - Available information is insufficient to resolve a species' eligibility for assessment or to permit an assessment of the species' risk of extinction.

[4]OMNR (Ontario Ministry of Natural Resources)
(provincial status from MNR June 8 2011)
The provincial review process is implemented by the MNR's Committee on the Status of Species at Risk in Ontario (COSSARO).

EXT Extinct - A species that no longer exists anywhere.
EXP Extirpated - A species that no longer exists in the wild in Ontario but still occurs elsewhere.
END Endangered - A species facing imminent extinction or extirpation in Ontario which is a candidate for regulation under Ontario's Endangered Species Act (ESA) (END-R designations are no longer relevant as species are covered under new ESA April 2009)
THR Threatened - A species that is at risk of becoming endangered in Ontario if limiting factors are not reversed.
SC Special Concern (formerly Vulnerable) - A species with characteristics that make it sensitive to human activities or natural events.
NAR Not at Risk - A species that has been evaluated and found to be not at risk.
DD Data Deficient (formerly Indeterminate) - A species for which there is insufficient information for a provincial status recommendation.

[5]SARA (Species at Risk Act) Status and Schedule
The Act establishes Schedule 1, as the official list of wildlife species at risk. It classifies those species as being either Extirpated, Endangered, Threatened, or a Special Concern. Once listed, the measures to protect and recover a listed wildlife species are implemented.
EXT Extinct - A wildlife species that no longer exists.
EXP Extirpated **-** A wildlife species that no longer exists in the wild in Canada, but exists elsewhere in the wild.
END Endangered - A wildlife species that is facing imminent extirpation or extinction.
THR Threatened - A wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.
SC Special Concern - A wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.

Schedule 1: is the official list of species that are classified as extirpated, endangered, threatened, and of special concern.
Schedule 2: species listed in Schedule 2 are species that had been designated as endangered or threatened, and have yet to be re-assessed by COSEWIC using revised criteria. Once these species have been re-assessed, they may be considered for inclusion in Schedule 1.
Schedule 3: species listed in Schedule 3 are species that had been designated as special concern, and have yet to be re-assessed by COSEWIC using revised criteria. Once these species have been re-assessed, they may be considered for inclusion in Schedule 1.

The Act establishes Schedule 1 as the official list of wildlife species at risk. However, please note that while Schedule 1 lists species that are extirpated, endangered, threatened and of special concern, the prohibitions do not apply to species of special concern.

Species that were designated at risk by COSEWIC prior to October 1999 (Schedule 2 & 3) must be reassessed using revised criteria before they can be considered for addition to Schedule 1 of SARA. After they have been assessed, the Governor in Council may on the recommendation of the Minister, decide on whether or not they should be added to the List of Wildlife Species at Risk.

Government of Canada. Species at Risk Public Registry. Website: [http://www.sararegistry.gc.ca/default_e.cfm May 24, 2011]
Glossary: http://www.sararegistry.gc.ca/about/glossary/default_e.cfm#e
Species Index A-Z: http://www.sararegistry.gc.ca/sar/index/default_e.cfm
Species Listing by Schedule: http://www.sararegistry.gc.ca/sar/listing/default_e.cfm

Halton Regional Significance

Halton Flora (Vegetation) Significance Codes are defined as follows:
X - Present
U - Uncommon native species
R - Rare native species
R# - Number of stations for a rare native species
E - Extirpated native species
+ or I - introduced species
X+ - introduced in municipality
SR - sight record
LR - literature record

Halton Wildlife Significance Codes
From : Halton Natural Areas Inventory (Dwyer 2006)

Appendix D: Table 4: Species of Conservation Concern Screening

A = Abundant >125 Stations
C = Common 36-125 Stations
U = Uncommon 15-35 Stations
R= Rare < 15 Stations
E = Extirpated no longer present in Halton Region
I = Introduced an introduced species not native to Ontario
Uncertain = Uncertain if species is present in Halton Region
LS = Locally Significant
M = Migration

Other References

Dwyer, J.K. 2006. Halton Natural Areas Inventory. Volume 1: Site Summaries.