Region of Peel

King/Albion-Vaughan Intersection Natural Environment Assessment

Original Submission November 2017

Revised: February 2020

B000709

CIMA+
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Region of Peel

King/Albion-Vaughan Intersection Natural Environment Assessment

B000709

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Original Report: November 14, 2017
Revised: February 2020

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1. Introduction

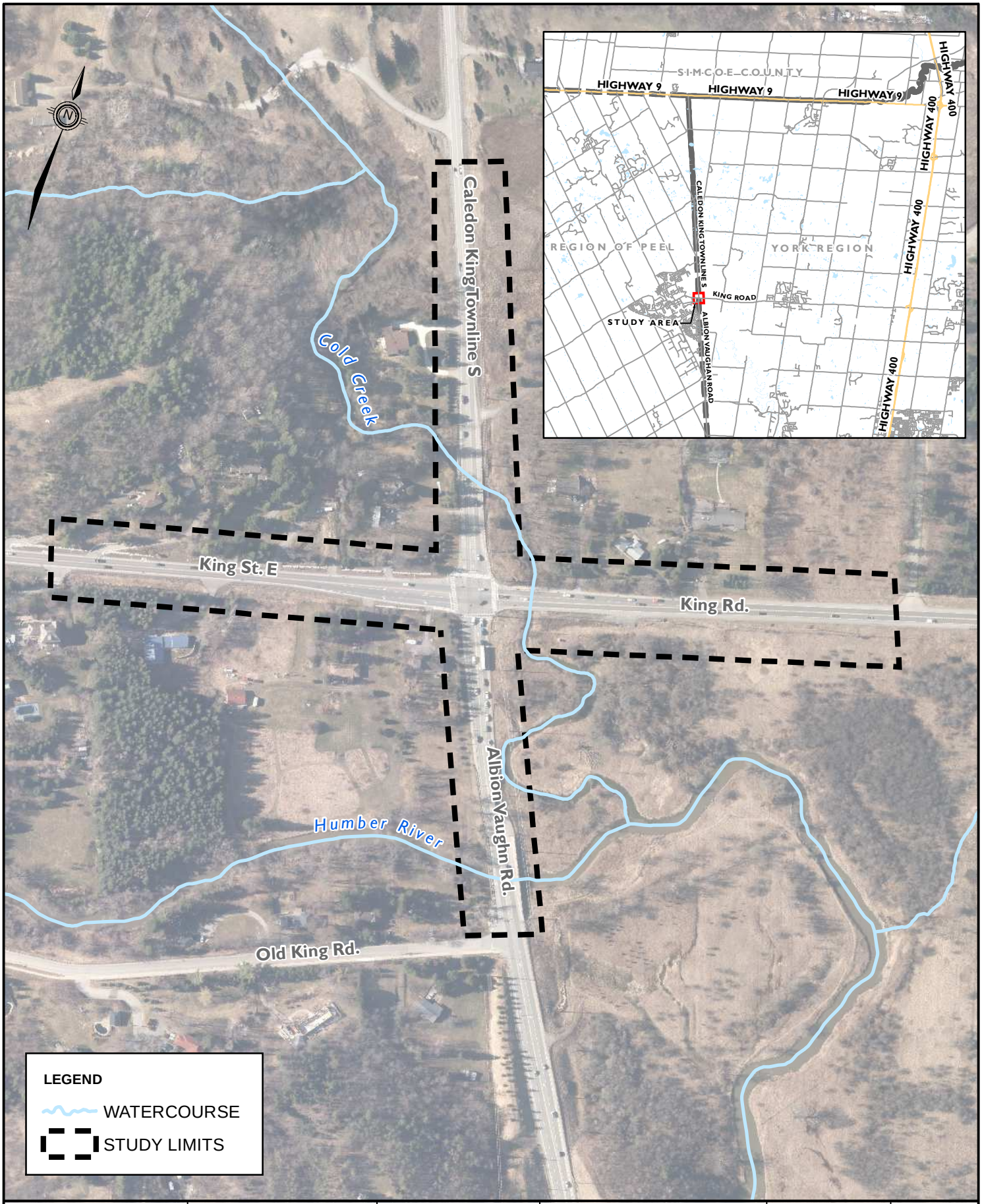
CIMA Canada Inc. (CIMA+) has been retained by the Region of Peel to complete engineering and supporting studies as part of a Municipal Class Environmental Assessment (MCEA) for improvements to the King Street and Albion Vaughan Road Intersection (the 'Study Area'). As part of the MCEA, an assessment of potential impact from the proposed intersection improvements on the natural environment is required. The intersection is located at the boundary of the Towns of Caledon and King, as Albion Vaughan Road is the dividing border between these two municipalities. The Town of Caledon is located within the Region of Peel and the Township of King is located within the Region of York.

2. Scope of the Assessment

The Study Area is focused on the lands surrounding the intersection of King Street and Albion Vaughan Road (Figure 1), which is within the jurisdiction of the Toronto and Region Conservation Authority (TRCA).

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

- Aerial imagery (current and historic)
- Surficial geology mapping (Ontario Geological Survey)
- Data published through available wildlife atlases
- Environmental feature mapping in the Official Plans of the Town of Caledon, Township of King, Region of Peel, and York Region
- Fish / 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
- Data sets provided by TRCA and the Ministry of Natural Resources and Forestry (MNRF)
- Field reconnaissance data collected by CIMA+ ecologists



CLIENT: Region of Peel — Working for you

SCALE: 25 12.5 0 25 50 meters — 1:3,500

PROJECT NAME: PEEL - KING VAUGHAN ENVIRONMENTAL ASSESSMENT

SHEET TITLE: STUDY AREA

PROJECT No: B000709		CLIENT FILE No: ---
DRAFTER: S. ELLIOTT	DESIGNER ---	DRAWING No: 1
APPROVER J. HASLETT	APPROVER ---	
DATE: 09/11/2017		SHEET No: 1 of 1

3. Landscape Features and Designations

3.1 Ecoregion

The Study Area is located within Ecoregion 6E, the second most densely populated ecoregion in Ontario. This ecoregion is part of the Mixedwood Plains of Southern Ontario, characterized by relatively diverse vegetation.

3.2 Surficial Geology

Surficial geology mapping from the Ontario Geological Survey indicates that the Study Area in within two surficial geological units of the Till Plains physiographic region of southern Ontario (Chapman and Putnam 1984). Typical soils in these units are comprised of modern alluvial deposits of clay, silt, sand, and gravel, or glaciolacustrine deposits of clay to silt-textured till.

3.3 Watershed and Watercourses

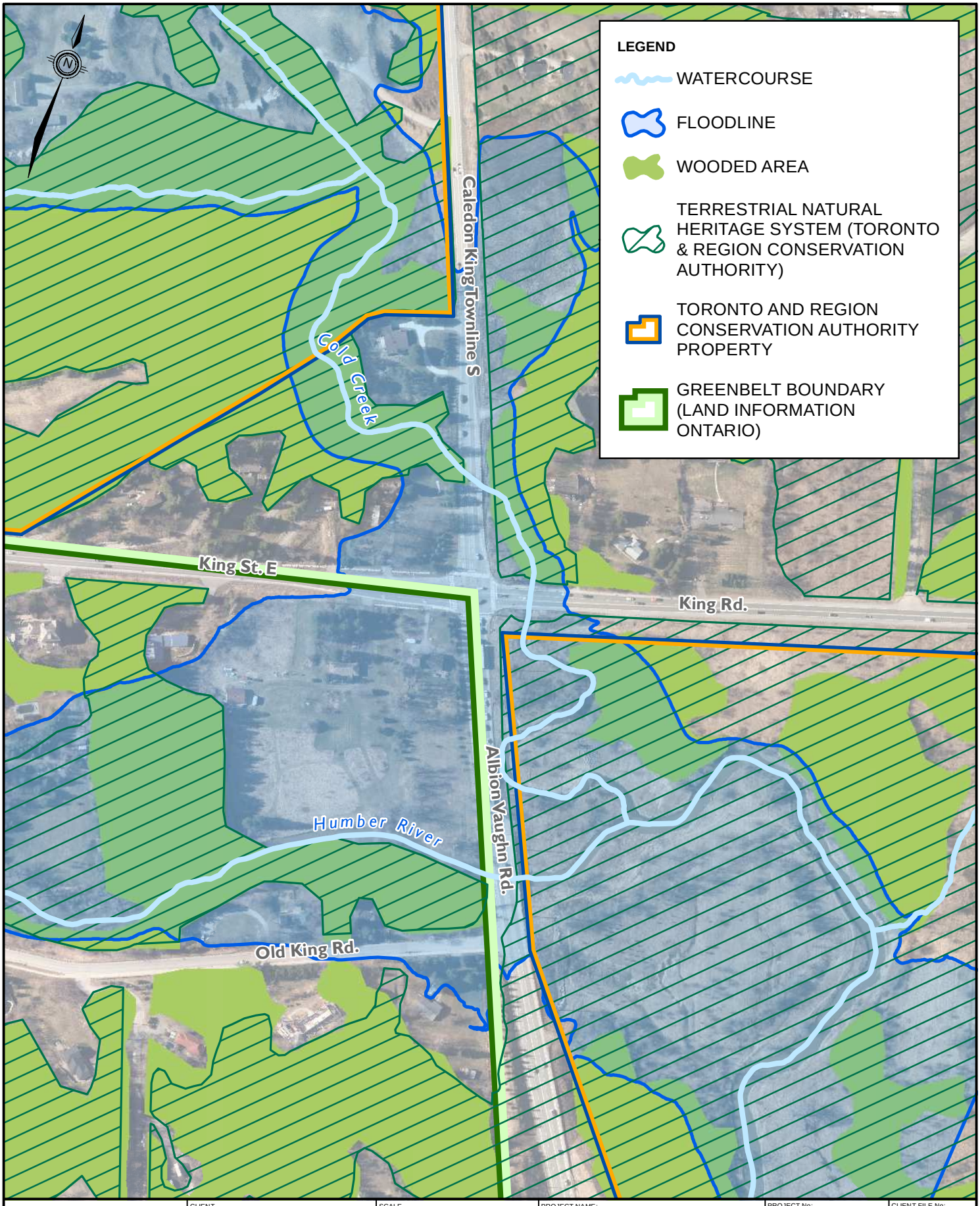
The Study Area is within the middle reaches of the main Humber River watershed. The Humber River flows east across Albion Vaughan Road south of King Street. Cold Creek, a tributary to the Humber River, flows southeast across Albion Vaughan Road and crosses King Street before its confluence with the Humber River (Figure 2).

Both the Humber River and Cold Creek are in TRCA's Middle Humber Fish Management Zone, and both watercourses are considered to be cold water fish habitat.

Fisheries data from TRCA indicate that both Cold Creek and Humber River are habitat for salmonids, with diverse cyprinid and game fish communities. Redside Dace are reported in the Humber River watershed, but were not specifically identified in the watercourse reaches at the Study Area.

3.4 Wetlands

There are no wetlands located within or adjacent to the Study Area.



CIMA+

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PROJECT NAME:
PEEL - KING VAUGHAN ENVIRONMENTAL ASSESSMENT

SHEET TITLE:
EXISTING LANDSCAPE FEATURES AND DESIGNATIONS

PROJECT No: B000709		CLIENT FILE No: ---
DRAFTER: S. ELLIOTT	DESIGNER ---	DRAWING No: 2
APPROVER J. HASLETT	APPROVER ---	
DATE: 09/11/2017		SHEET No: 1 of 1

3.5 Uplands

Uplands in the Study Area consist of forest and meadow (Figure 2). The lands southeast of the intersection are owned by the TRCA, and are undeveloped. The other quadrants of the intersection are development as low density residential. In these areas, natural cover is punctuated with buildings and maintained green spaces.

3.6 Provincial Designations

Most of the Study Area is within the Natural Heritage System of the Protected Countryside of the Provincial Greenbelt Plan (Figure 2).

No Provincially Significant Wetlands or Areas of Natural and Scientific Interest are within or in proximity to the Study Area.

3.7 Conservation Authority Designations

TRCA has identified a Natural Heritage System (NHS) within and around the Study Area, comprised largely of the natural areas around the watercourses and the undeveloped green spaces on the TRCA property (Figure 2).

The valley and stream corridors associated with Cold Creek and the Humber River are also identified as natural environment features by the TRCA.

3.8 Municipal Planning Designations

The eastern side of the intersection is within the jurisdictions of York Region and the Township of King. The western side of the intersection is within the jurisdictions of the Region of Peel and the Town of Caledon.

York Region identifies the eastern side of the Study Area as Regional Greenlands System, which represents the NHS of the Region. Within the Greenlands System, York Region designates the Study Area as woodland.

The Township of King identifies the corner southeast of the intersection as green space.

The Region of Peel identifies the western side of the Study Area as a core area of the Greenlands System. The Region also identifies the section of the Humber River outside of the Greenbelt as a River Valley Connection (southwest of the intersection).

The Town of Caledon identifies the western side of the Study Area as Environmental Policy Area.

4. Biological Community Characterization

4.1 General Approach

Characterization of the biological community in the Study Area was completed by compiling data from published resources, data provided by local agencies, and by conducting a visual assessment of natural heritage features on June 27 and August 23, 2017, with particular focus on aquatic habitat and vegetation composition. Field assessments were limited to the road rights-of-way (ROW) under municipal ownership. Bird, amphibian, reptile, turtle, and mammal information was compiled for a broader area, as these wildlife occupy varying spatial areas. Data records for biological communities are provided as Appendix A.

4.2 Vegetation

A vegetation survey was conducted generally following the Ecological Land Classification (ELC) approach. Polygons were delineated from aerial photograph interpretation, and a survey of plant species was conducted within the publically owned ROW. Observations of plant species beyond the ROW were made where possible. Three community types were identified (Figure 3). No Butternut trees (*Juglans cinerea*) were observed by CIMA+ within the Study Area.

Deciduous Forest (FOD)

Deciduous forest is present along Cold Creek north of King Street, and as a small pocket within the TRCA lands. The forested areas within front and side yards of residential lots on the north side of the intersection show evidence of disturbance in the form of manicured edges, removal of woody debris, and prevalence of invasive species.

The edge of Polygon 2 in the ROW on the west side of Caledon King Townline Road is representative of disturbed woodland edge adjacent to residential development. Tree and shrub species include Blue Spruce (*Picea pungens*), White Spruce (*Picea glauca*), Norway Maple (*Acer platanoides*), Manitoba Maple (*Acer negundo*), Black Walnut (*Juglans nigra*), and Staghorn Sumac (*Rhus typhina*). Herbaceous plant cover is dominated by non-native species in the aster and vetch families.

Polygon 5 at the northeast corner of the intersection is located within the front and side yards of residential lots. The vegetation within the road ROW is characterized by Black Locust (*Robinia pseudoacacia*), Manitoba Maple, Eastern White Cedar (*Thuja occidentalis*), White Spruce, Black Walnut, and horticultural tree species. A single Bur Oak (*Quercus macrocarpa*) is located at the corner of the intersection, and shows 30-

40% dieback in the crown. Herbaceous plant cover is predominantly non-native, with representatives from the aster, carrot, buttercup, and rose families. Buckthorn and grapevine are also prevalent.

Polygon 8 is within the TRCA-owned lands on the south side of King Road, and from roadside observations, appears to contain Manitoba Maple and Bur Oak. The forest is outside of the ROW, and roadside vegetation was limited to manicured grasses.

Cultural Meadow (CUM)

Polygon 4 is a natural open area bordering the east side of Caledon King Townline Road. The southern end of the polygon was examined within the ROW, and was comprised of vetches, asters, milkweed, and scattered willow. Most species were non-native.

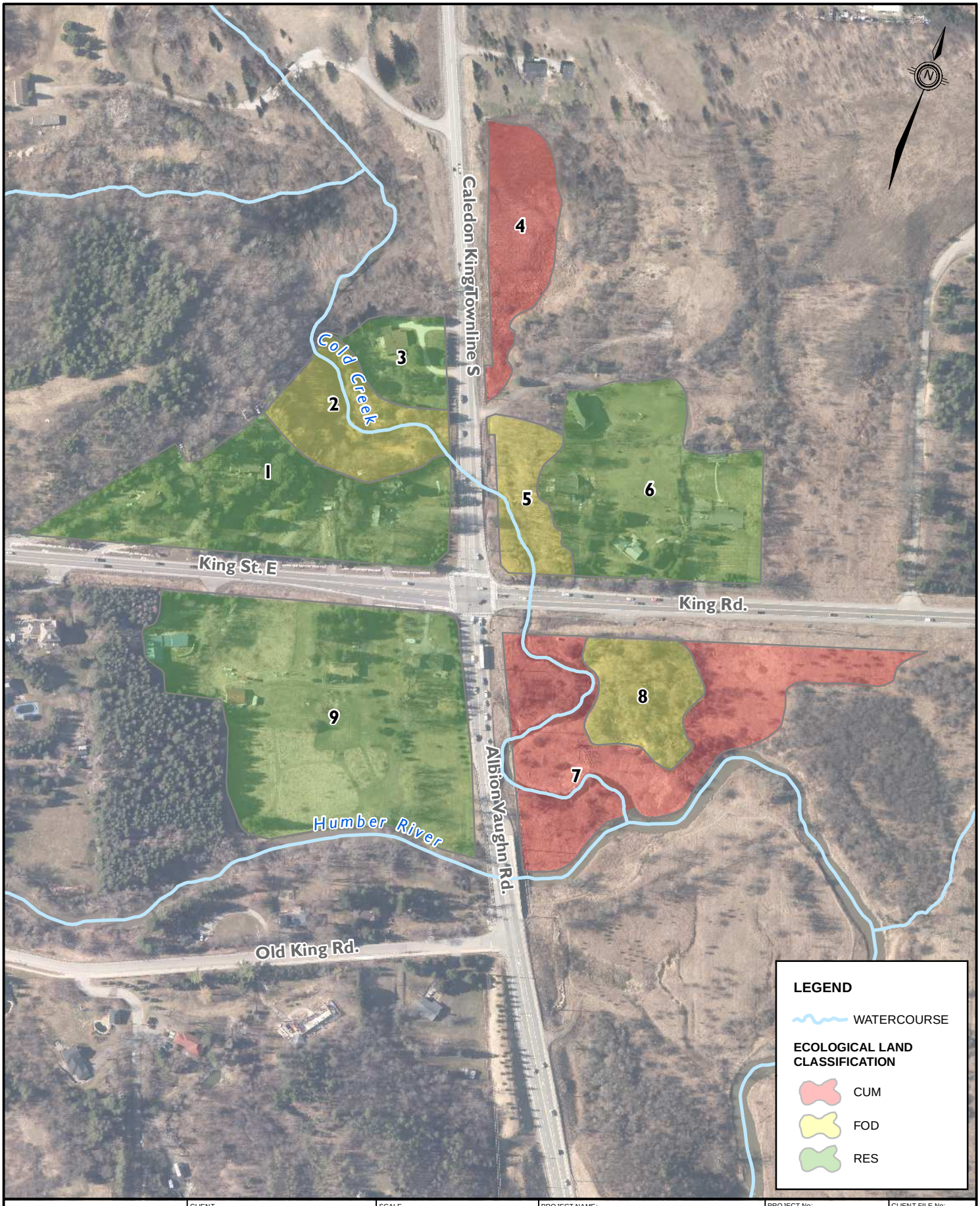
Polygon 7 is within TRCA-owned lands on the south side of King Road. The vegetation within the ROW of this quadrant of the intersection consisted of asters. legumes, milkweed, buttercups, cattails, and grasses. Most species were non-native.

Residential (RES)

Polygons 1, 6, and 9 are characterized by maintained and landscaped areas with screens of trees towards the intersection, predominantly consisting of White Spruce, Blue Spruce, and horticultural tree species. The White Spruce in Polygon 1 along Caledon King Townline Road show ~50% crown dieback. Prior road widening resulted in fill being extended up the trunks of the trees, which likely contributed to declining health.

Only one plant species observed within the Study Area has a rarity classification that triggers policy protection. Rare species are designated as either provincially or federally at risk, or can be Species of Conservation Concern as identified by TRCA (L1 to L3 ranks). Species of Conservation Concern may not currently be rare, but they are highly sensitive to habitat loss and disturbances associated with changes in the surrounding landscape. As such, they are protected under the Provincial Policy Statement.

Pearly Everlasting (*Anaphalis margaritacea*) was observed within the ROW along Polygons 5, 6, and 7. This species is not at risk federally or provincially, but is ranked as L3 by TRCA. Pearly Everlasting is a tolerant species found in a variety of habitats from meadows and fields to roadside ditches, and would likely persist in the Study Area after ground disturbance.



CIMA

CLIENT: Region of Peel Working for you

SCALE: 25 12.5 0 25 50 meters
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PROJECT NAME: PEEL - KING VAUGHAN ENVIRONMENTAL ASSESSMENT

SHEET TITLE: ECOLOGICAL LAND CLASSIFICATION

PROJECT No: B000709			CLIENT FILE No: ---
DRAFTER: S. ELLIOTT	DESIGNER ---		DRAWING No: 3
APPROVER J. HASLETT	APPROVER ---		
DATE: 08/11/2017			SHEET No: 1 of 1

4.3 Birds

No formal breeding bird survey was conducted as part of the field assessment. CIMA+ ecologists collected data on bird species present in the Study Area through opportunistic observations. Data from the Nature Counts eBird program and from TRCA were also compiled and reviewed. The results are summarized in Appendix A, representing all documented observations in the vicinity of the Study Area.

Of the recent bird species observations (within the last 5 years), there are several with rarity classifications that trigger policy protection (Table 1). These include species that are designated as either provincially or federally at risk, or Species of Conservation Concern as identified by TRCA (L1 to L3 ranks). Species of Conservation Concern may not currently be rare, but they are highly sensitive to habitat loss and disturbances associated with changes in the surrounding landscape. As such, they are protected under the Provincial Policy Statement. Table 1 also includes an assessment of the potential use of the study area by the bird species at risk identified as potentially present in the area by the MNRF: Loggerhead Shrike, Chimney Swift, Bank Swallow, Bobolink, Wood Trush and Eastern Wood-pewee.

Table 1. Rare Bird Species in the Vicinity of the Study Area

Common Name ***Scientific Name*** **Rarity Rankings**	**Comments**	**Habitat in Study Area**
Ruffed Grouse *Bonasa umbellus* Federal = NAR Provincial = NAR TRCA Rank = **L3**	Ruffed Grouse were observed by TRCA in a large block of forest approximately 1 km northwest of the Study Area. This species tends to occupy forest interiors with scattered clearings, and would not likely use the forest edge at the road.	No
Hooded Merganser *Lophodytes cucullatus* Federal = NAR Provincial = NAR TRCA Rank = **L3**	Hooded Merganser was observed by TRCA in a pond on private property approximately 1 km south of the Study Area. No suitable habitat is available for this species near the intersection.	No

Common Name ***Scientific Name*** **Rarity Rankings**	**Comments**	**Habitat in Study Area**
Great Blue Heron *Ardea herodias* Federal = NAR Provincial = NAR TRCA Rank = **L3**	Great Blue Heron was reported through eBird in the continuous forested area along the Humber River approximately 2.5 km southeast of the Study Area. This species is commonly found along riverbanks and in grassy areas, which coincides with the habitat available at the watercourse crossings in the Study Area.	Yes
American Woodcock *Scolopax minor* Federal = NAR Provincial = NAR TRCA Rank = **L3**	American Woodcock have been observed by TRCA in forested areas northwest and southeast of the Study Area. The closest observations have been approximately 500 m from the intersection. This species uses habitats ranging from forests, forest edges, old fields, to wet meadows, which is consistent with the vegetation communities at the southeast corner of the intersection.	Yes
Black-billed Cuckoo *Coccyzus erythropthalmus* Federal = NAR Provincial = NAR TRCA Rank = **L3**	Black-billed Cuckoo has been observed by TRCA and reported through eBird in the forested/thicket habitats southeast of the Study Area, with the closest observation approximately 50 m south of King Road. Suitable habitat for this species exists immediately southeast of the intersection.	Yes
Pileated Woodpecker *Dryocopus pileatus* Federal = NAR Provincial = NAR TRCA Rank = **L3**	Pileated Woodpecker has been observed by TRCA in forested areas north and south of the Study Area, with the closest observation approximately 500 m from the intersection. This species prefers mature forests with standing dead trees. Based on field observations, the forested areas immediately adjacent to the intersection are not likely to be used by this species due to the lack of standing dead trees and high levels of disturbance.	No

Common Name *Scientific Name* Rarity Rankings	Comments	Habitat in Study Area
Eastern Wood-pewee *Contopus virens* Federal = **SC** Provincial = **SC** TRCA Rank = L4	Eastern Wood Pewee was observed by TRCA in the forested areas northwest of the intersection, and was also heard during CIMA+ field work. This species is a forest bird that is vulnerable to habitat loss and changes to forest conditions that affect availability of insects to eat.	Yes
Alder Flycatcher *Empidonax alnorum* Federal = NAR Provincial = NAR TRCA Rank = **L3**	Alder Flycatcher has been observed by TRCA and reported through eBird in forested habitat southeast of the Study Area, with the closest observation approximately 2 km from the intersection. Suitable habitat for this species includes dense thicket and brushy areas, typically around water. The habitat surrounding Cold Creek and Humber River in the vicinity of the intersection is not preferable for this species.	No
Least Flycatcher *Empidonax minimus* Federal = NAR Provincial = NAR TRCA Rank = **L3**	Least Flycatcher was observed by TRCA in forest edge / thicket habitat northwest and southeast of the intersection, with the closest observation approximately 1 km from the Study Area. Preferred habitat for this species is open forest, especially around edges.	Yes
Blue-headed Vireo *Vireo solitaries* Federal = NAR Provincial = NAR TRCA Rank = **L3**	Blue-headed Vireo was observed by TRCA approximately 1.5 km north of the Study Area within the interior of a large mixed forest block. This species prefers areas of extensive forest, which is not consistent with the fragmented habitat at the intersection.	No

Common Name *Scientific Name* Rarity Rankings	Comments	Habitat in Study Area
Bank Swallow *Riparia riparia* Federal = **THR** Provincial = **THR** TRCA Rank = **L3**	Bank Swallow was reported through eBird approximately 5 km southeast of the Study Area, in the vicinity of the Humber River. This species uses vertical faces in silt and sand deposits, typically along banks of large rivers and lakes. The banks of Cold Creek and Humber River in the Study Area do not provide suitable habitat for this species.	No
Brown Thrasher *Toxostoma rufum* Federal = NAR Provincial = NAR TRCA Rank = **L3**	Brown Thrasher has been observed by TRCA in thicket and open brushy areas southeast of the intersection, and in the vicinity of the Study Area. This species prefers shrubby areas and is tolerant of urban environments. It would likely use habitat adjacent to the intersection.	Yes
Wood Thrush *Hylocichla mustelina* Federal = **THR** Provincial = **SC** TRCA Rank = **L3**	Wood Thrush has been observed by the TRCA in several locations around the Study Area, with the closest observation approximately 300 m from the intersection. This species prefers mature forest, but will use smaller forest patches where available. Fragmentation of habitat is one of the key threats to this species.	Yes
Ovenbird *Seiurus aurocapilla* Federal = NAR Provincial = NAR TRCA Rank = **L2**	Ovenbird has been observed by TRCA in large forest patches with interior habitat to the north and south of the Study Area. The closest observation is approximately 500 m from the intersection. This species requires large tracts of forest for breeding, and would not likely depend on the forest edges at the intersection.	No

Common Name *Scientific Name* Rarity Rankings	Comments	Habitat in Study Area
Northern Waterthrush *Parkesia noveboracensis* Federal = NAR Provincial = NAR TRCA Rank = **L3**	Northern Waterthrush was observed by TRCA east of the Study Area, with the closest observation approximately 2 km from the intersection. This species prefers interior forest areas along swamps and streams, which is not consistent with habitat in the Study Area.	No
Blue-winged Warbler *Vermivora cyanoptera* Federal = NAR Provincial = NAR TRCA Rank = **L3**	Blue-winged Warbler has been observed by TRCA in several locations around the Study Area. This species prefers brushy old fields and woodland edges, which is consistent with the habitat adjacent to the intersection.	Yes
Nashville Warbler *Oreothlypis ruficapilla* Federal = NAR Provincial = NAR TRCA Rank = **L3**	Nashville Warbler was observed by TRCA north of the Study Area in large forest blocks with interior habitat. This species is most often found in brushy openings of forests or at forest edges. The habitat adjacent to the intersection is unlikely to provide suitable habitat for this species.	No
Mourning Warbler *Geothlypis philadelphia* Federal = NAR Provincial = NAR TRCA Rank = **L3**	Mourning Warbler has been observed by TRCA and reported through eBird from various locations in proximity to the Study Area. This species inhabits brushy second-growth areas and clearings, which is consistent with the rural residential habitats around the intersection.	Yes
American Redstart *Setophaga ruticilla* Federal = NAR Provincial = NAR TRCA Rank = **L3**	American Redstart was observed by TRCA approximately 300 m south of the intersection, in forested habitat along the Humber River. This species prefers open woodlands, often near roads or streams. Habitat adjacent to the intersection is suitable for this species.	Yes

Common Name *Scientific Name* Rarity Rankings	Comments	Habitat in Study Area
Eastern Meadowlark *Sturnella magna* Federal = **THR** Provincial = **THR** TRCA Rank = **L3**	Eastern Meadowlark was reported through the eBird program in an open field approximately 5 km southeast of the intersection. No observations of this species have been made near the Study Area, however this species prefers old pastures and shrubby fields, which are present adjacent to the intersection.	Yes
Eastern Towhee *Pipilo erythrophthalmus* Federal = NAR Provincial = NAR TRCA Rank = **L3**	Eastern Towhee has been observed by TRCA along forest edges outside of the Study Area, with the nearest observation being approximately 300 m west of the intersection. This species utilizes open brushy areas at the edge of woodlands, which is consistent with the habitat available adjacent to the intersection.	Yes
Clay-colored Sparrow *Spizella pallida* Federal = NAR Provincial = NAR TRCA Rank = **L3**	Clay-colored Sparrow was observed by TRCA in a plantation approximately 1.7 km southeast of the Study Area. This species utilizes open woodlands and tends to prefer coniferous habitats. It is not likely to inhabit the areas adjacent to the intersection.	No
Field Sparrow *Spizella pusilla* Federal = NAR Provincial = NAR TRCA Rank = **L3**	Field Sparrow was reported from an open field area approximately 5 km southeast of the Study Area through the eBird program. This species inhabits bushy pastures and woodland edges, but typically not in wide-open exposed areas, like the habitat on the south side of the intersection.	No
Scarlet Tanager *Piranga olivacea* Federal = NAR Provincial = NAR TRCA Rank = **L3**	Scarlet Tanager has been observed by TRCA in forested areas outside of the Study Area. The closest observation is approximately 400 m southeast of the intersection. This species requires large blocks of forest, and tends to not use small forest fragments. Habitat adjacent to the intersection is not suitable for this species.	No

Common Name *Scientific Name* Rarity Rankings	Comments	Habitat in Study Area
Loggerhead Shrike *Lanius ludovicianus* Federal = Endangered (migrans subspecies); no status (Eastern subspecies) Provincial = Endangered TRCA Rank = **LX**	Loggerhead Shrike was not observed by TRCA or listed in eBird within the study area or in proximity. TRCA considers this species as extirpated species (LX) since it has not been recorded in the region in the past 10 years. This species prefers grazing areas where the grass is short. This type of habitat is not present within the study area.	No
Chimney Swift Federal = Threatened Provincial = Threatened TRCA Rank = **L4**	Chimney Swift was not observed by TRCA or listed in eBird within the study area or in proximity. Based on field observations, the forested areas immediately adjacent to the intersection are not likely to be used by this species due to the lack of standing dead trees and high levels of disturbance.	No
Bobolink *Dolichonyx oryzivorus* Federal = Threatened Provincial = Threatened TRCA Rank = **L2**	Bobolink was not observed by TRCA or listed in eBird within the study area or in proximity. This species needs large areas of hayfield which are not present within the study area.	No

4.4 Amphibians and Reptiles

The Ontario Nature Herptile Atlas (Atlas Squares 17PJ05 and 17PJ06) was consulted to determine which amphibian and reptile species are likely to occur in the general vicinity of the Study Area. These records were augmented with data provided by TRCA.

Of the recent herptile species observations (within the last 5 years), there are several with rarity classifications that trigger policy protection (Table 2). These include species that are designated as either provincially or federally at risk, or Species of Conservation Concern as identified by TRCA (L1 to L3 ranks). Species of Conservation Concern may not currently be rare, but they are highly sensitive to habitat loss and disturbances associated with changes in the surrounding landscape. As such, they are protected under the Provincial Policy Statement.

Table 2. Rare Herptile Species in the Vicinity of the Study Area

Common Name ***Scientific Name*** **Rarity Rankings**	**Comments**	**Habitat in Study Area**
Gray Treefrog *Hyla versicolor* Federal = NAR Provincial = NAR TRCA Rank = **L2**	Gray Treefrog was observed by TRCA in forested areas outside of the Study Area, with the nearest observation approximately 400 m southeast of the intersection. This species utilizes mature woodlands near permanent bodies of water. Habitat adjacent to the intersection is likely unsuitable for this species due to fragmentation and ground disturbance.	No
Spring Peeper *Pseudacris crucifer* Federal = NAR Provincial = NAR TRCA Rank = **L2**	Spring Peeper was observed by TRCA in forested areas outside of the Study Area, with the nearest observation approximately 500 m from the intersection. This species utilizes woodlands with vernal pools, and summers in forested areas with good leaf litter and ground cover. They are not often found in manicured urban areas.	No
Northern Leopard Frog *Lithobates pipiens* Federal = NAR Provincial = NAR TRCA Rank = **L3**	Northern Leopard Frog was observed by TRCA along a forested edge associated with Cold Creek upstream of the Study Area. This species occupies a wide range of habitats, and can be found foraging a long distance from waterbodies. Habitat along Cold Creek and Humber River would be suitable for this species.	Yes
Wood Frog *Lithobates sylvaticus* Federal = NAR Provincial = NAR TRCA Rank = **L2**	Wood Frog has been observed by TRCA north and south of the Study Area along forested sections of Cold Creek and Humber River. This species is associated with moist woodlands, requiring good ground cover. They are not often found in manicured urban areas.	No

Common Name *Scientific Name* Rarity Rankings	Comments	Habitat in Study Area
Midland Painted Turtle *Chrysemys picta marginata* Federal = NAR Provincial = NAR TRCA Rank = **L3**	Midland Painted Turtle was observed by TRCA in a pond approximately 1 km south of the Study Area. This species inhabits still or slow-moving waterbodies with basking areas and aquatic vegetation. The habitat of Cold Creek and Humber River in the Study Area is not suitable for this species.	No
Milksnake *Chrysemys picta marginata* Federal = **SC** Provincial = NAR TRCA Rank = **L3**	Milksnake was observed by TRCA north of the Study Area, in open fields adjacent to forest. This species can be common in rural areas where there is an abundance of mice. Habitat adjacent to the intersection could be suitable for this species.	Yes

4.5 Mammals

The Atlas of the Mammals of Ontario was consulted to determine which species are likely to occur in the general vicinity of the Study Area. These records were augmented with data provided by TRCA.

Of the recent mammal species observations (within the last 5 years), only one species has a rarity classification that triggers policy protection. Rare species are designated as either provincially or federally at risk, or can be Species of Conservation Concern as identified by TRCA (L1 to L3 ranks). Species of Conservation Concern may not currently be rare, but they are highly sensitive to habitat loss and disturbances associated with changes in the surrounding landscape. As such, they are protected under the Provincial Policy Statement. Table 3 presents an assessment of the potential use of the study area by the mammal species at risk identified as potentially present in the area by the MNRF: Eastern Small-footed Myotis, Little Brown Myotis, Northern Myotis and Tri-coloured Bat

Table 3. Rare Mammals Species in the Vicinity of the Study Area

Common Name ***Scientific Name*** **Rarity Rankings**	**Comments**[1]	**Habitat in Study Area**
Eastern Small-footed Myotis *Myotis leibii* Federal = NAR Provincial = Endangered TRCA Rank = **L?**	Small-footed myotis roost in a variety of habitats including rocks, rock outcrops, buildings, under bridges, in caves, mines or hollow trees. There are no hollow trees in the study area, however, they could use the existing bridges as a summer roosting habitat.	Yes
Little Brown Myotis *Myotis lucifugus* Federal = Endangered Provincial = Endangered TRCA Rank = **L4**	Little Brown Bats can roost in trees and buildings including attics, abandoned buildings and barns for summer colonies where they can raise their young. They could use the FOD ELC unit as a summer roosting habitat.	Yes
Northern Myotis *Myotis septentrionalis* Federal = Endangered Provincial = Endangered TRCA Rank = **L?**	Northern Myotis use forests including boreal and mixed. They roost in buildings, under loose bark and in tree cavities. There are no boreal or mixed forests within the study area.	No
Tri-coloured Bat *Perimyotis subflavus* Federal = Endangered Provincial = Endangered TRCA Rank = **L?**	Tri-coloured Bat live near the edges of forests. They can roost in rock crevices, caves, buildings and tree foliage. They could use the FOD ELC unit as a summer roosting habitat.	Yes

Within the Study Area, TRCA observed Northern Short-tailed Shrew (*Blarina brevicauda*) from the forested area approximately 900 m northwest of the intersection. This species is not at risk federally or provincially, but is ranked as L3 by TRCA. Northern Short-tailed Shrew is most commonly found in hardwood forests with deep leaf-litter and abundant food, and tends to avoid areas with little cover and extremes of temperature and moisture. The habitat adjacent to the intersection would not be preferred by this species.

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4.6 Fish and Fish Habitat

CIMA+ ecologists conducted a stream assessment on June 27, 2017 to document the biophysical characteristics of both Cold Creek and Humber River. Cold Creek, a

[1] Bats habitat description based on Ontario Nature *Guide to Bats in Ontario* (https://onnaturemagazine.com/bat-guide.html)

tributary to the Humber River, flows southeast across Albion Vaughan Road, then across King Street to the Humber River. The Humber River flows east across Albion Vaughan Road, south of King Street. Characteristics of each watercourse in the Study Area are provided in 4 to 7.

Table 4. Characteristics of Cold Creek Upstream of Caledon King Townline

Average wetted width	2.5 m			
Average depth	0.30 m			
Gradient	5-9 %			
Habitat characteristics	Pool	15%	Run	80%
	Riffle	5%	Chute	0%
Water quality characteristics (qualitative)	Temp.	Cold	Clarity	Turbid (because of rain)
Substrate	Clay 50%	Pebble 20%	Sand 30%	
Vegetation type (%)	*Type*	*Left bank*	*Right bank*	*Dominant species*
	Canopy (≥4m)	80	80	Graminea *sp.*
	Shrub	10	10	Solidago *canadensis*
	Grasses	5	5	*Tussilago farfara*
	Erosion	5	5	
Bank stability	*Left bank*		*Right bank*	
	Mostly stable		Mostly stable	

Table 5. Characteristics of Cold Creek Downstream of Caledon King Townline

Average wetted width	3 m			
Average depth	0.30 m			
Gradient	5-9 %			
Habitat characteristics	Pool	10%	Run	85%
	Riffle	5%	Chute	0%
Water quality characteristics (qualitative)	Temp.	Cold	Clarity	Turbid
Substrate characteristics	Pebble 20%	Sand 30%	Clay 40%	Silt 10%

Vegetation type (%)	*Type*	*Left bank*	*Right bank*	*Dominant species*
	Canopy (≥4m)	-	10	*Graminea sp.*
	Shrubs	-	10	*Acer negundo*
	Grasses	100	80	*Phragmites australis*

Bank stability	*Left bank*	*Right bank*
	Mostly stable	Mostly stable

Table 6. Characteristics of Humber River Upstream of Albion Vaughan Rd

Average wetted width	4 m			
Average depth	0.60 m			
Gradient	5-9 %			
Habitat characteristics	Pool	5%	Run	90%
	Riffle	5%	Chute	0%
Water quality characteristics (qualitative)	Temp.	Cold	Clarity	Turbid
Substrate characteristics	Sand 90%	Silt 10%		

Vegetation type (%)	*Type*	*Left bank*	*Right bank*	*Dominant species*
	Canopy (≥4m)	10	20	*Graminea sp.*
	Shrubs	5	5	*Acer negundo*
	Grasses	85	75	*Tussilago farfara*

Bank stability	*Left bank*	*Right bank*
	Mostly stable	Mostly stable

Table 7. Characteristics of Humber River Downstream of Albion Vaughan Rd

Average wetted width	4 m			
Average depth	0.60 m			
Gradient	5-9 %			
Habitat characteristics	Pool	5%	Run	90%
	Riffle	5%	Chute	0%
Water quality characteristics (qualitative)	Temp.	Cold	Clarity	Turbid
Substrate characteristics	Sand 90%	Silt 10%		
Vegetation type (%)	*Type*	*Left bank*	*Right bank*	*Dominant species*
	Canopy (≥4m)	-	-	*Graminea sp.*
	Shrubs	-	50	*Tussilago farfara*
	Grasses	100	50	*Vicia cracca*
Bank stability	*Left bank*		*Right bank*	
	Mostly stable		Mostly stable	

Fisheries data was compiled from TRCA monitoring information. Two fishery sites, located in Cold Creek and the Main Humber River just southeast of the Study Area, provide recent and historical information about species present in these waterbodies.

The fish species in Cold Creek are characteristic of a cold water community, with Rainbow Trout (*Oncorhynchus mykiss*), Brown Trout (*Salmo trutta*), Mottled Sculpin (*Cottus bairdii*), White Sucker (*Catostomus commersonii*), Northern Hog Sucker (*Hypentelium nigricans*), and American Brook Lamprey (*Lethenteron appendix*). The forage fish community is comprised of common cyprinids such as Fathead Minnow (*Pimephales promelas*), Creek Chub (*Semotilus atromaculatus*), Blacknose Dace (*Rhinichthys atratulus*), and Longnose Dace (*Rhinichthys cataractae*). Darters, Yellow Perch (*Perca flavescens*), Pumpkinseed (*Lepomis gibbosus*) and Brown Bullhead (*Ameiurus nebulosus*) are also present.

The fish species in Humber River are similar to that of Cold Creek, with the addition of a more diverse cyprinid and sunfish community. Both watercourses meet the definition of Commercial, Aboriginal, or Recreational (CRA) fishery under the most recent policies of the Fisheries Act.

No aquatic species at risk are known in the Study Area, however American Brook Lamprey is ranked as L3 by TRCA. This species is associated with stable, high quality

cold water habitats. Maintenance of clean substrates and cold water temperature are important.

5. Impact Assessment and Mitigation Measures

The proposed infrastructure improvements will require expansion of the two structures over Cold Creek and widening of the road within the ROW, as shown on the project plans in Appendix C.

The structure expansion involve work in and around a watercourse that is considered fish habitat, therefore design and mitigation techniques will be required to prevent serious harm as defined in the *Fisheries Act*. Habitat for American Brook Lamprey, a Species of Conservation Concern is also present, therefore techniques to protect its habitat will be required. Recommendations are provided in Sections 5.1 and 5.2.

Widening of the road within the ROW will require removal of roadside vegetation, grading of side slopes, and disturbance at the edge of existing natural communities. Trees that could need to be removed for this project would be located:

West side of Albion Vaughan Rd (south of King Rd)

- Removal of 1 tree on north side of existing driveway

West Side of Albion Vaughan Rd (north of King Rd)

- Removal of 2 trees on south side of existing driveway
- Likely Removal of 6 trees on north side of existing driveway

North side of King Rd (east of Albion Vaughan Rd)

- Removal of 1 tree at corner (large tree, but it has been heavily pruned away from the overhead wires and it has severe dieback)
- Possible Removal of additional trees at bridge widening.

From the assessment of biological communities in the vicinity of the Study Area, 14 rare species are known or likely to occupy the natural habitats adjacent to the intersection. These species are highly sensitive to disturbance and require mitigation measures to prevent long-term impacts to adjacent habitats. Potential threats related to the project are provided in Table 7 and mitigation measures are provided in Section 5.3

Table 8. Rare Species Requiring Habitat Disturbance Mitigation

Habitat Type	Rare Species Concerned	Potential Threats from the Project
Waterbody Edges	Great Blue Heron Northern Leopard Frog	+ Removal of vegetation and cover along waterbodies + Disturbance during critical breeding periods + Sedimentation of water
Fields and Meadows	American Woodcock Eastern Meadowlark Milksnake	+ Disturbance during critical breeding periods + Destruction of ground nests + Road mortality
Open Forest / Thicket	Black-billed Cuckoo Least Flycatcher Brown Thrasher Blue-winged Warbler Mourning Warbler American Redstart Eastern Towhee Eastern Small-footed Myotis Little Brown Myotis Tri-coloured Bat	+ Disturbance during critical breeding/roosting periods + Reduction of insect food supply through application of pesticide
Mature Forest	Eastern Wood-pewee Wood Thrush Eastern Small-footed Myotis Little Brown Myotis Tri-coloured Bat	+ Disturbance during critical breeding/roosting periods + Loss of tree cover at habitat edges + Reduction of insect food supply through application of pesticide

5.1 Aquatic Habitat Protection and Restoration

+ Bank treatments to accompany the structure expansions should include bioengineering techniques at the interface with the channel.

+ The substrate in Cold Creek is suitable spawning habitat for salmonids, so excavation of the stream bed should be kept to a minimum.

+ All disturbed areas must be restored with native species of vegetation, complementary to the adjacent natural communities. A landscape restoration plan must be reviewed and approved by TRCA.

- To protect critical life stages of cold water aquatic species, in-water construction must occur during the July 1 to September 15 cold water work window.
- Instream works must be conducted in an area isolated from the active channel, and fish and wildlife must be salvaged from the work area prior to construction. Fish and wildlife salvage must be completed by a qualified professional with appropriate permits. Fish passage must be maintained at all times.
- The sequence of construction must be planned to minimize the duration of instream work. Hand-labour should be considered for the bioengineering techniques to minimize requirements for machinery to enter the water.

5.2 Sediment and Erosion Control

- Water quality in Cold Creek is good, and the benthic macroinvertebrate community is productive. Stringent sediment and erosion controls must be installed prior to construction, and monitored and maintained throughout construction. TRCA must approve of the proposed sediment and erosion controls.
- Instream works should be conducted during a period of low flow and stable weather. Work should not be planned if extended periods of precipitation is forecasted.
- If water must be pumped/diverted from the site, as per TRCA *Erosion & Sediment Control Guidelines for Urban Construction* (December 2006), dewatering water will be pumped through a filter bag. This filter bag:
  - Will be located on a grassed area a minimum of 30 m away from the receiving waterbody. If a suitable grassed location is not available/possible, the filter bag will need to be placed on top of a rock pad and surrounded with sediment fencing or approved equivalent.
  - The sediment bag must be securely clamped to the outside of the discharge hose to form a secure seal; and
  - The bag will be routinely monitored for efficiency (i.e. outflow) and deficiencies in the bag and hose clamp, and replaced or repaired accordingly.
- Intake pipes must be screened to prevent entrainment of fish and wildlife.
- Sediment and erosion controls must be removed after the site is stabilized to prevent long-term entrapment of wildlife.

5.3 Terrestrial Habitat Protection and Restoration

- Tree removal and site preparation for construction should occur before March 1 or after September 30 to protect habitat of amphibians, reptiles, mammals and migratory birds during critical life stages, and comply with provincial and federal legislation.
- Natural vegetation areas should be fenced to limit construction materials from entering adjacent communities, and to limit wildlife from entering the work area.
- Tree removal should be kept to a minimum where possible. Trees that must be removed should be replaced with native tree species that are complementary to the adjacent natural communities. Replacement plantings of both native and non-native vegetation are required within TRCA regulated areas.
- All disturbed areas must be restored with native species of vegetation, complementary to the adjacent natural communities. A landscape restoration plan must be reviewed and approved by TRCA.
- If possible, construction should be timed toward the end of the summer, when critical nesting periods are complete.
- Contract documents should specify that maintenance of newly vegetated areas should not include the use of pesticides.

5.4 Migratory Birds and Bats Protection

In addition to the measures already listed in section 5.3, the following additional mitigation measures are required during construction in order to comply with the *Migratory Birds Act* and the *Endangered Species Act* requirements to protect migratory birds and bats species at risk that could use the study area (including under the existing bridges) to nest or roost.

- As potential tree/vegetation removal is being proposed in FOD and CUM ELC units, complementary species at risk surveys (e.g. Eastern Wood-pewee, Wood Thrush, Eastern Meadowlark, Eastern Small-footed Myotis, Little Brown Myotis, Tri-coloured Bat) needs to be conducted during detail design to confirm the absence of species at risk from the proposed works area.
- Any wildlife incidentally encountered during construction will not be knowingly harmed.
- Nesting migratory birds will be protected in accordance with the *Migratory Birds Convention Act, 1994.*

- The Proponent/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.
- The Contractor will ensure that the work site is kept clean and that no garbage or food scraps that could attract animals or alter their behaviour are left behind.
- The Contractor will ensure that all debris and solid waste left on site, as well as temporary fencing and signs are removed after completion of the works.
- When possible, work should be completed during daylight hours. 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.
- 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 wildlife road mortality.

- If works affecting bridges are proposed between the months of April and September, put physical barriers in place before April 15 to prevent migratory birds and bats to use the existing bridge structures to be affected by the proposed works to nest or roost. These barriers need to be removed after the works are completed.

6. Policy and Legislation Compliance

6.1 Fisheries Act

The Fisheries Act is administered by DFO, and is intended to manage threats to the sustainability and ongoing productivity of Canada's fisheries. Section 35 of the Act prohibits the carrying on of a work, undertaking or activity that results in serious harm to fish that are part of or support a Commercial Recreational or Aboriginal (CRA) fishery.

Serious harm to fish is defined as the death of fish or the permanent alteration to, or destruction of, fish habitat.

Fish habitat is defined as spawning grounds and any other areas, including nursery, rearing, food supply and migration areas, on which fish depend directly or indirectly to carry out their life processes.

The project will involve work within and adjacent to CRA habitat, therefore the project will require a self-assessment at the detailed design stage to determine if DFO requires review of the proposed works.

6.2 Migratory Birds Convention Act

The Migratory Birds Convention Act regulates the protection and conservation of migratory birds as populations and individuals, and also 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 provides nesting opportunities for migratory birds; therefore, the provisions of this Act apply. The recommended mitigation measures related to tree and vegetation removal provide compliance with this legislation.

6.3 Endangered Species Act

The *Endangered Species Act,* 2007 identifies species at risk in Ontario in an effort to protect them and their habitat and to promote the recovery of these species.

Section 10. (1)(a) of the *Act* states that:

No person shall damage or destroy the habitat of,

(a) a species that is listed on the Species at Risk in Ontario List as an endangered or threatened species; or

Section 17. (1) of the *Act* states that:

The Minister may issue a permit to a person that, with respect to a species specified in the permit that is listed on the Species at Risk in Ontario List as an extirpated, endangered or threatened species, authorizes the person to engage in an activity specified in the permit that would otherwise be prohibited by section 9 or 10. 2007, c. 6, s. 17 (1).

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 5.4, potential impacts to Eastern Wood-pewee, Wood Thrush,

Eastern Meadowlark, Eastern Small-footed Myotis, Little Brown Myotis, Tri-coloured Bat will need to be confirmed through surveys completed during the detail design phase. Consultation and possibly approvals from the MECP could be required if the presence of Eastern Meadowlark, Eastern Small-footed Myotis, Little Brown Myotis, Tri-coloured Bat and their habitat is confirmed within the preferred road network corridors.

Species listed as special concern such as Eastern Wood-pewee and Wood Thrush are not protected under the ESA, however, these species receive protection under the *Fish and Wildlife Conservation Act* and the *Planning Act*. These acts offer protection to individuals and their habitat.

6.4 Planning Act

The Planning Act 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 Region of Peel Official Plan, York Region Official Plan, Township of King Official Plan, and Town of Caledon Official Plan policies apply, as well as the Provincial Policy Statement.

6.4.1 Provincial Policy Statement

The Provincial Policy Statement (PPS) provides the policy foundation for protection of natural features and areas in Ontario. The Policy states that natural heritage systems should be identified, and the biodiversity and ecological function of those systems should be maintained.

Excerpts from relevant sections of PPS policies for protection of significant features are as follows:

> 2.1.5 Development and site alteration shall not be permitted in significant wildlife habitat [this includes habitat for Species of Conservation Concern] unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.
>
> 2.1.6 Development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements.
>
> 2.1.7 Development and site alteration shall not be permitted in habitat of endangered species and threatened species, except in accordance with provincial and federal requirements.

2.1.8 Development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.4, 2.1.5, and 2.1.6 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.

The recommended environmental design and mitigation measures minimize negative impacts on natural heritage, thus conforming to PPS policies.

6.4.2 Regional Official Plans

The Regions of Peel and York identify the lands around the intersection as a component of the Greenlands System, based on the forest cover present. This designation is intended to protect the function and connectivity of the natural heritage system to sustain natural heritage features, areas and ecological functions.

Development and site alteration is generally prohibited in the Greenlands System, however there is an exemption for essential infrastructure that is approved under the Environmental Assessment Act. This project is part of an MCEA, therefore it is in compliance with Regional policies.

6.4.3 Local Official Plans

The Township of King and the Town of Caledon identify Green Space and Environmental Policy Area around the intersection.

Where infrastructure projects are subject to the Environmental Assessment Act, the Town of Caledon and Township of King will participate in the related review process to ensure that the ecosystem principles, goals, objectives, policies and performance measures have been adhered to, to the greatest extent possible.

6.5 Greenbelt Act and Plan

The Greenbelt Act provides permanent protection to agricultural resources and environmentally sensitive land in Ontario. The Greenbelt Plan accompanies the Act, identifying areas where urbanization should not occur, and providing policies for lands within the Greenbelt.

The Study Area is within the Natural Heritage System of the Protected Countryside of the Greenbelt. Infrastructure expansions that are subject to the Environmental Assessment Act are permitted within the Protected Countryside.

6.6 Conservation Authorities Act

The Conservation Authorities Act allows for the establishment of Conservation Authorities with the purpose of developing and implementing watershed-based programs for the conservation, restoration, development, and management of natural resources other than oil, gas, coal, and minerals. Conservation Authorities have the power to develop watershed management plans, work with private landowners for conservation projects, implement flood control measures, own and operate Conservation Areas, and create regulations pertaining to water bodies and flooding.

The Study Area is within the jurisdiction of TRCA; therefore, this Act applies to the Project.

Section 21 of the Act states that:

> Conservation Authorities have the power to study and investigate the watersheds of their jurisdictions and to determine programs whereby the natural resources of the watershed may be conserved, restored, developed and managed.
>
> In addition, the Study Area is within an area regulated by TRCA under O.Reg. 166/06: Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses.

Sections 2 and 3 of the Regulation state that:

> No person shall undertake development in an area regulated by TRCA, unless TRCA is of the opinion that the control of flooding, erosion, dynamic beaches, pollution or the conservation of land will not be affected by the development, and permission is thus granted.

This report will be provided to TRCA for review, and their comments will be considered as part of the MCEA. A permit from TRCA under O. Reg. 166/06 will be required at the detailed design stage.

APPENDIX A

Biological Community Lists

Albion Vaughan Rd / King Road Intersection
Amphibian Records

Common Name	*Scientific Name*	Origin	SARA	ESA	G Rank	N Rank	S Rank	L Rank	Recent Observation	Data Sources
Anura - Frogs and Toads										
Bufonidae - Toads										
American Toad	*Anaxyrus americanus*	N			G5	N5	S5	L4	x	7
Hylidae - Tree Frogs & Allies										
Gray Treefrog	*Hyla versicolor*	N			G5	N5	S5	L2	x	1, 7
Spring Peeper	*Pseudacris crucifer*	N			G5	N5	S5	L2	x	1, 7
Ranidae - True Frogs										
Green Frog	*Lithobates clamitans*	N			G5	N5	S5	L4	x	1, 7
Northern Leopard Frog	*Lithobates pipiens*	N	NAR	NAR	G5	N5	S5	L3	x	1, 7
Wood Frog	*Lithobates sylvaticus*	N			G5	N5	S5	L2	x	1, 7

Common Name	*Scientific Name*	Origin	SARA	ESA	G Rank	N Rank	S Rank	TRCA L Rank	Recent Observation	Data Sources
Galliformes - Grouse, Quail & Allies										
Phasianidae - Partridge, Grouse & Turkeys										
Ruffed Grouse	*Bonasa umbellus*	N			G5	N5	S4	L3	x	7
Anseriformes - Ducks, Geese & Swans										
Anatidae - Ducks, Geese & Swans										
Wood Duck	*Aix sponsa*	N			G5	N5B,N5N	S5	L4	x	7
Mallard	*Anas platyrhynchos*	N			G5	N5B,N5N	S5	L5	x	4
Hooded Merganser	*Lophodytes cucullatus*	N			G5	N5B	S5B,S5N	L3	x	7
Pelecaniformes - Pelicans, Herons, Ibises & Allies										
Ardeidae - Herons & Bitterns										
Great Blue Heron	*Ardea herodias*	N			G5	N5B	S4	L3	x	4
Green Heron	*Butorides virescens*	N			G5	N4B	S4B	L4	x	4
Accipitriformes - Hawks, Kites, Eagles & Allies										
Cathartidae - New World Vultures										
Turkey Vulture	*Cathartes aura*	N			G5	N5B	S5B	L5	x	4
Accipitridae - Hawks, Kites & Eagles										
Cooper's Hawk	*Accipiter cooperii*	N	NAR	NAR	G5	N5B,N4N	S4	L4	x	4, 7
Red-tailed Hawk	*Buteo jamaicensis*	N	NAR	NAR	G5	N5B	S5	L5	x	4
Charadriiformes - Plovers, Sandpipers & Allies										
Scolopacidae - Sandpipers & Phalaropes										
Spotted Sandpiper	*Actitis macularius*	N			G5	N5B	S5	L4	x	7
American Woodcock	*Scolopax minor*	N			G5	N5B	S4B	L3	x	7
Laridae - Gulls, Terns & Skimmers										
Ring-billed Gull	*Larus delawarensis*	N			G5	N5B,N5N	S5B,S4N	L4	x	4
Columbiformes - Pigeons & Doves										
Columbidae - Pigeons & Doves										
Mourning Dove	*Zenaida macroura*	N			G5	N5	S5	L5	x	4
Cuculiformes - Cuckoos & Anis										
Cuculidae - Cuckoos & Anis										
Black-billed Cuckoo	*Coccyzus erythropthalmus*	N			G5	N5B	S5B	L3	x	4, 7
Apodiformes - Swifts & Hummingbirds										
Trochilidae - Hummingbirds										
Ruby-throated Hummingbird	*Archilochus colubris*	N			G5	N5B	S5B	L4	x	7
Coraciiformes - Kingfishers & Allies										
Alcedinidae - Kingfishers										
Belted Kingfisher	*Megaceryle alcyon*	N			G5	N5B	S4B	L4	x	4, 5
Piciformes - Woodpeckers										
Picidae - Woodpeckers										
Downy Woodpecker	*Picoides pubescens*	N			G5	N5	S5	L5	x	4
Hairy Woodpecker	*Picoides villosus*	N			G5	N5	S5	L4	x	4, 7
Northern Flicker	*Colaptes auratus*	N			G5	N5	S4B	L4	x	4, 7
Pileated Woodpecker	*Dryocopus pileatus*	N			G5	N5	S5	L3	x	7
Passeriformes - Perching Birds										
Tyrannidae - Tyrant Flycatchers										
Eastern Wood-pewee	*Contopus virens*	N	SC	SC	G5	N4N5B	S4B	L4	x	3, 7
Alder Flycatcher	*Empidonax alnorum*	N			G5	N5B	S5B	L3	x	4, 7
Least Flycatcher	*Empidonax minimus*	N			G5	N5B	S4B	L3	x	7
Eastern Phoebe	*Sayornis phoebe*	N			G5	N5B	S5B	L5	x	7
Great Crested Flycatcher	*Myiarchus crinitus*	N			G5	N5B	S4B	L4	x	4, 7
Eastern Kingbird	*Tyrannus tyrannus*	N			G5	N5B	S4B	L4	x	4, 7
Vireonidae - Vireos										
Blue-headed Vireo	*Vireo solitarius*	N			G5	N5B	S5B	L3	x	7
Red-eyed Vireo	*Vireo olivaceus*	N			G5	N5B	S5B	L4	x	4, 7
Corvidae - Crows & Jays										
Blue Jay	*Cyanocitta cristata*	N			G5	N5	S5	L5	x	3, 4
American Crow	*Corvus brachyrhynchos*	N			G5	N5B,N5N	S5B	L5	x	4, 5
Bombycillidae - Waxwings										
Cedar Waxwing	*Bombycilla cedrorum*	N			G5	N5	S5B	L5	x	3, 4
Paridae - Chickadees & Titmice										
Black-capped Chickadee	*Poecile atricapillus*	N			G5	N5	S5	L5	x	4
Hirundinidae - Swallows										

Common Name	*Scientific Name*	Origin	SARA	ESA	G Rank	N Rank	S Rank	L Rank	Recent Observation	Data Sources
Tree Swallow	*Tachycineta bicolor*	N			G5	N5B	S4B	L4	x	4, 7
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	N			G5	N5B	S4B	L4	x	4
Bank Swallow	*Riparia riparia*	N	THR	THR	G5	N5B	S4B	L3	x	4
Cliff Swallow	*Petrochelidon pyrrhonota*	N			G5	N5B	S4B	L5	x	4
Sittidae - Nuthatches										
Red-breasted Nuthatch	*Sitta canadensis*	N			G5	N5	S5	L4	x	4, 7
White-breasted Nuthatch	*Sitta carolinensis*	N			G5	N5	S5	L4	x	7
Troglodytidae - Wrens										
House Wren	*Troglodytes aedon*	N			G5	N5B	S5B	L5	x	4
Polioptilidae - Gnatcatchers										
Blue-gray Gnatcatcher	*Polioptila caerulea*	N			G5	N4B	S4B	L4	x	4, 7
Mimidae - Mockingbirds & Thrashers										
Gray Catbird	*Dumetella carolinensis*	N			G5	N5B	S4B	L4	x	4, 7
Brown Thrasher	*Toxostoma rufum*	N			G5	N5B	S4B	L3	x	7
Sturnidae - Starlings										
European Starling	*Sturnus vulgaris*	E			G5	NNA	SNA	L+	x	3, 4
Turdidae - Thrushes										
Eastern Bluebird	*Sialia sialis*	N	NAR	NAR	G5	N5B	S5B	L4	X	4
Wood Thrush	*Hylocichla mustelina*	N	THR	SC	G4	N4B	S4B	L3	x	7
American Robin	*Turdus migratorius*	N			G5	N5B,N5N	S5B	L5	x	3, 4
Fringillidae - Finches										
American Goldfinch	*Spinus tristis*	N			G5	N5B,N5N	S5B	L5	x	3, 4
Parulidae - Wood-Warblers										
Ovenbird	*Seiurus aurocapilla*	N			G5	N5B	S4B	L2	x	7
Northern Waterthrush	*Parkesia noveboracensis*	N			G5	N5B	S5B	L3	x	7
Blue-winged Warbler	*Vermivora cyanoptera*	N			G5	N4B	S4B	L3	x	7
Nashville Warbler	*Oreothlypis ruficapilla*	N			G5	N5B	S5B	L3	x	7
Mourning Warbler	*Geothlypis philadelphia*	N			G5	N5B	S4B	L3	x	4, 7
Common Yellowthroat	*Geothlypis trichas*	N			G5	N5B	S5B	L4	x	4, 7
American Redstart	*Setophaga ruticilla*	N			G5	N5B	S5B	L3	x	7
Yellow Warbler	*Setophaga petechia*	N			G5	N5B	S5B	L5	x	4
Icteridae - Blackbirds										
Red-winged Blackbird	*Agelaius phoeniceus*	N			G5	N5B,N5N	S4	L5	x	4
Eastern Meadowlark	*Sturnella magna*	N	THR	THR	G5	N4B	S4B	L3	x	4
Common Grackle	*Quiscalus quiscula*	N			G5	N5B	S5B	L5	x	3, 4
Brown-headed Cowbird	*Molothrus ater*	N			G5	N5B	S4B	L5	x	4
Orchard Oriole	*Icterus spurius*	N			G5	N4N5B	S4B	L5	x	4, 7
Baltimore Oriole	*Icterus galbula*	N			G5	N5B	S4B	L5	x	3, 4
Emberizidae - Sparrows										
Eastern Towhee	*Pipilo erythrophthalmus*	N			G5	N4N5B	S4B	L3	x	7
Chipping Sparrow	*Spizella passerina*	N			G5	N5B	S5B	L5	x	4
Clay-colored Sparrow	*Spizella pallida*	N			G5	N5B	S4B	L3	x	7
Field Sparrow	*Spizella pusilla*	N			G5	N4B	S4B	L3	x	4
Song Sparrow	*Melospiza melodia*	N			G5	N5B,N5N	S5B	L5	x	4
Cardinalidae - Cardinals & Allies										
Northern Cardinal	*Cardinalis cardinalis*	N			G5	N5	S5	L5	x	4
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	N			G5	N5B	S4B	L4	x	3, 4, 7
Indigo Bunting	*Passerina cyanea*	N			G5	N5B	S4B	L4	x	4, 7
Scarlet Tanager	*Piranga olivacea*	N			G5	N5B	S4B	L3	x	7

Common Name	*Scientific Name*	Origin	SARA	ESA	S Rank	Cold Creek	Humber River	Data Sources
Petromyzontiformes - Lampreys								
Petromyzontidae - Lampreys								
Lamprey sp.	*Icthyomyzon sp.*	?				X		6
American Brook Lamprey	*Lethenteron appendix*	N			S3	X	X	6
Cypriniformes - Carps, Minnows & Allies								
Cyprinidae - Carps & True Minnows								
Brassy Minnow	*Hybognathus hankinsoni*	N			S5	X		6
Common Shiner	*Luxilus cornutus*	N			S5	X	X	6
River Chub	*Nocomis micropogon*	N	NAR	NAR	S4		X	6
Bluntnose Minnow	*Pimephales notatus*	N	NAR	NAR	S5		X	6
Fathead Minnow	*Pimephales promelas*	N			S5	X	X	6
Blacknose Dace	*Rhinichthys atratulus*	N			S5	X	X	6
Longnose Dace	*Rhinichthys cataractae*	N			S5	X	X	6
Creek Chub	*Semotilus atromaculatus*	N			S5	X	X	6
Catostomidae - Suckers								
White Sucker	*Catostomus commersonii*	N			S5	X	X	6
Northern Hog Sucker	*Hypentelium nigricans*	N			S4	X	X	6
Siluriformes - Catfishes								
Ictaluridae - Bullhead Catfishes								
Brown Bullhead	*Ameiurus nebulosus*	N			S5	X		6
Stonecat	*Noturus flavus*	N			S4		X	6
Salmoniformes - Salmons, Trouts & Chars								
Salmonidae - Salmons, Trouts & Chars								
Rainbow Trout	*Oncorhynchus mykiss*	E			SNA	X		6
Brown Trout	*Salmo trutta*	E			SNA	X	X	6
Scorpaeniformes - Scorpionfishes & Sculpins								
Cottidae - Sculpins								
Mottled Sculpin	*Cottus bairdii*	N			S5	X		6
Perciformes - Perches, Basses & Allies								
Centrarchidae - Sunfishes								
Rock Bass	*Ambloplites rupestris*	N			S5		X	6
Pumpkinseed	*Lepomis gibbosus*	N			S5	X	X	6
Largemouth Bass	*Micropterus salmoides*	N			S5		X	6
Percidae - Perches & Darters								
Rainbow Darter	*Etheostoma caeruleum*	N			S4	X	X	6
Fantail Darter	*Etheostoma flabellare*	N			S4	X	X	6
Johnny Darter	*Etheostoma nigrum*	N			S5	X	X	6
Yellow Perch	*Perca flavescens*	N			S5	X		6

Albion Vaughan Rd / King Road Intersection
Mammal Records

Common Name	*Scientific Name*	Origin	SARA	ESA	G Rank	N Rank	S Rank	L Rank	Recent Observations	Breeding	Evidence	Data Sources
Rodentia - Rodents												
Castoridae - Beavers												
Beaver	*Castor canadensis*	N			G5	N5	S5	L4	x			7
Soricomorpha - Shrews & Moles												
Soricidae - Shrews												
Northern Short-tailed Shrew	*Blarina brevicauda*	N			G5	N5	S5	L3	x			7

Albion Vaughan Rd / King Road Intersection
Reptile and Turtle Records

Common Name	*Scientific Name*	Origin	SARA	ESA	G Rank	N Rank	S Rank	L Rank	Recent Observation	Data Sources
Cryptodeira - Turtles										
Emydidae - Pond Turtles										
Midland Painted Turtle	*Chrysemys picta marginata*	N			G5T5	N4	S4	L3	x	1, 7
Squamata - Snakes & Skinks										
Colubridae - Non-venomous Snakes										
Milksnake	*Lampropeltis triangulum*	N	SC	NAR	G5	N3N4	S4	L3	x	1, 7
Eastern Gartersnake	*Thamnophis sirtalis sirtalis*	N			G5T5	N5	S5	L4	x	1, 7

Common Name	Scientific Name	Origin	SARA	ESA	S Rank	L Rank	In ROW	In ROW	In ROW	In ROW	In ROW	In ROW	In ROW	In ROW	In ROW	Data Sources
Apiales - Asterids																
Apiaceae - Celeries, Carrots & Parsleys																
Wild Carrot	Daucus carota	E			SNA	L+				X	X	X	X			3
Cow-parsnip	Heracleum maximum	N			S5	L5				X	X	X	X			3
Asterales - Daiseys																
Asteraceae - Daiseys & Sunflowers																
Common Yarrow	Achillea millefolium	E			SNA	L+	X	X	X	X	X	X	X		X	3
Annual Ragweed	Ambrosia artemisiifolia	N			S5	L5					X	X				3
Pearly Everlasting	Anaphalis margaritacea	N			S5	L3					X	X	X			3
Great Burdock	Arctium lappa	E			SNA	L+					X	X				3
Chicory	Cichorium intybus	E			SNA	L+				X	X	X	X			3
Bull Thistle	Cirsium vulgare	E			SNA	L+				X	X	X	X			3
Oxeye Daisy	Leucanthemum vulgare	E			SNA	L+					X	X				3
Coneflower sp.	Rudbeckia sp.	N-E			S1-SNA	L4-L+				X	X	X	X			3
Canada Goldenrod	Solidago canadensis var. canadensis	N			S5	L5				X	X	X	X			3
Northern Rough-stemmed Goldenrod	Solidago rugosa ssp. rugosa	N			S5	L5				X	X	X	X			3
Common Sow-thistle	Sonchus oleraceus	E			SNA	L+	X	X	X	X	X	X	X		X	3
Common Dandelion	Taraxacum officinale	E			SNA	L+	X	X	X	X	X	X	X		X	3
Yellow Goat's-beard	Tragopogon dubius	E			SNA	L+				X	X	X	X			3
Colt's-foot	Tussilago farfara	E			SNA	L+		X	X	X	X		X			3
Caryophyllales - Carnations, Amaranths, Ice Plants, Cacti & Beets																
Caryophyllaceae - Carnations																
Bouncing-bet	Saponaria officinalis	E			SNA	L+							X			3
Dipsacales - Honeysuckles																
Caprifoliaceae - Honeysuckles																
Honeysuckle sp.	Lonicera sp.	N-E			S5-SNA	L3-L+					X	X				3
Dipsacaceae - Teasels																
Common Teasel	Dipsacus fullonum	E			SNA	L+				X	X	X	X			3
Fabales - Legumes																
Fabaceae - Legumes																
Garden Bird's-foot Trefoil	Lotus corniculatus	E			SNA	L+	X	X	X	X	X	X	X		X	3
Black Locust	Robinia pseudoacacia	E			SNA	L+					X	X				3
Common Crown-vetch	Securigera varia	E			SNA	L+					X	X				3
Yellow Clover	Trifolium aureum	E			SNA	L+	X	X	X	X	X	X	X		X	3
Tufted Vetch	Vicia cracca	E			SNA	L+	X	X	X	X	X	X	X		X	3
Fagales - Beeches, Birches, Alders & Oaks																
Fagaceae - Chestnuts, Beeches & Oaks																
Bur Oak	Quercus macrocarpa	N			S5	L4					X	X		X		3
Gentianales - Dogbanes, Milkweeds & Gentians																
Asclepiadaceae - Milkweeds																
Common Milkweed	Asclepias syriaca	N			S5	L5				X	X	X	X			3
Juglandales - Walnuts & Hickories																
Juglandaceae - Walnuts & Hickories																
Black Walnut	Juglans nigra	N			S4?	L5		X			X	X	X			3
Myrtales - Myrtles																
Onagraceae - Willowherbs																
Common Evening Primrose	Oenothera biennis	N			S5	L5				X	X	X	X			3
Plantaginales - Plantains																
Plantaginaceae - Plantains																
Common Plantain	Plantago major	E			SNA	L+	X	X	X	X	X	X	X		X	3
Polygonales - Smartweeds																
Polygonaceae - Smartweeds																
Curly Dock	Rumex crispus	E			SNA	L+	X	X	X	X	X	X	X		X	3
Ranunculales - Buttercups & Allies																
Ranunculaceae - Buttercups																
Canada Anemone	Anemone canadensis	N			S5	L5				X	X	X	X			3
Tall Buttercup	Ranunculus acris	E			SNA	L+				X	X	X	X			3
Rhamnales - Buckthorns & Grapevines																
Rhamnaceae - Buckthorns																
Glossy Buckthorn	Frangula alnus	E			SNA	L+				X	X	X	X			3
Vitaceae - Grapevines																
Virginia Creeper	Parthenocissus quinquefolia	N			S4?	L5				X	X	X	X			3
Riverbank Grape	Vitis riparia	N			S5	L5				X	X	X	X			3

Common Name	Scientific Name	Origin	SARA	ESA	S Rank	L Rank	In ROW	In ROW	In ROW	In ROW	In ROW	In ROW	In ROW	In ROW	In ROW	Data Sources
Rosales - Roses																
Rosaceae - Roses																
Hawthorn Sp.	Crataegus sp.	N-E			S1-S5	L2-L+					X	X				3
Crabapple Sp.	Malus sp.	N-E			S4	L3-L+					X	X			X	3
Sulphur Cinquefoil	Potentilla recta	E			SNA	L+				X	X	X	X			3
Salicales - Willows, Aspens & Poplars																
Salicaceae - Willows, Aspens & Poplars																
Willow	Salix sp.									X	X	X	X			3
Sapindales - Maples, Sumacs & Allies																
Aceraceae - Maples																
Manitoba Maple	Acer negundo	E			S5	L+	X	X	X	X	X	X	X	X		3
Norway Maple	Acer platanoides	E			SNA	L+		X							X	3
Silver Maple	Acer saccharinum	N			S5	L4									X	3
(Acer rubrum X Acer saccharinum)	Acer x freemanii	E			SNA	L+					X		X			3
Amur Maple	Acer ginnala	E			SNA	L+					X					3
Anacardiaceae - Sumacs																
Staghorn Sumac	Rhus typhina	N			S5	L5		X								3
Saxifragales - Saxifrages																
Cercidiphyllacaea - Katsuras																
Japanese Katsura	Cercidiphyllum japonicum	E				L+									X	3
Scrophulariales - Figworts, Bladderworts, Olives & Allies																
Oleaceae - Olives																
White Ash	Fraxinus americana	N			S4	L5					X	X				3
Common Lilac	Syringa vulgaris	E			SNA	L+					X	X				3
Scrophulariaceae - Figworts & Snapdragons																
Common Mullein	Verbascum thapsus	E			SNA	L+				X	X	X	X			3
Solanales - Bindweeds, Nightshades & Allies																
Convolvulaceae - Bindweeds																
Field Bindweed	Convolvulus arvensis	E			SNA	L+	X	X	X						X	3
Theales - St. John's-worts & Waterworts																
Clusiaceae - St. John's-worts																
St. John's-wort sp.	Hypericum sp.	N-E			S1-S5	L1-L3				X	X	X	X			3
Urticales - Mulberries, Elms & Nettles																
Ulmaceae - Elms																
American Elm	Ulmus americana	N			S5	L5					X	X	X			3
Cyperales - Grasses & Sedges																
Poaceae - Grasses																
Bromus sp.	Bromus sp.	N-E			S4-S5	L2-L4	X	X	X	X	X	X	X		X	3
Reed Canary Grass	Phalaris arundinacea var. arundinacea	N			S5	L+?	X	X	X	X	X	X	X		X	3
European Reed	Phragmites australis ssp. australis	E			SNA	L+				X	X	X	X			3
Typhales - Cattails & Burreeds																
Typhaceae - Cattails																
Cattail	Typha sp.	N				L5							X			3
Pinales - Conifers																
Cupressaceae - Junipers & Cedars																
Eastern White Cedar	Thuja occidentalis	N			S5	L4					X	X				3
Pinaceae - Spruces, Pines, Larches & Firs																
White Spruce	Picea glauca	N			S5	L3		X			X	X				3
Blue Spruce	Picea pungens	E			SNA	L+		X				X			X	3
Filicales - True Ferns																
Dryopteridaceae - Wood Ferns																
Ostrich Fern	Matteuccia struthiopteris	N			S5	L5				X	X	X	X			3

Albion Vaughan Rd / King Road Intersection
Data Sources

#	Year	Source
1	2017	Herp Atlas https://www.ontarionature.org/dynamic-maps/dynamic-maps/
2	1994	Atlas of the Mammals of Ontario https://www.ontarionature.org/discover/resources/publications.php
3	2017	Cima+ Field Assessment
4	2017	E-Bird - data from 2013-2017
5	2013	Nature Counts - data from 2013
6	2017	TRCA Fisheries Data
7	2014	TRCA Flora and Fauna Data - data from 2012-2014

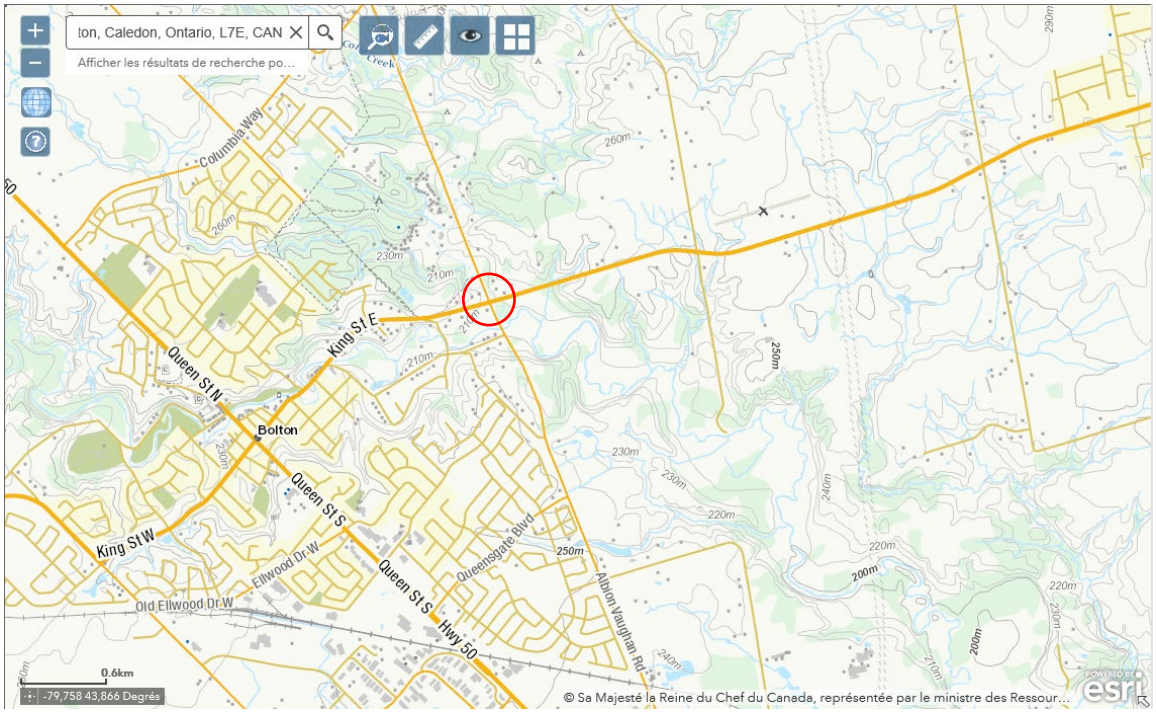
APPENDIX B

Correspondence from MNRF and DFO Aquatic Species at Risk Map

Legend

One or more aquatic species listed under the Species at Risk Act are found (or potentially found) within the coloured areas.

- Critical Habitat
- Extirpated, Endangered, or Threatened
- Special Concern
- Project Location



Fisheries and Oceans Aquatic Species at Risk Map
Consulted Online February 21, 2020

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
Facsimile: (905) 713-7361

Ontario

December 13, 2017

Jennifer Haslett
CIMA
65 King Street East
Bowmansville ON L1C 1N4
905-697-4464 Ext. 6928
Jennifer.haslett@cima.ca

Re: Request for Information for Natural Environmental Study for conducting a Municipal Class Environmental Assessment in advance of improvements to the Albion Vaughan Road and King Street Intersection, Township of King, York Municipality

Dear Mrs. Haslett,

In your email dated December 11, 2017 you requested information on Species at Risk, Fish Dot Information and Natural Heritage Features occurring on or adjacent to the above mentioned location. As of the date of this letter, MNRF has no records of Species at Risk recorded for your study area.

Also attached are fish collection records for Fish Dot information for Fish File Number 94, 36, 699, 31, 597, 358, 596 and 372.

Additionally, the species listed below have the potential to occur in your study area and may require further assessment or field studies to determine presence:

- EASTERN SMALL-FOOTED MYOTIS (Endangered)
- LITTLE BROWN MYOTIS (Endangered)
- NORTHERN MYOTIS (Endangered)
- TRI-COLOURED BAT (Endangered)
- BUTTERNUT (Endangered)
- LOGGERHEAD SHRIKE (Endangered)
- CHIMNEY SWIFT (Threatened)
- BANK SWALLOW (Threatened)
- BOBOLINK (Threatened)
- WOOD TRUSH (Special Concern)
- EASTERN WOOD-PEWEE (Special Concern)

All 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.

Additional natural heritage information including information on wetlands and Areas of Natural and Scientific Interest (ANSIs) can be accessed through Land Information Ontario or through NHIC's Make-a-map.

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

Sincerely,

Emmanuel Ogunjobi
Management Biologist
Ontario Ministry of Natural Resources and Forestry, Aurora District

YORK/KING/XIV 7W

▲ 359

STREAM	STATION NO.	DATE	TIME	WEATHER	AIR TEMP.	# IN CREW
COLD CREEK Mudnumber	143	24/7/72	11:45	CLOUDS-WARM GEN CLEAR	27°C	5

DIMENSIONS	BOTTOM TYPE (%)		BANKS		LAND USE
WIDTH: 25'	ROCK: 28%	SILT: —	HIGH: 70%	STABLE: 95%	recreation
DEPTH 8"	GRAVEL: 45%	CLAY: 2%	LOW: 30%	UNSTABLE: 5%	
VELOCITY: —	SAND: 25%	MUCK: —	UNDERCUT: NOT RECENT		

VOLUME:	ACCESS TO STREAM	OWNERSHIP OF LAND
WATER TEMP: 18°C	RIGHT OF ROAD	Rural

OBSTRUCTIONS	BANK VEGETATION	INSTREAM VEGETATION	TURBIDITY	
FENCES:	MEADOW: ✓	EXTENT: minimal	CLEAR: ✓	COMMENTS:
LARGE BOULDERS:	MARSH:		SLIGHTLY MURKY:	
LOGS:	HDWD. TREES: ✓	TYPE: algae	MURKY:	
FALLEN TREES:	CONIF. TREES:		SILTY:	
DAMS: WIERS	CULTIVATED:		COLOUR:	

STREAM GRADIENT (%)		STREAM COVER (%)	POLLUTION:
STEEP:	RIFFLES: 55%	DENSE: 5%	no visible signs
MODERATE: 50%	POOLS: 10%	PARTLY OPEN: 5%	
LOW: 50%	SMOOTH FLOW: 35%	OPEN: 90%	

FISH SPECIES	NO.
BLACKNOSE DACE	5
LONGNOSE "	7
WHITE SUCKER	46
BROOK TROUT	1
SLIMY SCULPIN	2

FISH REPORTED BY ANGLERS: THIS AREA REF. TO IN DIARY FOR SITE #141 ie. BROWN TROUT

PONDS OBSERVED:

DAMS OBSERVED: artificial weirs of rock

COMMENTS:

WATER CHEMISTRY

DISSOLVED OXYGEN:

pH

TOTAL AKLALINITY:

INVESTIGATORS: 61 Wayne & Marquis 1972

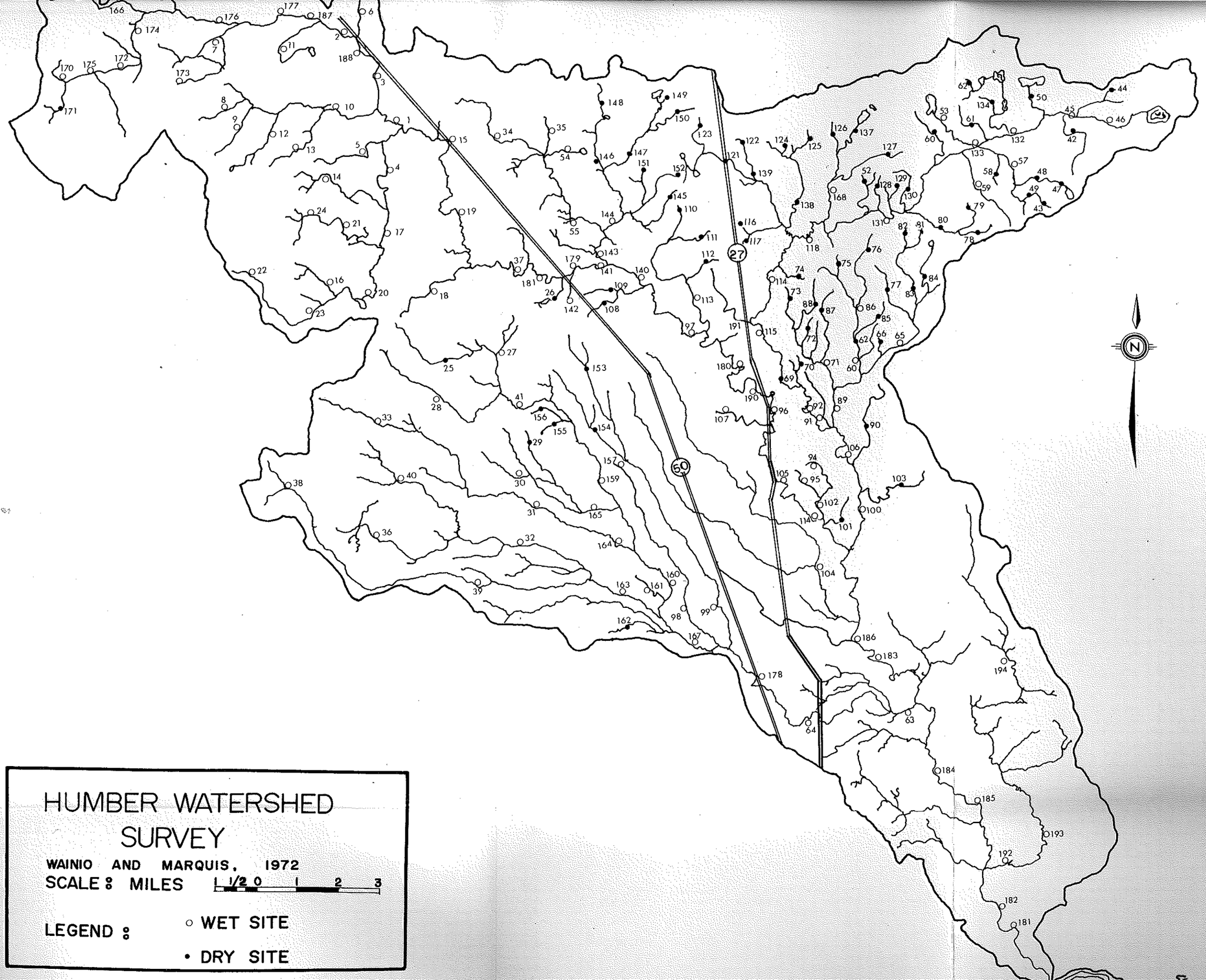
R.H. Rev.

(i) Ministry of Natural Resources Survey by Wainio and Marquis, 1972

This survey was made possible through the combined efforts of General Foods (Canada) Limited, the Ministry of Natural Resources and the Metropolitan Toronto and Region Conservation Authority. General Foods provided salaries for many students to clean up the Humber and a crew was allocated to survey the fish of the Humber. This survey crew was supervised by Allan Wainio of the Ministry and was led by Robert Marquis, a graduate of the University of Toronto. Crew members were Barbara Bielmeier, Edward Littleford, Wendy Rinehart, Cameron Stewart and Laurier Therrien.

The sites for the survey were selected by R. A. Hester and were generally located at places where the river or stream was crossed by a road. In this way 194 sites were selected and were sampled during the months of June, July and August, 1972. R. A. Hester also drew up the data sheets used by the crew at each station. Besides collections of fish and invertebrates, data were gathered on stream dimensions, bottom type, condition of the banks, obstructions in the stream, turbidity, instream and bank vegetation, stream cover, stream gradient and signs of pollution.

Each site that was not dry was examined for fish using seine and dip nets. Those fish captured were identified, counted and returned to the stream. If field identification was not possible, the specimen was preserved in formalin and identified at a later date. One or more bottom samples were collected to determine the invertebrate fauna of the stream bed.


HUMBER WATERSHED
SURVEY
WAINIO AND MARQUIS, 1972
SCALE : MILES 1 1/2 0 1 2 3
LEGEND : ○ WET SITE
• DRY SITE
N
27
50

Ministry of Natural Resources
Ontario

Field Collection Record

FISH

Use Pencil Only

H

No. of Bags 03

Nashville

MNR District No. 74	Name of Waterbody COLD CREEK			Collection No 01	Station No. 03
County or Judicial District YORK	Township KING			Watershed Code 2 11 C 04	
Locality of Waterbody (if other than stream or river)					
Locality of station OLD KING RD. SOUTH OF YORK REGION (11)					
Latitude 43°53'13"	Longitude 79°43'11"	Date Day 18	Month 08	Year 82	Time Started 0900 Hrs.
Duration 1.0 Hrs.	Drainage System LAKE ONTARIO TRIBUTARIES				

Water Type

☐ Spring ☐ Canal ☑ Stream/River ☐ River/Lake Junction ☐ Flooded Area ☐ Pool
☐ Pond ☐ Lake ☐ Muskeg/Bog ☐ Reservoir ☐ Other _____

Water Temperature	Air Temperature	Distance Offshore Min.	Distance Offshore Max.	Depth of Capture Min.	Depth of Capture Max.
12 °C	17 °C	N/A m	N/A m	0.0 m	0.60 m

Plant Type

☐ Submergent ☐ Floating ☐ Emergent ☑ None

Bottom Type

☐ Rock ☑ Boulder ☑ Rubble ☑ Gravel ☑ Sand ☐ Silt
☐ Clay ☐ Muck ☐ Marl ☐ Detritus ☐ Other _____

Current

☐ Still ☐ Slow ☑ Medium ☐ Fast ☐ Quantitative _____ m/s

Water Colour

☑ Colorless ☐ Yellow/Brown ☐ Blue/Green ☐ Turbid ☐ Other _____

Cover (Shore)

☑ None ☐ Sparse ☐ Moderate ☐ Dense ☐ Other _____

Cover (In water)

☐ None ☐ Sparse ☑ Moderate ☐ Dense ☐ Other _____

Gear

☑ Seine ☐ Gill Net ☐ Dip Net ☐ Angled ☐ Trawl ☐ Minnow Trap
☐ Piscicide ☐ Trap Net ☐ Hoop Net ☑ Electrofish ☐ Surber ☐ Other _____

Size of Net (Gill or Seine Net) Length	Size of Net or Mouth (Trap, Hoop or Trawl)	Mesh Size Smallest	Mesh Size Largest
3 m	N/A m	0.5 cm	0.5 cm

Selectivity of Sample

☐ All Kept ☐ None Kept* ☑ Some Kept* ☐ No Catch
*List Released Fish on Back

Preservative

☑ Formalin 10% ☐ Kahle's Solution ☐ Alcohol ☐ Frozen ☐ Other _____

Date Day 18 Month 08 Year 82 Collectors J. MOORE / A. RODRIGUES (M.N.R.C.H.)

Additional Data: Pollution, Colour and Condition of Fish, Parasites, etc.

- BRIDGE UNDER CONSTRUCTION SEVERAL HUNDRED METRES UPSTREAM

Shaded Areas For Main Office Use Only

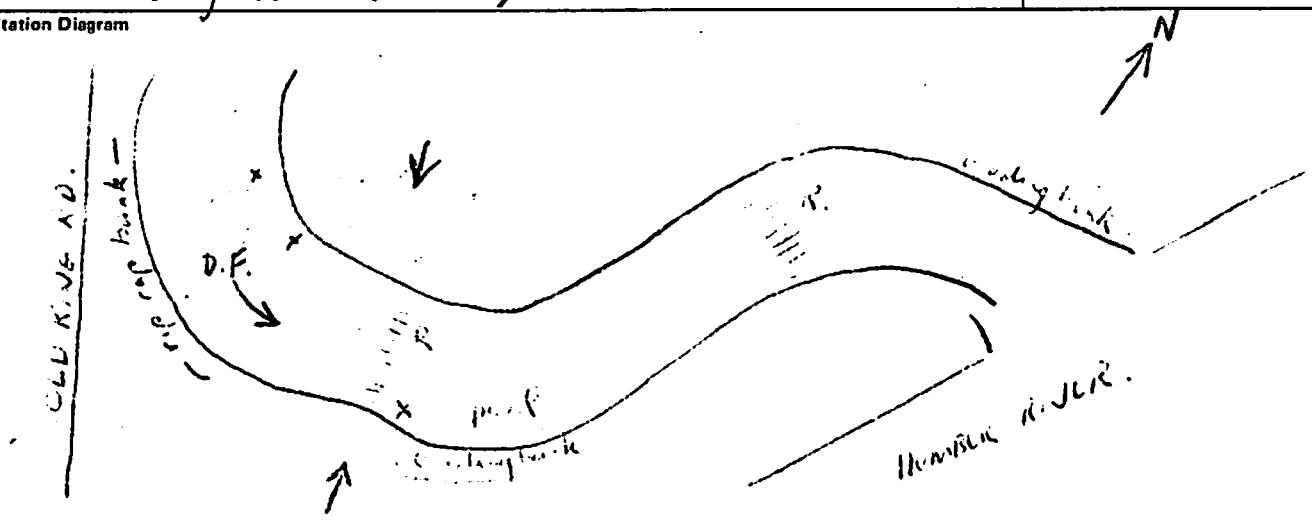
MNR District No.	Name of Waterbody	Collection No.	Station No.

Date Received Day	Month	Year	Township	Latitude ° '	Longitude ° '	Acc.	Page	Of

No.	Scientific Name	Code	Size Range (TL in mm)	OMNR Cat No.	ROM Cat. No.
~50	ASSORTED SMALL FISH		30-150		
	above released.				
	Lampetra lamottei	11			
	Catostomus commersoni	163			
	Notropis cornutus	198			
	Rhinichthys atratulus	210			
	R. cataractae	211			
	Semotilus atromaculatus	212			
	Etheostoma caeruleum	337			
	E. flabellare	339			
	Cottus bairdi	381			
	identified in lab*				

Identified by	Date
Greg Nuhn (MNRCA)	

Station Diagram



Ministry of Natural Resources
Ontario

Field Collection Record

INVERTEBRATES

Use Pencil Only

H

No. of Bags: 04

MNR District No.	74
Name of Waterbody	COLD CREEK
Collection No.	01
Station No.	01
County or Judicial District	YORK ~~REGIONAL MUNICIPALITY~~
Township	KING
Watershed Code	2 HC-04
Locality of Waterbody (if other than stream or river)	
Locality of station	OLD KING RD. SOUTH OF YORK REGION (11) ~~(KING RD.)~~ (BOLTON RD.)
Latitude	43° 53' 3"
Longitude	79° 43' 1"
Date Day / Month / Year	23 / 06 / 82
Time Started	1010 Hrs.
Duration	2.0 Hrs.
Drainage System	LAKE ONTARIO TRIBUTARIES

Water Type
☐ Spring ☐ Canal ☑ Stream/River ☐ River/Lake Junction ☐ Flooded Area ☐ Pool
☐ Pond ☐ Lake ☐ Muskeg/Bog ☐ Reservoir ☐ Other

Water Temperature	Air Temperature	Distance Offshore Min.	Max.	Depth of Capture Min.	Max.
12 °C	18 °C	N/A m	N/A m	0.0 m	0.60 m

Plant Type
☐ Submergent ☐ Floating ☐ Emergent ☑ None

Bottom Type
☐ Rock ☑ Boulder ☑ Rubble ☑ Gravel ☑ Sand ☐ Silt
☐ Clay ☐ Muck ☐ Marl ☐ Detritus ☐ Other

Current
☐ Still ☐ Slow ☑ Medium ☐ Fast ☐ Quantitative ______ m/s

Water Colour
☐ Colorless ☐ Yellow/Brown ☐ Blue/Green ☑ Turbid ☐ Other

Cover (Shore)
☑ None ☐ Sparse ☐ Moderate ☐ Dense ☐ Other

Cover (In water)
☐ None ☐ Sparse ☑ Moderate ☐ Dense ☐ Other

Gear
☐ Seine ☐ Gill Net ☐ Dip Net ☐ Angled ☐ Trawl ☐ Minnow Trap
☐ Piscicide ☐ Trap Net ☐ Hoop Net ☐ Electrofish ☑ Surber ☐ Other

Size of Net (Gill or Seine Net) Length	Size of Net or Mouth (Trap, Hoop or Trawl)	Mesh Size Smallest	Largest
N/A m	N/A m	N/A cm	N/A cm

Selectivity of Sample
☑ All Kept ☐ None Kept* ☐ Some Kept* ☐ No Catch
*List Released Fish on Back

Preservative
☑ Formalin 10% ☑ Kahle's Solution ☐ Alcohol ☐ Frozen ☐ Other

Date Day	Month	Year	Collectors
23	06	82	S. [illegible] (M.T.R.C.A.)

Additional Data: Pollution, Colour and Condition of Fish, Parasites, etc.

~~4 [illegible]~~

BRIDGE UNDER CONSTRUCTION SEVERAL HUNDRED METRES UPSTREAM.

Shaded Areas For Main Office Use Only

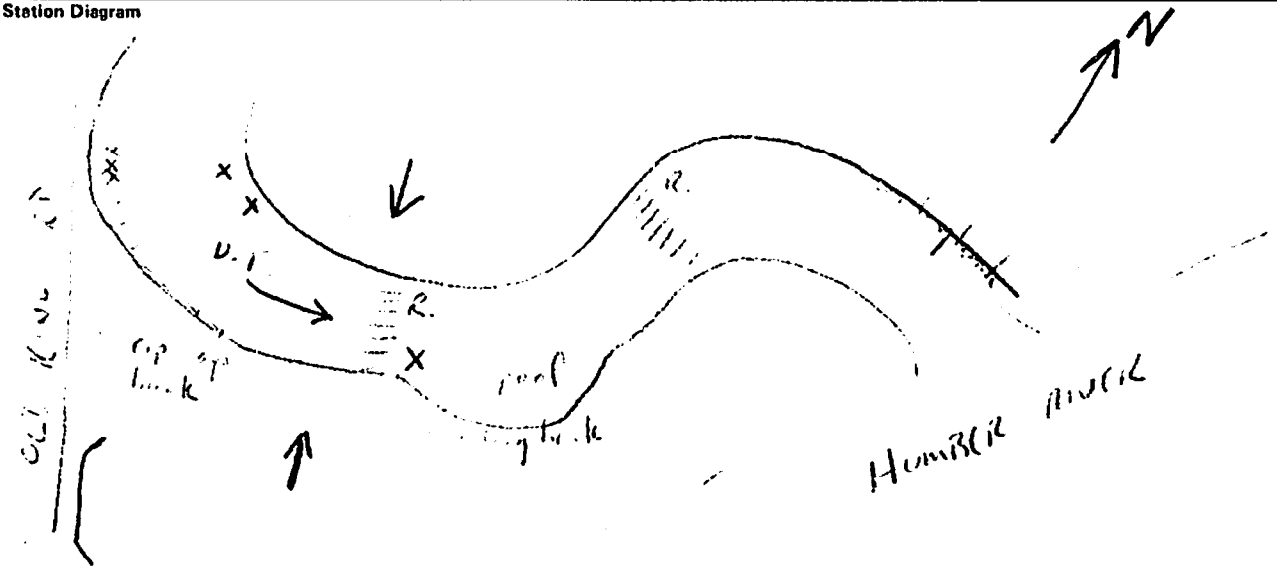
MNR District No.	Name of Waterbody	Collection No.	Station No.

Date Received Day	Month	Year	Township	Latitude ° '	Longitude ° '	Acc.	Page	Of

No.	Scientific Name	Code	Size Range (T L in mm)	OMNR Cat No.	ROM Cat. No.

Identified by	Date

Station Diagram



YORK/KING/XIV 7W

▲ 359

STREAM	STATION NO.	DATE	TIME	WEATHER	AIR TEMP.	# IN CREW
COLD CREEK Mudumber	143	24/7/72	11:45	CLOUDS-WARM GEN. CLEAR	27°C	5

DIMENSIONS	BOTTOM TYPE (%)		BANKS		LAND USE
WIDTH: 25'	ROCK: 28%	SILT: —	HIGH: 70%	STABLE: 95%	recreation
DEPTH 8"	GRAVEL: 45%	CLAY: 2%	LOW: 30%	UNSTABLE: 5%	
VELOCITY: —	SAND: 25%	MUCK: —	UNDERCUT: NOT RECENT		

VOLUME:	ACCESS TO STREAM	OWNERSHIP OF LAND
WATER TEMP: 18°C	RIGHT OF ROAD	rural

OBSTRUCTIONS	BANK VEGETATION	INSTREAM VEGETATION	TURBIDITY	
FENCES:	MEADOW: ✓	EXTENT: minimal	CLEAR: ✓	COMMENTS:
LARGE BOULDERS:	MARSH:		SLIGHTLY MURKY:	
LOGS:	HDWD. TREES: ✓	TYPE: algae	MURKY:	
FALLEN TREES:	CONIF. TREES:		SILTY:	
DAMS: WIERS	CULTIVATED:		COLOUR:	

STREAM GRADIENT (%)		STREAM COVER (%)	POLLUTION:
STEEP:	RIFFLES: 55%	DENSE: 5%	no visible signs
MODERATE: 50%	POOLS: 10%	PARTLY OPEN: 5%	
LOW: 50%	SMOOTH FLOW: 35%	OPEN: 90%	

FISH SPECIES	NO.
BLACKNOSE DACE	5
LONGNOSE "	7
WHITE SUCKER	46
BROOK TROUT	1
SLIMY SCULPIN	2

FISH REPORTED BY ANGLERS

THIS AREA REF. TO IN DIARY FOR SITE #141 IC. BROWN TROUT

PONDS OBSERVED:

DAMS OBSERVED: artificial weirs of rock

COMMENTS:

WATER CHEMISTRY

DISSOLVED OXYGEN:

pH

TOTAL AKLALINITY:

INVESTIGATORS: 61 Wayne & Marquis 1972

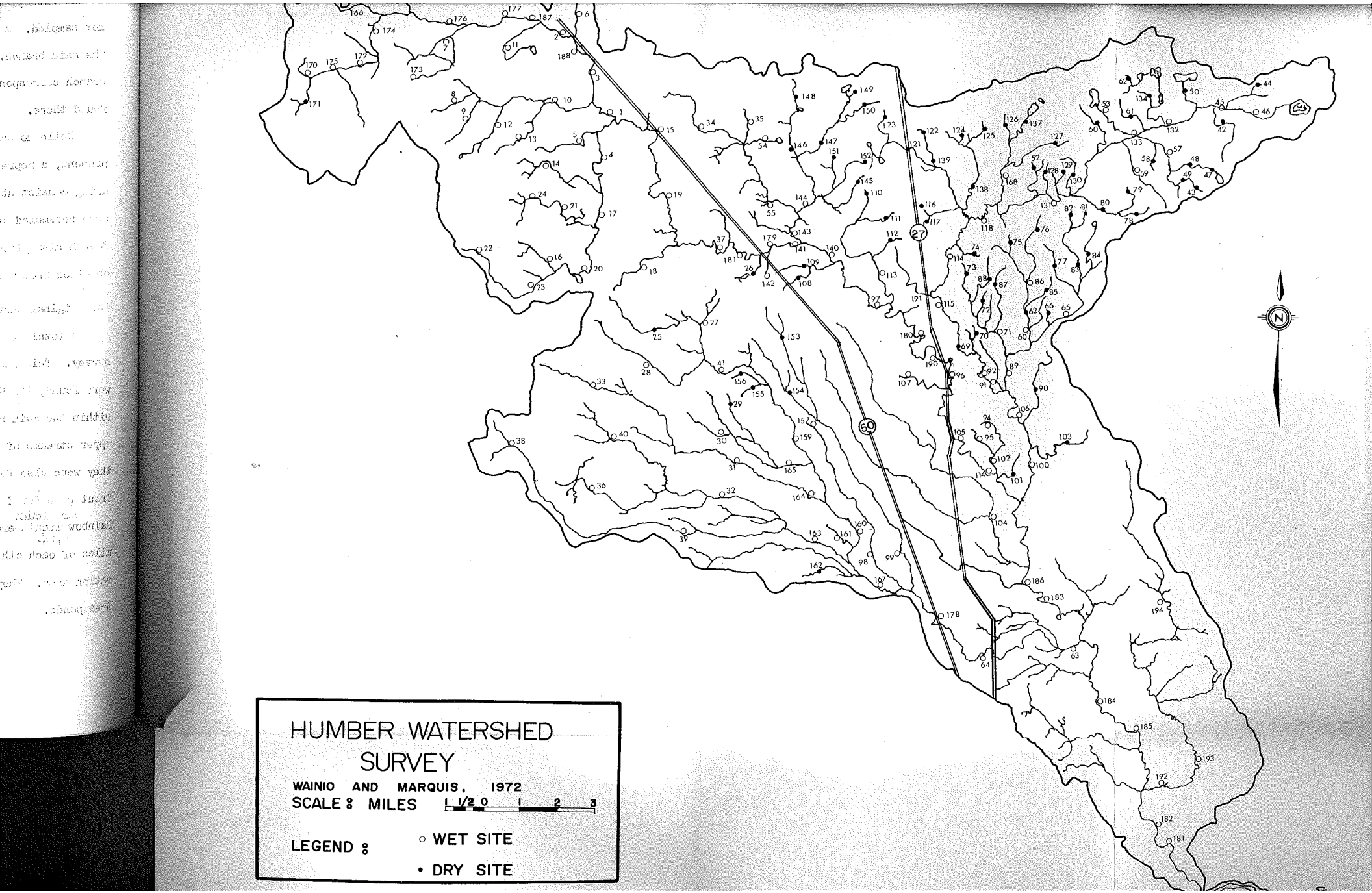
R.H. Rev.

(i) Ministry of Natural Resources Survey by Wainio and Marquis, 1972

This survey was made possible through the combined efforts of General Foods (Canada) Limited, the Ministry of Natural Resources and the Metropolitan Toronto and Region Conservation Authority. General Foods provided salaries for many students to clean up the Humber and a crew was allocated to survey the fish of the Humber. This survey crew was supervised by Allan Wainio of the Ministry and was led by Robert Marquis, a graduate of the University of Toronto. Crew members were Barbara Bielmeier, Edward Littleford, Wendy Rinehart, Cameron Stewart and Laurier Therrien.

The sites for the survey were selected by R. A. Hester and were generally located at places where the river or stream was crossed by a road. In this way 194 sites were selected and were sampled during the months of June, July and August, 1972. R. A. Hester also drew up the data sheets used by the crew at each station. Besides collections of fish and invertebrates, data were gathered on stream dimensions, bottom type, condition of the banks, obstructions in the stream, turbidity, instream and bank vegetation, stream cover, stream gradient and signs of pollution.

Each site that was not dry was examined for fish using seine and dip nets. Those fish captured were identified, counted and returned to the stream. If field identification was not possible, the specimen was preserved in formalin and identified at a later date. One or more bottom samples were collected to determine the invertebrate fauna of the stream bed.


HUMBER WATERSHED
SURVEY
WAINIO AND MARQUIS, 1972
SCALE : MILES 1/2 0 1 2 3
LEGEND : ○ WET SITE
• DRY SITE
27
50
N

Ministry of Natural Resources
Ontario

Field Collection Record

Use Pencil Only

Δ94

No. of Bags

MNR District No. | Name of Waterbody: Bolton Main downstream from trib. | Collection No. | Station No.

County or Judicial District | Township | Watershed Code: H11a-15 ba

Locality of Waterbody (if other than stream or river)

Locality of station: Albion-King Townline, 100 m S. of King Rd.

Latitude: 43° 53' 19" | Longitude: 79° 43' 05" | Date Day: 04 | Month: 06 | Year: 92 | Time Started | Hrs.

Duration | Hrs. | Drainage System

Water Type

☐ Spring ☐ Canal ☒ Stream/River ☐ River/Lake Junction ☐ Flooded Area ☐ Pool
☐ Pond ☐ Lake ☐ Muskeg/Bog ☐ Reservoir ☐ Other

Water Temperature	Air Temperature	Distance Offshore Min.	Distance Offshore Max.	Depth of Capture Min.	Depth of Capture Max.
17.0 °C	24.0 °C	m	m	m	m

Plant Type

☒ Submergent ☐ Floating ☐ Emergent ☐ None

Bottom Type

☐ Rock ☐ Boulder ☐ Rubble ☒ Gravel ☒ Sand ☐ Silt
☐ Clay ☒ Muck ☐ Marl ☐ Detritus ☐ Other

Current

☐ Still ☒ Slow → ☐ Medium ☐ Fast ☐ Quantitative ____ m/s

Water Colour

☒ Colorless ☐ Yellow/Brown ☐ Blue/Green ☒ Turbid ☐ Other

Cover (Shore)

☒ None ☐ Sparse ☐ Moderate ☐ Dense ☐ Other

Cover (In water)

☒ None ☐ Sparse ☐ Moderate ☐ Dense ☐ Other

Gear

☒ Seine ☐ Gill Net ☒ Dip Net ☐ Angled ☐ Trawl ☐ Minnow Trap
☐ Piscicide ☐ Trap Net ☐ Hoop Net ☒ Electrofish ☐ Surber ☐ Other

Size of Net (Gill or Seine Net) Length	Size of Net or Mouth (Trap, Hoop or Trawl)	Mesh Size Smallest	Mesh Size Largest
1.5, 3 m	m	cm	cm

Selectivity of Sample

☐ All Kept ☐ None Kept* ☒ Some Kept* ☐ No Catch
*List Released Fish on Back

Preservative

☒ Formalin ☐ Kahle's Solution ☐ Alcohol ☐ Frozen ☐ Other

Date Day | Month | Year | Collectors: WICHERT

Additional Data: Pollution, Colour and Condition of Fish, Parasites, etc.

Sedges
grasses
, mustard flower

Shaded Areas For Main Office Use Only

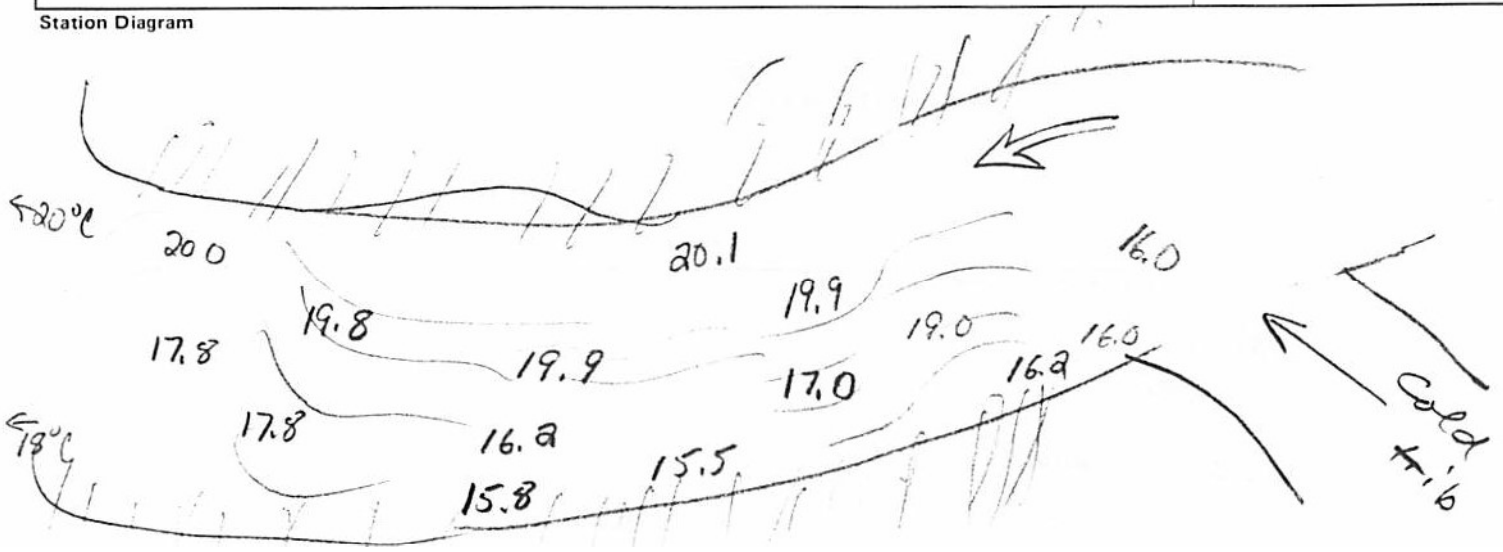
MNR District No.	Name of Waterbody	Collection No.	Station No.

Date Received Day	Month	Year	Township	Latitude ° '	Longitude ° '	Acc.	Page	Of

No.	Scientific Name	Code	Size Range (T.L. in mm)	OMNR Cat No.	ROM Cat. No.
5	White Sucker		22.2, 24.0		
10	Rock bass		17.2, 15.6, 4.2		
29	Blntnose Minn.		6.4, 3.2		
23+1=24	Blacknose Dace		2.8, 5.3 7.2		
35+1=36	Common Shiner		13.7 4.2		
32+1=33	Creek chub		11.0		
7	Longnose dace		7.0, 8.6		
3	Northern Hog sucker		9.9, 13.7		
6	Fathead (green)?				
	271 s				

Identified by	Date

Station Diagram



Ministry of Natural Resources Ontario

(4)

Field Collection Record

A 597

Use Pencil Only

No. of Bags |

MNR District No.	Name of Waterbody "Cold Creek"	Collection No.	Station No. H34
County or Judicial District	Township		Watershed Code H

Locality of Waterbody (if other than stream or river)

Locality of station: 1 km NE Bolton

Latitude 43° 53' 55" | Longitude 79° 43' 05" | Date Day 11 | Month 07 | Year 84 | Time Started 1:25 Hrs. p.m.

Duration . Hrs. | Drainage System

Water Type
- ☐ Spring ☐ Canal ☑ Stream/River ☐ River/Lake Junction ☐ Flooded Area ☐ Pool
- ☐ Pond ☐ Lake ☐ Muskeg/Bog ☐ Reservoir ☐ Other

Water Temperature	Air Temperature	Distance Offshore Min.	Max.	Depth of Capture Min.	Max.
15 °C	24° °C	m	m	voltage 400 m	time 618 m

Plant Type
- ☐ Submergent ☐ Floating ☐ Emergent ☑ None

Bottom Type
- ☐ Rock ☐ Boulder ☑ Rubble ☑ Gravel ☑ Sand ☑ Silt
- ☐ Clay ☐ Muck ☐ Marl ☐ Detritus ☐ Other

Current
- ☐ Still ☑ Slow ☐ Medium ☐ Fast ☐ Quantitative m/s

Water Colour
- ☐ Colorless ☐ Yellow/Brown ☑ Blue/Green (Green circled) ☑ Turbid ☐ Other

Cover (Shore)
- ☐ None ☐ Sparse ☑ Moderate ☐ Dense ☐ Other

Cover (In water)
- ☐ None ☑ Sparse ☐ Moderate ☐ Dense ☐ Other

Gear
- ☐ Seine ☐ Gill Net ☐ Dip Net ☐ Angled ☐ Trawl ☐ Minnow Trap
- ☐ Piscicide ☐ Trap Net ☐ Hoop Net ☑ Electrofish ☐ Surber ☐ Other

Size of Net (Gill or Seine Net) Length	Size of Net or Mouth (Trap, Hoop or Trawl)	Mesh Size Smallest	Largest
m	m	cm	cm

Selectivity of Sample
- ☐ All Kept ☐ None Kept* ☐ Some Kept* ☐ No Catch

*List Released Fish on Back

Preservative
- ☐ Formalin ☐ Kahle's Solution ☐ Alcohol ☐ Frozen ☐ Other

Date Day 11 | Month 07 | Year 84 | Collectors: STEEDMAN

Additional Data: Pollution, Colour and Condition of Fish, Parasites, etc.

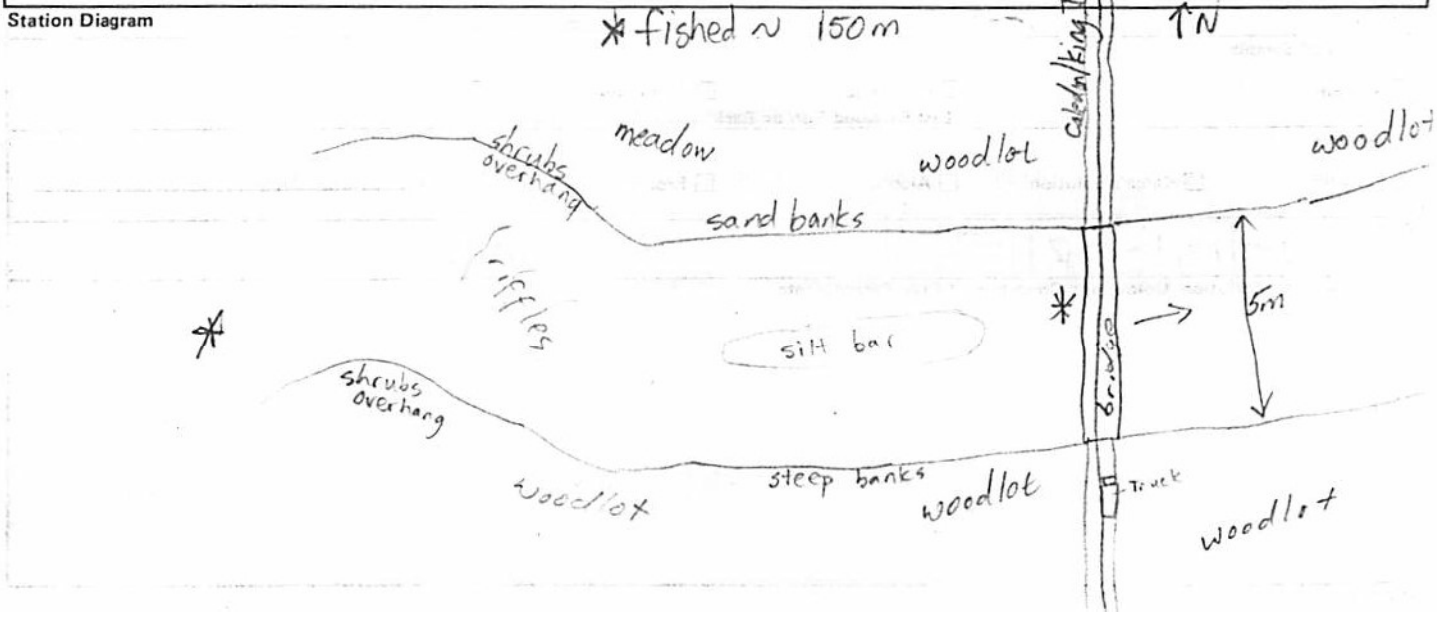
Shaded Areas For Main Office Use Only

MNR District No.	Name of Waterbody		Collection No.	Station No.
Date Received Day / Month / Year	Township	Latitude ° '	Longitude ° '	Acc. / Page / Of

No.	Scientific Name	Code	Size Range (T.L. in mm)	OMNR Cat No.	ROM Cat. No.
11	wh. sucker – 8" – IIII				618
	10" – I				400
	11" – II				
	12" – II				
	9" – I				
	13" – I				
52	BAIRDI sculpin – ~~IIII~~ ~~IIII~~ ~~IIII~~ ~~IIII~~ ~~IIII~~ ~~IIII~~ ~~IIII~~ III		~~IIII~~ ~~IIII~~	IIII	
17	long nose dace – ~~IIII~~ ~~IIII~~ ~~IIII~~ II				
2	chub – 3" – II				
1	B.N. DACE I				
83					

Identified by | Date

Station Diagram



-31

John Almond
Ontario Ministry of Natural Resources
50 Bloomington Road West, R.R. #2
Aurora, Ontario
L4G 3G8

October 9, 1998.

Re: Scientific Collector's Permit #A 3210

Dear Mr. Almond,

Enclosed are the field collection records from our sampling activities in Aurora District during June and July of 1998. This is in fulfillment of condition #9 of the Scientific Collector's permit, #A 3210, issued to myself on June 30th, 1998.

One noteworthy finding: one specimen of the blackside darter (*Percina maculata*) was collected in the Humber River, below Woodbridge Road in the town of Woodbridge. According to records at the Royal Ontario Museum, this species has not been collected previously in the Humber River.

Thanks for your help.

Sincerely,

Geoff Wild.
Watershed Ecosystems Graduate Program
Trent University
Peterborough, Ontario
K9J 7B8

Ministry of Natural Resources
Ontario

Field Collection Record

31

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MNR District No.	Name of Waterbody	Collection No.	Station No.
	Cold Creek		

County or Judicial District	Township	Watershed No.
York	King	H

Locality of Waterbody (if other than stream or river)

Locality of station: between Bolton & Nobleton at Jct. of York rd. 11 and Caledon-King Townline

Latitude	Longitude	Date Day	Month	Year	Time Started	Hrs.
° ′	° ′	03	07	98	1030	

Duration	Hrs.	Drainage System
11	5	Humber River

Water Type
☐ Spring ☐ Canal ☒ Stream/River ☐ River/Lake Junction ☐ Flooded Area ☐ Pool
☐ Pond ☐ Lake ☐ Muskeg/Bog ☐ Reservoir ☐ Other

Water Temperature	Air Temperature	Distance Offshore Min.	Distance Offshore Max.	Depth of Capture Min.	Depth of Capture Max.
~ °C	~ °C	0 m	2.0 m	0 m	1.0 m

Plant Type
☒ Submergent ☐ Floating ☐ Emergent ☐ None

Bottom Type
☒ Rock ☐ Boulder ☐ Rubble ☐ Gravel ☒ Sand ☒ Silt
☐ Clay ☐ Muck ☐ Marl ☐ Detritus ☐ Other

Current
☐ Still ☒ Slow ☐ Medium ☐ Fast ☐ Quantitative ____ m/s

Water Colour
☐ Colorless ☒ Yellow/Brown ☐ Blue/Green ☐ Turbid ☐ Other

Cover (Shore)
☐ None ☐ Sparse ☒ Moderate ☐ Dense ☐ Other

Cover (In water)
☐ None ☐ Sparse ☒ Moderate ☒ Dense ☐ Other

Gear
☐ Seine ☐ Gill Net ☐ Dip Net ☐ Angled ☐ Trawl ☐ Minnow Trap
☐ Piscicide ☐ Trap Net ☐ Hoop Net ☒ Electrofish 413s ☐ Surber ☐ Other

Size of Net (Gill or Seine Net) Length	Size of Net or Mouth (Trap, Hoop or Trawl)	Mesh Size Smallest	Mesh Size Largest
m	m	cm	cm

Selectivity of Sample
☐ All Kept ☐ Sample Selected ☒ None Kept* ☐ Some Kept* ☐ No Catch
*List Released Fish on Back

Preservative
☐ Formalin ☐ Kahle's Solution ☐ Alcohol ☐ Frozen ☐ Other

Date Day	Month	Year	Collectors

Additional Data: Pollution, Colour and Condition of Fish, Parasites, etc.

DATE (y/m/d)	District	Waterbody	Location	Contact Name	Contact Phone
980703	Aurora	Cold Ck. (Humber trib)	btw. Nobleton and Bolton at junct. of York Rd. 11 and Caledon-King Town Line S.	Ian Buchanan	(905) 713-7405

Scientific Name	Common Name	OMNR Code	Total Number	Total Length (mm)	
				Min.	Max.
Petromyzontidae					
Petromyzon marinus	sea lamprey		1	170	--
Cyprinidae					
Hybognathus hankinsoni	brassy minnow		1	68	--
Rhinichthys atratulus	blacknose dace		1	44	--
R. cataractae	longnose dace		10	52	74
Semotilus atromaculatus	creek chub		4	83	109
Catostomidae					
Catostomus commersoni	white sucker		10	57	226
Ictaluridae					
Ameiurus nebulosus	brown bullhead		1	192	--
Cottidae					
Cottus bairdi	mottled sculpin		61	39	75

Send info to: Len Haddow, Box 431, Bolton, Ontario, L7E 5T3

Ministry of Natural Resources
Ontario

Field Collection Record

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MNR LICENCE NO. TO COLLECT FISH FOR SCIENTIFIC PURPOSES: AU 020-01 #31

No. of Bags

MNR District: 714 | Name of Waterbody: Humber River | Collection No. | Station No. 014

County or Judicial District: Peel | Township: Caledon. | Watershed Code: 2 1 H C H 0 4

Locality of Waterbody (if other than stream or river):

Locality of station: #4 U/S of Palgrave Mill Pond @ HWY 50 crossing

Latitude | Longitude | Date Day | Month | Year | Time Started | Hrs.

Duration | Hrs. | Drainage System: Lake Ontario/Humber River

Water Type

☐ Spring ☐ Canal ☑ Stream/River ☐ River/Lake Junction ☐ Flooded Area ☐ Pool
☐ Pond ☐ Lake ☐ Muskeg/Bog ☐ Reservoir ☐ Other

Water Temperature	Air Temperature	Distance Offshore Min.	Distance Offshore Max.	Depth of Capture Min.	Depth of Capture Max.
≈ 18 °C	22 °C	m	m	m	m

Plant Type

☐ Submergent ☐ Floating ☐ Emergent ☑ None

Bottom Type

☐ Rock ☐ Boulder ☐ Cobble ☐ Gravel ☐ Sand ☑ Silt
☐ Clay ☑ Muck ☐ Marl ☐ Detritus ☐ Other

Current

☐ Still ☑ Slow ☐ Medium ☐ Fast ☐ Quantitative ____ m³/s

Water Colour

☐ Colourless ☑ Yellow/Brown ☐ Blue/Green ☐ Turbid ☐ Other

Cover (Shore)

☐ None ☐ Sparse ☑ Moderate ☐ Dense ☐ Other

Cover (In water)

☐ None ☑ Sparse ☐ Moderate ☐ Dense ☐ Other

Gear

☐ Seine ☐ Gill Net ☐ Dip Net ☐ Angled ☐ Trawl ☐ Minnow Trap
☐ Piscicide ☐ Trap Net ☐ Hoop Net ☑ Electrofish ☐ Surber ☐ Other

Size of Net (Gill or Seine Net) Length: m | Size of Net or Mouth (Trap, Hoop or Trawl): m | Mesh Size Smallest: cm | Largest: cm

Selectivity of Sample

☐ All Kept ☐ None Kept* ☐ Some Kept* ☐ No Catch
*List Released Fish on Back

Preservative

☐ Formalin ☐ Kane's Solution ☐ Alcohol ☐ Frozen ☐ Other

Date Day: 16 Month: 07 Year: 01 Collectors: T. Rice + (Stewardship Rangers.)

Additional Data: Pollution, Colour and Condition of Fish, Parasites, etc.

* Substrate extremely soft & unsafe to walk in with backpack
* tried 2 different areas, called off due to safety concerns
209 E-fishing seconds.

Shaded Areas For Main Office Use Only

MNR District No.	Name of Waterbody	Collection No.	Station No.
	Humber River		

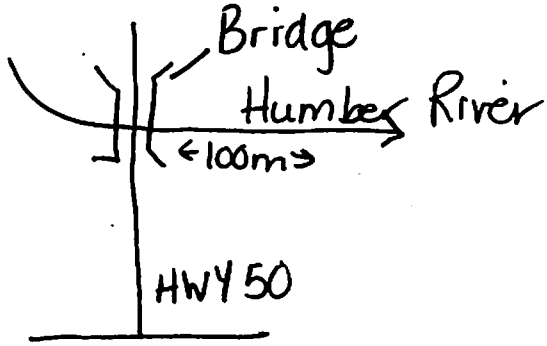
Date Received Day	Month	Year	Township	Latitude °	Longitude °	Acc.	Page	Of

No.	Scientific Name	Code		OMNR Cat No.	ROM Cat. No.
1	Mottled sculpin (Cottus bairdi)		uk.		

Identified by: T. Rice

Date: 16/07/01

Station Diagram



Ministry of Natural Resources
Ontario

(4)

Field Collection Record

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1596

No. of Bags

MNR District No.	Name of Waterbody	Collection No.	Station No.
	Main Branch Humber River		H 33

County or Judicial District	Township	Watershed Code
		H

Locality of Waterbody (if other than stream or river)

Locality of station: 1 km E Bolton

Latitude	Longitude	Date Day	Month	Year	Time Started	Hrs.
43° 53' 00"	79° 43' 20"	11	07	84	12:25	

Duration: . Hrs. | Drainage System:

Water Type

☐ Spring ☐ Canal ☑ Stream/River ☐ River/Lake Junction ☐ Flooded Area ☐ Pool
☐ Pond ☐ Lake ☐ Muskeg/Bog ☐ Reservoir ☐ Other

Water Temperature	Air Temperature	Distance Offshore Min.	Distance Offshore Max.	Depth of Capture Min.	Depth of Capture Max.
20 °C	24 °C	m	m	Voltage 400 m	Time 1162 m

Plant Type

☑ Submergent ☐ Floating ☑ Emergent ☐ None

Bottom Type

☐ Rock ☐ Boulder ☑ Rubble ☑ Gravel ☑ Sand ☑ Silt
☐ Clay ☐ Muck ☐ Marl ☐ Detritus ☐ Other

Current

☐ Still ☐ Slow ☑ Medium ☑ Fast ☐ Quantitative m/s

Strong current

Water Colour

☐ Colorless ☐ Yellow/Brown ☑ Blue/Green ☑ Turbid ☐ Other

Cover (Shore)

☐ None ☐ Sparse ☑ Moderate ☐ Dense ☐ Other

Cover (In water)

☐ None ☑ Sparse ☑ Moderate ☐ Dense ☐ Other

Gear

☐ Seine ☐ Gill Net ☐ Dip Net ☐ Angled ☐ Trawl ☐ Minnow Trap
☐ Piscicide ☐ Trap Net ☐ Hoop Net ☑ Electrofish ☐ Surber ☐ Other

Size of Net (Gill or Seine Net) Length	Size of Net or Mouth (Trap, Hoop or Trawl)	Mesh Size Smallest	Mesh Size Largest
m	m	cm	cm

Selectivity of Sample

☐ All Kept ☐ None Kept* ☑ Some Kept* ☐ No Catch
*List Released Fish on Back

Preservative

☑ Formalin ☐ Kahle's Solution ☐ Alcohol ☐ Frozen ☐ Other

Date Day	Month	Year	Collectors
11	07	84	STEEDMAN

Additional Data: Pollution, Colour and Condition of Fish, Parasites, etc.

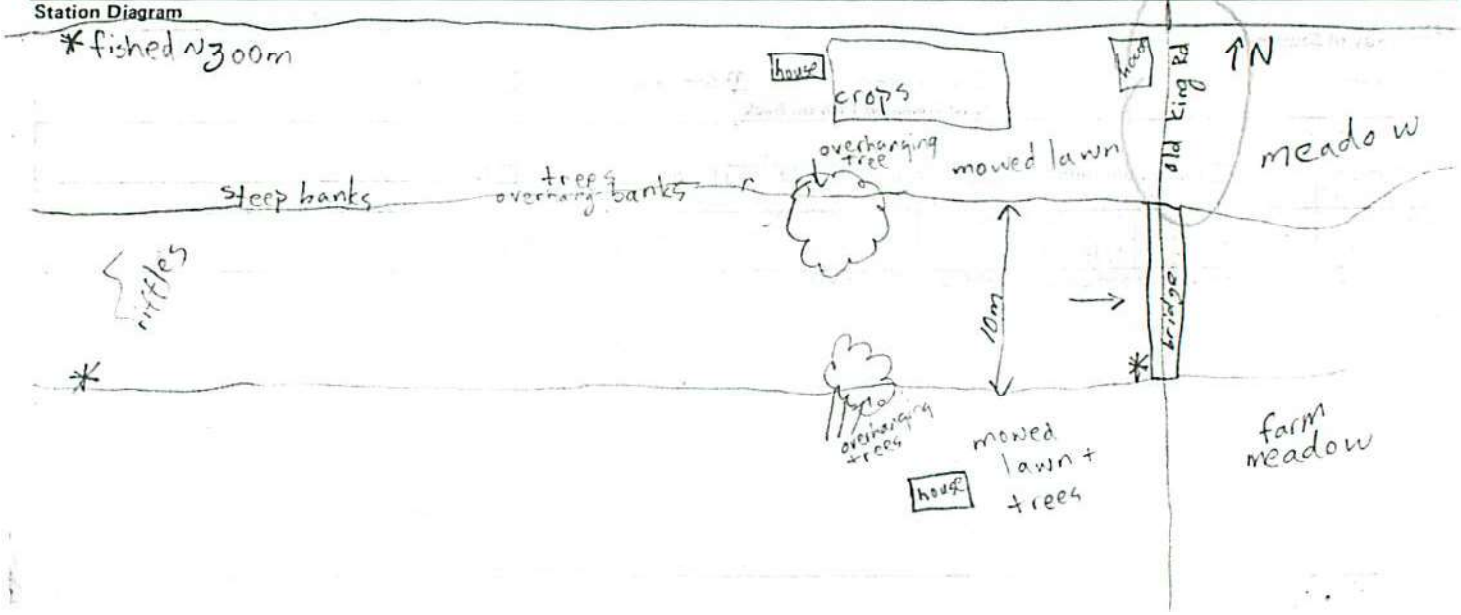
2066 (12/79)

Shaded Areas For Main Office Use Only

MNR District No.	Name of Waterbody			Collection No.	Station No.
Date Received Day / Month / Year	Township	Latitude ° '	Longitude ° '	Acc.'	Page / Of

No.	Scientific Name	Code	Size Range (T.L. in mm)	OMNR Cat No.	ROM Cat. No.
2	Rainbow Darters - II				
white sucker 10	- 10" - I 3" - I 5" - I' 4" - I 7" - III 6" - II				
7	hog sucker - 6' - II 3" - II 1" II 12" - I				
15	rock Bass - 7' - IIII 2" - IIII 5" - II 1" - IIII				
6	long nose dace - IIII II				
common shiner 7	- 3" - II II 2" - I II				
7	blck nose dace - II ~~IIII~~				
20	chub - 4" - ~~III~~ 3" - ~~III~~ 5" - I 2" - III ~~IIII~~ I I				
2	stonecat - 5" - I I				
3	B.N. MNW. III				
2	F.T. DART II				
Identified by BJ				Date	

Station Diagram



Ministry of Natural Resources
Ontario

Field Collection Record

W

494

No. of Bags

Use Pencil Only

MNR District No.	Name of Waterbody	Collection No.	Station No.
	Humber → Upstream of cold Creek		

County or Judicial District	Township	Watershed Code
Bolton		H 1 9 H 1 5

Locality of Waterbody (if other than stream or river): do

Locality of station: Albion - King Townline, 100 m S. of King Rd

Latitude	Longitude	Date Day	Month	Year	Time Started	Hrs.
43° 53' 19"	79° 43' 05"	23	06	92	11:00	

Duration: . Hrs. Drainage System:

Water Type
☐ Spring ☐ Canal ☑ Stream/River ☐ River/Lake Junction ☐ Flooded Area ☐ Pool
☐ Pond ☐ Lake ☐ Muskeg/Bog ☐ Reservoir ☐ Other

Water Temperature	Air Temperature	Distance Offshore Min.	Distance Offshore Max.	Depth of Capture Min.	Depth of Capture Max.
17.7 °C	23 °C	m	m	m	m

Plant Type
☐ Submergent ☐ Floating ☐ Emergent ☐ None

Bottom Type
☐ Rock ☐ Boulder ☐ Rubble ☐ Gravel ☐ Sand ☐ Silt
☐ Clay ☐ Muck ☐ Marl ☐ Detritus ☐ Other

Current
☐ Still ☑ Slow ☑ Medium ☐ Fast ☐ Quantitative ____ m/s

Water Colour
☑ Colorless ☐ Yellow/Brown ☐ Blue/Green ☑ Turbid bit ☐ Other

Cover (Shore)
☐ None ☑ Sparse ☐ Moderate ☐ Dense ☐ Other

Cover (In water)
☐ None ☑ Sparse ☐ Moderate ☐ Dense ☐ Other

Gear
☑ Seine ☐ Gill Net ☐ Dip Net ☐ Angled ☐ Trawl ☐ Minnow Trap
☐ Piscicide ☐ Trap Net ☐ Hoop Net ☑ Electrofish 672 ☐ Surber ☐ Other

Size of Net (Gill or Seine Net) Length	Size of Net or Mouth (Trap, Hoop or Trawl)	Mesh Size Smallest	Mesh Size Largest
(2 x 8 m 2 x 4 m) 1 x 1.5 m	m	cm	cm

Selectivity of Sample
☐ All Kept ☐ None Kept* ☐ Some Kept* ☐ No Catch
Stationary
*List Released Fish on Back

Preservative
☐ Formalin ☐ Kahle's Solution ☐ Alcohol ☐ Frozen ☐ Other

Date Day Month Year | Collectors: WICHERT

Additional Data: Pollution, Colour and Condition of Fish, Parasites, etc.

Shaded Areas For Main Office Use Only

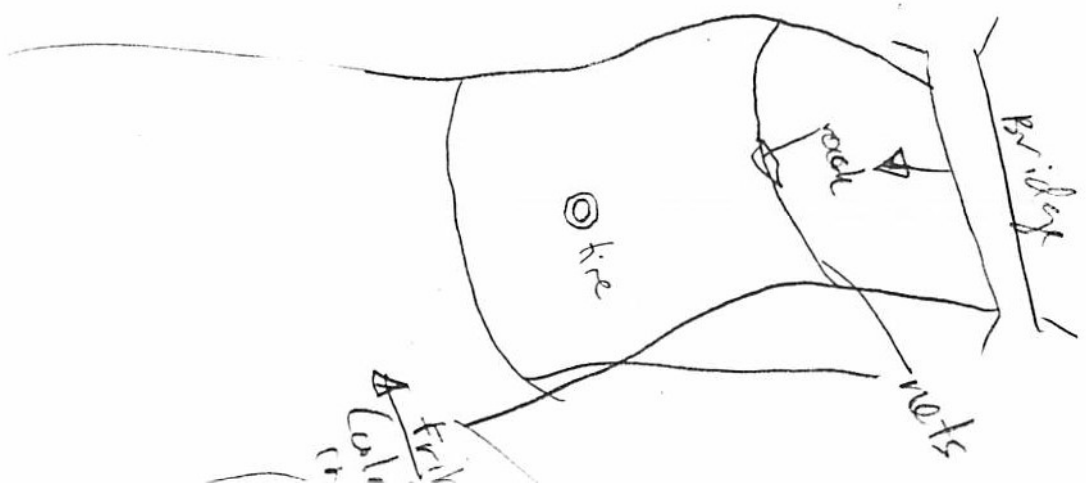
MNR District No.	Name of Waterbody	Collection No.	Station No.

Date Received Day	Month	Year	Township	Latitude ° '	Longitude ° '	Acc.	Page	Of

No.	Scientific Name	Code	Size Range (T.L. in mm)	OMNR Cat No.	ROM Cat. No.
16	Common Shiner	198	6.6, 7.9, 10.0		
68	Creek Chub (spotty)	212	1.9, 8.9		
16	Blacknose Dace (spotty)	210	5.9		
17	Blunthose minnow	208	4.7		
13	Rock Bass	311	13.3, 5.5, 4.4		
5	White Sucker	163	8.0, 15.3		
1	Fathead minnow	209	5.1		
4	Longnose Dace	211	7.6, 8.7		
10	Fantail Darter	339	7.1, 7.9		
1	Hog Sucker	165	9.4		
2	Stonecat	235	7.1		
5	Rainbow Darter	337	4.7, 5.5		
1	Johnny Darter	341	5.5		
	Checked ✓				

Identified by	Date

Station Diagram



Ministry of Natural Resources
Ontario

Field Collection Record

Jan Buchanan.

·31

Use Pencil Only

No. of Bags

MNR District No.	Name of Waterbody: Cold Creek.			Collection No. 01	Station No. 01
County or Judicial District: York Region	Township: King			Watershed Code	
Locality of Waterbody (if other than stream or river)					
Locality of station: from 50m upstream to 100m downstream of King Road (York Regional Road 11)					
Latitude 43° 53' 12"	Longitude 79° 42.9'	Date Day 26	Month 05	Year 95	Time Started 09 30 Hrs.
Duration: 8 hr 25 min Hrs. Sec.	Drainage System: Humber River				

Water Type

☐ Spring ☐ Canal ☑ Stream/River ☐ River/Lake Junction ☐ Flooded Area ☐ Pool
☐ Pond ☐ Lake ☐ Muskeg/Bog ☐ Reservoir ☐ Other

Water Temperature	Air Temperature	Distance Offshore Min.	Distance Offshore Max.	Depth of Capture Min.	Depth of Capture Max.
5.5 °C	11.5 °C	m	m	0.20 m	0.70 m

Plant Type

☐ Submergent ☐ Floating ☐ Emergent ☑ None

Bottom Type

☐ Rock ☐ Boulder ☑ Rubble ☑ Gravel ☑ Sand ☐ Silt
☐ Clay ☐ Muck ☐ Marl ☑ Detritus ☐ Other

Current

☑ Still ☑ Slow ☑ Medium ☑ Fast ☐ Quantitative ____ m/s

Water Colour

☐ Colorless ☑ Yellow/Brown ☐ Blue/Green ☐ Turbid ☐ Other

Cover (Shore)

☐ None ☐ Sparse ☑ Moderate ☐ Dense ☐ Other

Cover (In water)

☐ None ☐ Sparse ☑ Moderate ☑ Dense ☐ Other

Gear

☐ Seine ☐ Gill Net ☑ Dip Net ☐ Angled ☐ Trawl ☐ Minnow Trap
☐ Piscicide ☐ Trap Net ☐ Hoop Net ☑ Electrofish ☐ Surber ☐ Other

Size of Net (Gill or Seine Net) Length	Size of Net or Mouth (Trap, Hoop or Trawl)	Mesh Size Smallest	Mesh Size Largest
m	m	cm	cm

Selectivity of Sample

☐ All Kept ☑ None Kept* ☐ Some Kept* ☐ No Catch
*List Released Fish on Back

Preservative

☐ Formalin ☐ Kahle's Solution ☐ Alcohol ☐ Frozen ☐ Other

Date Day ____ Month ____ Year ____ Collectors: K.W. Dance, J.L. Dance, Dance Environmental Inc.

Additional Data: Pollution, Colour and Condition of Fish, Parasites, etc.

Black spot on several dace.

2066 (12/79)

Shaded Areas For Main Office Use Only

MNR District No.	Name of Waterbody	Collection No.	Station No.

Date Received (Day / Month / Year)	Township	Latitude	Longitude	Acc.	Page	Of
		° '	° '			

No.	Scientific Name	Code	Size Range (T.L. in mm)	OMNR Cat No.	ROM Cat. No.
6	Catostomus commersoni	163	up to 20cm		
1	Hypentelium nigricans	165	15cm		
1	Luxilus cornutus	198			
3	Rhinichthys cataractae	211			
1	Etheostoma nigrum	341			
17	Cottus bairdi	381			

Identified by	Date
K. W. Dance, MSc.	April 26, 1995.

Station Diagram

DANCE
ENVIRONMENTAL
INC.

·31

DE-092

May 4, 1995.

Paragon Engineering Limited
Kitchener, ON
Attn: G. Leveck, P.Eng.

Dear Mr. Leveck:

Re: **King Road Bridge at Cold Creek - Preliminary Natural Environment Findings.**

As requested, we provide a preliminary summary of work completed to date and associated issues.

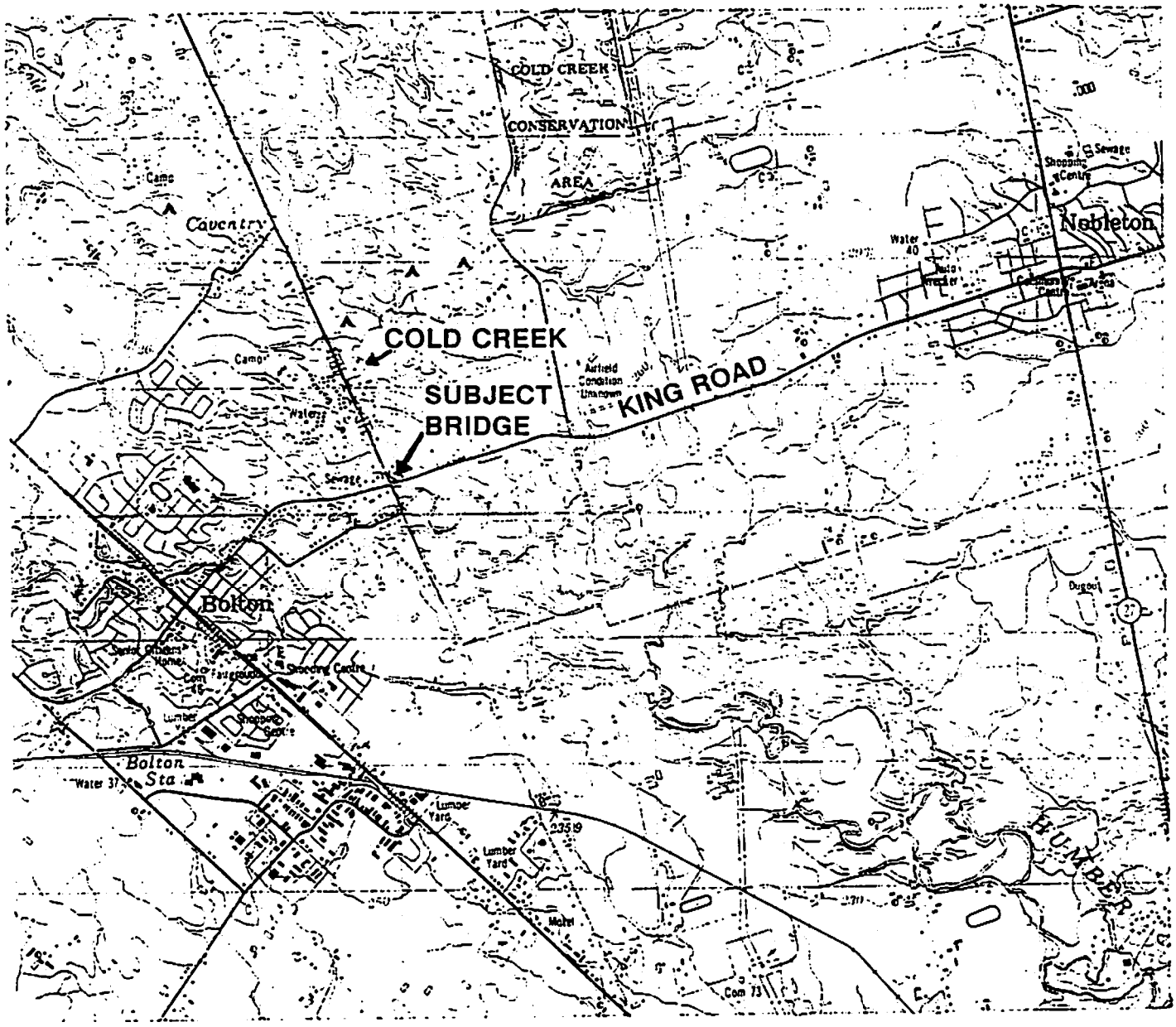
Figure 1 shows the study area location on Cold Creek.

METHODS

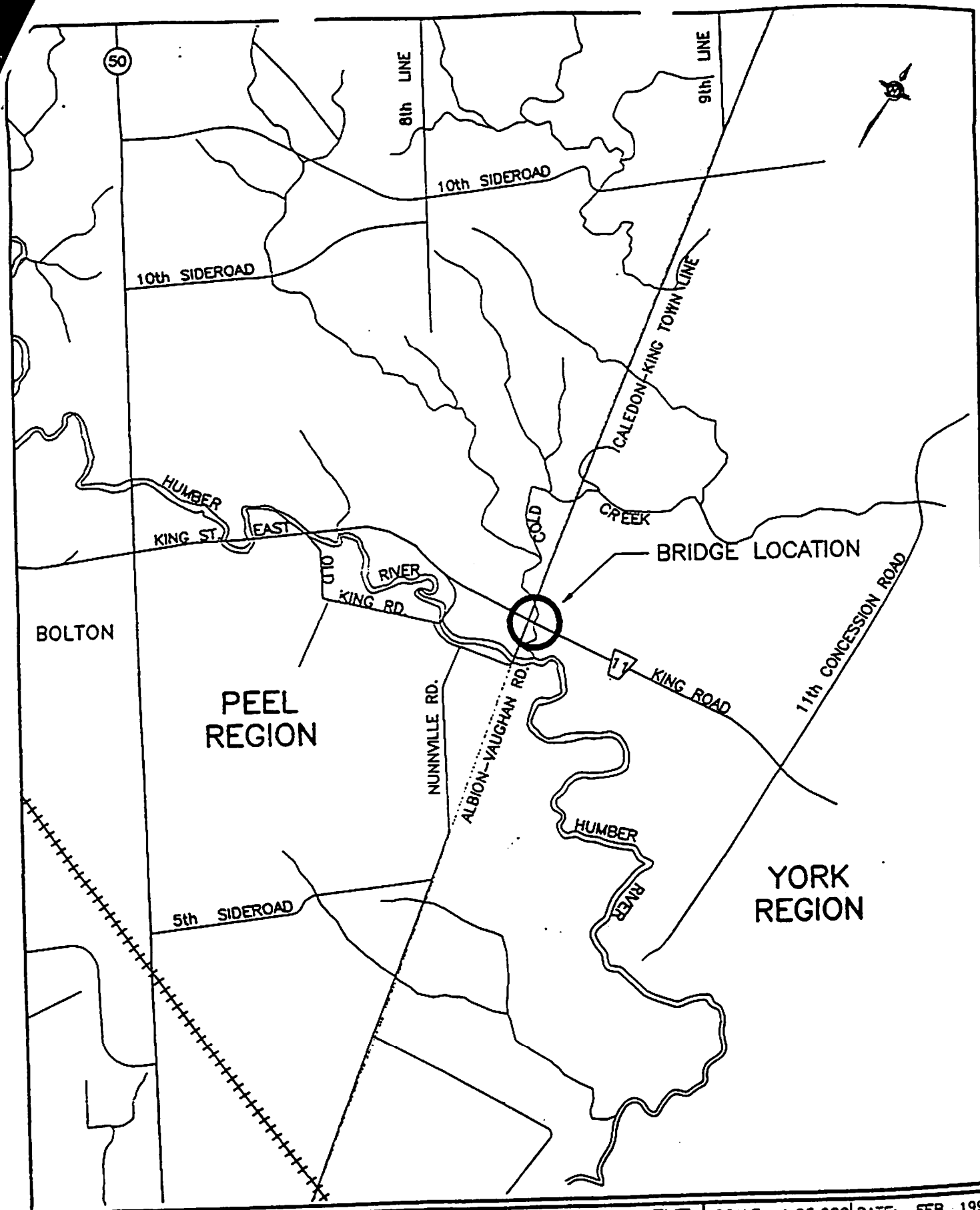
- letters were sent to MTRCA and MNR, Maple requesting file data on natural environment conditions in the study area
- file data were reviewed at MNR's office on April 25, 1995 - fisheries data are available for several locations on Cold Creek including our study area - during this visit Ian Buchanan the York North Area biologist described a number of issues which they require be addressed in bridge and culvert replacement studies
- a reconnaissance survey of the site was conducted on April 20, 1995
- an electrofishing survey (825 seconds duration) and habitat mapping were completed on April 26, 1995 - Kevin Wilson, Leonard Ng and others from the Region were present to observe this work
- the stream survey extended 50 m upstream and 100 m downstream of the bridge.

421 Greenbrook Drive, Kitchener, ON N2M 4K1
Tel (519) 570-1777 Fax (519) 570-2233

FIGURE 1. STUDY AREA LOCATION.



Scale 1:50,000 Source: NTS Bolton 30M/13 Edition 7	DANCE ENVIRONMENTAL INC. DE-092 May 1995.



PARAGON ENGINEERING LIMITED
CONSULTING ENGINEERS

PROPOSED BRIDGE REPLACEMENT
KING ROAD AT YORK PEEL LINE

LOCATION PLAN

SCALE: 1:25,000 | DATE: FEB. 1995

PROJECT NO. 5940

FIGURE 1

KEY CONSIDERATIONS

Key issues to address during the assessment and design are as follows:

- span should not interfere with low flow and bank full channels
- post-construction low flow channel should match the existing low flow channel dimensions - don't want a wider shallower cross-section
- rock can be used to define the low flow channel
- native vegetation replanting should be used to treat any areas where vegetation is disturbed during construction
- MNR indicates that bioengineering may be needed if extensive or new areas are affected by the construction
- there is no significant stream bank erosion or slumping within the road right-of-way; the closest slumping bank is on the first bend downstream of the bridge - 20 m away
- MNR prefers that work be completed in the dry - E.A. should describe construction methods and phasing, and the E.A. should specify how erosion and sedimentation control will be accomplished
- regarding stormwater management: consideration should be given to avoiding runoff pipes and ditches outletting directly to the creek - BMPs should be evaluated - if there is a rural cross-section ditches should discharge to the floodplain or to floodplain ponds, before flowing to the creek; tiered ditches with cattail growths could also be considered, provided that this does not create maintenance problems
- the bridge span should allow wildlife passage beneath it
- natural channel configuration and treatment should be provided in and out of the bridge structure
- the construction timing guideline for cold water streams within the Humber basin is construction during the June 1 to September 15th period
- if the bridge is being widened or lengthened in ways that may affect fish habitat there may be a need for fish habitat compensation - if the structure dimensions don't change, any potential impacts could probably be dealt with through mitigation.

Please call me if there are any questions about this material.

Yours very truly,
Dance environmental Inc.

K.W. Dance, M.Sc.
President

PRELIMINARY FINDINGS

Vegetation

- only small trees, shrubs and low herbaceous plants are present in the area which would be affected by construction - these are common species which could be replaced by mitigation plantings.

Wildlife

- only common wildlife species were observed at and around the site
- species found: American Robin, European Starling, Belted Kingfisher, Red-winged Blackbird, Brown-headed Cowbird, Great Blue Heron, Raccoon, White-tailed Deer. Old nests of a Swallow species and an Eastern Phoebe were found on the underside of the bridge.

Fish

- MNR file data from surveys in 1978, 1982 and 1986 indicate a cold water fishery - with Brook Trout and Brown Trout
- Ian Buchanan, MNR Biologist, indicated that Rainbow Trout have also been reported in Cold Creek
- MNR found a number of common small fish species which we also collected
- Table 1 lists the fish species captured during the April 26, 1995 survey - one trout was seen upstream of the King Road bridge it escaped capture, but is assumed to have been a Brown Trout, from its size and behaviour
- on April 20, 1995 two Brown Trout were observed feeding under the upstream margin of the King Road bridge.

Aquatic Habitat

- Dissolved oxygen concentration was 13.0 mg/L on April 26, 1995, this is typical of a trout stream
- a variety of habitat types: pools, riffles and runs are present
- there is much clean, firm substrate and cover in the form of deep water, undercut banks, some rocks, and logs
- severe bank erosion and slumping is occurring on the outside of bends, downstream of the bridge
- it appears that fish habitat improvement work has been undertaken downstream of the bridge - we expect to learn more about this when MTRCA responds to our information request
- cross-section measurements at 4 locations indicated bank full widths in the 6.5 to 10.6 m range and low flow channel widths in the 4.7 to 7.2 m range.

Table 1. Fish Captured in Cold Creek at King Road, York Region, April 26, 1995.

In 50 m Upstream of King Road Bridge

1	Mottled Sculpin
1	White Sucker
1	Longnose Dace

Beneath the Bridge

3	White Sucker - captured (10 to 15 were present)

In 100 m Downstream of Bridge

2	White Sucker
1	Northern Hog Sucker
1	Johnny Darter
16	Mottled Sculpin
1	Common Shiner
2	Longnose Dace

PEEL / ALBION / VIII / 7E

A 372

STREAM	STATION NO.	DATE	TIME	WEATHER	AIR TEMP.	# IN CREW
HUMBER (MAIN BR.)	141	27/7/72	9:15	CLEAR - WARM CALM	25.5°C	5

DIMENSIONS	BOTTOM TYPE (%)		BANKS		LAND USE
WIDTH: 41'	ROCK: 10%	SILT:	HIGH: 90%	STABLE: 60%	undeveloped agricultural land
DEPTH 8"-10"	GRAVEL: 60%	CLAY:	LOW: 10%	UNSTABLE: 40%	
VELOCITY:	SAND: 25%	MUCK: 5%	UNDERCUT: NORTH BANK		

VOLUME:	ACCESS TO STREAM	OWNERSHIP OF LAND
WATER TEMP: 22°C	clearance away from banks	private

OBSTRUCTIONS	BANK VEGETATION	INSTREAM VEGETATION	TURBIDITY	
FENCES:	MEADOW: ✓	EXTENT: very minimal	CLEAR:	COMMENTS:
LARGE BOULDERS:	MARSH: ✓		SLIGHTLY MURKY:	
LOGS: ✓	HDWD. TREES: ✓	TYPE: algae grasses	MURKY: ✓	
FALLEN TREES: ✓	CONIF. TREES: ✓		SILTY: ✓	
DAMS:	CULTIVATED:		COLOUR:	

STREAM GRADIENT (%)		STREAM COVER (%)	POLLUTION
STEEP:	RIFFLES: 25%	DENSE:	minimal - old tires etc.
MODERATE: 5%	POOLS:	PARTLY OPEN: 10%	
LOW: 95%	SMOOTH FLOW: 75%	OPEN: 90%	

FISH SPECIES	NO.	FISH REPORTED BY ANGLERS
BLACKNOSE DACE	1	
LONGNOSE "	4	
BLACKCHIN SHINER	6	
COMMON SHINER	9	
HOG SUCKER	2	
CRAYFISH	1	

PONDS OBSERVED:

DAMS OBSERVED:

COMMENTS:

WATER CHEMISTRY

DISSOLVED OXYGEN:

pH

TOTAL AKLALINITY:

INVESTIGATORS: 22 Walton & Marquis 1972

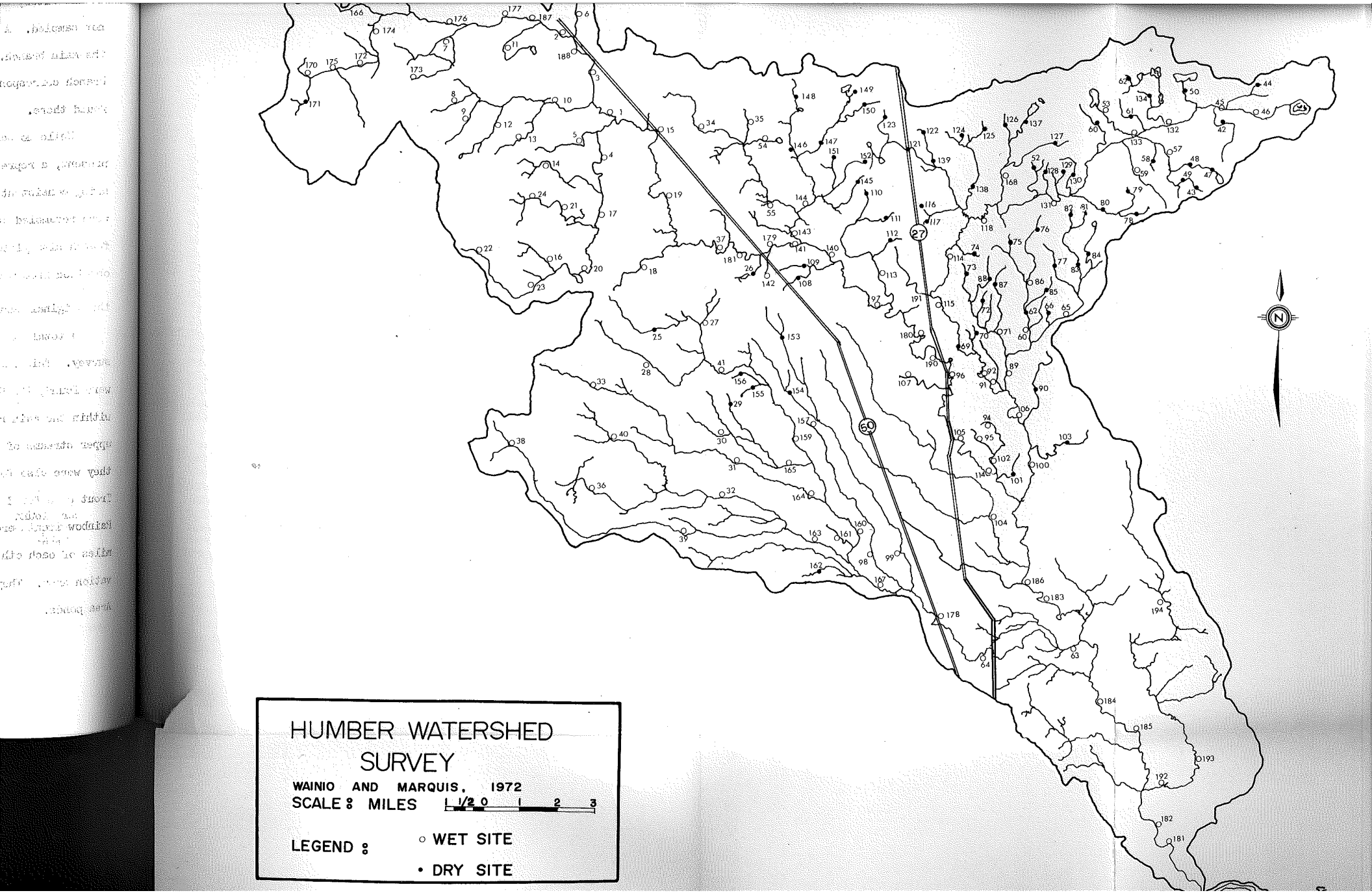
R.H. Rev. 2

(i) Ministry of Natural Resources Survey by Wainio and Marquis, 1972

This survey was made possible through the combined efforts of General Foods (Canada) Limited, the Ministry of Natural Resources and the Metropolitan Toronto and Region Conservation Authority. General Foods provided salaries for many students to clean up the Humber and a crew was allocated to survey the fish of the Humber. This survey crew was supervised by Allan Wainio of the Ministry and was led by Robert Marquis, a graduate of the University of Toronto. Crew members were Barbara Bielmeier, Edward Littleford, Wendy Rinehart, Cameron Stewart and Laurier Therrien.

The sites for the survey were selected by R. A. Hester and were generally located at places where the river or stream was crossed by a road. In this way 194 sites were selected and were sampled during the months of June, July and August, 1972. R. A. Hester also drew up the data sheets used by the crew at each station. Besides collections of fish and invertebrates, data were gathered on stream dimensions, bottom type, condition of the banks, obstructions in the stream, turbidity, instream and bank vegetation, stream cover, stream gradient and signs of pollution.

Each site that was not dry was examined for fish using seine and dip nets. Those fish captured were identified, counted and returned to the stream. If field identification was not possible, the specimen was preserved in formalin and identified at a later date. One or more bottom samples were collected to determine the invertebrate fauna of the stream bed.


HUMBER WATERSHED
SURVEY
WAINIO AND MARQUIS, 1972
SCALE : MILES 1/2 0 1 2 3
LEGEND : ○ WET SITE
• DRY SITE
27
50
N

Ministry of Natural Resources
Ontario

Field Collection Record

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1 A

No. of Bags: 03

MNR District No.: 74	Name of Waterbody: HUMBER RIVER	Collection No.: 01	Station No.: 02 (Nashville)
County or Judicial District: YORK	Township: KING	Watershed Code: 2HC-04	

Locality of Waterbody (if other than stream or river):

Locality of station: OLD KING RD. AND KING RD. (YORK REGION (11))

Latitude: 43° 53.3' Longitude: 79° 43.1' Date Day: 17 Month: 08 Year: 82 Time Started: 1100 Hrs.

Duration: 1.0 Hrs. Drainage System: LAKE ONTARIO TRIBUTARIES

Water Type
☐ Spring ☐ Canal ☑ Stream/River ☐ River/Lake Junction ☐ Flooded Area ☐ Pool
☐ Pond ☐ Lake ☐ Muskeg/Bog ☐ Reservoir ☐ Other

Water Temperature: 19 °C | Air Temperature: 24 °C | Distance Offshore Min.: N/A m Max.: N/A m | Depth of Capture Min.: 0.0 m Max.: 0.60 m

Plant Type
☑ Submergent ☐ Floating ☐ Emergent ☐ None

Bottom Type
☐ Rock ☑ Boulder ☑ Rubble ☑ Gravel ☑ Sand ☑ Silt
☐ Clay ☐ Muck ☐ Marl ☐ Detritus ☐ Other

Current
☐ Still ☐ Slow ☑ Medium ☐ Fast ☐ Quantitative ______ m/s

Water Colour
☑ Colorless ☐ Yellow/Brown ☐ Blue/Green ☐ Turbid ☐ Other

Cover (Shore)
☐ None ☑ Sparse ☐ Moderate ☐ Dense ☐ Other

Cover (In water)
☐ None ☐ Sparse ☑ Moderate ☐ Dense ☐ Other

Gear
☑ Seine ☐ Gill Net ☐ Dip Net ☐ Angled ☐ Trawl ☐ Minnow Trap
☐ Piscicide ☐ Trap Net ☐ Hoop Net ☑ Electrofish ☐ Surber ☐ Other

Size of Net (Gill or Seine Net) Length: 3 m | Size of Net or Mouth (Trap, Hoop or Trawl): N/A m | Mesh Size Smallest: 0.5 cm Largest: 0.5 cm

Selectivity of Sample
☐ All Kept ☐ None Kept* ☑ Some Kept* ☐ No Catch
*List Released Fish on Back

Preservative
☑ Formalin 10% ☐ Kahle's Solution ☐ Alcohol ☐ Frozen ☐ Other

Date Day: 17 Month: 08 Year: 82 Collectors: S. MAUDE / A. RODRIGUES (M.T.R.C.A.)

Additional Data: Pollution, Colour and Condition of Fish, Parasites, etc.

2066 (12/79)

Shaded Areas For Main Office Use Only

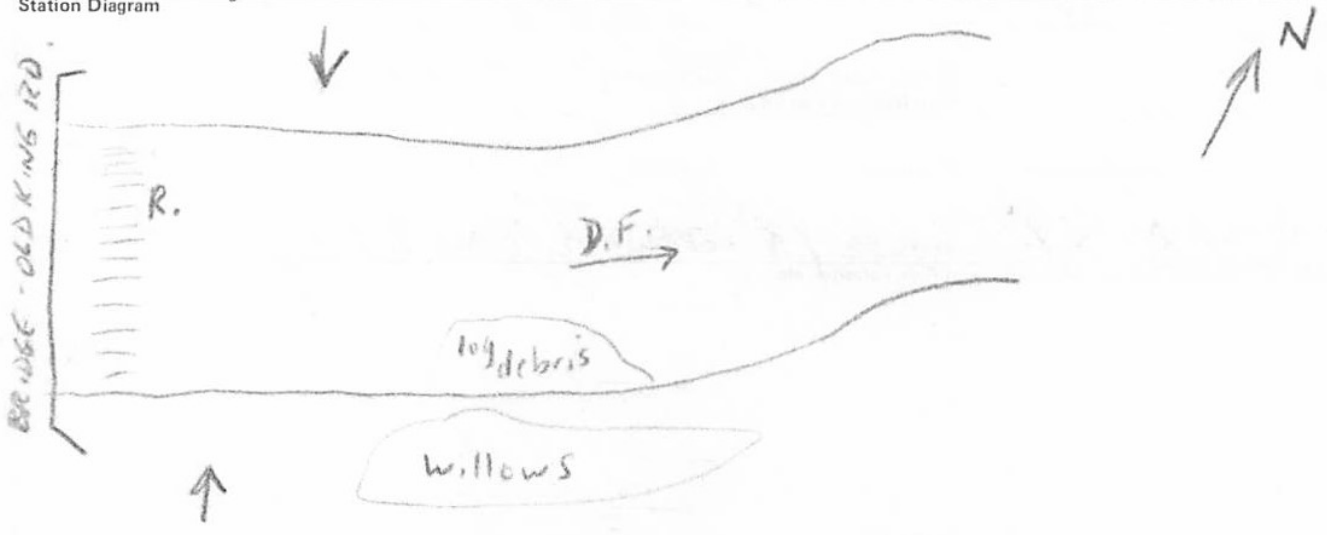
MNR District No.	Name of Waterbody	Collection No.	Station No.

Date Received Day	Month	Year	Township	Latitude ° .	Longitude ° .	Acc.	Page	Of

No.	Scientific Name	Code	Size Range (T.L. in mm)	OMNR Cat No.	ROM Cat. No.
1	Ambloplites rupestris	311	150		
	above released.				
	Lampetra lamottei	11			
	Catostomus commersoni	163			
	Hypentelium nigricans	165			
	Notropis cornutus	198			
	Pimephales notatus	208			
	Rhinichthys atratulus	216			
	R. cataractae	211			
	Semotilus atromaculatus	212			
	Ictalurus nebulosus	233			
	Noturus flavus	235			
	Ambloplites rupestris	311			
	Lepomis gibbosus	313			
	Etheostoma nigrum	341			
	identified in lab *				

Identified by * Greg Nuhn (MTRCA). Date

Station Diagram



Ontario Natural Resources

Field Collection Record

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No. of Bags

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MNR District No. | Name of Waterbody: Humber R Bolton 1a15 downstream | Collection No. | Station No.

County or Judicial District | Township: Mainstem | Watershed Code

Locality of Waterbody (if other than stream or river)

Locality of station: Albion - King Townline, 100 m S. of King Rd

Latitude: 43° 53.19' | Longitude: 79° 43.05' | Date Day: 12 | Month: 08 | Year: 93 | Time Started | Hrs.

Duration | Hrs. | Drainage System

Water Type

☐ Spring ☐ Canal ☐ Stream/River ☐ River/Lake Junction ☐ Flooded Area ☐ Pool

☐ Pond ☐ Lake ☐ Muskeg/Bog ☐ Reservoir ☐ Other

Water Temperature	Air Temperature	Distance Offshore Min.	Distance Offshore Max.	Depth of Capture Min.	Depth of Capture Max.
~22.5 °C	30.0 °C	m	m	m	m

Plant Type

☐ Submergent ☐ Floating ☐ Emergent ☐ None

Bottom Type

☐ Rock ☐ Boulder ☐ Rubble ☐ Gravel ☐ Sand ☐ Silt

☐ Clay ☐ Muck ☐ Marl ☐ Detritus ☐ Other

Current

☐ Still ☐ Slow ☐ Medium ☐ Fast ☐ Quantitative m/s

Water Colour

☐ Colorless ☐ Yellow/Brown ☐ Blue/Green ☐ Turbid ☐ Other

Cover (Shore)

☐ None ☐ Sparse ☐ Moderate ☐ Dense ☐ Other

Cover (In water)

☐ None ☐ Sparse ☐ Moderate ☐ Dense ☐ Other

Gear

☐ Seine ☐ Gill Net ☐ Dip Net ☐ Angled ☐ Trawl ☐ Minnow Trap

☐ Piscicide ☐ Trap Net ☐ Hoop Net ☐ Electrofish ☐ Surber ☐ Other

Size of Net (Gill or Seine Net) Length	Size of Net or Mouth (Trap, Hoop or Trawl)	Mesh Size Smallest	Mesh Size Largest
m	m	cm	cm

Selectivity of Sample

☐ All Kept ☐ None Kept* ☐ Some Kept* ☐ No Catch

*List Released Fish on Back

Preservative

☐ Formalin ☐ Kahle's Solution ☐ Alcohol ☐ Frozen ☐ Other

Date Day | Month | Year | Collectors: WICHERT

Additional Data: Pollution, Colour and Condition of Fish, Parasites, etc.

Shocking time = 545 seconds

MNR District No.	Name of Waterbody	Collection No.	Station No.

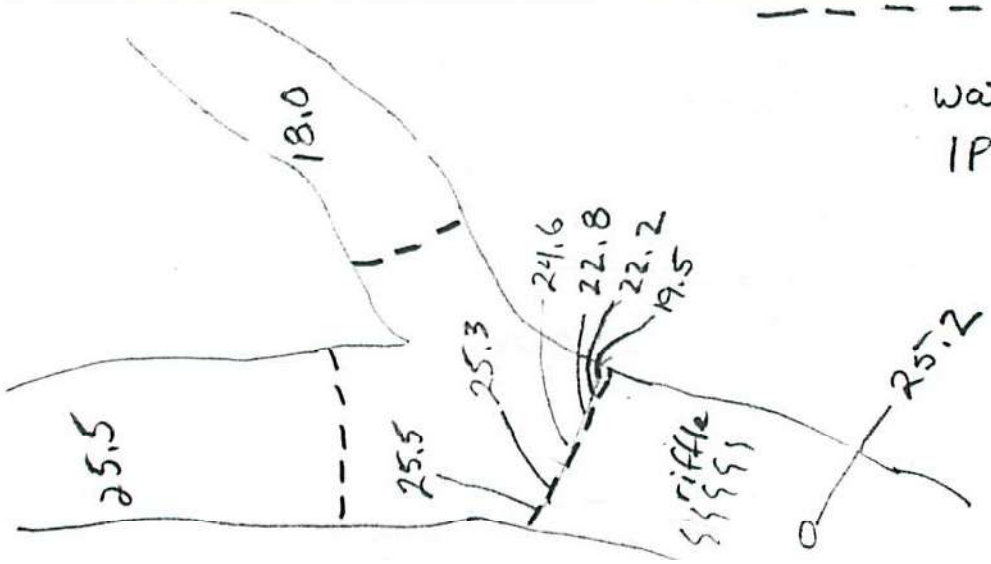
Date Received Day	Month	Year	Township	Latitude ° ′	Longitude ° ′	Acc.	Page	Of

No.	Scientific Name	Code	Size Range (T. L. in mm)	OMNR Cat No.	ROM Cat. No.
1	N Hogsucker		23.8		
15	Rock Bass		16.4/20		
1	Brook lamprey		~16		
1	Br. Bullhead		13.2		
35	C. chub		11		
4	Stonecat		11.9/3.3		
57	LND Dace		10.6		
17	BN Dace		/3.8		
6	Rainbow Dart.		5.2		
42	Tangail Darter		7.0		
4	Johnny Darter		6.0		
3	W. Sucker		9.8		
1	Com. Shiner		9.5		
19	M. Sculpin		4.2/3.9		
2	Brook Stickleback		4.2/3.6		

Identified by

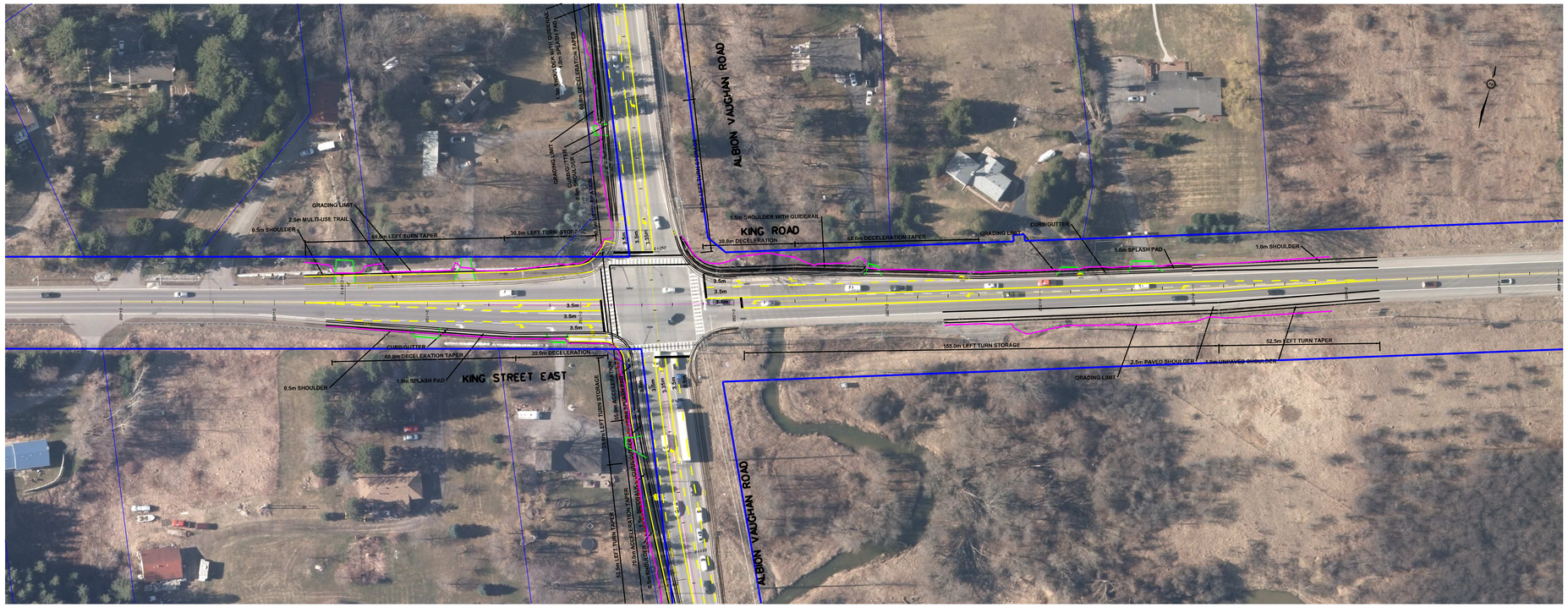
Date

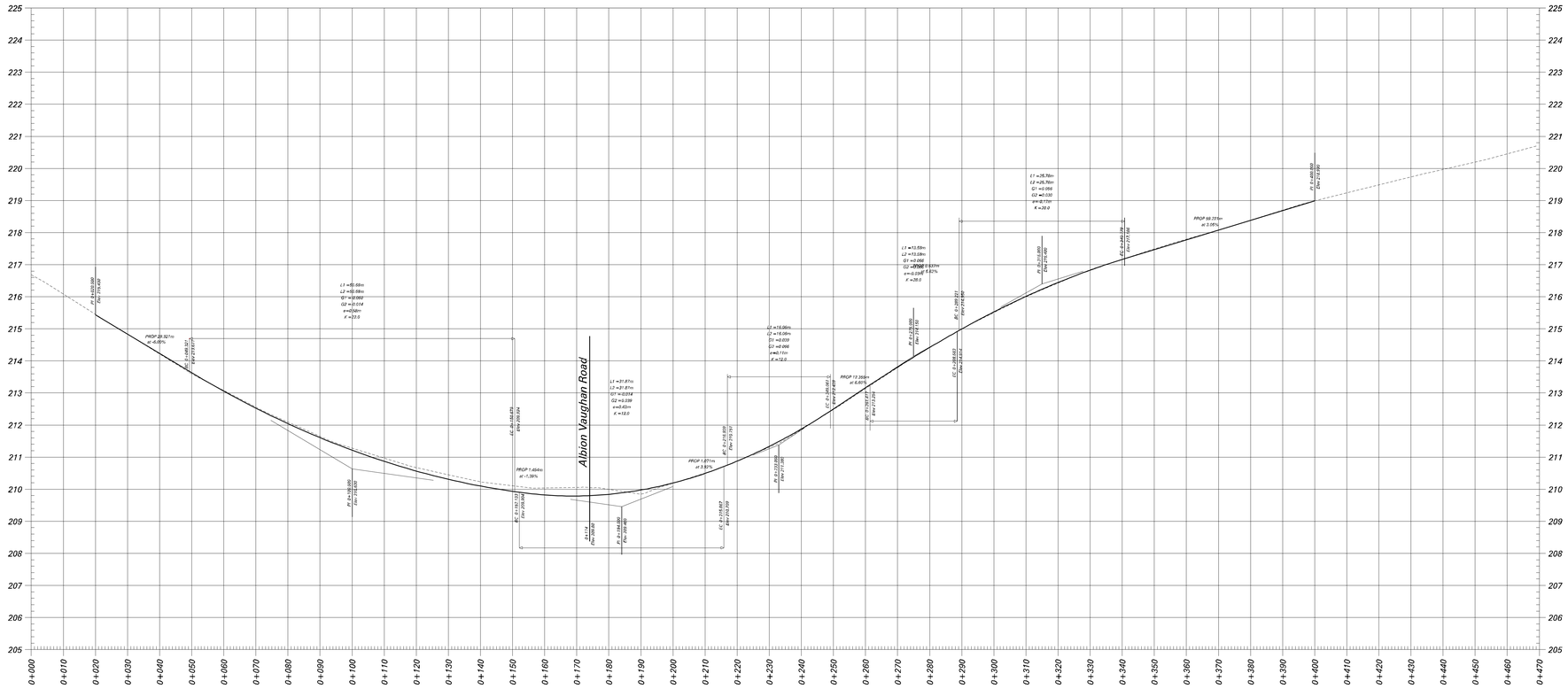
Station Diagram



APPENDIX C

Project Plans





SERVICE DATA

SERVICE	DATE	INIT.	SERVICE	DATE	INIT.

REVISIONS

DATE	DETAILS	INIT.

LEGEND:

- ROW
- PROPERTY
- GRADING LIMIT
- TEMPORARY EASEMENT
- DRIVEWAY TIE IN
- PROP PROPERTY
- CATCH BASIN RELOCATION

Designed by Chkd.

Approved by

0m 12m 30m

0m 1m 3m

HORIZONTAL SCALE
SCALE 1:500

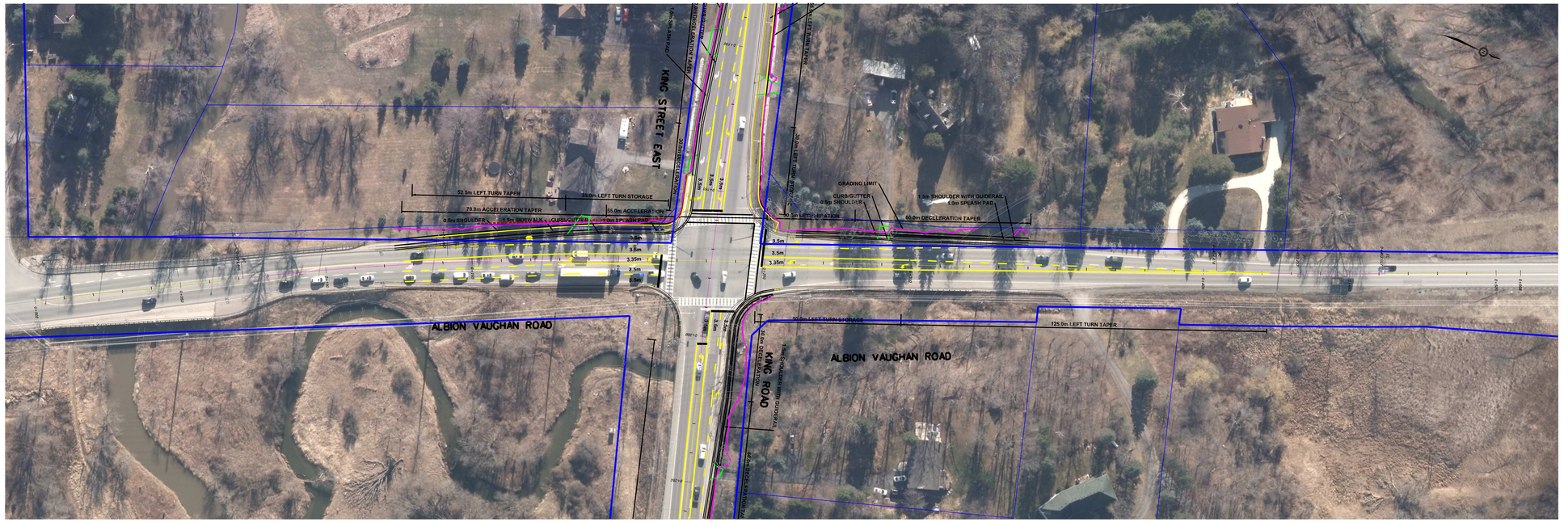
VERTICAL SCALE

Region of Peel
Working for you

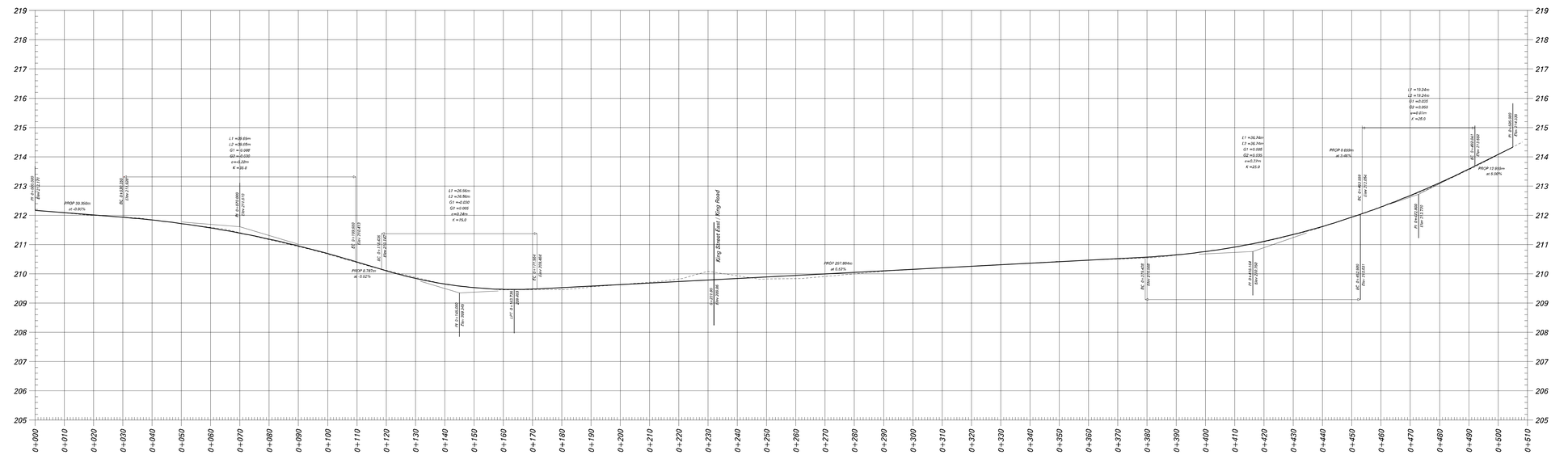
KING VAUGHAN EA

FULL WIDENING DESIGN
KING ROAD/ KING STREET EAST
PLAN & PROFILE

CAD Area	X-XX	Area	X-XX	Project No.	B000709
Checked by	J.G.	Drawn by	H.G.		
Date	FEB. 2020	Sheet	2 of 4	Plan No.	0002-D



Albion Vaughan Road

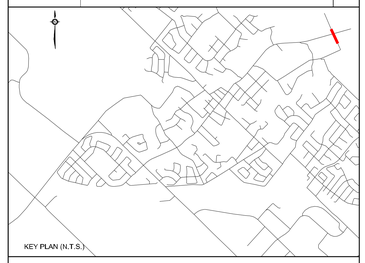


SERVICE DATA

SERVICE	DATE	INIT.	SERVICE	DATE	INIT.

REVISIONS

DATE	DETAILS	INIT.



LEGEND:

- ROW
- PROPERTY
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- TEMPORARY EASEMENT
- DRIVEWAY TIE IN
- PROP PROPERTY
- CATCH BASIN RELOCATION

Designed by

Chkd.

Approved by

0m 10m 30m — HORIZONTAL SCALE
SCALE 1:500

0m 1m 3m — VERTICAL SCALE

Region of Peel
Working for you

KING VAUGHAN EA

FULL WIDENING DESIGN
ALBION VAUGHAN ROAD
PLAN & PROFILE

CAD Area	X-XX	Area	X-XX	Project No.	B000709
Checked by	J.G.	Drawn by	H.G.		
Date	FEB. 2020	Sheet	1 of 4	Plan No.	**0001-D**