

Appendix E.2 - NatSci Report

Individual Environmental Assessment
Teston Road Area (Y.R.49) between Highway 400 and Bathurst Street (Y.R.38)
Natural Environment Report

Regional Municipality of York

APPENDIX C – Fisheries Field Data Sheets

WATERCOURSE FIELD COLLECTION FORM

GENERAL INFORMATION			
Project # 190261800	Project Description: TESTON RD	Date: AUG 18 2022	
Is Stream Realignment required for this section: <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unknown			
Collectors: H WILTON B GOTTFRIED	Time Started: 9:30	Time Finished: 11:33	
Weather Conditions: SUN , 27°			
Air Temp (°C): 27°	Water Temp (°C): 21.9	Conductivity (µS/cm): 1,90 mS/cm	Velocity (m/s): N/A / 6 sec.
Photos Numbers And Descriptions: / Turb → 0.0 NTU D.O → 4.1 mg/L @ 49% PH → 5.64 (?).			
LOCATION			
Name of Waterbody: DON RIVER TRIB	Drainage System: DON RIVER	Crossing #: SITE # 1	Station #: /
Location Of Crossing: W OF TESTON @ DUFFERIN			
GPS Coordinates: 43,878460, -79.495878		MTO Chainage: /	
Township: VAUGHAN		MNR District: AURORA	

LAND USE AND POLLUTION								
Surrounding Land Use: DEVELOPMENT, NATURAL					Sources of Pollution: - Potential US source of erosion & sedimentation (development?)			
EXISTING STRUCTURE TYPE								
Bridge <input type="radio"/>		Box Culvert <input type="radio"/>		Open Foot Culvert <input type="radio"/>		CSP <input type="radio"/>		N/A <input type="radio"/>
Other <input checked="" type="radio"/> FUTURE BRIDGE (Describe)					Size: (w x h) m ² opening of dam is ~1.3m.			
SECTION TYPE AND MORPHOLOGY								
Section (Reach) Identifier: D/S of pond outlet					Section Location: (Include On Habitat Map)			
Associated Wetland HEADWATERS + POND U/S					↘			
Stream / River <input type="radio"/>		Channelized <input type="radio"/>		Permanent <input checked="" type="radio"/>		Intermittent <input type="radio"/>		Ephemeral <input type="radio"/>
Total Section (Reach) Length (m): ~200m								
Sub-Sections:	Run <input checked="" type="radio"/>	Pool <input type="radio"/>	Riffle <input type="radio"/>	Flats <input type="radio"/>	Culvert <input type="radio"/>	Other <input type="radio"/>		
Percentage of Area:	100							
Mean wetted depth (m)	0.03							
Mean wetted width (m)	0.4							
Mean bankfull depth (m)	~0.12							
Mean bankfull width (m)	3.8m							
Substrate (type & %)	Silt, gr, D Bo.							
Bedrock (Br)	Boulder (Bo)	Cobble (Co)	Gravel (Gr)	Sand (Sa)	Silt (Si)	Clay (Cl)	Muck (Mu)	Detritus (D)

BANK STABILITY				
	Stable	Slightly Unstable	Moderately Unstable	Unstable
Left Bank	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Right Bank	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Deposition Zone	Protected Bank	Vulnerable Bank	Eroding Bank
Left Bank	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Right Bank	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
HABITAT				
In-Stream Cover (% surface area):				
Undercut banks: <input checked="" type="checkbox"/>	Boulders: <input checked="" type="checkbox"/>	Cobbles: <input checked="" type="checkbox"/>	Organic Debris: 15	None <input checked="" type="checkbox"/>
Vascular Macrophytes:			Woody Debris:	
Instream: 10 → wetland habitat			Instream: 55	
Overhanging: 20			Overhanging: 5	
Shore Cover (% stream shaded):				
100-90% <input type="radio"/>	89-60% <input checked="" type="radio"/>	59-30% <input type="radio"/>	29-1% <input type="radio"/>	None <input type="radio"/>
Vegetation Type:				
Vegetation Type (%)	Submergent:	Floating:	Emergent: 10	None <input checked="" type="checkbox"/>
Predominant Species:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Reed canary grass	

MIGRATORY OBSTRUCTIONS

Permanent DAM AT POND	Seasonal /	None /
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POTENTIAL CRITICAL HABITAT

Spawning /	Groundwater Iron staining is present D/S of dam (~100m) in wetland area	Other /
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POTENTIAL ENHANCEMENT OPPORTUNITIES

- silt deposition noted ~ 50-80m D/S of dam where gradient declines. Appears unnatural. compared to native substrates. (↓ sediment input)
- remove 0.35m barrier @ Pond outfall.

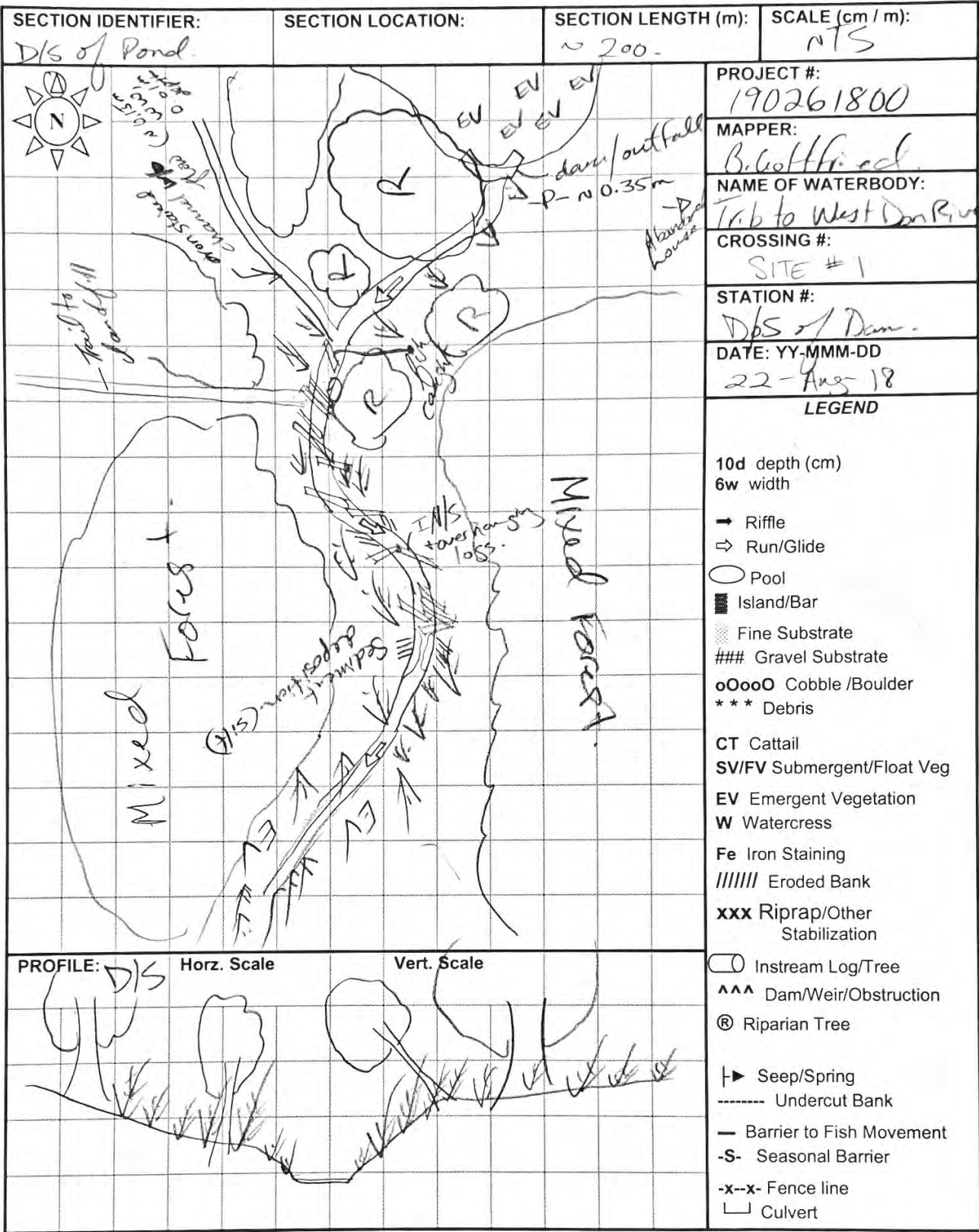
ADDITIONAL COMMENTS

- DIS OF PRIVATE POND + DAM. NO ACCESS TO PROPERTY NORTH OF PROPOSED BRIDGE
- defined flow through mixed forest before opening into wetland habitat D/S.
- pond is dense w/ m/s veg (pickweed)
- 1 Blacknose Dace caught u/s of stream crossing.
25 mm TL
- 1 additional small fish (likely same sized dace) observed

Additional Notes Appended? No Yes

Number of Pages _____

202 seconds shocking.



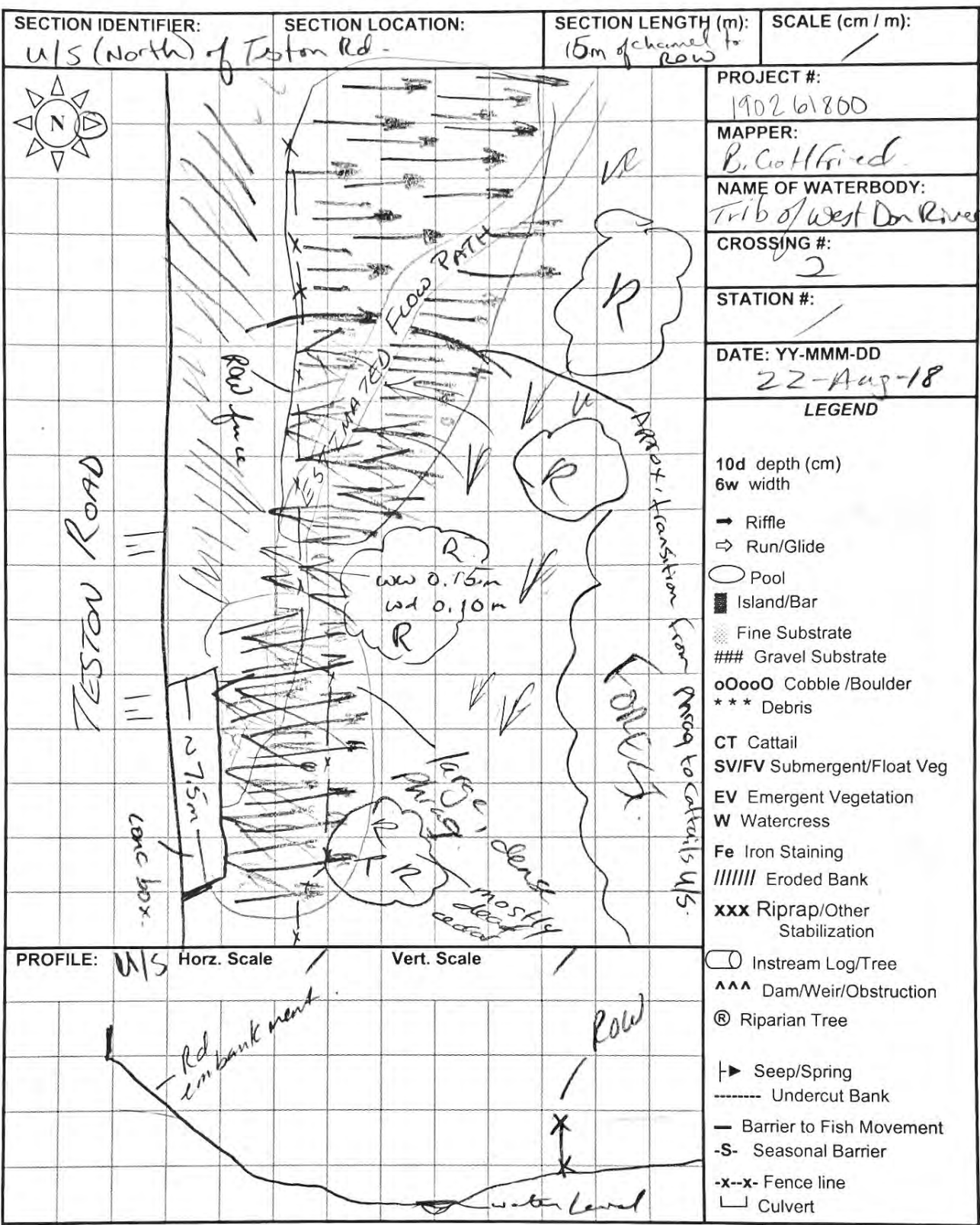
WATERCOURSE FIELD COLLECTION FORM

GENERAL INFORMATION			
Project # 190261800	Project Description: TESTON RD	Date: AUG 18/22	
Is Stream Realignment required for this section: <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unknown			
Collectors: H. WILTON B. GOTTFRIED	Time Started: 13:45	Time Finished: 14:00	
Weather Conditions: SUN, PARTIAL CLOUD			
Air Temp (°C): 29	Water Temp (°C): /	Conductivity (µS/cm): /	Velocity (m/s): /
Photos Numbers And Descriptions: /			
LOCATION			
Name of Waterbody: TRIB OF WEST DON RIVER	Drainage System: DON RIVER	Crossing #: SITE #2 UIS	Station #: /
Location Of Crossing: TESTON RD JUST WEST OF BATHURST			
GPS Coordinates: VAUGHAN		MTO Chainage: /	
Township: 43.882284, -79.477120		MNR District: AURORA	

LAND USE AND POLLUTION								
Surrounding Land Use: TESTON RD, NATURAL					Sources of Pollution: RUNOFF, LITTER			
EXISTING STRUCTURE TYPE								
Bridge <input type="radio"/>	Box Culvert <input checked="" type="radio"/>	Open Foot Culvert <input type="radio"/>	CSP <input type="radio"/>	N/A <input type="radio"/>				
Other <input type="radio"/> (Describe)				Size: (w x h) m ² 7.5m x 1.5m				
SECTION TYPE AND MORPHOLOGY								
Section (Reach) Identifier: UIS					Section Location: (Include On Habitat Map)			
Associated Wetland								
Stream / River <input type="radio"/>	Channelized <input type="radio"/>	Permanent <input checked="" type="radio"/>	Intermittent <input type="radio"/>	Ephemeral <input type="radio"/>				
Total Section (Reach) Length (m): 50								
Sub-Sections:	Run <input checked="" type="radio"/>	Pool <input type="radio"/>	Riffle <input type="radio"/>	Flats <input type="radio"/>	Culvert <input type="radio"/>	Other <input type="radio"/>		
Percentage of Area:	100							
Mean wetted depth (m)	0.10							
Mean wetted width (m)	0.15							
Mean bankfull depth (m)	N/A							
Mean bankfull width (m)	N/A							
Substrate (type & %)	MU, D							
Bedrock (Br)	Boulder (Bo)	Cobble (Co)	Gravel (Gr)	Sand (Sa)	Silt (Si)	Clay (Cl)	Muck (Mu)	Detritus (D)
							50	50

BANK STABILITY				
	Stable	Slightly Unstable	Moderately Unstable	Unstable
Left Bank	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Right Bank	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Deposition Zone	Protected Bank	Vulnerable Bank	Eroding Bank
Left Bank N/A	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Right Bank N/A	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HABITAT				
In-Stream Cover (% surface area):				
Undercut banks:	Boulders:	Cobbles:	Organic Debris:	None <input type="radio"/>
Vascular Macrophytes: 100		Woody Debris:		
Instream: CATTAILS		Instream:		
Overhanging: PHRAG		Overhanging:		
Shore Cover (% stream shaded):				
100-90% <input checked="" type="radio"/>	89-60% <input type="radio"/>	59-30% <input type="radio"/>	29-1% <input type="radio"/>	None <input type="radio"/>
Vegetation Type:				
Vegetation Type (%)	Submergent:	Floating:	Emergent: 100	None <input type="radio"/>
Predominant Species:			CATTAILS PHRAG	

MIGRATORY OBSTRUCTIONS		
Permanent LOW FLOW, THICK VEG	Seasonal	None
POTENTIAL CRITICAL HABITAT		
Spawning	Groundwater IRON STAINING	Other
POTENTIAL ENHANCEMENT OPPORTUNITIES		
ADDITIONAL COMMENTS		
<ul style="list-style-type: none"> - Small incised channel in cattails + Phrag - No fishing completed in thick vegetation - Not likely direct habitat w/in vegetation, possible U/S out of ROW - SURVEY limited to ROW - 15m of channel 		
Additional Notes Appended? <input checked="" type="radio"/> No <input type="radio"/> Yes		Number of Pages _____

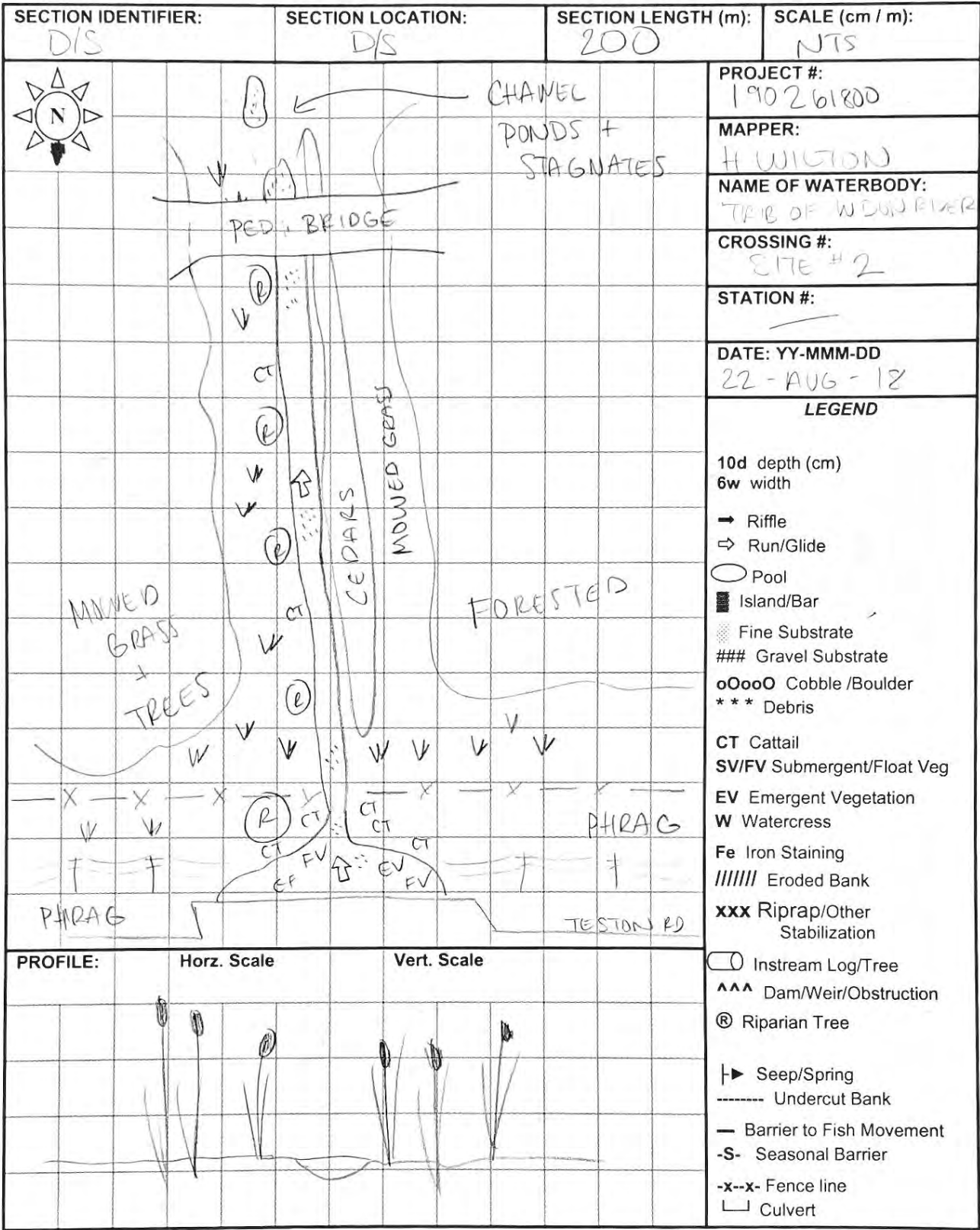


WATERCOURSE FIELD COLLECTION FORM

GENERAL INFORMATION			
Project # <p style="text-align: center;">190261800</p>	Project Description: <p style="text-align: center;">Teston Rd.</p>	Date: <p style="text-align: center;">Aug 18/22</p>	
Is Stream Realignment required for this section: <input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Unknown			
Collectors: <i>B. Gottfried / H. Wilton</i>	Time Started: <p style="text-align: center;">2:08 (14:08)</p>	Time Finished: <p style="text-align: center;">15:00</p>	
Weather Conditions: <i>Sunny, Hot</i>			
Air Temp (°C): <i>28°C</i>	Water Temp (°C): <i>17.2</i>	Conductivity (µS/cm): <i>1.34 mScm</i>	Velocity (m/s): <i>Nil.</i>
Photos Numbers And Descriptions: <p style="text-align: right; margin-right: 50px;"><i>D.O → 5.4 mg/L @ 58%</i> <i>Turb → 0.0 NTU.</i> <i>pH → 5.85 (?)</i></p>			
LOCATION			
Name of Waterbody: <i>Trib to west Don River</i>	Drainage System: <i>DON RIVER</i>	Crossing #: <p style="text-align: center;"><i>2</i></p> <p style="text-align: center;"><i>D/S</i></p>	Station #: <p style="text-align: center;"><i>/</i></p>
Location Of Crossing: <i>East of Dufferin @ Teston Rd.</i>			
GPS Coordinates: <p style="text-align: center;"><i>43.882000, -79.476795</i></p>		MTO Chainage: <p style="text-align: center;"><i>/</i></p>	
Township: <p style="text-align: center;"><i>VANGLAN</i></p>		MNR District: <p style="text-align: center;"><i>Aurora</i></p>	

BANK STABILITY				
	Stable	Slightly Unstable	Moderately Unstable	Unstable
Left Bank	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Right Bank	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Deposition Zone	Protected Bank	Vulnerable Bank	Eroding Bank
Left Bank	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Right Bank	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
HABITAT				
In-Stream Cover (% surface area):				
Undercut banks: <input checked="" type="checkbox"/>	Boulders: <input checked="" type="checkbox"/>	Cobbles: <input checked="" type="checkbox"/>	Organic Debris: 10	None <input type="checkbox"/>
Vascular Macrophytes:			Woody Debris:	
Instream: 15			Instream: 5	
Overhanging: 25			Overhanging: 3	
Shore Cover (% stream shaded):				
100-90% <input type="checkbox"/>	89-60% <input type="checkbox"/>	59-30% <input checked="" type="checkbox"/>	29-1% <input type="checkbox"/>	None <input type="checkbox"/>
Vegetation Type:				
Vegetation Type (%)	Submergent:	Floating:	Emergent:	None <input type="checkbox"/>
Predominant Species:	<input checked="" type="checkbox"/>	Duckweed (land)	Cattails (Broadleaf) terrestrial species	

MIGRATORY OBSTRUCTIONS		
Permanent /	Seasonal - lack of flow/depth - triple CSP is also barrier	None /
POTENTIAL CRITICAL HABITAT		
Spawning /	Groundwater /	Other /
POTENTIAL ENHANCEMENT OPPORTUNITIES		
<p>↑ flow</p> <p>↓ seasonal barriers @ triple CSP crossing of private bridge</p> <p>↑ riparian lawn is cut ~8m from RUB on private property</p>		
ADDITIONAL COMMENTS		
<ul style="list-style-type: none"> - defined channel w/ dense riparian + overhanging cover (particularly D/S of private bridge) - Cannot efish D/S due to NDMNRF restriction due to Redside Dace - limited to No flow (stagnant conditions w/ surface film) - Abundant thin wooden slats deposited in/s, D/S of ROW 		
Additional Notes Appended? <input checked="" type="radio"/> No <input type="radio"/> Yes		Number of Pages _____



∇ = TERR GRASS + SHRUB

WATERCOURSE FIELD COLLECTION FORM

GENERAL INFORMATION			
Project # 190261800	Project Description: Teston Rd.	Date: Aug 18/22	
Is Stream Realignment required for this section: <input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Unknown			
Collectors: B. Gottfred / A. Wilton	Time Started: 12:45	Time Finished: 1:28	
Weather Conditions: Sunny, hot.			
Air Temp (°C): 27	Water Temp (°C): /	Conductivity (µS/cm): /	Velocity (m/s): /
Photos Numbers And Descriptions: /			
LOCATION			
Name of Waterbody: Trib to West Don River	Drainage System: 	Crossing #: Site 3	Station #: /
Location Of Crossing: west of Bethelst st			
GPS Coordinates: 43,884090, -79,468193		MTO Chainage: /	
Township: /		MNRF District: Aurora	

BANK STABILITY				
	Stable	Slightly Unstable	Moderately Unstable	Unstable
Left Bank	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Right Bank	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Deposition Zone	Protected Bank	Vulnerable Bank	Eroding Bank
Left Bank	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Right Bank	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
HABITAT				
In-Stream Cover (% surface area):				
Undercut banks: ✓	Boulders: 10	Cobbles: 30	Organic Debris: 5	None <input type="radio"/>
Vascular Macrophytes:		Woody Debris:		
Instream: 5		Instream: 5		
Overhanging: 15		Overhanging: 0		
Shore Cover (% stream shaded):				
100-90% <input type="radio"/>	89-60% <input type="radio"/>	59-30% <input type="radio"/>	29-1% <input checked="" type="radio"/>	None <input type="radio"/>
Vegetation Type:				
Vegetation Type (%)	Submergent:	Floating:	Emergent:	None <input checked="" type="radio"/>
Predominant Species:			- top species terrestrial	

MIGRATORY OBSTRUCTIONS		
Permanent /	Seasonal dry, 0.25m gradient drop 12.5m u/s of inlet	None /
POTENTIAL CRITICAL HABITAT		
Spawning /	Groundwater /	Other /
POTENTIAL ENHANCEMENT OPPORTUNITIES		
<ul style="list-style-type: none"> - remove seasonal gradient barriers. - remove m/s filter fabric. <p>→ No Access beyond ROW. D/S side is underground.</p>		
ADDITIONAL COMMENTS		
<p>from inlet to ROW limit, cobble substrate is predominant. Beyond ROW, silt in less defined, low gradient channel. is predominant (channel may braid u/s of ROW)</p> <ul style="list-style-type: none"> - old remnant filter fabric is in/s 12m u/s of inlet. - Cobble in culvert. - silt fence present on both sides of channel 		
Additional Notes Appended? <input type="radio"/> No <input type="radio"/> Yes		Number of Pages _____

SECTION IDENTIFIER: u/s (North)	SECTION LOCATION: u/s Teston Rd.	SECTION LENGTH (m): 10	SCALE (cm / m): NTS
			PROJECT #: 190261800 MAPPER: B. Gottfried NAME OF WATERBODY: Trib to West Don CROSSING #: 3 STATION #:
			DATE: YY-MMM-DD 22 Aug 18
PROFILE: Horz. Scale Vert. Scale 			LEGEND 10d depth (cm) 6w width → Riffle ⇨ Run/Glide ○ Pool ■ Island/Bar ● Fine Substrate ### Gravel Substrate oOooO Cobble / Boulder *** Debris CT Cattail SV/FV Submergent/Float Veg EV Emergent Vegetation W Watercress Fe Iron Staining // // // // // Eroded Bank xxx Riprap/Other Stabilization ○ Instream Log/Tree ^^^ Dam/Weir/Obstruction ® Riparian Tree ▸ Seep/Spring ----- Undercut Bank — Barrier to Fish Movement -S- Seasonal Barrier -x-x- Fence line └ Culvert

APPENDIX D – Plant and Wildlife Species Lists

Type	Scientific Name	Common Names	CC	CW	SRank	Lrank
Herb	<i>Medicago sativa</i> ssp. <i>sativa</i>	Alfalfa	0		5 SNA	L+
Shrub	<i>Cornus alternifolia</i>	Alternate-leaved Dogwood	6		3 S5	L5
Tree	<i>Fagus grandifolia</i>	American Beech	6		3 S4	L4
Tree	<i>Populus balsamifera</i>	Balsam Poplar	4		-3 S5	L5
Tree	<i>Tilia americana</i>	Basswood	4		3 S5	L5
Herb	<i>Galium</i> sp	Bedstraw Species				
Herb	<i>Lotus corniculatus</i>	Bird's-foot Trefoil	0		3 SNA	L+
Woody Vine	<i>Solanum dulcamara</i>	Bittersweet Nightshade	0		0 SNA	L+
Tree	<i>Fraxinus nigra</i>	Black Ash	7		-3 S3	L4
Tree	<i>Prunus serotina</i>	Black Cherry	3		3 S5	L5
Tree	<i>Robinia pseudo-acacia</i>	Black Locust	0		4 SE5	L+
Shrub	<i>Rubus occidentalis</i>	Black Raspberry	2		5 S5	L5
Tree	<i>Picea mariana</i>	Black Spruce	8		-3 S5	L2
Tree	<i>Juglans nigra</i>	Black Walnut	5		3 S4?	L5
Herb	<i>Rudbeckia hirta</i>	Black-eyed Susan	0		3 S5	L4
Herb	<i>Silene vulgaris</i>	Bladder Champion	0		5 SNA	L+
Herb	<i>Sanguinaria canadensis</i>	Bloodroot	5		3 S5	L5
Shrub	<i>Carpinus caroliniana</i>	Blue Beech	6		0 S5	L4
Fern	<i>Pteridium aquilinum</i>	Bracken Fern	3		3 S5	L4
Shrub	<i>Diervilla lonicera</i>	Bush Honeysuckle	5		5 S5	L5
Herb	<i>Ranunculus</i> sp	Buttercup Species				
Tree	<i>Juglans cinerea</i>	Butternut	6		3 S2?	L3
Herb	<i>Maianthemum canadense</i>	Canada Mayflower	5		3 S5	L4
Herb	<i>Cirsium arvense</i>	Canada Thistle	0		3 SNA	L+
Herb	<i>Typha</i> sp	Cattail Species				
Herb	<i>Cichorium intybus</i>	Chicory	0		5 SNA	L+
Woody Vine	<i>Celastrus scandens</i>	Climbing Bittersweet	3		3 S5	L3
Herb	<i>Tussilago farfara</i>	Coltsfoot	0		3 SNA	L+
Herb	<i>Sagittaria latifolia</i>	Common Arrowhead	4		-5 S5	L4
Shrub	<i>Rhamnus cathartica</i>	Common Buckthorn	0		0 SNA	L+
Herb	<i>Arctium minus</i>	Common Burdock	0		5 SNA	L+
Herb	<i>Oenothera biennis</i>	Common Evening-primrose	0		3 S5	L5
Fern	<i>Athyrium filix-femina</i>	Common Lady Fern	4		0 S5	L5
Herb	<i>Asclepias syriaca</i>	Common Milkweed	0		5 S5	L5
Herb	<i>Verbascum thapsus</i>	Common Mullein	0		5 SNA	L+
Herb	<i>Plantago major</i>	Common Plantain	0		3 SNA	L+
Shrub	<i>Ligustrum vulgare</i>	Common Privet	0		3 SNA	L+
Herb	<i>Ambrosia artemisiifolia</i>	Common Ragweed	0		3 S5	L5
Graminoid	<i>Phragmites australis</i> ssp. <i>australis</i>	Common Reed	0		-3 SNA	L+
Herb	<i>Hypericum perforatum</i>	Common St. John's-wort	0		5 SNA	L+
Herb	<i>Dipsacus fullonum</i>	Common Teasel	0		3 SNA	L+
Herb	<i>Valeriana officinalis</i>	Common Valerian	0		3 SNA	L+

Herb	<i>Achillea millefolium</i>	Common Yarrow	0	3 SNA	L+
Vine	<i>Vicia cracca</i>	Cow Vetch	0	5 SNA	L+
Shrub	<i>Malus</i> sp	Crabapple Species			
Herb	<i>Securigera varia</i>	Crown Vetch	0	5 SNA	L+
Herb	<i>Rumex crispus</i>	Curly Dock	0	0 SNA	L+
Herb	<i>Erigeron annuus</i>	Daisy Fleabane	0	1 S5	L5
Herb	<i>Hesperis matronalis</i>	Dame's Rocket	0	3 SNA	L+
Herb	<i>Lemna</i> sp	Duckweed Species			
Tree	<i>Populus deltoides</i>	Eastern Cottonwood	4	0 S5	L5
Tree	<i>Tsuga canadensis</i>	Eastern Hemlock	7	3 S5	L4
Tree	<i>Thuja occidentalis</i>	Eastern White Cedar	4	-3 S5	L5
Tree	<i>Pinus strobus</i>	Eastern White Pine	4	3 S5	L4
Herb	<i>Inula helenium</i>	Elecampane	0	3 SNA	L+
Herb	<i>Circaea</i> sp	Enchanter's Nightshade Species			
Tree	<i>Populus alba</i>	European White Poplar	0	5 SNA	L+
Herb	<i>Maianthemum racemosum</i>	False Solomon's Seal	4	3 S5	L5
Vine	<i>Convolvulus arvensis</i>	Field Bindweed	0	5 SNA	L+
Herb	<i>Hieracium caespitosum</i>	Field Hawkweed	0	5 SNA	L+
Herb	<i>Nymphaea odorata</i>	Fragrant White Water-lily	5	-5 S5	L3
Herb	<i>Alliaria petiolata</i>	Garlic Mustard	0	0 SNA	L+
Herb	<i>Solidago</i> sp	Goldenrod Species			
Shrub	<i>Crataegus</i> sp	Hawthorn Species			
Herb	<i>Symphyotrichum cordifolium</i>	Heart-leaved Aster	5	5 S5	L5
Herb	<i>Geranium robertianum</i>	Herb Robert	2	3 S5	L+?
Shrub	<i>Viburnum opulus</i> var. <i>americanum</i>	Highbush Cranberry	5	-3 S5	L3
Tree	<i>Gleditsia triacanthos</i>	Honey Locust	8	0 S2?	L+
Shrub	<i>Lonicera</i> sp	Honeysuckle Species			
Fern	<i>Equisetum</i> sp	Horsetail Species			
Herb	<i>Arisaema triphyllum</i>	Jack-in-the-pulpit	5	-2 S5	L5
Herb	<i>Centaurea</i> sp	Knapweed Species			
Tree	<i>Populus grandidentata</i>	Large-toothed Aspen	5	5 S5	L4
Herb	<i>Euphorbia esula</i>	Leafy Spurge	0	5 SNA	L+
Tree	<i>Acer negundo</i>	Manitoba Maple	0	-2 S5	L+?
Herb	<i>Tragopogon pratensis</i>	Meadow Goat's-beard	0	5 SNA	L+
Herb	<i>Thalictrum</i> sp	Meadow-rue Species			
Fern	<i>Matteuccia struthiopteris</i>	Ostrich Fern	5	0 S5	L5
Herb	<i>Leucanthemum vulgare</i>	Ox-eye Daisy	0	5 SNA	L+
Herb	<i>Sonchus arvensis</i>	Perennial Sow-thistle	0	3 SNA	L+
Herb	<i>Impatiens glandulifera</i>	Pink Touch-me-not	0	-3 SNA	L+
Herb	<i>Potamogeton</i> sp	Pondweed Species			
Tree	<i>Fraxinus pennsylvanica</i>	Red Ash	3	-3 S4	L5
Herb	<i>Actaea rubra</i>	Red Baneberry	5	5 S5	L5
Herb	<i>Trifolium pratense</i>	Red Clover	0	3 SNA	L+

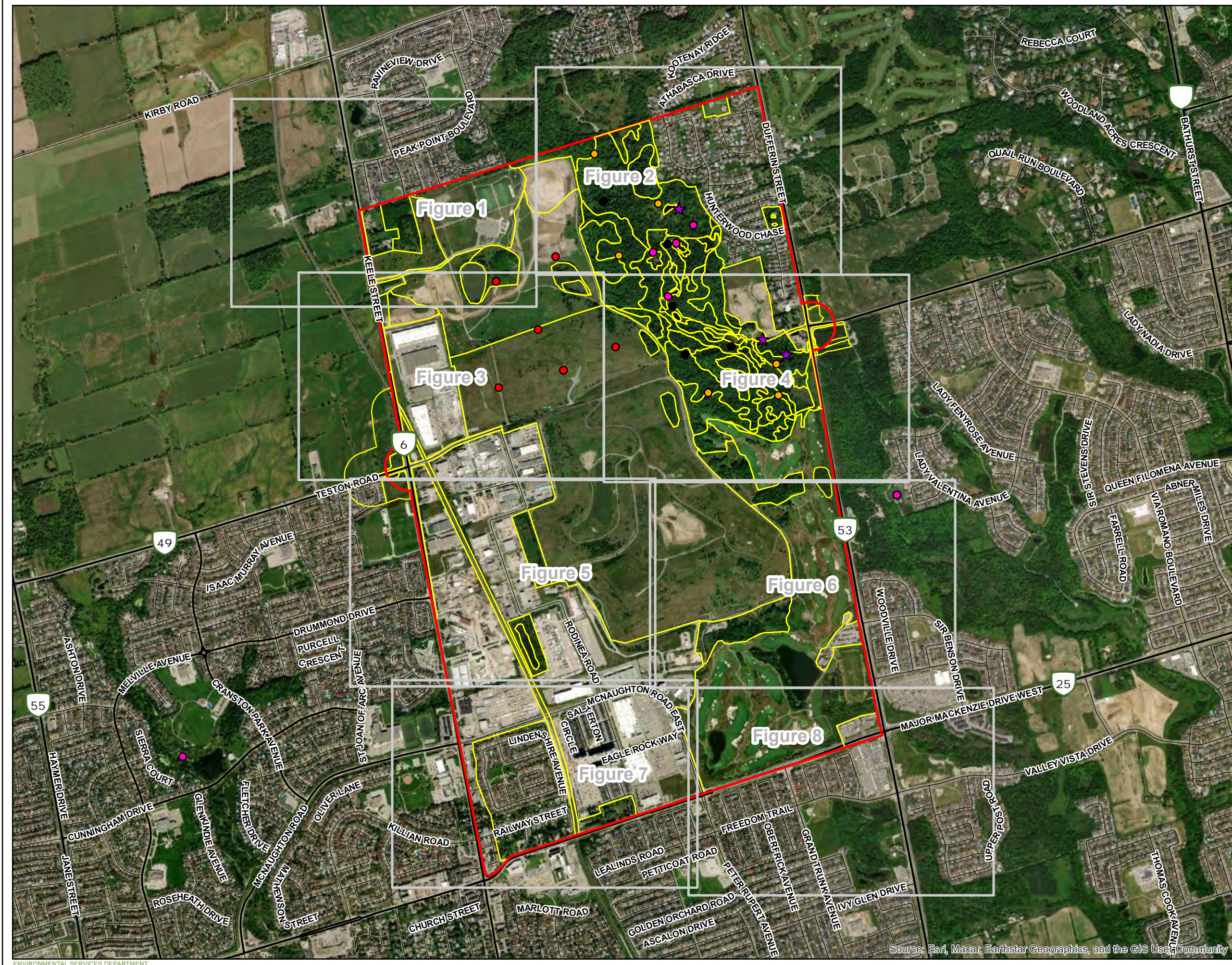
Shrub	<i>Sambucus racemosa</i>	Red Elderberry	5	3 S5	L5
Tree	<i>Acer rubrum</i>	Red Maple	4	0 S5	L4
Tree	<i>Quercus rubra</i>	Red Oak	6	3 S5	L4
Tree	<i>Pinus resinosa</i>	Red Pine	8	3 S5	L1
Shrub	<i>Cornus stolonifera</i>	Red-osier Dogwood	2	-3 S5	L5
Graminoid	<i>Phalaris arundinacea</i>	Reed Canary Grass	0	-3 S5	L+?
Woody Vine	<i>Vitis riparia</i>	Riverbank Grape	0	0 S5	L5
Herb	<i>Streptopus lanceolatus</i>	Rose Twisted Stalk	7	3 S5	L3
Shrub	<i>Cornus rugosa</i>	Round-leaved Dogwood	6	5 S5	L4
Shrub	<i>Salix interior</i>	Sandbar Willow	1	-3 S5	L5
Tree	<i>Pinus sylvestris</i>	Scots Pine	0	3 SNA	L+
Fern	<i>Equisetum hyemale</i> ssp. <i>affine</i>	Scouring Rush	2	0 S5	L5
Fern	<i>Onoclea sensibilis</i>	Sensitive Fern	4	-3 S5	L5
Herb	<i>Anemone acutiloba</i>	Sharp-lobed Hepatica	6	5 S5	L3
Herb	<i>Pyrola elliptica</i>	Shinleaf	5	5 S5	L3
Tree	<i>Ulmus pumila</i>	Siberian Elm	0	3 SNA	L+
Graminoid	<i>Bromus inermis</i>	Smooth Brome	0	5 SNA	L+
Herb	<i>Polygonatum sp</i>	Solomon's Seal Species			
Shrub	<i>Alnus incana</i> ssp. <i>rugosa</i>	Speckled Alder	6	-5 S5	L3
Fern	<i>Dryopteris carthusiana</i>	Spinulose Wood Fern	5	-3 S5	L5
Herb	<i>Centaurea stoebe</i>	Spotted Knapweed	0	5 SNA	L+
Herb	<i>Impatiens capensis</i>	Spotted Touch-me-not	4	-3 S5	L5
Shrub	<i>Rhus typhina</i>	Staghorn Sumac	1	3 S5	L5
Tree	<i>Acer saccharum</i> ssp. <i>saccharum</i>	Sugar Maple	4	3 S5	L5
Tree	<i>Platanus occidentalis</i>	Sycamore	8	-3 S4	L2
Herb	<i>Tanacetum vulgare</i>	Tansy	0	5 SNA	L+
Woody Vine	<i>Parthenocissus vitacea</i>	Thicket Creeper	4	3 S5	L5
Tree	<i>Populus tremuloides</i>	Trembling Aspen	2	0 S5	L5
Herb	<i>Trillium sp</i>	Trillium Species			
Herb	<i>Echium vulgare</i>	Viper's Bugloss	0	5 SNA	L+
Woody Vine	<i>Parthenocissus quinquefolia</i>	Virginia Creeper	6	3 S4?	L5
Herb	<i>Geum canadense</i>	White Avens	3	0 S5	L5
Tree	<i>Betula papyrifera</i>	White Birch	2	3 S5	L4
Tree	<i>Ulmus americana</i>	White Elm	3	-3 S5	L5
Herb	<i>Prenanthes sp</i>	White Lettuce Species			
Tree	<i>Picea glauca</i>	White Spruce	6	3 S5	L3
Herb	<i>Melilotus albus</i>	White Sweet-clover	0	3 SNA	L+
Herb	<i>Trillium grandiflorum</i>	White Trillium	5	3 S5	L4
Herb	<i>Monarda fistulosa</i>	Wild Bergamot	6	3 S5	L5
Herb	<i>Daucus carota</i>	Wild Carrot	0	5 SNA	L+
Herb	<i>Matricaria chamomila</i>	Wild Chamomile	0	5 SNA	L+
Shrub	<i>Rubus idaeus</i>	Wild Red Raspberry	2	3 S5	L5
Herb	<i>Aralia nudicaulis</i>	Wild Sarsaparilla	4	3 S5	L5

Shrub/Tree	Salix sp	Willow Species			
Fern	Dryopteris sp	Wood Fern Species			
Herb	Fragaria vesca	Woodland Strawberry	4	3 S5	L5
Herb	Geum aleppicum	Yellow Avens	2	0 S5	L5
Herb	Galium verum	Yellow Bedstraw	0	5 SNA	L+
Tree	Betula alleghaniensis	Yellow Birch	6	0 S5	L4
Herb	Clinopodium vulgare	Wild Basil	4	5 S5	L5
Herb	Solidago flexicaulis	Zig-zag Goldenrod	6	3 S5	L5
Tree	Kentucky Coffee-tree	Gymnocladus dioicus	6	5 S2?	L+

Common Name	Scientific Name	SARO Status	Srank	Lrank	Observed in Overall IEA Study Area	Observed in Focal Study Area	New Observation in Technically Preferred Alternative Study Area
Alder Flycatcher	<i>Empidonax alnorum</i>	Not at Risk	S5	L4	Yes	No	No
American Crow	<i>Corvus brachyrhynchos</i>	Not at Risk	S5B	L5	Yes	Yes	No
American Goldfinch	<i>Spinus tristis</i>	Not at Risk	S5B	L5	Yes	Yes	No
American Kestrel	<i>Falco sparverius</i>	Not at Risk	S4	L4	No	Yes	No
American Redstart	<i>Setophaga ruticilla</i>	Not at Risk	S5B	L4	Yes	Yes	No
American Robin	<i>Turdus migratorius</i>	Not at Risk	S5B	L5	Yes	Yes	No
American Woodcock	<i>Scolopax minor</i>	Not at Risk	S4B	L3	No	Yes	No
Baltimore Oriole	<i>Icterus galbula</i>	Not at Risk	S4B	L5	Yes	Yes	No
Barn Swallow	<i>Hirundo rustica</i>	Special Concern	S5B	L4	Yes	Yes	No
Black-capped Chickadee	<i>Parus atricapillus</i>	Not at Risk	S5	L5	Yes	Yes	No
Black-throated Green Warbler	<i>Setophaga virens</i>	Not at Risk	S5	L3	Yes	No	No
Blue Jay	<i>Cyanocitta cristata</i>	Not at Risk	S5	L5	Yes	Yes	No
Bobolink	<i>Dolichonyx oryzivorus</i>	Threatened	S4B	L3	No	Yes	No
Brown-headed Cowbird	<i>Molothrus ater</i>	Not at Risk	S4B	L5	No	Yes	No
Cedar Waxwing	<i>Bombus ciliarum</i>	Not at Risk	S5B	L5	Yes	Yes	No
Chipping Sparrow	<i>Spizella passerina</i>	Not at Risk	S5B	L5	No	Yes	No
Clay-coloured Sparrow	<i>Spizella pallida</i>	Not at Risk	S4B	L3	No	Yes	No
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>	Not at Risk	S5	L5	Yes	No	No
Common Grackle	<i>Quiscalus quiscula</i>	Not at Risk	S5B	L5	No	Yes	No
Common Yellowthroat	<i>Geothlypis trichas</i>	Not at Risk	S5B	L4	Yes	Yes	No
Downy Woodpecker	<i>Picoides pubescens</i>	Not at Risk	S5	L5	Yes	Yes	No
Eastern Kingbird	<i>Tyrannus tyrannus</i>	Not at Risk	S4B	L4	Yes	Yes	No
Eastern Meadowlark	<i>Sturnella magna</i>	Threatened	S4B	L3	No	Yes	No
Eastern Phoebe	<i>Sayornis phoebe</i>	Not at Risk	S5	L5	Yes	No	No
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	Not at Risk	S4B	L3	No	Yes	No
Eastern Wood-pewee	<i>Contopus virens</i>	Special Concern	S4B	L4	Yes	Yes	No
European Starling	<i>Sturnus vulgaris</i>	Not at Risk	Introduced	L+	Yes	No	No
Field Sparrow	<i>Spizella pusilla</i>	Not at Risk	S4B	L4	Yes	Yes	No
Gray Catbird	<i>Dumetella carolinensis</i>	Not at Risk	S4B	L4	No	Yes	No
Great Blue Heron	<i>Ardea herodias</i>	Not at Risk	S4	L3	Yes	Yes	No
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	Not at Risk	S4B	L4	Yes	Yes	No
Gull sp.	<i>Larus sp.</i>	Not at Risk			No	Yes	No
Hairy Woodpecker	<i>Picoides villosus</i>	Not at Risk	S5	L4	Yes	Yes	No
Horned Lark	<i>Eremophila alpestris</i>	Not at Risk	S5B	L3	No	Yes	No
House Sparrow	<i>Passer domesticus</i>	Not at Risk	SNA	L+	No	Yes	No
House Wren	<i>Troglodytes aedon</i>	Not at Risk	S5B	L5	Yes	Yes	No
Indigo Bunting	<i>Passerina cyanea</i>	Not at Risk	S4B	L4	Yes	Yes	No
Killdeer	<i>Charadrius vociferus</i>	Not at Risk	S5B, S5N	L4	Yes	Yes	No
Least Flycatcher	<i>Empidonax minimus</i>	Not at Risk	S4B	L4	No	Yes	No
Magnolia Warbler	<i>Setophaga magnolia</i>	Not at Risk	S5B	L3	No	Yes	No
Mallard	<i>Anas platyrhynchos</i>	Not at Risk	S5	L5	Yes	Yes	No
Mourning Dove	<i>Zenaidura macroura</i>	Not at Risk	S5	L5	No	Yes	No
Mourning Warbler	<i>Geothlypis philadelphia</i>	Not at Risk	S4B	L3	No	Yes	No
Northern Cardinal	<i>Cardinalis cardinalis</i>	Not at Risk	S5	L5	Yes	Yes	No
Northern Flicker	<i>Colaptes auratus</i>	Not at Risk	S4B	L4	Yes	Yes	No
Northern Mockingbird	<i>Mimus polyglottos</i>	Not at Risk	S4	L4	No	Yes	No
Orchard Oriole	<i>Icterus spurius</i>	Not at Risk	S4B	L5	No	Yes	No
Osprey	<i>Pandion haliaetus</i>	Not at Risk	S5B	L3	Yes	Yes	No
Pileated Woodpecker	<i>Dryocopus pileatus</i>	Not at Risk	S5	L3	Yes	Yes	No
Pine Warbler	<i>Setophaga pinus</i>	Not at Risk	S5B	L4	No	Yes	No
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	Not at Risk	S4	L5	No	Yes	No
Red-breasted Nuthatch	<i>Sitta canadensis</i>	Not at Risk	S5	L5	Yes	Yes	No
Red-eyed Vireo	<i>Vireo olivaceus</i>	Not at Risk	S5B	L4	Yes	Yes	No
Red-tailed Hawk	<i>Buteo jamaicensis</i>	Not at Risk	S5	L5	No	Yes	No
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	Not at Risk	S4	L5	Yes	Yes	No
Ring-billed Gull	<i>Larus delawarensis</i>	Not at Risk	S5B, S4N	L4	No	Yes	No
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	Not at Risk	S4/S5	L4	Yes	No	No
Savannah Sparrow	<i>Passerculus sandwichensis</i>	Not at Risk	S4B	L4	Yes	Yes	No
Scarlet Tanager	<i>Piranga olivacea</i>	Not at Risk	S4B	L3	No	Yes	No
Song Sparrow	<i>Melospiza melodia</i>	Not at Risk	S5B	L5	Yes	Yes	No
Spotted Sandpiper	<i>Actitis macularia</i>	Not at Risk	S5	L4	Yes	No	No
Swainson's Thrush	<i>Catharus ustulatus</i>	Not at Risk	S4B	Not listed	No	Yes	No
Swamp Sparrow	<i>Melospiza georgiana</i>	Not at Risk	S5B	L4	Yes	Yes	No
Tree Swallow	<i>Tachycineta bicolor</i>	Not at Risk	S4B	L4	No	Yes	No
Turkey Vulture	<i>Cathartes aura</i>	Not at Risk	S5B	L5	Yes	Yes	No
Vesper Sparrow	<i>Poocetes gramineus</i>	Not at Risk	S4B	L3	No	Yes	No
Warbling Vireo	<i>Vireo gilvus</i>	Not at Risk	S5B	L5	No	Yes	No
White-breasted Nuthatch	<i>Sitta carolinensis</i>	Not at Risk	S5	L4	Yes	Yes	No
Wild Turkey	<i>Meleagris gallopavo</i>	Not at Risk	S5	L3	Yes	Yes	No
Willow Flycatcher	<i>Empidonax traillii</i>	Not at Risk	S5B	L4	No	Yes	No
Winter Wren	<i>Troglodytes hiemalis</i>	Not at Risk	S5B	L3	Yes	Yes	No
Wood Thrush	<i>Hylocichla mustelina</i>	Special Concern	S4B	L3	Yes	Yes	No
Yellow Warbler	<i>Setophaga petechia</i>	Not at Risk	S5B	L5	Yes	Yes	No
Yellow-rumped Warbler	<i>Setophaga coronata</i>	Not at Risk	S5B	L3	Yes	No	No

Common Name	Scientific Name	SARO Status	Srank	Lrank	Observed in Overall IEA Study Area	Observed in Focal Study Area	New Observation in Technically Preferred Alternative Study Area
Eastern Chipmunk	<i>Tamias striatus</i>	Not at Risk	S5	L4	No	Yes	No
Eastern Cottontail	<i>Sylvilagus floridanus</i>	Not at Risk	S5	L4	No	Yes	No
White-tailed Deer	<i>Odocoileus virginianus</i>	Not at Risk	S5	L4	No	Yes	No
Eastern Gray Squirrel	<i>Sciurus carolinensis</i>	Not at Risk	S5	L5	No	Yes	No
Striped Skunk	<i>Mephitis mephitis</i>	Not at Risk	S5	L5	No	Yes	No
Raccoon	<i>Procyon lotor</i>	Not at Risk	S5	L5	No	No	Yes
Beaver	<i>Castor canadensis</i>	Not at Risk	S5	L4	Yes	No	No
Red Fox	<i>Vulpes vulpes</i>	Not at Risk	S5	L4	Yes	No	No
Spring Peeper	<i>Pseudacris crucifer</i>	Not at Risk	S5	L2	No	Yes	No
Midland Painted Turtle	<i>Chrysemys picta marginata</i>	Not at Risk	S4	L3	Yes	Yes	No
American Toad	<i>Anaxyrus americanus</i>	Not at Risk	S5	L4	Yes	Yes	No
Green Frog	<i>Lithobates clamitans</i>	Not at Risk	S5	L4	Yes	Yes	No
Eastern Gartersnake	<i>Thamnophis sirtalis sirtalis</i>	Not at Risk	S5	L4	No	No	Yes
Gray Treefrog	<i>Hyla versicolor</i>	Not at Risk	S5	L2	Yes	No	No
Wood Frog	<i>Lithobates sylvatica</i>	Not at Risk	S4	L2	Yes	No	No
Snapping Turtle	<i>Chelydra serpentina</i>	Special Conce	S4	L3	Yes	No	No
Black Swallowtail	<i>Papilio polyxenes</i>	Not at Risk	S5	N/A	No	Yes	No
Bluet sp.	<i>Enallagma sp.</i>			N/A	No	Yes	No
Brush-footed Butterflies	Nymphalidae			N/A	No	Yes	No
Cabbage White	<i>Pieris rapae</i>	Not at Risk	SNA	N/A	No	Yes	No
Common European Amber Snail	<i>Succinea putris</i>	Not at Risk	SNA	N/A	No	Yes	No
Litter Moths	<i>Zanclognatha sp.</i>			N/A	No	Yes	No
Monarch	<i>Danaus plexippus</i>	Special Conce	S2N,S4B	N/A	No	Yes	No
Narrow-winged Damselflies	Coenagrionidae			N/A	No	Yes	No
Silvery Blue	<i>Glaucopsyche lygdamus</i>	Not at Risk	S5	N/A	No	Yes	No
Stink Bugs	Pentatomidae			N/A	No	Yes	No

APPENDIX E – ELC Mapping



LEGEND

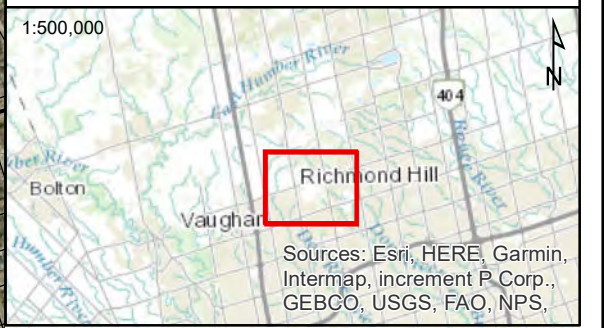
- Focal Study Area (2021)
- Ecological Land Classification
- 2020 SAR Observation Locations
- ★ 2021 Butternut Observation (+/- 12m)

Breeding Bird Survey Locations

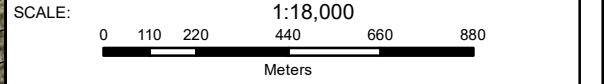
- Threatened/Endangered Species Detected
- Special Concern SAR Detected
- No SAR Detected

Transportation Network

- Arterial / Collector
- Local Roads



Coordinate System: NAD 1983 UTM Zone 17N
Sources: MNR

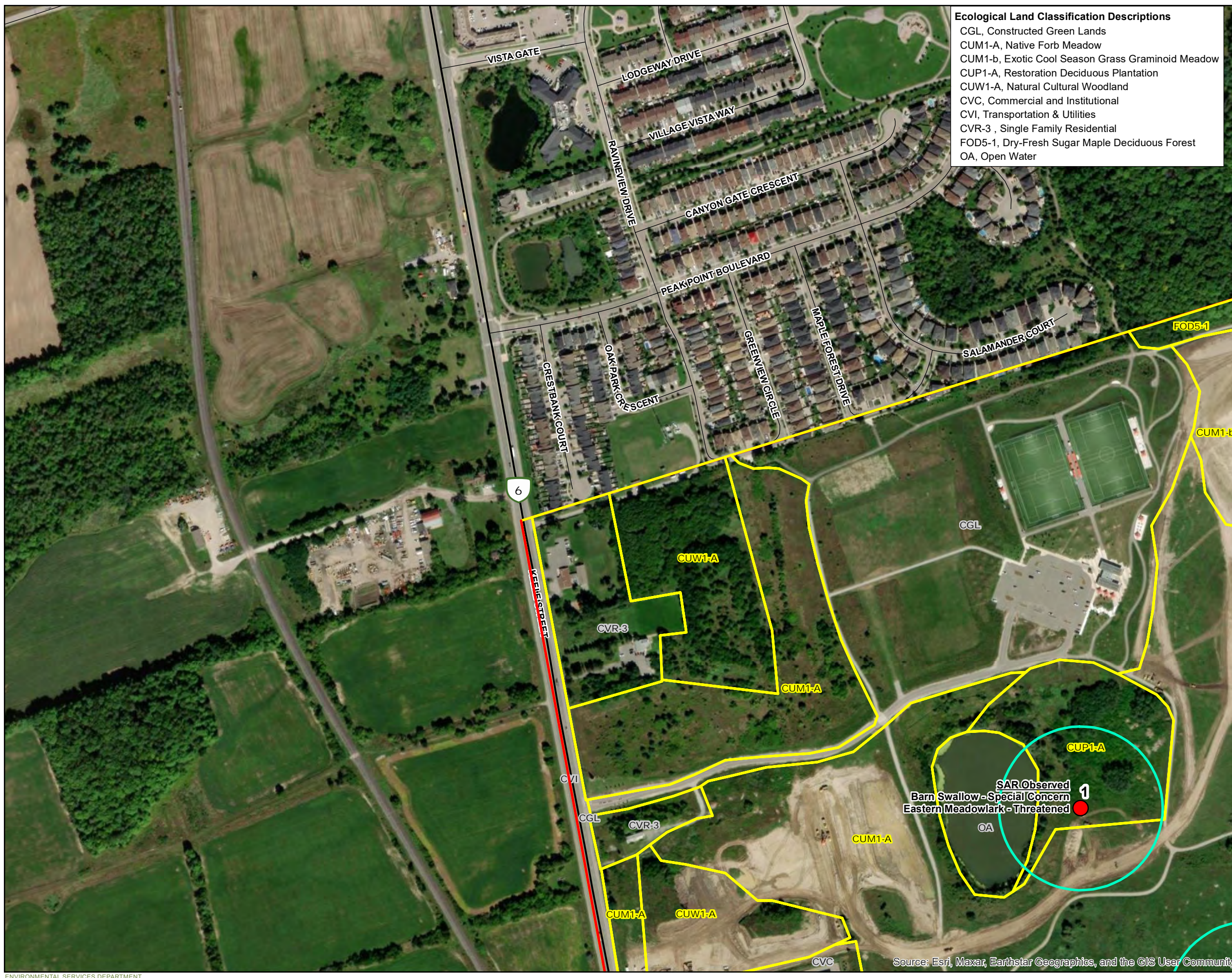


TITLE: Ecological Land Classification, Breeding Bird Survey Locations, and SAR Observations

PROJECT NO.: 190261800

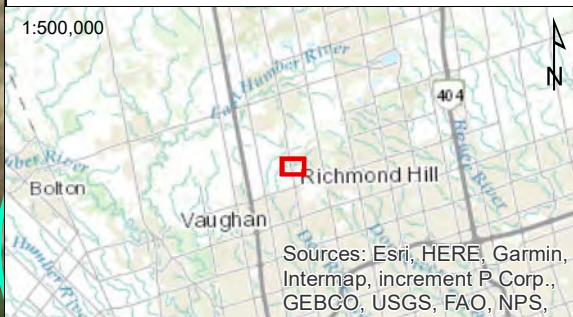
Teston Road

DATE: **March 2024** **Overview**

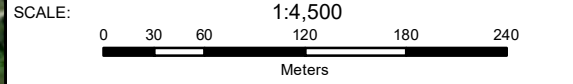


Ecological Land Classification Descriptions
 CGL, Constructed Green Lands
 CUM1-A, Native Forb Meadow
 CUM1-b, Exotic Cool Season Grass Graminoid Meadow
 CUP1-A, Restoration Deciduous Plantation
 CUW1-A, Natural Cultural Woodland
 CVC, Commercial and Institutional
 CVI, Transportation & Utilities
 CVR-3, Single Family Residential
 FOD5-1, Dry-Fresh Sugar Maple Deciduous Forest
 OA, Open Water

- LEGEND**
- Focal Study Area (2021)
 - Ecological Land Classification
 - Approximate Limit of Breeding Bird Survey
 - 2020 SAR Observation Locations
 - 2021 Butternut Observation (+/- 12m)
- Breeding Bird Survey Locations**
- Threatened/Endangered Species Detected
 - Special Concern SAR Detected
 - No SAR Detected
- ELC Community L Rank**
- L2
 - L3
 - L4
 - L+, L5
 - Not Ranked
- Transportation Network**
- Expressway / Highway / Freeway
 - Arterial / Collector
 - Local Roads



Coordinate System: NAD 1983 UTM Zone 17N
 Sources: MNR

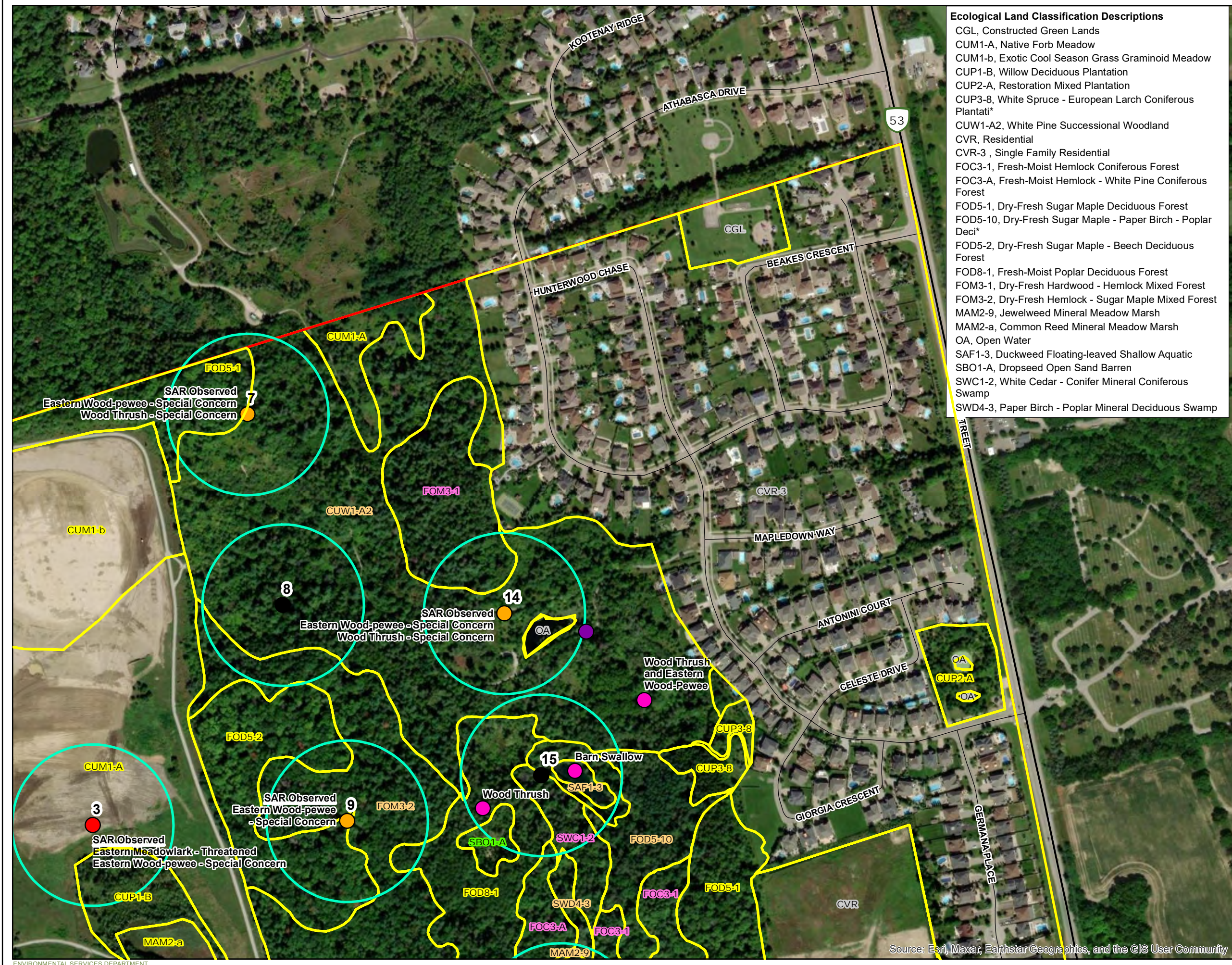


TITLE: Ecological Land Classification, Breeding Bird Survey Locations, and SAR Observations

PROJECT NO.: 190261800
 Teston Road

DATE: March 2024 Figure 1

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

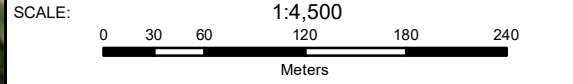


- Ecological Land Classification Descriptions**
- CGL, Constructed Green Lands
 - CUM1-A, Native Forb Meadow
 - CUM1-b, Exotic Cool Season Grass Graminoid Meadow
 - CUP1-B, Willow Deciduous Plantation
 - CUP2-A, Restoration Mixed Plantation
 - CUP3-8, White Spruce - European Larch Coniferous Plantati*
 - CUW1-A2, White Pine Successional Woodland
 - CVR, Residential
 - CVR-3, Single Family Residential
 - FOC3-1, Fresh-Moist Hemlock Coniferous Forest
 - FOC3-A, Fresh-Moist Hemlock - White Pine Coniferous Forest
 - FOD5-1, Dry-Fresh Sugar Maple Deciduous Forest
 - FOD5-10, Dry-Fresh Sugar Maple - Paper Birch - Poplar Deci*
 - FOD5-2, Dry-Fresh Sugar Maple - Beech Deciduous Forest
 - FOD8-1, Fresh-Moist Poplar Deciduous Forest
 - FOM3-1, Dry-Fresh Hardwood - Hemlock Mixed Forest
 - FOM3-2, Dry-Fresh Hemlock - Sugar Maple Mixed Forest
 - MAM2-9, Jewelweed Mineral Meadow Marsh
 - MAM2-a, Common Reed Mineral Meadow Marsh
 - OA, Open Water
 - SAF1-3, Duckweed Floating-leaved Shallow Aquatic
 - SBO1-A, Dropseed Open Sand Barren
 - SWC1-2, White Cedar - Conifer Mineral Coniferous Swamp
 - SWD4-3, Paper Birch - Poplar Mineral Deciduous Swamp

- LEGEND**
- Focal Study Area (2021)
 - Ecological Land Classification
 - Approximate Limit of Breeding Bird Survey
 - 2020 SAR Observation Locations
 - 2021 Butternut Observation (+/- 12m)
- Breeding Bird Survey Locations**
- Threatened/Endangered Species Detected
 - Special Concern SAR Detected
 - No SAR Detected
- ELC Community L Rank**
- L2
 - L3
 - L4
 - L+, L5
 - Not Ranked
- Transportation Network**
- Expressway / Highway / Freeway
 - Arterial / Collector
 - Local Roads



Coordinate System: NAD 1983 UTM Zone 17N
Sources: MNR



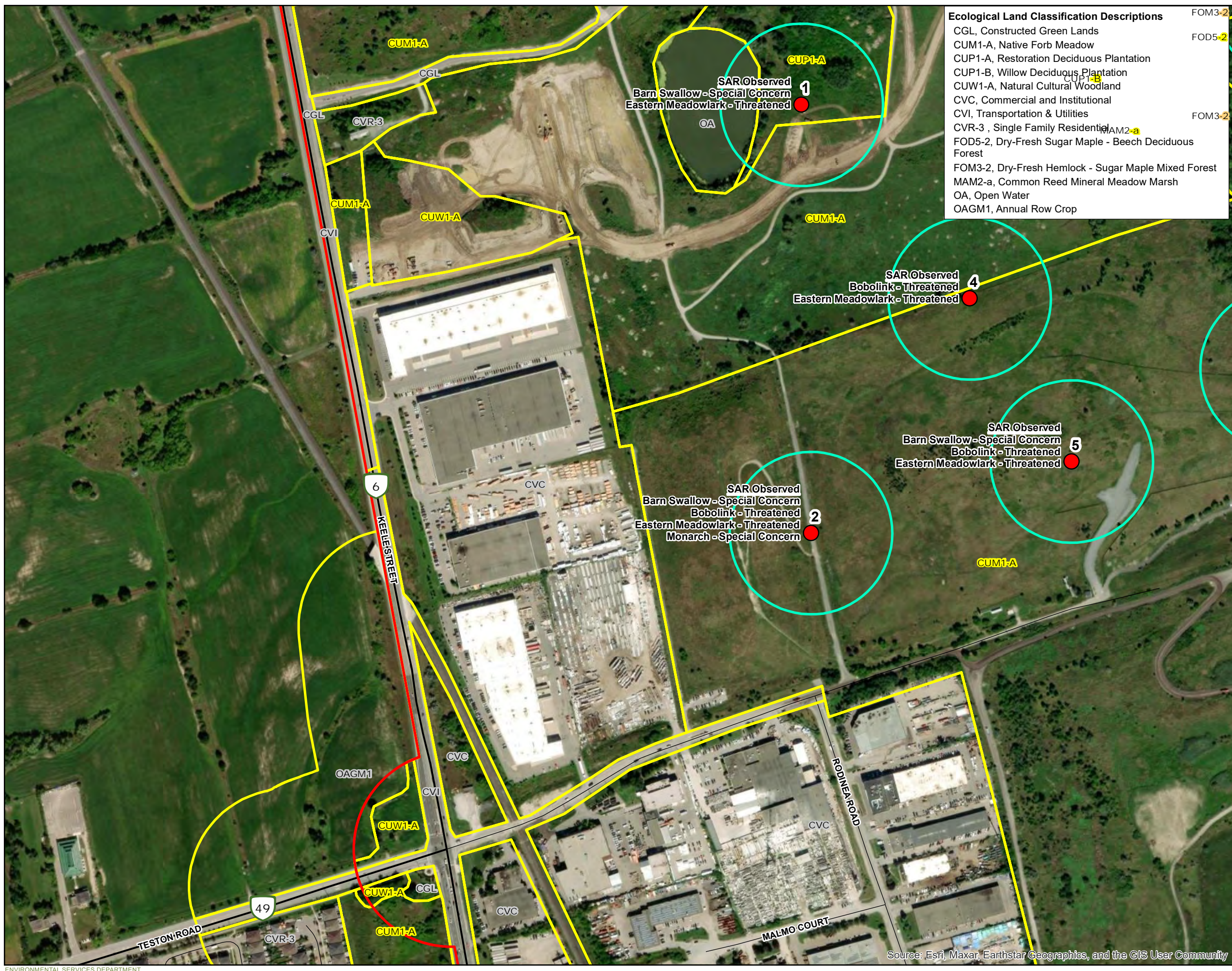
TITLE: **Ecological Land Classification, Breeding Bird Survey Locations, and SAR Observations**

PROJECT NO.: 190261800

Teston Road

DATE: **March 2024** **Figure 2**

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



Ecological Land Classification Descriptions

- CGL, Constructed Green Lands
- CUM1-A, Native Forb Meadow
- CUP1-A, Restoration Deciduous Plantation
- CUP1-B, Willow Deciduous Plantation
- CUW1-A, Natural Cultural Woodland
- CVC, Commercial and Institutional
- CVI, Transportation & Utilities
- CVR-3, Single Family Residential
- FOD5-2, Dry-Fresh Sugar Maple - Beech Deciduous Forest
- FOM3-2, Dry-Fresh Hemlock - Sugar Maple Mixed Forest
- MAM2-a, Common Reed Mineral Meadow Marsh
- OA, Open Water
- OAGM1, Annual Row Crop

LEGEND

- Focal Study Area (2021)
- Ecological Land Classification
- Approximate Limit of Breeding Bird Survey
- 2020 SAR Observation Locations
- 2021 Butternut Observation (+/- 12m)

Breeding Bird Survey Locations

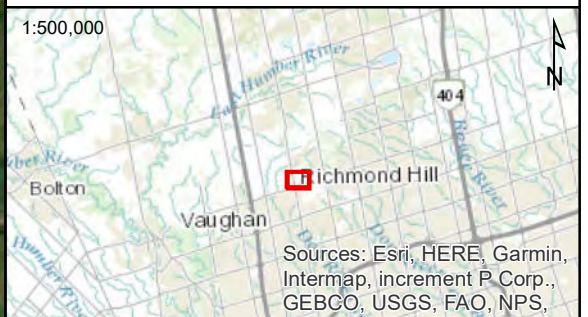
- Threatened/Endangered Species Detected
- Special Concern SAR Detected
- No SAR Detected

ELC Community L Rank

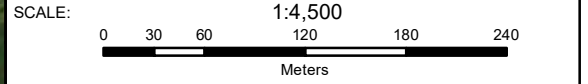
- L2
- L3
- L4
- L+, L5
- Not Ranked

Transportation Network

- Expressway / Highway / Freeway
- Arterial / Collector
- Local Roads



Coordinate System: NAD 1983 UTM Zone 17N
Sources: MNR



TITLE: **Ecological Land Classification, Breeding Bird Survey Locations, and SAR Observations**

PROJECT NO.: 190261800
Teston Road

DATE: **March 2024** **Figure 3**

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



Ecological Land Classification Descriptions

- CGL, Constructed Green Lands
- CUM1-A, Native Forb Meadow
- CUM1-C, Exotic Forb Old Field Meadow
- CUM1-b, Exotic Cool Season Grass Graminoid Meadow
- CUP1-4, Hybrid Poplar Deciduous Plantation
- CUP2-f, Hybrid Poplar - Conifer Mixed Plantation
- CUP3-H, Mixed Conifer Coniferous Plantation
- CUT1-1, Sumac Deciduous Thicket
- CUW1-A, Natural Cultural Woodland
- CVI, Transportation & Utilities
- CVR, Residential
- CVR-2, High Density Residential
- CVR-3, Single Family Residential
- CVR-4, Rural Property
- FOC1-2, Dry-Fresh White Pine (- Red Pine) Coniferous Forest
- FOC3-1, Fresh-Moist Hemlock Coniferous Forest
- FOC3-A, Fresh-Moist Hemlock - White Pine Coniferous Forest
- FOD2-4, Dry-Fresh Oak - Hardwood Deciduous Forest
- FOD3-1, Dry-Fresh Poplar Deciduous Forest
- FOD5-1, Dry-Fresh Sugar Maple Deciduous Forest
- FOD5-10, Dry-Fresh Sugar Maple - Paper Birch - Poplar Deci*
- FOD5-2, Dry-Fresh Sugar Maple - Beech Deciduous Forest
- FOD8-1, Fresh-Moist Poplar Deciduous Forest
- FOM3-1, Dry-Fresh Hardwood - Hemlock Mixed Forest
- FOM3-2, Dry-Fresh Hemlock - Sugar Maple Mixed Forest
- FOM5-1, Dry-Fresh Paper Birch Mixed Forest
- MAM2-10, Forb Mineral Meadow Marsh
- MAM2-9, Jewelweed Mineral Meadow Marsh
- SAF1-3, Duckweed Floating-leaved Shallow Aquatic
- SBO1-A, Dropseed Open Sand Barren
- SBO1-B, Flat-stemmed Bluegrass - Forb Open Sand Barren
- SWC1-1, White Cedar Mineral Coniferous Swamp
- SWC1-2, White Cedar - Conifer Mineral Coniferous Swamp
- SWD4-3, Paper Birch - Poplar Mineral Deciduous Swamp
- SWT2-5, Red Osier Dogwood Mineral Thicket Swamp

LEGEND

- Focal Study Area (2021)
- Ecological Land Classification
- Approximate Limit of Breeding Bird Survey
- 2020 SAR Observation Locations
- 2021 Butternut Observation (+/- 12m)

Breeding Bird Survey Locations

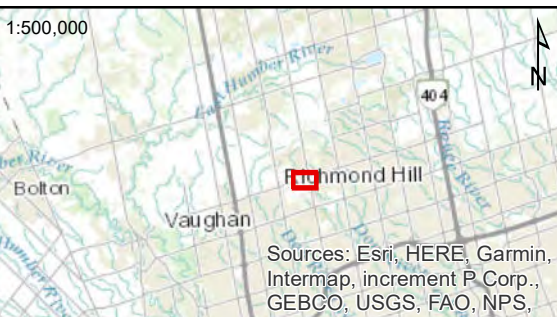
- Threatened/Endangered Species Detected
- Special Concern SAR Detected
- No SAR Detected

ELC Community L Rank

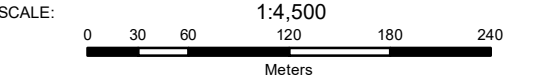
- L2
- L3
- L4
- L+, L5
- Not Ranked

Transportation Network

- Expressway / Highway / Freeway
- Arterial / Collector
- Local Roads



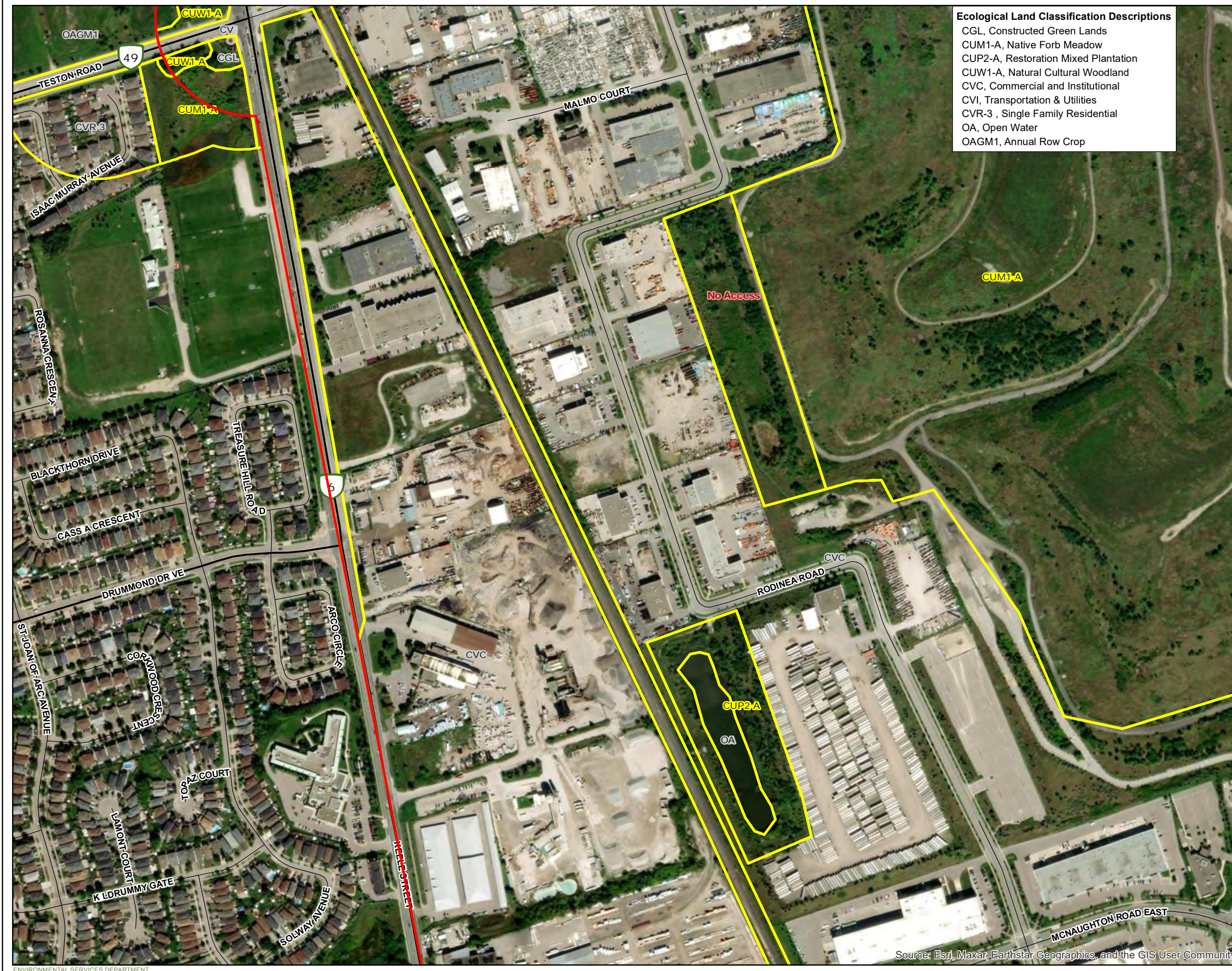
Coordinate System: NAD 1983 UTM Zone 17N
Sources: MNR



TITLE: **Ecological Land Classification, Breeding Bird Survey Locations, and SAR Observations**

PROJECT NO.: 190261800
Teston Road

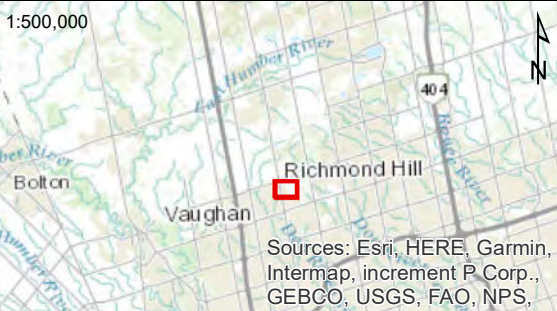
DATE: March 2024 Figure 4



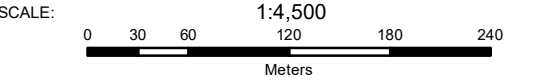
Ecological Land Classification Descriptions
 CGL, Constructed Green Lands
 CUM1-A, Native Forb Meadow
 CUP2-A, Restoration Mixed Plantation
 CUW1-A, Natural Cultural Woodland
 CVC, Commercial and Institutional
 CVI, Transportation & Utilities
 CVR-3, Single Family Residential
 OA, Open Water
 OAGM1, Annual Row Crop

LEGEND

- Focal Study Area (2021)
- Ecological Land Classification
- Approximate Limit of Breeding Bird Survey
- 2020 SAR Observation Locations
- 2021 Butternut Observation (+/- 12m)
- Breeding Bird Survey Locations**
- Threatened/Endangered Species Detected
- Special Concern SAR Detected
- No SAR Detected
- ELC Community L Rank**
- L2
- L3
- L4
- L+, L5
- Not Ranked
- Transportation Network**
- Expressway / Highway / Freeway
- Arterial / Collector
- Local Roads



Coordinate System: NAD 1983 UTM Zone 17N
 Sources: MNR

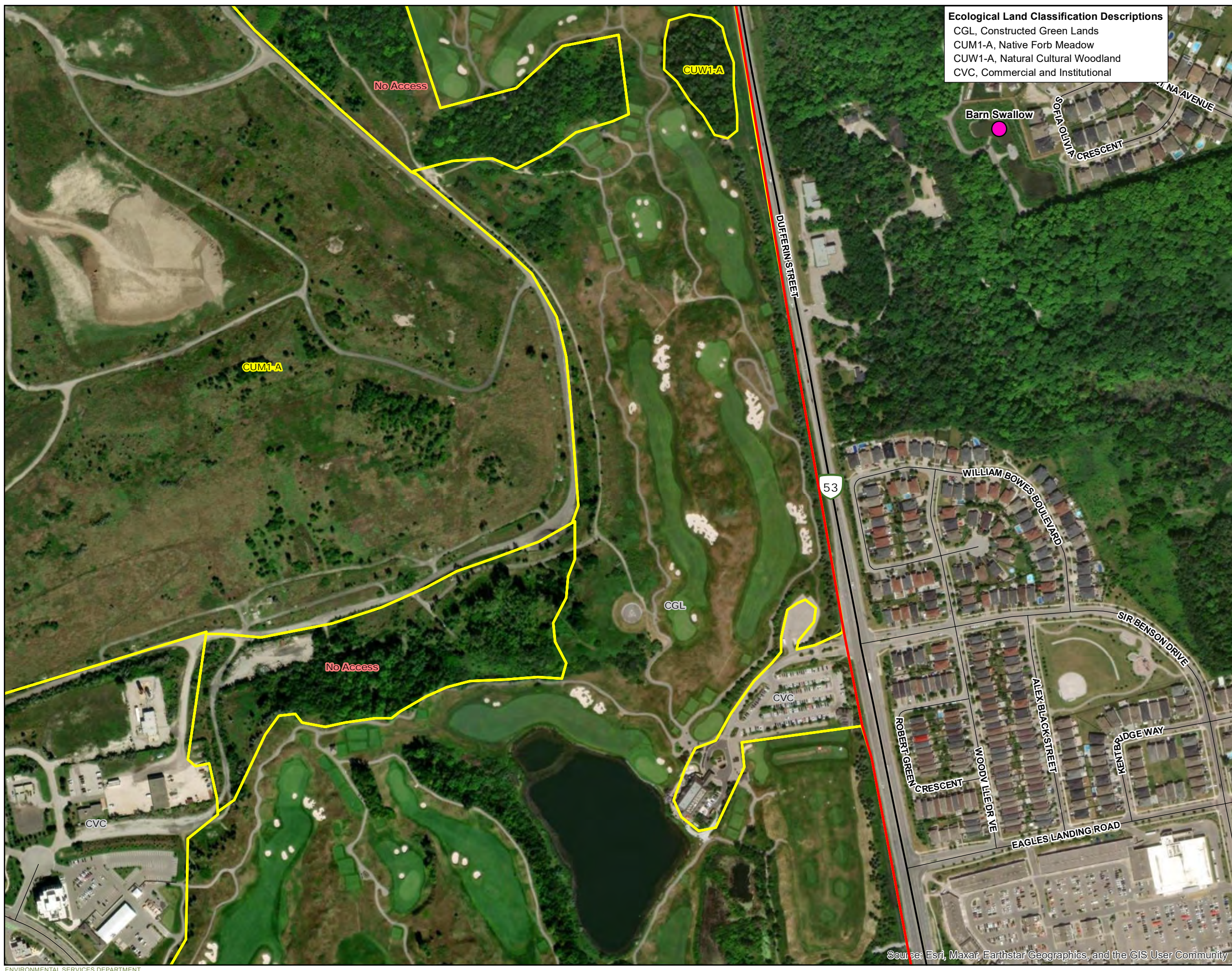


TITLE: Ecological Land Classification, Breeding Bird Survey Locations, and SAR Observations

PROJECT NO.: 190261800
 Teston Road

DATE: **March 2024** **Figure 5**

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



Ecological Land Classification Descriptions
 CGL, Constructed Green Lands
 CUM1-A, Native Forb Meadow
 CUW1-A, Natural Cultural Woodland
 CVC, Commercial and Institutional

LEGEND

- Focal Study Area (2021)
- Ecological Land Classification
- Approximate Limit of Breeding Bird Survey
- 2020 SAR Observation Locations
- 2021 Butternut Observation (+/- 12m)

Breeding Bird Survey Locations

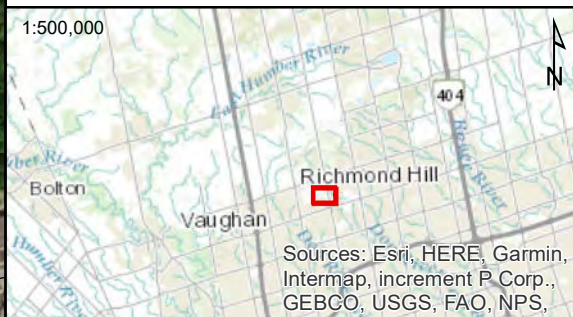
- Threatened/Endangered Species Detected
- Special Concern SAR Detected
- No SAR Detected

ELC Community L Rank

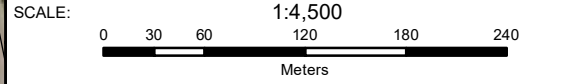
- L2
- L3
- L4
- L+, L5
- Not Ranked

Transportation Network

- Expressway / Highway / Freeway
- Arterial / Collector
- Local Roads



Coordinate System: NAD 1983 UTM Zone 17N
 Sources: MNR



TITLE: Ecological Land Classification, Breeding Bird Survey Locations, and SAR Observations

PROJECT NO.: 190261800

Teston Road

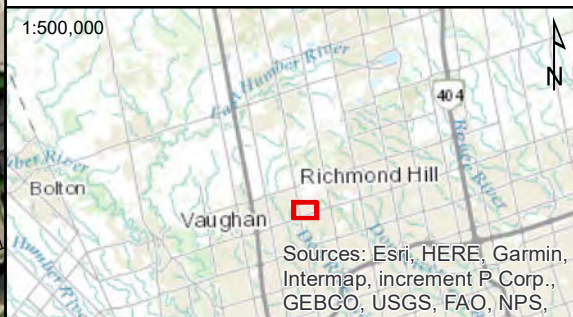
DATE: **March 2024** **Figure 6**

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

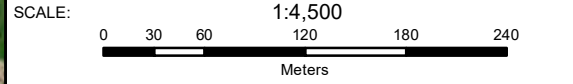


Ecological Land Classification Descriptions
 CGL, Constructed Green Lands
 CUP2-A, Restoration Mixed Plantation
 CVC, Commercial and Institutional
 CVI, Transportation & Utilities
 CVR-3, Single Family Residential
 OA, Open Water

- LEGEND**
- Focal Study Area (2021)
 - Ecological Land Classification
 - Approximate Limit of Breeding Bird Survey
 - 2020 SAR Observation Locations
 - 2021 Butternut Observation (+/- 12m)
 - Breeding Bird Survey Locations**
 - Threatened/Endangered Species Detected
 - Special Concern SAR Detected
 - No SAR Detected
 - ELC Community L Rank**
 - L2
 - L3
 - L4
 - L+, L5
 - Not Ranked
 - Transportation Network**
 - Expressway / Highway / Freeway
 - Arterial / Collector
 - Local Roads



Coordinate System: NAD 1983 UTM Zone 17N
 Sources: MNR



TITLE: Ecological Land Classification, Breeding Bird Survey Locations, and SAR Observations

PROJECT NO.: 190261800
 Teston Road

DATE: **March 2024** **Figure 7**

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



Ecological Land Classification Descriptions
 CGL, Constructed Green Lands
 CVC, Commercial and Institutional

LEGEND

- Focal Study Area (2021)
- Ecological Land Classification
- Approximate Limit of Breeding Bird Survey
- 2020 SAR Observation Locations
- 2021 Butternut Observation (+/- 12m)

Breeding Bird Survey Locations

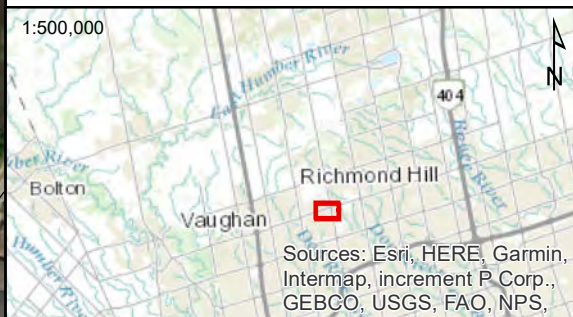
- Threatened/Endangered Species Detected
- Special Concern SAR Detected
- No SAR Detected

ELC Community L Rank

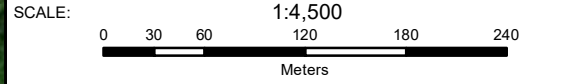
- L2
- L3
- L4
- L+, L5
- Not Ranked

Transportation Network

- Expressway / Highway / Freeway
- Arterial / Collector
- Local Roads



Coordinate System: NAD 1983 UTM Zone 17N
 Sources: MNR



TITLE: Ecological Land Classification, Breeding Bird Survey Locations, and SAR Observations

PROJECT NO.: 190261800
 Teston Road

DATE: **March 2024** **Figure 8**

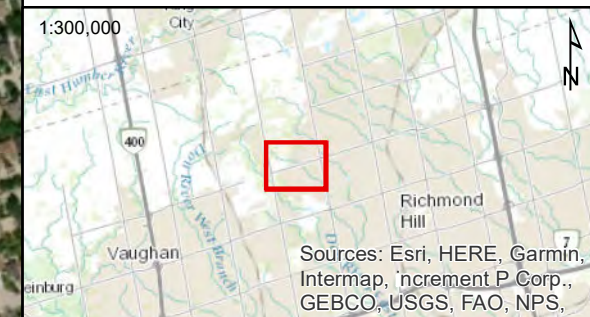
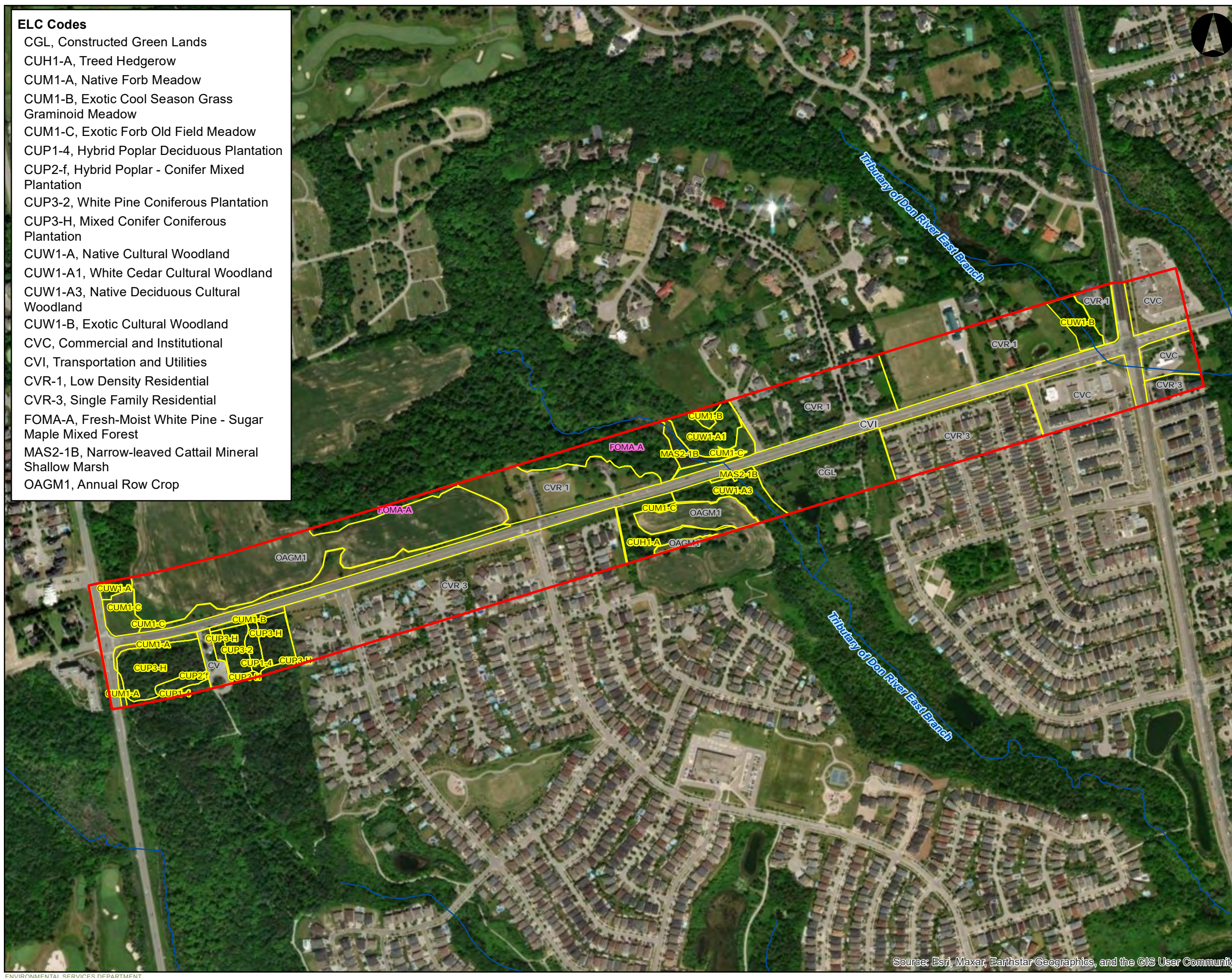
ELC Codes

- CGL, Constructed Green Lands
- CUH1-A, Treed Hedgerow
- CUM1-A, Native Forb Meadow
- CUM1-B, Exotic Cool Season Grass Graminoid Meadow
- CUM1-C, Exotic Forb Old Field Meadow
- CUP1-4, Hybrid Poplar Deciduous Plantation
- CUP2-f, Hybrid Poplar - Conifer Mixed Plantation
- CUP3-2, White Pine Coniferous Plantation
- CUP3-H, Mixed Conifer Coniferous Plantation
- CUW1-A, Native Cultural Woodland
- CUW1-A1, White Cedar Cultural Woodland
- CUW1-A3, Native Deciduous Cultural Woodland
- CUW1-B, Exotic Cultural Woodland
- CVC, Commercial and Institutional
- CVI, Transportation and Utilities
- CVR-1, Low Density Residential
- CVR-3, Single Family Residential
- FOMA-A, Fresh-Moist White Pine - Sugar Maple Mixed Forest
- MAS2-1B, Narrow-leaved Cattail Mineral Shallow Marsh
- OAGM1, Annual Row Crop

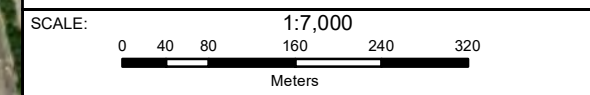


LEGEND

- Study Area (120m)
 - Ecological Land Classification (ELC)
 - Watercourses
- ELC Community L Rank**
- L3
 - L+, L5
 - Not Ranked



Coordinate System: NAD 1983 UTM Zone 17N
Sources: MNRF



TITLE: **Ecological Land Classification (ELC)**

PROJECT NO.: 190261800

DATE: **March 2024**

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

APPENDIX F – Terrestrial SAR Habitat Assessment

Table 1: Species at Risk Screening for the Study Area.

Taxon	Common Name	Scientific Name	ESA Status	Habitat Description (MECP, 2022)	Discussion of Habitat Suitability within Technically Preferred Alternative Study Area	Potential to Occur within Study Area (Yes/No)	Species Observed during MH Field Investigations (Yes/No)
Amphibians	Jefferson Salamander	<i>Ambystoma jeffersonianum</i>	Endangered	They live in deciduous or mixed forests with undisturbed forest floors where they spend their time in moist, loose soil, under logs, or in leaf litter. In early spring, adults travel to breeding ponds. These ponds are generally vernal pools fed by groundwater, snowmelt, or surface water that are unpolluted and do not dry up. Jefferson Salamanders spend the winter underground in mammal burrows, rock crevices or other underground cavities where they can get below the frost line and avoid freezing temperatures.	There is no suitable breeding habitat for this species (i.e., vernal pools). Therefore, this species is not likely to be present. Furthermore, few of the forest communities present might be suitable for this species at any time of year (i.e., mixed or deciduous forests with loose soils and leaf litter).	No	No
Birds	Acadian Flycatcher	<i>Empidonax virescens</i>	Endangered	The Acadian Flycatcher is typically found in mature, shady forests with ravines, or in forested swamps with lots of maple and beech trees. The nest is placed near the tip of a lower limb on a tree, and is loosely woven, with strands of plant material hanging down. In Canada, the Acadian Flycatcher nests only in southwestern Ontario and primarily lives in the warmer climate of southern Ontario's Carolinian forests. It nests in large forests and forested ravines near the shore of Lake Erie and needs large, undisturbed forests, often more than 40 hectares in size. It has also been known to nest at a few sites in the Greater Toronto Area but this is unusual.	This species was not detected during breeding bird surveys in suitable habitat types, or at any other time while on site. Therefore, this species is not likely to be present. Furthermore, few of the ELC communities present might be suitable for this species at any time of year (i.e., mature, shady, deciduous forests or swamps).	No	No
Birds	Bank Swallow	<i>Riparia riparia</i>	Threatened	Bank Swallows nest in burrows in natural and human-made settings where there are vertical faces in silt and sand deposits. Many nests are on banks of rivers and lakes, but they are also found in active sand and gravel pits or former ones where the banks remain suitable. They breed in colonies ranging from several to a few thousand pairs.	There is no suitable breeding habitat for this species (i.e., bluffs or vertical faces of exposed soils) and this species was not detected during breeding bird surveys, or at any other time while on site. Therefore, this species is not likely to be present. However, construction activities such as excavation, grading, and stockpiling of soils can create habitat for this species.	Yes, During construction only	No
Birds	Barn Swallow	<i>Hirundo rustica</i>	Threatened	Barn Swallows often live in close association with humans, building their cup-shaped mud nests almost exclusively on human-made structures such as open barns, under bridges and in culverts. The species is attracted to open structures that include ledges where they can build their nests, which are often re-used from year to year. They prefer unpainted, rough-cut wood, since the mud does not adhere as well to smooth surfaces.	This species has been confirmed foraging during breeding bird surveys (at BBS 1, BBS 2, BBS 5, BBS 6, and BBS 17), within wetland and open meadow communities. Potential structures for nesting are also present (e.g., culverts) however, no nests belonging to this species have been observed to date.	Yes	Yes
Birds	Bobolink	<i>Dolichonyx oryzivorus</i>	Threatened	The Bobolink is a medium sized songbird found in grasslands and hayfields. In their summer breeding season, male Bobolinks are black with a white back and yellow collar. By late summer, males lose their breeding plumage to resemble the female's tan colour with black stripes. Bobolinks spend much of their time out of sight on the ground feeding on insects and seeds.	This species has been confirmed to be present and determined to be breeding during breeding bird surveys (at BBS 2, BBS 4, BBS 5, and BBS 6), within open meadow communities.	Yes	Yes
Birds	Canada Warbler	<i>Cardellina canadensis</i>	Special Concern	In Ontario, Canada Warbler is most abundant along the southern Shield. This species breeds in a range of deciduous or mixed, usually wet forest types, all with a well-developed, dense shrub layer. The dense shrub layer is used to conceal nests which are usually located on or near the ground on mossy logs or roots, along stream banks or on hummocks.	This species was not detected during breeding bird surveys in suitable habitat types, or at any other time while on site. Therefore, this species is not likely to be present. Furthermore, few of the ELC communities present might be suitable for this species at any time of year (i.e., mature, dense, deciduous or mixed forests).	No	No

Table 1: Species at Risk Screening for the Study Area.

Taxon	Common Name	Scientific Name	ESA Status	Habitat Description (MECP, 2022)	Discussion of Habitat Suitability within Technically Preferred Alternative Study Area	Potential to Occur within Study Area (Yes/No)	Species Observed during MH Field Investigations (Yes/No)
Birds	Cerulean Warbler	<i>Setophaga cerulea</i>	Threatened	Cerulean Warblers spend their summers (breeding seasons) in mature, deciduous forests with large, tall trees and an open under storey. In late summer, they begin their long migration to wintering grounds in the Andes Mountains in South America. In southern Ontario, populations appear to be separated into two distinct bands: one from southern Lake Huron to western Lake Ontario, and further north, the other from the Bruce Peninsula and Georgian Bay area to the Ottawa River.	This species was not detected during breeding bird surveys in suitable habitat types, or at any other time while on site. Therefore, this species is not likely to be present. Furthermore, few of the ELC communities present might be suitable for this species at any time of year (i.e., mature, open, deciduous forests).	No	No
Birds	Chimney Swift	<i>Chaetura pelagica</i>	Threatened	Chimney Swifts are commonly found in urban areas near buildings, and nest and roost in chimneys and other manmade structures. Before European settlement, Chimney Swifts primarily nested on cave walls and in hollow trees and tree cavities in old growth forests. They are highly gregarious and tend to feed over open water where insects congregate.	This species was not detected during breeding bird surveys in suitable habitat types, or at any other time while on site. Therefore, this species is not likely to be present. Furthermore, potential structures for nesting are not present (e.g., chimneys), few trees were suitable for potential Chimney Swift roosting/nesting, and the forested communities are not old growth.	No	No
Birds	Common Nighthawk	<i>Chordeiles minor</i>	Special Concern	Common Nighthawk habitat consists of open areas with little to no ground vegetation, such as logged or burned-over areas, forest clearings, rock barrens, peat bogs, lakeshores, and mine tailings. Although the species also nests in cultivated fields, orchards, urban parks, mine tailings and along gravel roads and railways, they tend to occupy natural sites.	This species was not detected at any time while on site and none of the ELC communities present might be suitable for this species at any time of year (i.e., open areas with little to no ground vegetation). Therefore, this species is not likely to be present.	No	No
Birds	Eastern Meadowlark	<i>Sturnella magna</i>	Threatened	Eastern Meadowlarks breed primarily in moderately tall grasslands, such as pastures and hayfields, but are also found in alfalfa fields, weedy borders of croplands, roadsides, orchards, airports, shrubby overgrown fields, or other open areas. Small trees, shrubs or fence posts are used as elevated song perches.	This species has been confirmed to be present and determined to be breeding during breeding bird surveys (at BBS 1 through to BBS 6), within open meadow communities.	Yes	Yes
Birds	Eastern Wood-pewee	<i>Contopus virens</i>	Special Concern	Eastern Wood-Pewees prefer open deciduous, mixed or coniferous forests with little understory. They can also be found in forest clearings and at forest edges, in farm woodlots, or in parks.	This species has been confirmed to be present and determined to be breeding during breeding bird surveys (at BBS 3, BBS 7, BBS 9, BBS 12, BBS 13, BBS 14, and BBS 17), within treed and forest communities.	Yes	Yes
Birds	Evening Grosbeak	<i>Coccothraustes vespertinus</i>	Special Concern	In Ontario, the Evening Grosbeak breeds in northern coniferous forests and as far south as southern Georgian Bay. During the breeding season it is generally found in open, mature mixed-wood forests dominated by fir species, White Spruce, or Trembling Aspen. It's abundance is strongly linked to the cycle of its primary prey, the Spruce Budworm. Outside the breeding season, the species depends mostly on seed crops from tree species in the boreal forest such as firs and spruce. It is also attracted to ornamental trees that have seeds or fruit, and may visit bird feeders.	This species was not detected during breeding bird surveys in suitable habitat types, or at any other time while on site. Therefore, this species is not likely to be present. Furthermore, few of the ELC communities present might be suitable for this species at any time of year (i.e., mature, open, forests dominated by fir species, White Spruce, or Trembling Aspen).	No	No
Birds	Golden-winged Warbler	<i>Vermivora chrysoptera</i>	Special Concern	Golden-winged Warblers prefer to nest in areas with young shrubs surrounded by mature forest – locations that have recently been disturbed, such as field edges, hydro or utility right-of-ways, or logged areas.	This species was not detected during breeding bird surveys in suitable habitat types, or at any other time while on site. Therefore, this species is not currently present. Furthermore, few of the ELC communities present might be suitable for this species at any time of year (i.e., shrub dominated communities).	No	No

Table 1: Species at Risk Screening for the Study Area.

Taxon	Common Name	Scientific Name	ESA Status	Habitat Description (MECP, 2022)	Discussion of Habitat Suitability within Technically Preferred Alternative Study Area	Potential to Occur within Study Area (Yes/No)	Species Observed during MH Field Investigations (Yes/No)
Birds	Grasshopper Sparrow	<i>Ammodramus savannarum</i>	Special Concern	The Grasshopper Sparrow lives in open grassland areas with well-drained, sandy soil. It will also nest in hayfields and pasture, as well as alvars, prairies and occasionally grain crops such as barley. It prefers areas that are sparsely vegetated. Its nests are well-hidden in the field and woven from grasses in a small cup-like shape. The Grasshopper Sparrow can be found throughout southern Ontario, but only occasionally on the Canadian Shield. It is most common where grasslands, hay or pasture dominate the landscape.	This species was not detected during breeding bird surveys in suitable habitat types, or at any other time while on site. Therefore, this species was not present at the time of MH's field investigations. However, there is suitable habitat for this species within the same open meadow communities that Eastern Meadowlark and/or Bobolink were confirmed in.	Yes	No
Birds	Least Bittern	<i>Ixobrychus exilis</i>	Threatened	In Ontario, the Least Bittern is found in a variety of wetland habitats, but strongly prefers vast cattail marshes with a mix of open pools and channels. The nests are almost always built near open water, which is needed for foraging. This species eats mostly frogs, small fish, and aquatic insects.	This species was not detected during breeding bird surveys, or at any other time while on site. Therefore, this species is not likely to be present. Furthermore, none of the ELC communities present might be suitable for this species at any time of year (i.e.,	No	No
Birds	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	Endangered	The Red-headed Woodpecker lives in open woodland and woodland edges, and is often found in parks, golf courses and cemeteries. These areas typically have many dead trees, which the bird uses for nesting and perching. A few of these birds will stay the winter in woodlands in southern Ontario if there are adequate supplies of nuts.	This species was not detected during breeding bird surveys, or at any other time while on site. Therefore, this species is not likely to be present. Furthermore, none of the ELC communities present might be suitable for this species at any time of year (i.e., mature woodlands or woodland edges containing large diameter, dead trees).	No	No
Birds	Wood Thrush	<i>Hylocichla mustelina</i>	Special Concern	The Wood Thrush lives in mature deciduous and mixed (conifer-deciduous) forests. They seek moist stands of trees with well-developed undergrowth and tall trees for singing perches. This species prefers large forests, but will also use smaller stands of trees. They build their nests in living saplings, trees or shrubs, usually in sugar maple or American beech.	This species has been confirmed to be present and determined to be breeding during breeding bird surveys (at BBS 7 and BBS 14), within treed and forest communities.	Yes	Yes
Insects	Monarch	<i>Danaus plexippus</i>	Special Concern	Monarchs use three different types of habitat throughout their life cycle. Monarch caterpillars feed on milkweed plants and are confined to meadows and open areas where milkweed grows. Adult butterflies can be found in more diverse habitats where they feed on the nectar from a variety of wildflowers. During late summer and fall, groups of Monarchs numbering in the thousands, can be seen along the north shores of Lake Ontario and Lake Erie migrating to central Mexico where they spend the winter months.	This species has been confirmed to be present and determined to have breeding habitat within open meadow communities. Nectaring habitat is also present wherever there are flowering plants (e.g., meadow communities, wetland communities, and residential areas).	Yes	Yes
Mammals	Eastern Small-footed Myotis	<i>Myotis leibii</i>	Endangered	In the spring and summer, Eastern Small-footed Myotis will roost in a variety of habitats, including in or under rocks, in rock outcrops, in buildings, under bridges, or in caves, mines, or hollow trees (MECP, 2020). This species prefers mountainous terrain in deciduous or coniferous forests, though they can also be found in flat lands (Naughton, 2012). These bats often change their roosting locations every day, and at night hunt for insects to eat, including beetles, mosquitos, moths, and flies (MECP, 2020). From late November to early April, these bats hibernate alone or in small groups within caves and abandoned mines (Naughton, 2012). They tend to choose colder and drier sites for hibernation than similar bat species, and have strong fidelity to hibernation sites (MECP, 2020).	There is confirmed suitable roosting habitat for this species within treed and forest communities, where potential maternity roost trees have been identified. Further surveys (i.e., acoustic monitoring) are required to confirm presence/absence of this species.	Yes	No

Table 1: Species at Risk Screening for the Study Area.

Taxon	Common Name	Scientific Name	ESA Status	Habitat Description (MECP, 2022)	Discussion of Habitat Suitability within Technically Preferred Alternative Study Area	Potential to Occur within Study Area (Yes/No)	Species Observed during MH Field Investigations (Yes/No)
Mammals	Little Brown Myotis	<i>Myotis lucifugus</i>	Endangered	During the day they roost in tree cavities and crevices or in buildings such as in barns or attics, which are suitable as day roosts for non-breeding individuals and as maternity roosts for those rearing their young (MECP, 2020). Rock crevices may also be used by both day roosting and maternity roosting Little Brown Bats). Little Brown Myotis is most common close to water and can be found in both forested and urban environments. Most foraging is completed around or over water, therefore aquatic insects make up a large portion of their diet (Naughton, 2012). This species hibernates in abandoned mines or caves from October or November to March or April (MECP, 2020).	There is confirmed suitable roosting habitat for this species within treed and forest communities, where potential maternity roost trees have been identified. Further surveys (i.e., acoustic monitoring) are required to confirm presence/absence of this species.	Yes	No
Mammals	Northern Myotis	<i>Myotis septentrionalis</i>	Endangered	They are associated primarily with boreal forests, and roost under loose bark or in cavities of trees, and occasionally in buildings (MECP, 2020). Although buildings are sometimes used for maternity roosting sites, breeding females most frequently select large diameter cavity trees in which to rear their young. Northern Myotis can consume larger prey than other bats and are opportunistic hunters that can glean insects off of vegetation (Naughton, 2012). Northern Myotis begin hibernation between September and November and emerge between March and May, depending on the climate at the selected hibernation sites. They hibernate alone or in small groups in deep crevices, caves, drilled holes, abandoned mines, and occasionally in basements (Naughton, 2012).	There is confirmed suitable roosting habitat for this species within treed and forest communities, where potential maternity roost trees have been identified. Further surveys (i.e., acoustic monitoring) are required to confirm presence/absence of this species.	Yes	No
Mammals	Tri-colored Bat	<i>Perimyotis subflavus</i>	Endangered	They prefer to forage over water and along forest edges for suitable prey such as beetles, flies, and moths. In the summer, day roost and maternity roost sites are typically within older forests in foliage (such as dead clusters of Maple or Oak leaves), in tangles of Old Man's Beard Lichen, and in tree cavities, however they also occasionally roost within buildings (Naughton, 2012 and MECP, 2018). They have low tolerance to freezing temperatures, and as a result they typically hibernate the longest, from autumn to late spring, and select caves or other underground locations that provide warmer conditions than those required by most other bats. This bat is not a strong long-distance traveler, therefore hibernation and maternity sites are generally less than 100 km apart (Naughton 2012). Tri-colored bats hibernate alone or as part of a small group (MECP, 2020).	There is confirmed suitable roosting habitat for this species within treed and forest communities, where potential maternity roost trees have been identified. Further surveys (i.e., acoustic monitoring) are required to confirm presence/absence of this species.	Yes	No
Plants	American Ginseng	<i>Panax quinquefolius</i>	Endangered	In Ontario, American Ginseng typically grows in rich, moist, but well-drained, and relatively mature, deciduous woods dominated by Sugar Maple (<i>Acer saccharum</i>), White Ash (<i>Fraxinus americana</i>) and American Basswood (<i>Tilia americana</i>). It usually grows in deep, nutrient rich soil over limestone or marble bedrock.	This species was not detected, despite targeted surveys completed to determine its presence or absence. Therefore, this species is not likely to be present.	No	No
Plants	Black Ash	<i>Fraxinus nigra</i>	Endangered	Black Ash is predominantly a wetland species found in swamps, floodplains and fens. Black Ash occurs throughout most of Ontario, except the Far North, ranging from southern Ontario east to the Quebec border, west to the Manitoba border and north to approximately 51° latitude.	This species has been detected within a swamp community and there is potential habitat elsewhere within riparian areas, adjacent to wetlands, and in swamp or moist forested or treed communities.	Yes	Yes

Table 1: Species at Risk Screening for the Study Area.

Taxon	Common Name	Scientific Name	ESA Status	Habitat Description (MECP, 2022)	Discussion of Habitat Suitability within Technically Preferred Alternative Study Area	Potential to Occur within Study Area (Yes/No)	Species Observed during MH Field Investigations (Yes/No)
Plants	Butternut	<i>Juglans cinerea</i>	Endangered	In Ontario, Butternut usually grows alone or in small groups in deciduous forests. It prefers moist, well-drained soil and is often found along streams. It is also found on well-drained gravel sites and rarely on dry rocky soil. This species does not do well in the shade, and often grows in sunny openings and near forest edges.	This species has been detected within several forest communities and there is potential habitat elsewhere within treed, forest, savannah, and meadow communities.	Yes	Yes
Reptiles	Blanding's Turtle	<i>Emydoidea blandingii</i>	Threatened	Blanding's Turtles live in shallow water, usually in large wetlands and shallow lakes with lots of water plants. It is not unusual, though, to find them hundreds of metres from the nearest water body, especially while they are searching for a mate or traveling to a nesting site. Blanding's Turtles hibernate in the mud at the bottom of permanent water bodies from late October until the end of April.	This species has not been observed on site to date. However, this species is not highly detectable without specific surveys. As no targeted surveys for this species have been completed, it is unknown whether this species is present. There is suitable habitat for this species in numerous ELC communities (i.e., wetlands, swamps, and adjacent upland habitats).	Yes	No
Reptiles	Eastern Ribbonsnake	<i>Thamnophis sauritus</i>	Special Concern	The Eastern Ribbonsnake is usually found close to water, especially in marshes, where it hunts for frogs and small fish. A good swimmer, it will dive in shallow water, especially if it is fleeing from a potential predator. At the onset of cold weather, these snakes congregate in underground burrows or rock crevices to hibernate together.	This species has not been observed on site to date. However, this species is not highly detectable without specific surveys. As no targeted surveys for this species have been completed, it is unknown whether this species occurs. There is suitable habitat for this species in numerous ELC communities (i.e., wetlands, treed areas, forests).	Yes	No
Reptiles	Snapping Turtle	<i>Chelydra serpentina</i>	Special Concern	Snapping Turtles spend most of their lives in water. They prefer shallow waters so they can hide under the soft mud and leaf litter, with only their noses exposed to the surface to breathe. During the nesting season, from early to mid summer, females travel overland in search of a suitable nesting site, usually gravelly or sandy areas along streams. Snapping Turtles often take advantage of man-made structures for nest sites, including roads (especially gravel shoulders), dams and aggregate pits.	This species has been confirmed to be present (near BBS 10) and there is suitable year-round habitat for this species in numerous ELC communities (i.e., wetlands, swamps, and adjacent upland habitats).	Yes	Yes

APPENDIX G – Significant Wildlife Habitat Assessment

Significant Wildlife Habitat Screening for Teston Road Technically Preferred Alternative, within Eco-Region 6E

Wildlife Habitat	Candidate SWH		Confirmed SWH	Assessment
	ELC Ecosites	Habitat Criteria	Defining Criteria	
avoid the impacts of winter conditions.		significant. <u>Species:</u> <i>White-tailed Deer</i>	development is within Stratum II yarding area then Movement Corridors are to be considered.	
Rare Vegetation Communities				
Cliffs and Talus Slopes <u>Rationale:</u> Cliffs and Talus Slopes are extremely rare habitats in Ontario.		<ul style="list-style-type: none"> A Cliff is vertical to near vertical bedrock >3m in height. A Talus Slope is rock rubble at the base of a cliff made up of coarse Most cliff and talus slopes occur along the Niagara Escarpment. 	<ul style="list-style-type: none"> Confirm any ELC Vegetation Type for Cliffs or Talus Slopes. 	Not Present This rare vegetation community is not present, as determined through ELC.
Sand Barren <u>Rationale:</u> Sand barrens are rare in Ontario and support rare species. Most Sand Barrens have been lost due to cottage development and forestry.	ELC Ecosites: SBO1, SBS1, SBT1 Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always ≤ 60%.	<ul style="list-style-type: none"> Sand Barrens typically are exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion. Usually located within other types of natural habitat such as forest or savannah. Vegetation can vary from patchy and barren to tree covered, but less than 60%. A sand barren area >0.5ha in size. 	<ul style="list-style-type: none"> Confirm any ELC Vegetation Type for Sand Barrens. Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). 	Not Present This rare vegetation community is not present, within the Technically Preferred Alternative limits as determined through ELC.
		<ul style="list-style-type: none"> An alvar is typically a level, mostly unfractured, calcareous bedrock Vegetation cover varies from patchy to barren with a less than 60% An Alvar site > 0.5 ha in size. 	<ul style="list-style-type: none"> Site must not be dominated by exotic or introduced species (<50% The alvar must be in excellent condition and fit in with surrounding 	Not Present This rare vegetation community is not present, as determined through ELC.
Old Growth Forest <u>Rationale:</u> Due to historic logging practices, extensive old growth forest is rare in the Eco-Region. Interior habitat provided by old growth forests is required by many wildlife species.	Forest Community Series: FOD, FOC, FOM, SWD, SWC, SWM	<ul style="list-style-type: none"> Old Growth forests are characterized by heavy mortality or turnover of over-storey trees resulting in a mosaic of gaps that encourage development of a multi-layered canopy and an abundance of snags and downed woody debris. Woodland areas 30 ha or greater in size or with at least 10 ha interior habitat assuming 100 m buffer at edge of forest. 	Field Studies will determine: <ul style="list-style-type: none"> If dominant trees species of the area are >140 years old, then the area containing these trees is Significant Wildlife Habitat. The forested area containing the old growth characteristics will have experienced no recognizable forestry activities (cut stumps will not be present). The area of forest ecosites combined or an eco-element within an ecosite that contain the old growth characteristics is the SWH. Determine ELC vegetation types for the forest area containing the old growth characteristics. 	Not Present This rare vegetation community is not present, as determined through ELC.
Savannah <u>Rationale:</u> Savannahs are extremely rare habitats in Ontario.	TPS1, TPS2, TPW1, TPW2, CUS2	<ul style="list-style-type: none"> A Savannah is a tallgrass prairie habitat that has tree cover between No minimum size to site. Site must be restored or a natural site. 	<ul style="list-style-type: none"> Area of the ELC Ecosite is the SWH. Site must not be dominated by exotic or introduced species (<50% 	Not Present These rare vegetation communities are not present, as determined through ELC.
Tallgrass Prairie	TPO1, TPO2	<ul style="list-style-type: none"> A Tallgrass Prairie has ground cover dominated by prairie grasses. An 	Field studies confirm one or more of the Prairie indicator species listed in	Not Present

Significant Wildlife Habitat Screening for Teston Road Technically Preferred Alternative, within Eco-Region 6E

Wildlife Habitat	Candidate SWH		Confirmed SWH	Assessment
	ELC Ecosites	Habitat Criteria	Defining Criteria	
Seasonal Concentration Areas of Animals				
Waterfowl Stopover and Staging Areas (Terrestrial) <u>Rationale:</u> Habitat important to migrating waterfowl.	CUM1 or CUT1 and evidence of annual spring flooding from melt water or run-off within these Ecosites.	<ul style="list-style-type: none"> Fields with sheet water during Spring (mid-March to May). Fields flooding during spring melt and run-off provide important invertebrate foraging habitat for migrating waterfowl. Agricultural fields with waste grains are commonly used by waterfowl, these are not considered SWH unless they have spring sheet water available. <u>Species:</u> <i>American Black Duck, Wood Duck, Green-winged Teal, Blue-winged Teal, Mallard, Northern Pintail, Northern Shoveler, American Wigeon, Gadwall</i>	Studies carried out and verified presence of an annual concentration of any listed species: <ul style="list-style-type: none"> Any mixed species aggregations of 100 or more individuals required. The flooded field ecosite habitat plus a 100-300m radius, dependent on local site conditions and adjacent land use is the significant wildlife habitat. Annual use of habitat is documented from information sources or field studies (annual use can be based on studies or determined by past surveys with species numbers and dates). Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". 	Not Present Suitable flooded fields are not present within the Technically Preferred Alternative limits.
	MAS1, MAS2, MAS3, SAS1, SAM1, SAF1, SWD1, SWD2, SWD3, SWD4, SWD5, SWD6, SWD7	<ul style="list-style-type: none"> Ponds, marshes, lakes, bays, coastal inlets, and watercourses used These habitats have an abundant food supply (mostly aquatic) 	<ul style="list-style-type: none"> Aggregations of 100 or more of listed species for 7 days, results in > Areas with annual staging of ruddy ducks, canvasbacks, and The combined area of the ELC ecosites and a 100m radius area is Wetland area and shorelines associated with sites identified within Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Annual Use of Habitat is Documented from Information Sources or 	
Shorebird Migratory Stopover Area <u>Rationale:</u> High quality shorebird stopover habitat is extremely rare and typically has a long history of use.	BBO1, BBO2, BBS1, BBS2, BBT1, BBT2, SDO1, SDS2, SDT1, MAM1, MAM2, MAM3, MAM4, MAM5,	<ul style="list-style-type: none"> Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats. Great Lakes coastal shorelines, including groynes and other forms of armour rock lakeshores, are extremely important for migratory shorebirds in May to mid-June and early July to October. Sewage treatment ponds and storm water ponds do not qualify as a SWH. <u>Species:</u> <i>Greater Yellowlegs, Lesser Yellowlegs, Marbled Godwit, Hudsonian Godwit, Black-bellied Plover, American Golden-Plover, Semipalmated Plover, Solitary Sandpiper, Spotted Sandpiper, Semipalmated Sandpiper, Pectoral Sandpiper, White-rumped Sandpiper, Baird's Sandpiper, Least Sandpiper, Purple Sandpiper, Stilt Sandpiper, Short-billed Dowitcher, Red-necked Phalarope, Whimbrel, Ruddy Turnstone, Sanderling, Dunlin</i>	Studies confirming: <ul style="list-style-type: none"> Presence of 3 or more of listed species and >1000 shorebird use days during spring or fall migration period. (shorebird use days are the accumulated number of shorebirds counted per day over the course of the fall or spring migration period). Whimbrel stop briefly (<24hrs) during spring migration, any site with >100 Whimbrel used for 3 years or more is significant. The area of significant shorebird habitat includes the mapped ELC shoreline ecosites plus a 100m radius area. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". 	Candidate SWH The shorelines of watercourses and wetlands are not likely to support large aggregations of shorebirds. However, 3 or more of the listed species may be present for >1000 shorebird use days combined, during migration.
		<ul style="list-style-type: none"> The habitat provides a combination of fields and woodlands that provide Raptor wintering (hawk/owl) sites need to be > 20 ha with a combination Least disturbed sites, idle/fallow or lightly grazed field/meadow (>15ha) Field area of the habitat is to be wind swept with limited snow depth or 	<ul style="list-style-type: none"> One or more Short-eared Owls or; One of more Bald Eagles or; At To be significant a site must be used regularly (3 in 5 years) for a The habitat area for an Eagle winter site is the shoreline forest 	

Significant Wildlife Habitat Screening for Teston Road Technically Preferred Alternative, within Eco-Region 6E

Wildlife Habitat	Candidate SWH		Confirmed SWH	Assessment
	ELC Ecosites	Habitat Criteria	Defining Criteria	
		<ul style="list-style-type: none"> Eagle sites have open water and large trees and snags available for 	<ul style="list-style-type: none"> Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". 	
<p>Bat Hibernacula <u>Rationale:</u> Bat hibernacula are rare habitats in all Ontario landscapes.</p>	<p>Bat Hibernacula may be found in these ecosites: CCR1, CCR2, CCA1, CCA2 (Note: buildings are not considered to be SWH)</p>	<ul style="list-style-type: none"> Hibernacula may be found in caves, mine shafts, underground foundations, and Karsts. Active mine sites should not be considered as SWH. The locations of bat hibernacula are relatively poorly known. <p><u>Species:</u> <i>Big Brown Bat, Tri-coloured Bat</i></p>	<ul style="list-style-type: none"> All sites with confirmed hibernating bats are SWH. The area includes 200m radius around the entrance of the hibernaculum for most development types and 1000m for wind farms. Studies are to be conducted during the peak swarming period (Aug. – Sept.). Surveys should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for Wind Power Projects". 	<p>Not Present Formations suitable for hibernation, such as caves or karsts, are not present within the Technically Preferred Alternative limits.</p>
<p>Bat Maternity Colonies <u>Rationale:</u> Known locations of forested bat maternity colonies are extremely rare in all Ontario landscapes.</p>		<ul style="list-style-type: none"> Maternity colonies can be found in tree cavities, vegetation and often in Maternity roosts are not found in caves and mines in Ontario. Maternity colonies located in Mature deciduous or mixed forest stands Female Bats prefer wildlife tree (snags) in early stages of decay, class Silver-haired Bats prefer older mixed or deciduous forest and form 	<ul style="list-style-type: none"> Maternity Colonies with confirmed use by: <ul style="list-style-type: none"> >10 Big Brown Bats >5 Adult Female Silver-haired Bats The area of the habitat includes the entire woodland, or a forest stand Evaluation methods for maternity colonies should be conducted 	
<p>Turtle Wintering Areas <u>Rationale:</u> Generally, sites are the only known sites in the area. Sites with the highest number of individuals are most significant.</p>	<p>Snapping and Midland Painted Turtles; ELC Community Classes; SW, MA, OA and SA, ELC Community Series; FEO and BOO</p> <p>Northern Map Turtle: Open Water areas such as deeper rivers or streams and lakes with current can also be used as over-wintering habitat.</p>	<ul style="list-style-type: none"> For most turtles, wintering areas are in the same general area as their core habitat. Water has to be deep enough not to freeze and have soft mud substrates. Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen. Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH. <p><u>Species:</u> <i>Midland Painted Turtle</i> Special Concern: <i>Northern Map Turtle, Snapping Turtle</i></p>	<ul style="list-style-type: none"> Presence of 5 over-wintering Midland Painted Turtles is significant. One or more Northern Map Turtle or Snapping Turtle over-wintering within a wetland is significant. The mapped ELC ecosite area with the over wintering turtles is the SWH. If the hibernation site is within a stream or river, the deep- water pool where the turtles are over wintering is the SWH. Over wintering areas may be identified by searching for congregations (Basking Areas) of turtles on warm, sunny days during the fall (Sept. – Oct.) or spring (Mar. May). Congregation of turtles is more common where wintering areas are limited and therefore significant. 	<p>Candidate SWH Wetlands and watercourses present have the potential to provide overwintering habitat for turtles. Both Snapping Turtles and Midland Painted Turtles have been observed in proximity to the Technically Preferred Alternative limits.</p>
		<ul style="list-style-type: none"> For snakes, hibernation takes place in sites located below frost lines in Areas of broken and fissured rock are particularly valuable since they Wetlands can also be important over-wintering habitat in conifer or shrub 	<ul style="list-style-type: none"> Presence of snake hibernacula used by a minimum of five individuals Congregations of a minimum of five individuals of a snake sp. <u>or</u>; <u>Note:</u> If there are Special Concern Species present, then site is SWH. <u>Note:</u> Sites for hibernation possess specific habitat parameters (e.g. 	

Significant Wildlife Habitat Screening for Teston Road Technically Preferred Alternative, within Eco-Region 6E

Wildlife Habitat	Candidate SWH		Confirmed SWH	Assessment
	ELC Ecosites	Habitat Criteria	Defining Criteria	
	For Five-lined Skink: ELC Community Series of FOD and FOM and Ecosites: FOC1, FOC3	<ul style="list-style-type: none"> Five-lined Skink prefer mixed forests with rock outcrop openings 	<ul style="list-style-type: none"> Presence of any active hibernaculum for skink is significant. 	
<p>Colonially - Nesting Bird Breeding Habitat (Bank and Cliff)</p> <p><u>Rationale:</u> Historical use and number of nests in a colony make this habitat significant. An identified colony can be very important to local populations. All swallow population are declining in Ontario.</p>	<p>Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles. Cliff faces, bridge abutments, silos, barns.</p> <p>Habitat found in the following ecosites: CUM1, CUT1, CUS1, BLO1, BLS1, BLT1, CLO1, CLS1, CLT1</p>	<ul style="list-style-type: none"> Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate area. Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles. Does not include a licensed/permitted Mineral Aggregate Operation. <p><u>Species:</u> <i>Cliff Swallow</i> <i>Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies)</i></p>	<p>Studies confirming:</p> <ul style="list-style-type: none"> Presence of 1 or more nesting sites with 8 or more cliff swallow pairs and/or rough-winged swallow pairs during the breeding season. A colony identified as SWH will include a 50m radius habitat area from the peripheral nests. Field surveys to observe and count swallow nests are to be completed during the breeding season. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". 	<p>Not Present</p> <p>No cliff faces, suitable embankments, or eroded areas are present in the area. Therefore, this SWH is not present.</p>
	SWM2, SWM3, SWM5, SWM6, SWD1, SWD2, SWD3, SWD4, SWD5, SWD6, SWD7, FET1	<ul style="list-style-type: none"> Nests in live or dead standing trees in wetlands, lakes, islands, and Most nests in trees are 11 to 15 m from ground, near the top of the tree. 	<ul style="list-style-type: none"> Presence of 5 or more active nests of Great Blue Heron or other listed The habitat extends from the edge of the colony and a minimum 300m Confirmation of active heronries are to be achieved through site 	
<p>Colonially - Nesting Bird Breeding Habitat (Ground)</p> <p><u>Rationale:</u> Colonies are important to local bird population, typically sites are only known colony in area and are used annually.</p>	<p>Any rocky island or peninsula (natural or artificial) within a lake or large river (two-lined on a 1:50,000 NTS map).</p> <p>Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird)</p> <p>MAM1 – 6; MAS1 – 3; CUM, CUT, CUS</p>	<ul style="list-style-type: none"> Nesting colonies of gulls and terns are on islands or peninsulas associated with open water or in marshy areas. Brewers Blackbird colonies are found loosely on the ground in low bushes in close proximity to streams and irrigation ditches within farmlands. <p><u>Species:</u> <i>Herring Gull, Great Black-backed Gull, Little Gull, Ring-billed Gull, Common Tern, Caspian Tern, Brewer's Blackbird</i></p>	<p>Studies confirming:</p> <ul style="list-style-type: none"> Presence of > 25 active nests for Herring Gulls or Ring-billed Gulls, >5 active nests for Common Tern or >2 active nests for Caspian Tern. Presence of 5 or more pairs for Brewer's Blackbird. Any active nesting colony of one or more Little Gull, and Great Black-backed Gull is significant. The edge of the colony and a minimum 150m radius area of habitat, or the extent of the ELC ecosites containing the colony or any island <3.0ha with a colony is the SWH. Studies would be done during May/June when actively nesting. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". 	<p>Not Present</p> <p>Nesting habitat for colonies of the listed species under this SWH type are not present.</p>
		<ul style="list-style-type: none"> A butterfly stopover area will be a minimum of 10 ha in size with a The habitat is typically a combination of field and forest and provides The habitat should not be disturbed, fields/meadows with an 	<ul style="list-style-type: none"> The presence of Monarch Use Days (MUD) during fall migration MUD is based on the number of days a site is used by Monarchs, 	

Significant Wildlife Habitat Screening for Teston Road Technically Preferred Alternative, within Eco-Region 6E

Wildlife Habitat	Candidate SWH		Confirmed SWH	Assessment
	ELC Ecosites	Habitat Criteria	Defining Criteria	
migrate south for the winter.	history of butterflies being observed.	<ul style="list-style-type: none"> Staging areas usually provide protection from the elements and are 	<ul style="list-style-type: none"> Observational studies are to be completed and need to be done MUD of >5000 or >3000 with the presence of Painted Ladies or Red 	
<p>Landbird Migratory Stopover Areas</p> <p><u>Rationale:</u> Sites with a high diversity of species as well as high numbers are most significant.</p>	All Ecosites associated with These ELC Community Series: FOC, FOM, FOD, SWC, SWM, SWD	<ul style="list-style-type: none"> Woodlots need to be >10 ha in size and within 5 km of Lake Ontario. If multiple woodlands are located along the shoreline those Woodlands <2km from Lake Ontario are more significant. Sites have a variety of habitats: forest, grassland and wetland complexes. The largest sites are more significant. Woodlots and forest fragments are important habitats to migrating birds, these features located along the shore and located within 5km of Lake Ontario are Candidate SWH. <p><u>Species:</u> All migratory songbirds, All migrant raptors species</p>	<p>Studies confirm:</p> <ul style="list-style-type: none"> Use of the habitat by >200 birds/day and with >35 spp with at least 10 bird spp. recorded on at least 5 different survey dates. This abundance and diversity of migrant bird species is considered above average and significant. Studies should be completed during spring (Apr/May) and fall (Aug/Oct) migration using standardized assessment techniques. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects. 	<p>Not Present</p> <p>Although numerous migratory birds have been documented, the Technically Preferred Alternative is located greater than 5 km from Lake Ontario. Therefore, it does not meet the criteria for this SWH.</p>
		<ul style="list-style-type: none"> Deer yarding areas or winter concentration areas (yards) are areas deer The Core of a deer yard (Stratum I) is located within the Stratum II area OMNRF determines deer yards following methods outlined in "Selected Woodlots with high densities of deer due to artificial feeding are not 	<ul style="list-style-type: none"> Snow depth and temperature are the greatest influence on deer use Deer Yards are mapped by OMNRF District offices. Locations of Field investigations that record deer tracks in winter are done to If a SWH is determined for Deer Wintering Area or if a proposed 	<p>Not Present</p> <p>The MNRF has not identified any deer yarding areas in proximity to the project.</p>
<p>Deer Winter Congregation Areas</p> <p><u>Rationale:</u> Deer movement during winter in the southern areas of Eco-Region 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands to reduce or</p>	All Forested Ecosites with these ELC Community Series: FOC, FOM, FOD, SWC, SWM, SWD Conifer plantations much smaller than 50 ha may also be used.	<ul style="list-style-type: none"> Woodlots will typically be >100ha in size. Woodlots >100ha may be considered as significant based on MNRF studies or assessment. Deer movement during winter in the southern areas of Eco-Region 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands. If deer are constrained by snow depth, refer to the Deer Yarding Area habitat in the SWH criteria schedule. Large woodlots > 100ha and up to 1500 ha are known to be used annually by densities of deer that range from 0.1-1.5 deer/ha. Woodlots with high densities of deer due to artificial feeding are not 	<p>Studies confirm:</p> <ul style="list-style-type: none"> Deer management is an MNRF responsibility, deer winter congregation areas considered significant will be mapped by MNRF. Use of the woodlot by white-tailed deer will be determined by MNRF, all woodlots exceeding the area criteria are significant, unless determined not to be significant by MNRF. Studies should be completed during winter (Jan/Feb) when >20cm of snow is on the ground using aerial survey techniques, ground or road surveys, or a pellet count deer density survey. If a SWH is determined for Deer Wintering Area or if a proposed 	<p>Not Present</p> <p>The MNRF has not identified any deer wintering areas in proximity to the project.</p>

Significant Wildlife Habitat Screening for Teston Road Technically Preferred Alternative, within Eco-Region 6E

Wildlife Habitat	Candidate SWH		Confirmed SWH	Assessment
	ELC Ecosites	Habitat Criteria	Defining Criteria	
avoid the impacts of winter conditions.		significant. <u>Species:</u> <i>White-tailed Deer</i>	development is within Stratum II yarding area then Movement Corridors are to be considered.	
Rare Vegetation Communities				
Cliffs and Talus Slopes <u>Rationale:</u> Cliffs and Talus Slopes are extremely rare habitats in Ontario.		<ul style="list-style-type: none"> A Cliff is vertical to near vertical bedrock >3m in height. A Talus Slope is rock rubble at the base of a cliff made up of coarse Most cliff and talus slopes occur along the Niagara Escarpment. 	<ul style="list-style-type: none"> Confirm any ELC Vegetation Type for Cliffs or Talus Slopes. 	Not Present This rare vegetation community is not present, as determined through ELC.
Sand Barren <u>Rationale:</u> Sand barrens are rare in Ontario and support rare species. Most Sand Barrens have been lost due to cottage development and forestry.	ELC Ecosites: SBO1, SBS1, SBT1 Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always ≤ 60%.	<ul style="list-style-type: none"> Sand Barrens typically are exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion. Usually located within other types of natural habitat such as forest or savannah. Vegetation can vary from patchy and barren to tree covered, but less than 60%. A sand barren area >0.5ha in size. 	<ul style="list-style-type: none"> Confirm any ELC Vegetation Type for Sand Barrens. Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). 	Not Present This rare vegetation community is not present, within the Technically Preferred Alternative limits as determined through ELC.
		<ul style="list-style-type: none"> An alvar is typically a level, mostly unfractured, calcareous bedrock Vegetation cover varies from patchy to barren with a less than 60% An Alvar site > 0.5 ha in size. 	<ul style="list-style-type: none"> Site must not be dominated by exotic or introduced species (<50% The alvar must be in excellent condition and fit in with surrounding 	Not Present This rare vegetation community is not present, as determined through ELC.
Old Growth Forest <u>Rationale:</u> Due to historic logging practices, extensive old growth forest is rare in the Eco-Region. Interior habitat provided by old growth forests is required by many wildlife species.	Forest Community Series: FOD, FOC, FOM, SWD, SWC, SWM	<ul style="list-style-type: none"> Old Growth forests are characterized by heavy mortality or turnover of over-storey trees resulting in a mosaic of gaps that encourage development of a multi-layered canopy and an abundance of snags and downed woody debris. Woodland areas 30 ha or greater in size or with at least 10 ha interior habitat assuming 100 m buffer at edge of forest. 	Field Studies will determine: <ul style="list-style-type: none"> If dominant trees species of the area are >140 years old, then the area containing these trees is Significant Wildlife Habitat. The forested area containing the old growth characteristics will have experienced no recognizable forestry activities (cut stumps will not be present). The area of forest ecosites combined or an eco-element within an ecosite that contain the old growth characteristics is the SWH. Determine ELC vegetation types for the forest area containing the old growth characteristics. 	Not Present This rare vegetation community is not present, as determined through ELC.
Savannah <u>Rationale:</u> Savannahs are extremely rare habitats in Ontario.	TPS1, TPS2, TPW1, TPW2, CUS2	<ul style="list-style-type: none"> A Savannah is a tallgrass prairie habitat that has tree cover between No minimum size to site. Site must be restored or a natural site. 	<ul style="list-style-type: none"> Area of the ELC Ecosite is the SWH. Site must not be dominated by exotic or introduced species (<50% 	
Tallgrass Prairie	TPO1, TPO2	<ul style="list-style-type: none"> A Tallgrass Prairie has ground cover dominated by prairie grasses. An 	Field studies confirm one or more of the Prairie indicator species listed in	Not Present

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Wildlife Habitat	Candidate SWH		Confirmed SWH	Assessment
	ELC Ecosites	Habitat Criteria	Defining Criteria	
Rationale: Tallgrass Prairies are extremely rare habitats in Ontario.		<ul style="list-style-type: none"> open Tallgrass Prairie habitat has < 25% tree cover. No minimum size to site. Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH. 	Appendix N of the SWHTG should be present. Note: Prairie plant spp. list from Eco-Region 6E should be used. <ul style="list-style-type: none"> Area of the ELC Ecosite is the SWH. Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). 	This rare vegetation community is not present, as determined through ELC.
		<ul style="list-style-type: none"> Rare Vegetation Communities may include beaches, fens, forest, ELC Ecosite codes that have the potential to be a rare ELC Vegetation The OMNRF/NHIC will have up to date listing for rare vegetation 	<ul style="list-style-type: none"> Area of the ELC Vegetation Type polygon is the SWH. 	Not Present These rare vegetation communities are not present, as determined through ELC.
Specialized Habitat for Wildlife				
Waterfowl Nesting Area Rationale: Important to local waterfowl populations, sites with greatest number of species and highest number of individuals are significant.	All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH: MAS1, MAS2, MAS3, SAS1, SAM1, SAF1, MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, SWT1, SWT2, SWD1, SWD2, SWD3, SWD4 Note: Includes adjacency to Provincially Significant Wetlands	<ul style="list-style-type: none"> A waterfowl nesting area extends 120 m from a wetland (> 0.5 ha) or a wetland (>0.5ha) and any small wetlands (0.5ha) within 120m or a cluster of 3 or more small (<0.5 ha) wetlands within 120 m of each individual wetland where waterfowl nesting is known to occur. Upland areas should be at least 120 m wide so that predators such as racoons, skunks, and foxes have difficulty finding nests. Wood Ducks and Hooded Mergansers utilize large diameter trees (>40cm dbh) in woodlands for cavity nest sites. Species: <i>American Black Duck, Northern Pintail, Northern Shoveler, Gadwall, Blue-winged Teal, Green-winged Teal, Wood Duck, Hooded Merganser, Mallard</i>	Studies confirmed: <ul style="list-style-type: none"> Presence of 3 or more nesting pairs for listed species excluding Mallards, or presence of 10 or more nesting pairs for listed species including Mallards. Any active nesting site of an American Black Duck is considered significant. Nesting studies should be completed during the spring breeding season (April - June). Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". A field study confirming waterfowl nesting habitat will determine the boundary of the waterfowl nesting habitat for the SWH, this may be greater or less than 120 m from the wetland and will provide enough habitat for waterfowl to successfully nest. 	Candidate SWH Wetlands and surrounding upland areas may provide suitable nesting habitat for species such as Wood Duck and Mallards.
		<ul style="list-style-type: none"> Nests are associated with lakes, ponds, rivers or wetlands along Osprey nests are usually at the top a tree whereas Bald Eagle nests Nests located on man-made objects are not to be included as SWH 	<ul style="list-style-type: none"> One or more active Osprey or Bald Eagle nests in an area. Some species have more than one nest in a given area and priority is For an Osprey, the active nest and a 300 m radius around the nest or For a Bald Eagle the active nest and a 400-800 m radius around the To be significant a site must be used annually. When found inactive, Observational studies to determine nest site use, perching sites and Evaluation methods to follow "Bird and Bird Habitats: Guidelines for 	
Woodland Raptor Nesting Habitat	May be found in all forested ELC Ecosites.	<ul style="list-style-type: none"> All natural or conifer plantation woodland/forest stands >30ha with >10ha of interior habitat. Interior habitat determined with a 200m 	Studies confirm: <ul style="list-style-type: none"> Presence of 1 or more active nests from species list is considered 	Candidate SWH

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Wildlife Habitat	Candidate SWH		Confirmed SWH	Assessment
	ELC Ecosites	Habitat Criteria	Defining Criteria	
<p>Rationale: Nests sites for these species are rarely identified; these area sensitive habitats are often used annually by these species.</p>	<p>May also be found in SWC, SWM, SWD, and CUP3</p>	<p>buffer.</p> <ul style="list-style-type: none"> Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees. Species such as Coopers hawk nest along forest edges sometimes on peninsulas or small off-shore islands. In disturbed sites, nests may be used again, or a new nest will be in close proximity to an old nest. <p><u>Species:</u> <i>Northern Goshawk, Cooper's Hawk, Sharp-shinned Hawk, Red-shouldered Hawk, Barred Owl, Broad-winged Hawk</i></p>	<p>significant.</p> <ul style="list-style-type: none"> Red-shouldered Hawk and Northern Goshawk – A 400m radius around the nest or 28 ha area of habitat is the SWH. (the 28 ha habitat area would be applied where optimal habitat is irregularly shaped around the nest). Barred Owl – A 200m radius around the nest is the SWH. Broad-winged Hawk and Coopers Hawk– A 100m radius around the nest is the SWH. Sharp-Shinned Hawk – A 50m radius around the nest is the SWH. Conduct field investigations from mid-March to end of May. The use of call broadcasts can help in locating territorial (courting/nesting) raptors and facilitate the discovery of nests by narrowing down the search area. 	<p>The continuous forest along the East Don River is large (>30ha) and includes interior habitat, and provides potential suitable habitat for several species listed under this SWH type.</p>
<p>Turtle Nesting Areas Rationale: These habitats are rare and when identified will often be the only breeding site for local populations of turtles</p>	<p>Exposed mineral soil (sand or gravel) areas adjacent (<100m) or within the following ELC Ecosites: MAS1, MAS2, MAS3, SAS1, SAM1, SAF1, BOO1, FEO1</p>	<ul style="list-style-type: none"> Best nesting habitat for turtles are close to water and away from roads and sites less prone to loss of eggs by predation from skunks, raccoons or other animals. For an area to function as a turtle-nesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH. Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used. <p><u>Species:</u> <i>Midland Painted Turtle</i> Special Concern: <i>Northern Map Turtle, Snapping Turtle</i></p>	<p>Studies confirm:</p> <ul style="list-style-type: none"> Presence of 5 or more nesting Midland Painted Turtles. One or more Northern Map Turtle or Snapping Turtle nesting is a SWH. The area or collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30-100m around the nesting area dependent on slope, riparian vegetation and adjacent land use is the SWH. Travel routes from wetland to nesting area are to be considered within the SWH as part of the 30-100m area of habitat. Field investigations should be conducted in prime nesting season, typically late spring to early summer. Observational studies observing the turtles nesting is a recommended method. 	<p>Candidate SWH Lands adjacent to wetlands and watercourses have the potential to provide nesting opportunities for turtles. Snapping Turtle and Midland Painted Turtles have been observed during field surveys, and in Year 1 a Midland Painted Turtle hatchling was observed adjacent to a wetland along a dirt pathway (north and west of Dufferin Street). Therefore, turtle nesting does occur in the area, though, targeted surveys have not been carried out to confirm the scale of nesting activity.</p>
<p>Seeps and Springs Rationale: Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.</p>	<p>Seeps/Springs are areas where ground water comes to the surface. Often, they are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs.</p>	<ul style="list-style-type: none"> Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system. Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species. <p><u>Species:</u> <i>Wild Turkey, Ruffed Grouse, Spruce Grouse, White-tailed Deer, Salamander spp.</i></p>	<p>Field Studies confirm:</p> <ul style="list-style-type: none"> Presence of a site with 2 or more seeps/springs should be considered SWH. The area of a ELC forest ecosite or an eco-element within ecosite containing the seeps/springs is the SWH. The protection of the recharge area considering the slope, vegetation, height of trees and groundwater condition need to be considered in delineation the habitat. 	<p>Candidate SWH Seeps have been recorded in headwater areas within the Technically Preferred Alternative limits. However, targeted surveys have not been carried out to confirm whether 2 or more of these features are present.</p>
<p>Amphibian Breeding Habitat (Woodland) Rationale: These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations.</p>	<p>All Ecosites associated with these ELC Community Series: FOC, FOM, FOD, SWC, SWM, SWD Breeding pools within the woodland or the shortest distance from forest habitat are more significant because they are more likely to be used due to reduced risk to migrating amphibians.</p>	<ul style="list-style-type: none"> Presence of a wetland, pond or woodland pool (including vernal pools) >500m² (about 25m diameter) within or adjacent (within 120m) to a woodland (no minimum size). Some small wetlands may not be mapped and may be important breeding pools for amphibians. Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat. <p><u>Species:</u> <i>Eastern Newt, Blue-spotted Salamander, Spotted Salamander, Gray Treefrog, Spring Peeper, Western Chorus Frog, Wood Frog</i></p>	<p>Studies confirm:</p> <ul style="list-style-type: none"> Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog species with Call Level Codes of 3. A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the woodland/wetlands. The habitat is the wetland area plus a 230m radius of woodland area. If a wetland area is adjacent to a woodland, a travel corridor connecting the wetland to the woodland is to be included in the habitat. 	<p>Candidate SWH Wetland habitats with permanent water adjacent to woodlands are present and may provide suitable breeding habitat. Spring Peeper and Gray Treefrog are both listed species under this SWH type that have been recorded during field surveys.</p>
<p>Amphibian Breeding Habitat (Wetlands)</p>	<p>ELC Community Classes SW, MA, FE, BO, OA, and SA.</p>	<ul style="list-style-type: none"> Wetlands>500m² (about 25m diameter), supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNRF mapping and could be important amphibian 	<p>Studies confirm:</p> <ul style="list-style-type: none"> Presence of breeding population of 1 or more of the listed 	<p>Candidate SWH</p>

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Wildlife Habitat	Candidate SWH		Confirmed SWH	Assessment
	ELC Ecosites	Habitat Criteria	Defining Criteria	
<p><u>Rationale:</u> Wetlands supporting breeding for these amphibian species are extremely important and fairly rare within Central Ontario landscapes.</p>	<p>Typically, these wetland ecosites will be isolated (>120m) from woodland ecosites, however larger wetlands containing predominantly aquatic species (e.g. Bull Frog) may be adjacent to woodlands.</p>	<p>breeding habitats.</p> <ul style="list-style-type: none"> Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape, and concealment from predators. Bullfrogs require permanent water bodies with abundant emergent vegetation. <p><u>Species:</u> <i>Eastern Newt, American Toad, Spotted Salamander, Four-toed Salamander, Blue-spotted Salamander, Gray Treefrog, Western Chorus Frog, Northern Leopard Frog, Pickerel Frog, Green Frog, Mink Frog, Bullfrog</i></p>	<p>newt/salamander species or 2 or more of the listed frog/toad species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog/toad species with Call Level Codes of 3. or; Wetland with confirmed breeding Bullfrogs are significant.</p> <ul style="list-style-type: none"> The ELC ecosite wetland area and the shoreline are the SWH. A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the wetlands. If a SWH is determined for Amphibian Breeding Habitat (Wetlands) then Movement Corridors are to be considered. 	<p>American Toad, Gray Treefrog, and Green Frog are listed species under this SWH type that have been observed during field surveys. Wetland areas are available, and may provide suitable breeding habitat.</p>
<p>Woodland Area-Sensitive Bird Breeding Habitat</p> <p><u>Rationale:</u> Large, natural blocks of mature woodland habitat within the settled areas of Southern Ontario are important habitats for area sensitive interior forest songbirds.</p>	<p>All Ecosites associated with these ELC Community Series: FOC, FOM, FOD, SWC, SWM, SWD</p>	<ul style="list-style-type: none"> Habitats where interior forest breeding birds are breeding, typically large Interior forest habitat is at least 200 m from forest edge habitat. <p>Special Concern: <i>Canada Warbler</i> Threatened: <i>Cerulean Warbler</i></p>	<ul style="list-style-type: none"> Presence of nesting or breeding pairs of 3 or more of the listed wildlife Note: any site with breeding Cerulean Warblers or Canada Warblers Conduct field investigations in spring and early summer when birds Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" 	<p>Candidate SWH</p> <p>Interior forest habitat is present in the forest tract along the East Don River, and 2 of the listed species under this SWH type (Red-breasted Nuthatch and Winter Wren) are probable breeders in this area, based on breeding bird survey data. Black-throated Green Warblers have also been observed, though it was unknown whether they were breeding. Therefore, the criteria for this SWH have not been confirmed, though this SWH is likely present.</p>
Habitats of Species of Conservation Concern Considered SWH				
<p>Marsh Breeding Bird Habitat</p> <p><u>Rationale:</u> Wetlands for these bird species are typically productive and fairly rare in Southern Ontario landscapes.</p>	<p>MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, SAS1, SAM1, SAF1, FEO1, BOO1</p> <p>For Green Heron: All SW, MA, and CUM1 sites.</p>	<ul style="list-style-type: none"> Nesting occurs in wetlands. All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present. For Green Heron, habitat is at the edge of water such as sluggish streams, ponds, and marshes sheltered by shrubs and trees. Less frequently, it may be found in upland shrubs or forest a considerable distance from water. <p><u>Species:</u> <i>American Bittern, Virginia Rail, Sora, Common Moorhen, American Coot, Pied-billed Grebe, Marsh Wren, Sedge Wren, Common Loon, Sandhill Crane, Green Heron, Trumpeter Swan</i> Special Concern: <i>Black Tern, Yellow Rail</i></p>	<p>Studies confirm:</p> <ul style="list-style-type: none"> Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren or 1 pair of Sandhill Cranes; or breeding by any combination of 5 or more of the listed species Note: any wetland with breeding of 1 or more Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH. Area of the ELC ecosite is the SWH. Breeding surveys should be done in May/June when these species are actively nesting in wetland habitats. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". 	<p>Candidate SWH</p> <p>Marsh and swamp habitat is present in the Technically Preferred Alternative limits, and may provide potential breeding habitat for several species listed under this SWH type, primarily Green Heron.</p>
	<p>CUM1, CUM2</p>	<ul style="list-style-type: none"> Large grassland areas (includes natural and cultural fields and Grasslands not Class 1 or 2 agricultural lands, and not being actively Grassland sites considered significant should have a history of The indicator bird species are area sensitive requiring larger grassland 	<ul style="list-style-type: none"> Presence of nesting or breeding of 2 or more of the listed species. A field with 1 or more breeding Short-eared Owls is to be considered The area of SWH is the contiguous ELC ecosite field areas. Conduct field investigations of the most likely areas in spring and early Evaluation methods to follow "Bird and Bird Habitats: Guidelines for 	

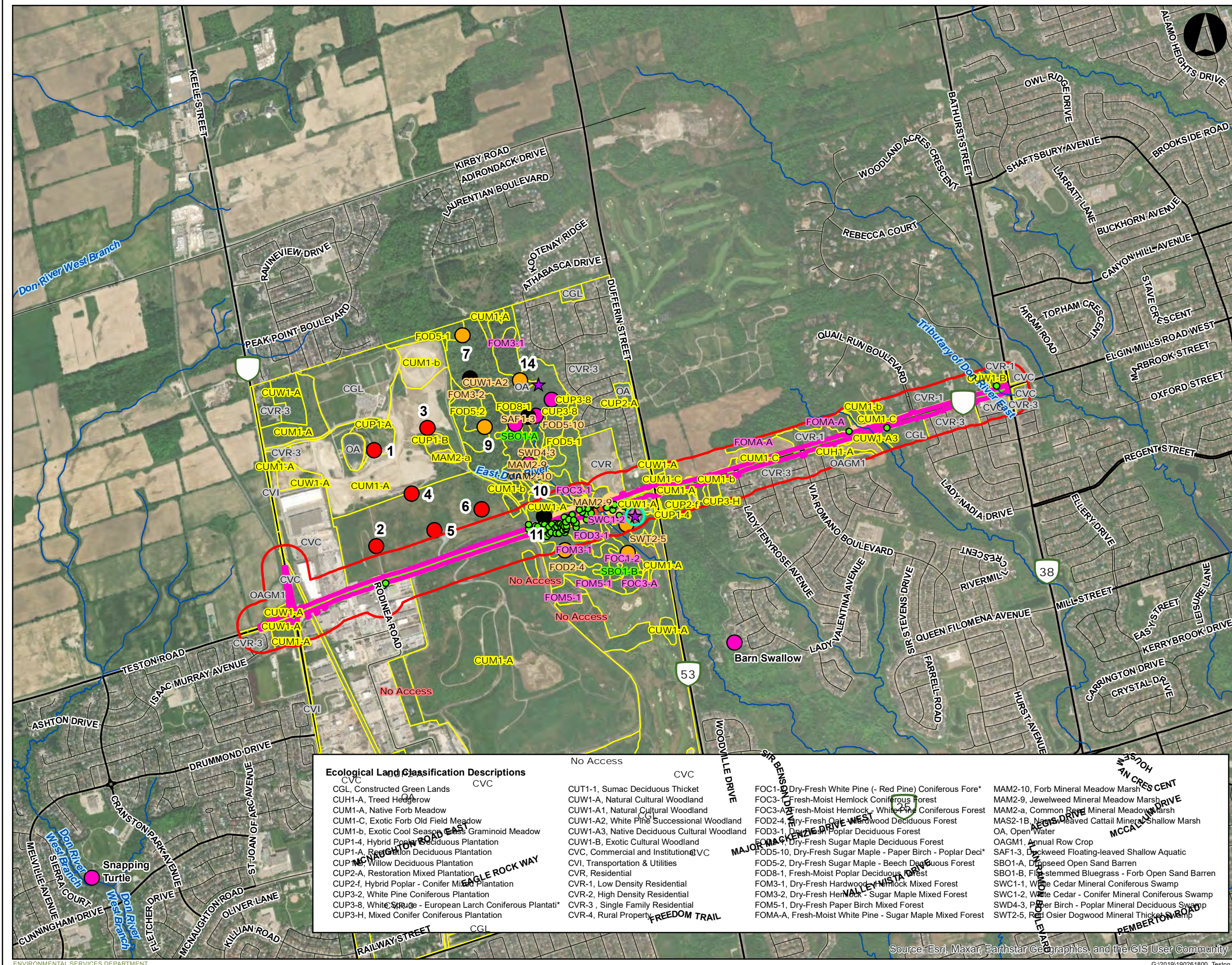
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Wildlife Habitat	Candidate SWH		Confirmed SWH	Assessment
	ELC Ecosites	Habitat Criteria	Defining Criteria	
<p>Shrub/Early Successional Bird Breeding Habitat</p> <p><u>Rationale:</u> This wildlife habitat is declining throughout Ontario and North America. The Brown Thrasher has declined significantly over the past 40 years based on CWS (2004) trend records.</p>	<p>CUT1, CUT2, CUS1, CUS2, CUW1, CUW2</p> <p>Patches of shrub ecosites can be complexed into a larger habitat for some bird species</p>	<ul style="list-style-type: none"> Large field areas succeeding to shrub and thicket habitats >10ha in size. Shrub land or early successional fields, not class 1 or 2 agricultural lands, not being actively used for farming (i.e. no row- cropping, haying or live- stock pasturing in the last 5 years). Shrub thicket habitats (>10 ha) are most likely to support and sustain a diversity of these species. Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or pasturelands. <p><u>Species:</u> Indicator Spp.: <i>Brown Thrasher, Clay-coloured Sparrow</i> Common Spp.: <i>Field Sparrow, Black-billed Cuckoo, Eastern Towhee, Willow Flycatcher</i> Special Concern: <i>Golden-winged Warbler</i> Endangered: <i>Yellow-breasted Chat</i></p>	<p>Field Studies confirm:</p> <ul style="list-style-type: none"> Presence of nesting or breeding of 1 of the indicator species and at least 2 of the common species. A habitat with breeding Yellow-breasted Chat or Golden-winged Warbler is to be considered as Significant Wildlife Habitat. The area of the SWH is the contiguous ELC ecosite field/thicket area. Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" 	<p>Not Present</p> <p>While several of the listed species under this SWH type were recorded, they were not present in proximity to one another or in the right combinations to meet the criteria for this SWH. Minimal shrub/early successional habitat is present, and is limited to along the margins of the large Native Forb Meadow (CUM1-A) communities.</p>
<p>Terrestrial Crayfish</p> <p><u>Rationale:</u> Terrestrial Crayfish are only found within SW Ontario in Canada and their habitats are very rare.</p>	<p>MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, MAS1, MAS2, MAS3, SWD, SWT, SWM CUM1 with inclusions of above meadow marsh ecosites can be used by terrestrial crayfish.</p>	<ul style="list-style-type: none"> Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for terrestrial crayfish. Constructs burrows in marshes, mudflats, meadows, the ground can't be too moist. Can often be found far from water. Both species are a semi- terrestrial burrower which spends most of its life within burrows consisting of a network of tunnels. Usually, the soil is not too moist so that the tunnel is well formed. <p><u>Species:</u> <i>Chimney or Digger Crayfish; (Fallicambarus fodiens)</i> <i>Devil Crayfish or Meadow Crayfish; (Cambarus diogenes)</i></p>	<p>Studies Confirm:</p> <ul style="list-style-type: none"> Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable meadow marsh, swamp, or moist terrestrial sites. Area of ELC ecosite or an eco-element area of meadow marsh or swamp within the larger ecosite area is the SWH. Surveys should be done April to August in temporary or permanent water. Note the presence of burrows or chimneys are often the only indicator of presence, observance or collection of individuals is very difficult. 	<p>Not Present</p> <p>Suitable habitat or habitat conditions for terrestrial crayfish was not observed, and no evidence of terrestrial crayfish was observed.</p>
<p>Special Concern and Rare Wildlife Species</p> <p><u>Rationale:</u> These species are quite rare or have experienced significant population declines in Ontario.</p>	<p>All plant and animal element occurrences (EO) within a 1 or 10km grid.</p> <p>Older element occurrences were recorded prior to GPS being available, therefore location information may lack accuracy.</p>	<ul style="list-style-type: none"> When an element occurrence is identified within a 1 or 10 km grid for a Special Concern or provincially rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites. Expert advice should be sought as many of the rare spp. have little information available about their requirements. <p><u>Species:</u> <i>All Special Concern and Provincially Rare (S1-S3, SH) plant and animal species. Lists of these species are tracked by the Natural Heritage Information Centre (NHIC).</i></p>	<p>Studies Confirm:</p> <ul style="list-style-type: none"> Assessment/inventory of the site for the identified special concern or rare species needs to be completed during the time of year when the species is present or easily identifiable. The area of the habitat to the finest ELC scale that protects the habitat form and function is the SWH, this must be delineated through detailed field studies. The habitat needs be easily mapped and cover an important life stage component for a species e.g. specific nesting habitat or foraging habitat. 	<p>Confirmed SWH</p> <p>Special concern species observed to date with confirmed habitat include Wood Thrush, Eastern Wood-pewee, Monarch, and Snapping Turtle.</p> <p>No additional provincially rare species (not including species at risk) have been recorded.</p>
Animal Movement Corridors				
<p>Amphibian Movement Corridors</p> <p><u>Rationale:</u> Movement corridors for amphibians moving from their terrestrial habitat to breeding habitat can be extremely important for local populations.</p>	<p>Corridors may be found in all ecosites associated with water.</p> <p>Corridors will be determined based on identifying the significant breeding habitat for these species.</p>	<ul style="list-style-type: none"> Movement corridors between breeding habitat and summer habitat. Movement corridors must be determined when Amphibian Breeding Habitat is confirmed as SWH. <p><u>Species:</u> <i>Eastern Newt, American Toad, Spotted Salamander, Four-toed Salamander, Blue-spotted Salamander, Gray Treefrog, Western Chorus Frog, Northern Leopard Frog, Pickerel Frog, Green Frog, Mink Frog, Bullfrog</i></p>	<ul style="list-style-type: none"> Field Studies must be conducted at the time of year when species are expected to be migrating or entering breeding sites. Corridors should consist of native vegetation, with several layers of vegetation. Corridors unbroken by roads, waterways or bodies, and undeveloped areas are most significant. Corridors should have at least 15m of vegetation on both sides of waterway or be up to 200m wide of woodland habitat and with gaps <20m. Shorter corridors are more significant than longer corridors, however amphibians must be able to get to and from their summer and breeding habitat. 	<p>Candidate SWH</p> <p>The presence of this SWH is only determined after amphibian breeding SWH is confirmed. However, this SWH is likely, given the habitat conditions present and the herptofauna observed in the area.</p>
<p>Deer Movement</p>	<p>Corridors may be found in all</p>	<ul style="list-style-type: none"> Movement corridor must be determined when Deer Wintering Habitat 	<ul style="list-style-type: none"> Studies must be conducted at the time of year when deer are 	<p>Not Present</p>

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Wildlife Habitat	Candidate SWH		Confirmed SWH	Assessment
	ELC Ecosites	Habitat Criteria	Defining Criteria	
<p>Corridors <u>Rationale:</u> Corridors important for all species to be able to access seasonally important life-cycle habitats or to access new habitat for dispersing individuals by minimizing their vulnerability while travelling.</p>	<p>forested ecosites. A Project Proposal in Stratum II Deer Wintering Area has potential to contain corridors.</p>	<p>is confirmed as SWH.</p> <ul style="list-style-type: none"> A deer wintering habitat identified by the OMNRF as SWH in Table 1.1 of this Schedule will have corridors that the deer use during fall migration and spring dispersion Corridors typically follow riparian areas, woodlots, areas of physical geography (ravines, or ridges). 	<p>migrating or moving to and from winter concentration areas</p> <ul style="list-style-type: none"> Corridors that lead to a deer wintering habitat should be unbroken by roads and residential areas. Corridors should be at least 200m wide with gaps >20m and if following riparian area with at least 15m of vegetation on both sides of the waterway. Shorter corridors are more significant than longer corridors 	<p>The MNRF has not identified any deer wintering habitat in the area. Therefore, the criteria for this SWH are not met.</p>
Significant Wildlife Habitat Exceptions for Eco Districts within Eco Region 6E				
		<ul style="list-style-type: none"> Black bears require forested habitat that provides cover, winter Forested habitats need to be large enough to provide cover and Woodland ecosites >30ha with mast-producing tree species, either soft 	<ul style="list-style-type: none"> All woodlands >30ha with a 50% composition of these ELC 	<p>Not Present The project is not located within Eco-District 6E-14.</p>
<p>Lek <u>Rationale:</u> Sharp-tailed grouse only occur on Manitoulin Island in Eco-region 6E, Leks are an important habitat to maintain their population. Eco-District: 6E-17</p>	<p>CUM. CUS, CUT</p>	<ul style="list-style-type: none"> The lek or dancing ground consists of bare, grassy or sparse shrubland. There is often a hill or rise in topography. Leks are typically a grassy field/meadow >15ha with adjacent shrublands and >30ha with adjacent deciduous woodland. Conifer trees within 500m are not tolerated. Grasslands (field/meadow) are to be >15ha when adjacent to shrubland and >30ha when adjacent to deciduous woodland. Grasslands are to be undisturbed with low intensities of agriculture (light grazing or late haying). Leks will be used annually if not destroyed by cultivation or invasion by woody plants or tree planting. 	<p>Studies confirming lek habitat are to be completed from late March to June.</p> <ul style="list-style-type: none"> Any site confirmed with sharp-tailed grouse courtship activities is considered significant. The field/meadow ELC ecosites plus a 200 m radius area with shrub or deciduous woodland is the lek habitat. 	<p>Not Present The project is not located within Eco-District 6E-17.</p>

APPENDIX H – Aquatic and Terrestrial Impact Assessment Figures



LEGEND

- Preliminary Design
- Watercourses
- 120m from Preliminary Design
- Ecological Land Classification

ELC Community L Rank

- L2
- L3
- L4
- L4, L5
- Not Ranked

- Other SAR Observation Locations
- Potential Maternity Roost Tree for SAR Bats

Butternuts

- Butternut Observation (+/- 12m)
- Habitat (25 m Radius)
- Habitat (50 m Radius)

Breeding Bird Survey Locations

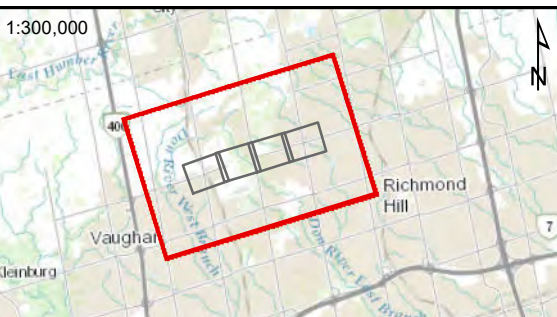
- Threatened/Endangered Species Detected
- Special Concern SAR Detected
- No SAR Detected

Design Impacts

- Permanent Loss
- Negative Impact
- Harmful Alteration

Transportation Network

- Arterial / Collector
- Local Roads



Ecological Land Classification Descriptions	
CGL, Constructed Green Lands	CVC
CUH1-A, Treed Hedgerow	CVC
CUM1-A, Native Forb Meadow	
CUM1-C, Exotic Forb Old Field Meadow	
CUM1-b, Exotic Cool Season Grass Graminoid Meadow	
CUP1-4, Hybrid Poplar - Hardwood Deciduous Plantation	
CUP1-A, Restoration Deciduous Plantation	
CUP1-B, Willow Deciduous Plantation	
CUP2-A, Restoration Mixed Plantation	
CUP2-f, Hybrid Poplar - Conifer Mixed Plantation	
CUP3-2, White Pine Coniferous Plantation	
CUP3-8, White Spruce - European Larch Coniferous Plantation	
CUP3-H, Mixed Conifer Coniferous Plantation	
CUT1-1, Sumac Deciduous Thicket	
CUW1-A, Natural Cultural Woodland	
CUW1-A1, Natural Cultural Woodland	
CUW1-A2, White Pine Successional Woodland	
CUW1-A3, Native Deciduous Cultural Woodland	
CUW1-B, Exotic Cultural Woodland	
CVC, Commercial and Institutional	
CVI, Transportation & Utilities	
CVR, Residential	
CVR-1, Low Density Residential	
CVR-2, High Density Residential	
CVR-3, Single Family Residential	
CVR-4, Rural Property	
FOC1-1, Dry-Fresh White Pine (- Red Pine) Coniferous Forest	
FOC3-1, Fresh-Moist Hemlock Coniferous Forest	
FOC3-A, Fresh-Moist Hemlock - White Pine Coniferous Forest	
FOD2-4, Dry-Fresh Oak - Hardwood Deciduous Forest	
FOD3-1, Dry-Fresh Poplar Deciduous Forest	
FOD5-1, Dry-Fresh Sugar Maple Deciduous Forest	
FOD5-10, Dry-Fresh Sugar Maple - Paper Birch - Poplar Deciduous Forest	
FOD5-2, Dry-Fresh Sugar Maple - Beech Deciduous Forest	
FOD8-1, Fresh-Moist Poplar Deciduous Forest	
FOM3-1, Dry-Fresh Hardwood - Black Mixed Forest	
FOM3-2, Dry-Fresh Hemlock - Sugar Maple Mixed Forest	
FOM5-1, Dry-Fresh Paper Birch Mixed Forest	
FOMA-A, Fresh-Moist White Pine - Sugar Maple Mixed Forest	
MAM2-10, Forb Mineral Meadow Marsh	
MAM2-9, Jewelweed Mineral Meadow Marsh	
MAM2-a, Common Reed Mineral Meadow Marsh	
MAS2-1B, Narrow-leaved Cattail Mineral Shallow Marsh	
OA, Open Water	
OAGM1, Annual Row Crop	
SAF1-3, Duckweed Floating-leaved Shallow Aquatic	
SBO1-A, Dropseed Open Sand Barren	
SBO1-B, Flats-topped Bluegrass - Forb Open Sand Barren	
SWC1-1, White Cedar Mineral Coniferous Swamp	
SWC1-2, White Cedar - Conifer Mineral Coniferous Swamp	
SWD4-3, Paper Birch - Poplar Mineral Deciduous Swamp	
SWT2-5, Red Osier Dogwood Mineral Thicket	

Coordinate System: NAD 1983 UTM Zone 17N
Sources: MNRF, ESRI

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, Esri, IGN

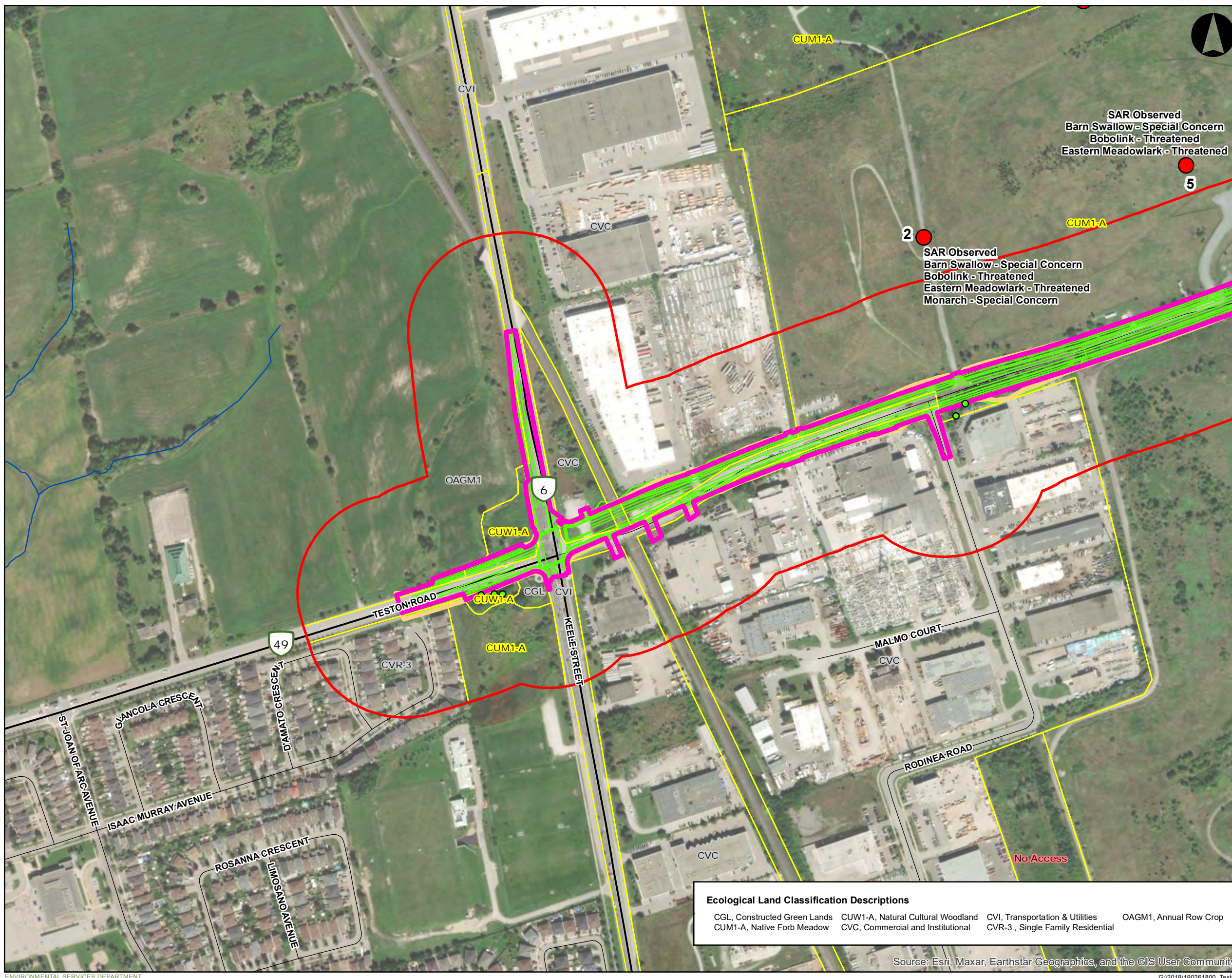
SCALE: 1:20,000
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TITLE: **Terrestrial Impact Assessment**

PROJECT NO.: 190261800
Teston Road, Vaughan Ontario

DATE: May 2024

Figure 1 of 5



- LEGEND**
- Preliminary Design
 - Watercourses
 - 120m from Preliminary Design
 - Ecological Land Classification
- ELC Community L Rank**
- L2
 - L3
 - L4
 - L4, L5
 - Not Ranked
- Other SAR Observation Locations
 - Potential Maternity Roost Tree for SAR Bats
- Butternuts**
- ★ Butternut Observation (+/- 12m)
 - Habitat (25 m Radius)
 - Habitat (50 m Radius)
- Breeding Bird Survey Locations**
- Threatened/Endangered Species Detected
 - Special Concern SAR Detected
 - No SAR Detected
- Design Impacts**
- Permanent Loss
 - Negative Impact
 - Harmful Alteration
- Transportation Network**
- Arterial / Collector
 - Local Roads

SAR Observed
Barn Swallow - Special Concern
Bobolink - Threatened
Eastern Meadowlark - Threatened

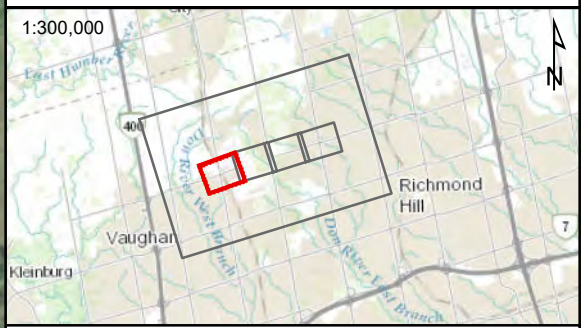
5

SAR Observed
Barn Swallow - Special Concern
Bobolink - Threatened
Eastern Meadowlark - Threatened
Monarch - Special Concern

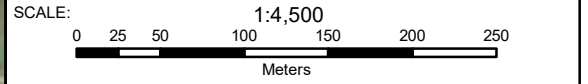
2

Ecological Land Classification Descriptions

CGL, Constructed Green Lands	CUW1-A, Natural Cultural Woodland	CVI, Transportation & Utilities	OAGM1, Annual Row Crop
CUM1-A, Native Forb Meadow	CVC, Commercial and Institutional	CVR-3, Single Family Residential	



Coordinate System: NAD 1983 UTM Zone 17N
Sources: MNR, ESRI
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN

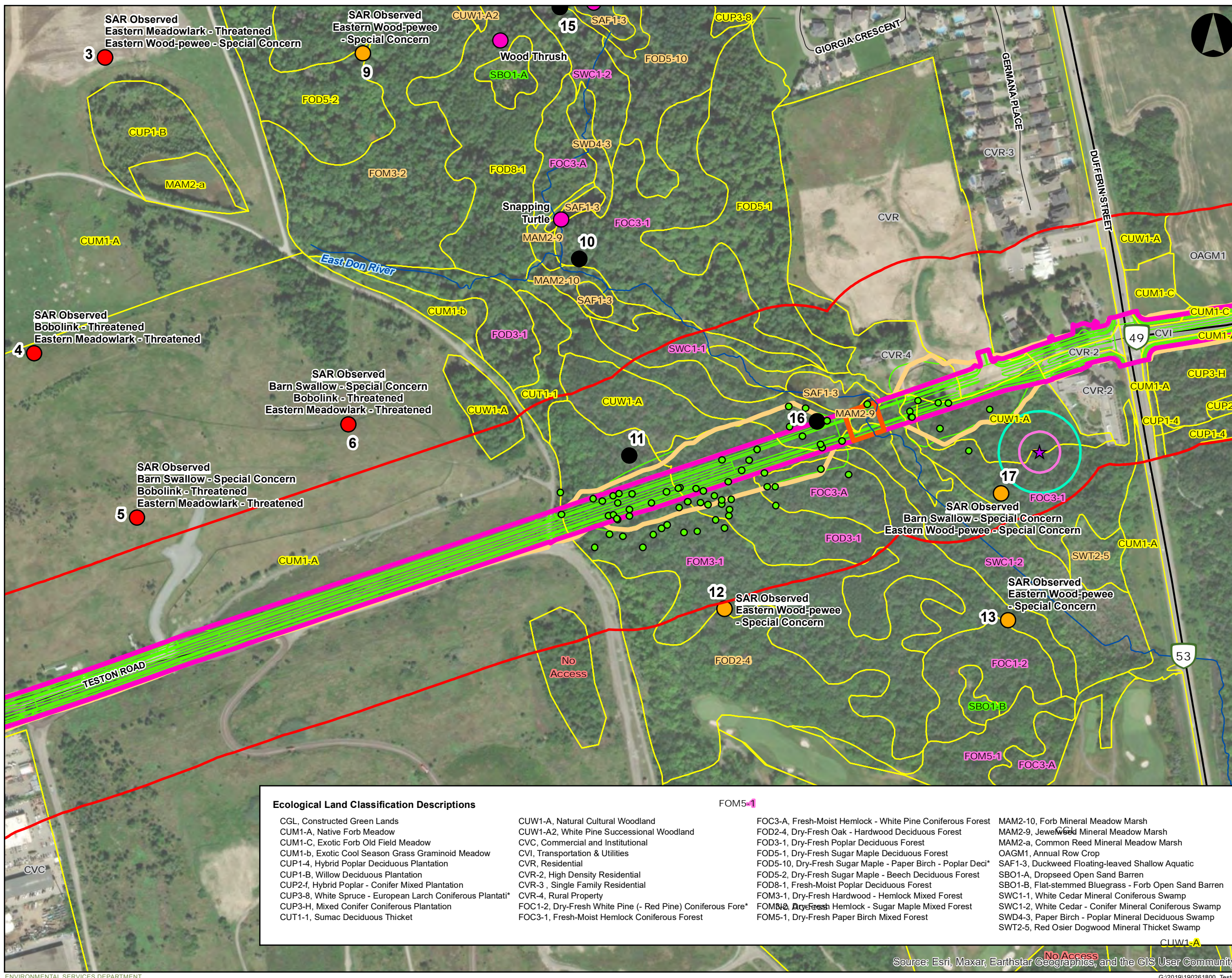


TITLE: **Terrestrial Impact Assessment**

PROJECT NO.: 190261800
Teston Road, Vaughan Ontario

DATE: **May 2024** Figure 2 of 5

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



LEGEND

- Preliminary Design
- Watercourses
- 120m from Preliminary Design
- Ecological Land Classification

ELC Community L Rank

- L2
- L3
- L4
- L4, L5
- Not Ranked

- Other SAR Observation Locations
- Potential Maternity Roost Tree for SAR Bats

Butternuts

- Butternut Observation (+/- 12m)
- Habitat (25 m Radius)
- Habitat (50 m Radius)

Breeding Bird Survey Locations

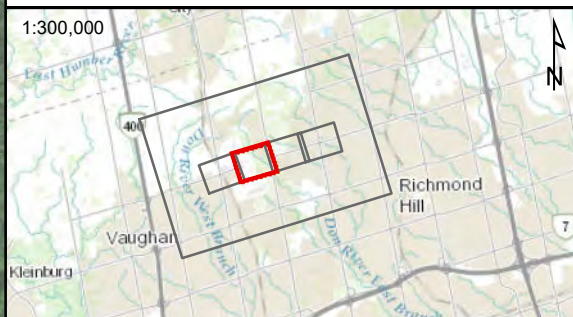
- Threatened/Endangered Species Detected
- Special Concern SAR Detected
- No SAR Detected

Design Impacts

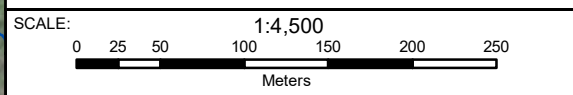
- Permanent Loss
- Negative Impact
- Harmful Alteration

Transportation Network

- Arterial / Collector
- Local Roads



Coordinate System: NAD 1983 UTM Zone 17N
 Sources: MNR, ESRI
 Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN



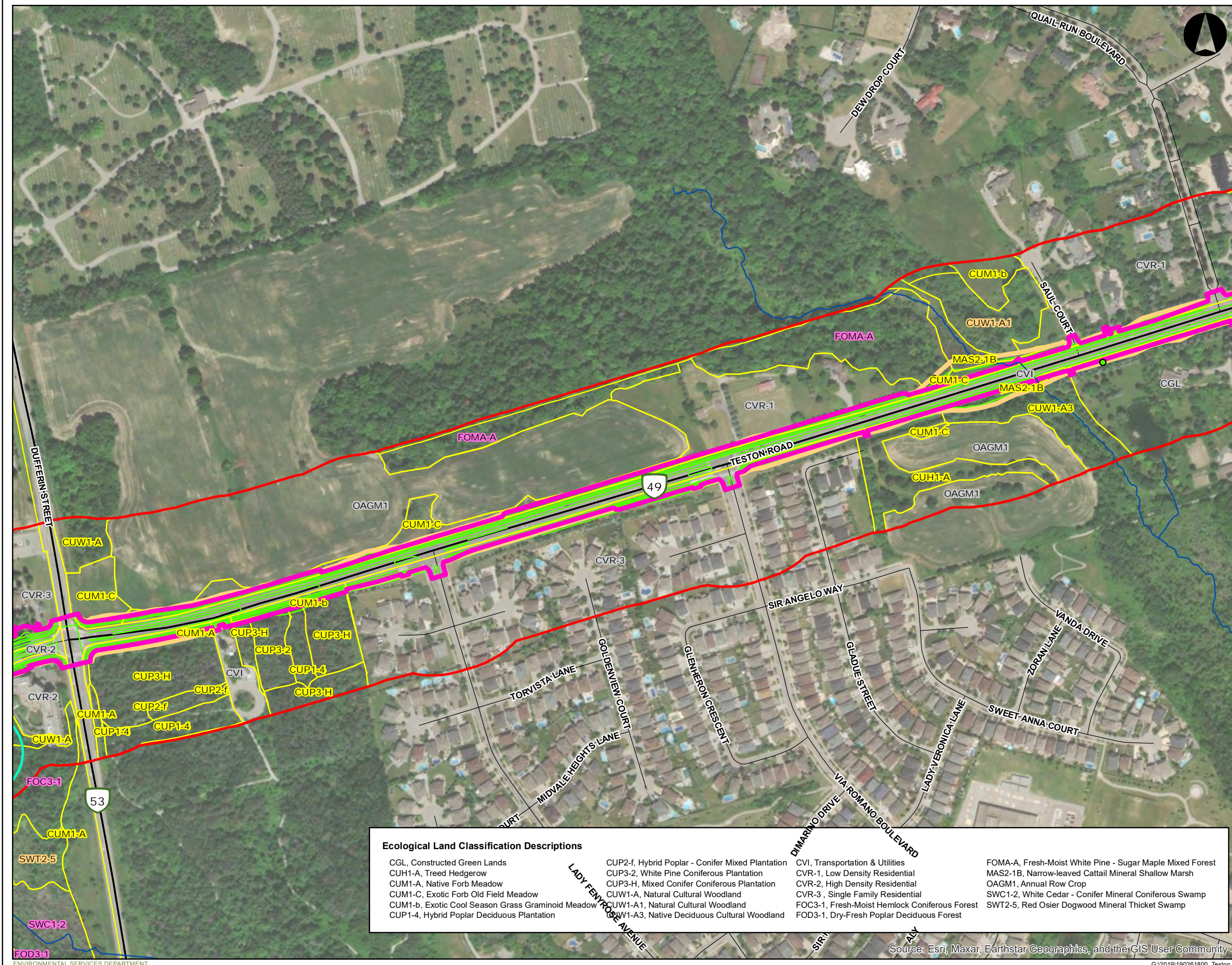
TITLE: **Terrestrial Impact Assessment**

PROJECT NO.: 190261800
 Teston Road, Vaughan Ontario

DATE: May 2024 Figure 3 of 5

Ecological Land Classification Descriptions	
CGL, Constructed Green Lands	CUW1-A, Natural Cultural Woodland
CUM1-A, Native Forb Meadow	CUW1-A2, White Pine Successional Woodland
CUM1-C, Exotic Forb Old Field Meadow	CVC, Commercial and Institutional
CUM1-b, Exotic Cool Season Grass Graminoid Meadow	CVI, Transportation & Utilities
CUP1-4, Hybrid Poplar Deciduous Plantation	CVR, Residential
CUP1-B, Willow Deciduous Plantation	CVR-2, High Density Residential
CUP2-f, Hybrid Poplar - Conifer Mixed Plantation	CVR-3, Single Family Residential
CUP3-8, White Spruce - European Larch Coniferous Plantation	CVR-4, Rural Property
CUP3-H, Mixed Conifer Coniferous Plantation	FOC1-2, Dry-Fresh White Pine (- Red Pine) Coniferous Forest
CUT1-1, Sumac Deciduous Thicket	FOC3-1, Fresh-Moist Hemlock Coniferous Forest
	FOM5-1
	FOC3-A, Fresh-Moist Hemlock - White Pine Coniferous Forest
	FOD2-4, Dry-Fresh Oak - Hardwood Deciduous Forest
	FOD3-1, Dry-Fresh Poplar Deciduous Forest
	FOD5-1, Dry-Fresh Sugar Maple Deciduous Forest
	FOD5-10, Dry-Fresh Sugar Maple - Paper Birch - Poplar Deciduous Forest
	FOD5-2, Dry-Fresh Sugar Maple - Beech Deciduous Forest
	FOD8-1, Fresh-Moist Poplar Deciduous Forest
	FOM3-1, Dry-Fresh Hardwood - Hemlock Mixed Forest
	FOM5-1, Dry-Fresh Hemlock - Sugar Maple Mixed Forest
	MAM2-10, Forb Mineral Meadow Marsh
	MAM2-9, Jewelweed Mineral Meadow Marsh
	OAGM1, Annual Row Crop
	SAF1-3, Duckweed Floating-leaved Shallow Aquatic
	SBO1-A, Dropseed Open Sand Barren
	SBO1-B, Flat-stemmed Bluegrass - Forb Open Sand Barren
	SWC1-1, White Cedar Mineral Coniferous Swamp
	SWC1-2, White Cedar - Conifer Mineral Coniferous Swamp
	SWD4-3, Paper Birch - Poplar Mineral Deciduous Swamp
	SWT2-5, Red Osier Dogwood Mineral Thicket Swamp

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



LEGEND

- Preliminary Design
- Watercourses
- 120m from Preliminary Design
- Ecological Land Classification

ELC Community L Rank

- L2
- L3
- L4
- L4, L5
- Not Ranked

- Other SAR Observation Locations
- Potential Maternity Roost Tree for SAR Bats

Butternuts

- Butternut Observation (+/- 12m)
- Habitat (25 m Radius)
- Habitat (50 m Radius)

Breeding Bird Survey Locations

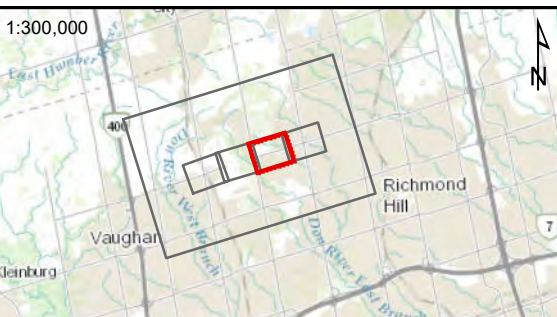
- Threatened/Endangered Species Detected
- Special Concern SAR Detected
- No SAR Detected

Design Impacts

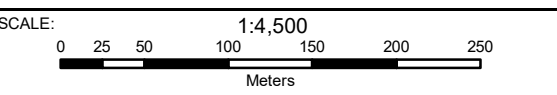
- Permanent Loss
- Negative Impact
- Harmful Alteration

Transportation Network

- Arterial / Collector
- Local Roads



Coordinate System: NAD 1983 UTM Zone 17N
 Sources: MNR, ESRI
 Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN



TITLE: **Terrestrial Impact Assessment**

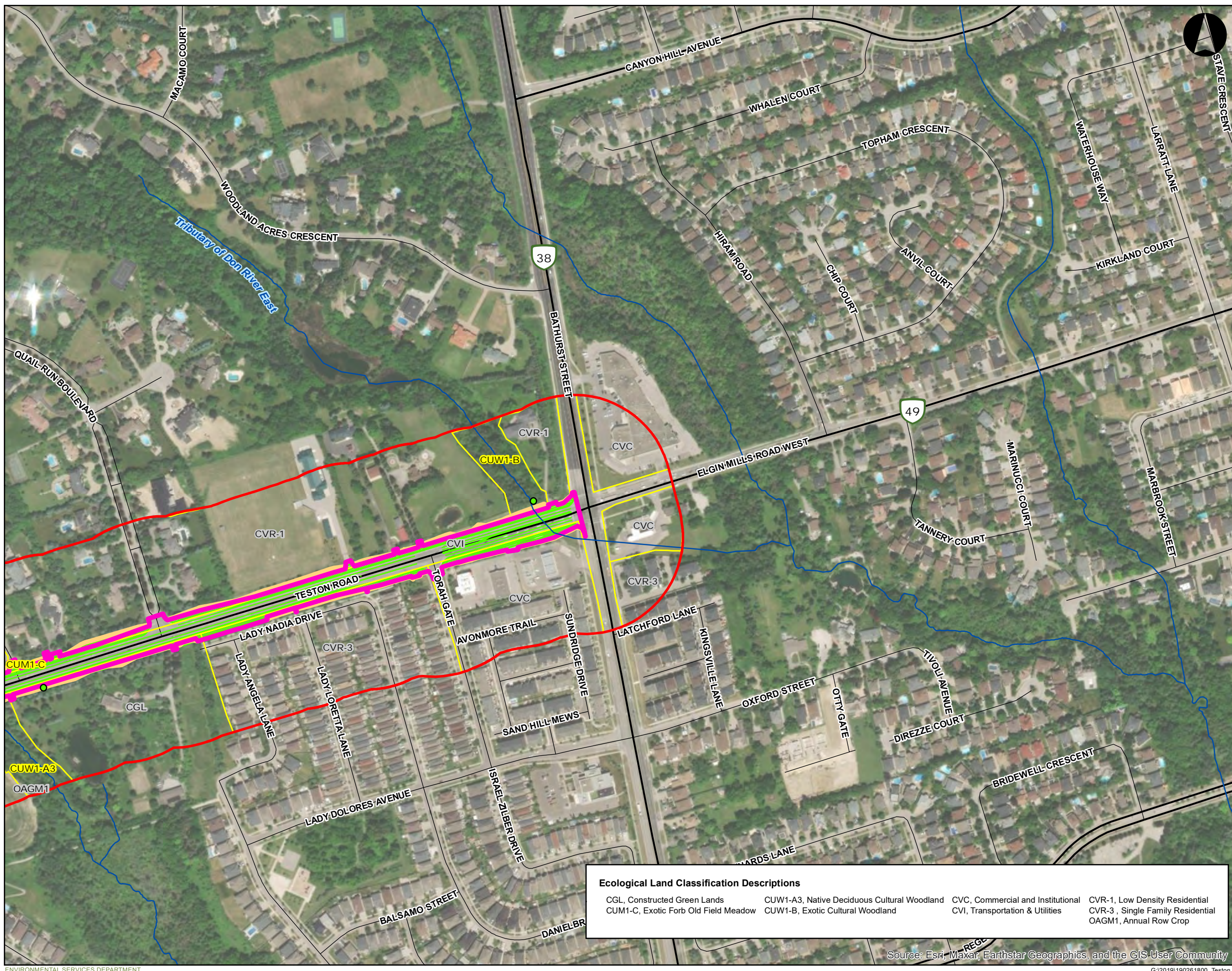
PROJECT NO.: 190261800
 Teston Road, Vaughan Ontario

DATE: **May 2024** Figure 4 of 5

Ecological Land Classification Descriptions

CGL, Constructed Green Lands	CUP2-f, Hybrid Poplar - Conifer Mixed Plantation	CVI, Transportation & Utilities	FOMA-A, Fresh-Moist White Pine - Sugar Maple Mixed Forest
CUH1-A, Treed Hedgerow	CUP3-2, White Pine Coniferous Plantation	CVR-1, Low Density Residential	MAS2-1B, Narrow-leaved Cattail Mineral Shallow Marsh
CUM1-A, Native Forb Meadow	CUP3-H, Mixed Conifer Coniferous Plantation	CVR-2, High Density Residential	OAGM1, Annual Row Crop
CUM1-C, Exotic Forb Old Field Meadow	CUW1-A, Natural Cultural Woodland	CVR-3, Single Family Residential	SWC1-2, White Cedar - Conifer Mineral Coniferous Swamp
CUM1-b, Exotic Cool Season Grass Graminoid Meadow	CUW1-A1, Natural Cultural Woodland	FOC3-1, Fresh-Moist Hemlock Coniferous Forest	SWT2-5, Red Osier Dogwood Mineral Thicket Swamp
CUP1-4, Hybrid Poplar Deciduous Plantation	CUW1-A3, Native Deciduous Cultural Woodland	FOD3-1, Dry-Fresh Poplar Deciduous Forest	

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



LEGEND

- Preliminary Design
- Watercourses
- 120m from Preliminary Design
- Ecological Land Classification

ELC Community L Rank

- L2
- L3
- L4
- L4, L5
- Not Ranked

- Other SAR Observation Locations
- Potential Maternity Roost Tree for SAR Bats

Butternuts

- Butternut Observation (+/- 12m)
- Habitat (25 m Radius)
- Habitat (50 m Radius)

Breeding Bird Survey Locations

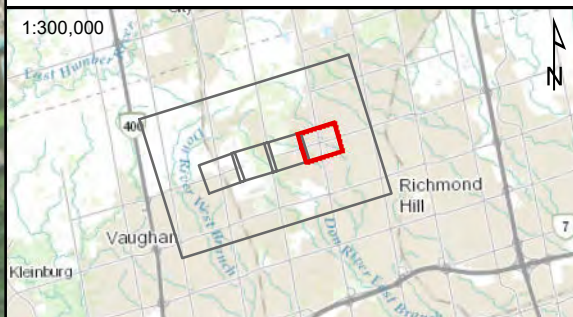
- Threatened/Endangered Species Detected
- Special Concern SAR Detected
- No SAR Detected

Design Impacts

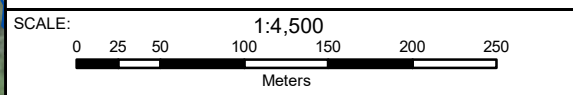
- Permanent Loss
- Negative Impact
- Harmful Alteration

Transportation Network

- Arterial / Collector
- Local Roads



Coordinate System: NAD 1983 UTM Zone 17N
 Sources: MNR, ESRI
 Sources: Esri, HERE, Garmin, Intermap, increment P-Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN



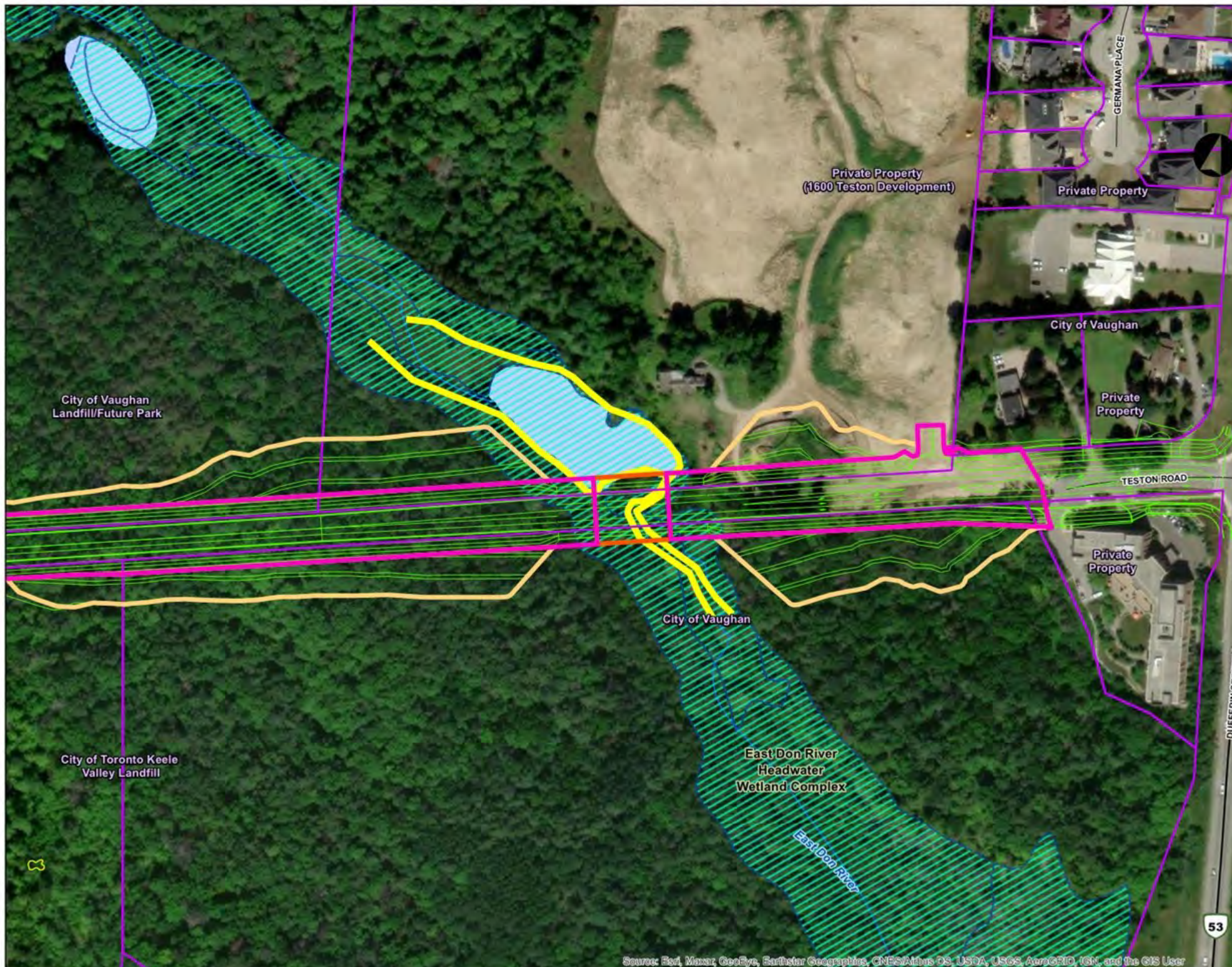
Ecological Land Classification Descriptions

CGL, Constructed Green Lands	CUW1-A3, Native Deciduous Cultural Woodland	CVC, Commercial and Institutional	CVR-1, Low Density Residential
CUM1-C, Exotic Forb Old Field Meadow	CUW1-B, Exotic Cultural Woodland	CVI, Transportation & Utilities	CVR-3, Single Family Residential
			OAGM1, Annual Row Crop

TITLE: **Terrestrial Impact Assessment**

PROJECT NO.: 190261800
 Teston Road, Vaughan Ontario

DATE: **May 2024** Figure 5 of 5



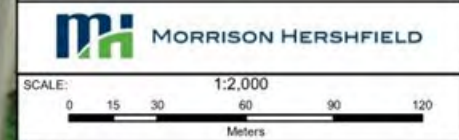
- Significant Natural Heritage Features**
- 2yr Floodline
- Land Information Ontario Data**
- Watercourses
 - Waterbodies
 - Evaluated-Provincially Significant Wetlands
- Transportation Network**
- Arterial / Collector
 - Local Roads
- Design Elements**
- Proposed Design
 - Property Boundaries
- Design Impacts (Valley)**
- Permanent
 - Temporary
 - Harmful Alteration

NOTES:

- The area shown is within the jurisdiction of the Ministry of Natural Resources and Forestry (MNR) Aurora District and Toronto and Region Conservation Authority Area



Coordinate System: NAD 1983 UTM Zone 17N
Sources: MNR



TITLE:
**Teston IEA Valley Crossing,
Aquatic Impacts**

PROJECT NO.: 190261800
Teston Road, Vaughan Ontario

DATE: August 2023 Figure 1

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User

APPENDIX I – Aquatic Effects Assessment

AQUATIC EFFECTS ASSESSMENT SUMMARY TABLE
Don River East Branch, West of Dufferin Street

Waterbody	Pathway of Effect(s)	Stressor (Potential Impact)	Mitigation Measures	Residual Effects
Don River East Branch West of Dufferin Street	Vegetation Clearing	Alteration of riparian vegetation Bank stability and exposed soils Increased erosion potential	Minimize vegetation removal on the waterbody banks where possible in order to maintain shading and bank stability. Stabilize disturbed banks with native seed mixture and/or cover exposed areas with erosion control measures until seeding or planting can occur. Install sediment fence around disturbed areas as per OPSS.MUNI 805 . Clearing shall be completed in accordance with the specifications outlined in OPSS.MUNI 201 .	Change in habitat structure and cover Change in food supply Change in nutrient concentration (Note: these are anticipated to be minor short-term residual that may occur to riparian areas as seed and natural vegetation (grasses/forbs) will take some time to re-establish along work/staging areas.)
	Grading	Addition or removal of instream organic structure Bank stability and exposed soils	Heavy machinery access and staging will be limited to areas within the new ROW and along the banks of the watercourse. Reinstate and stabilize banks disturbed during construction to pre-construction or better condition. Exposed areas will be revegetated using a seed mix composed of native species that are appropriate for the site conditions, as per OPSS.MUNI 803 . Grading operations must be completed as per OPSS.MUNI 206 . Top soil will be replaced after grading operations as per OPSS.MUNI 802 . Use of effective erosion and sediment control measures including topsoil and seed, sediment fence barriers, and erosion control blankets as per OPSS.MUNI 804 and OPSS.MUNI 805	Change in habitat structure and cover
	Excavation	Bank stability and exposed soils Dewatering	Work will be carried out within the in-water timing window between June 15 –September 15 when water levels are	No residual effects following the implementation of appropriate mitigation

		<p>Increased erosion potential</p> <p>Removal of topsoil</p> <p>Spoil/stockpile material</p>	<p>depressed and to avoid harming fish during critical life stages</p> <p>Use of effective erosion and sediment control measures including topsoil and seed, sediment fencing, and erosion control blanket as per OPSS.MUNI 804 and OPSS.MUNI 805.</p> <p>Bridge works will be carried out in the dry, within the confines of cofferdams.</p> <p>Work area dewatering will be directed to a flat vegetated area at least 30 m from the receiving watercourse or ditchline or outlet into a filter bag (also 30 m from surface water features) to allow sediments to settle out before re-entering the watercourse.</p> <p>Reinstate and stabilize banks of watercourse disturbed during construction to pre-construction or better condition.</p> <p>Exposed areas will be revegetated using a seed mix composed of native species that are appropriate for the site conditions, as per OPSS.MUNI 803.</p> <p>All stockpiles shall be placed at minimum of 30m from any waterbody.</p> <p>Excavation will be completed in accordance with OPSS.MUNI 902.</p>	
	<p>Riparian Planting</p>		<p>ESC will be used to contain/isolate the construction zone and to manage site drainage to prevent erosion and sedimentation to the waterbody.</p> <p>ESC measures will be in place until all areas are stabilized.</p> <p>Minimize use of fertilizers to best management or industry standards.</p> <p>Reinstate and stabilize banks of watercourse disturbed during construction to pre-construction or better condition.</p> <p>Exposed areas will be revegetated using a seed mix composed of native species that are appropriate for the site conditions, as per OPSS.MUNI 803.</p>	<p>No residual effects following the implementation of appropriate mitigation</p>

			Native tree and shrub species will be planted within the riparian zone and meander belt according to the landscape plan.	
	Industrial Equipment	<p>Oil, grease and fluid leaks from equipment</p> <p>Bank stability and exposed soils</p> <p>Increased erosion potential</p> <p>Resuspension and entrainment of sediment</p>	<p>Work will be carried out within the in-water timing window between June 15 –September 15 when water levels are depressed and to avoid harming fish during critical life stages.</p> <p>Heavy machinery access will be limited to pre-defined areas along the banks of the watercourse. The watercourse will not be crossed or treated as machinery staging at any time.</p> <p>Machinery will be clean and free of fluid leaks, invasive species and noxious weeds on arrival at the construction site and will be maintained in this condition through regular inspections (i.e. daily).</p> <p>Minimize the movement of machinery near waterbody banks and use the lightest equipment possible. Whenever possible, operate machinery on land above the high water mark in a manner that minimizes disturbance to the banks and bed of the waterbody.</p> <p>Wash, refuel and service machinery and store fuel and other materials for the machinery in such a way as to prevent any deleterious substances from entering the water.</p> <p>Refueling, maintenance and necessary repairs shall be carried out on a site designated for this purpose located 30m way from any waterbody.</p> <p>Have spill kits onsite and drip pans under all non-mobile machinery.</p> <p>Operation of equipment in waterbodies or on waterbody banks shall be carried out according to OPSS.MUNI 182.</p> <p>Use of effective erosion control measures including topsoil and seed, sediment fence barriers, and erosion control blankets as per OPSS.MUNI 804 and OPSS.MUNI 805.</p>	No residual effects following the implementation of appropriate mitigation

			<p>Reinstate and stabilize banks of watercourse disturbed during construction to pre-construction or better condition.</p> <p>Exposed areas will be revegetated using a seed mix composed of native species that are appropriate for the site conditions, as per OPSS.MUNI 803.</p> <p>Bridge works will be carried out in the dry, within the confines of cofferdams.</p> <p>Work area dewatering will be directed to a flat vegetated area at least 30 m from the receiving watercourse or ditchline or outlet into a filter bag (also 30 m from surface water features) to allow sediments to settle out before re-entering the watercourse.</p>	
	Change in Timing, Duration, or Frequency of Flow	Dewatering	<p>Bridge works will be carried out in the dry, within the confines of cofferdams.</p> <p>Work area dewatering will be directed to a flat vegetated area at least 30 m from the receiving watercourse or ditchline or outlet into a filter bag (also 30 m from surface water features) to allow sediments to settle out before re-entering the watercourse.</p> <p>Any in-water channel works and cofferdam placement will take place within the in-water timing window between June 15 –September 15 when water levels are depressed and to avoid harming fish during critical life stages.</p>	No residual effects following the implementation of appropriate mitigation
	Fish Passage	Flow Barriers	<p>Bridge works will be carried out in the dry, within the confines of cofferdams.</p> <p>Any in-water channel works and cofferdam placement will take place within the in-water timing window between June 15 –September 15 when water levels are depressed and to avoid harming fish during critical life stages.</p>	No residual effects following the implementation of appropriate mitigation