Region of Peel

Coleraine CP Grade Separation

Natural Heritage Evaluation

B000738

November 12, 2019

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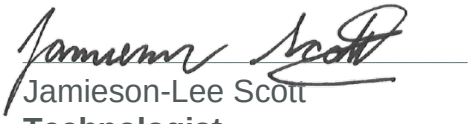

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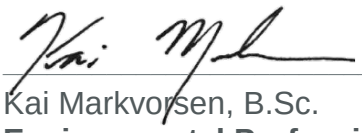

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Abbreviations

ANSI	Area of Natural and Scientific Interest
DFO	Department of Fisheries and Oceans / Fisheries and Oceans Canada
ELC	Ecological Land Classification (Lee et al., 1998, as amended)
ESA	Endangered Species Act, 2007, S.O. 2007, c. 6
FNHS	Functional Natural Heritage System
GIS	Geographic Information System
LIO	Land Information Ontario
masl	Metres above mean sea level
mbgs	Metres below ground surface
MCEA	Municipal Class Environmental Assessment
MNRF	Ministry of Natural Resources and Forestry
NHIC	Natural Heritage Information Centre
NHS	Natural Heritage System
TNHS	Targeted Natural Heritage System
TRCA	Toronto and Region Conservation Authority
OBBA	Ontario Breeding Bird Atlas
OP	Official Plan
PPS	Provincial Policy Statement, 2014
PSW	Provincially Significant Wetland
SAR	Species at Risk
SARA	Species at Risk Act, S.C. 2002, c. 29
SWH	Significant Wildlife Habitat (as defined by MNRF criteria)

1. Introduction

CIMA Canada Inc. (CIMA+) was retained by the Region of Peel to conduct a Schedule 'C' Municipal Class Environmental Assessment (MCEA) for the Coleraine Drive Grade Separation ('the Project'). In the MCEA, the city is proposing road widening and the incorporation of additional / modified pedestrian grade separation along Coleraine Road. Specifically, two (2) options have been proposed: (1) a rail over road design; and (2) a road over rail design. As part of this MCEA, an assessment of potential impact to natural heritage is required. The Project is in Bolton, Town of Caledon, Region of Peel. Refer to Figure 1 (*see* **Appendix A**) for location details.

2. Scope of the Assessment

This natural heritage study is being conducted to determine the presence and extent of natural heritage features and associated constraints on the proposed long-term traffic improvements and grade separation of the CP Rail line on Coleraine Drive south of Old Ellwood Drive in the Town of Caledon (the "Study Area").

The identification and description of natural features on and adjacent to the Study Area is necessary in order to assess the potential environmental impact of the development and to provide suggestions for the minimization and/or mitigation of these impacts. This report includes descriptions of natural features on and adjacent to the Study Area as determined through reviews of secondary source information and direct observation during site visits. Anticipated impacts are outlined in this draft report for the purposes of mitigation by design. However, the project final scope of impact can only be determined when final grading and construction limits are known. The locations of the natural features on and adjacent to the Study Area are shown in Figure 2 (*see* **Appendix A**).The natural heritage study is consistent with the documentation requirements of the TRCA's Ontario Regulation 166/06 and their Living City Policies, the 2016 amendments to the Peel Region Official Plan, and the Town of Caledon Official Plan.

Available existing information relevant to the Study Area was reviewed to document known or potential natural heritage features and functions. These data sets included:

- Aerial imagery (current and historic);
- Ontario Geological Survey Maps;
- Data published through wildlife atlases;
- Environment mapping in the Official Plans of the Town of Caledon and Region of Peel;
- Fish and wildlife data records from the Natural Heritage Information Centre (NHIC);
- Watershed monitoring reports related to the Humber River watershed and the Main Humber subwatershed;

- Natural heritage features identified through Land Information Ontario; and
- Data sets provided by TRCA and the Ministry of Natural Resources and Forestry (MNRF)

3. Site Context

3.1 Ecoregion

The Study Area is located within Ecoregion 6E (Lake Simcoe-Rideau Ontario), the second most densely populated ecoregion in Ontario. This ecoregion is part of the Mixedwood Plains of Southern Ontario, characterized by relatively diverse vegetation. More than 57% of the ecoregion exists as cropland (44.4%), and pasture and abandoned fields (12.8%). Forest cover includes deciduous (16.0%), coniferous (5.3%), and mixed forest (8.8%). Water covers 4% of the ecoregion.

The regional diversity of the vegetation includes hardwood forests that are dominated by Sugar Maple (Acer saccharum), American Beech (*Fagus grandifolia*), White Ash (*Fraxinus americana*), Eastern Hemlock (*Tsuga canadensis*), and numerous species are found where substrates are well developed on upland sites. The lowlands--including rich floodplain forests--are well established with Green Ash (*Fraxinus pennsylvanica*), Silver Maple (*Acer saccharinum*), Red Maple (*Acer rubrum*), Eastern White Cedar (Thuja occidentalis), Yellow Birch (Betula alleghaniensis), Balsam Fir (*Abies balsamea*), and Black Ash (*Fraxinus nigra*). Peatlands (including fens, rarely bogs), often established with Black Spruce (*Picea mariana*) and Tamarack (*Larix laricina*), occur along the northern edge and in the eastern portion of the ecoregion (Ministry of Natural Resources, 2019).

3.2 Surficial Geology

Surficial geology mapping from the Ontario Geological Survey indicates that the Study Area lies within the till plains of southern Ontario (Chapman and Putnam 1984). The soils in this region are described as till deposits with clay to silt-textured till derived from glaciolacustrine deposits or shale (*see* Figure 3, **Appendix A***)*.

Bedrock geology, as found in Ontario Geological Survey 1:250 000 scale bedrock geology of Ontario Map (Miscellaneous Release–Data 126 - Revision 1), is consistent with the Georgian Bay Formation, which is composed of beds of shale, interbedded dolomitic siltstone, and minor limestone (*see* Figure 4, **Appendix A**).

3.3 Watershed and Drainage

The Study Area is within the Humber River watershed generally, and the Main Humber subwatershed specifically. The Humber River watershed covers 911 km^2, its headwaters

beginning in the Niagara Escarpment (NE) and Oak Ridges Moraine (ORM), flowing through fertile clay and till plains, and draining to Lake Ontario. Its physio geological features include the Lake Iroquois Sand Plain, Niagara Escarpment, Oak Ridges Moraine, Peel Plain, South Slope, Guelph Drumlin Field, and Horseshoe Moraine. It is the largest watershed in the TRCA jurisdiction. Within the Humber River watershed, the largest recharge areas are situated in the northern portion, in the Oak Ridges Moraine and on the Niagara Escarpment. Infiltration to these zones may exceed 300 mm per year.

The headwaters of the Main Humber subwatershed originate in the NE and ORM just north of Regional Road 9 flowing through the South Slope to the Peel Plain. Agricultural lands and natural areas make up the majority of the landscape.

North of the CP rail line, a small tributary (Jaffary Creek) of the Humber River begins as two tributaries; one originates at a stormwater pond on the west side of Coleraine Drive and flows east under the road through the valley south of King Street. There, it meets the other from the south-west where it flows into a stormwater settling pond (Jaffary's Creek Pond). The creek continues from Jaffary's Creek Pond underground, travelling north along Deer Valley Drive where it drains into the Humber River.

3.4 Significant Natural Heritage Features

Land Information Ontario (LIO) was used to generate Natural Heritage maps along with online resources to identify any significant natural heritage features that receive policy protection under the Provincial Policy Statement.

CIMA+ also sent out an information request to the MNRF to identify any significant natural heritage features in the Study Area and obtain additional information on restricted Species at Risk (SAR) records, fisheries records, or other data on file concerning the Study Area (*see* **Appendix D**).

3.4.1 Natural Heritage System

The Natural Heritage System (NHS) at a site is composed of features and functions of the natural landscape that are integral to its maintenance and long-term function. This includes designated areas, features and habitats protected under regulation and policy, and other important components identified through a Natural Heritage Evaluation.

3.4.2 Areas of Natural and Scientific Interest

There are no Areas of Natural and Scientific Interest (ANSI) within, or in proximity to, the Study Area.

3.4.3 Provincially Significant Wetlands

No Provincially Significant Wetlands (PSW) are located within or within proximity of the Study Area.

3.4.4 Significant Woodlands

Woodlands have been identified in the northeast portion of the Study Area in association with the TRCAs NHS, the region's Greenlands System, and the municipality's Environmental Policy Area (EPA).

3.4.5 Aquatic Habitat

The stormwater pond west of Coleraine Drive does not support fish habitat as the perched culvert outlet draining the pond is a barrier to fish species.

At the northern end of Coleraine drive lies Jaffary Creek to the east. Historically, Jaffary Creek has been highly modified, fragmented, and diverted from its original location by way of culverts and storm drains beginning as early as 1854. It was diverted again in 1982 and then once more in 1983—the latter removing a significant portion of the original stream from the course by diverting everything east of Station Rd to the north along Deer Valley Drive (*Bolton's Founding Fathers – The Jaffary Connections*, 2018).

Further, TRCA publications for the greater Humber River watershed and subwatershed systems provide no fish population data for Jaffary Creek (TRCA, 2008). A more detailed analysis would be required to determine the effect of long term stream fragmentation on existing fish habitat quality in this creek.

3.5 Provincial Designations

The Study Area is not located within the Oak Ridges Moraine, the Greenbelt Plan, or the Niagara Escarpment Plan. As such, the Study Area is not governed by the regulations and policies contained within the Oak Ridges Moraine Plan, Greenbelt Plan, or the Niagara Escarpment Plan.

No significant features protected by Provincial Policy were identified at the subject site.

3.6 Conservation Authority Designations

TRCA has identified the valley along Jaffary Creek flowing east of Coleraine Drive as a component of the Target Natural Heritage System (*see* Figure 2, **Appendix A**). The Natural Heritage System (NHS) is comprised of two components, including the Functional Natural Heritage System (FNHS) which describes existing natural heritage features, areas and corridors, and the Target Natural Heritage System (TNHS) which describes areas that would improve the value, function, and connectivity of existing NHS features. Further, Jaffary's Creek was identified by West Bolton's Sustainable Neighbourhood Action Program (SNAP) for rehabilitation to address fragmentation

of the creek's ecosystem and concerns over accelerated erosional processes (TRCA, 2019).

As noted above, a portion of the proposed project area is located within TRCA's Regulated Area of the Humber River Watershed. Specifically, the proposed project area—the proposed road widening at the north end of Coleraine drive--is located adjacent to a woodland providing natural cover to Jaffary Creek. As such a TRCA permit pursuant to Ontario Regulation 166/06 would be required for the works within the Regulated Area.

3.7 Municipal Planning Designations

In addition to provincially designated significant natural heritage features, municipalities have the authority to identify other natural features that are considered of local significance. When included in municipal Official Plans, these locally significant features also carry protection under the Provincial Policy Statement.

A portion of the Study Area falls within the Greenlands System designated as Natural Areas and Corridors (NAC) in the Region of Peel Official Plan.

The valley surrounding the storm water pond and Jaffary Creek located east and west of Coleraine Drive, south of King Street, is considered an Environmental Policy Area in the Town of Caledon Official Plan.

The Bolton Land Use Plan contained within the Town of Caledon Official Plan describes Coleraine Drive as the Bolton Arterial Road Network. The majority of the Study Area is primarily designated as Industrial Land Use. North of the rail line, land use is designated for low density residential.

No other natural heritage designations are associated with the Study Area in local planning documents.

4. Site Characterization

4.1 Methods

The Study Area was assessed by conducting a two-day visual assessment of natural heritage features, with particular focus on vegetation composition. CIMA+ ecologists conducted a vegetation community survey on June 8th and a tree inventory on August 23rd of 2017. This included the collection of bird data through incidental observations. Bird, amphibian, reptile, turtle, and mammal data were compiled for the general area. The data were augmented through compilation of wildlife datasets from prior studies conducted in the immediate area.

4.2 Vegetation Community

CIMA+ ecologists visited the Study Area on June 8th, 2017 and conducted a vegetation survey, as per Ecological Land Classification (ELC) standard protocols. Seven distinct vegetation

communities were identified (*see* Figure 5 and Figure 6 in **Appendix A**). This vegetation survey was augmented with arboreal data from the tree inventory conducted by CIMA+ arborist on August 23rd, 2017:

Lawn and treed areas (LAT)

The majority of the Study Area is composed of human-made structures or landscaped areas. As a result, the roadside vegetation is primarily composed of lawn and common horticulture species. The dominant species include Norway Maple (*Acer platanoides*), White Spruce (*Picea glauca*), Norway Spruce (*Picea abies*), Blue Spruce (*Picea pungens*), and Austrian Pine (*Pinus nigra*).

Dry – Fresh Deciduous Forest (FOD4)

East of Coleraine Drive and north of the residences located on Natureway Court is a small woodland corresponding to a deciduous forest ecotype with a moderately dry loam substrate. The plot is dominated by Norway Maple, American Basswood (*Tilia Americana),* American Elm *(Ulmus americana),* and Green Ash *(Fraxinus pennsylvanica)* with a dominant undergrowth of the invasive European Buckthorn (*Rhamnus cathartica).*

Mineral Cultural Thicket (CUT1)

East of the small woodland is a mineral cultural thicket characterized by a variety of shrubs and herbaceous species. The dominant shrub species are Red-osier Dogwood (*Cornus stolonifera*) and Pussy Willows (*Salix discolor*). A sizeable portion of the community is composed of invasive species, including Dame's Rocket (*Hesperis matronalis*), Garlic Mustard (*Alliaria petiolata*), and Coltsfoot (*Tussilago farfara*).

Coniferous Forest (FOC)

Along the eastern perimeter of the mineral cultural thicket and south of King Street is a small coniferous forest dominated by White Spruce.

Dry – Fresh White Birch – Poplar – Conifer Mixed Forest Ecosite (FOM5)

North of King Street and east of Coleraine Drive is a small patch of forest corresponding to a fresh White Birch – poplar – conifer mixed forest. This patch is bordered by a small ditch and is dominated by White Spruce and Trembling Aspen *(Populus tremuloides)*.

Mineral Cultural Meadow (CUM1)

A mineral cultural meadow occupies the northwestern quadrant of the King Street and Coleraine

Drive intersection. The quadrant is primarily composed of grasses and few herbaceous plants, including Canada Goldenrod (*Solidago canadensis*), Bull Thistle (*Cirsium vulgare*), and Common Milkweed *(Asclepias syriaca)*.

Mineral Cultural Woodland (CUW1)

A water retention pond and its banks occupy the southwestern quadrant of the King Street and Coleraine Drive intersection. The banks of the pond represent a mineral cultural woodland characterized by a variety of horticultural trees with a cover of grasses and herbaceous plants. Tree cover is sparse and mainly composed of Norway Maple, Red Oak *(Quercus rubrum)*, Scots Pine *(Pinus sylvestris),* and White Spruce. In some areas within the plot, Staghorn Sumac (*Rhus typhina*) is the dominant species.

4.3 Bird Community

No breeding bird survey was conducted as part of the natural heritage assessment. CIMA+ ecologists collected incidental data on bird species present in the Study Area through opportunistic sightings and hearings. During the background review the species listed within the Atlas of Breeding Birds of Ontario (Atlas square 17PJ05) identified 100 bird species as potentially occurring within the study area. Both CIMA+ and Atlas of Breeding Birds of Ontario (ABBO) data are presented in **Appendix C**.

4.4 Amphibian and Reptile Community

The Ontario Nature Herptile Atlas (Atlas Square 17PJ05) was consulted to determine which species are likely to occur in the general vicinity of the Study Area. Recent records for the atlas square were compared to habitat conditions in the Study Area to determine which species are likely to be present though none were observed during field assessments:

Table 1. Potential Herpetofauna at Study Area

Common Name	*Scientific Name*	Likely Present	Habitat Notes
American Toad	*Anaxyrus americanus*	Yes	American Toads are found in a wide variety of terrestrial habitats and are known to breed along river margins. The riparian zone on both sides of the stormwater pond and tributary would be suitable habitat for this species.

Common Name	*Scientific Name*	Likely Present	Habitat Notes
Gray Treefrog	*Hyla versicolor*	No	Gray Treefrogs are found in wooded and forested habitats and prefer to breed in semi permanent woodland ponds without fish or a significant current. Habitat in the Study Area is not suitable habitat for this species.
Spring Peeper	*Pseudacris crucifer*	Yes	Spring Peepers are habitat generalists, and in summer, spend their time in forested upland habitats. The woodland areas along the tributary would be suitable habitat for this species.
Western Chorus Frog	*Pseudacris maculata*	No	Western Chorus Frog prefers marshes or wooded wetlands, particularly those with dense shrub layers and grasses. Habitat in the Study Area is not suitable habitat for this species.
American Bullfrog	*Lithobates catesbeianus*	Yes	American Bullfrogs prefer to live in permanent bodies of water. The stormwater pond in the Study Area would be suitable habitat for this species.
Green Frog	*Lithobates clamitans*	Yes	Green Frogs can be found near almost any type of permanent waterbody and are known to bask on shorelines in the summer. The stormwater pond and adjacent habitat would be suitable for this species.
Northern Leopard Frog	*Lithobates pipiens*	Yes	Northern Leopard Frogs occupy a wide range of habitats but are most often found around permanent ponds and wetlands without large fish. The stormwater pond and adjacent habitat would be suitable for this species.
Wood Frog	*Lithobates sylvaticus*	No	Wood Frogs prefer moist woodlands with vernal pools. The habitat in the Study Area would not likely provide suitable habitat for this species.

Common Name	*Scientific Name*	Likely Present	Habitat Notes
Eastern Red-backed Salamander	*Plethodon cinereus*	No	Eastern Red-backed Salamanders are typically found in deciduous or mixed forests characteristic of mature woodlands with lots of fallen logs, coarse woody debris and leaf litter. The level of disturbance along the Study Area would not provide the necessary habitat for this species.
Red-spotted Newt	*Notophthalmus viridescens viridescens*	No	Red-spotted Newts are generally found in slow-moving water in a variety of ponds and lakes, and along quiet stretches of streams and swamps. The level of disturbance along the Study Area would not provide the necessary habitat for this species.
Snapping Turtle	*Chelydra serpentina*	Yes	Snapping Turtles occur in almost any freshwater habitat, though they are most often found in slow-moving water with soft mud or sand bottom and abundant vegetation. The stormwater pond in the Study Area would be suitable for this species.
Midland Painted Turtle	*Chrysemys picta marginata*	Yes	Midland Painted Turtles are found in a variety of permanent and temporary water bodies, but they prefer densely vegetated waters with little or no flow. The stormwater pond in the Study Area would be suitable for this species.
Red-bellied Snake	*Storeria occipitomaculata*	Yes	Red-bellied Snakes are most often found in deciduous and mixed woodlands and prefer hilly or mountainous areas. The deciduous woodlands adjacent to the Study Area may be suitable habitat for this species.
Eastern Milksnake	*Lampropeltis Triangulum*	Yes	Milksnakes can be found in a variety of habitats but tend to use open areas such as rocky outcrops, fields and forest edge. The upland habitats in the location of the Study Area may be suitable for this species.

Common Name	*Scientific Name*	Likely Present	Habitat Notes
Eastern Gartersnake	*Thamnophis sirtalis sirtalis*	Yes	Eastern Gartersnakes are habitat generalists and can be found in a wide variety of areas, including forests, shrublands, wetlands, fields and rocky areas. The Study Area would be suitable for this species.

4.5 Mammal Community

The Ontario Mammal Atlas was consulted to determine which native mammal species are likely to occur in the general vicinity of the Study Area. Records from the atlas were compared to habitat conditions in the Study Area to determine which species are likely to be present though none were observed during field assessments:

Table 2. Potential Mammals at Study Area

Common Name	*Scientific Name*	Likely Present	Habitat Notes
Virginia Opossum	*Didelphis virginiana*	Yes	Virginia Opossum is found in a variety of habitats, especially woodlands and thickets near streams and swamps. The woodlands and stream near the Study Area is suitable habitat for this species.
Woodchuck	*Marmota monax*	Yes	Woodchucks use a wide variety of habitats, but favour agricultural areas, small woodlots, and open forests. This species is likely to use habitat in the Study Area.
Eastern Gray Squirrel	*Sciurus carolinensis*	Yes	Eastern Gray Squirrel use deciduous or mixed forests or woodlots, preferably with mast producing trees. They are also found in river bottomlands. Habitat in the Study Area is suitable for this species.
Eastern Chipmunk	*Tamias striatus*	Yes	Easter Chipmunk are found in wooded areas and river valleys and prefer evergreen-deciduous forest edges. Habitat along the Study Area would be suitable habitat for this species.
Red Squirrel	*Tamiasciurus hudsonicus*	Yes	Red Squirrels are found in all forest types, including rural woodlots. Habitat in the Study Area is suitable for this species.

Common Name	*Scientific Name*	Likely Present	Habitat Notes
Beaver	*Castor canadensis*	No	Beavers are found in wetlands with an adequate food supply and deep water, slow flowing brooks, streams, rivers, and lakes bordered by woodlands. Habitat in the Study Area would not provide suitable habitat for this species.
Meadow Vole	*Microtus pennsylvanicus*	No	Mead Vole use a wide variety of habitats, but favour wet meadows, swampy pastures, and moist grasslands. The habitat in the Study Area is not suitable habitat for this species.
Muskrat	*Ondatra zibethicus*	Yes	Muskrats use wetlands with dense emergent vegetation where water doesn't freeze to the bottom. They are also known to use shallow portions of lakes or ponds, or slow flowing streams and rivers with abundant vegetation. The ravine surrounding Jaffary Creek is suitable for this species.
Deer Mouse	*Peromyscus maniculatus*	Yes	Deer mice can be found in a variety of habitats but are most commonly found in prairies, bushy areas, and woodlands. The woodlands near the Study Area is suitable for this species.
Norway Rat	*Rattus norvegicus*	Yes	Norway Rat prefer to live among human settlements, finding habitat in sewers, garbage dumps, open fields, and woodlands. Habitat in the Study Area is suitable for this species.
Porcupine	*Erethizon dorsatum*	Yes	Porcupine are found in a broad variety of habitats and prefer mixed and coniferous forested areas. The wooded areas surrounding the Study Area would be suitable habitat for this species.
Snowshoe Hare	*Lepus americanus*	No	Snowshoe Hare are primarily found in the boreal forest, but in the southern part of their range can be found in cedar and spruce swamps or woods with dense brushy under-story. The woodlands adjacent to the Study Area are not suitable for this species.

Common Name	*Scientific Name*	Likely Present	Habitat Notes
European Hare	*Lepus europaeus*	Yes	European Hare prefer open fields and pastures bordered by hedgerows and woodlots. The cultural meadows and thickets in the Study Area are suitable habitat for this species.
Eastern Cottontail	*Sylvilagus floridanus*	Yes	Eastern Cottontail prefer wooded areas with undergrowth, and they build their nests in thickets. Habitat in the Study Area is suitable for this species.
Northern Short-tailed Shrew	*Blarina brevicauda*	Yes	Northern Short-tailed Shrew is found in all terrestrial habitats, preferring damp brushy woodlands and weedy and bushy borders of fields. The ravine surrounding Jaffary Creek is suitable for this species.
Coyote	*Canis latrans*	Yes	Coyote are found in most habitats and are commonly found in urban areas. Habitat in the Study Area is suitable for this species.
Red Fox	*Vulpes vulpes*	Yes	Red Fox use dry, mixed landscape, with abundant edges of scrubland and woodland. Habitat in the Study Area is suitable for this species.
American Mink	*Neovison vison*	Yes	American Mink use stream banks, lakeshores, beaver ponds, marshes or forested wetlands with abundant cover such as rocks, logs or thickets. The ravine surrounding Jaffary Creek is suitable for this species.
Striped Skunk	*Mephitis mephitis*	Yes	Striped Skunks prefer semi-open woods, orchards, meadows, grasslands, fields, cultivated lands and pastures in rural or urban areas. The habitat in the Study Area is suitable for this species.
Northern Raccoon	*Procyon lotor*	Yes	Raccoons use habitat in wooded areas near lakes or streams, typically with open fields. They also use wetlands and prefer to be near human habitation. Habitat in the Study Area is suitable for this species.
White-tailed Deer	*Odocoileus virginianus*	Maybe	White-tailed Deer are typically found in forests with interspersed open areas such as pastures or fields. They also use forest edges and swamps. Habitat in the Study Area may be suitable for this species.

4.6 Aquatic Community

A CIMA+ ecologist conducted an assessment of the stormwater pond and outlet on June 8th, 2017 to assess aquatic habitat. Water levels were noted as being low in the outlet despite high water conditions—this may indicate that it is dry at certain times during the summer period. The stormwater pond west of Coleraine Drive does not support fish habitat as the perched culvert draining the pond is a barrier to fish species. Presence of a viable fish habitat is also unlikely in the tributary east of Coleraine Drive; water levels were also documented as being low and may be dry at certain times during the summer months. The stream course is also highly fragmented due to more than a century of man-made diversions (*see* Section 3.4.5).

4.7 Species at Risk Screening

A Species at Risk (SAR) screening was completed to evaluate potential for the presence of SAR in the Study Area. SARs were identified by the MNRF, third party data sources, or observed during the field assessment, were included in the screening. Habitat requirements for these species were compared to the habitat available in the Study Area.

The Natural Heritage Information Centre was also consulted for atlas squares 17PJ0058, 17PJ0057, and 17PJ0157. Ministry of Natural Resources and Forestry (MNRF) noted records of Barn Swallow (*Hirundo rustica*), Chimney Swift (*Chaetura pelagica*), Butternut (*Juglans cinera*), and Little Brown Myotis (*Myotis lucifugus*) were found within the study area.

Data from the Ontario Reptile and Amphibian Atlas was compiled for the 10 km x 10 km grid square 17PJ05 that covers the Study Area. A record of Eastern Milksnake (*Lampropeltis triangulum*) was noted within the study area—this species of non-venomous snake is listed as Special Concern under SARO; a record of Blanding's Turtle (*Emydidae blandingii*) was noted within the study area and this species of turtle is listed as threatened under SARO and ESA; and there are also records of Snapping Turtles (*Chelydra serpentina*), which are listed as Special Concern under SARO.

Data from the ABBO was compiled for the grid square that covers the Study Area.

Species at risk records in the area include the following species:

Table 3. Potential Species at Risk at Study Area

Common Name Scientific Name Rarity Rankings	Habitat Likely Present	Observed
Eastern Meadowlark *Sturmella magna* Federal – **Threatened** Provincial - **Threatened**	None. Treed and lawn fields south of Coleraine Drive provides sufficient space, but the monoculture vegetation community makes it unsuitable.	No
Eastern Wood-pewee *Contopus virens* Federal – **Special Concern** Provincial – **Special Concern**	Potential for feeding, breeding, and rearing in FOM5.	No
Barn Swallow *Hirundo rustica* Federal – **Threatened** Provincial – **Threatened**	Feeding and nesting. Culvert structure provides adequate nesting opportunities and open water is ideal for feeding.	No
Chimney Swift *Chaetura pelagica* Federal – **Threatened** Provincial – **Threatened**	Feeding and potential nesting. Open water provides adequate feeding opportunities. The perimeter of FOD4 and FOC to the east of Coleraine Drive does not provide suitable habitat, but the interior of the woodland may provide suitable trees of sufficient diameter with cavities.	No
Snapping Turtle *Chelydra serpentina* Federal - **Special Concern** Provincial – **Special Concern**	Movement corridor, feeding, and nesting. Open ground is readily available. The mineral cultural thicket surrounding the stormwater pond is suitable habitat.	No
Eastern Milksnake *Lampropeltis triangulum* Provincial – **Special Concern** **Federal – Special Concern**	The upland habitats in the location of the Study Area may be suitable for this species.	No
Blanding's Turtle *Emydidae blandingii* Federal – **Threatened** Provincial - **Threatened**	Movement corridor and feeding. Open ground is readily available. The mineral cultural thicket surrounding the stormwater pond is suitable for temporary habitat.	No

Common Name Scientific Name Rarity Rankings	Habitat Likely Present	Observed
Little Brown Myotis *Myotis lucifugus* Federal - **Endangered** Provincial – **Endangered**	Feeding and roosting. The mineral thicket around the stormwater pond would provide suitable food supply from insects that have aquatic larval stages. The perimeter of FOD4 and FOC to the east of Coleraine Drive does not provide suitable habitat, but the interior of the woodland may provide suitable trees of sufficient diameter with cavities.	No
Butternut *Juglans cinereal* Federal **– Endangered** Provincial **- Endangered**	Butternut usually grows alone or in small groups in deciduous forests. It prefers moist, well-drained soil and is often found along streams. FOD4 may provide suitable conditions.	No

No Butternut (*Juglans cinerea*) trees or other floral species at risk were observed within the study area during the June 8, 2017 site visit or tree inventory on August 23, 2017 (*see* **Appendix E**).

5. Assessment of the Natural Heritage System

The background information and data collected in the field were reviewed together to confirm the extent of the NHS in the Study Area.

5.1 Components of the Natural Heritage System

A review of existing information and field verification of natural heritage features indicates the NHS at the subject site consists of the coniferous forest patch at the northeast edge of King Street West as well as a sloped mineral cultural thicket, a small coniferous forest, and a small deciduous woodland located on the south side of the street (*see* Figure 2, **Appendix A**). There are no other natural features on the subject site. Planted vegetation in the lawn and treed areas were examined separately by arborists as part of a tree inventory (*see* **Appendix E**).

The Provincial Policy Statement (PPS) provides direction on which natural features and areas in Ontario should be considered significant (*See* Section 8).

The NHS at the subject site does not include any wetlands, valleylands, or ANSIs. Due to the potential for SAR, additional surveys may be required. As a result of limitations of the tree survey--restricted to transects along Coleraine Drive-- a bat survey may be required due to the potential for suitable habitat along Jaffary Creek's woodland. The following evaluation of impacts is scoped to the woodlands east of the north end of Coleraine drive.

6. Impact Evaluation of the Proposed Development

The City is proposing road widening and the incorporation of additional / modified pedestrian grade separation along Coleraine Road. Specifically, two (2) options have been proposed: (1) a rail over road design; and (2) a road over rail design. Both designs incorporate a widening of the ends of Coleraine road where it meets the intersections of King Street West and Holland Drive. Design drawings associated with these options are presented in **Appendix A** as Figure 7 and 8.

Potential impacts to natural heritage features were evaluated for all options currently under consideration and where potential adverse impacts were identified, environmental mitigation measures have been proposed. All options would have limited impacts to the valley and wooded area east of Coleraine drive at the north end and variation in impacts to natural heritage features and local wildlife is limited; the construction footprint and grading limit would likely extend no farther than an area within the EPA that appears to have already been heavily disturbed as seen in aerial imagery from 2009.

The proposed project and alternatives were evaluated based on the habitats, species, and features identified in the Study Area. The activities or issues as they relate to the proposed project were evaluated based upon the potential to impact the natural environment. The measures identified below should be considered in the context of proposed development within the study area and are not necessarily a complete listing.

Potential impacts will be evaluated in detail once a preferred solution is selected.

7. Recommended Mitigation Measures

Measures to mitigate impacts to Terrestrial Vegetation and Wildlife

- Fencing will be installed outside of the critical root zone (CRZ) of any trees not intended for removal to prevent soil compression, root damage and to minimize damage to branches.
- Branches of trees that overhang the work area will be pruned back to prevent unintentional harm. If root damage is unavoidable, sever roots cleanly with pruning tools to limit decay and vectors for disease.
- If vegetation removal is required, all vegetation/trees should be surveyed for birds/nests/bats/roosts prior to removal by a certified biologist.
- Work areas will be clearly demarcated by fencing.
- Stockpiled materials will be surrounded by sediment control fencing to prevent turtle nesting.

- If outside material (e.g. top soil, sand) has to be used on the construction site, it will be reputably sourced.
- Existing access roads will be used as much as possible and speed limits will be clearly posted on site access and construction roads to minimize the potential for road mortality.
- Should any mammal, reptile or amphibian species be encountered during construction, the construction activities will immediately stop until the animal has safely moved out of harm's way. If a non-SAR individual needs to be moved, it can be relocated to its appropriate habitat outside of the work area.
- If SAR are encountered and it is suspected that the activity will cause harm, harass or kill the animal(s), MNRF should be contacted for advice on how to proceed.
- Prior to vegetation clearing, preconstruction sweeps of vegetated areas will be undertaken to ensure wildlife are not present. It is recommended that grading and slope be minimized to retain as many trees as possible, as well as edge plantings during the post construction phase to protect the remnant woodlands.
- The removal of native vegetation will be minimized and the areas to be cleared will be clearly delineated on the construction drawings.
- Grading should occur in phases to limit the size of the disturbed area.
- Graded areas that are to be revegetated according to an approved plan shall be revegetated with approved plant-list species appropriate to the site and in keeping with the adjacent forest edge.
- Grading should be restricted to areas contained by silt fencing.
- Restore soil surfaces immediately following final grading, with surface restoration to include features that minimize erosion (e.g. placing sod).
- Removal of woody vegetation will not occur during the breeding bird season from March 1st – August 31st inclusive, unless a qualified biologist has searched the site for nests and concluded that no nests are present, no more than 2 days prior to clearing.
- Nesting migratory birds will be protected in accordance with the *Migratory Birds Convention Act, 1994*

- Small equipment will be utilized in order to prevent harming woody vegetation not intended for removal.
- Any stockpiling of cleared vegetation or chips will be situated away from the water.
- Where possible, cleared areas will be re-vegetated with native trees and shrubs following the completion of the construction phase.
- When possible, work will be completed during daylight. If nighttime lights are used, they will be installed so as to illuminate the work area only to minimize impacts to nighttime activities of wildlife.
- Vehicles and equipment will have the appropriate mufflers installed to minimize sound disturbance to wildlife.
- Food scraps and garbage will not be left at the project site.

Measures to Protect Water Quality

- The new structure drainage design will take into consideration the existing erosion issues identified for Jaffary Creek by the TRCA.
- An Erosion and Sediment Control Plans (ESC) should be developed and implemented to ensure erosion and sedimentation is minimized and water quality is maintained through construction
- The contractor will be responsible to ensure that the ESC measures chosen are appropriate for the site and are functioning as intended.
- The contractor will maintain and monitor ESC measures, provide the results of monitoring, and ensure adjustments as needed are made on a continuous basis.
- No work will occur within 15 m of the water until the appropriate ESC measures have been properly implemented. These will be designed to prevent the movement of suspended sediments and concrete outside of the site preparation and construction work areas.
- Work will stop if sedimentation issues occur outside of work areas until the cause of sedimentation is identified and addressed
- Should dust particles be created during work then they will be suppressed using appropriate methods (i.e. tarps). Chemical dust suppressants will not be used.

- Any removal of vegetation will be minimized, and removal will be completed using small machinery.
- Machinery working in the temporary work area will be clean of mud and free of leaks.
- Additional materials (i.e. filter cloth and silt fencing) should be readily available in case they are needed promptly for erosion and/or sediment control.
- The sediment fencing will not be removed until the terrestrial vegetation has re-established.
- There will be no use of herbicides in clearing of vegetation.
- Refueling of equipment (e.g., pumps) and maintenance shall be conducted off slopes and away from water bodies on impermeable pads (drip tray) or buried liners to allow full containment of spills.
- A spill response plan should be developed and ensure adequate response training for personnel on-site.
- Emergency spill kits will be located on site.
- The contractor crew will be fully trained on the use of clean-up materials in order to minimize impacts of any accidental spills.
- Methods to prevent soil compaction, such as swamp mats or pads should be used.
- The area will be monitored for leaks and spills. In the unlikely event of a minor spillage, the contractor will halt the activity and corrective measures will be implemented. Any spills will be immediately reported to the MECP Spills Action Centre (1-800-268-6060) and TRCA.
- Minimization of the slope length and gradient of disturbed areas.
- Exposed soil will be graded to a stable angle and revegetated in a manner that prevents erosion.

Measures to Mitigate Impacts to Air Quality

- All equipment and vehicles will be equipped with dust collectors and mufflers as appropriate.

- During asphalt removal, tarps will be used to contain airborne dust particles.
- Water will be applied, at a minimum, on a daily basis, to all inactive disturbed surface areas. Water will be applied more frequently if required to prevent the visible emissions of fugitive dust.
- All loads on haul trucks will be covered.
- During very windy conditions, material handling/transfer activity that generates fugitive dust will be avoided or reduced. If it is not possible to reschedule the activity, increased application of water for dust suppression may be used.
- Wetted stockpiles will be surrounded with sediment and erosion control measures (i.e. fencing).
- Materials with the potential to generate dust will be sprayed with water 15 minutes prior to handling and/or at points of transfer.
- Burning of waste materials will be prohibited
- Disturbed areas will be re-vegetated following construction utilizing native shrubs and trees, based on local conditions, to promote the quick re-growth of a natural habitat and minimize fugitive dust.
- The proposed works and noise levels emitted by all equipment and machinery will be in compliance with the applicable municipal Noise Control By-law.
- Speed limits shall be respected and the speed of vehicles on the work site shall be limited.
- Motorized equipment and other noisy equipment will be equipped with mufflers, acoustic enclosures or other noise-control devices.
- Any powered equipment will be shut off when not in use.
- Nearby residents will be advised of construction schedules, specifically for work that generates specific nuisances.

Measures to Mitigate Impacts to Significant Wildlife Habitat and Species at Risk, Wildlife and Migratory Birds

- Vegetation removal/clearing and site preparation for construction will occur before March 1st or after October 31st to protect habitat of amphibians, reptiles, butterflies, mammals and migratory birds during critical life stages, and comply with provincial and federal legislation.

- Contractor will not destroy active nests (i.e. nests with eggs or young birds), or wound or kill birds, of species protected under the *Migratory Birds Convention Act, 1994* and/or regulations under the Act.

- If a nesting migratory bird or nest containing eggs or young of migratory birds are identified within the study area adjacent lands, all activities will stop, and the Canadian Wildlife Services of Environment and Climate Change Canada will be contacted to discuss mitigation measures.

- Any nest found will be protected with a buffer zone determined by a setback distance appropriate to the species, the intensity of the disturbance and the surrounding habitat until the young have naturally and permanently left the vicinity of the nest.

- If works are being completed during the Snapping Turtles nesting season (June to October), sediment fences along the shoreline of the creek and pond in the works area need to be installed before June 1 following the MNRF *Reptile and Amphibian Exclusion Fencing* (2013) to prevent impacts to turtles and their nests.

- Prior to vegetation clearing, preconstruction sweeps of vegetated areas will be undertaken to ensure wildlife are not present.
- Ensure that SAR are not in the area by scanning the location where your activity is to occur.
- If SAR are encountered and it is anticipated that the activity will cause harm, harass or kill the animal(s), the activity should immediately stop. A qualified biologist should then be contacted to ensure proper implementation of mitigation measures.

Measures for Addressing Invasive Species

- An Invasive Plant Species Management Plan should be designed by an environmental professional before the start of the works. This plan will include the location of all exotic invasive plant species individuals/colonies within the work area, as well as required management and disposal measures to be implemented by the contractor. These management and disposal measures will be based on the Ontario Invasive Plant Council Best Practices.
- To prevent the spread of invasive species, the Clean Equipment Protocol for Industry should be followed. Boots and equipment that are to be used in conjunction with the project works must also be clean of soils and plant parts before arriving and leaving the site.

8. Policy and Legislation Review

8.1 Federal Legislation

8.1.1 Fisheries Act

The *Fisheries Act* is administered by the Department of Fisheries and Oceans Canada (DFO) and is intended to provide a framework for the management of threats to fish and fish habitat—including the prevention of pollution--regardless of their attachment to a fishery.

Section 34.4 of the Act prohibits the carrying on of any work, undertaking or activity, that results in the death of fish or the "harmful alteration, disruption or destruction of fish habitat", also known as HADD. Fish habitat is defined as spawning grounds and any other areas frequented by fish, including nursery, rearing, food supply and migration areas, on which fish depend directly or indirectly to carry out their life processes.

It also gives authorities the ability to establish standards and codes of practice for all phases of the project's development cycle (Section 34.2), ensure free passage of fish or fish habitat concerning existing obstructions (Section 34.3), and develop a streamlined process that designates certain undertakings as likely to cause death of fish or HADD (Section 35.1).

Other key components include:

- Authorization to establish a system for project proponents to create fish habitat banks (fish habitat created, restored, etc.) in exchange for certified habit credits that the proponent can apply to offset the project's adverse effects (Sections 42.2 - 42.04).
- Establishment of a public registry of records related to development project approval processes (Sections 42.2 – 42.3).

Following a more detailed survey, if the retention pond, outlet, and Jaffary Creek are defined as fish habitat, despite their poor quality and no potential for migration, they are likely to require a DFO request for review under the *Fish and Fish Habitat Protection Program*.

8.1.2 Migratory Birds Convention Act

The Migratory Birds Convention Act regulates the protection and conservation of migratory birds as populations and individuals and protects their nests. The Act applies to any areas that provide potential for nesting habitat of migratory birds.

Section 6 of the Migratory Bird Regulations made under the Act states that no person shall disturb, destroy or take a nest, egg, nest shelter, eider duck shelter or duck box of a migratory bird except under authority of a permit.

The Study Area does provide suitable habitat for migratory birds. The provisions of this Act apply to any development activities proposed due to the potential for nesting.

8.1.3 Planning Act

The Planning Act (Planning Act, R.S.O. 1990, c. P.13) establishes the framework through which local and regional municipalities prepare Official Plans, and the province establishes policies governing matters of provincial interest. These planning documents provide direction on planning policies, including policies for the management of natural heritage. For this project, the Town of Caledon Official Plan and the Region of Peel Official Plan policies apply, as well as the Provincial Policy Statement.

8.2 Provincial Legislation

8.2.1 Endangered Species Act

The *Endangered Species Act* prohibits any person from killing or damaging the habitat of species that are listed on the Species at Risk in Ontario list. Some exemptions exist under O.Reg. 242/08 of the Act, related to particular species and activities, for example the Eastern Meadowlark. If a proposed undertaking is covered under one of the exemptions, a streamlined notification process applies. If none of the exemptions apply, a permit under section 17(1) of the Act is required.

Environmental design and mitigation measures were developed for the Project to minimize negative impacts on the habitats and SAR within the Study Area. As identified in Section 5, potential impacts to SAR will need to be confirmed through the detailed design phase.

Consultation and possible approvals from the MECP could be required if the presence of these species and their habitat is confirmed within the preferred grade separation and road widening.

8.2.2 Provincial Policy Statement

The Provincial Policy Statement (PPS) (Ontario Ministry of Municipal Affairs and Housing (OMMAH), 2014) is a planning document that provides a framework for, and governs development within, the Province of Ontario. In order to preserve various ecological resources deemed significant in the Province, development lands must be assessed for the presence of natural heritage features prior to construction. These natural heritage features (listed below) are both defined and afforded protections under the PPS. Linkages between natural heritage features, surface water and groundwater features are also recognized and afforded similar protections under the policy. Section 2.1.2 of the PPS also requires that the diversity and connectivity of all natural heritage features and the long-term ecological function of natural heritage systems be maintained, restored or improved where possible. Further to this, natural heritage systems within Ecoregions 6E and 7E are to be identified as per Section 2.1.3.

Under the PPS (OMMAH, 2014), development or site alteration is prohibited within significant wetlands in Ecoregions 5E, 6E and 7E and in significant coastal wetlands, but may be allowed adjacent to these features provided the adjacent lands have been evaluated and it has been demonstrated that there will be no negative impacts to these features or their ecological functions. Development may be permitted in or adjacent to significant wetlands north of Ecoregions 5E, 6E and 7E, significant woodlands and significant valleylands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Mary's River), significant wildlife habitat, and significant areas of natural and scientific interest (ANSI), provided there will be no negative impacts to these features or their ecological function due to the proposed undertaking. In addition, development and site alteration is not permitted in fish habitat unless in accordance with provincial and federal legislation.

Natural heritage features as defined by the PPS (OMMAH, 2014) include:

a. *Fish Habitat;*
b. *Habitats of Endangered and Threatened Species;*
c. *Significant Areas of Natural and Scientific Interest (ANSI);*
d. *Significant Wetlands;*
e. *Significant Coastal Wetlands;*
f. *Other Coastal Wetlands in Ecoregions 5E, 6E and 7E;*
g. *Significant Wildlife Habitat;*
h. *Significant Woodlands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Mary's River); and,*
i. *Significant Valleylands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Mary's River).*

The only natural heritage feature that has been confirmed within the Study Area is the fish habitat that might be present in Jaffary Creek. Environmental design and mitigation measures were developed for the project to minimize negative impacts on this feature.

8.2.3 Conservation Authorities Act

The *Conservation Authorities Act* gives individual conservation authorities the power to regulate development and activities in or adjacent to river or stream valleys, Great Lakes and large inland lakes and shorelines, watercourses, hazardous lands and wetlands. Regulations made under the Conservation Authorities Act specify the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulations managed by individual Conservation Authorities. These regulations apply to lands within river or stream valleys, flood plains, wetlands, watercourses, lakes, hazardous lands or lands within 120 m of a Provincially Significant Wetland or wetlands greater than 2 hectares, or lands within 30 m of non-provincially significant wetlands.

Development or site alteration within these regulated areas may be permitted provided development is conducted in accordance with existing policies.

The project is located within the jurisdiction of the Toronto and Region Conservation Authority (TRCA). As such, a permit will be required for any proposed works within this regulated area.

8.2.4 Environmental Assessment Act

The *Environmental Assessment Act* (R.S.O. 1990, c.E-18) provides a mechanism for review and assessment of potential environmental impacts of public sector projects. The Act applies to any plan, project or activity carried out by, or on behalf of, a public body.

Under the Act, "environment" is comprised of natural, social, cultural and economic components. A Natural Environment Review is required to define and assess impact on the natural component of the environment.

8.3 Municipal Policy

8.3.1 Regional Municipality of Peel Official Plan

The Regional Municipality of Peel consists of three area municipalities, including the City of Brampton, the City of Mississauga and the Town of Caledon. Section 2.3 of the current Regional Municipality of Peel Official Plan (December 2016 Consolidation) was referenced for identification of a Greenlands System in the Study Area. Section 2.3.1 establishes the general objective for the Regional Council regarding the Greenlands System as to "…protect and support the restoration and rehabilitation of Greenlands System in Peel.".

Section 2.3 of the Regional Municipality of Peel Official Plan defines a Greenlands System that consists of (i) Core Areas, (ii) Natural Areas and Corridors and (iii) Potential Natural Areas and Corridors. This Greenlands System is intended to support and express the Regional Municipality of Peel's vision for the protection of the natural environment. The Regional Municipality of Peel, area municipalities and other partners are responsible for implementing this vision through the policy framework set out in the Regional Official Plan. The Core Areas of the Greenlands System contain certain ecological features, forms and/or functions that provide favourable conditions for uninterrupted natural systems and maximum biodiversity.

These areas are protected by the Regional Official Plan and are functionally supported, connected and/or buffered by the other two components of the Greenlands System, including those areas considered (i) Natural Areas and Corridors (NAC) and (ii) Potential Natural Areas and Corridors (PNAC). Section 2.3.2.25 directs municipalities to require an EIS for development or site alteration in or adjacent to the Greenlands System. The Official Plan defers to municipal plans to achieve more specific protections for these areas (Section 2.3.2.1).

The Peel Data Centre, a repository for GIS data pertaining to the Region of Peel, provided Greenlands System data that confirmed the presence of 2 Natural Heritage System components within the Study Area:

- A woodland along Jaffary Creek tributary categorized as NAC; and

- Woodlands north of King Street W categorized as NAC.NAC natural features can also be designated as significant features (as defined in the PPS)

8.3.2 Town of Caledon Official Plan

The Town of Caledon Official Plan contains detailed Ecosystem Planning and Management policies whose fundamental objective is to ensure that the integrity of the Town's ecosystems is protected, maintained and, as appropriate, restored and enhanced. Sections 3.1, 3.2, and 5.7 of the current Town of Caledon Official Plan are particularly relevant to the identification of opportunities and constraints to development within the Study Area.

Section 3.1 of the Town of Caledon Official Plan establishes detailed Ecosystem Objectives and outlines (i) an overall Ecosystem Planning Strategy, (ii) General Policies and (iii) Performance Measures that together establish a broad framework for ecosystem planning and management in the Town of Caledon.

Section 3.2 includes an Ecosystem Framework (Section 3.2.3.1) that consists of four categories: (i) Natural Core Areas, (ii) Natural Corridors, (iii) Supportive Natural Systems and (iv) Natural Linkages. This Ecosystem framework incorporates and refines the components of the Regional Greenlands System as defined by the Regional Municipality of Peel Official Plan, in a manner that conforms to the Regional Plan's environmental policy direction.

Ecosystem components categorized as Natural Core Areas (e.g. woodland core areas) or Natural Corridors (e.g. stream corridors) are designated Environmental Policy Area (EPA) (Section 3.2.3.1.1). New development is generally prohibited in lands designated EPA excepting essential infrastructure (Section 5.7.3.5). See Figure 9, **Appendix A** for the Bolton Land Use Plan Map.

Components identified as NAC natural features that fall within the Study Area are also identified as Natural Corridors under the Town of Caledon Official plan and are considered EPAs. New public infrastructure is not permitted in EPAs with the exception of essential infrastructure projects where an EIS and management plan have been developed.

Section 7.2.7.3 states that a 15 m natural vegetation buffer strip on tributaries of the Humber River will be provided to the MNRF. As a tributary of the Humber River, Jaffary Creek shall be provided.

8.4 Places to Grow Act and Plan

The Places to Grow Act of 2005 is a framework for implementing growth by ensuring that municipalities bring official plans into conformity with aspects of the mandate. Both the Town of Caledon Official Plan and the Regional Municipality of Peel Official Plan have conformed to the Provincial Growth Plan for the Greater Golden Horseshoe.

8.5 Clean Water Act

The Province of Ontario brought into effect the Clean Water Act, 2006, S.O. 2006, c. 22 (CWA) and various associated regulations in July 2007. The CWA identified 19 separate Source Water Protection Areas through the use of existing watershed boundaries.

The Source Protection Plans are intended to focus on protecting water before it enters the drinking water treatment system. The Town of Caledon manages Wellhead Protection Areas (WHPA) via the Official Plan to restrict or prohibit the potential risk of contamination through certain land uses. According to the MECP's Source Protection Information Atlas, there are no WHPAs within the vicinity of the Study Area.

8.6 Actions Required During Final Design

- Additional surveys may be required to confirm the absence of the following:
    - Eastern Wood-pewee (*Contopus virens*) in FOM ELC;
    - Chimney Swift (*Chaetura pelagica*) in FOC and FOD4; and
    - Little Brown Myotis (*Myotis lucifugus*) in FOC and FOD4 ELCs.

  Should the presence of the Chimney Swift or Little Brown Bat be confirmed, MECP needs to be contacted to confirm the need for the submission of an Information Gathering Form under the Endangered Species Act.

- Should the Eastern Wood-pewee presence be confirmed, the limits of its habitat has to be delineated to establish the vegetation protection zone associated with the presence of this significant wildlife habitat (special concern species habitat);
- Additional surveys will be required during the final design stage of the project to confirm the absence of Barn Swallow nests within 200 m of the proposed road widening at the north end of Coleraine Drive. Should a nest be found on a structure or building within this distance, MECP needs to be contacted to confirm the need for the submission of an Information Gathering Form under the Endangered Species Act;

- Additional fish habitat analysis and fish survey will be required to confirm the status of Jaffary Creek and the stormwater pond as fish habitat under the *Fisheries Act*.
- Confirmation of the required compensation for the trees to be removed for the project. At the detailed design and construction stage, it is recommended that the appropriate funds be set aside and budgeted for natural heritage restoration;
- Submission of a permit application to TRCA under Ontario Regulation 166/06 for the activities located within the Regulated Area; and
- Integration of all the mitigation measures described in Section 7 of this report as well as in MECP, MNRF, Region of Peel and TRCA approvals in the final plans and specifications.

9. Conclusion

The above is a preliminary review of the applicable policies, regulations, and legislation of the proposed work on site provided for discussion. When final grading limits, construction equipment and material laydown areas (total area of disturbance) is known, the report can be finalized.

10. References

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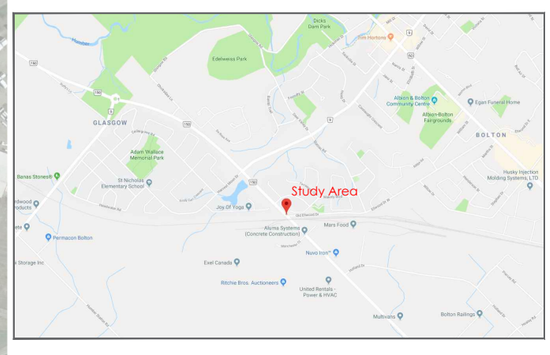
Appendix A

Figures

Legend

Study Area



References :

- Aerial picture, Google, 2018

General Notes :

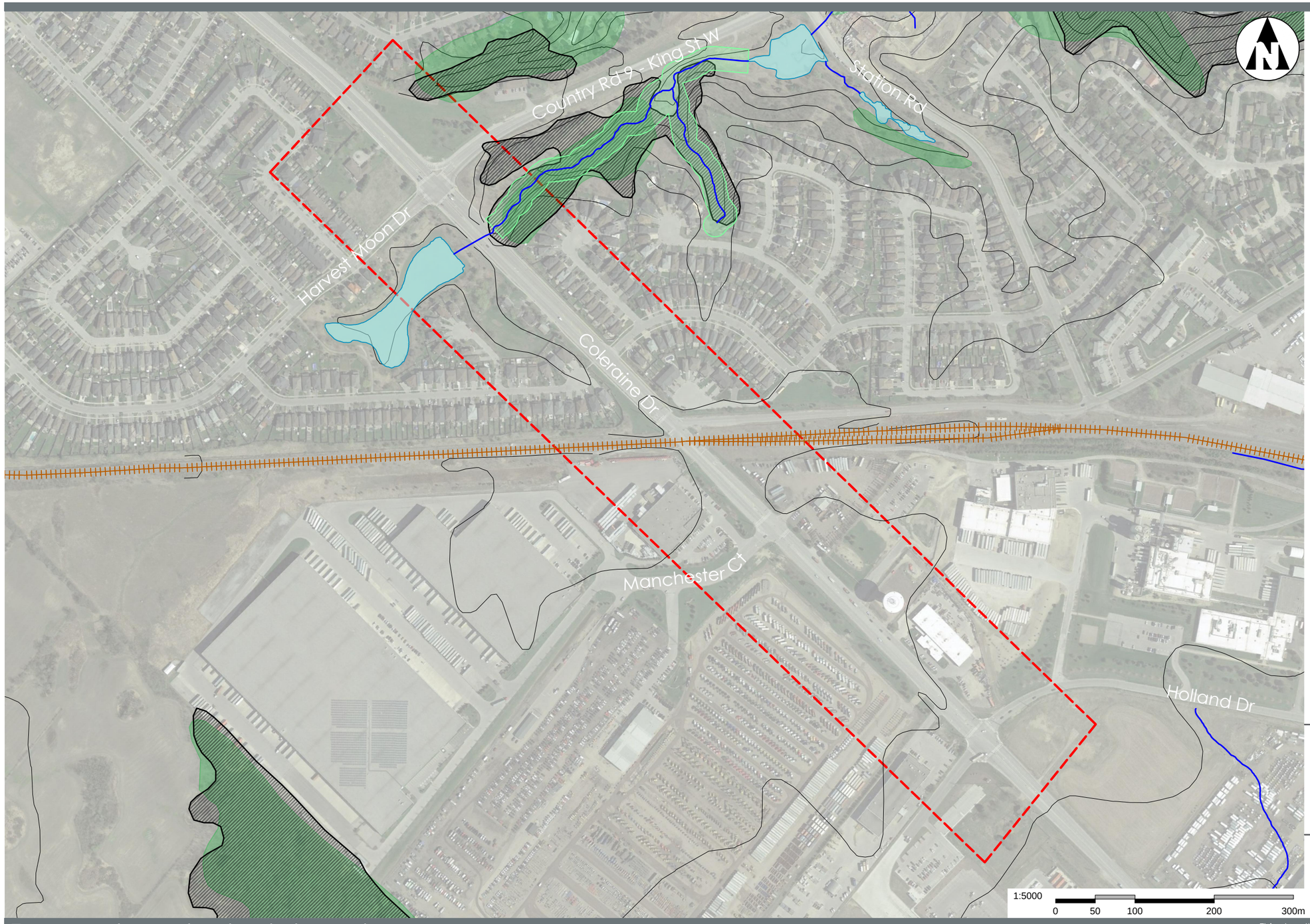
The dimensions on the plan must be read and not measured. Any errors or omissions must be reported to CIMA+. Boundaries, areas and property titles should be verified by a surveyor.

Site Location Map

Peel Coleraine GS EA - Peel, ON
Region of Peel

Ref. # : B000738

Drawn by: V. Fauvel-Benoît
Design by: J. L. Scott
Verified by: K. Markvorsen
Revision 01 - Issued for Environmental Assessment Study - August 14, 2019



Legend

- Boundary of Study Area
- Contours (5 m)
- Greenlands System - Natural Areas and Corridors (NAC)
- Natural Heritage System
- Railroads
- Waterbodies
- Watercourses
- Woodlands
- Vegetation Protection Zone (15 m)

1:5000

0 50 100 200 300m

References:

- Aerial picture, Google, 2018
- Contours, Government of Ontario
- Greenlands Natural System (Woodlands), Region of Peel, April 2011
- Natural Heritages System, Region of Peel, April 2011
- Railroads, Land Information Ontario, Government of Ontario
- Waterbodies, National Hydro Network, Government of Canada, August 2019
- Watercourses, Region of Peel, October 2015
- Woodlands, Land Information Ontario, Government of Ontario

General Notes:

The dimensions on the plan must be read and not measured. Any errors or omissions must be reported to CIMA+. Boundaries, areas and property titles should be verified by a surveyor.

Topography and natural elements

Peel Coleraine GS EA - Peel, ON
Region of Peel

Ref. # : B000738

Drawn by: V. Fauvel-Benoît
Design by: J. L. Scott
Verified by: K. Markvorsen
Revision 03 - Issued for Environmental Assessment Study - November 07, 2019

Legend

- Boundary of Study Area
- 5d Till
  Clay to silt-textured till (derived from glaciolacustrine deposits or shale)

1:5000

0 50 100 200 300m

References:

- Aerial picture, Google, 2018
- Surficial Geology of Southern Ontario, Ministry of Energy, Northern Development and Mines, 2017

General Notes:

The dimensions on the plan must be read and not measured. Any errors or omissions must be reported to CIMA+. Boundaries, areas and property titles should be verified by a surveyor.

Surficial Geology

Peel Coleraine GS EA - Peel, ON
Region of Peel

Ref. # : B000738

Drawn by: V. Fauvel-Benoît
Design by: J. L. Scott
Verified by: K. Markvorsen
Revision 01 - Issued for Environmental Assessment Study - August 14, 2019

Legend

Boundary of Study Area

Shale, Limestone
Group: -
Formation: Georgian Bay

1:5000

0 50 100 200 300m

References:

- Aerial picture, Google, 2018
- Paleozoic Geology of Southern Ontario, Ministry of Energy, Northern Development and Mines, 2017

General Notes:

The dimensions on the plan must be read and not measured. Any errors or omissions must be reported to CIMA+. Boundaries, areas and property titles should be verified by a surveyor.

Paleozoic Geology

Peel Coleraine GS EA - Peel, ON
Region of Peel

Ref. # : B000738

Drawn by: V. Fauvel-Benoît
Design by: J. L. Scott
Verified by: K. Markvorsen
Revision 01 - Issued for Environmental Assessment Study - August 14, 2019

Figure 5. ELC units of eastern portion of the study area

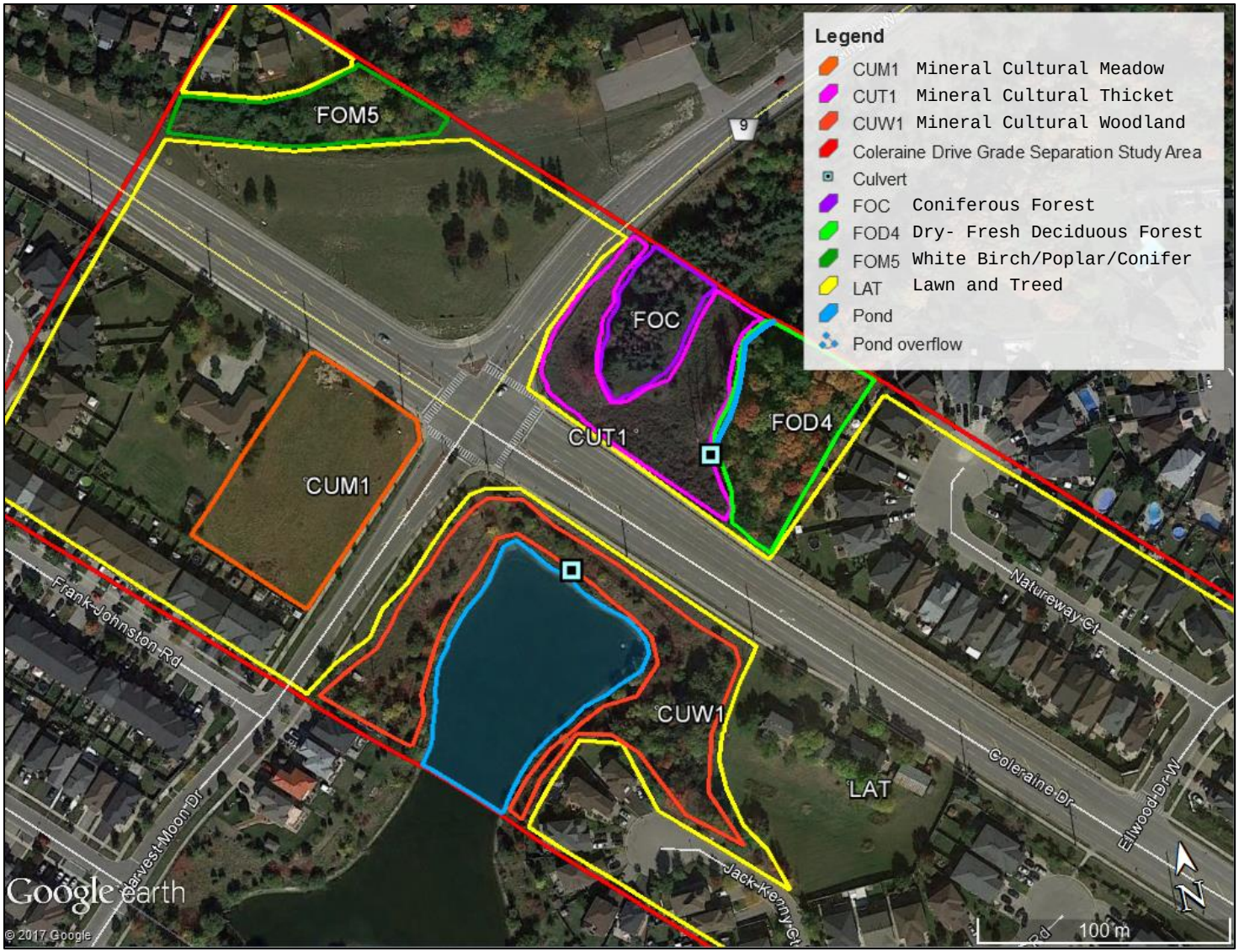
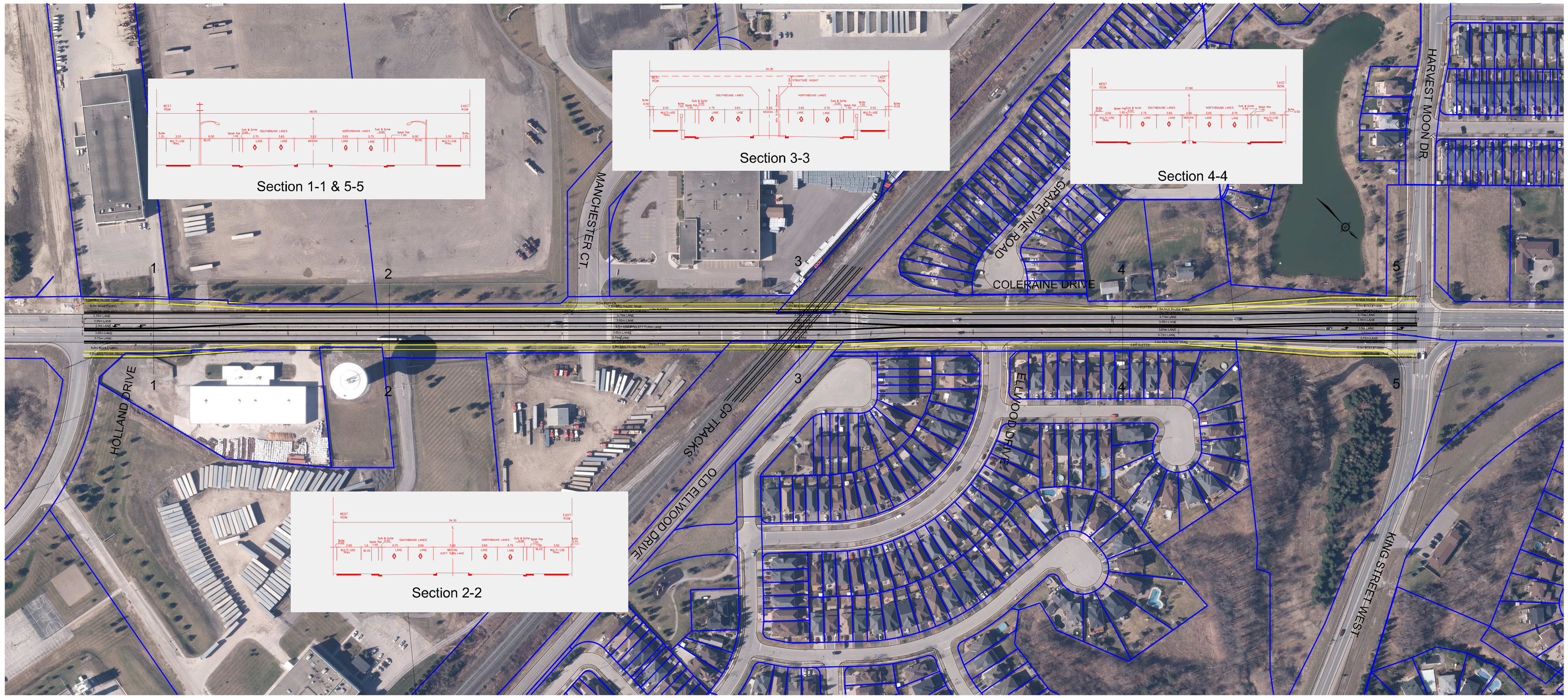
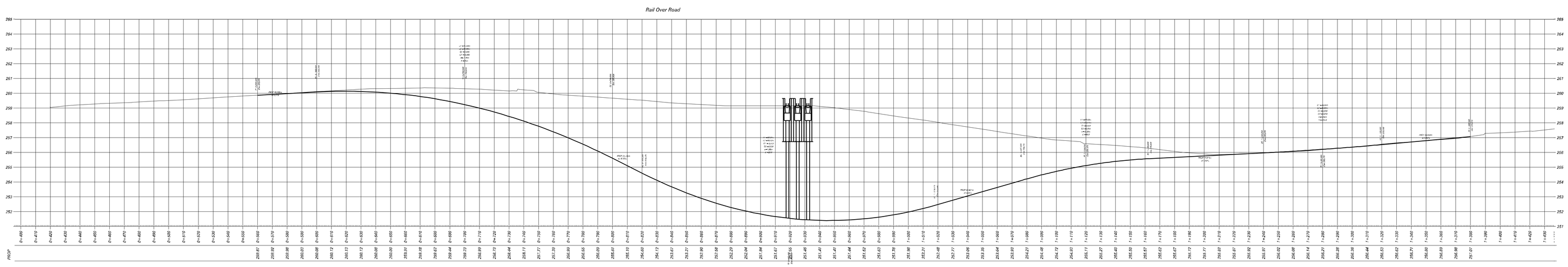


Figure 6. ELC units of western portion of the study area



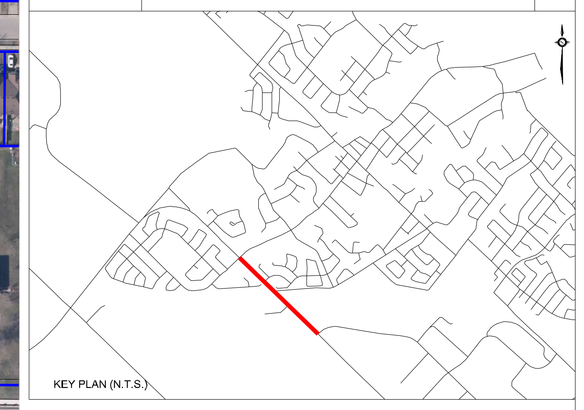


SERVICE DATA

SERVICE	DATE	INIT.	SERVICE	DATE	INIT.

REVISIONS

DATE	DETAILS	INIT.
JULY 18, 2017	ISSUED FOR REVIEW	S.K.



General Notes

Designed by ____ Chkd. ____

Approved by

0m 20m 60m
0m 2m 6m

HORIZONTAL SCALE
SCALE 1:1000

VERTICAL SCALE

Region of Peel
Working for you

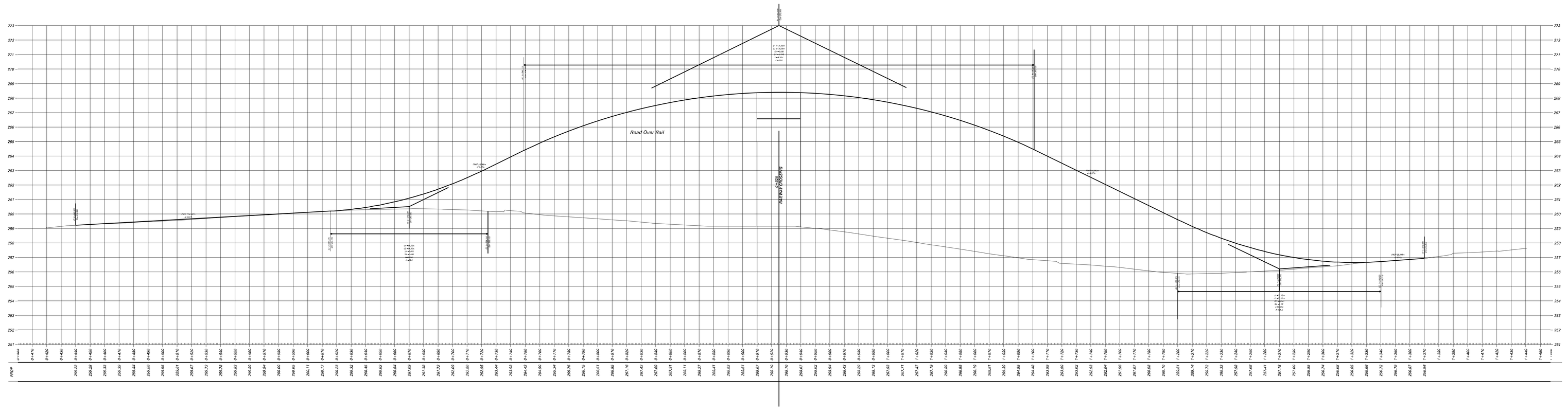
COLERAINE DRIVE

(HOLLAND DRIVE TO HARVEST MOON DRIVE)

RAIL OVER ROAD OPTION
PLAN & PROFILE

STA. 0+000 TO STA. 1+034

CAD Area	X-XX	Area	X-XX	Project No.	B000520
Checked by	S.K.	Drawn by	H.G.	Plan No.	0002-D
Date	JULY 2015	Sheet	2 of 9		

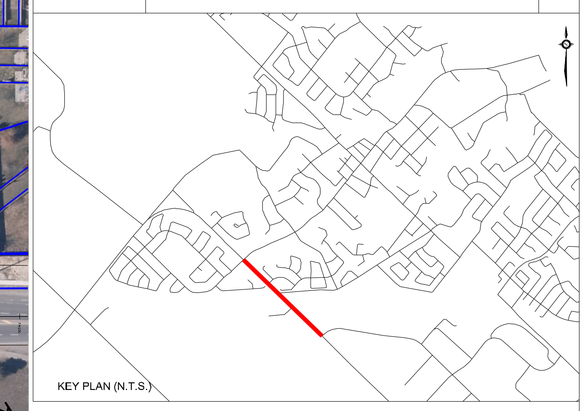


SERVICE DATA

SERVICE	DATE	INIT.	SERVICE	DATE	INIT.

REVISIONS

DATE	DETAILS	INIT.
JULY 18, 2017	ISSUED FOR REVIEW	S.K.



General Notes

Designed by
Chkd.

Approved by

0m 20m 60m
HORIZONTAL SCALE
SCALE 1:1000

0m 2m 6m
VERTICAL SCALE

Region of Peel
Working for you

COLERAINE DRIVE

(HOLLAND DRIVE TO HARVEST MOON DRIVE)

ROAD OVER RAIL OPTION
PLAN & PROFILE

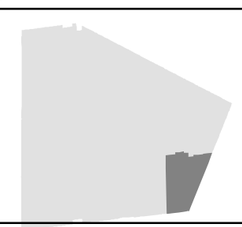
STA. 0+000 TO STA. 1+034

CAD Area	X-XX	Area	X-XX	Project No.	B000520
Chocked by	S.K.	Drawn by	H.G.		
Date	JULY 2015	Sheet	2 of 9	Plan No.	0002-D

Schedule C
BOLTON
LAND USE PLAN

TOWN OF CALEDON

- Prime Agricultural Area
- Rural Lands
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Special Residential
- General Industrial
- Dry Industrial
- Prestige Industrial
- Policy Area - Industrial
- Bolton Highway 50 Commercial Area
- Bolton South Hill Commercial Area
- Bolton North Hill Commercial Area
- Rural Uses
- Institutional
- Special Provisions
- Open Space Policy Area
- Environmental Policy Area
- Boundary of Greenbelt Plan Area
- Oak Ridges Moraine Conservation Plan Area
- 2021 Settlement Boundary
- 100 Year Floodline Limit
- Regional Floodline Limit
- Special Policy Area Boundary
- Site Specific Area
- Bolton Arterial Road Network
- Regional Road
- Local Road
- Railway



Base Data Source: Town of Caledon

0 0.25 0.5 1 1.5 2 km

Refer to Schedule C-4 "Northeast Bolton Land Use Plan"

Refer to Schedule C-3 "West Bolton Secondary Plan Area"

Refer to OPA #183

Refer to Schedule C-1 "Bolton Core Land Use Plan"

O.Reg 210/13

Bolton South Hill Commercial Area

Refer to Schedule C-2 "Bolton South Hill Land Use Plan"

Refer to OPA 223

Refer to Schedule C-7 "Coleraine West Employment Area"

Refer to Schedule C-6 "Bolton Community Shopping Centre Commercial Area"

Refer to Schedule C-5 "South Simpson Industrial Secondary Plan Phase 1"

Refer to OPA 190

Refer to OPA 240

Bolton Highway 50 Commercial Area

East-West Industrial Connector Road

Refer to OPA 228

Refer to Schedule C-5 "South Simpson Industrial Secondary Plan Phase 2"

CON 4 CON 5 CON 6 CON 7 CON 8 CON 9

LOT 14 LOT 13 LOT 12 LOT 11 LOT 10 LOT 9 LOT 8 LOT 7 LOT 6 LOT 5 LOT 4 LOT 3 LOT 2 LOT 1

OAK RIDGES MORAINE CONSERVATION PLAN AREA

KING ST KING ST W HEALEY RD MAYFIELD RD

DUFFYS LN HIGHWAY 50 MOUNT HOPE RD MOUNT PLEASANT RD CALEDON KING TOWNLINE

COLUMBIA WAY BOLTON ST N QUEEN ST S

THE GORE RD HUMBER STATION RD CENTREVILLE CREEK RD INNIS LAKE RD

A BION VAUGHAN RD CITY OF VAUGHAN TOWNSHIP OF KING REGION OF YORK

VAUGHAN RD KING RD KIRBY RD COLD CREEK RD

CITY OF BRAMPTON

Humber River

Wildfield

9 8 14 50

SAVED: 2 April 2018

FILE: S:\POLICY SECTION\GIS\official_plan\mxd\9-april_2018

SAVED BY: bloverock

April 2018 Office Consolidation

Appendix B

Photographic Log

Site Location		
Coleraine Drive		
Photo #	**Date**	**Cardinal Direction**
1	12/07/2017	N
Description		
View north on Coleraine Drive		

Site Location		
Coleraine Drive		
Photo #	**Date**	**Cardinal Direction**
2	12/07/2017	N
Description		
View north on the ELC ecosites: • **CUT 1 in the foreground** • **FOD4 on the right** • **FOC in the back**		

Site Location	
Coleraine Drive	
Photo #	**Date** / **Cardinal Direction**
3	12/07/2017 / N
Description	

View north on the ELC ecosites:

- **CUT 1 in the foreground**
- **FOD4 on the right**
- **FOC on the left in the back**
- **The pond outlet is also visible**

Site Location	
Coleraine Drive	
Photo #	**Date** / **Cardinal Direction**
4	12/07/2017 /
Description	

View of the pond outlet and the culvert under Coleraine Dr.

Site Location	
Coleraine Drive	

Photo #	Date	Cardinal Direction
5	12/07/2017	E

Description

View east on a LAT area at the north eastern corner of King St. and Coleraine Dr.

Site Location	
Coleraine Drive	

Photo #	Date	Cardinal Direction
6	12/07/2017	S

Description

View south on Coleraine Dr.

Appendix C

Biological Inventory Lists

Coleraine Grade Separation NHA
Amphibian Records

Common Name	*Scientific Name*	Origin	SARA	ESA	G Rank	N Rank	S Rank	L Rank	Recent Observation
Anura - Frogs and Toads									
Bufonidae - Toads									
American Toad	*Anaxyrus americanus*	N			G5	N5	S5	L4	
Hylidae - Tree Frogs & Allies									
Gray Treefrog	*Hyla versicolor*	N			G5	N5	S5	L2	x
Spring Peeper	*Pseudacris crucifer*	N			G5	N5	S5	L2	x
Western Chorus Frog (Carolinian)	*Pseudacris triseriata*	N	NAR	NAR	G5TNR	N4	S4	L2	
Ranidae - True Frogs									
American Bullfrog	*Lithobates catesbeianus*	N			G5	N5	S4	L2	x
Green Frog	*Lithobates clamitans*	N			G5	N5	S5	L4	x
Northern Leopard Frog	*Lithobates pipiens*	N	NAR	NAR	G5	N5	S5	L3	
Wood Frog	*Lithobates sylvaticus*	N			G5	N5	S5	L2	x

Coleraine Grade Seperation NHA
Reptile Turtle Records

Common Name	*Scientific Name*	Origin	SARA	ESA	G Rank	N Rank	S Rank	L Rank	Recent Observation
Cryptodeira - Turtles									
Chelydridae - Snapping Turtles									
Snapping Turtle	*Chelydra serpentina*	N	SC	SC	G5	N5	S3	L3	x
Emydidae - Pond Turtles									
Western Painted Turtle	*Chrysemys picta bellii*	N	NAR		G5T5	N4N5	S3?		
Midland Painted Turtle	*Chrysemys picta marginata*	N			G5T5	N4	S4	L3	x
Pond Slider	*Trachemys scripta*	E			G5	NNA	SNA	L+	
Squamata - Snakes & Skinks									
Colubridae - Non-venomous Snakes									
Ring-necked Snake	*Diadophis punctatus*	N			G5	N5	S4	LX	
Eastern Milksnake	*Lampropeltis triangulum*	N	SC	NAR	G5	N3N4	S4	L3	x
Red-bellied Snake	*Storeria occipitomaculata*	N			G5	N5	S5	L3	x
Eastern Gartersnake	*Thamnophis sirtalis sirtalis*	N			G5T5	N5	S5	L4	x

Coleraine Grade Seperation NHA
Bird Records

Common Name	*Scientific Name*	Origin	SARA	ESA	G Rank	N Rank	S Rank	TRCA L Rank	Recent Observation	Historical Observation
Anseriformes - Ducks, Geese & Swans										
Anatidae - Ducks, Geese & Swans										
Canada Goose	*Branta canadensis*	N			G5	N5B,N5N	S5	L5	x	
Mallard	*Anas platyrhynchos*	N			G5	N5B,N5N	S5	L5	x	
Accipitriformes - Hawks, Kites, Eagles & Allies										
Accipitridae - Hawks, Kites & Eagles										
Sharp-shinned Hawk	*Accipiter striatus*	N		NAR	G5	N5B,N5N	S5	L3		x
Charadriiformes - Plovers, Sandpipers & Allies										
Scolopacidae - Sandpipers & Phalaropes										
Spotted Sandpiper	*Actitis macularius*	N			G5	N5B	S5	L4	x	
Columbiformes - Pigeons & Doves										
Columbidae - Pigeons & Doves										
Mourning Dove	*Zenaida macroura*	N			G5	N5	S5	L5	x	x
Coraciiformes - Kingfishers & Allies										
Alcedinidae - Kingfishers										
Belted Kingfisher	*Megaceryle alcyon*	N			G5	N5B	S4B	L4	x	
Piciformes - Woodpeckers										
Picidae - Woodpeckers										
Downy Woodpecker	*Picoides pubescens*	N			G5	N5	S5	L5		x
Passeriformes - Perching Birds										
Vireonidae - Vireos										
Warbling Vireo	*Vireo gilvus*	N			G5	N5B	S5B	L5	x	
Corvidae - Crows & Jays										
Blue Jay	*Cyanocitta cristata*	N			G5	N5	S5	L5	x	
Bombycillidae - Waxwings										
Cedar Waxwing	*Bombycilla cedrorum*	N			G5	N5	S5B	L5	x	
Paridae - Chickadees & Titmice										
Black-capped Chickadee	*Poecile atricapillus*	N			G5	N5	S5	L5		x
Sittidae - Nuthatches										
White-breasted Nuthatch	*Sitta carolinensis*	N			G5	N5	S5	L4		x
Sturnidae - Starlings										
European Starling	*Sturnus vulgaris*	E			G5	NNA	SNA	L+	x	
Turdidae - Thrushes										
American Robin	*Turdus migratorius*	N			G5	N5B,N5N	S5B	L5	x	
Fringillidae - Finches										
Purple Finch	*Haemorhous purpureus*	N			G5	N5B,N5N	S4B	L4		x
House Finch	*Haemorhous mexicanus*	E			G5	N5	SNA	L+	x	x
Common Redpoll	*Acanthis flammea*	N			G5	N5B,N5N	S4B		x	
American Goldfinch	*Spinus tristis*	N			G5	N5B,N5N	S5B	L5	x	x
Parulidae - Wood-Warblers										
Common Yellowthroat	*Geothlypis trichas*	N			G5	N5B	S5B	L4	x	
Icteridae - Blackbirds										
Red-winged Blackbird	*Agelaius phoeniceus*	N			G5	N5B,N5N	S4	L5	x	
Common Grackle	*Quiscalus quiscula*	N			G5	N5B	S5B	L5	x	
Baltimore Oriole	*Icterus galbula*	N			G5	N5B	S4B	L5	x	
Emberizidae - Sparrows										

Coleraine Grade Seperation NHA
Bird Records

Common Name	*Scientific Name*	Origin	SARA	ESA	G Rank	N Rank	S Rank	L Rank	Recent Observation	Historical Observation
American Tree Sparrow	*Spizella arborea*	N			G5	N5B,N5N	S4B	L4		x
Song Sparrow	*Melospiza melodia*	N			G5	N5B,N5N	S5B	L5	x	
Dark-eyed Junco	*Junco hyemalis*	**N**			G5	N5B,N5N	S5B		x	x
Cardinalidae - Cardinals & Allies										
Northern Cardinal	*Cardinalis cardinalis*	N			G5	N5	S5	L5	x	x

Coleraine Grade Seperation NHA
Mammal Records

Common Name	*Scientific Name*	Origin	SARA	ESA	G Rank	N Rank	S Rank	L Rank	Recent Observations
Didelphimorphia - Opossums									
Didelphidae - Opossums									
Virginia Opossum	*Didelphis virginiana*	N			G5	N4	S4	L4	
Rodentia - Rodents									
Sciuridae - Squirrels & Chipmunks									
Woodchuck	*Marmota monax*	N			G5	N5	S5	L5	
Eastern Gray Squirrel	*Sciurus carolinensis*	N			G5	N5	S5	L5	
Eastern Chipmunk	*Tamias striatus*	N			G5	N5	S5	L4	
Red Squirrel	*Tamiasciurus hudsonicus*	N			G5	N5	S5	L4	
Castoridae - Beavers									
Beaver	*Castor canadensis*	N			G5	N5	S5	L4	
Cricetidae - Voles, Lemmings & New World Mice									
Meadow Vole	*Microtus pennsylvanicus*	N			G5	N5	S5	L4	
Muskrat	*Ondatra zibethicus*	N			G5	N5	S5	L4	
Deer Mouse	*Peromyscus maniculatus*	N			G5	N5	S5	L4	
Muridae - Rats & Mice									
Norway Rat	*Rattus norvegicus*	E			G5	NNA	SNA	L+	
Erethizontidae - Porcupines									
Porcupine	*Erethizon dorsatum*	N			G5	N5	S5	L2	
Lagomorpha - Hares & Rabbits									
Leporidae - Hares & Rabbits									
Snowshoe Hare	*Lepus americanus*	N			G5	N5	S5	LX	
European Hare	*Lepus europaeus*	N			G5	NNA	SNA	L+	
Eastern Cottontail	*Sylvilagus floridanus*	N			G5	N5	S5	L4	
Soricomorpha - Shrews & Moles									
Soricidae - Shrews									
Northern Short-tailed Shrew	*Blarina brevicauda*	N			G5	N5	S5	L3	
Carnivora - Carnivores									
Canidae - Dogs									
Coyote	*Canis latrans*	N			G5	N5	S5	L4	
Red Fox	*Vulpes vulpes*	N			G5	N5	S5	L4	
Mustelidae - Weasels									
American Mink	*Neovison vison*	N			G5	N5	S4	L4	
Mephitidae - Skunks									
Striped Skunk	*Mephitis mephitis*	N			G5	N5	S5	L5	
Procyonidae - Raccoons									
Northern Raccoon	*Procyon lotor*	N			G5	N5	S5	L5	

Coleraine Grade Seperation NHA
Plant Records

Common Name	Scientific Name	Origin	SARA	ESA	G Rank	N Rank	S Rank	L Rank	Recent Observations
Asterales - Daiseys									
Asteraceae - Daiseys & Sunflowers									
Bull Thistle	Cirsium vulgare	E			GNR	NNA	SNA	L+	x
Canada Goldenrod	Solidago canadensis var. canadensis	N			G5T5	N5	S5	L5	x
Colt's-foot	Tussilago farfara	E			GNR	NNA	SNA	L+	x
Capparales - Mustards, Capers & Mignonettes									
Brassicaceae - Mustards									
Garlic Mustard	Alliaria petiolata	E			GNR	NNA	SNA	L+	x
Dame's Rocket	Hesperis matronalis	E			G4G5	NNA	SNA	L+	x
Celastrales - Bittersweets & Hollies									
Celastraceae - Bittersweets									
Eastern Burning Bush	Euonymus atropurpureus	N			G5	N3	S3	L2	x
Cornales - Dogwoods & Gums									
Cornaceae - Dogwoods									
Red-osier Dogwood	Cornus stolonifera	N			G5	N5	S5	L5	x
Dipsacales - Honeysuckles									
Caprifoliaceae - Honeysuckles									
Common Elderberry	Sambucus canadensis	N			G5T5	NNR	S5	L5	x
Fabales - Legumes									
Fabaceae - Legumes									
Honey-locust	Gleditsia triacanthos	N			G5	N2	S2?	L+	x
Fagales - Beeches, Birches, Alders & Oaks									
Betulaceae - Alders & Birches									
Paper Birch	Betula papyrifera	N			G5	N5	S5	L4	x
Fagaceae - Chestnuts, Beeches & Oaks									
Bur Oak	Quercus macrocarpa	N			G5	N5	S5	L4	x
Northern Red Oak	Quercus rubra	N			G5	N5	S5	L4	x
Gentianales - Dogbanes, Milkweeds & Gentians									
Asclepiadaceae - Milkweeds									
Common Milkweed	Asclepias syriaca	N			G5	N5	S5	L5	x
Malvales - Mallows									
Tiliaceae - Lime Trees									
American Basswood	Tilia americana	N			G5	N5	S5	L5	x
Little-leaf Linden	Tilia cordata	E			GNR	NNA	SNA	L+	x
Rhamnales - Buckthorns & Grapevines									
Rhamnaceae - Buckthorns									
Common Buckthorn	Rhamnus cathartica	E			GNR	NNA	SNA	L+	x
Rosales - Roses									
Rosaceae - Roses									
Smooth Serviceberry	Amelanchier laevis	N			G5	N5	S5	L4	x
Sand Cherry	Prunus pumila var. pumila	N			G5T4	N4?	S3	L+?	x
Salicales - Willows, Aspens & Poplars									
Salicaceae - Willows, Aspens & Poplars									
Trembling Aspen	Populus tremuloides	E			G5	N5	S5	L5	x
Pussy Willow	Salix discolor	N			G5	N5	S5	L4	x
Sapindales - Maples, Sumacs & Allies									
Aceraceae - Maples									

Common Name	Scientific Name	Origin	SARA	ESA	G Rank	N Rank	S Rank	L Rank	Recent Observations
Manitoba Maple	Acer negundo	E			G5	N5	S5	L+?	x
Norway Maple	Acer platanoides	E			GNR	NNA	SNA	L+	x
(Acer rubrum X Acer saccharinum)	Acer x freemanii	E			GNA	NNA	SNA	L4	x
Anacardiaceae - Sumacs									
Fragrant Sumac	Rhus aromatica	N			G5	N5	S4	L+	x
Staghorn Sumac	Rhus typhina	N			G5	N5	S5	L5	x
Hippocastanaceae - Buckeyes									
Horse Chestnut	Aesculus hippocastanum	E			GNR	NNA	SNA	L+	x
Scrophulariales - Figworts, Bladderworts, Olives & Allies									
Bignoniaceae - Trumpet Creepers & Catalpas									
Northern Catalpa	Catalpa speciosa	E			G4?	NNA	SNA	L+	x
Oleaceae - Olives									
Green Ash	Fraxinus pennsylvanica	N			G5	N5	S4	L5	x
Japanese Tree Lilac	Syringa reticulata ssp. reticulata	E			GNRTNR	NNA	SNA	L+	x
Common Lilac	Syringa vulgaris	E			GNR	NNA	SNA	L+	x
Urticales - Mulberries, Elms & Nettles									
Ulmaceae - Elms									
American Elm	Ulmus americana	N			G5	N5	S5	L5	x
Pinales - Conifers									
Cupressaceae - Junipers & Cedars									
Creeping Juniper	Juniperus horizontalis	N			G5	N5	S5	L2	x
Eastern White Cedar	Thuja occidentalis	N			G5	N5	S5	L4	x
Pinaceae - Spruces, Pines, Larches & Firs									
Norway Spruce	Picea abies	E			G5	NNA	SNA	L+	x
White Spruce	Picea glauca	N			G5	N5	S5	L3	x
Blue Spruce	Picea pungens	E			G5	NNA	SNA	L+	x
Mugo Pine	Pinus mugo	E			GNR	NNA	SNA		x
Black Pine	Pinus nigra	E			GNR	NNA	SNA	L+	x
Red Pine	Pinus resinosa	N			G5	N5	S5	L1	x
Eastern White Pine	Pinus strobus	N			G5	N5	S5	L4	x
Scots Pine	Pinus sylvestris	E			GNR	NNA	SNA	L+	x

Appendix D

Record of Correspondence

Ministry of
Natural Resources
and Forestry
Aurora District Office
50 Bloomington Road
Aurora, Ontario L4G 0L8

Ministère des
Richesses naturelles
et des Forêts

Telephone: (905) 713-7400
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Ontario

December 14, 2017

Ana-Laura Giacomel
55 King Street East
Bowmanville Ontario
L1C 1N4

Phone: 905-697-4464 ext. 6910

Re: Request for Information for Coleraine Drive south of Old Ellwood Drive, Town of Caledon, Regional Municipality of Peel

Dear Ms. Giacomel,

In your email dated September 12, 2017 you requested information on Species at Risk and rare species occurring on or adjacent to the above mentioned location. The species listed below have the potential to occur in your study area and may require further assessment or field studies to determine presence:

- Butternut (Endangered)
- Barn Swallow (Threatened)
- Chimney Swift (Threatened)
- Little Brown Myotis (Endangered)
- Snapping Turtle (Special Concern)

Additional natural heritage information including information on wetlands and Areas of Natural and Scientific Interest (ANSIs) can be obtained through Land Information Ontario (LIO).

The species listed above may receive protection under the *Endangered Species Act, 2007* (ESA) and thus, an approval from MNRF may be required if the work you are proposing could cause harm to these species or their habitats. If the Species at Risk in Ontario List is amended, additional species may be listed and protected under the ESA or the status and protection levels of currently listed species may change.

We require more detailed information on the proposed project in order to assess the impacts of the works on Species at Risk. *When project details have been determined*, please fill out an Information Gathering Form (IGF) for any *threatened* or *endangered* species listed in the provided letter and submit it to our office (to ESA.Aurora@ontario.ca). The IGF can be found here (along with its associated guide). Please include detailed descriptions of the undertakings such as proposed timing and phasing of the project and details on what is required at each phase.

All sections and tables should be filled out in their entirety – incomplete forms will be returned and may delay the review process. Any applicable supplemental information that will assist with

the review process should also be submitted with the IGF (e.g. field survey results, site plan/drawings, ELC mapping, etc.). Please note that forms are reviewed in the order in which they are received by MNRF and we will contact you with our response once the review is complete.

Absence of information provided by MNRF for a given geographic area, or lack of current information for a given area or element, does not categorically mean the absence of sensitive species or features. Many areas in Ontario have never been surveyed and new plant and animal species records are still being discovered for many localities. For these reasons, the MNRF cannot provide a definitive statement on the presence, absence or condition of biological elements in any part of Ontario. If development or site alteration is proposed, surveys by a qualified professional may need to be undertaken in the future to confirm presence or absence of sensitive species or features.

This Species at Risk information is highly sensitive and is not intended for any person or project unrelated to this undertaking. Please do not include any specific information in reports that will be available for public record. As you complete your fieldwork in these areas, please report all information related to any Species at Risk to our office. This will assist with updating our database and facilitate early consultation regarding your project.

If you have any questions or comments, please do not hesitate to contact ESA.aurora@ontario.ca.

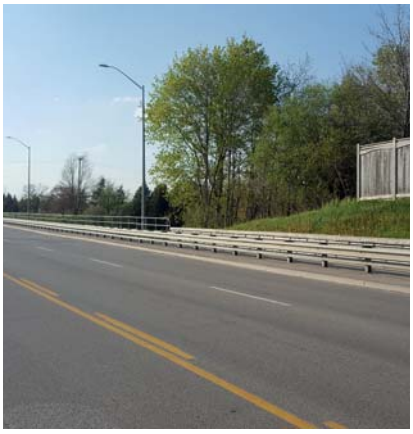
Sincerely,

Melanie Shapiera
Management Biologist
Ontario Ministry of Natural Resources and Forestry, Aurora District

Appendix E

Tree Survey

Region of Peel
Working for you



Tree Inventory and Assessment
Coleraine Drive
CPR Grade Separation

August 2017

B000738

CIMA
Partners in excellence

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Appendix A

Tree Inventory and Assessment Drawing TI-1 to TI-5

1. INTRODUCTION

CIMA+ has been retained by the Region of Peel to complete a tree assessment along Coleraine Drive between Harvest Moon Road/King Street West and Holland Drive in preparation of a grade separation between the CP rail and Coleraine Drive.

The purpose of this Tree Inventory and Assessment Report is to record species, size, and condition of trees and groups of vegetation within the site for use in the development of a tree preservation plan for the site.

2. LIMITATIONS

The assessment presented in this report has been made using accepted standard arboriculture techniques as outlined in the Council of Tree and Landscape Appraisers *Guide for Plant Appraisal*, 9th Edition (2000). These techniques include visual examination of above ground parts of each tree. The trees observed were not climbed, cored, or dissected, and excavation for detailed root crown inspection was not performed. Since some symptoms may only be present seasonally, the extent of observations that can be made may be limited by the time of year in which the inspection took place.

Since trees are living organisms, their health and vigour continually change over time due to seasonal variations, changes in site conditions, and other factors. For this reason, the assessment presented in this report is valid at the time of inspection, and no guarantee is made about the continued health of trees that are deemed to be in good condition. It is recommended that the trees be re-assessed periodically to identify changes in condition. While every standing tree has the potential for failure and therefore poses some risk, a tree assessment is a good indication of present health and potential problems that could arise in the future.

CIMA+ has prepared this report for the sole use of the client. Any use of this report by a third party, as any decision based on this report, is the singular responsibility of the third party. CIMA+ will not be held responsible for eventual damages towards a third party resulting from decisions taken, or based, on this report.

3. METHODOLOGY

The site was visited by CIMA+ employees on August 23, 2017. Trees were identified, numbered, measured, and assessed for condition. Tree groups were also assessed, and are shown on the drawing as well. The tree inventory and assessment table containing this information is included in Section 4.

Drawing No. TI-1 through to TI-5 shows locations of the numbered trees included in the assessment. The drawing is included as Appendix A.

3.1 Tree Size

Size refers to trunk diameter (caliper or DBH) measured in centimetres at 1.4 m above the ground. Where trees had more than one trunk from the base, the size of each trunk was recorded. Where trees forked to codominant trunks, each trunk was measured or the diameter was measured under the flare and the approximate height of the measurement was noted.

Trees under 5 cm DBH were not included in the assessment.

3.2 Condition

Trees and shrubs were given a subjective condition rating of Excellent, Good, Fair, Poor, or Dead. Following is a summary of how the ratings are determined:

+ EXCELLENT (E): no apparent health problems; good structural form
+ GOOD (G): minor problems with health and/or structural form
+ FAIR (F): more serious problems with health and/or structural form
+ POOR (P): major problems with health and structural form
+ DEAD (D): dead

The notes section of the assessment table in this report includes details of observations made concerning the structural form and health of trees.

3.3 Observations

Several structural defects and health problems are included in the Notes section of the tree inventory and assessment table. Structural defects are often insignificant when a tree is small, but can pose problems when the tree grows larger and the weight of branches put added stress on defects that can cause weakness. Larger trees also have the potential to cause more damage should they fail. Following is an explanation of some of the problems included in the Notes section of the inventory and assessment table, and how they can affect trees over time.

+ *Adventitious shoots* are vigorous growth of shoots from pruning cuts, inner branches, or along the trunk that usually occur in response to stress.
+ *Buckthorn* is a thorny, invasive exotic shrub species that out-competes native vegetation.
+ *Codominant leaders* (2 trunks or branches of approximately equal size) often have narrow branch angles, and are associated with weak branch attachment. Strong branch

attachments occur between 2 limbs of unequal size with enough space for branch enlargement and formation of a branch bark ridge.

+ *Crossing branches* are often associated with narrow branch angles. Branches that cross over each other often rub, causing damage and therefore weakness to one or both branches, and crossing branches can eventually girdle each other.
+ *Dieback* refers to the ends of branches dying, which is often associated with root problems.
+ *Emerald Ash Borer* refers to a species of beetle native to East Asia that feeds on all species ash trees (*Fraxinus* spp.) during its larval stage. Typical symptoms of infection include heavy seed set, dieback, splitting bark, and adventitious shoots. Almost all infected ash trees will die within a few years of infection.
+ *Exposed surface roots* can be a result of erosion and soil compaction combined with increasing root diameter. It is important to protect exposed roots from pedestrian and vehicular traffic, and lawn mowers. Damage to roots can cause stress and can result in canopy dieback.
+ *Girdling roots* are roots that cross over each other or around the trunk of the tree. As these roots grow larger, they can restrict the uptake of nutrients and water, and inhibit structural anchorage.
+ A tree with a *lean* can be more susceptible to windthrow and soil failure. *Self-correcting lean* refers to a natural correction of the lean by development of new growth that counteracts the lean of the trunk to provide a more balanced form.
+ *Live crown ratio* is the ratio of the live crown to the overall height of the tree. A low live crown ratio can develop when trees are growing close together in stands, or can be created by pruning or dieback. Low live crown ratio is associated with increased likelihood of failure, depending on the cause and site factors.
+ When a tree has *multiple branches from the same point of attachment*, the branches usually have characteristics of weakly attached branches.
+ *Narrow branch angles*, especially where there is included bark, can be a problem as trees grow larger because the inner wood is poorly attached.
+ *Suppressed* trees are growing under the canopies of neighbouring trees, which can diminish vigour and affect structural form.

The detailed observations made concerning tree species, size, and condition are included in the tree inventory and assessment table in Section 4.

4. TREE INVENTORY AND ASSESSMENT TABLE

Tree No.	Species	Size (cm)	Condition	Notes
1A	Norway spruce	13	G-E	
1B	Norway spruce	13	G-E	
2A	Littleleaf linden	17	E	A few adventitious shoots typical of *Tilia* spp.
2B	Littleleaf linden	19	E	A few adventitious shoots typical of *Tilia* spp.
2C	Littleleaf linden	17	E	A few adventitious shoots typical of *Tilia* spp.
2D	Littleleaf linden	17	E	
2E	Littleleaf linden	17	E	On south slope and aspect of berm; lean south 10 degrees from vertical; no buttress adaptation
2F	Littleleaf linden	17	E	
3	Burning bush	NA	E	Shrub; approx. 3 m tall
4	Norway spruce	19	G-E	
5	Norway spruce	15	D	Dead
6	Littleleaf linden	17	E	
7	Norway spruce	7	D	Dead
8	Norway spruce	13	G-E	
9	Lilac, staghorn sumac	NA	E, P	Shrub group; approx. 4 m tall; lilac healthy; 50% dieback of sumac
10A	Norway spruce	13	G-E	
10B	Norway spruce	21	E	
10C	Norway spruce	13	G-E	
11A	Littleleaf linden	17	E	
11B	Littleleaf linden	17	E	Lean south 10 degrees from vertical; no buttress adaptation; not on a slope, so likely rotated when newly planted and never corrected
11C	Littleleaf linden	Multi-stem	F	Wounds from lawnmower deck damage to trunks; crossing branches
12	Littleleaf linden	19	E	
13	Norway spruce	19	G-E	
14A	Norway spruce	13	G-E	
14B	Norway spruce	13	G-E	
14C	Norway spruce	19	G-E	
15	Lilac, staghorn sumac	NA	E, P	Shrub group; approx. 4 m tall; lilac healthy; 90% dieback of sumac
16A	Littleleaf linden	19	E	A few adventitious roots typical of *Tilia* spp.
16B	Littleleaf linden	19	E	A few adventitious roots typical of *Tilia* spp.
17	Norway spruce	13	G-E	Lost leader (recently topped); some dieback in lower 1 m of crown

Tree No.	Species	Size (cm)	Condition	Notes
18A	Norway spruce	13	G-E	Lost leader (recently topped); dense growth in top 1 m of crown
18B	Norway spruce	18	E	
19A	Norway spruce	18	E	
19B	Norway spruce	18	E	
19C	Norway spruce	18	E	
19D	Norway spruce	18	E	
20A	Blue spruce	16	F	Bottom 2 m of crown being damaged by entrance traffic
20B	Blue spruce	16	E	
20C	Blue spruce	16	G	Some crown dieback at 2 m height
20D	Blue spruce	22	E	
21A	Norway maple	11	F	Girdled roots exposed at ground surface next to curb; evidence of leaf/small branch stress (colour change) from truck traffic at entrance
21B	Norway maple	7	F	Possible girdled roots - similar position to 21A
22	Columnar European beech	6	F	Possible girdled roots - similar position to 21A
23	Norway maple	11	G	
24A	Honey locust	8	E	In landscaped island
24B	Honey locust	8	E	In landscaped island
24C	Honey locust	8	E	In landscaped island
25	Austrian pine	18	E	At intersection corner
26A	Austrian pine	18	F	Needle tips turning orange; some crown loss between 2-3 m height
26B	Austrian pine	22	F	Leader topped at 5 m
26C	Austrian pine	18	F	Municipal address sign bolted into trunk, becoming included into tree
27A	Austrian pine	18	F	
27B	Austrian pine	22	F	
27C	Austrian pine	18	F	
28	Austrian pine	22	F	Behind chainlink fence on private property
29A	Blue spruce	17	F	Some damage to bottom 2 m of crown from adjacent entrance traffic
29B	Blue spruce	17	G	
29C	Blue spruce	17	G	
30	Austrian pine	22	G	2 m x 2 m Russian olive suppressed beneath the tree within the fence
31A	Austrian pine	22	G	2 m x 2 m Russian olive suppressed beneath the tree within the fence

Tree No.	Species	Size (cm)	Condition	Notes
31B	Austrian pine	22	G	
31C	Austrian pine	18	G	Codominant stems from 0.3 m above ground
32A	White spruce	10	G	Heavy cone set; directly under hydro line; inside fence
32B	White spruce	10	G	Heavy cone set; directly under hydro line; inside fence
33	Staghorn sumac	NA	G	Shrub; approx. 3 m tall
34	Hawthorn	NA	E	Shrub; approx. 2 m tall
35	Lilac tree	10	E	Inside fence
36A	Honey locust	16	P	Poor form; crossing branches; 50% dieback; growing in ditch next to hydrant
36B	Honey locust	16	F	Poor form; crossing branches; 30% dieback; growing in ditch next to hydrant
37	Red-osier dogwood and burning bush	NA	E	Shrub group; approx. 2 m tall
38A	Norway spruce	15	G	
38B	Norway spruce	15	F	Some shading and dieback due to interior position in bottom 3 m of crown
38C	Norway spruce	15	E	
39A	Bur oak	10	E	Codominant stems from 2.5 m above ground
39B	Bur oak	10	E	
39C	Bur oak	10	F	Two broken and hanging branches
40A	Blue spruce	15	G	Some dieback in upper crown
40B	Blue spruce	12	E	2-m tall buckthorn at base of tree
41A	Manitoba maple	5	E	Codominant stems from 2.0 m above ground
41B	Manitoba maple	5	E	
42A	Honey locust	16	F	Poor form; crossing branches; 30% dieback
42B	Honey locust	16	D	Dead
43	Manitoba maple	Multi-stem	F	5 stems 5-10 cm; poor structure; some wounds from friction of growing under wood fence
44	Lilac	NA	E	Shrub; approx. 2 m tall; growing out from backyard under wood fence
45A	Group	1 - 30	P-E	Black walnut, green ash, buckthorn, basswood, sugar maple, Virginia creeper, grapevine; fallen white birch found, though no evidence of living specimens
45B	Group	5 - 25	G-E	Predominantly white spruce, small white pine, ash, apple; ash is affected by Emerald Ash Borer
45C	Group	5 - 25	E	Staghorn sumac, Manitoba maple, buckthorn, apple, Norway maple, white pine, white spruce, white cedar,

Tree No.	Species	Size (cm)	Condition	Notes
				elm; all trees are located within the fenced in area or further into the neighbouring valley
46	Green ash	34	P	Greatly affected by Emerald Ash Borer; many adventitious shoots and branches, some to 8 cm diameter
47	Group	2 - 8	G-E	Eastern white cedar, Manitoba maple, Norway maple; approx. 5 m tall; mostly cedar; group growing directly under hydro line
48A	Scots pine	20	E	
48B	Scots pine	20	E	
48C	Scots pine	22,22	P-F	Codominant stems at 1 m above ground; topped with significant crown removal
49	Catalpa	33	G	Some crown removed around hydro line
50	Manitoba maple	34	G	Lean 10% from vertical with almost entire canopy overhanging driveway
51	Pear	Multi-stem	F	3 stems from 10-12 cm; bearing fruit
52A	Blue spruce	30	E	
52B	Blue spruce	30	E	
53	Group	NA	E	Shrubs; Manitoba maple, fragrant sumac, sandcherry; approx. 3 m tall
54A	Ash	23	D	Dead; evidence of Emerald Ash Borer; adventitious shoots from base
54B	Ash	17	D	Dead; evidence of Emerald Ash Borer; adventitious shoots from base
55	Group	NA	E	Shrubs; Manitoba maple, fragrant sumac, spirea; approx. 3 m tall
56A	Group	NA	E	Shrubs; burning bush, juniper; approx. 2 m tall
56B	Group	NA	E	Shrubs; burning bush, juniper; approx. 2 m tall
57A	Smooth serviceberry	9	E	Few dried fruit on upper canopy
57B	Smooth serviceberry	9	F	Adventitious shoots at 0.3 m above ground; leader dieback
58A	Elderberry	NA	E	Shrub; approx. 2.5 m tall
58B	Group	NA	E	Elderberry, fragrant sumac; approx. 2.5 m tall
58C	Group	NA	E	Elderberry, fragrant sumac, Manitoba maple; approx. 2.5 m tall
59A	White spruce	6	F	Approx. 30% dieback concentrated in bottom 1 m of crown
59B	White spruce	6	P	Approx. 60% dieback concentrated in bottom 1 m of crown

Tree No.	Species	Size (cm)	Condition	Notes
60	Group	NA	P-E	Staghorn sumac, ash; sumac in excellent condition; evidence of Emerald Ash Borer on two ash trees; one ash 4 m tall in good health
61A	Manitoba maple	12,9	E	Next to fence along CPR corridor
61B	Manitoba maple	7	P	Poor form; many branches and stems haphazardly pruned at base and throughout
61C	Manitoba maple	Multi-stem	G	7 stems at 1, 2, 3, 3, 3, 4, and 5 cm each
62	Group	NA	E	Staghorn sumac, buckthorn; 3.5 m tall; growing around hydro pole within fenced area
63A	Blue spruce	15	G	Codominant stems at 2 m above ground
64	Blue spruce	18	E	
65	Pussy willow	NA	E	Shrub; approx. 2.5 m tall
66	Variegated dogwood	NA	E	Shrub; approx. 1 m tall
67	Lilac	NA	E	Shrub; approx. 2 m tall
68	Freeman maple	13	G	Multiple branches from same point on stem; pruning wounds at 1 m above ground, some epicormic growth
69A	Littleleaf linden	12	E	
69B	Littleleaf linden	12	E	
69C	Littleleaf linden	12	E	
70	Spirea	NA	E	Shrub; approx. 1.5 m tall
71	Mugho pine	NA	E	Shrub; approx. 1.5 m tall
72	Norway maple	17	E	
73	Freeman maple	13	E	
74	Ninebark	NA	E	Shrub; approx. 1.5 m tall
75	Norway maple	12	E	
76A	Blue spruce	15	E	Codominant stems at 4 m above ground
76B	Blue spruce	15	E	
76C	Blue spruce	15	E	Some heavy sap from wound at 1.5 m above ground
76D	Blue spruce	15	E	
77A	White spruce	17	E	
77B	White spruce	17	E	
77C	White spruce	17	E	

5. CONSTRUCTION MANAGEMENT

The most typical construction damage to trees is root damage from compaction and severance. While the dripline of a tree's canopy is typically thought to be associated with the root area, the root zones can

actually extend significantly beyond the dripline of the tree, sometimes up to 2 or 3 times the height of the tree.

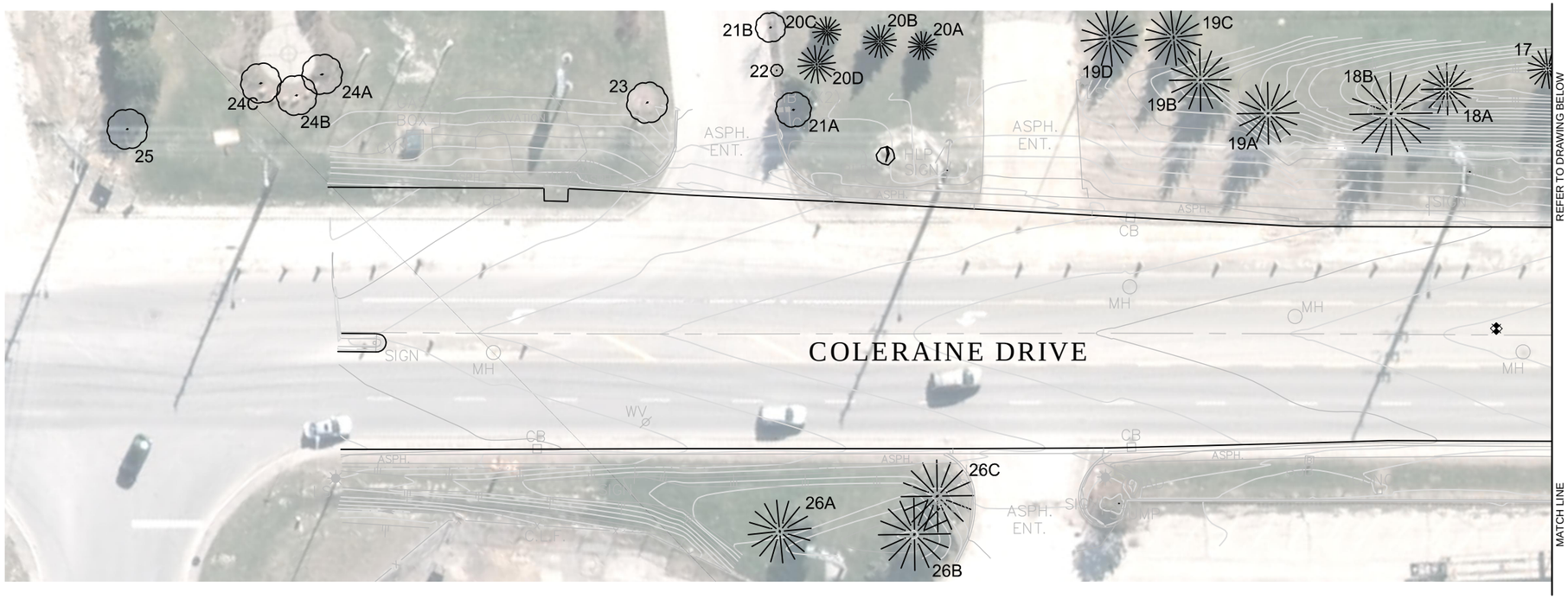
To protect trees, grade changes and construction activities that could cause soil compaction should be kept away from trees as much as possible. If roots will be damaged by excavation equipment, it is better to cut roots cleanly with sharp pruning tools rather than allow them to be torn by large equipment. Clean cuts will help to minimize decay and entry points for disease.

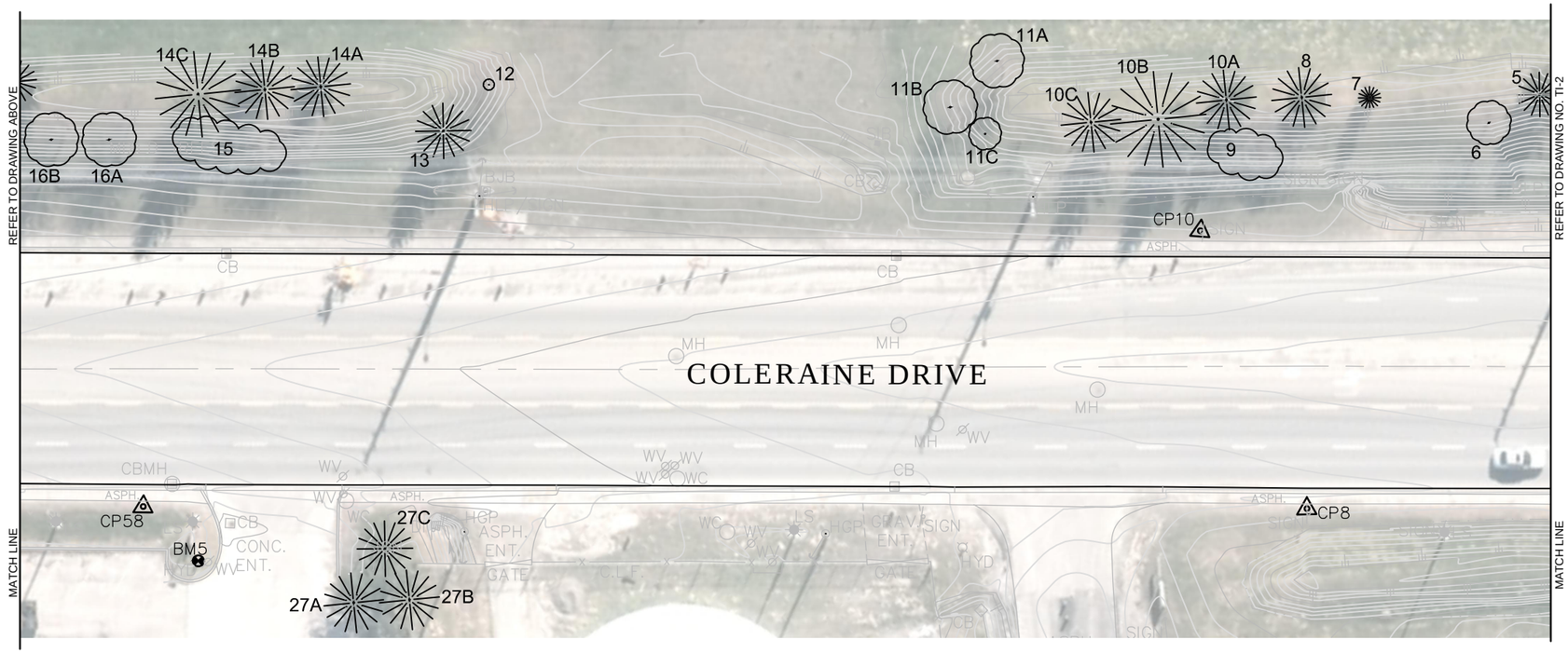
Equipment and materials should not be stored near trees, and equipment should not be left idling where exhaust could burn foliage.

6. CERTIFICATION

I certify that all the statements of fact in this assessment are true, complete, and correct to the best of my knowledge and belief, and that they are made in good faith.

Lisa Cullen, ISA Certified Arborist ON-0741A





LEGEND

140 139 EXISTING TREES WITH TREE INVENTORY NUMBERS (SEE TREE REPORT)

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INFORM THEMSELVES OF THE EXACT LOCATION OF, AND ASSUME ALL LIABILITY FOR DAMAGE TO ALL UTILITIES SERVICES AND STRUCTURES WHETHER ABOVE GROUND OR BELOW GRADE BEFORE COMMENCING THE WORK. SUCH INFORMATION IS NOT NECESSARILY SHOWN ON THE DRAWING, AND WHERE SHOWN, THE ACCURACY CANNOT BE GUARANTEED.

WITH THE SOLE EXCEPTION OF THE BENCHMARK(S) SPECIFICALLY DESCRIBED FOR THIS PROJECT, NO ELEVATION INDICATED OR ASSUMED HEREON IS TO BE USED AS A REFERENCE ELEVATION FOR ANY PURPOSE.

ALL DIMENSIONS AND INFORMATION SHALL BE CHECKED AND VERIFIED ON THE JOB AND ANY DISCREPANCIES MUST BE REPORTED TO THE MUNICIPALITY BEFORE COMMENCING THE WORK. DRAWINGS ARE NOT TO BE SCALED.

No.	DATE	BY	ISSUES / REVISIONS

Region of Peel
Working for you

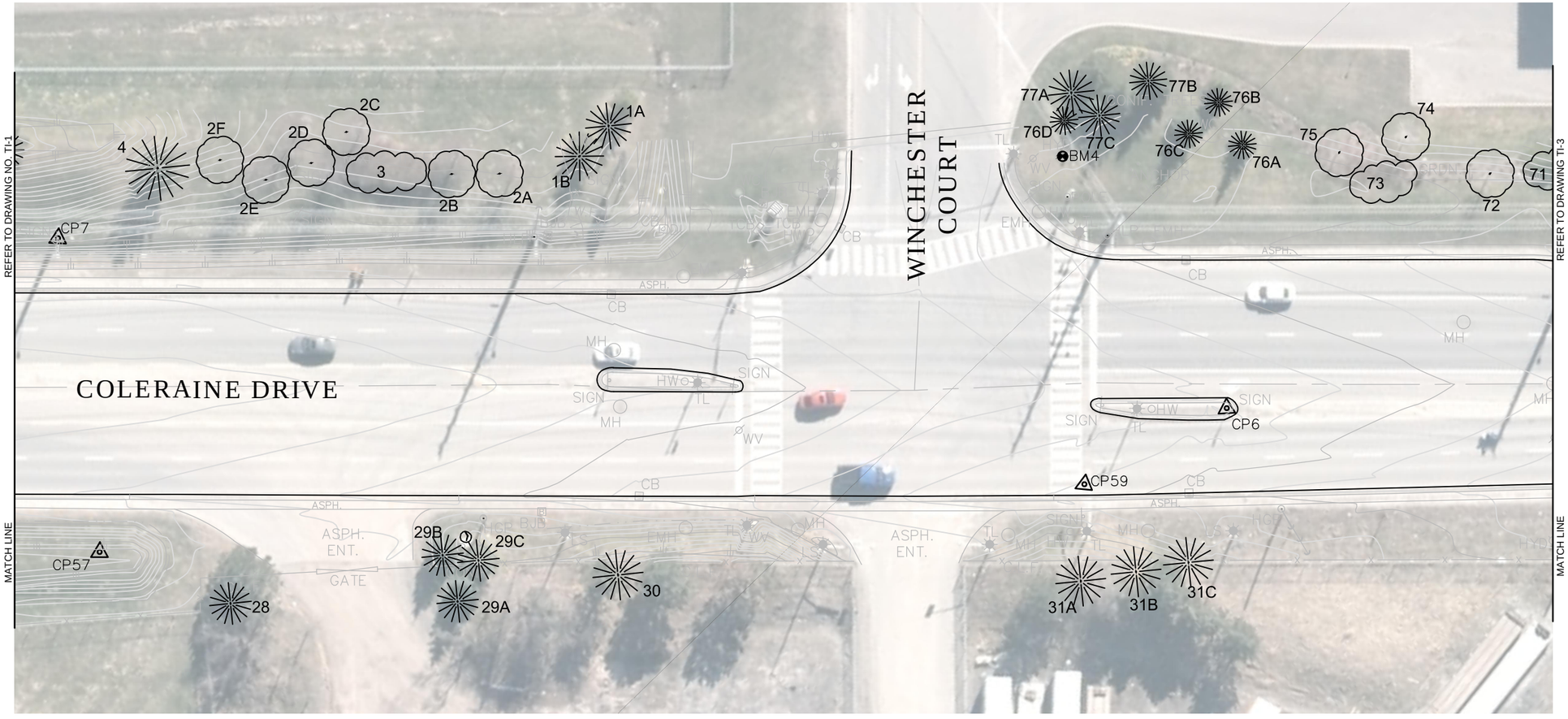
PROJECT:

COLERAINE DRIVE
CPR GRADE SEPARATION

DRAWING:

Tree Inventory

DRAWN BY :	CHECKED BY :	PROJECT
L. May	G. Bunker	B000738
DESIGNED BY :	APPROVED BY :	DRAWING No.
	L. Cullen	
SCALE :	DATE :	
1:500	August 2017	TI-1



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Region of Peel
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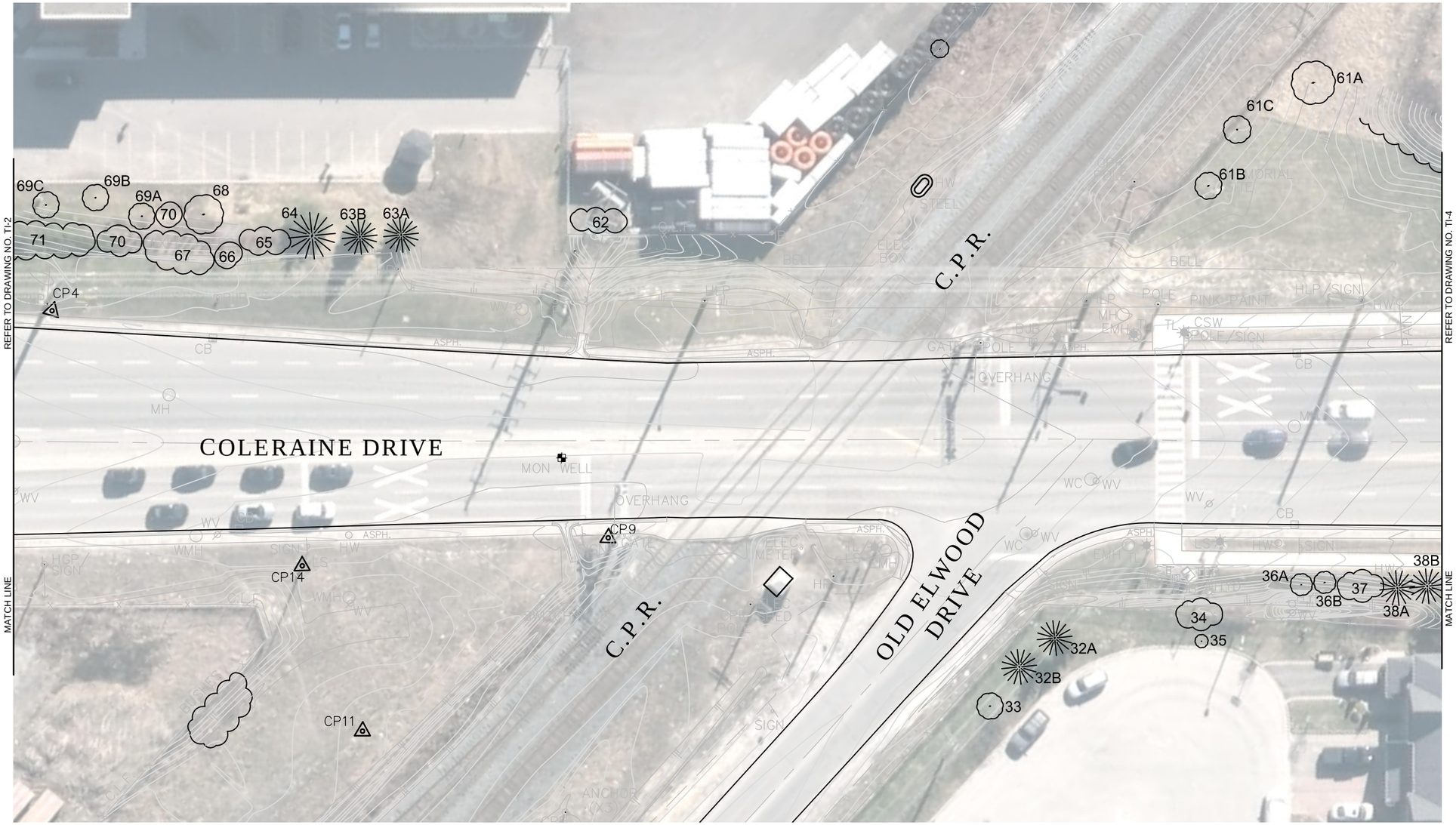
PROJECT:

COLERAINE DRIVE
CPR GRADE SEPARATION

DRAWING:

Tree Inventory

DRAWN BY :	CHECKED BY :	PROJECT
L. May	G. Bunker	B000738
DESIGNED BY :	APPROVED BY :	DRAWING No.
	L. Cullen	
SCALE :	DATE :	
1:500	August 2017	TI-2



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Region of Peel
Working for you

PROJECT:

COLERAINE DRIVE
CPR GRADE SEPARATION

DRAWING:

Tree Inventory

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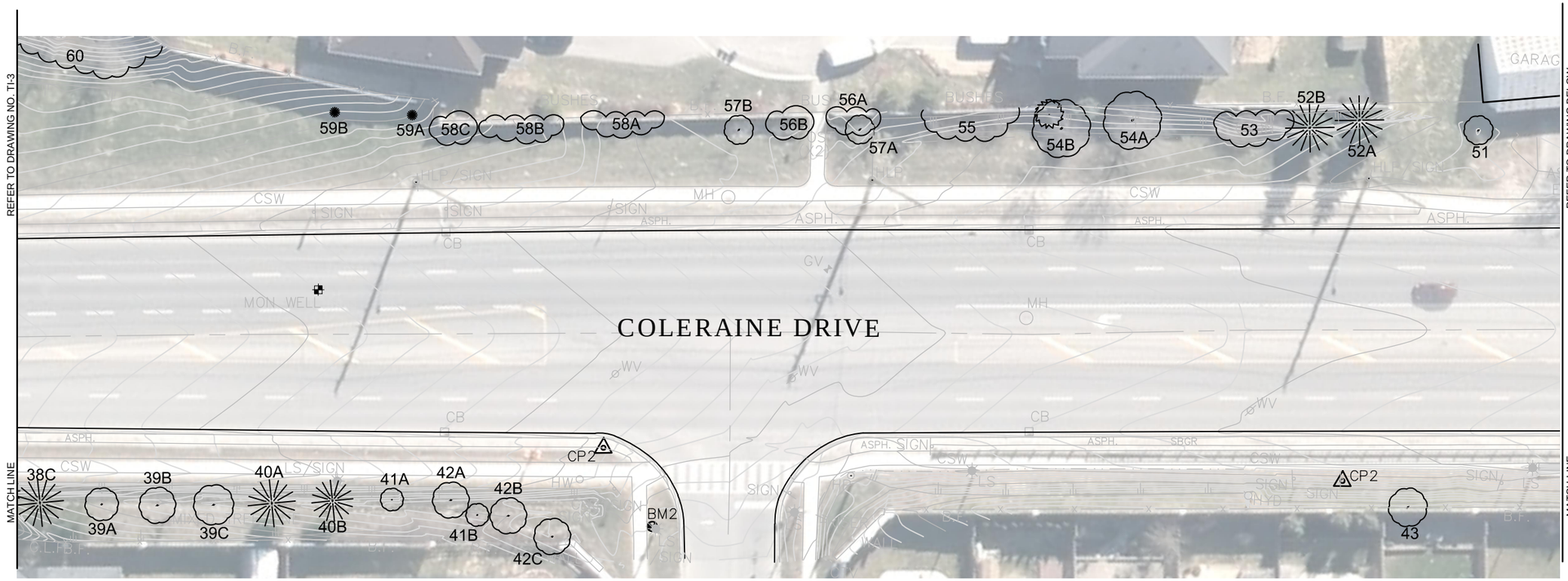
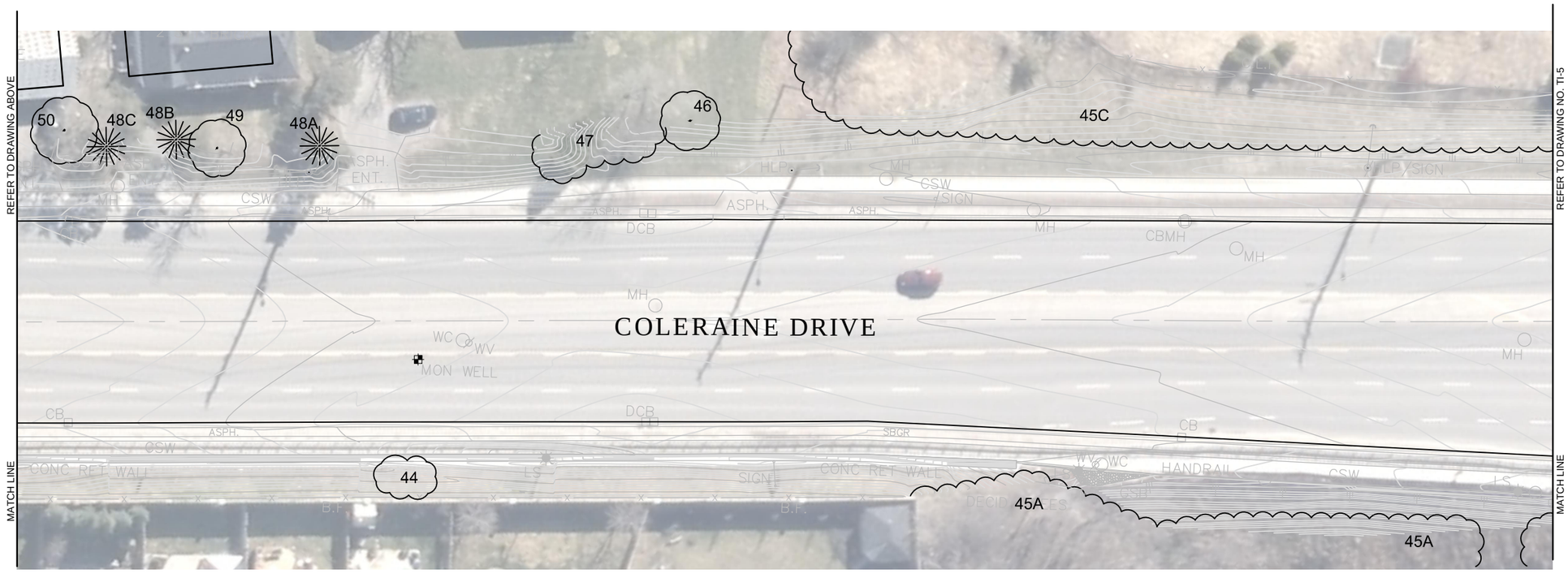
L. May	G. Bunker	B000738
DESIGNED BY :	APPROVED BY :	DRAWING No.
	L. Cullen	
SCALE :	DATE :	TI-3
1:500	August 2017	





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WITH THE SOLE EXCEPTION OF THE BENCHMARK(S) SPECIFICALLY DESCRIBED FOR THIS PROJECT, NO ELEVATION INDICATED OR ASSUMED HEREON IS TO BE USED AS A REFERENCE ELEVATION FOR ANY PURPOSE.

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No.	DATE	BY	ISSUES / REVISIONS

Region of Peel
Working for you

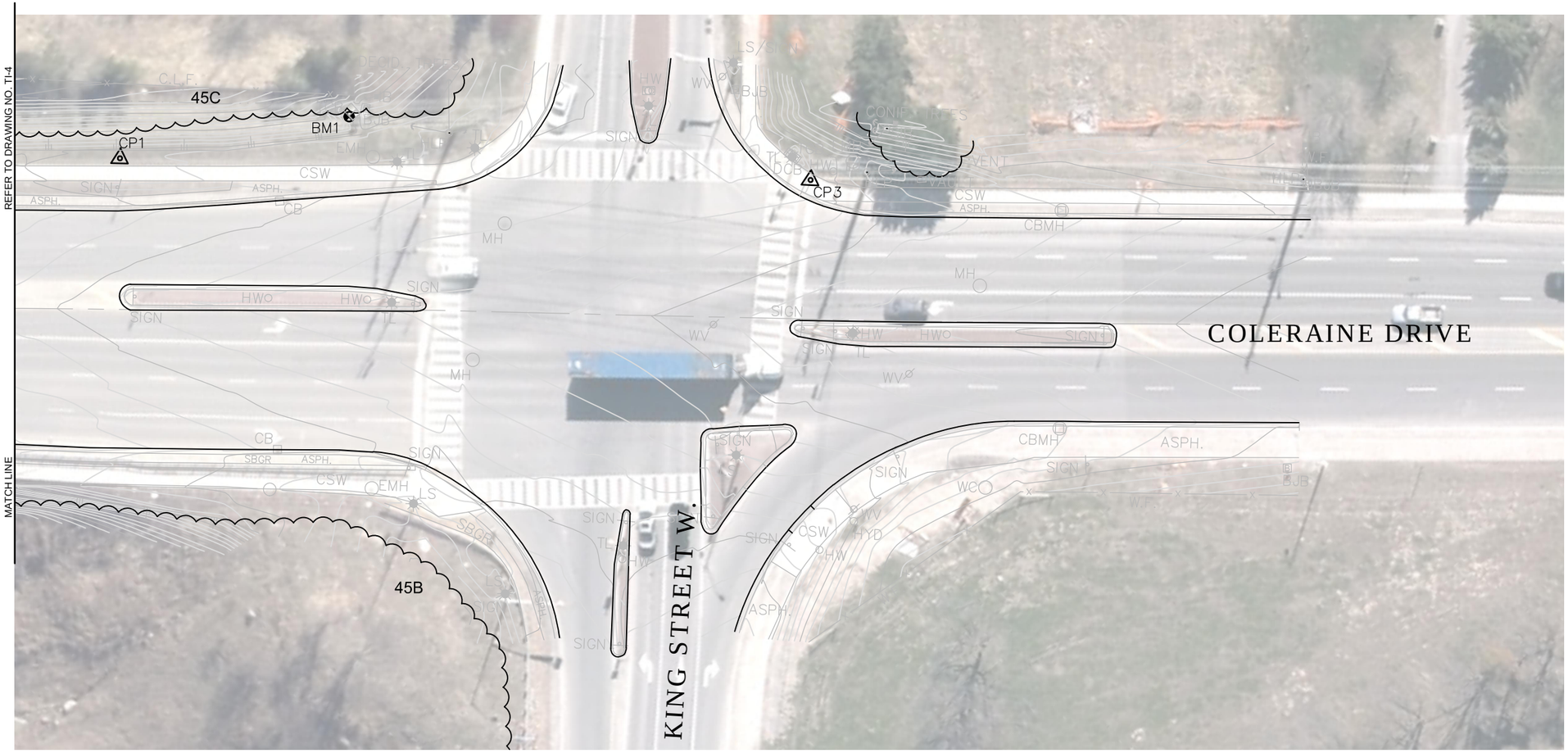
PROJECT:

COLERAINE DRIVE
CPR GRADE SEPARATION

DRAWING:

Tree Inventory

DRAWN BY :	CHECKED BY :	PROJECT
L. May	G. Bunker	B000738
DESIGNED BY :	APPROVED BY :	DRAWING No.
	L. Cullen	
SCALE :	DATE :	
1:500	August 2017	TI-4



LEGEND

140 139 EXISTING TREES WITH TREE INVENTORY NUMBERS (SEE TREE REPORT)

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DESIGNED BY :	APPROVED BY :	DRAWING No.
	L. Cullen	
SCALE :	DATE :	TI-5
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