Appendix C1 –

Vegetation

Scientific Name	Common Name	CC	CW	G-Rank	COSEWIC	COSSARO	S-Rank	Halton	Native Status	Polygon									
										1	2	3	4	5	6	7	8	9	10
Acer ginnala	Amur Maple		5	G-TNR			SE1		I					x					
Acer negundo	Manitoba Maple	0	-2	G5			S5		N		x	x	x	x		x		x	x
Acer platanoides	Norway Maple	0	5	G?			SE5		I	x	x	x	x	x	x	x	x		x
Acer saccharinum	Silver Maple	5	-3	G5			S5	C	N		x	x		x					
Acer saccharum ssp. saccharum	Sugar Maple	4	3	G5			S5	C	N		x		x	x					x
Achillea millefolium ssp. millefolium	Common Yarrow	0	3	G5			SE		I							x			
Aesculus hippocastanum	Horse Chestnut	0	5	G?	-	-	SE2		I					x					
Agrimonia striata	Woodland Agrimony	3	3	G5			S4		N				x						
Alisma subcordatum	Common Water-plantain	3	-5	G5			S4?	C	N									x	
Alliaria petiolata	Garlic Mustard	0	0	G?			SE5		I	x	x	x	x	x		x	x		x
Ambrosia artemisiifolia	Common Ragweed	0	3	G5			S5	C	N							x			
Arctium lappa	Great Burdock	0	5	G?			SE5		I	x	x	x		x				x	x
Arisaema triphyllum ssp. triphyllum	Jack-in-the-pulpit	5	-2	G5			S5	C	N	x			x						x
Asclepias syriaca	Common Milkweed	0	5	G5			S5	C	N						x	x		x	
Aster novae-angliae	New England Aster	2	-3	G5			S5	C	N			x			x				
Bidens frondosa	Devil's Beggar-ticks	3	-3	G5			S5	C	N			x		x					
Bromus inermis ssp. inermis	Smooth Brome	0	5	G4G5			SE5		I					x		x			
Carex blanda	Woodland Sedge	3	0	G5			S5	C	N										x
Carex pensylvanica	Pennsylvania Sedge	5	5	G5			S5	C	N	x									
Carex rosea	Stellate Sedge	5	5	G5			S5	C	N	x									
Carex stipata	Awl-fruited Sedge	3	-5	G5			S5		N		x								
Carya cordiformis	Bitternut Hickory	6	0	G5			S5	C	N	x			x				x		x
Carya ovata	Shagbark Hickory	6	3	G5			S5	C	N	x			x						
Celastrus orbiculatus	Oriental Bittersweet	-	-	GNR	-	-	SNA		I					x					
Chelidonium majus	Greater Celandine		5	GNR			SNA		I										x
Chrysanthemum leucanthemum	Ox-eye Daisy	0	5	G?			SE5		I		x				x		x		
Circaea lutetiana ssp. canadensis	Canada Enchanter's Nightshade	3	3	G5			S5	C	N								x		x
Cirsium arvense	Canada Thistle	0	3	G?			SE5		I			x		x		x		x	x
Convallaria majalis	Lily-of-the-valley	0	5	G5			SE5		I	x				x					x

Scientific Name	Common Name	CC	CW	G-Rank	COSEWIC	COSSARO	S-Rank	Halton	Native Status	Polygon									
										1	2	3	4	5	6	7	8	9	10
Cornus foemina ssp. racemosa	Grey Dogwood	2	-2	G5			S5	C	N			x		x	x		x		
Cornus stolonifera	Red-osier Dogwood	2	-3	G5	-	-	S5	C	N					x					x
Coronilla varia	Trailing Crown-vetch	0	5	G?			SE5		I						x	x			
Crataegus laevigata	English Hawthorn	0	5						I					x					
Cynanchum rossicum	White Swallow-wort	0	5	G?	-	-	SE5		I					x					
Dactylis glomerata	Orchard Grass	0	3	G?			SE5		I	x	x	x	x	x					x
Daucus carota	Wild Carrot	0	5	G?			SE5		I			x		x		x			x
Dianthus armeria	Deptford Pink	0	5	G?			SE5		I							x	x		
Dipsacus fullonum ssp. sylvestris	Common Teasel	0	5	G?			SE5		I			x		x	x	x		x	
Echinacea purpurea	Purple Coneflower	0	5	G4			SE1		I			x							
Echinocystis lobata	Wild Cucumber	3	-2	G5			S5	C	N				x	x					
Echium vulgare	Viper's Bugloss	0	5	G?			SE5		I						x	x			
Elaeagnus angustifolia	Russian Olive	0	4	G?			SE3		I					x	x		x		
Elymus repens	Quack Grass	0	3	G5			SE5		I							x			
Elymus virginicus var. virginicus	Virginia Wild Rye	5	-2	G5	-	-	S5	C	N					x					
Erigeron annuus	Daisy Fleabane	0	1	G5			S5	C	N			x				x	x	x	
Erigeron canadensis	Canada Horseweed	0	3	G5			S5		N				x						
Euonymus alata	Winged Euonymus	0	5	G?	-	-	SE2		I					x					
Euphorbia esula	Hungarian Spurge	0	5	G5			SE5		I						x	x			
Fallopia dumetorum	Hedge Bindweed	2	0	G5			S5	C	N			x			x	x			
Fragaria virginiana ssp. virginiana	Common Strawberry	2	1	G5			S5	C	N										x
Fraxinus americana	White Ash	4	3	G5			S5	C	N	x			x	x		x	x		
Fraxinus excelsior	European Ash	0	5	G?	-	-	SE2		I					x					
Fraxinus pennsylvanica	Red Ash	3	-3	G5			S5	C	N			x			x	x	x	x	x
Galium aparine	Cleavers	4	3	G5			S5	C	N			x			x		x	x	
Geranium maculatum	Spotted Crane's-bill	6	3	G5			S5	C	N	x	x		x						x
Geranium robertianum	Herb Robert	0	5	G5			SE5		I				x				x	x	x
Geum aleppicum	Yellow Avens	2	-1	G5			S5	C	N	x			x					x	x
Geum canadense	White Avens	3	0	G5			S5	C	N	x		x	x				x	x	
Gleditsia triacanthos var. inermis	Thornless Honeylocust								I					x	x		x	x	

Scientific Name	Common Name	CC	CW	G-Rank	COSEWIC	COSSARO	S-Rank	Halton	Native Status	Polygon									
										1	2	3	4	5	6	7	8	9	10
Hedera helix	English Ivy		3	GNR			SNA		I	x				x					
Heliopsis helianthoides	False Sunflower	3	3	G5			S4S5		N				x						
Hemerocallis lilioasphodelus	Yellow Daylily								I										x
Hesperis matronalis	Dame's Rocket	0	5	G4G5			SE5		I						x	x	x	x	x
Hieracium aurantiacum	Orange Hawkweed	0	5	G?			SE5		I								x		
Hieracium vulgatum	Common Hawkweed		5	GNR			SNR		I		x								
Hieracium vulgatum	Common Hawkweed		5	GNR			SNA		I				x						
Hydrophyllum virginianum	Virginia Water-leaf	6	-2	G5			S5	C	N	x									
Hypericum perforatum	Common St. John's-wort	0	5	G?			SE5		I							x			x
Impatiens capensis	Spotted Touch-me-not	4	-3	G5			S5	C	N	x			x	x	x		x	x	x
Iris pseudacorus	Yellow Iris	0	-5	G?	-	-	SE3		I					x					
Juglans cinerea	Butternut	6	2	G4	END	END	S2?		N		x								
Juglans nigra	Black Walnut	5	3	G5			S4	C	N	x	x	x	x	x	x	x	x	x	x
Juncus tenuis	Path Rush	0	0	G5			S5		N			x	x						
Juniperus virginiana	Eastern Red Cedar	4	3	G5	-	-	S5	C	N					x					
Lactuca serriola	Prickly Lettuce		3	GNR			SNA		I										x
Leonurus cardiaca ssp. cardiaca	Motherwort	0	5	G?			SE5		I	x		x		x				x	
Ligustrum vulgare	Common Privet	0	1	G?			SE5		I								x	x	
Lonicera tatarica	Tartarian Honeysuckle	0	3	G?			SE5		I	x		x	x	x				x	x
Lotus corniculatus	Bird's-foot Trefoil	0	1	G?					I							x			x
Lysimachia ciliata	Fringed Loosestrife	4	-3	G5			S5	C	N				x						
Lythrum salicaria	Purple Loosestrife	0	-5	G5			SE5		I				x		x	x		x	
Maianthemum racemosum ssp. racemosum	False Solomon's Seal	4	3	G5			S5	C	N	x	x		x						
Malus pumila	Common Apple	0	5	G5			SE5		I			x		x					
Matricaria chamomilla	Wild Chamomile		5	GNR			SNA		I									x	

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										1	2	3	4	5	6	7	8	9	10
Medicago lupulina	Black Medick	0	1	G?			SE5		I			x				x			
Melilotus alba	White Sweet-clover	0	3	G5			SE5		I		x								
Melilotus officinalis	Yellow Sweet-clover	0	3	G?			SE5		I							x			
Mentha spicata	Spearmint	0	-4	G?			SE4		I						x				
Morus alba	White Mulberry	0	0	G?			SE5		I	x	x	x		x	x	x			x
Narcissus pseudonarcissus	Daffodil	0	0	G?	-	-	SE2		I					x					x
Oenothera biennis	Common Evening-primrose	0	3	G5			S5	C	N					x	x				
Ostrya virginiana	Hop Hornbeam	4	4	G5			S5	C	N	x	x		x	x					
Parthenocissus inserta	Thicket Creeper	3	3	G5			S5	C	N				x						x
Parthenocissus quinquefolia	Virginia Creeper	6	1	G5			S4?	C	N	x		x							
Pastinaca sativa	Wild Parsnip	0	5	G?			SE5		I			x						x	x
Phalaris arundinacea	Reed Canary Grass	0	-4	G5			S5		N				x	x	x	x	x	x	x
Phleum pratense	Timothy	0	3	G?			SE5		I			x	x						
Phragmites australis	Common Reed	0	-4	G5			S5		I						x		x		
Picea glauca	White Spruce	6	3	G5	-	-	S5	-	N					x					
Picea pungens	Blue Spruce			G5			SE1		I	x									
Pinus nigra	Austrian Pine	0	-5	G?	-	-	SE2		I				x	x					
Pinus strobus	Eastern White Pine	4	3	G5			S5	C	N	x			x	x					
Plantago major	Common Plantain	0	-1	G5			SE5		I			x							x
Poa pratensis ssp. pratensis	Kentucky Blue Grass	0	1	G?			S5		N					x					x
Podophyllum peltatum	Mayapple	5	3	G5			S5	C	N	x									
Polygonum lapathifolium	Pale Smartweed	2	-4	G5			S5	C	N								x		
Populus deltoides ssp. deltoides	Eastern Cottonwood	4	-1	G5			S5	C	N		x	x		x			x		
Populus tremuloides	Trembling Aspen	2	0	G5	-	-	S5	C	N					x					
Potentilla recta	Rough-fruited Cinquefoil	0	5	G?			SE5		I						x				
Prunus avium	Sweet Cherry	0	5	G?	-	-	SE4		I					x					
Prunus serotina	Black Cherry	3	3	G5			S5	C	N	x	x		x	x					
Prunus virginiana ssp. virginiana	Choke Cherry	2	1	G5			S5	C	N	x	x		x						x
Quercus alba	White Oak	6	3	G5			S5	C	N	x			x						
Quercus bicolor	Swamp White Oak	8	-4	G5			S4	C	N				x						
Quercus macrocarpa	Bur Oak	5	3	G5			S5	C	N				x	x					

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										1	2	3	4	5	6	7	8	9	10
Quercus rubra	Red Oak	6	3	G5			S5	C	N	x	x	x	x	x		x	x		
Ranunculus acris	Tall Buttercup	0	-2	G5			SE5		I			x					x	x	x
Reynoutria japonica	Japanese Knotweed		3	GNR			SNA		I		x								
Rhamnus cathartica	Common Buckthorn	0	3	G?			SE5		I	x	x	x	x	x	x	x	x	x	x
Rhus radicans ssp. negundo	Climbing Poison-ivy	5	-1	G5			S5		N	x			x		x			x	x
Rhus typhina	Staghorn Sumac	1	5	G5			S5	C	N			x		x	x	x	x	x	
Ribes cynosbati	Prickly Gooseberry	4	5	G5			S5	C	N		x								
Robinia pseudo-acacia	Black Locust	0	4	G5			SE5		I		x	x	x	x	x	x	x	x	
Rosa multiflora	Multiflora Rose	0	3	G?			SE4		I		x	x	x	x		x	x		x
Rubus idaeus ssp. idaeus	Red Raspberry	0	5	G5			SE1		I						x				x
Rubus occidentalis	Black Raspberry	2	5	G5			S5	C	N	x	x	x	x	x		x	x		x
Rubus odoratus	Purple Flowering Raspberry	3	5	G5			S5	C	N		x								
Rumex crispus	Curly Dock	0	-1	G?			SE5		I						x	x		x	x
Salix discolor	Pussy Willow	3	-3	G5			S5	C	N							x		x	
Salix nigra	Black Willow	6	-5	G5			S4?	C	N				x						
Salix X rubens	Hybrid White Willow	0	-4	G?			SE4		I		x			x	x	x	x	x	
Salix x sepulcralis	Weeping Willow			GNR			SNA		I			x		x					x
Sium suave	Water-parsnip	4	-5	G5	-	-	S5	C	N					x					
Smilax herbacea	Herbaceous Carrionflower	5	0	G5			S4?	C	N										x
Solanum dulcamara	Bittersweet Nightshade	0	0	G?			SE5		I					x	x				
Solidago altissima var. altissima	Tall Goldenrod	1	3	G?	-	-	S5	C	N					x					
Solidago caesia	Blue-stem Goldenrod	5	3	G5			S5	C	N	x									
Solidago canadnesis	Canada Goldenrod	1	3	G5			S5	C	N	x	x	x	x		x	x	x	x	x
Symphyotrichum lateriflorus var. lateriflorus	One-sided Aster	3	-2	G5	-	-	S5	C	N					x					
Syringa vulgaris	Common Lilac	0	5	G?			SE5		I							x			
Taraxacum officinale	Common Dandelion	0	3	G5			SE5		I			x					x		x
Thuja occidentalis	Eastern White Cedar	4	-3	G5			S5	C	N			x	x	x					
Tilia americana	Basswood	4	3	G5			S5	C	N		x		x	x			x	x	x

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Tilia cordata	Little-leaf Linden		5	GNR			SNA		I					x			x		
Tragopogon dubius	Doubtful Goat's-beard	0	5	G?			SE5		I			x							
Tragopogon pratensis ssp. pratensis	Meadow Goat's-beard	0	5	G?			SE5		I						x				
Trifolium pratense	Red Clover	0	2	G?			SE5		I		x	x							x
Trifolium repens	White Clover	0	2	G?			SE5		I		x								
Tsuga canadensis	Eastern Hemlock	7	3	G5	-	-	S5	C	N					x					x
Typha latifolia	Broad-leaved Cattail	3	-5	G5			S5	C	N						x		x		
Ulmua rubra	Slippery Elm	6	0	G5			S5		I								x		
Ulmus americana	White Elm	3	-2	G5?			S5	C	N	x	x			x			x		
Ulmus pumila	Siberian Elm	0	5	G?			SE3		I	x		x				x			
Urtica dioica ssp. dioica	European Stinging Nettle	0	-1	G5T?			SE2		I				x				x		
Valeriana officinalis	Common Valerian	0	2	G?			SE3		I		x								
Verbena hastata	Blue Vervain	4	-4	G5			S5	C	N					x	x				
Vicia cracca	Cow Vetch	0	5	G?			SE5		I			x			x	x		x	x
Vicia sativa ssp. nigra	Common Vetch	0	4	G?			SE5		I					x	x	x			
Vinca minor	Periwinkle	0	5	G?			SE5		I	x	x	x	x	x					
Viola canadensis	Canada Violet	6	5	G5	-	-	S5		N					x					
Vitis riparia	Riverbank Grape	0	-2	G5			S5	C	N		x	x	x	x	x	x	x	x	x
Xanthium strumarium	Cocklebur	2	0	G?	-	-	S5	C	N					x	x				
Aster sp	Aster Species									x	x	x	x		x	x	x	x	
Bromus sp	Brome Species														x				
Crataegus sp	Hawthorn Species													x			x	x	x
Lonicera sp	Honeysuckle Species													x		x	x		
Malus sp	Apple Species										x			x		x	x		
Oxalis Sp	Wood Sorrel Species																		x
Poa sp	Blue Grass Species											x			x		x		
Polygonum sp	Smartweed Species																	x	
Salix sp	Willow Species											x		x					
Symphyotrichum sp	Aster Species													x					
Veronica sp	Speedwell Species											x							

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Viola sp	Violet Species									x									

Legend

Coefficient of Conservatism and Coefficient of Wetness
CC = Coefficient of Conservatism. Rank of 0 to 10 based on plants degree of fidelity to a range of synecological parameters: (0-3) Taxa found in a variety of plant communities; (4-6) Taxa typically associated with a specific plant community but tolerate moderate disturbance; (7-8) Taxa associated with a plant community in an advanced successional stage that has undergone minor disturbance; (9-10) Taxa with a high fidelity to a narrow range of synecological parameters.
CW = Coefficient of Wetness. -Value between 5 and –5. A value of –5 is assigned to Obligate Wetland (OBL) and 5 to Obligate Upland (UPL), with intermediate values assigned to the remaining categories (Oldham et al., 1995).

G-Rank (global)
Global ranks are assigned by a consensus of the network of Conservation Data Centres (CDCs), scientific experts, and the Nature Conservancy to designate a rarity rank based on the range-wide status of a species, subspecies, or variety.
G1 Extremely rare—usually 5 or fewer occurrences in the overall range or very few remaining individuals; or because of some factor(s) making it especially vulnerable to extinction.
G2 Very rare—usually between 5 and 20 occurrences in the overall range or with many individuals in fewer occurrences; or because of some factor(s) making it vulnerable to extinction.
G3 Rare to uncommon—usually between 20 and 100 occurrences; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.
G4 Common—usually more than 100 occurrences; usually not susceptible to immediate threats.
G5 Very common—demonstrably secure under present conditions.

S-Ranks (provincial)
Provincial (or Subnational) ranks are used by the Natural Heritage Information Centre (NHIC) to set protection priorities for rare species and natural communities. These ranks are not legal designations. Provincial ranks are assigned in a manner similar to that described for global ranks, but consider only those factors within the political boundaries of Ontario.
S1 Critically Imperiled—Critically imperiled in the nation or state/province because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province.
S2 Imperiled—Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.
S3 Vulnerable—Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
S4 Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors.
S5 Secure—Common, widespread, and abundant in the nation or state/province.
S#S# Range Rank —A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).
SX Apparently extirpated from Ontario, with little likelihood of rediscovery. Typically not seen in the province for many decades, despite searches at known historic sites.
SE Exotic; not believed to be a native component of Ontario's flora.

COSEWIC (Committee on the Status of Endangered Wildlife in Canada)
(federal status from COSEWIC April 2008)
EXT Extinct - A species that no longer exists.
EXP Extirpated - A species no longer existing in the wild in Canada, but occurring elsewhere.
END Endangered - A species facing imminent extirpation or extinction.
THR Threatened - A species likely to become endangered if limiting factors are not reversed.

SC Special Concern (formerly vulnerable) - A species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.
NAR Not At Risk - A species that has been evaluated and found to be not at risk of extinction given the current circumstances.
DD Data Deficient (formerly Indeterminate) - Available information is insufficient to resolve a species' eligibility for assessment or to permit an assessment of the species' risk of extinction.
* - Species on Schedule 1 of Species At Risk Act (SARA)

OMNR (Ontario Ministry of Natural Resources)
(*provincial status from MNR June 2008)*
The provincial review process is implemented by the MNR's Committee on the Status of Species at Risk in Ontario (COSSARO).
EXT Extinct—A species that no longer exists anywhere.
EXP Extirpated—A species that no longer exists in the wild in Ontario but still occurs elsewhere.
END Endangered - A species facing imminent extinction or extirpation in Ontario which is a candidate for regulation under Ontario's Endangered Species Act (ESA).
THR Threatened—A species that is at risk of becoming endangered in Ontario if limiting factors are not reversed.
SC Special Concern (formerly Vulnerable) —A species with characteristics that make it sensitive to human activities or natural events.
NAR Not at Risk—A species that has been evaluated and found to be not at risk.
DD Data Deficient (formerly Indeterminate) —A species for which there is insufficient information for a provincial status recommendation.

Halton
Regional status from Conservation Halton (Conservation Halton, 2018).
R: Rare (observed in 5 or fewer site in the respective NAIs
U: Uncommon (observed in 6-15 sites in the respective NAIs)
C: Common in respective NAIs
H?: Requires further review
I: Introduced

Polygon	Ecological Land Classification		Ranking		Vegetation Community Description	Representative Photo
	Code	Name	Global	Provincial		
1	CUM1-1	Dry - Moist Old Field Cultural Meadow	-	-	Characterization: Pioneer, open tableland community on relatively flat topography. Characterized by a suite of common / typical old field and early successional species, with scattered young trees and shrubs. Mean CW: 2.3 Mean CC: 0.83 Dominant Species: Canada Goldenrod (*Solidago canadensis*) with abundant Wild Carrot (*Daucus carota*), Panicled Aster (*Aster lanceolatus*), and Smooth Brome (*Bromus inermis ssp. inermis*) Plant SAR / SOCC[1,2]: Common Cinquefoil (*Potentilla simplex*) – locally uncommon Habitat Features: Common Milkweed (*Asclepias syriaca*) and other wildflowers; Monarch observed – Special Concern Disturbance: anthropogenic community, tractor tracks throughout; occasional White Swallow-wort (*Cynanchum rossicum*), synonym: Dog-strangling Vine (DSV)	
2	CUW1	Mineral Cultural Woodland	-	-	Characterization: Young, treed tableland community on slightly sloping topography. Mix of native and introduced trees, shrubs, and ground cover typical of disturbed / edge habitats. Mean CW: 1.97 Mean CC: 1.73 Dominant Species: Green Ash (*Fraxinus pennsylvanica*), Sugar Maple (*Acer saccharum ssp. saccharum*), Red Cedar (*Juniperus virginiana*), and Scots Pine (*Pinus sylvestris*) SAR / SOCC: Low Serviceberry (*Amelanchier spicata*) – locally rare (R7), and Common Juniper (*Juniperus communis*) – locally uncommon Habitat Features: none noted Disturbance: anthropogenic community, abundant Common Buckthorn (*Rhamnus cathartica*) and DSV	
3	SWD4-1	Willow Mineral Deciduous Swamp	GNR	S4	Characterization: Mid-aged, treed, riparian bottomland community. Native trees, dense shrub layer, and ground cover comprised of common wetland species. Wetland soils (Moisture Regime 6 – very moist) Mean CW: -2.14 Mean CC: 2.36 Dominant Species: Peach-leaved Willow (*Salix amygdaloides*), Green Ash, Red-osier Dogwood (*Cornus stolonifera*), and Common Buckthorn SAR / SOCC: Pink Knotweed (*Polygonum pensylvanicum*) – locally rare (R4) Habitat Features: none Disturbance: abundant Common Buckthorn	

[1] Locally uncommon / rare plant species rankings from: *The Distribution and Status of the Vascular Plants of the Greater Toronto Area* (Varga, et al. 2000). Wildlife SAR and SOCC are not included under this heading. For reference to all SAR and SOCC within the study area, refer to main document.
[2] Three species listed by Varga et al (2000) as uncommon and/or rare - Canada Goldenrod (*Solidago canadensis*) and Gray Dogwood (*Cornus racemose*), and Black Walnut (*Juglans nigra*) are now ubiquitous on the landscape and are not considered herein as SOCC.

Polygon	Ecological Land Classification		Ranking		Vegetation Community Description	Representative Photo
	Code	Name	Global	Provincial		
4	CUP3-3 / CUM1-1 Inclusion: MAM2-2	Complex: Scots Pine Coniferous Plantation / Dry - Moist Old Field Cultural Meadow Inclusion: Reed Canary Grass Mineral Meadow Marsh	- / - GNR	- / - S5	Characterization: Mosaic of open and treed anthropogenic communities on rolling upland topography. Predominantly introduced trees and shrubs with ground cover typical of disturbed / edge habitats. Mean CW: 1.10 Mean CC: 1.34 Dominant Species: Plantation: Scots Pine; Meadow: Canada Goldenrod with abundant Smooth Brome and Knapweed (*Centaurea sp.*); Inclusion: Reed Canary Grass (*Phalaris arundinacea*) SAR / SOCC: Small-flowered False Foxglove (*Agalinis paupercula var. paupercula*) – locally rare (R2), and Common Juniper – locally uncommon Habitat Features: Common Milkweed and other wildflowers; Monarch observed – Special Concern Disturbance: anthropogenic community; occasional Common Buckthorn	
5	SWD4-1 / MAM2	Complex: Willow Mineral Deciduous Swamp / Mineral Meadow Marsh	GNR / -	S4 / -	Characterization: Mosaic of open and treed riverine / bottomland communities. Characterized by typical suite of wetland trees, shrubs, and ground cover. Wetland soils (Moisture Regime 5 = moist) Mean CW: -2.27 Mean CC: 2.34 Dominant Species: White Willow (*Salix alba*), Red-osier Dogwood, sedges (*Carex spp.*), goldenrods (*Solidago spp.*), Purple Loosestrife (*Lythrum salicaria*), Path Rush (*Juncus tenuis*), Wild Mint (*Mentha arvensis ssp. borealis*), Field Horsetail (*Equisetum arvense*), and Spotted Joe-pye-weed (*Eupatorium maculatum ssp. maculatum*) SAR / SOCC: locally rare: Large Yellow Lady's Slipper (*Cypripedium calceolus var. pubescens*) (R10) and Swamp Rose (*Rosa palustris*) (R4); locally uncommon: Knotted Rush (*Juncus nodosus*), Silverweed (*Potentilla anserina ssp. anserina*), and Highbush Cranberry (*Viburnum trilobum*) Habitat Features: variety of wildflowers; Monarch observed – Special Concern Disturbance: located within previously disturbed rural habitat matrix – early successional	
6	CUS1	Mineral Cultural Savannah	-	-	Characterization: Young, Semi-open, anthropogenic community located on a valley slope. Dominated by introduced species. Transitional soils along topographical gradient. Mean CW: 1.75 Mean CC: 0.90 Dominant Species: Scots Pine with abundant Common Apple (*Malus pumila*), Canada Goldenrod, Smooth Brome, Kentucky Blue Grass (*Poa pratensis*) and Knapweed SAR / SOCC: none Habitat Features: Common Milkweed and other wildflowers Disturbance: anthropogenic community; occasional Common Buckthorn and DSV	

Polygon	Ecological Land Classification		Ranking		Vegetation Community Description	Representative Photo
	Code	Name	Global	Provincial		
7	MAS2-1	Cattail Mineral Shallow Marsh	G5	S5	Characterization: Young, open, bottomland / riverine community. Low diversity of common wetland species. Wetland soils (Moisture Regime 5 – moist). Mean CW: -3.40 Mean CC: 1.60 Dominant Species: Broad-leaved Cattail (*Typha latifolia*) with abundant Reed Canary Grass SAR / SOCC: none Habitat Features: wildflowers; Monarch observed – Special Concern Disturbance: wetland habitat fragmented by Bloor Street (otherwise contiguous with Polygon C15 to the south)	
8	FOD5-4	Dry - Fresh Sugar Maple - Ironwood Deciduous Forest	G?	S5	Characterization: Mid-aged, treed community located on a valley slope. Relatively high diversity of native trees, with low diversity of ground cover. Transitional soils along topographical gradient. Mean CW: 2.14 Mean CC: 2.86 Dominant Species: Hop Hornbeam (*Ostrya virginiana*) and Sugar Maple, with abundant Choke Cherry (*Prunus virginiana ssp. virginiana*) SAR / SOCC: none Habitat Features: fallen logs Disturbance: edge influences – forest historically cleared to top of valley slope, remaining forest is limited to a narrow band along the slope; occasional Common Buckthorn and DSV	
9	FOD6-5	Fresh - Moist Sugar Maple - Hardwood Deciduous Forest	GNR	S5	Characterization: Mid-aged to mature, treed community located on a valley slope. Relatively high diversity of native trees, with low diversity of ground cover. Transitional soils along topographical gradient. Mean CW: 1.64 Mean CC: 2.21 Dominant Species: Hop Hornbeam, Sugar Maple, Yellow Birch (*Betula alleghaniensis*) and American Beech (*Fagus grandifolia*), with abundant Choke Cherry SAR / SOCC: none Habitat Features: mature trees, snags, fallen logs Disturbance: edge influences – forest historically cleared to top of valley slope, remaining forest is limited to a narrow band along the slope; historic dumping of stones from adjacent field; occasional Common Buckthorn and DSV	

Polygon	Ecological Land Classification		Ranking		Vegetation Community Description	Representative Photo
	Code	Name	Global	Provincial		
10	FOD5-6	Dry-Fresh Sugar Maple Basswood Deciduous Forest	G5?	S5	Characterization: Mid-aged to mature, treed community located on a valley slope. Dominated by Two native species, with low diversity of ground cover. Transitional soils along topographical gradient. Mean CW: 1.85 Mean CC: 3.31 Dominant Species: Sugar Maple, Basswood (*Tilia americana*), and Green Ash with some Eastern White Pine (*Pinus strobus*). SAR / SOCC: none Habitat Features: mature trees, snags, some fallen logs Disturbance: Significant non-native invasive garden escape species including Periwinkle and Lily-of-the-valley (*Convallaria majalis*). Yard waste dumping is prevalent along the border of residential backards and the forest.	

ELC COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: Appleby Creek		POLYGON: 1	
	SURVEYOR(S): N. Schwetz	DATE: JUNE 20/18	TIME: start / finish	
	UTMZ:	UTME:	UTMN:	

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
G TERRESTRIAL G WETLAND G AQUATIC	G ORGANIC G MINERAL SOIL G PARENT MIN. G ACIDIC BEDRK. G BASIC BEDRK. G CARB. BEDRK.	G LACUSTRINE G RIVERINE G BOTTOMLAND G TERRACE G VALLEY SLOPE G TABLELAND G ROLL. UPLAND G CLIFF G TALUS G CREVICE / CAVE G ALVAR G ROCKLAND G BEACH / BAR G SAND DUNE G BLUFF	G NATURAL G CULTURAL	G PLANKTON G SUBMERGED G FLOATING-LVD. G GRAMINOID G FORB G LICHEN G BRYOPHYTE G DECIDUOUS G CONIFEROUS G MIXED	G LAKE G POND G RIVER G STREAM G MARSH G SWAMP G FEN G BOG G BARREN G MEADOW G PRAIRIE G THICKET G SAVANNAH G WOODLAND G FOREST G PLANTATION
SITE G OPEN WATER G SHALLOW WATER G SURFICIAL DEP. G BEDROCK			**COVER** G OPEN G SHRUB G TREED		

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	4	QUE RUBR = ACEPLAT = CARO VAT = OSTVIRG
2	SUB-CANOPY	2	3	ACESASA = ACEPLAT = JUGNIGR = OSTVIRG
3	UNDERSTOREY	4	4	ACEPLAT > PRUVIRG = PRUSERO = OSTVIRG
4	GRD. LAYER	6	4	ALLPST > VIO. SP = GLEHEDEP = DaDPELT

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:	BA:

SIZE CLASS ANALYSIS:		< 10		10 - 24		25 - 50		> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG		MID-AGE	X	MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:	FOREST	FO
COMMUNITY SERIES:	DECIDUOUS	FOD
ECOSITE:	OAK - MAPLE - HICKORY	FOD2
VEGETATION TYPE:	DRY - FRESH OAK HICKORY DEC. FOREST	FOD2 - 2
INCLUSION		
COMPLEX		

Notes: - dead ash - city removals - large carcond & guard dal (tube down)

ELC PLANT SPECIES LIST	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COL.
MORALBA		R			
ACEPLAT	O	O	A		
PINSTRO	O				
JUGNIGR		O			
CAROVAT	O		R		
PRUSERO		O	O		
QUERUBR	O				
FRAAMER	O	O	R		
OSTVIRG	O	O	O		
ACESASA	R	O	R		
ACMPUMI			R		
CARCORD	R	R			
ULMAMER		R			
TILAMER		R			
SALALBA	R				
PICPUNG		R			
LONTATA			R		
PRUVIRG			O		
RHACATH			R	O	

SPECIES CODE	LAYER 1	2	3	4	COL.
CONMAJA				R	
ALLPETI				A	
VIO-SP				O	
GEMALEP				O	
CARPENN				R	
IMPCAPE				O	
RUBOCCI				R	
PARQUIN				R	
ARIATRO				O	
GEUCANA				O	
SMIRACE				R	
LEOCARD				R	
VINMINO				O	
PODPELT				O	
HYDVIRG				R	
CARROSE				R	
ARCLAPP				R	
SOLCAES				R	
GERMACU				R	
RHURANE				O	
ENGLISH IVY				O	
GRASS-SP				O	
DACGLOM				R	
SOL-SP				R	

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ELC STAND CHARACTERISTICS	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

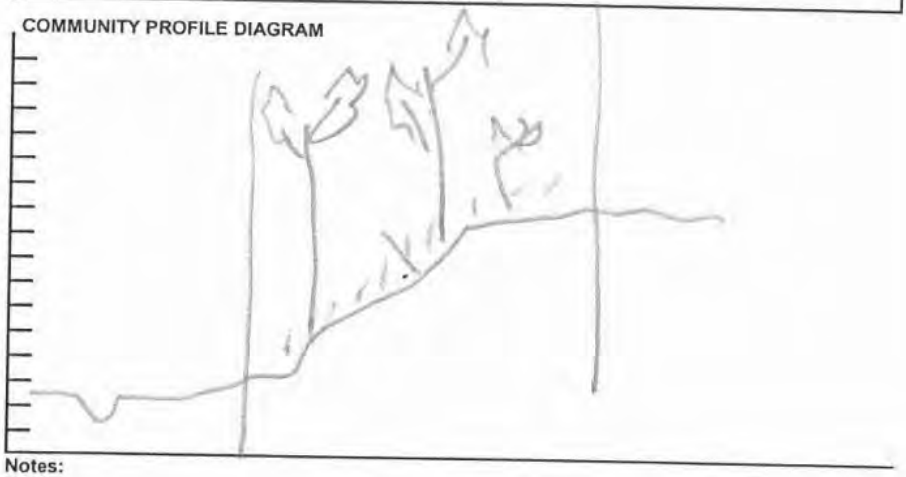
TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AVG
TOTAL							100
BASAL AREA (BA)							
DEAD							

STAND COMPOSITION:

COMMUNITY PROFILE DIAGRAM



Notes:

ELC SOILS ONTARIO	SITE: POLYGON: DATE: SURVEYOR(S):

	P/A	PP	Dr	Slope Position	Aspect	%	Type	Class	UTM Z	EASTING	NORTHING
1	A	S	Z	Z	—	—	—	—	17	601770	4801834 E5.4
2											
3											
4											
5											

SOIL	1	2	3	4	5
TEXTURE x HORIZON	0 A SCL 33 B SC 120				
A TEXTURE	SCL				
COURSE FRAGMENTS	999				
B TEXTURE	SC				
COURSE FRAGMENTS	999				
C TEXTURE	999				
COURSE FRAGMENTS	999				
EFFECTIVE TEXTURE	SC				
SURFACE STONINESS	0				
SURFACE ROCKINESS	0				
DEPTH TO / OF					
MOTTLES	999				
GLEY	999				
BEDROCK	999				
WATER TABLE	999				
CARBONATES	—				
DEPTH OF ORGANICS	0,5cm				
PORE SIZE DISC #1	—				
PORE SIZE DISC #2	—				
MOISTURE REGIME	2				
SOIL SURVEY MAP					
LEGEND CLASS					

ELC COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: Appleby Creek		POLYGON: 2	
SURVEYOR(S): N Schweitz	DATE: June 2018	TIME: start	finish
UTMZ: 17	UTME:	UTMN:	

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
G TERRESTRIAL G WETLAND G AQUATIC	G ORGANIC G MINERAL SOIL G PARENT MIN. G ACIDIC BEDRK. G BASIC BEDRK. G CARB. BEDRK.	G LACUSTRINE G RIVERINE G BOTTOMLAND G TERRACE G VALLEY SLOPE G TABLELAND G ROLL. UPLAND G CLIFF G TALUS G CREVICE / CAVE G ALVAR G ROCKLAND G BEACH / BAR G SAND DUNE G BLUFF	G NATURAL G CULTURAL	G PLANKTON G SUBMERGED G FLOATING-LVD. G GRAMINOID G FORB G LICHEN G BRYOPHYTE G DECIDUOUS G CONIFEROUS G MIXED	G LAKE G POND G RIVER G STREAM G MARSH G SWAMP G FEN G BOG G BARREN G MEADOW G PRAIRIE G THICKET G SAVANNAH G WOODLAND G FOREST G PLANTATION
SITE			**COVER**		
G OPEN WATER G SHALLOW WATER G SURFICIAL DEP. G BEDROCK			G OPEN G SHRUB G TREED		

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	1	4	ACEPLAT = JUGNIG(R) Acessa = T. lan
2	SUB-CANOPY	2	2	Aceplat ? Juglans > Rhacath = Malmaier
3	UNDERSTOREY	4	2	Rhamnet = PRUVIRG = VITRIPA = ULMAMER
4	GRD. LAYER	5	4	SOL-SP = ARCLAPP = ASTSP > MELALBA

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:	BA:

SIZE CLASS ANALYSIS:		< 10		10 - 24		25 - 50		> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG		MID-AGE	X	MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:	FOREST	FO
COMMUNITY SERIES:	DECIDUOUS	FOD
ECOSITE:	FRESH-MOIST LOWLAND	FOD7
VEGETATION TYPE:		
INCLUSION		
COMPLEX	Cultural woodland	CUW1

Notes:
- Inclusion - CUP3
- open areas from road/s maintained
- Parts of creek restored. Still lack oak & hickory

ELC PLANT SPECIES LIST	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COL.
Salxvub	R				
Acplat	O	A			
Acesasa	R				
TILAMER	R		R		
PRUSERO		R			
JUGNIGR	O	O			
POPDELT	R				
ULMAMER		R	O		
MORALBA			R		
ACESACC				R	
RIBSPEC				R	
OSTVIRG			R		
~~Salix~~					
Juglcine		R			
ROSMACT			O		
PRUVIRG			O		
VITRIPA			O		

Planted

SPECIES CODE	LAYER 1	2	3	4	COL.
VIBOPU				O	
HIERACI				O	
SMIRACE				R	
RUBODOR				O	
RUBACCI				O	
Sal-sp				A	
RIBCYNO				R	
DACGLOM				R	
ARCLAPP				A	
GERMACU				R	
HIRVULG				O	
CAREXSP				D	
TRIPRAT				R	
VALOFFI				D	
AST_SP				A	
TRIREPE				R	
CIRARV				R	
MELALBU				O	
REYNJAPO				R	

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ELC COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: APPLEBY CREEK		POLYGON: 3	
	SURVEYOR(S): N. SCHWEITZ	DATE: JUNE 20/18	TIME: start	
			finish	
	UTMZ:	UTME:	UTMN:	

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☑ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☑ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☑ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☑ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☑ WOODLAND ☐ FOREST ☐ PLANTATION
SITE			**COVER**		
☐ OPEN WATER ☐ SHALLOW WATER ☑ SURFICIAL DEP. ☐ BEDROCK			☐ OPEN ☐ SHRUB ☑ TREED		

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	3	JUGNIGR > ACEPLAT = ACENEGU = SMA
2	SUB-CANOPY	3	3	JUGNIGR = ACEPLAT = ACENEGU = ROBPSE
3	UNDERSTOREY	4	3	RHACATH-LONTATA - ACENEGU = ACEPLAT
4	GRD. LAYER	5	4	DACGLOM = SOL-SP - POA-SP > TRIPRAT

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE, 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:	BA:

SIZE CLASS ANALYSIS:		< 10		10 - 24		25 - 50		> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG	X	MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:	CULTURAL	CU
COMMUNITY SERIES:	WOODLAND	CUW
ECOSITE:	MINERAL CULTURAL WOODLAND	CUW1
VEGETATION TYPE:		CUW1
INCLUSION		
COMPLEX	FRESH-MOIST DEC. FOREST	FOD7

Notes:

Community plots b/w woodland and lowland forest. More dense in exotics and B. walnut.

ELC PLANT SPECIES LIST	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COL.
JUGNIGR	A	O	R	O	
MALPUMI	R	R			
ACENEGU	O	O	O		
ACEPLAT	O	O	O	R	
ROBPSEU	R	O	O	O	
FRAPENN		R	O	R	
THUOCC				R	
ULMPUMI		R			
CORRACE			R		
ACESACC			R		
POPDELT	R		R		
QUERUBR	R				
SAL SP		R	R		
SALX SERR	O	O			
MORALBA		R	R		
RHACATH		O	O	R	
LONTATA			O		
VICCRAC				R	
ROSMULT			R		
VITRIPA			R	R	
PARQUIN			R		
RHUTYPH			R		

SPECIES CODE	LAYER 1	2	3	4	COL.
DACGLOM				A	
great doc				G	
SOL-SP				A	
ALLPETI				O	
CONARVE				O	
CONSEPI				O	
TRIPRAT				O	
goatsbeard				R	
GALAPAR				O	
Timothy				O	
GEUCANA				R	
motherwort				R	
TAROFFI				O	
~~ACHATRO~~ PASSATI				R	
ERIANNU				R	
Bathrush				O	
CIRARVE				R	
BIDFERON				R	
RANACRI				R	
DAUCARO				R	
SYMNOPA				R	
Periwinkle				R	
VER-SP				R	
Common plantain				O	
RUBOCCI				O	
POA-SP				A	
Sedge-SP				R	
MEDLUPU				R	
DIPSYLV				R	
PASSATI				R	

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ELC STAND CHARACTERISTICS	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

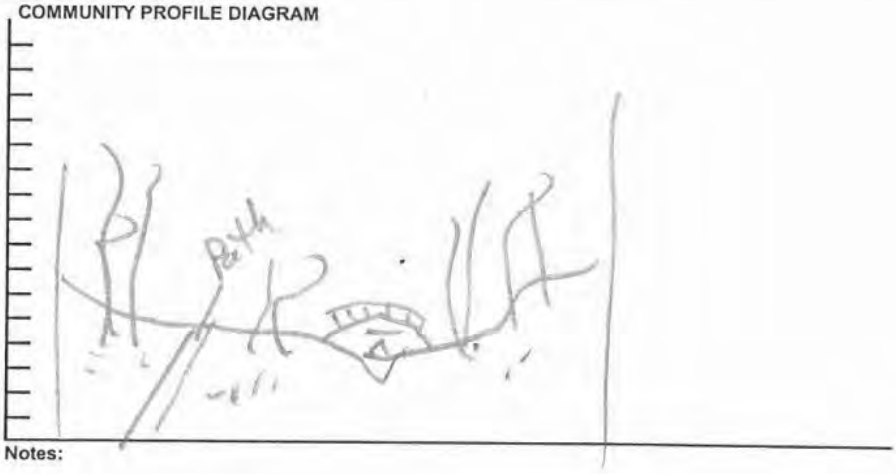
TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AVG
TOTAL							100
BASAL AREA (BA)							
DEAD							

STAND COMPOSITION:

COMMUNITY PROFILE DIAGRAM



Notes:

ELC SOILS ONTARIO	SITE: POLYGON: DATE: SURVEYOR(S):

				Slope					UTM	
	P/A	PP	Dr	Position	Aspect	%	Type	Class	Z	EASTING	NORTHING
1											
2											
3											
4											
5											

SOIL	1	2	3	4	5
TEXTURE x HORIZON					
A TEXTURE					
COURSE FRAGMENTS					
B TEXTURE					
COURSE FRAGMENTS					
C TEXTURE					
COURSE FRAGMENTS					
EFFECTIVE TEXTURE					
SURFACE STONINESS					
SURFACE ROCKINESS					
DEPTH TO / OF					
MOTTLES					
GLEY					
BEDROCK					
WATER TABLE					
CARBONATES					
DEPTH OF ORGANICS					
PORE SIZE DISC #1					
PORE SIZE DISC #2					
MOISTURE REGIME					
SOIL SURVEY MAP					
LEGEND CLASS					

NO SOILS
COURSE FRAGMENTS
HARD SURFACES.

ELC WILDLIFE	SITE:	
	POLYGON:	
	DATE:	
	SURVEYOR(S):	
	START TIME:	END TIME:

TEMP (°C):	CLOUD (10th):	WIND:	PRECIPITATION:
CONDITIONS:			

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS		SNAGS
	HIBERNACULA		FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#
B	BLJA	OB		1					

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRD - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS OR YOUNG
TK = TRACKS FE = FEEDING EVIDENCE SC = SCAT
SI = OTHER SIGNS (specify)

Page ..... of .....

ELC COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: Appleby Creek		POLYGON: 4	
	SURVEYOR(S): N. Schuster	DATE: JUNE 20/19	TIME: start	
			finish	
	UTMZ:	UTME:	UTMN:	

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
G TERRESTRIAL G WETLAND G AQUATIC	G ORGANIC G MINERAL SOIL G PARENT MIN. G ACIDIC BEDRK. G BASIC BEDRK. G CARB. BEDRK.	G LACUSTRINE G RIVERINE G BOTTOMLAND G TERRACE G VALLEY SLOPE G TABLELAND G ROLL. UPLAND G CLIFF G TALUS G CREVICE / CAVE G ALVAR G ROCKLAND G BEACH / BAR G SAND DUNE G BLUFF	G NATURAL G CULTURAL	G PLANKTON G SUBMERGED G FLOATING-LVD. G GRAMINOID G FORB G LICHEN G BRYOPHYTE G DECIDUOUS G CONIFEROUS G MIXED	G LAKE G POND G RIVER G STREAM G MARSH G SWAMP G FEN G BOG G BARREN G MEADOW G PRAIRIE G THICKET G SAVANNAH G WOODLAND G FOREST G PLANTATION
SITE G OPEN WATER G SHALLOW WATER G SURFICIAL DEP. G BEDROCK			**COVER** G OPEN G SHRUB G TREED		

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	4	JUGNIGR2 QUERUBR = ACESASA ULMAMER
2	SUB-CANOPY	2	3	QUERUBR = FRAPENN = TILAMER = OSTVIR2
3	UNDERSTOREY	3	3	LONTAT2 = POSMULT = FRAAME2 > PRUVIRG
4	GRD. LAYER	5	4	PARTQUI = GALAPA = ASTSPP1 = SMIRAC

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:	BA:

SIZE CLASS ANALYSIS:		< 10		10 - 24		25 - 50		> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG		MID-AGE	X	MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:	FOREST	FO
COMMUNITY SERIES:	DECIDUOUS	FOD
ECOSITE:	MINERAL FRESH-MOIST	FOD9
VEGETATION TYPE:	FRESH-MOIST OAK-MAPLE DECIDUOUS FOREST	FOD9-1
INCLUSION		
% COMPLEX		FOD7-4

Notes: OAK'S & B. WALNUT ABUNDANT
than maple, hickory
Ivy escaped from yards
leaf waste

ELC PLANT SPECIES LIST	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COL.
JUGNIGR	O			R	
QUERUBR	O	O			
QUEALBA	R	R			
FRAAMER	R	O	O	O	
QUERBICO	R	R			
TILAMER		R	R		
CARCVAT	R				
THUOCCI				R	
OSTVIRG		R			
ACESASA	O	R			
PRUSTRO		R			
ACEPLAT		R	R		
SALNIGR	R				
CARCORD				R	
ALNINCG		R			
LONTATA			O		
ROSMULT			O		
RHACATH			R		
PRUVIRG			R		

SPECIES CODE	LAYER 1	2	3	4	COL.
DACGLOM				O	
PHLPRAT				O	
SOL_SP				O	
AST_SP				O	
GEUCANA				O	
GEUALEP				O	
RUBOCCI				R	
ARIATRO				R	
VITRIPA			R	R	
AGRSTRI				O	
PARQUIN				R	
HALLIARA				R	
ALLPETI				R	
SMIRACE				O	
GRASS_SP				O	
JUNTENU				O	
HEDHELI				O	
GERMACR				R	
IMPCAPE				O	
SRICANA				R	
PHAARUN				R	
RHURANE				R	
GERROBE				R	
LYSCILI				R	
URTDIOI				R	
LINMINO				R	
LYTSALI				R	
ECHLOBA				R	

Page ..... of .....

ELC
COMMUNITY DESCRIPTION & CLASSIFICATION
SITE: Appleby Creek
SURVEYOR(S): M. SCHAUERTE
UTMZ: 17 UTME: UTMN:
DATE: JUNE 25/19
TIME: start/ finish
POLYGON: 5

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
SITE: G TERRESTRIAL; G WETLAND; G AQUATIC	G ORGANIC; G MINERAL SOIL; G PARENT MIN; G ACIDIC BEDRK; G BASIC BEDRK; G CARB BEDRK	G LACUSTRINE; G RIVERINE; G BOTTOMLAND; G TERRACE; G VALLEY SLOPE; G TABLELAND; G ROLL UPLAND; G CLIFF; G TALUS; G CREVICE / CAVE; G ROCKLAND; G BEACH / BAR; G SAND DUNE; G BLUFF	G NATURAL; G CULTURAL	COVER: G OPEN; G SHRUB; G TREED; G PLANKTON; G SUBMERGED; G FLOATING-LVD; G GRAMINOID; G FORB; G LICHEN; G BRYOPHYTE; G DECIDUOUS; G CONIFEROUS; G MIXED	G LAKE; G POND; G MARSH; G STREAM; G SWAMP; G FEN; G BOG; G BARREN; G ALVAR; G MEADOW; G PRAIRIE; G THICKET; G SAVANNAH; G WOODLAND; G FOREST; G PLANTATION
G OPEN WATER; G SHALLOW WATER; G SUBTIDAL DEP; G BEDROCK					

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 CANOPY	2	3	ACSA
2 SUB-CANOPY	3	3	ACSA = SAAL
3 UNDERSTOREY	4	3	RHAB ACSA < SAAL
4 GRD. LAYER	4	4	SAAL CAAR > ACSA > RHAB = ACSA

HT CODES: 1 = ≤25 m; 2 = 10<HT≤25 m; 3 = 2<HT≤10 m; 4 = 1<HT≤2 m; 5 = 0.5<HT≤1 m; 6 = 0.2<HT≤0.5 m; 7 = HT<0.2 m
CVR CODES: 0= NONE; 1 = 0% < CVR ≤ 10%; 2 = 10 < CVR ≤ 25%; 3 = 25 < CVR ≤ 60%; 4 = CVR > 60%

STAND COMPOSITION: BA:

SIZE CLASS ANALYSIS:		< 10	10-24	25 - 50	> 50
STANDING SNAGS:		< 10	10 - 24	25 - 50	> 50
DEADFALL/LOGS:		< 10	10 - 24	25 - 50	> 50

ABUNDANCE CODES: N = NONE; R = RARE; O = OCCASIONAL; A = ABUNDANT

COMM. AGE:		PIONEER	YOUNG	MID-AGE	MATURE	OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

	ELC CODE
COMMUNITY CLASS:	
COMMUNITY SERIES:	
ECOSITE:	
VEGETATION TYPE:	CUW1
INCLUSION	CUM1
COMPLEX	

Notes:

ELC
STAND CHARACTERISTICS
SITE:
POLYGON:
DATE:
SURVEYOR(S):

TREE TALLY BY SPECIES:
PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AVG
TOTAL							

BASAL AREA (BA)	
DEAD	
	100

STAND COMPOSITION:

COMMUNITY PROFILE DIAGRAM

Notes:

ELC

SITE:
POLYGON:
DATE:
SURVEYOR(S):

MANAGEMENT / DISTURBANCE

DISTURBANCE / EXTENT	0	1	2	3	SCORE †
TIME SINCE LOGGING	> 30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS	
INTENSITY OF LOGGING	NONE	FUEL WOOD	SELECTIVE	DIAMETER LIMIT	
EXTENT OF LOGGING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
SUGAR BUSH OPERATIONS	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF OPERATIONS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
GAPS IN FOREST CANOPY	NONE	SMALL	INTERMEDIATE	LARGE	
EXTENT OF GAPS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
LIVESTOCK (GRAZING)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF LIVESTOCK	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ALIEN SPECIES	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF ALIEN SPECIES	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
PLANTING (PLANTATION)	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF PLANTING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
TRACKS AND TRAILS	NONE	FAINT TRAILS	WELL MARKED	TRACKS OR	
EXTENT OF TRACKS/TRAILS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DUMPING (RUBBISH)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DUMPING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
EARTH DISPLACEMENT	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISPLACEMENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
RECREATIONAL USE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF RECR. USE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
NOISE	NONE	SLIGHT	MODERATE	INTENSE	
EXTENT OF NOISE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DISEASE/DEATH OF TREES	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISEASE / DEATH	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
WIND THROW (BLOW DOWN)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF WIND THROW	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BROWSE (e.g. DEER)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BROWSE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BEAVER ACTIVITY	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BEAVER	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FLOODING (pools & puddling)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FLOODING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FIRE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FIRE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ICE DAMAGE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF ICE DAMAGE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
OTHER	NONE	LIGHT	MODERATE	HEAVY	
EXTENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	

† INTENSITY x EXTENT = SCORE

ELC

SITE:
POLYGON:
DATE:
SURVEYOR(S):
START TIME: END TIME:

WILDLIFE

TEMP (°C): CLOUD (10th): WIND: PRECIPITATION:
CONDITIONS:

POTENTIAL WILDLIFE HABITAT:

VERNAL POOLS		SNAGS	
HIBERNACULA		FALLEN LOGS	

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#
R	TUR	DR		1					
	AMRO	DS		*					

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):
BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY
A = ANXIETY BEHAVIOUR N = NEST BUILDING

P = PAIR
V = VISITING NEST

BREEDING BIRD - CONFIRMED:
DD = DISTRACTION NU = USED NEST
NE = EGGS NY = YOUNG
AE = NEST ENTRY

FY = FLEDGED YOUNG
FS = FOOD/FAECAL SACK

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION
DP = DISTINCTIVE PARTS HO = HOUSE/DEN
TK = TRACKS FE = FEEDING EVIDENCE
SI = OTHER SIGNS (specify)

CA = CARCASS
FY = EGGS OR YOUNG
SC = SCAT

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ELC COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: Appleby Creek | POLYGON: 8 b

SURVEYOR(S): J. Schwartz | DATE: June 20/18 | TIME: start / finish

UTMZ: | UTME: | UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
G TERRESTRIAL G WETLAND G AQUATIC	G ORGANIC G MINERAL SOIL G PARENT MIN. G ACIDIC BEDRK. G BASIC BEDRK. G CARB. BEDRK.	G LACUSTRINE G RIVERINE G BOTTOMLAND G TERRACE G VALLEY SLOPE G TABLELAND G ROLL. UPLAND G CLIFF G TALUS G CREVICE / CAVE G ALVAR G ROCKLAND G BEACH / BAR G SAND DUNE G BLUFF	G NATURAL G CULTURAL	G PLANKTON G SUBMERGED G FLOATING-LVD. G GRAMINOID G FORB G LICHEN G BRYOPHYTE G DECIDUOUS G CONIFEROUS G MIXED	G LAKE G POND G RIVER G STREAM G MARSH G SWAMP G FEN G BOG G BARREN G MEADOW G PRAIRIE G THICKET G SAVANNAH G WOODLAND G FOREST G PLANTATION
SITE			**COVER**		
G OPEN WATER G SHALLOW WATER G SURFICIAL DEP. G BEDROCK			G OPEN G SHRUB G TREED		

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	2	ROBPSE = JUGNIGR = ACERAT > SAL
2	SUB-CANOPY	3	2	ACERAT = FRAPNN > SALAMG > RUB.
3	UNDERSTOREY	4	1	JUGNIGR = FRAPNN = ACERAT
4	GRD. LAYER	5	4	SOL - SP = CONARV = LYTSIA = PdA - SP

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION: | BA:

SIZE CLASS ANALYSIS:		< 10		10 - 24		25 - 50		> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG		MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:	CULTURAL	CU
COMMUNITY SERIES:	SAVANNAH	CUS
ECOSITE:	MINERAL CULTURAL SAV.	CUS1
VEGETATION TYPE:		
INCLUSION	Mineral meadow marsh	MAM2-10
COMPLEX		

Notes:

- whole community constructed / designed
- upland savannah ~ meadow marsh close to creek

ELC PLANT SPECIES LIST	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COL.
ROBPSEU	O				
JUGNIGR	O		O	D	
ACEPLAT	O	O	D		
FRAPENN		O	O		
MORALBA				R	
ELAANGU		R			
SALXRUB	R				
RHACATH			R		
RHUTYPH			R		
CORRACE			R		
CHRLEUC				O	
RHURADE				R	

SPECIES CODE	LAYER 1	2	3	4	COL.
DIPFULL				O	
RUMCRIS				O	
SOL-SP				A	
PHAARUN				O	
CONARVE				A	
ASCSYRI				O	
CORVARI				O	
VERHAST				R	
LYTSALI				A	
TYPLATI				O	
VITRIPA				O	
RUBSIDI				O	
VICSATI				R	
HESMATR				R	
ECHVULG				R	
POTRECT				R	
ASTNOVAN				R	
VICCRAC				R	
OENBIEN				R	
EUPESUL				O	
IMPCAPE				O	
RHUHIRT				R	
TRAPRAT				R	
MENSPIC				O	
SONOLE				R	
PARTHEISS				R	
PHRAUST				R	
YANSPIN				R	
GALAPITR				R	
POA-SP				A	
BRO-SP				O	

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ELC STAND CHARACTERISTICS	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

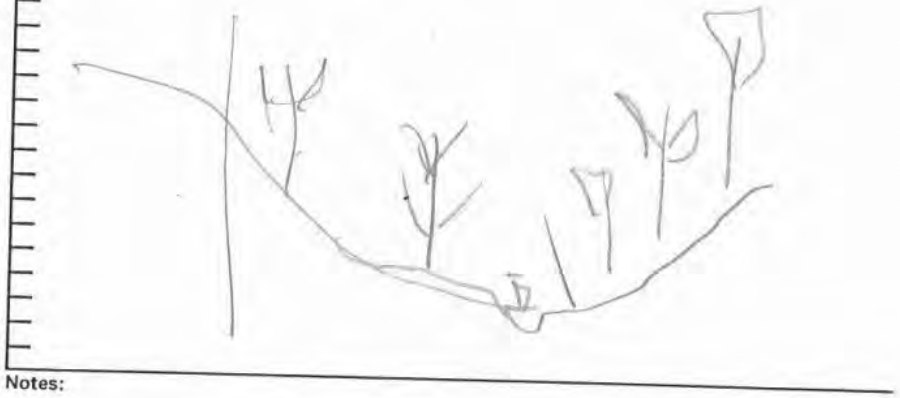
TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AVG
TOTAL							100
BASAL AREA (BA)							
DEAD							

STAND COMPOSITION:

COMMUNITY PROFILE DIAGRAM



Notes:

ELC SOILS ONTARIO	SITE: POLYGON: DATE: SURVEYOR(S):

	P/A	PP	Dr	Slope Position	Aspect	%	Type	Class	Z	UTM EASTING	UTM NORTHING
1	A	5	5	4	✓	—	—	—	17	600457	4802161 ±4.8m
2											
3											
4											
5											

SOIL TEXTURE x HORIZON	1	2	3	4	5
	A 26 B 120				
A TEXTURE	CL				
COURSE FRAGMENTS	999				
B TEXTURE	SiCL				
COURSE FRAGMENTS	999				
C TEXTURE	999				
COURSE FRAGMENTS	999				
EFFECTIVE TEXTURE	SiCL				
SURFACE STONINESS	0				
SURFACE ROCKINESS	0				
DEPTH TO / OF					
MOTTLES	42				
GLEY	999				
BEDROCK	999				
WATER TABLE	999				
CARBONATES	—				
DEPTH OF ORGANICS	—				
PORE SIZE DISC #1	—				
PORE SIZE DISC #2	—				
MOISTURE REGIME	5				
SOIL SURVEY MAP					
LEGEND CLASS					

ELC STAND CHARACTERISTICS	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

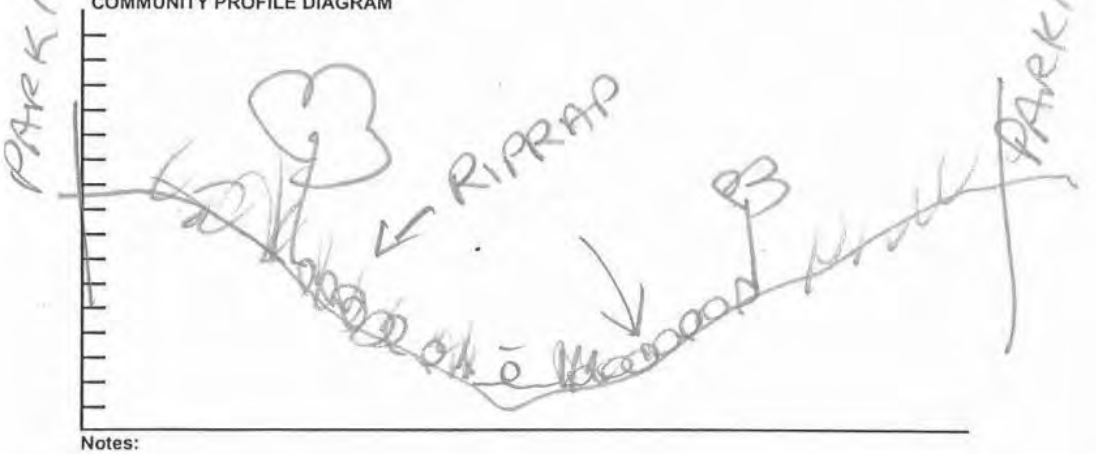
TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AVG
TOTAL							100
BASAL AREA (BA)							
DEAD							

STAND COMPOSITION:

COMMUNITY PROFILE DIAGRAM



Notes:

ELC SOILS ONTARIO	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

				Slope						UTM	
	P/A	PP	Dr	Position	Aspect	%	Type	Class	Z	EASTING	NORTHING
1											
2											
3											
4											
5											

SOIL TEXTURE x HORIZON	1	2	3	4	5
A TEXTURE					
COURSE FRAGMENTS					
B TEXTURE					
COURSE FRAGMENTS					
C TEXTURE					
COURSE FRAGMENTS					
EFFECTIVE TEXTURE					
SURFACE STONINESS					
SURFACE ROCKINESS					
DEPTH TO / OF					
MOTTLES					
GLEY					
BEDROCK					
WATER TABLE					
CARBONATES					
DEPTH OF ORGANICS					
PORE SIZE DISC #1					
PORE SIZE DISC #2					
MOISTURE REGIME					
SOIL SURVEY MAP					
LEGEND CLASS					

ELC WILDLIFE	SITE:	
	POLYGON:	
	DATE:	
	SURVEYOR(S):	
	START TIME:	END TIME:

TEMP (°C):	CLOUD (10th):	WIND:	PRECIPITATION:
CONDITIONS:			

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS		SNAGS
	HIBERNACULA		FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#
B	MALL	FC		1					
B	RWRB	FC		5					
B	BCNH	FC		1					

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRD - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS OR YOUNG
TK = TRACKS FE = FEEDING EVIDENCE SC = SCAT
SI = OTHER SIGNS (specify)

Page ..... of .....

ELC COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: Appleby Creek		POLYGON: 6 7
	SURVEYOR(S): N. Schmetz	DATE: June 20/18	TIME: start / finish
	UTMZ:	UTME:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
G TERRESTRIAL G WETLAND G AQUATIC	G ORGANIC G MINERAL SOIL G PARENT MIN. G ACIDIC BEDRK. G BASIC BEDRK. G CARB. BEDRK.	G LACUSTRINE G RIVERINE G BOTTOMLAND G TERRACE G VALLEY SLOPE G TABLELAND G ROLL. UPLAND G CLIFF G TALUS G CREVICE / CAVE G ALVAR G ROCKLAND G BEACH / BAR G SAND DUNE G BLUFF	G NATURAL G CULTURAL	G PLANKTON G SUBMERGED G FLOATING-LVD. G GRAMINOID G FORB G LICHEN G BRYOPHYTE G DECIDUOUS G CONIFEROUS G MIXED	G LAKE G POND G RIVER G STREAM G MARSH G SWAMP G FEN G BOG G BARREN G MEADOW G PRAIRIE G THICKET G SAVANNAH G WOODLAND G FOREST G PLANTATION
SITE G OPEN WATER G SHALLOW WATER G SURFICIAL DEP. G BEDROCK			**COVER** G OPEN G SHRUB G TREED		

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	3	2	JUGNIGR=ROBPSEU>ACENEGU=RHUTYPH
2	SUB-CANOPY	3	2	RHUTYPH>SALDISC=FRAPENN=PHACAT
3	UNDERSTOREY	3	2	RHUTYPH>SALDISC>ROSMULT=MOR ALB
4	GRD. LAYER	4	4	CORVARI>SOL-SP

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:	BA:

SIZE CLASS ANALYSIS:		< 10		10 - 24		25 - 50		> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG		MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:	CULTURAL	CU
COMMUNITY SERIES:	CULTURAL MEADOW	CUM
ECOSITE:	M [illegible]	CUM1
VEGETATION TYPE:	FOEB	
INCLUSION	min. meadow marsh	MAM2-10
COMPLEX	SUMAC CULTURAL Th. Cult.	CUT1

Notes:

0-2m adjacent to creek is not sp. Mostly purple loosestrife and willows.

ELC PLANT SPECIES LIST	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COL.
SALDISC	R	O	O		
RHUTYPH		A	A		
JUGNIGR	O	R			
ACEPLAT	R	R			
ROSMULT		R	R		
ROBPSEU	O				
ACENEGU	R				
MORALBA		R	R		
~~SALDISC~~		R			
FRAPENN		O	R		
RHACATH		O	O		
LON SP			D		
PARQUINQ			R	R	
LILAC			R		
~~MORALBA~~			A		

SPECIES CODE	LAYER 1	2	3	4	COL.
CORVARI				D	
VITRIPA				O	
RUMCRIS				O	
CONVARVE				O	
VICCRAC				O	
SOL-SP				A	
ERIANNU				R	
DIPFULL				O	
PHAARUN				O	
LYTSALI				O	
CIRARVE				O	
~~VICCRAC~~				O	
ASCSYRI				R-O	
AMBARTE				R	
VICSATI				R	
HESMATR				O	
ELYREPE				O	
~~TARPRAT~~				R	
ECHVULG				R	
MEDLUPU				O	
RUBOCCI				O	
EUPESUL				R	
ALLPETI				O	
BROINN				O	
HYPPERF				R	
DAUCARO				R	
BIRSTOTPRA				R	
MELOFFI				O	
DIAPUNC				R	
ACHMILL				R	

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ELC STAND CHARACTERISTICS	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

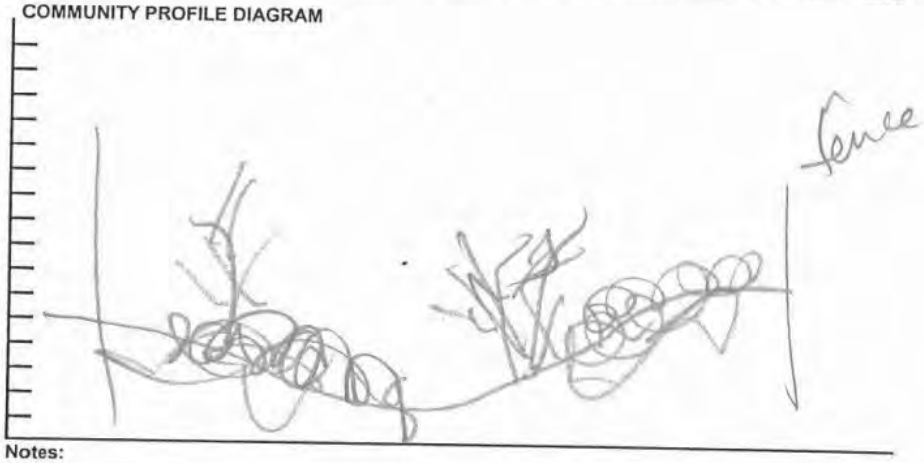
TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AVG
TOTAL							100
BASAL AREA (BA)							
DEAD							

STAND COMPOSITION:

COMMUNITY PROFILE DIAGRAM



Notes:

ELC STAND CHARACTERISTICS	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

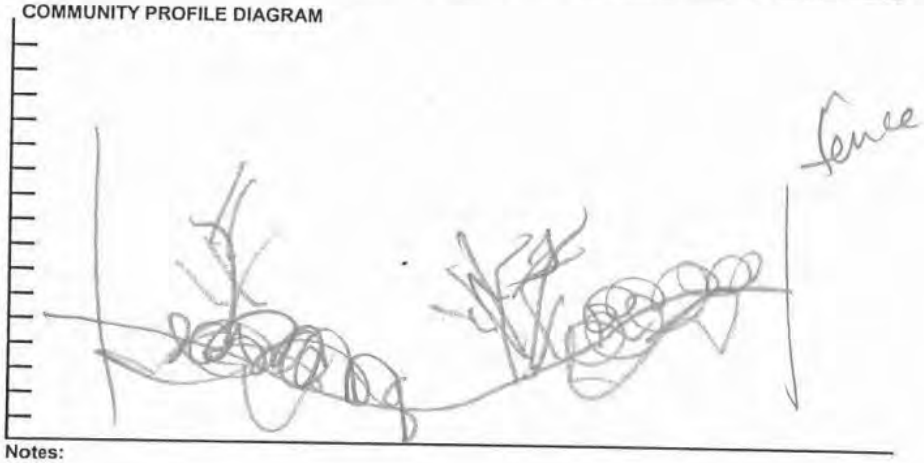
TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AVG
TOTAL							100
BASAL AREA (BA)							
DEAD							

STAND COMPOSITION:

COMMUNITY PROFILE DIAGRAM



Notes:

ELC SOILS ONTARIO	SITE: POLYGON: DATE: SURVEYOR(S):

				Slope					UTM	
	P/A	PP	Dr	Position	Aspect	%	Type	Class	Z	EASTING	NORTHING
1											
2											
3											
4											
5											

SOIL	1	2	3	4	5
TEXTURE x HORIZON					
A TEXTURE					
COURSE FRAGMENTS					
B TEXTURE					
COURSE FRAGMENTS					
C TEXTURE					
COURSE FRAGMENTS					
EFFECTIVE TEXTURE					
SURFACE STONINESS					
SURFACE ROCKINESS					
DEPTH TO / OF					
MOTTLES					
GLEY					
BEDROCK					
WATER TABLE					
CARBONATES					
DEPTH OF ORGANICS					
PORE SIZE DISC #1					
PORE SIZE DISC #2					
MOISTURE REGIME					
SOIL SURVEY MAP					
LEGEND CLASS					

ELC COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: Appleby Creek		POLYGON: 8	
SURVEYOR(S): N. Schwetz	DATE: JUNE 20/19	TIME: start / finish	
UTMZ:	UTME:	UTMN:	

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
G TERRESTRIAL G WETLAND G AQUATIC	G ORGANIC G MINERAL SOIL G PARENT MIN. G ACIDIC BEDRK. G BASIC BEDRK. G CARB. BEDRK.	G LACUSTRINE G RIVERINE G BOTTOMLAND G TERRACE G VALLEY SLOPE G TABLELAND G ROLL. UPLAND G CLIFF G TALUS G CREVICE / CAVE G ALVAR G ROCKLAND G BEACH / BAR G SAND DUNE G BLUFF	G NATURAL G CULTURAL	G PLANKTON G SUBMERGED G FLOATING-LVD. G GRAMINOID G FORB G LICHEN G BRYOPHYTE G DECIDUOUS G CONIFEROUS G MIXED	G LAKE G POND G RIVER G STREAM G MARSH G SWAMP G FEN G BOG G BARREN G MEADOW G PRAIRIE G THICKET G SAVANNAH G WOODLAND G FOREST G PLANTATION
SITE			**COVER**		
G OPEN WATER G SHALLOW WATER G SURFICIAL DEP. G BEDROCK			G OPEN G SHRUB G TREED		

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	3	JUGNIGR >> ROBPSEU = SALXRUB > ACESAC
2	SUB-CANOPY	2	3	" > ROBPSEU = FRAPENN > ULMAME
3	UNDERSTOREY	3	3	FRAPENN > JUGNIGR = RHUTYPH = RHACATH
4	GRD. LAYER	3	4	FRAPENN = VITRIPA = EQUARV = ROBOCC1

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT<10 m 4 = 1<HT≤2 m 5 = 0.5<HT<1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:	BA:

SIZE CLASS ANALYSIS:		< 10		10 - 24		25 - 50		> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG		MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:	CULTURAL	CU
COMMUNITY SERIES:	WOODLAND	CUW
ECOSITE:	CULTURAL WOODLAND	CUW2
VEGETATION TYPE:		
INCLUSION	Hawthorn / Buckthorn thicket	CUT1
COMPLEX		

Notes:

B INC Cattail shallow marsh MAS2-1

ELC PLANT SPECIES LIST	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COL.
JUGNIGR	D	A	O		
ROBPSEU	O	O			
POPDELT	R				
FRAPENN		O	A	A	
SALxRUB	O	R			
TILAMER	R	R			
ACERAT	R	R			
QUERUBR	R				
ULMAMER		R			
CARCORD	R				
Russian Olive		R			
TILCORD		R			
RHUTYPH			O		
RHACATH			O		
CRAT-SP			R		
LONSP			O		
CORRACE			O		
ROSMULT			R		
LIGVULG			R		

SPECIES CODE	LAYER 1	2	3	4	COL.
GEUCANA				A	
clovers				O	
VITRIPA				A	
ERIANNU				O	
HESMATR				O	
PHAARUN				R	
RUBOCCI				A	
tall buttercup				R	
SOL-SP				A	
IMPCAPE				O	
TAROFFI				R	
POLLARA				O	
HIERARA				R	
PARQUINQUE				A	
orchard.				R	
POA-SP				O	
CIRQUAD				A	
ALLPET				O	
GERROBE				R	
Dog Pink				R	
IMPCAPE				O	
CAR-SP				O	
Stinging nettle				R	
PHRAUST				R	– toward SSRd
INC-					
Typlati					
Impcape					

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ELC STAND CHARACTERISTICS	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

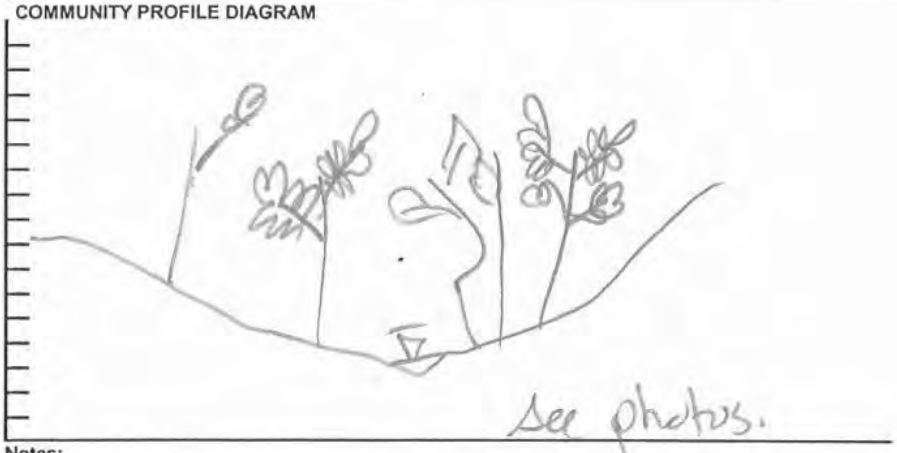
TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AVG
TOTAL							100
BASAL AREA (BA)							
DEAD							

STAND COMPOSITION:

COMMUNITY PROFILE DIAGRAM



Notes:

ELC SOILS ONTARIO	SITE: POLYGON: DATE: SURVEYOR(S):

	P/A	PP	Dr	Position	Aspect	Slope %	Slope Type	Slope Class	Z	UTM EASTING	UTM NORTHING
1	A	4	4	2	—	—	—	—	17	599963	4803967
2											
3											
4											
5											

SOIL	1	2	3	4	5
TEXTURE x HORIZON	A SiCL 23 B SiC 120				
A TEXTURE	SiCL				
COURSE FRAGMENTS	999				
B TEXTURE	SiC				
COURSE FRAGMENTS	999				
C TEXTURE	999				
COURSE FRAGMENTS	999				
EFFECTIVE TEXTURE	SiC				
SURFACE STONINESS	0				
SURFACE ROCKINESS	0				
DEPTH TO / OF					
MOTTLES	72				
GLEY	999				
BEDROCK	999				
WATER TABLE	999				
CARBONATES	—				
DEPTH OF ORGANICS	6.5cm				
PORE SIZE DISC #1	—				
PORE SIZE DISC #2	C				
MOISTURE REGIME	3				
SOIL SURVEY MAP					
LEGEND CLASS					

ELC COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: MUNNS CREEK		POLYGON: 9	
SURVEYOR(S): N. Silvestri	DATE: June 21/19	TIME: start	
		finish	
UTMZ:	UTME:	UTMN:	

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
G TERRESTRIAL G WETLAND G AQUATIC	G ORGANIC G MINERAL SOIL G PARENT MIN. G ACIDIC BEDRK. G BASIC BEDRK. G CARB. BEDRK.	G LACUSTRINE G RIVERINE G BOTTOMLAND G TERRACE G VALLEY SLOPE G TABLELAND G ROLL. UPLAND G CLIFF G TALUS G CREVICE / CAVE G ALVAR G ROCKLAND G BEACH / BAR G SAND DUNE G BLUFF	G NATURAL G CULTURAL	G PLANKTON G SUBMERGED G FLOATING-LVD. G GRAMINOID G FORB G LICHEN G BRYOPHYTE G DECIDUOUS G CONIFEROUS G MIXED	G LAKE G POND G RIVER G STREAM G MARSH G SWAMP G FEN G BOG G BARREN G MEADOW G PRAIRIE G THICKET G SAVANNAH G WOODLAND G FOREST G PLANTATION
SITE			**COVER**		
G OPEN WATER G SHALLOW WATER G SURFICIAL DEP. G BEDROCK			G OPEN G SHRUB G TREED		

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	3	JUGNIGR > ACENEGU = FRAPENN
2	SUB-CANOPY	3	3	ACENEGU > FRAPENN = JUGNIGR
3	UNDERSTOREY	3	4	ACENEGU = FRAPENN = RHATYPH
4	GRD. LAYER	6	4	VITRIPA = PARQUIN = MAPCAN = SO

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:	BA:

SIZE CLASS ANALYSIS:		< 10		10 - 24		25 - 50		> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG		MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:	Cultural	CU
COMMUNITY SERIES:	Woodland	CUW
ECOSITE:	Mineral Cultural	CUW1
VEGETATION TYPE:	Woodland	
INCLUSION		
COMPLEX		

Notes:

lots of dead ash. Community likely a forest a few yrs. ago

dead wood jammed creek in a few spots Raspberry

ELC PLANT SPECIES LIST	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COL.
FRAPENN	O	O	O		
SALXRUB	R	R			
ACENEGU	O	A	O		
SALDISC		R			
JUGNIGR	A	O			
TILAMER	R				
ROBPSEU	R	R			
Honeylocust	R				
CRAT-SP			R		
ANTTYPH			O		
RHACATH			R		
LIGVULG			R		
Lonicera			R		

SPECIES CODE	LAYER 1	2	3	4	COL.
RHURANE				R	
ASCSYRI				R	
CIRARVE				O	
VITRIPA				A	
PARQUIN				A	
IMPCAPS				A	
VICCRAC				R	
LYTSALI				O	
RUMCRIS				A	
MATGIAM				O	
HESMATR				O	
DIPFULL				R	
PASSPAT				R	
GEUALEP				O	
POL-SP				O	Ground level
PHAARUN				O	
SOL-SP				A	
ERIANNU				O	
PARLATP				O	
GALAPAR				O	
GERROBE				R	
GERCANA				O	
LEOCARD				R	
RANACRI				R	
ECHLODA				R	
RUBIDID				R	
URTDIOC				R	
ALIPLAN					

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ELC STAND CHARACTERISTICS	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AVG
TOTAL							100
BASAL AREA (BA)							
DEAD							

STAND COMPOSITION:

COMMUNITY PROFILE DIAGRAM

See photos

Notes:

ELC SOILS ONTARIO	SITE: POLYGON: DATE: SURVEYOR(S):

				Slope					UTM	
	P/A	PP	Dr	Position	Aspect	%	Type	Class	Z	EASTING	NORTHING
1											
2											
3											
4											
5											

SOIL TEXTURE x HORIZON	1 COURSE FRAGMENTS	2	3	4	5
A TEXTURE					
COURSE FRAGMENTS					
B TEXTURE					
COURSE FRAGMENTS					
C TEXTURE					
COURSE FRAGMENTS					
EFFECTIVE TEXTURE					
SURFACE STONINESS					
SURFACE ROCKINESS					
DEPTH TO / OF					
MOTTLES					
GLEY					
BEDROCK					
WATER TABLE					
CARBONATES					
DEPTH OF ORGANICS					
PORE SIZE DISC #1					
PORE SIZE DISC #2					
MOISTURE REGIME					
SOIL SURVEY MAP					
LEGEND CLASS					

ELC WILDLIFE	SITE:	
	POLYGON:	
	DATE:	
	SURVEYOR(S):	
	START TIME:	END TIME:

TEMP (°C):	CLOUD (10th):	WIND:	PRECIPITATION:
CONDITIONS:			

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS		SNAGS
	HIBERNACULA		FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#
B	CEWA	OB		1					

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRD - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS OR YOUNG
TK = TRACKS FE = FEEDING EVIDENCE SC = SCAT
SI = OTHER SIGNS (specify)

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POWO

ELC — SOILS ONTARIO

SITE: Appleby Erosion
POLYGON: 10 → missing from NS's survey
DATE: June 19 2019
SURVEYOR(S): KB

	P/A	PP	Dr	Position	Aspect	Slope %	Slope Type	Slope Class	UTM Z	UTM EASTING	UTM NORTHING
1											
2											
3											
4											
5											

SOIL	1	2	3	4	5
TEXTURE x HORIZON					
A TEXTURE					
COURSE FRAGMENTS					
B TEXTURE					
COURSE FRAGMENTS					
C TEXTURE					
COURSE FRAGMENTS					
EFFECTIVE TEXTURE					
SURFACE STONINESS					
SURFACE ROCKINESS					
DEPTH TO / OF					
MOTTLES					
GLEY					
BEDROCK					
WATER TABLE					
CARBONATES					
DEPTH OF ORGANICS					
PORE SIZE DISC #1					
PORE SIZE DISC #2					
MOISTURE REGIME					
SOIL SURVEY MAP					
LEGEND CLASS					

ELC — PLANT SPECIES LIST

SITE:
POLYGON:
DATE:
SURVEYOR(S):

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COL.
ACER PLA					
weeping willow					
JUGL NIG					
PIN STRO					
ACER SUG					
TILI AME					
OSTR VIR					
QUER RUB			R		
SALIX CRAC					
CARY OVAT					
OXAL SP.					
Day lily					
meadowsweet (					
CRAT SP.					
RUB OCC					
ROSA SP					
RUB NEO					
LONI TAT					
RHAM CAT					
CORN SER					
VICCA CR					
VITIS RIP					
PRUN VIR					

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COL.
Rumex CRISP					
ARCT LAP					
FRAG VIR					
ALLI PET					
GEUM ALEP					
Carex sp.					D
RAN ACRIS					
FRAX AME					
DACT GLOM					
CIRC LUT					
Rhm crisp					
POA PRAT					
TRIF Red					
LOT CORN					
Glandin					
HED MAT					
DAUC CAR					
CIRS ARV					
SOLI CANA					
LACT SERL					
[illegible] VIT					
VINCA MIN					
x Smilax sp					
TOX RAD					
Lily of the valley					
Jacks					
GER MAC					
Daph Lily					
TARA OFF					
HYP PERF					
PLANT MAJ					

PHAL ARUN
IMP CAP
GER ROB
PAST SATIV

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* unarmed.

Appendix C2–

Arboriculture

Tag #	ELC Polygon	Erosion Site	Ownership	Species Common Name	Species Botanical Name	Native/Introduced	DBH (cm)	Crown Reserve (m)	Condition	Defects and Decline Indicators	Notes
0043	8	9	Public	Russian Olive	*Elaeagnus angustifolia*	I	23	4.5	P	ts,ut	1m long split at fork
0044	8	9	Public	Hybrid Crack Willow	*Salix x rubens*	I	17	4.0	F-G	pr,ut	close prox to utility lines, pruned with stubs remaining
0045	8	9	Public	Slippery Elm	*Ulmus rubra*	I	12	2.0	G	ut	
0046	8	9	Public	Common Apple	*Malus spp.*		~30,~30,17	9.0	D(17), F-G		
0047	8	9	Public	Black Walnut	*Juglans nigra*	**N**	33	6.5	G		
0048	8	9	Public	Black Walnut	*Juglans nigra*	**N**	22	4.5	G	ex	
0049	8	9	Public	Basswood	*Tilia americana*	N	40	5.5	F-G	fc,tr,ww	5m long old frost crack - weeping with some open rot
0050	8	9	Public	Black Walnut	*Juglans nigra*	**N**	13	2.5	F	ex,um,vim	
0051	8	9	Public	Black Walnut	*Juglans nigra*	**N**	15	3.0	G		
0052	8	9	Public	Black Walnut	*Juglans nigra*	**N**	17,21	4.5	F-G	vil	joined to 0.3m
0053	8	9	Public	Black Walnut	*Juglans nigra*	**N**	25	4.5	F-G		
0054	8	9	Public	Black Walnut	*Juglans nigra*	**N**	50	9.0	G		
0055	8	9	Public	Black Walnut	*Juglans nigra*	**N**	37	7.0	F	ex,um	
0056	8	9	Public	Red Oak	*Quercus rubra*	N	30,22	5.5	F-G	ib	joined to 1m
0057	8	9	Public	Black Walnut	*Juglans nigra*	**N**	30	6.0	F-G	as,ex	
0058	8	9	Public	Black Walnut	*Juglans nigra*	**N**	25	4.5	F-G	ex,um	
0059	8	9	Public	Black Walnut	*Juglans nigra*	**N**	34	9.0	G		
0060	8	9	Public	Black Walnut	*Juglans nigra*	**N**	31,[22,22]	8.0	G	vil(30)	
0061	8	9	Public	Black Walnut	*Juglans nigra*	**N**	23	5.5	G	vim	
0062	8	9	Public	Black Walnut	*Juglans nigra*	**N**	20	4.0	F-G	vih	
0063	8	9	Public	White Ash	*Fraxinus americana*	N	48	-	D		
0064	8	9	Public	Black Walnut	*Juglans nigra*	**N**	17	4.5	F-G	ab,vim	trunk abrasion against 0063
0065	8	9	Public	Black Walnut	*Juglans nigra*	**N**					
0066	8	9	Public	White Ash	*Fraxinus americana*	N	31,33	-	D		
0067	8	9	Public	Black Walnut	*Juglans nigra*	**N**	21	3.0	F-P	ut,pr,cw	topped by utility line clearing
0068	8	9	Public	Black Walnut	*Juglans nigra*	**N**	34	7.0	G		
0069	8	9	Public	Black Walnut	*Juglans nigra*	**N**	16	3.5	F	ab,ut	intertwined with dead ash
0070	8	9	Public	White Ash	*Fraxinus americana*	N	24	-	D		
0071	7	9	Public	Norway Maple	*Acer platanoides*	I	23	5.0	G		landscape tree (planted)
0072	7	9	Public	Hybrid Crack Willow	*Salix x rubens*	I	21	3.0	F-P	tcb,ft4	uprooted on bank, curved up trunk
0073	7	9	Public	Manitoba Maple	*Acer negundo*	N	13	3.5	G		
0074	7	9	Public	Siberian Elm	*Ulmus pumila*	I	(15,15)	3.5	F-G	vim	
0075	7	9	Public	Black Walnut	*Juglans nigra*	**N**	13,8	3.0	G		joined to 0.2m
0076	7	9	Public	Black Walnut	*Juglans nigra*	**N**	14	2.5	G		
0077	7	9	Public	Black Walnut	*Juglans nigra*	**N**	16	4.5	G		
0078	7	9	Public	White Ash	*Fraxinus americana*	N	13	3.5	F	eab,cb,ep	
0079	7	9	Public	Black Walnut	*Juglans nigra*	**N**	25	6.0	F-G	vim	
0080	7	9	Public	Hybrid Crack Willow	*Salix x rubens*	I	30	3.5	F-G		
0081	6	8	Public	Hybrid Crack Willow	*Salix x rubens*	I	21	3.0	F	gab	debris jam at tree

Tag #	ELC Polygon	Erosion Site	Ownership	Species Common Name	Species Botanical Name	Native/Introduced	DBH (cm)	Crown Reserve (m)	Condition	Defects and Decline Indicators	Notes
0082	6	8	Public	Norway Maple	*Acer platanoides*	I	27	5.0	G		landscape tree (planted)
0083	5	7	Public	Hybrid Crack Willow	*Salix x rubens*	I	~85	5.0	P	le55,tb2	
0084	5	7	Public	Manitoba Maple	*Acer negundo*	N	21	-	F-P	le45,ti,tck	intertwined with fallen crack willow
0085	5	7	Public	Manitoba Maple	*Acer negundo*	N	18	3.0	P	th,bn	
0086	5	7	Public	Manitoba Maple	*Acer negundo*	N	14	2,1.5	F	us,ca	
0087	5	7	Public	White Ash	*Fraxinus americana*	N	[38,36,25]	-	D		
0088	5	7	Public	Manitoba Maple	*Acer negundo*	N	17,12,18	3,2	F	th(18)	
0089	5	7	Public	Manitoba Maple	*Acer negundo*	N	27	6.0	F-G	ex	
0090	5	7	Public	Manitoba Maple	*Acer negundo*	N	14	4.0	F-G		
0091	5	7	Public	Manitoba Maple	*Acer negundo*	N	15	4.5	G		
0092	5	7	Public	Hybrid Crack Willow	*Salix x rubens*	I	30,36	5.0	P	ex	
0093	5	7	Public	White Ash	*Fraxinus americana*	N	11.5	2.5	F		
0094	5	7	Public	Hybrid Crack Willow	*Salix x rubens*	I	52,55,70,45	10.0	F-P(52,55), P(70,45)	tt(52,55),tb2(70,45)	
0095	5	7	Public	Hybrid Crack Willow	*Salix x rubens*	I	27	5.0	F	tt	
0096	5	7	Public	Hybrid Crack Willow	*Salix x rubens*	I	28	4.5	F-P	le45e,ts,ft4	
0097	5	7	Public	Hybrid Crack Willow	*Salix x rubens*	I	44(21,17,12,13)	5.5	F-P	ft4	side branches growing vertically forming new stems
0098	5	7	Public	Hybrid Crack Willow	*Salix x rubens*	I	~50	6.0	F-P	ft4	
0099	5	7	Public	White Ash	*Fraxinus americana*	N	36	-	D		
0100	5	7	Public	White Ash	*Fraxinus americana*	N	46	-	D		
263	5	7	Public	Black Cherry	*Prunus serotina*	N	14	3.0	F-G		under dead white ash
264	5	7	Public	White Ash	*Fraxinus americana*	N	30	-	D		
265	5	7	Public	White Ash	*Fraxinus americana*	N	29	-	D*	ep2	
266	5	7	Public	White Ash	*Fraxinus americana*	N	26	-	D*	ep2	
267	5	7	Public	White Ash	*Fraxinus americana*	N	25	-	D*		
268	5	7	Public	Black Walnut	*Juglans nigra*	**N**	20	4.0	F-G		
269	5	7	Public	White Ash	*Fraxinus americana*	N	23	-	D*	le45s	leans parallel to channel
270	5	7	Public	White Ash	*Fraxinus americana*	N	[23,17]	-	D*		
271	5	7	Public	Manitoba Maple	*Acer negundo*	N	30	6.0	F-P	tck,le35	leans over channel
272	5	7	Public	Manitoba Maple	*Acer negundo*	N	15	3.0	F-G		
273	5	7	Public	White Ash	*Fraxinus americana*	N	30	-	D		
274	5	7	Public	White Ash	*Fraxinus americana*	N	17	-	D*		arching crown over channel
275	5	7	Public	White Ash	*Fraxinus americana*	N	27,32	-	D*	ts	trunk split down middle
276	5	7	Public	Manitoba Maple	*Acer negundo*	N	(13,10)	3.5	F	us	
278	5	7	Public	White Ash	*Fraxinus americana*	N	22	-	D*		
279	5	7	Public	English Hawthorn	*Crataegus laevigata*	I	15,12(11.5,10,10)	6,5	G		
280	5	7	Public	Russian Olive	*Elaeagnus angustifolia*	I	24	6.0	G		fork at 1.8m, low spreading crown
281	5	7	Public	White Ash	*Fraxinus americana*	N	41,30,33,23	-	D		~40cm trunk from group fallen into channel

Tag #	ELC Polygon	Erosion Site	Ownership	Species Common Name	Species Botanical Name	Native/Introduced	DBH (cm)	Crown Reserve (m)	Condition	Defects and Decline Indicators	Notes
282	5	7	Public	Common Buckthorn	*Rhamnus cathartica*	I	18	3.5	G		
283	5	7	Public	White Ash	*Fraxinus americana*	N	35	-	D*		
284	5	7	Public	White Mulberry	*Morus alba*	I	19	3.0	F-G	ib	weeping at union
285	5	7	Public	White Mulberry	*Morus alba*	I	25	5.0	F-G	ib	weeping crack at union
286	5	7	Public	White Ash	*Fraxinus americana*	N	39,32	-	D		
287	5	7	Public	Hybrid Crack Willow	*Salix x rubens*	I	~90	10.0	F	bbm	
288	5	7	Public	White Ash	*Fraxinus americana*	N	11.5	3.0	F-G	eab,cb	healed over eab damage
289	5	7	Public	Black Walnut	*Juglans nigra*	**N**	30	7.0	G		landscape tree (planted)
290	5	7	Public	Black Walnut	*Juglans nigra*	**N**	21	5.5	G	ex	
291	5	7	Public	Black Walnut	*Juglans nigra*	**N**	18	4.0	F-G	vi	
292	5	7	Public	Manitoba Maple	*Acer negundo*	N	(13,14,17)	4.0	F-G		fork at 0.3 and 0.8m
293	5	7	Public	White Elm	*Ulmus americana*	N	17	4.0	G	vim	
294	5	7	Public	Norway Maple	*Acer platanoides*	I	33	7.0	G		landscape tree (planted)
295	5	7	Public	Black Walnut	*Juglans nigra*	**N**	22	7.0	G		landscape tree (planted)
296	5	7	Public	Manitoba Maple	*Acer negundo*	N	23	5.0	F-G	le30n	
297	5	7	Public	White Ash	*Fraxinus americana*	N	11.5	2.0	F-P		
298	5	7	Public	English Hawthorn	*Crataegus laevigata*	I	15 @0.9m	3.5	F	vih	
299	5	7	Public	Hybrid Crack Willow	*Salix x rubens*	I	[24,22,36]	10.0	F-G		
300	5	7	Public	White Ash	*Fraxinus americana*	N	[9,11]	2.5	F-G?	eab,vil	
654	5	7	Public	White Ash	*Fraxinus americana*	N	17 @1m	4.0	F	eab,cb,ut	directly under utility lines
655	5	7	Public	White Ash	*Fraxinus americana*	N	11.5,10.5	4.5	F-G	eab	directly under utility lines, healed over eab damage
656	5	7	Public	Black Walnut	*Juglans nigra*	**N**	(26,10)	7.0	G		landscape tree (planted)
657	5	7	Public	Norway Maple	*Acer platanoides*	I	30	6.5	F-G	ib	landscape tree (planted)
658	5	6	Private	Silver Maple	*Acer saccharinum*	N	100 @1m	21.0	F-G	bb	clump of 7 stems ~30-40cm, private property
659	5	6	Private	Silver Maple	*Acer saccharinum*	N	~50,45,40,30,30,25,20	19.0	F-G		private property
660	5	6	Public	Weeping Willow	*Salix x sepulcralis* 'Chrysocoma'	I	[27,33],[28,25, 19]	14.5	F-G		growing out of the side of bank
661	5	6	Public	White Mulberry	*Morus alba*	I	19,21,(11,8)	6.0	F-G		tob
662	5	6	Public	Manitoba Maple	*Acer negundo*	N	11	3.0	F-G		tob
663	5	6	Public	Small-leaved Linden	*Tilia cordata*	I	15	4.0	G		
664	5	6	Public	White Spruce	*Picea glauca*	N	15	3.5	G		
665	5	6	Public	Manitoba Maple	*Acer negundo*	N	38	7.0	F	le45e	leans over channel, vertical side branches on trunk
666	5	6	Public	Manitoba Maple	*Acer negundo*	N	13	2.5	F	tbl	
667	5	6	Public	Manitoba Maple	*Acer negundo*	N	46	8.0	F-G	le30ne	leans over channel, fork at 3m
668	5	6	Public	Manitoba Maple	*Acer negundo*	N	65	10.0	F-G	le25se	
669	5	6	Public	Norway Maple	*Acer platanoides*	I	34	6.0	F-G	as	crown on side of silver maple crown, landscape tree (planted)
670	5	6	Public	Norway Maple	*Acer platanoides*	I	31	6.0	G		landscape tree (planted)
671	5	6	Public	Silver Maple	*Acer saccharinum*	N	38,26	9.0	F-G		joined at base, old scar at base

Tag #	ELC Polygon	Erosion Site	Ownership	Species Common Name	Species Botanical Name	Native/Introduced	DBH (cm)	Crown Reserve (m)	Condition	Defects and Decline Indicators	Notes
672	5	6	Public	Norway Maple	*Acer platanoides*	I	19,24,20,22,10	8.0	F-G	ex	joined at 0.4m
673	5	6	Public	Manitoba Maple	*Acer negundo*	N	36	7.0	G		fork at 1.7m
674	5	6	Public	Manitoba Maple	*Acer negundo*	N	10.5	2.5	F-G	le20s	on bank
675	5	6	Public	Manitoba Maple	*Acer negundo*	N	19	5.0	G		
676	5	6	Public	Manitoba Maple	*Acer negundo*	N	12	4.0	G		
677	5	6	Public	Manitoba Maple	*Acer negundo*	N	(24,12)	6.5	F-G		fork at 1.5m
678	5	6	Public	Black Walnut	*Juglans nigra*	**N**	17	4.5	G	as	
679	4	5	Public	White Ash	*Fraxinus americana*	N	16	4.0	P or D?		
680	4	5	Public	Norway Maple	*Acer platanoides*	I	17	3.5	F	eab,cb,ep	
681	4	5	Public	Red Oak	*Quercus rubra*	N	19	4.5	G	ex	tob
682	4	5	Private	Sugar Maple	*Acer saccharum*	N	44	8.0	F-G	ib,db	
683	4	5	Private	Norway Maple	*Acer platanoides*	I	30	6.0	F-G		
684	4	5	Private	Austrian Pine	*Pinus nigra*	I	21	3.5	F-G		
685	4	5	Public	Black Cherry	*Prunus serotina*	N	12.5	3.5	F-G	cf	formerly suppressed in understorey of ash trees
686	4	5	Public	Sugar Maple	*Acer saccharum*	N	([21,31],[21,14,19,33]) @1.7m	10.0	F-G	ex	
687	4	5	Public	Sugar Maple	*Acer saccharum*	N	45	8.0	F-G	ex	
688	4	5	Public	Red Oak	*Quercus rubra*	N	[51,43,32]	11.0	F-G	ib	joined to 1.2m, fork at 3m
689	4	5	Public	Bur Oak	*Quercus macrocarpa*	N	42	7.0	G	as	
690	4	5	Public	Shagbark Hickory	*Carya ovata*	N	32	6.0	G	as	slight lean to channel
691	4	5	Public	Bur Oak	*Quercus macrocarpa*	N	38	7.0	G	as	
692	4	5	Public	Red Oak	*Quercus rubra*	N	60	9.0	F-G		on bank of outfall channel
693	4	5	Public	Black Walnut	*Juglans nigra*	**N**	51	10.0	F-G	ex	
694	4	5	Public	Basswood	*Tilia americana*	N	26	4.5	F	us,su,ex	
695	4	5	Private	Sugar Maple	*Acer saccharum*	N	30	6.0	G		
696	4	5	Private	Red Oak	*Quercus rubra*	N	21	6.0	F-G	ex,um,le35nw	active lean
697	4	5	Public	Sugar Maple	*Acer saccharum*	N	16	5.0	F-G	ex,um	
698	4	5	Public	Basswood	*Tilia americana*	N	11	2.0	F-G	cod	formerly suppressed in understorey of ash trees
699	4	5	Public	Black Walnut	*Juglans nigra*	**N**	44	9.0	F-P	ex,um,le35n,tck	root mat juts out into channel
700	4	5	Public	Hop Hornbeam	*Ostrya virginiana*	N	14	4.5	F-G	ex,um	
701	4	5	Public	Sugar Maple	*Acer saccharum*	N	21	5.0	G	as	
702	4	5	Public	Sugar Maple	*Acer saccharum*	N	18	4.5	G		upslope
703	4	5	Public	Sugar Maple	*Acer saccharum*	N	13	3.0	G		
704	4	5	Public	Sugar Maple	*Acer saccharum*	N	30	6.0	F	ex,um,dt	
705	4	5	Public	Sugar Maple	*Acer saccharum*	N	42	8.0	F	ex,um,dt	
706	4	5	Public	Sugar Maple	*Acer saccharum*	N	35	7.0	G		
707	4	5	Public	Bur Oak	*Quercus macrocarpa*	N	12.5	2.0	F	ex,um,cc	
708	4	5	Public	Black Locust	*Robinia pseudoacacia*	I	28	6.0	G	ex	
709	4	5	Public	Black Locust	*Robinia pseudoacacia*	I	31	7.0	G		
710	4	5	Public	Black Locust	*Robinia pseudoacacia*	I	44	9.0	F-G	ex,um	slight lean

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711	4	5	Public	Basswood	*Tilia americana*	N	32,12	5.5	F-G	dt	formerly suppressed, slight lean
712	4	5	Public	Sugar Maple	*Acer saccharum*	N	29	5.0	F	as,hr	old scar 4m from base
713	4	5	Public	Hop Hornbeam	*Ostrya virginiana*	N	16	6.0	F	le35e,ex	growing out of side of bank
714	4	5	Private	White Ash	*Fraxinus americana*	N	16	3.0	P or D*?	eab,cb,ep	
715	4	5	Private	White Ash	*Fraxinus americana*	N	24	3.5	F or D*?	eab,cb,ep	
716	4	5	Private	White Ash	*Fraxinus americana*	N	30	5.0	F or D*?	eab,cb,ep	healing eab damage
717	4	5	Private	White Ash	*Fraxinus americana*	N	32	-	D		
718	4	5	Private	White Ash	*Fraxinus americana*	N	34	-	P or D*?	eab,ep,bs,thc	small stub hole at 3m (hollow in trunk)
719	4	5	Private	Sugar Maple	*Acer saccharum*	N	47	9.0	F-G	cod,ib,as	
720	4	5	Private	White Ash	*Fraxinus americana*	N	15	3.0	F-P	eab,cb,tcb	horizontal trunk for 2.5m, healed eab bark cracks
721	4	5	Private	White Ash	*Fraxinus americana*	N	35	-	P or D*?		
722	4	5	Private	White Pine	*Pinus strobus*	N	28	5.0	F-G	as	
723	4	5	Public	Basswood	*Tilia americana*	N	22, 6 x <10cm	6.0	F-G	ut,le20sw	clump, low voltage residential power service through crown
724	4	5	Public	Norway Maple	*Acer platanoides*	I	25	6.0	G		
725	4	5	Public	Norway Maple	*Acer platanoides*	I	13.5	3.0	F-G	tcb	
726	4	5	Private	Norway Maple	*Acer platanoides*	I	12	4.0	G		
727	4	5	Private	Norway Maple	*Acer platanoides*	I	19	5.0	G		
728	4	5	Public	Sugar Maple	*Acer saccharum*	N	48	9.0	G		
729	4	5	Public	Black Cherry	*Prunus serotina*	N	12	3.5	F	us, cwo	
730	4	5	Public	Norway Maple	*Acer platanoides*	I	12	4.0	G		
731	4	5	Public	Norway Maple	*Acer platanoides*	I	12	3.0	G		on bank
732	4	5	Public	Sugar Maple	*Acer saccharum*	N	33	7.0	G		
733	4	5	Public	Sugar Maple	*Acer saccharum*	N	38	8.0	F-G	cwo,bt	old scar from fork torn from union
734	4	5	Public	Red Oak	*Quercus rubra*	N	31	5.5	G	as	
735	4	5	Public	Norway Maple	*Acer platanoides*	I	11	3.0	F-G		formerly suppressed
736	10	4	Public	Black Walnut	*Juglans nigra*	**N**	27	5.0	F-G	tt	on slope
737	10	4	Public	White Mulberry	*Morus alba*	I	40	6.0	F-G	le15e	weeping branch stubs, leans upslope
738	10	4	Private	Norway Maple	*Acer platanoides*	I	14	3.0	F-G		
739	10	4	Public	Norway Maple	*Acer platanoides*	I	19	5.5	G		
740	10	4	Public	Norway Maple	*Acer platanoides*	I	15	4.5	G		
741	10	4	Public	Manitoba Maple	*Acer negundo*	N	39	8.0	F	le45e	leans upslope
742	10	4	Public	White Ash	*Fraxinus americana*	N	16	-	D		
743	10	4	Public	Norway Maple	*Acer platanoides*	I	22	5.0	G	ex	
744	10	4	Public	Black Walnut	*Juglans nigra*	**N**	31	8.0	F-G	tt,ex	
745	10	4	Public	Basswood	*Tilia americana*	N	23	4.5	F-G	ex	roots cut through during armourstone construction
746	10	4	Public	White Ash	*Fraxinus americana*	N	35,22,13	-	D*	ep2	

Tag #	ELC Polygon	Erosion Site	Ownership	Species Common Name	Species Botanical Name	Native/Introduced	DBH (cm)	Crown Reserve (m)	Condition	Defects and Decline Indicators	Notes
747	10	4	Public	Weeping Willow	*Salix x sepulcralis* 'Chrysocoma'	I	85	11.0	F	db50	
748	10	3	Private	Sugar Maple	*Acer saccharum*	N	(19,9)	3.0	F	us	growing up through crown of 749
749	10	3	Private	Bitternut Hickory	*Carya cordiformis*	N	51	11.0	G		
750	10	3	Private	Sugar Maple	*Acer saccharum*	N	15	4.5	F	ex,um,le30w	
751	10	3	Private	White Mulberry	*Morus alba*	I	31	5.5	F-G	ex	
752	2	2	Private	White Elm	*Ulmus americana*	N	15	3.5	F-G	us,ex	
753	2	2	Private	White Elm	*Ulmus americana*	N	13	3.0	F-G	ex	
754	2	2	Private	White Elm	*Ulmus americana*	N	23	5.0	F-G	us,tbl	
755	2	2	Private	White Ash	*Fraxinus americana*	N	21	-	D		
756	2	2	Private	Black Walnut	*Juglans nigra*	**N**	34	7.0	F-G	ex	tob
757	2	2	Private	White Ash	*Fraxinus americana*	N	24	-	D		
758	2	2	Private	Sugar Maple	*Acer saccharum*	N	18	5.0	G		formerly suppressed
759	2	2	Private	Hybrid Crack Willow	*Salix x rubens*	I	[34,22],50	4.0	F-P(34),D(22), P(50)	dt,ep(34),tb1(50)	
760	2	2	Private	White Ash	*Fraxinus americana*	N	36	-	D		
761	2	2	Private	White Ash	*Fraxinus americana*	N	20	-	D		
762	2	2	Private	White Elm	*Ulmus americana*	N	12.5	3.5	F-G	cf	formerly suppressed
763	2	2	Private	Black Walnut	*Juglans nigra*	**N**	45	9.0	G		
764	2	2	Private	White Ash	*Fraxinus americana*	N	15	-	D		
765	2	2	Private	Basswood	*Tilia americana*	N	11	2.5	G	us	
766	2	2	Private	White Ash	*Fraxinus americana*	N	48	-	D*	ep2	
767	2	2	Private	Hybrid Crack Willow	*Salix x rubens*	I	~40,30,46	10.0	F	le25e(46)	~40 - fallen across channel, leans parallel to channel
768	2	2	Private	Basswood	*Tilia americana*	N	13	2.5	G		
769	2	2	Private	White Ash	*Fraxinus americana*	N	11	2.5	F-G?	eab	eab damage healed over
770	2	2	Private	Black Walnut	*Juglans nigra*	**N**	25	5.0	F	us,su,cf	tob
771	2	2	Private	White Elm	*Ulmus americana*	N	22 @1m	5.0	F		
772	2	2	Private	White Ash	*Fraxinus americana*	N	53 @1m	-	D*	cod,ib,ep2	
773	2	2	Private	Norway Maple	*Acer platanoides*	I	19	4.5	F	hr,cwo	old 2.5m long trunk scar
774	2	2	Private	Norway Maple	*Acer platanoides*	I	50	11.0	G		
775	2	2	Private	Norway Maple	*Acer platanoides*	I	43	8.0	G		
776	2	2	Private	Norway Maple	*Acer platanoides*	I	11	4.0	F-G	us,ex	
777	2	2	Private	Black Cherry	*Prunus serotina*	N	13	2.0	F	le15e	
778	2	2	Private	Manitoba Maple	*Acer negundo*	N	20	5.0	F	ex,um,le45sw	
779	2	2	Private	White Ash	*Fraxinus americana*	N	47	-	D		
780	2	2	Private	Red Oak	*Quercus rubra*	N	20	4.5	G		slight lean toward channel
781	2	2	Private	Norway Maple	*Acer platanoides*	I	16	3.5	G	as	
782	2	2	Private	Norway Maple	*Acer platanoides*	I	11	2.5	F-G	ex	tob
783	2	1	Public	Norway Maple	*Acer platanoides*	I	35	8.0	F-G	le20se,as	
784	1	1	Public	Norway Maple	*Acer platanoides*	I	18	5.0	F-G	vim	
785	1	1	Public	White Ash	*Fraxinus americana*	N	18	-	P or D?	vim,eab	

Tag #	ELC Polygon	Erosion Site	Ownership	Species Common Name	Species Botanical Name	Native/Introduced	DBH (cm)	Crown Reserve (m)	Condition	Defects and Decline Indicators	Notes
786	1	1	Public	White Ash	*Fraxinus americana*	N	13,18	-	P or D*	eab,ep2	
787	2	1	Public	Hybrid Crack Willow	*Salix x rubens*	I	~55,50	7,3	F-P	tmc,tr	
788	2	1	Public	Norway Maple	*Acer platanoides*	I	25	6.0	G		
789	2	1	Public	Norway Maple	*Acer platanoides*	I	23	6.0	G		growing up into 757
790	2	1	Public	White Ash	*Fraxinus americana*	N	24	-	D*	ep2	
791	2	1	Public	Norway Maple	*Acer platanoides*	I	28	6.0	F-G	fc,ww	4m long frost crack - weeping in places
792	2	1	Public	Common Apple	*Malus spp.*		16,[19,23]	5.5	F	tbl,le30	leans to channel
793	2	1	Public	White Ash	*Fraxinus americana*	N	21	-	D		
794	2	1	Public	White Ash	*Fraxinus americana*	N	28	-	D		
795	2	1	Public	White Ash	*Fraxinus americana*	N	33	-	D*	ep2	
796	2	1	Public	Norway Maple	*Acer platanoides*	I	23	6.0	G		
797	2	1	Public	Horsechestnut	*Aesculus hippocastenum*	I	21 @1m	-	P	tck,dt	fork at 1.4m
798	2	1	Public	Horsechestnut	*Aesculus hippocastenum*	I	17	3.5	F	us,su	
799	2	1	Public	Norway Maple	*Acer platanoides*	I	17	4.0	F-G	as	
800	2	1	Public	Norway Maple	*Acer platanoides*	I	16	5.0	F-G	us	
801	2	1	Public	Norway Maple	*Acer platanoides*	I	13.5	3.5	F-G	us	
802	2	1	Public	Norway Maple	*Acer platanoides*	I	20	4.0	F-G	ti	intertwined crown with BN-1
803	2	1	Public	White Ash	*Fraxinus americana*	N	12	2.5	F-G?	cb,us	healed eab wounds
804	2	1	Public	Norway Maple	*Acer platanoides*	I	22	5.0	F-G	cc,su	
805	2	1	Public	Hybrid Crack Willow	*Salix x rubens*	I	83	7.0	F	ep1,dbm	old large broken trunks, 1 removed
806	2	1	Public	Hybrid Crack Willow	*Salix x rubens*	I	54	7.0	F-G	ep,db	
807	2	1	Public	White Elm	*Ulmus americana*	N	32	-	D		
808	2	1	Public	Norway Maple	*Acer platanoides*	I	32	8.0	F-G	le30w	retaining most leaves - green but wilted
809	2	1	Public	White Elm	*Ulmus americana*	N	19	4.0	F-G	tbl	formerly suppressed under white ash
810	2	1	Public	Norway Maple	*Acer platanoides*	I	41	8.0	F-G	bs	a few small stub holes
811	2	1	Public	White Ash	*Fraxinus americana*	N	31	-	D		
812	2	1	Public	White Ash	*Fraxinus americana*	N	17	3.0	F or F-G?	us,cb,eab	eab trunk damage healing
813	2	1	Public	Norway Maple	*Acer platanoides*	I	33	7.0	F-G	as	
814	2	1	Public	Hybrid Crack Willow	*Salix x rubens*	I	132	12.0	F-G		3 main forks at 2m- ~50-60cm dia. each
815	2	1	Public	Norway Maple	*Acer platanoides*	I	37	7.0	G	as	
816	2	1	Public	Norway Maple	*Acer platanoides*	I	17	3.0	F	bn,us	0.5m long old bark scar at base
817	2	1	Public	Norway Maple	*Acer platanoides*	I	14	3.0	F	us,ex	leans slightly to channel
818	2	1	Public	White Ash	*Fraxinus americana*	N	41	-	D		
819	2	1	Public	Norway Maple	*Acer platanoides*	I	13	3.0	F	ex	tob, leans slightly to channel
820	2	1	Public	Norway Maple	*Acer platanoides*	I	39	7.0	F-G	le15w	
821	2	1	Public	White Ash	*Fraxinus americana*	N	37	-	D		

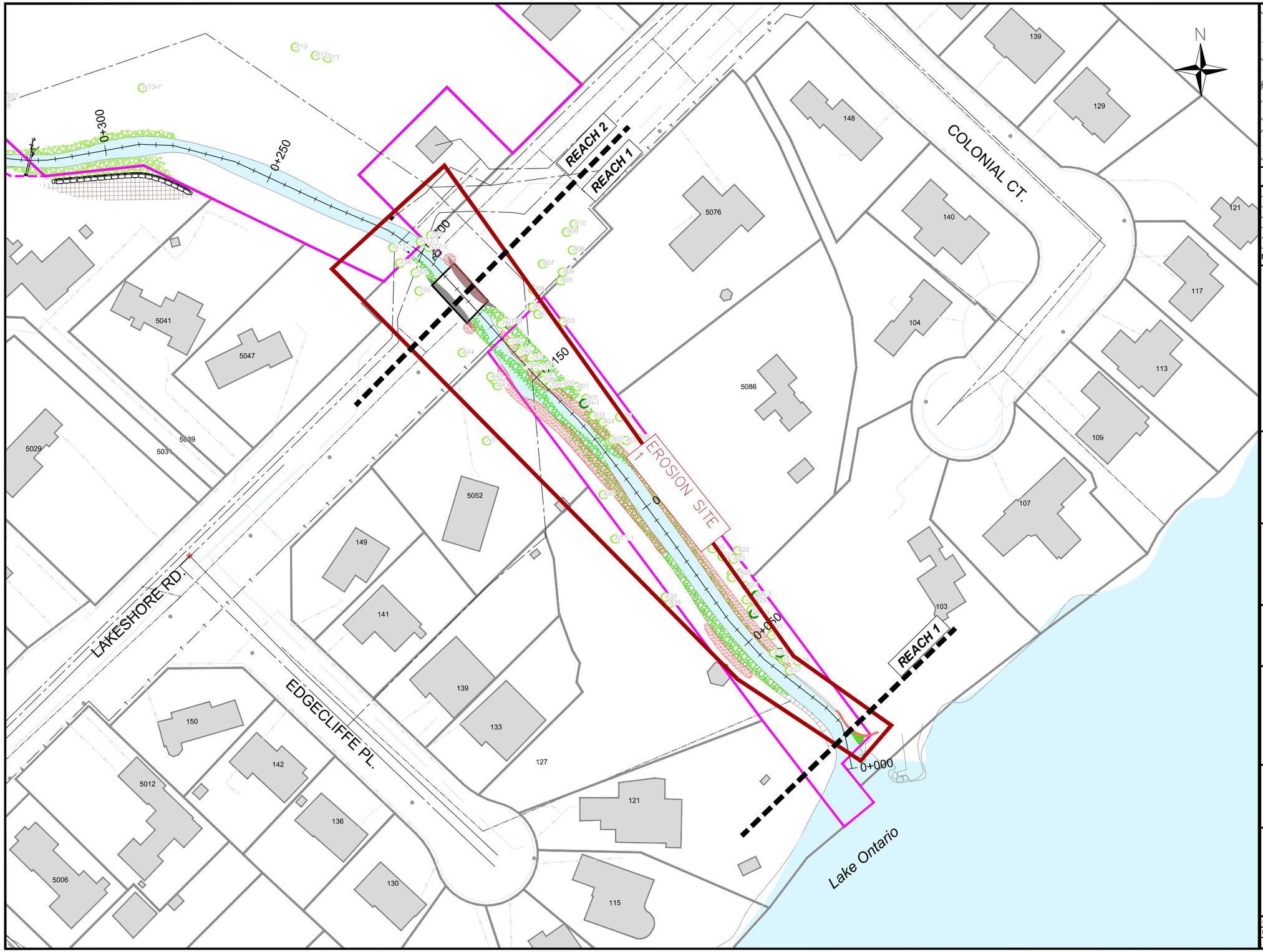
Tag #	ELC Polygon	Erosion Site	Ownership	Species Common Name	Species Botanical Name	Native/Introduced	DBH (cm)	Crown Reserve (m)	Condition	Defects and Decline Indicators	Notes
822	2	1	Public	Black Walnut	*Juglans nigra*	**N**	50	7.0	G		
823	2	1	Public	Norway Maple	*Acer platanoides*	I	23	5.0	F	us,dt	
824	2	1	Public	Norway Maple	*Acer platanoides*	I	32	6.0	F-G	ts	old trunk scars from fallen tree
825	2	1	Public	Norway Maple	*Acer platanoides*	I	28	6.0	F-G	ts	large trunk scar from fallen tree
826	2	1	Public	Hybrid Crack Willow	*Salix x rubens*	I	90	9.0	F-G		leans toward private property
827	2	1	Public	Norway Maple	*Acer platanoides*	I	18	3.0	F-G	cc	
828	2	1	Public	Norway Maple	*Acer platanoides*	I	14.5	3.5	F-G	us	
829	2	1	Public	Norway Maple	*Acer platanoides*	I	21	5.0	F-G	cc	
830	2	1	Public	Norway Maple	*Acer platanoides*	I	16	3.5	F	us,as	
831	2	1	Public	Norway Maple	*Acer platanoides*	I	42	7.0	G		
832	2	1	Public	Norway Maple	*Acer platanoides*	I	52	8.0	G		slight lean toward channel
833	2	1	Public	Norway Maple	*Acer platanoides*	I	15	3.5	F-G	us,su	
834	2	1	Public	Norway Maple	*Acer platanoides*	I	13	3.0	F	us,su	
835	2	1	Public	White Ash	*Fraxinus americana*	N	16	3.0	F	us	
836	2	1	Public	Hybrid Crack Willow	*Salix x rubens*	I	68,68,100	18.0	F-G	tmc	68 - slight lean west, 100 - large fork previously removed
837	2	1	Public	Norway Maple	*Acer platanoides*	I	16	3.5	F	us,su,ex,rsh	
838	ANTH	1	Public	Norway Maple	*Acer platanoides*	I	46,30	6.5	G	as	joined at base
839	ANTH	1	Public	Norway Maple	*Acer platanoides*	I	32,28,38	6.5	F-G(28), G	fc,cwo(28)	old calloused frost crack
840	ANTh	1	Public	Hybrid Crack Willow	*Salix x rubens*	I	[43,63]	9.0	F-G	ep1,ex	
841	ANTH	1	Public	White Ash	*Fraxinus americana*	N	16	5.0	F, P or D?	eab,us	
842	ANTH	1	Public	Manitoba Maple	*Acer negundo*	N	16	4.0	F-G	le30	
843	ANTH	1	Public	White Ash	*Fraxinus americana*	N	11	2.5	F, P or D?	us,eab	
844	ANTH	1	Public	Norway Maple	*Acer platanoides*	I	32,32	6,6	F-G	ut	joined at base
BN-1	2	1	Public	Butternut	*Juglans cinerea*	N	53	6.0	F?	tr,ca,db,bb	visible canker present
BN-2	2	1	Public	Butternut	*Juglans cinerea*	N	51	6.0	F-G	bb,cc	
BN-3	2	1	Public	Butternut	*Juglans cinerea*	**N**	45	7.0	F-G	ca	visible canker present
BN-4	2	1	Public	Butternut	*Juglans cinerea*	**N**	38	4.5	F-G	le30w,ca,df	faint signs of canker, tree appears to be fighting it off
NT10-1	8	9	Public	White Ash	*Fraxinus americana*	N	30	-	D		
NT10-2	8	9	Public	White Ash	*Fraxinus americana*	N	21	-	D		
NT10-3	8	9	Public	White Ash	*Fraxinus americana*	N	18	-	D		
NT10-4	7	9	Public	Hybrid Crack Willow	*Salix x rubens*	I	19	-	D		
NT10-5	7	9	Public	White Ash	*Fraxinus americana*	N	11	-	D		
NT10-6	8	9	Public	White Ash	*Fraxinus americana*	N	3 x 10-15	-	D		
NT1-1	ANTH	1	Public	Norway Maple	*Acer platanoides*	I	50	9.0	G	as	

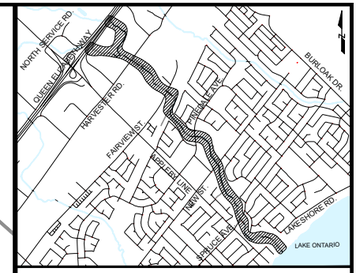
Tag #	ELC Polygon	Erosion Site	Ownership	Species Common Name	Species Botanical Name	Native/Introduced	DBH (cm)	Crown Reserve (m)	Condition	Defects and Decline Indicators	Notes
NT1-2	ANTH	1	Public	Silver Maple	*Acer saccharinum*	N	~60	9.0	F	le45e	lean toward channel, soil bulge on uphill side - appears to be active lean
NT2-1	2	1	Public	Norway Maple	*Acer platanoides*	I	~30,~15	5.5	F-G	ex,tbl	
NT2-2	2	1	Public	Norway Maple	*Acer platanoides*	I	~35	7.0	F-G	ex	
NT2-3	1	1	Public	White Ash	*Fraxinus americana*	N	15	-	D		
NT3-1	2	2	Private	Black Walnut	*Juglans nigra*	**N**	~60	8.0	G		
NT3-2	2	2	Private	Black Walnut	*Juglans nigra*	**N**	38	6.0	G		
NT4-1	10	3	Private	Weeping Willow	*Salix x sepulcralis* 'Chrysocoma'	I	~80	9.0	F	ex,bb	
NT4-2	10	3	Private	White Mulberry	*Morus alba*	I	[27,30]	7.0	F-G		joined to 0.8m
NT5-1	4	4	Public	White Ash	*Fraxinus americana*	N	12	-	F-P or D?		
NT5-2	4	4	Public	Black Walnut	*Juglans nigra*	**N**	~50	11.0	F	ex	tob, roots undermined almost up to trunk
NT7-1	5	6	Private	Amur Maple	*Acer ginnala*	I	22,10,12,11	5.0	F-P	tc,tr	private property
NT7-2	5	6	Private	Norway Maple	*Acer platanoides*	I	22	5.0	F-G	us,su	private property
NT7-3	5	6	Private	White Ash	*Fraxinus americana*	N	~25	-	D or F-P?	eab	private property
NT7-4	5	6	Private	Silver Maple	*Acer saccharinum*	N	~40,35,30,30	11.0	F-G		joined at base, private property
NT7-5	5	6	Private	Red Oak	*Quercus rubra*	N	~28	5.5	F-G	us	private property
NT8-1	5	7	Public	White Ash	*Fraxinus americana*	N	15	-	D		
NT8-10	5	7	Public	White Ash	*Fraxinus americana*	N	12,12	-	D		
NT8-11	5	7	Public	White Ash	*Fraxinus americana*	N	18	-	D		
NT8-12	5	7	Public	White Ash	*Fraxinus americana*	N	12,16	-	D		
NT8-13	5	7	Public	Common Apple	*Malus spp.*		5 x ~10	5.0	F	tbo	bent over trunks (old ice storm damage)
NT8-14	5	7	Public	White Ash	*Fraxinus americana*	N	13.5	-	D*	ep2	
NT8-15	5	7	Public	White Ash	*Fraxinus americana*	N	15	-	D		
NT8-16	5	7	Public	White Ash	*Fraxinus americana*	N	13	-	D		
NT8-17	5	7	Public	White Ash	*Fraxinus americana*	N	~20	-	D		
NT8-18	5	7	Public	White Ash	*Fraxinus americana*	N	12	-	D		
NT8-19	5	7	Public	White Ash	*Fraxinus americana*	N	13	-	D		
NT8-2	5	7	Public	White Ash	*Fraxinus americana*	N	20	-	D		
NT8-20	5	7	Public	White Ash	*Fraxinus americana*	N	4 x 10-15	-	D		
NT8-21	5	7	Public	Bur Oak	*Quercus macrocarpa*	N	18	4.0	G		

Tag #	ELC Polygon	Erosion Site	Ownership	Species Common Name	Species Botanical Name	Native/Introduced	DBH (cm)	Crown Reserve (m)	Condition	Defects and Decline Indicators	Notes
NT8-22	5	7	Public	White Ash	*Fraxinus americana*	N	12	-	D*	ep2	
NT8-23	5	7	Public	Hybrid Crack Willow	*Salix x rubens*	I	~25	4.5	F	ft4	
NT8-24	5	7	Public	Honeylocust	*Gleditsia triacanthos var. inermis*	I	~30	6.0	G		landscape tree (planted)
NT8-25	5	7	Public	Honeylocust	*Gleditsia triacanthos var. inermis*	I	~35	8.0	G		landscape tree (planted)
NT8-26	5	7	Public	Honeylocust	*Gleditsia triacanthos var. inermis*	I	~35	7.0	G		landscape tree (planted)
NT8-3	5	7	Public	White Ash	*Fraxinus americana*	N	18	-	D		
NT8-4	5	7	Public	White Ash	*Fraxinus americana*	N	~25	-	D		
NT8-5	5	7	Public	White Ash	*Fraxinus americana*	N	14	-	D		
NT8-6	5	7	Public	Hybrid Crack Willow	*Salix x rubens*	I	~35	9.0	F		
NT8-7	5	7	Public	White Ash	*Fraxinus americana*	N	28,30	-	D		
NT8-8	5	7	Public	White Ash	*Fraxinus americana*	N	30	-	D		
NT8-9	5	7	Public	White Ash	*Fraxinus americana*	N	12	-	D		
NT9-1	6	8	Public	Honeylocust	*Gleditsia triacanthos var. inermis*	I	~25	7.0	G		landscape tree (planted)
NT9-2	6	8	Public	Honeylocust	*Gleditsia triacanthos var. inermis*	I	~30	7.0	G		landscape tree (planted)
NT9-3	6	8	Public	Norway Maple	*Acer platanoides*	I	~15-20	6.0	G		landscape tree (planted)

Tree Condition: G = good, F-G = fair to good, F = fair, F-P = fair to poor, P = poor, D = dead
( ) diameter of two or more stems originating from a single stem at at ground level at or below breast height
[ ] diameter of two or more separate stems growing into one another – clump

Defects and Decline Indicators:
ab: abrasion against adjacent tree, fallen tree or limbs
bb: broken branches
bbm: broken major limbs
bbt: bark beetles excl. ash borer
bl: branch cluster growing from broken limb (commonly from ice storm damage)
be: beaver damage to cambium
bf: broken off main fork
bn: bark tissue necrosis (spots or dead vertical strip)
br: butt rot
bs: stub hole from missing branch, large limb or fork stem
bt: large limb torn from stem
bu: burly trunk
ca: canker
cas: assymetrical crown (most branches on one side only)
cb: cracked bark
cc: crown crowded by other tree crowns
cd: crown dead or mostly dead - epicormic shoots
cf: flat crown (suppressed)
co: conks (mushrooms)
cwr: callused wound - recent
cwo: callused wound - old
db: dead branches
dbm: dead major limbs
ded: dutch elm disease infection (yellowing, browning leaves -June-July)
df: dead main fork
dt: broken, dead or missing trunk top
eab: emerald ash borer exit holes
ep: epicormic shoots (on trunk and/or root collar)
ep2:epicormic shoots (root collar only)
es: eroding slope
ex: exposed roots
fc: frost crack (common in Norway Maple)
fe: fence (tree growing through or against)
fi: fill (bricks, cement, etc.) placed at or fallen onto base of tree
fis: fill (soil) placed onto root plate or eroding from upslope
fr: insect frass
ft1: fallen tree (onto tree being assessed)
ft2: tree fallen (resting on another tree)
ft3: tree fallen over - sometimes with no roots exposed - still alive (common with manitoba maple)
ft4:tree fallen over or uprooted, broken lower trunk - still alive (ex. hybrid crack and weeping willows)
gu: gummosis
hr: heart rot
hs: trunk growing out of hard structure or concrete formed around trunk or base
ib: included bark
lc:premature leaf colour change (stress)
ld: leaves heavily chewed by insects >50%
lm: top previously died or broken off, multiple side leaders
ls: abnormally small leaves (stress)
pb: peeling bark
pr: pruning
rs: slumped rootmass (eroding banks of channels)
rg: girdling roots
rsh: exposed shallow surface roots
tbb: trunk bend on lower trunk (ground movement)
tbl: trunk grows with lean, bend or twist to seek light
tc: trunk curved or crooked
tcb: trunk curved at base
tck: trunk crack
ts: trunk split
thc: trunk hollow cavity
tr: trunk open rot
tbo: trunk bent over
th: trunk horizontal or almost
ti: trunks intertwined
tl: trunk lean (deg.)
tb1: trunk broken off or removed
tb2: trunk broken but still attached
tm:trunks multiple from at or below ground level
tmc: trunks multiple, one or more cut off previously
tsi: trunk scarring from ice or flow debris
tsc: trunk scarring from construction activities
tt: trunk twisted
sa: road salt damage (short shoot growth - bunchy)
sp: tar spot
su: overtopped/suppressed
um:base of trunk undermined - stilting of roots
ur: partially uprooted but still living
us: understorey tree
ut: utility line interference
wc: weak crotch
wo: woodpecker damage
wh: woodpecker holes (eab)
ww: weeping wound
vih: vines (heavy infestation)
vim: vines (medium infestation)
ye: yellowing leaves





Key Map – NTS

No.	REVISION	By	DATE
1	ISSUED FOR		2019-06-28

LEGEND

- PROPERTY LINE
- SANITARY SEWERMAIN
- STORMLINE
- WATERMAIN
- GAS LINE
- PIPELINE

THE POSITION OF THE POLE LINES, CONDUITS, WATERMAINS, SEWERS, AND OTHER UTILITIES AND STRUCTURES ARE NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED.

BEFORE STARTING WORK

THE CONTRACTOR SHALL CONFIRM THE POSITION AND EXACT LOCATION OF ALL SUCH UTILITIES, AND SHALL ASSUME ALL LIABILITY FOR ANY DAMAGE TO THEM MADE DURING THE COURSE OF THE CONTRACT WORK.

JOB TITLE

Appleby Creek Erosion Control E.A.
BURLINGTON, ONTARIO

SHEET TITLE

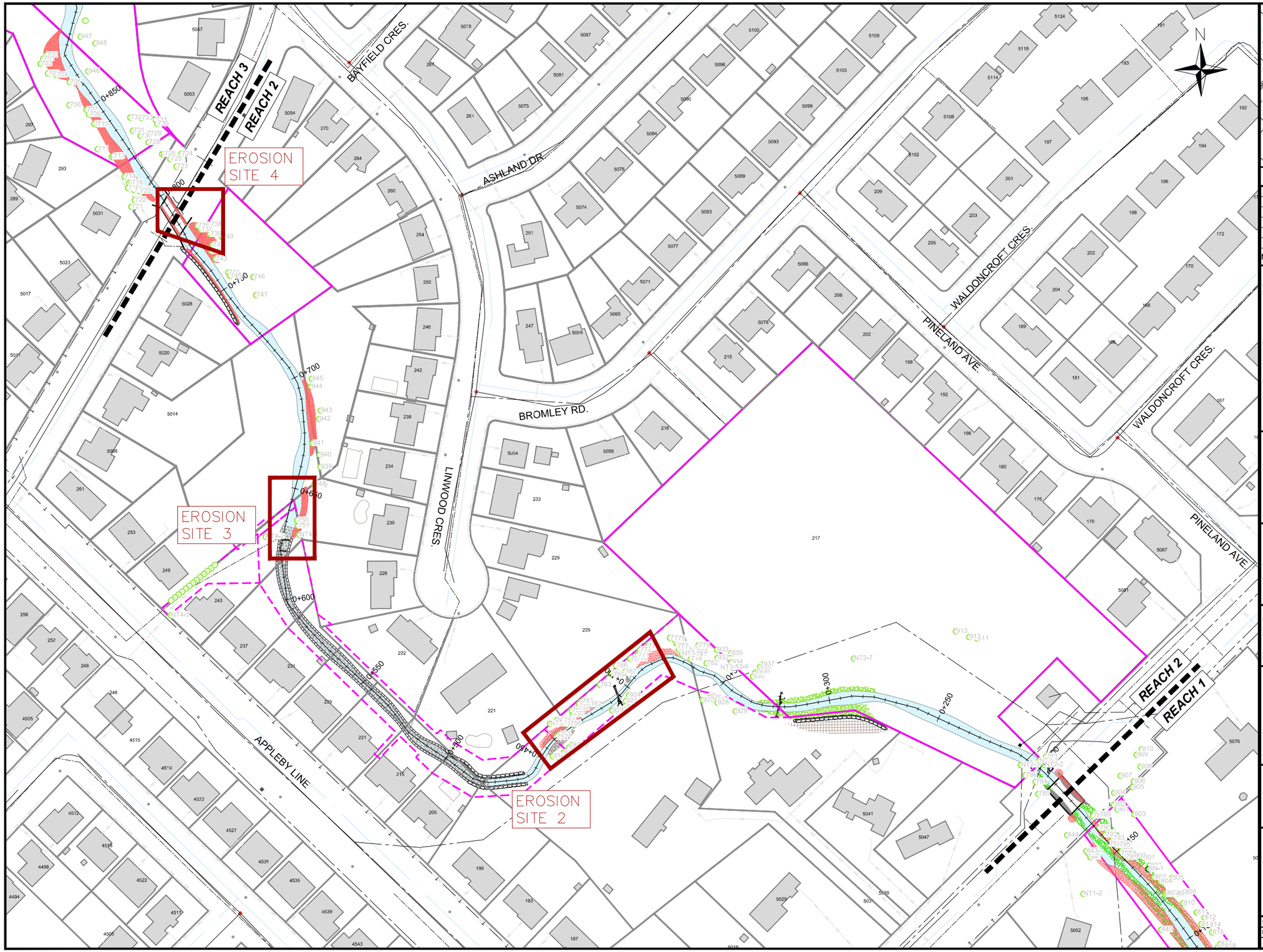
General Plan - Reach 1
GP - 1

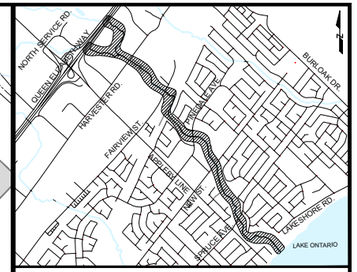
DESIGNED BY:	APPROVED BY:

CITY OF Burlington

Aquafor Beech Limited
#6-202-2600 SKYMARK Ave,
MISSISSAUGA, ONTARIO, L4W 5B2
PHONE: (905) 629-0099, FAX: (905) 629-0089

SCALE: HOR.–1:500	REVIEWED BY:	CONTRACT No.	
DRAWN BY: T.S.	DESIGNED BY:	FILE No.	
DATE: 19 JULY, 2019	SHEET NO: 1/7	DRAWING No.	





Key Map – NTS

No.	REVISION	By	DATE
1	ISSUED FOR		2019-06-28

LEGEND

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- SANITARY SEWERMAIN
- STORMLINE
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- GAS LINE
- PIPELINE

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JOB TITLE

Appleby Creek Erosion Control E.A.
BURLINGTON, ONTARIO

SHEET TITLE

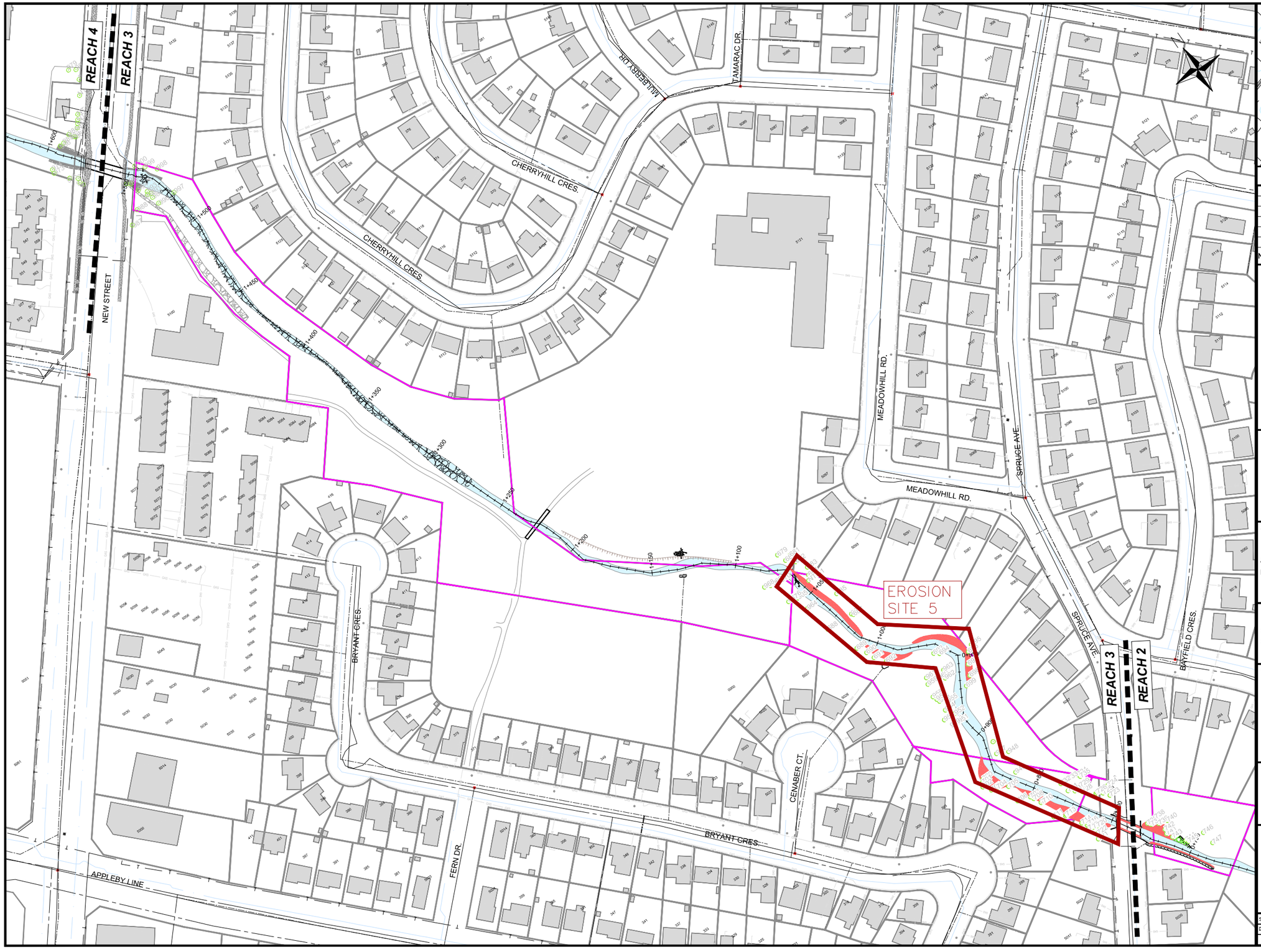
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GP - 2

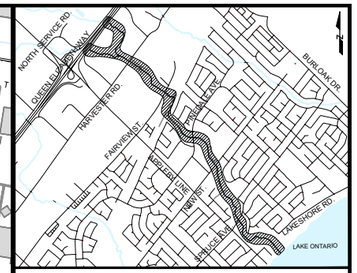
DESIGNED BY:	APPROVED BY:

CITY OF Burlington

Aquafor Beech Limited
#6-202-2600 SKYMARK Ave,
MISSISSAUGA, ONTARIO, L4W 5B2
PHONE: (905) 629-0099, FAX: (905) 629-0089

SCALE: HOR.–1:750	REVIEWED BY:	CONTRACT No.	
DRAWN BY: T.S.	DESIGNED BY:	FILE No.	
DATE: 19 JULY, 2019	SHEET NO: 2/7	DRAWING No.	





Key Map – NTS

No.	REVISION	By	DATE
1	ISSUED FOR		2019-06-28

LEGEND

- PROPERTY LINE
- SANITARY SEWERMAIN
- STORMLINE
- WATERMAIN
- GAS LINE
- PIPELINE

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BURLINGTON, ONTARIO

SHEET TITLE

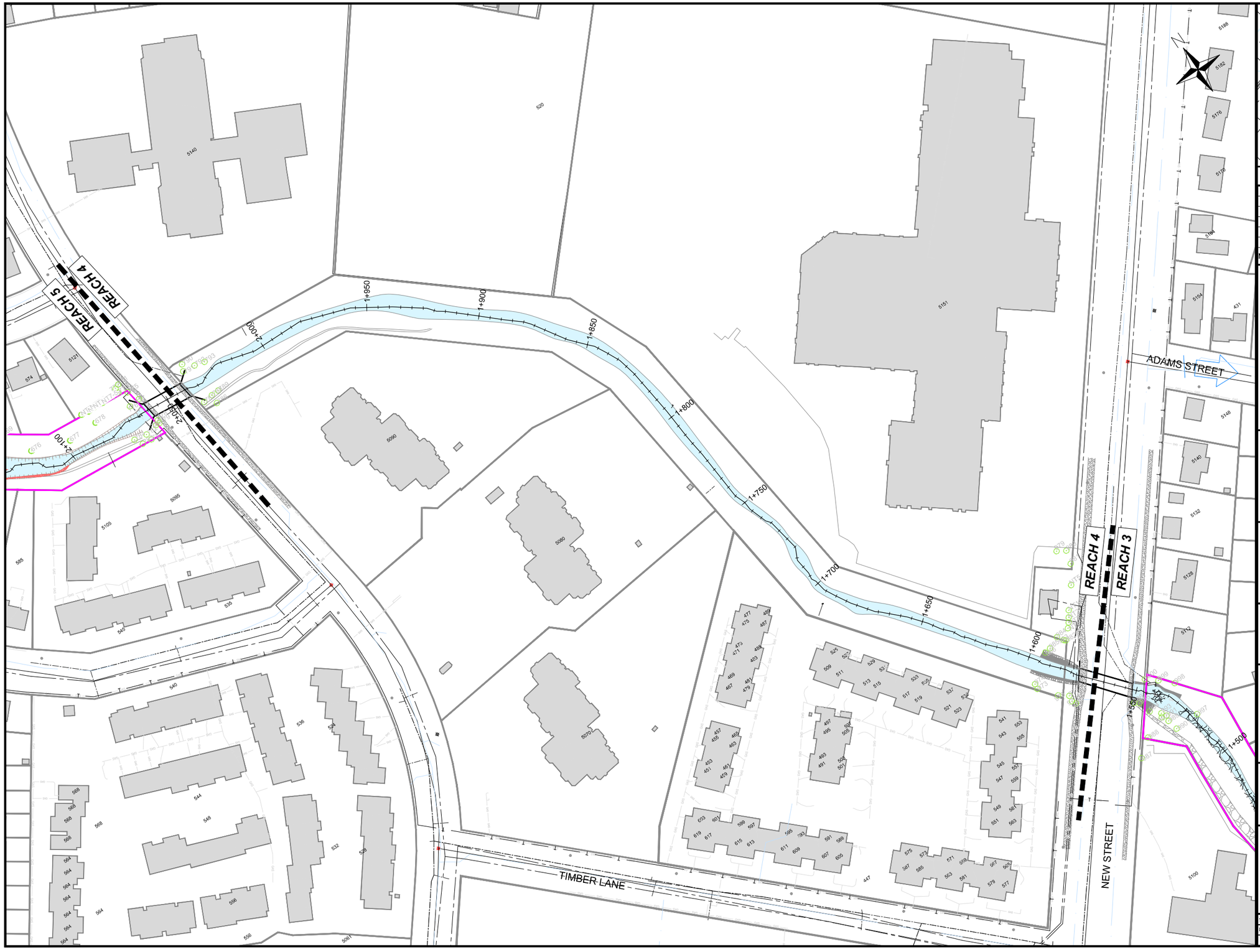
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GP - 3

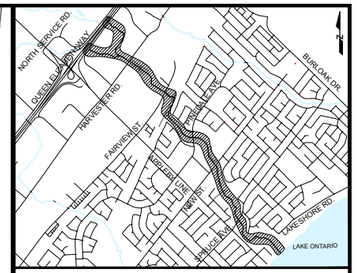
DESIGNED BY:	APPROVED BY:

CITY OF Burlington

Aquafor Beech Limited
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MISSISSAUGA, ONTARIO, L4W 5B2
PHONE: (905) 629-0099, FAX: (905) 629-0089

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DATE: 19 JULY, 2019	SHEET NO: 3/7		DRAWING No.





Key Map – NTS

No.	REVISION	By	DATE
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- PIPELINE

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Appleby Creek Erosion Control E.A.

BURLINGTON, ONTARIO

SHEET TITLE

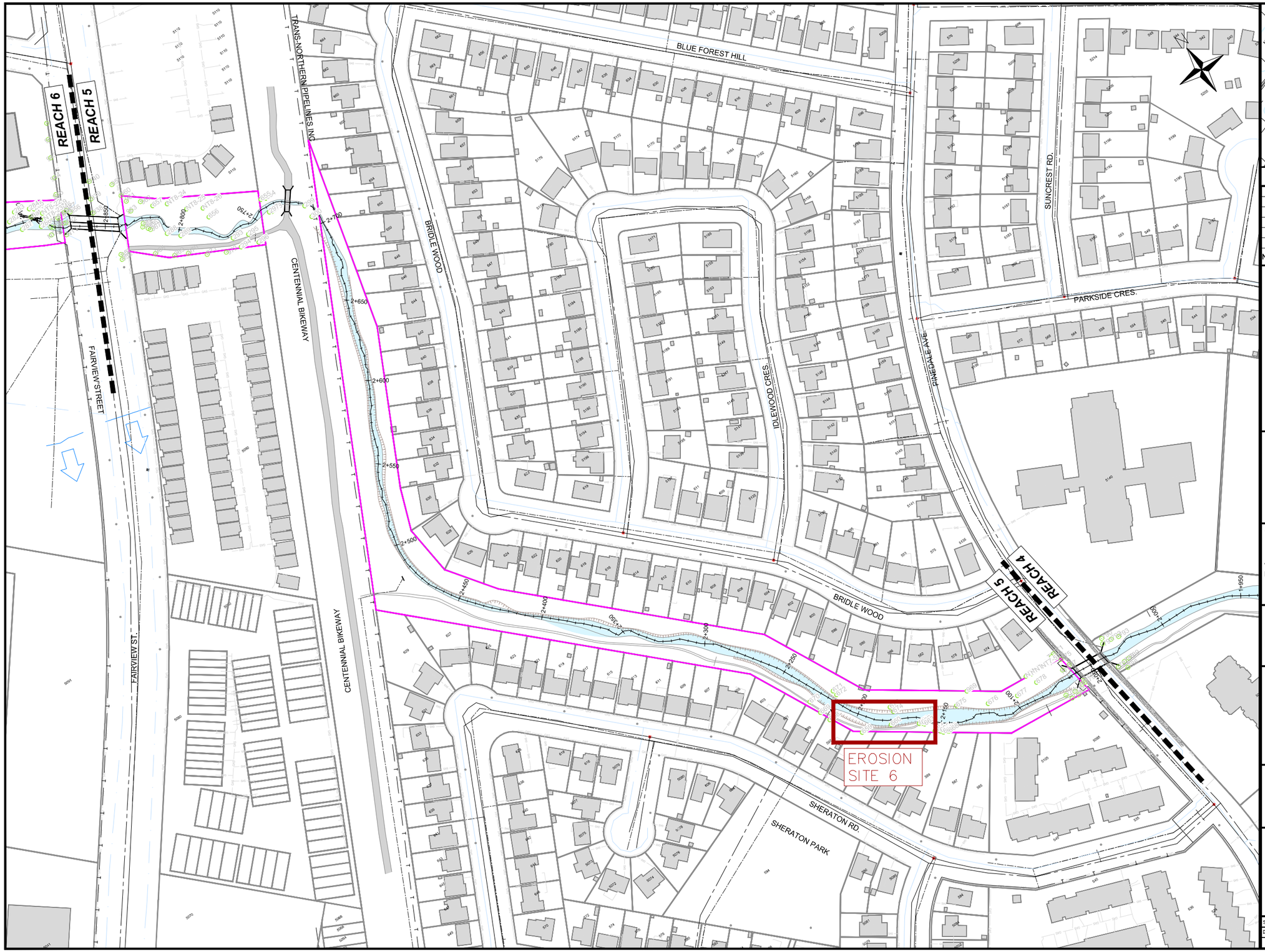
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GP - 4

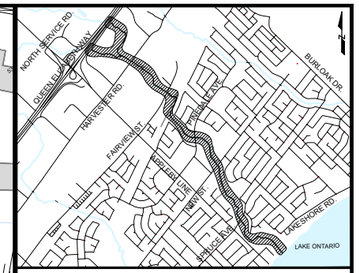
DESIGNED BY:	APPROVED BY:

CITY OF Burlington

Aquafor Beech Limited
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PHONE: (905) 629-0099, FAX: (905) 629-0089

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DATE: 19 JULY, 2019	SHEET NO: 4/7	DRAWING No.





Key Map – NTS

No.	REVISION	By	DATE
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LEGEND

- PROPERTY LINE
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- STORMLINE
- WATERMAIN
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JOB TITLE

Appleby Creek Erosion Control E.A.

BURLINGTON, ONTARIO

SHEET TITLE

General Plan - GP5
Existing Utilities

DESIGNED BY:	APPROVED BY:

City of Burlington

Aquafor Beech Limited
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PHONE: (905) 629-0099, FAX: (905) 629-0089

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DRAWN BY: T.S.	DESIGNED BY:		FILE No.
DATE: 19 JULY, 2019	SHEET NO: 5/7		DRAWING No.

SHERWOOD FOREST PARK

REACH 7

REACH 6

REACH 5

EROSION SITE 8

EROSION SITE 7

EROSION SITE 7

OVAL CRT.

FAIRVIEW ST.

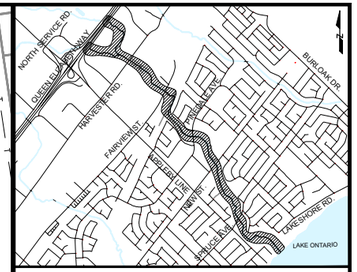
FAIRVIEW STREET

METROLINX RAIL CORRIDOR

APPLEBY GO STATION

ACCESS FROM HARVESTER ROAD

NG AND STORAGE AREA



Key Map – NTS

No.	REVISION	By	DATE
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LEGEND

- PROPERTY LINE
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- STORMLINE
- WATERMAIN
- GAS LINE
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Appleby Creek Erosion Control E.A.

BURLINGTON, ONTARIO

SHEET TITLE

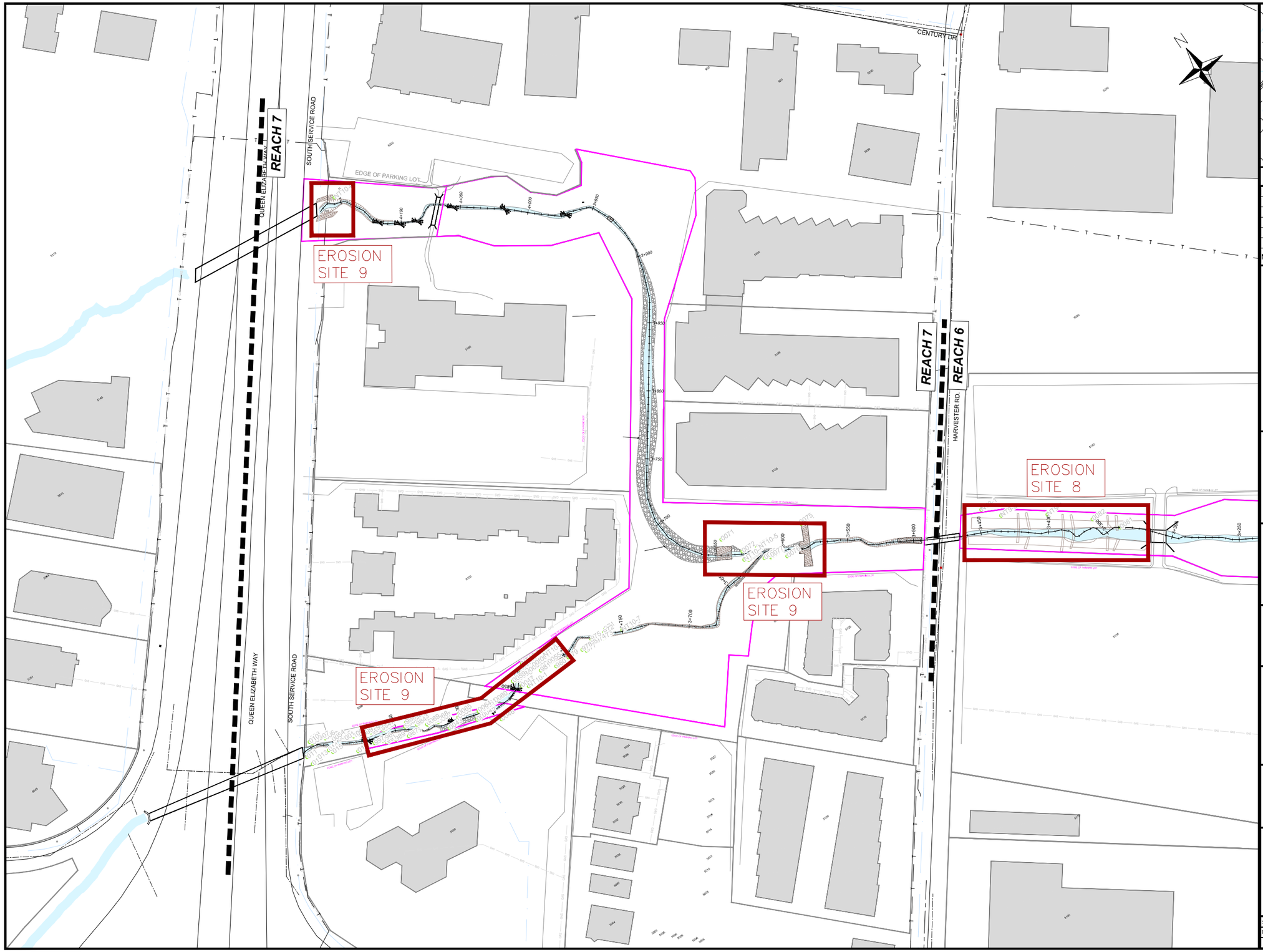
General Plan - GP6
Existing Utilities

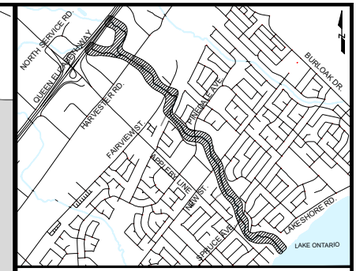
DESIGNED BY:	APPROVED BY:

CITY OF Burlington

Aquafor Beech Limited
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MISSISSAUGA, ONTARIO, L4W 5B2
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DATE: 19 JULY, 2019	SHEET NO: 6/7	DRAWING No.





Key Map – NTS

No.	REVISION	By	DATE
1	ISSUED FOR		2019-06-28

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JOB TITLE

Appleby Creek Erosion Control E.A.
BURLINGTON, ONTARIO

SHEET TITLE

General Plan - GP7
Exisiting Utilities

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CITY OF Burlington

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#6-202-2600 SKYMARK Ave,
MISSISSAUGA, ONTARIO, L4W 5B2
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Appendix C3 –

Butternut

input field data										automatic calculations from field data						**Categories: 1: non-retainable, 2: retainable, 3: archivable**				
Tree #	Live Crown %	Tree dbh (cm)	# bole cankers				# root flare (RF) cankers		<40 m from cankered tree? (Y or N)	**Circ.** (cm) = Pi x dbh	total **bole canker width** (sooty x 2.5 + open x 5)	total **RF canker width** (sooty x 2.5 + open x 5)	bole canker **%** of circ.	RF canker **%** of circ.	total bole & root canker % of 2xCirc	LC% >/= 50 & BC% = 0	LC% >70 & BRC % <20	LC% >70 & BC % <20	**Preliminary tree call**	**FINAL TREE CALL** a Cat 2, dbh>20cm <40m from a Cat 1
			sooty (S) (will be assigned 2.5 cm per canker)		open (O) (will be assigned 5 cm per canker)															
			S <2 m	S >2 m	O <2 m	O >2 m	RF S	RF O		**Circ** (cm)	**BC** (cm)	**RC** (cm)	**BC%**	**RC%**	**BRC%**					
1	80	60	0	4	3	0	1	3	n	188.4	25.0	17.5	**13.3**	**9.3**	**11.3**	1	2	2	**2**	**2**
2	80	50	1	0	0	0	0	0	n	157	2.5	0.0	**1.6**	**0.0**	**0.8**	1	2	2	**2**	**2**
3	70	45	5	2	0	0	2	1	n	141.3	17.5	10.0	**12.4**	**7.1**	**9.7**	1	1	1	**1**	**1**
4										0	0.0	0.0	**#####**	**#####**	**#####**	####	####	###	**##**	**#DIV/0!**
5										0	0.0	0.0	**#####**	**#####**	**#####**	####	####	###	**##**	**#DIV/0!**
6	100	40	2	2	0	0	2	0	n	125.6	10.0	5.0	**8.0**	**4.0**	**6.0**	1	2	2	**2**	**2**

Table 2: **Classes of Butternut, as defined in subsection 23.7(2) of O. Reg. 242/08**

Class	Description
Category 1 tree	The butternut tree is affected by butternut canker to such an advanced degree that retaining the tree would not support the protection or recovery of butternut trees in the area in which the tree is located.
Category 2 tree	The butternut tree is not affected by butternut canker or the butternut tree is affected by butternut canker but the degree to which it is affected is not too advanced and retaining the tree could support the protection or recovery of butternut trees in the area in which the tree is located.
Category 3 tree	The butternut tree may be useful in determining sources of resistance to butternut canker.

Ontario

FRMS-PL-F-003

LABORATORY TEST REPORT
BUTTERNUT HYBRIDITY TEST

OFRILS

1235 Queen Street East
Sault Ste. Marie, Ontario P6A 2E5
Phone: 705 946 7448
Fax: 705 946 2030

Report Date: 2018-10-24

Report ID: OFRILS-PL- 1870

Client	Aquafor Beech Ltd.		
Address	55 Regal Rd, Unit 3 Guelph, Ontario N1K 1B6		
Contact	Ash Baron		
Phone:	(519) 224-3733	Fax:	
E-mail:	baron.a@aquaforbeech.com		

MNRF Contact	Bohdan Kowalyk		
Address	Aurora District 50 Bloomington Rd. W. Aurora, ON L4G 0L8		
Phone:	(905) 713-7387	Fax:	
E-mail:	bohdan.kowalyk@ontario.ca		

Sample Received On: 2018-08-31

Method: Molecular tests to detect butternut x Japanese walnut hybrids*

Test Report:

Three standard molecular tests were conducted on one sample from Bromley Park, Burlington, Ontario. Hybridity was not detected in the results of laboratory tests. To the best of our knowledge the sample represents butternut, Juglans cinerea. Sample details may be found on page two of this report.

Please direct any questions to the contact below.

The Forest Pathology Laboratory applies three standard molecular tests published by Zhao & Woeste (2011) * for detecting hybrids.
Note: If these tests are for the purpose of seed tree certification, the results apply only to the tested tree(s), and cannot extend to progeny resulting from open pollination.

This result and test report relates only to the items tested.

All appropriate laboratory quality controls were applied in producing the result/s. The results and interpretation are reported to the best of the knowledge and expertise of the lab and is based on the reference method adopted.

Laboratory Contact:
Glenna Halicki Hayden
Forest Pathology Lab Supervisor
Ontario Forest Research Institute
1235 Queen Street East
Sault Ste. Marie, ON P6A 2E5
Phone: 705 946 7412 Fax: 705 946 2030
Email: glenna.halickihayden@ontario.ca
Web: http://ontario.ca/ofri

Authorized Signature Glenna Halicki Hayden

Name

* Based on published reference method: Peng Zhao & Keith E. Woeste. 2011. DNA markers identify hybrids between butternut (Juglans cinerea L.) and Japanese walnut (Juglans ailantifolia Carr.). Tree Genetics & Genomes 7:511–533. DOI 10.1007/s11295-010-0352-4.

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All errors and omissions are limited to the cost of the analysis

Revision No: 1.0

Date: 2014 - 07 - 11

Ontario

FRMS-PL-F-003

SAMPLE INFORMATION AND TEST SUMMARY

OFRILS
1235 Queen Street East
Sault Ste. Marie, Ontario P6A 2E5
Phone: 705 946 7448
Fax: 705 946 2030

Report ID: OFRILS-PL- 1870

Lab ID	Sample Type	Tree ID	Collection Site	UTM Coordinates	LAB RESULT Hybridity Detected	
18303	Foliage	Tree # 1 Bromley Park	Bromley Park, Burlington, Ontario	17T 601902 4801858	☒ NO	☐ YES
					☐ NO	☐ YES
					☐ NO	☐ YES
					☐ NO	☐ YES
					☐ NO	☐ YES
					☐ NO	☐ YES
					☐ NO	☐ YES
					☐ NO	☐ YES
					☐ NO	☐ YES
					☐ NO	☐ YES
					☐ NO	☐ YES
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					☐ NO	☐ YES
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					☐ NO	☐ YES
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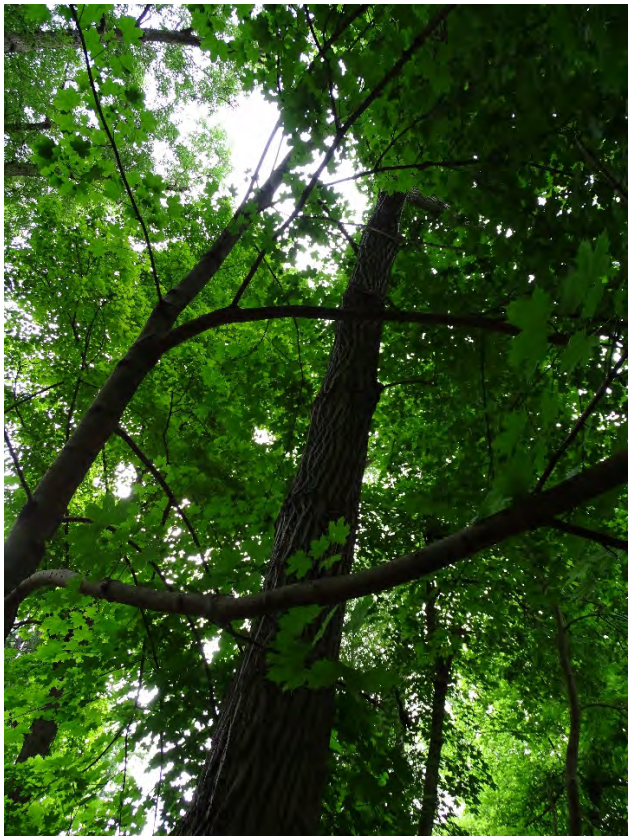
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Date: 2014 - 07 - 11

BN1



BN2



BN3



BN4



BN5



BN6



Appendix C4 –

Maternity Roost Habitat

Appendix B – Suitable Maternity Roost Trees for Little Brown Myotis/Northern Myotis

Include all live and dead standing trees ≥10cm dbh with loose or naturally exfoliating bark, cavities, hollows or cracks.

Project Name: Appleby Creek Erosion EA — Survey Date(s): JAN 18/19

Site Name: — Observers(s): N. Schuetz

ELC Ecosite: — Snag Density (snags/ha):

Tree #	Tree Species ID	dbh (cm)	Height Class[2]	Snag attributes (check all that apply)	Easting	Northing	Notes
SITE 8				☐ cavity[3] ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?[4]			
287 (flood fill tree)	Sal xmb	~90	1	☐ cavity ☒ loose bark ☒ crack ☐ knot hole ☐ other snag within 10m? ☒ Decay Class 1-3? 1-2			Major limbs Bkn
283	FRAXINUS	35	1	☐ cavity ☐ loose bark ☒ crack ☐ knot hole ☐ other snag within 10m? ☒ Decay Class 1-3? 3			Bkn branch in crack
275	Fraxinus	17 32	1	☐ cavity ☒ loose bark ☒ crack ☐ knot hole ☐ other snag within 10m? ☒ Decay Class 1-3? 3			Crack @ base
NT 9-12	"	12 16	2	☐ cavity ☒ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☒ Decay Class 1-3? 3			
94	Salxmb	32 55 45 70	1	☐ cavity ☒ loose bark ☒ crack ☐ knot hole ☐ other snag within 10m? ☒ Decay Class 1-3? 1			Broken limbs
92	"	30 36	1	☐ cavity ☒ loose bark ☒ crack ☐ knot hole ☐ other snag within 10m? ☒ Decay Class 1-3? 1			
87	FRAXINUS	38 36 25	1	☐ cavity ☒ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☒ Decay Class 1-3? 3			
83	Salxmb	~85	3	☐ cavity ☒ loose bark ☒ crack ☐ knot hole ☐ other snag within 10m? ☒ Decay Class 1-3? 2			
				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			

[2] **Height Class**: 1 = Dominant (above canopy); 2 = Co-dominant (canopy height); 3 = Intermediate (just below canopy); 4 = suppressed (well below canopy)

[3] The approx. height of the cavity should be noted. Note that cavities with an entrance near the ground may also be used by bats if they are "chimney-like".

[4] **Decay Class**: 1 = Healthy, live tree; 2 = Declining live tree, part of canopy lost; 3 = Very recently dead, bark intact, branches intact

13

Appendix B – Suitable Maternity Roost Trees for Little Brown Myotis/Northern Myotis

Include all live and dead standing trees ≥10cm dbh with loose or naturally exfoliating bark, cavities, hollows or cracks.

Project Name: Survey Date(s):

Site Name: Observers(s):

ELC Ecosite: Snag Density (snags/ha):

Tree #	Tree Species ID	dbh (cm)	Height Class[2]	Snag attributes (check all that apply)	Easting	Northing	Notes
SITE 6				☐ cavity[3] ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?[4]			
695	ACESASA	30	2	☐ cavity ☐ loose bark ☐ crack ☒ knot hole ☐ other snag within 10m? ☒ Decay Class 1-3? /			• woodpecker holes on dead stem
711	TILAMER	32 12	2	☐ cavity ☐ loose bark ☒ crack ☐ knot hole ☐ other snag within 10m? ☒ Decay Class 1-3? /			• crack in branch
705	ACESASA	42	2	☒ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☒ Decay Class 1-3? /			• erosion under tree • cavity in dead leader ≥ 10m up
690	Carovat	32	2	☐ cavity ☒ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☒ Decay Class 1-3? /			
SITE 7				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			
665	ACENEGUN	38	2	☐ cavity ☐ loose bark ☒ crack ☐ knot hole ☐ other snag within 10m? ☒ Decay Class 1-3? /			• crack in branch
Flood EA 668	"	65	2	☒ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☒ Decay Class 1-3? /			• cavity in branch
SITE 9				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			
NONE				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			

[2] **Height Class**: 1 = Dominant (above canopy); 2 = Co-dominant (canopy height); 3 = Intermediate (just below canopy); 4 = suppressed (well below canopy)

[3] The approx. height of the cavity should be noted. Note that cavities with an entrance near the ground may also be used by bats if they are "chimney-like".

[4] **Decay Class**: 1 = Healthy, live tree; 2 = Declining live tree, part of canopy lost; 3 = Very recently dead, bark intact, branches intact

13

Appendix B – Suitable Maternity Roost Trees for Little Brown Myotis/Northern Myotis

Include all live and dead standing trees ≥10cm dbh with loose or naturally exfoliating bark, cavities, hollows or cracks.

Project Name: Appleby Creek Erosion EA Survey Date(s): Jan 17/19

Site Name: Erosion SITE 1 Observers(s): N. Schwetz

ELC Ecosite: Snag Density (snags/ha):

Tree #	Tree Species ID	dbh (cm)	Height Class[2]	Snag attributes (check all that apply)	Easting	Northing	Notes
804	Salxrub	132	1	☐ cavity[3] ☐ loose bark ☐ crack ☒ knot hole ☐ other snag within 10m? ☒ Decay Class 1-3?[4] 1			Knot holes in canopy branches
805	"	83	1	☐ cavity ☒ loose bark ☐ crack ☒ knot hole ☐ other snag within 10m? ☒ Decay Class 1-3? 1			
787	"	~50 ~55	1	☐ cavity ☒ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☒ Decay Class 1-3? 2			, rat in trunk @ base , loose bark on branch by wire
840	"	43 63	1	☐ cavity ☒ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☒ Decay Class 1-3? 1			
EROSION SITE 3				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			
759	Salxrub	44,22 50	1	☐ cavity ☒ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☒ Decay Class 1-3? 2			smale patches of loose bark
EROSION SITE 4				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			
749	CARCOR	51	2	☐ cavity ☐ loose bark ☒ crack ☐ knot hole ☐ other snag within 10m? ☒ Decay Class 1-3? 1			Branch crack
EROSION SITE 5				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			
747	Salxsp	85	1	☐ cavity ☒ loose bark ☒ crack ☒ knot hole ☐ other snag within 10m? ☒ Decay Class 1-3? 1			

[2] **Height Class**: 1 = Dominant (above canopy); 2 = Co-dominant (canopy height); 3 = Intermediate (just below canopy); 4 = suppressed (well below canopy)

[3] The approx. height of the cavity should be noted. Note that cavities with an entrance near the ground may also be used by bats if they are "chimney-like".

[4] **Decay Class**: 1 = Healthy, live tree; 2 = Declining live tree, part of canopy lost; 3 = Very recently dead, bark intact, branches intact

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Appendix B – Suitable Maternity Roost Trees for Little Brown Myotis/Northern Myotis

Include all live and dead standing trees ≥10cm dbh with loose or naturally exfoliating bark, cavities, hollows or cracks.

Project Name: Survey Date(s):

Site Name: Observers(s):

ELC Ecosite: Snag Density (snags/ha):

Tree #	Tree Species ID	dbh (cm)	Height Class[2]	Snag attributes (check all that apply)	Easting	Northing	Notes
SITE 10				☐ cavity[3] ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?[4]			
NT 10-1	FRASMER	30	2	☐ cavity ☑ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☑ Decay Class 1-3? 3			
				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			
				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			
				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			
				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			
				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			
				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			
				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			
				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			

[2] **Height Class**: 1 = Dominant (above canopy); 2 = Co-dominant (canopy height); 3 = Intermediate (just below canopy); 4 = suppressed (well below canopy)

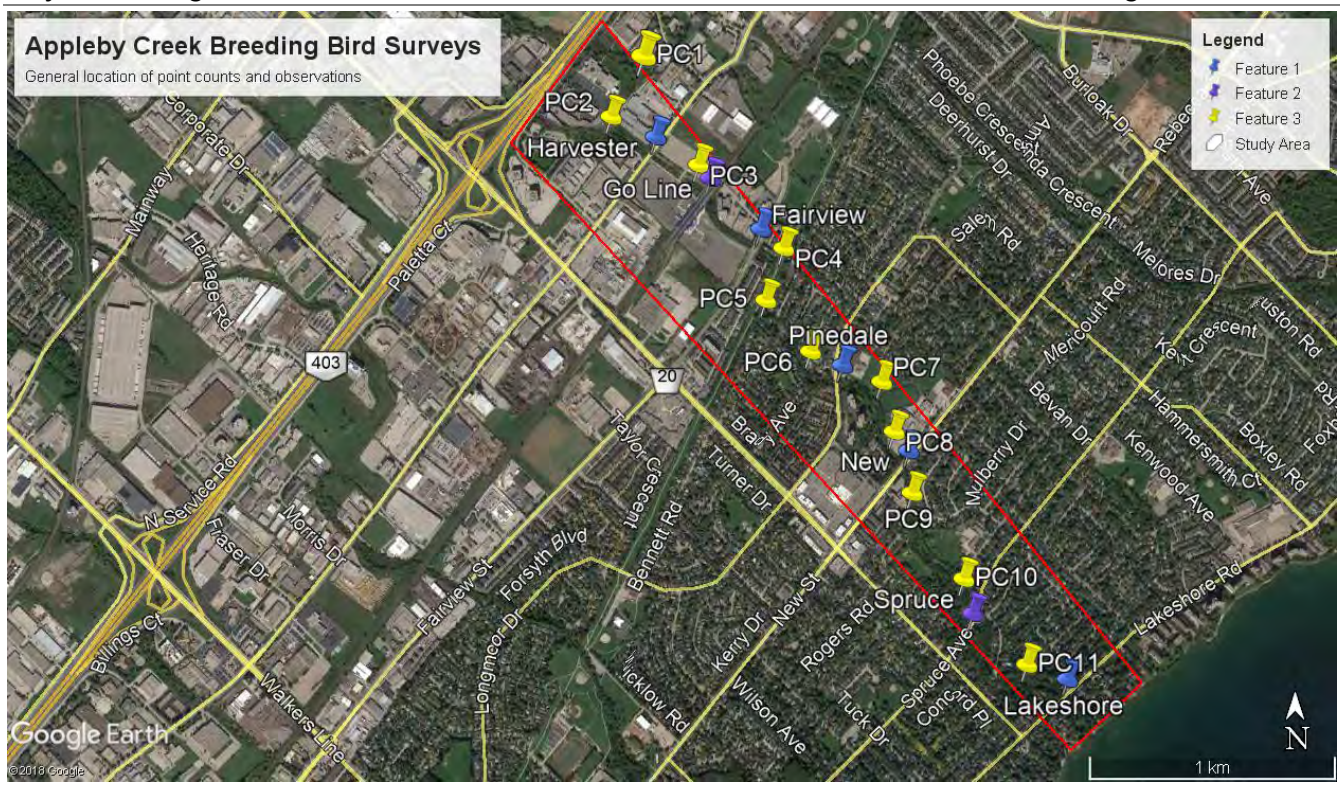
[3] The approx. height of the cavity should be noted. Note that cavities with an entrance near the ground may also be used by bats if they are "chimney-like".

[4] **Decay Class**: 1 = Healthy, live tree; 2 = Declining live tree, part of canopy lost; 3 = Very recently dead, bark intact, branches intact

13

Appendix C5 –

Breeding Birds



Point Count Locations (UTM) for Breeding Bird Survey at Appleby Creek:

Number	Easting	Northing
PC1	600134	4804256
PC2	600009	4804021
Harvester Rd Crossing	600191	4803940
PC3	600369	4803830
Go Line Crossing	600417	4803776
Fairview St Crossing	600626	4803573
PC4	600721	4803497
PC5	600651	4803284
PC6	600837	4803079
Pinedale Ave Crossing	600966	4803024
PC7	601129	4802960
PC8	601183	4802758
New St Crossing	601242	4802680
PC9	601260	4802510
PC10	601476	4802164
Spruce Ave Crossing	601513	4802022
PC11	601738	4801819
Lakeshore Rd Crossing	601903	4801761

Summary of Breeding Bird Survey Results for Appleby Creek:

Common Name	Binomial Name	Highest Breeding Evidence	SRank	Halton Rank	SARO Rank	COSEWIC Rank
Alder Flycatcher	*Empidonax alnorum*	**Poss (S)**	S5B, SZN			
American Crow	*Corvus brachyrhychos*	**Obs (X)**	S5B, SZN			
American Goldfinch	*Spinus tristis*	**Prob (T)**	S5B, SZN			
American Redstart	*Setophaga ruticilla*	**Poss (S)**	S5B, SZN			
American Robin	*Turdus migratorius*	**Prob (T)**	S5B, SZN			
Baltimore Oriole	*Icterus galbula*	**Prob (T)**	S5B, SZN			
Black-capped Chickadee	*Poecile atricapillus*	**Prob (T)**	S5			
Black-crowned Night-Heron	*Nycticorax nycticorax*	**Prob (T)**	S3B, SZN	HU		
Blue Jay	*Cyanocitta cristata*	**Poss (H)**	S5			
Canada Goose	*Branta canadensis*	**Obs (X)**	S5B, SZN			
Cedar Waxwing	*Bombycilla cedrorum*	**Poss (H)**	S5B, SZN			
Chipping Sparrow	*Spizella passerina*	**Poss (S)**	S5B, SZN			
Common Grackle	*Quiscalus quiscula*	**Prob (P)**	S5B, SZN			
Downy Woodpecker	*Picoides pubescens*	**Poss (H)**	S5			
European Starling	*Sturnus vulgaris*	**Poss (H)**	SNA			
Eastern Wood-Pewee	*Contopus virens*	**Poss (S)**	S5B, SZN			
Gray Catbird	*Dumetella carolinensis*	**Poss (S)**	S5B, SZN			
Great Crested Flycatcher	*Myiarchus crinitus*	**Poss (S)**	S5B, SZN			
House Sparrow	*Passer domesticus*	**Prob (P)**	SNA			
Killdeer	*Charadrius vociferous*	**Poss (H)**	S5B, SZN			
Mallard	*Anas platyrhynchos*	**Prob (P)**	S5B, SZN			
Mourning Dove	*Zenaida macroura*	**Poss (S)**	S5B, SZN			
Northern Cardinal	*Cardinalis cardinalis*	**Prob (T)**	S5			
Northern Flicker	*Colaptes auratus*	**Poss (H)**	S5B, SZN			
Red-bellied Woodpecker	*Melanerpes carolinus*	**Poss (H)**	S4	HU		
Red-breasted Nuthatch	*Sitta canadensis*	**Poss (H)**	S5B, SZN	HU		
Red-eyed Vireo	*Vireo olivaceus*	**Prob (T)**	S5B, SZN			
Red-winged Blackbird	*Agelaius phoeniceus*	**Conf (FY)**	S5B, SZN			
Ring-billed Gull	*Larus delawarensis*	**Obs (X)**	S5B,S4N			
Rock Pigeon	*Columba livia*	**Obs (X)**	SNA			

Common Name	Binomial Name	Highest Breeding Evidence	SRank	Halton Rank	SARO Rank	COSEWIC Rank
Song Sparrow	*Melospiza melodia*	**Prob (T)**	S5B, SZN			
Tree Swallow	*Tachycineta bicolor*	**Poss (S)**	S5B, SZN			
Warbling Vireo	*Vireo gilvus*	**Prob (T)**	S5B, SZN			
Yellow Warbler	*Setophaga petechia*	**Prob (T)**	S5B, SZN			
Unidentified sp.	*Unidentified sp.*	**Obs (X)**	SNA			

Legend

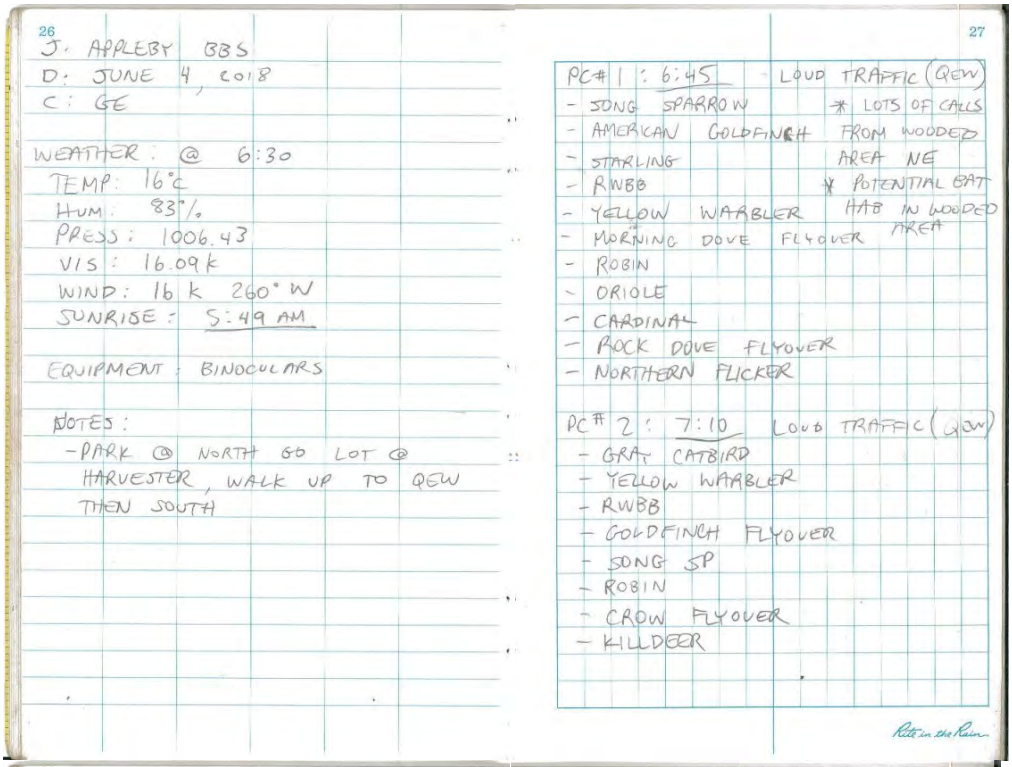
S-Ranks (provincial)
Provincial (or Subnational) ranks are used by the Natural Heritage Information Centre (NHIC) to set protection priorities for rare species and natural communities. These ranks are not legal designations. Provincial ranks are assigned in a manner similar to that described for global ranks, but consider only those factors within the political boundaries of Ontario.
S1 Critically Imperiled—Critically imperiled in the nation or state/province because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province.
S2 Imperiled—Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.
S3 Vulnerable—Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
S4 Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors.
S5 Secure—Common, widespread, and abundant in the nation or state/province.
S#S# Range Rank —A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).
SX Apparently extirpated from Ontario, with little likelihood of rediscovery. Typically not seen in the province for many decades, despite searches at known historic sites.
SE Exotic; not believed to be a native component of Ontario's flora.

COSEWIC (Committee on the Status of Endangered Wildlife in Canada)
(federal status from COSEWIC April 2008)
EXT Extinct - A species that no longer exists.
EXP Extirpated - A species no longer existing in the wild in Canada, but occurring elsewhere.
END Endangered - A species facing imminent extirpation or extinction.
THR Threatened - A species likely to become endangered if limiting factors are not reversed.
SC Special Concern (formerly vulnerable) - A species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.
NAR Not At Risk - A species that has been evaluated and found to be not at risk of extinction given the current circumstances.
DD Data Deficient (formerly Indeterminate) - Available information is insufficient to resolve a species' eligibility for assessment or to permit an assessment of the species' risk of extinction.
* - Species on Schedule 1 of Species At Risk Act (SARA)
SARO: OMNR (Ontario Ministry of Natural Resources)
(provincial status from MNR June 8 2011)
The provincial review process is implemented by the MNR's Committee on the Status of Species at Risk in Ontario (COSSARO).
EXT Extinct - A species that no longer exists anywhere.

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

Halton
Regional status Halton Natural Areas Inventory (Dwyer 2006)
R: Rare (observed in 5 or fewer site in the respective NAIs
U: Uncommon (observed in 6-15 sites in the respective NAIs)
C: Common in respective NAIs
H?: Requires further review
I: Introduced

Ontario Breeding Bird Atlas - Breeding Evidence Codes
OBSERVED
X Species observed in its breeding season (no breeding evidence).
POSSIBLE
H Species observed in its breeding season in suitable nesting habitat.
S Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season.
PROBABLE
P Pair observed in suitable nesting habitat in nesting season.
T Permanent territory presumed through registration of territorial behaviour (song, etc.) on at least two days, a week or more apart, at the same place.
D Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation.
V Visiting probable nest site
A Agitated behaviour or anxiety calls of an adult.
B Brood Patch on adult female or cloacal protuberance on adult male.
N Nest-building or excavation of nest hole.
CONFIRMED
DD Distraction display or injury feigning.
NU Used nest or egg shells found (occupied or laid within the period of the survey).
FY Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight.
AE Adult leaving or entering nest
FS Adult carrying fecal sac.



26
J. APPLEBY BBS
D: JUNE 4, 2018
C: GE

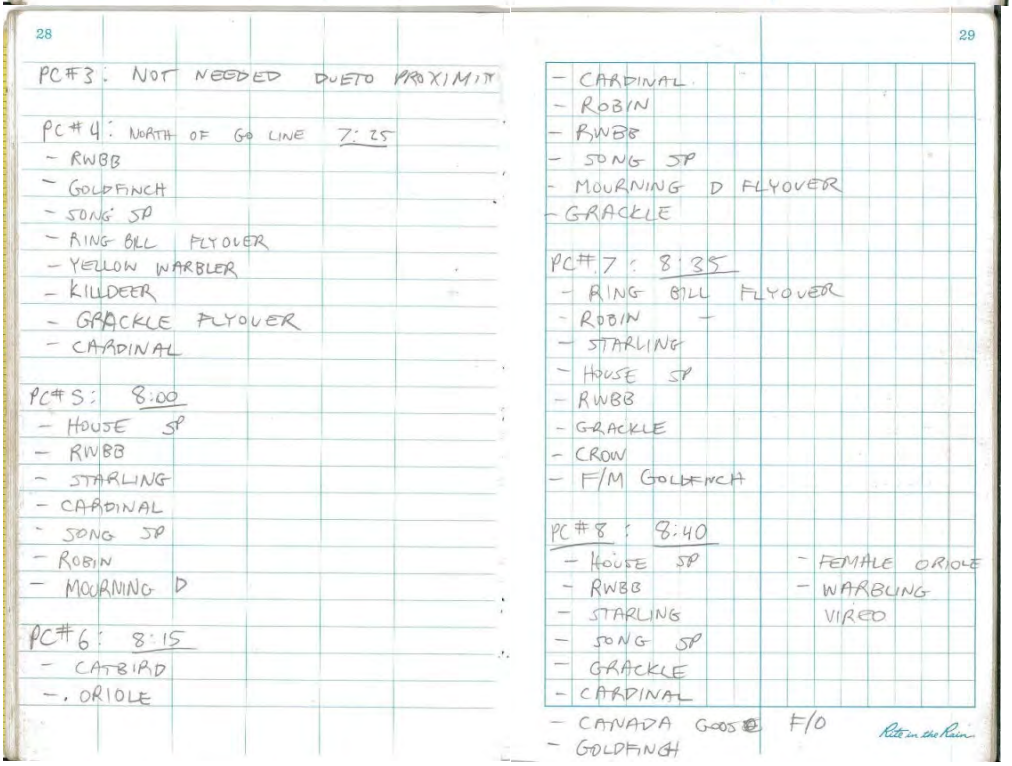
WEATHER: @ 6:30
TEMP: 16°C
HUM: 83%
PRESS: 1006.43
VIS: 16.09k
WIND: 16k 260° W
SUNRISE: 5:49 AM

EQUIPMENT: BINOCULARS

NOTES:
-PARK @ NORTH GO LOT @ HARVESTER, WALK UP TO QEW THEN SOUTH

27
PC#1: 6:45 - LOUD TRAFFIC (QEW)
- SONG SPARROW * LOTS OF CALLS
- AMERICAN GOLDFINCH FROM WOODED
- STARLING AREA NE
- RWBB * POTENTIAL BAT
- YELLOW WARBLER HAB IN WOODED
- MOURNING DOVE FLYOVER AREA
- ROBIN
- ORIOLE
- CARDINAL
- ROCK DOVE FLYOVER
- NORTHERN FLICKER

PC# 2: 7:10 LOUD TRAFFIC (QEW)
- GRAY CATBIRD
- YELLOW WARBLER
- RWBB
- GOLDFINCH FLYOVER
- SONG SP
- ROBIN
- CROW FLYOVER
- KILLDEER



28
PC#3: NOT NEEDED DUETO PROXIMIT

PC#4: NORTH OF GO LINE 7:25
- RWBB
- GOLDFINCH
- SONG SP
- RING BILL FLYOVER
- YELLOW WARBLER
- KILLDEER
- GRACKLE FLYOVER
- CARDINAL

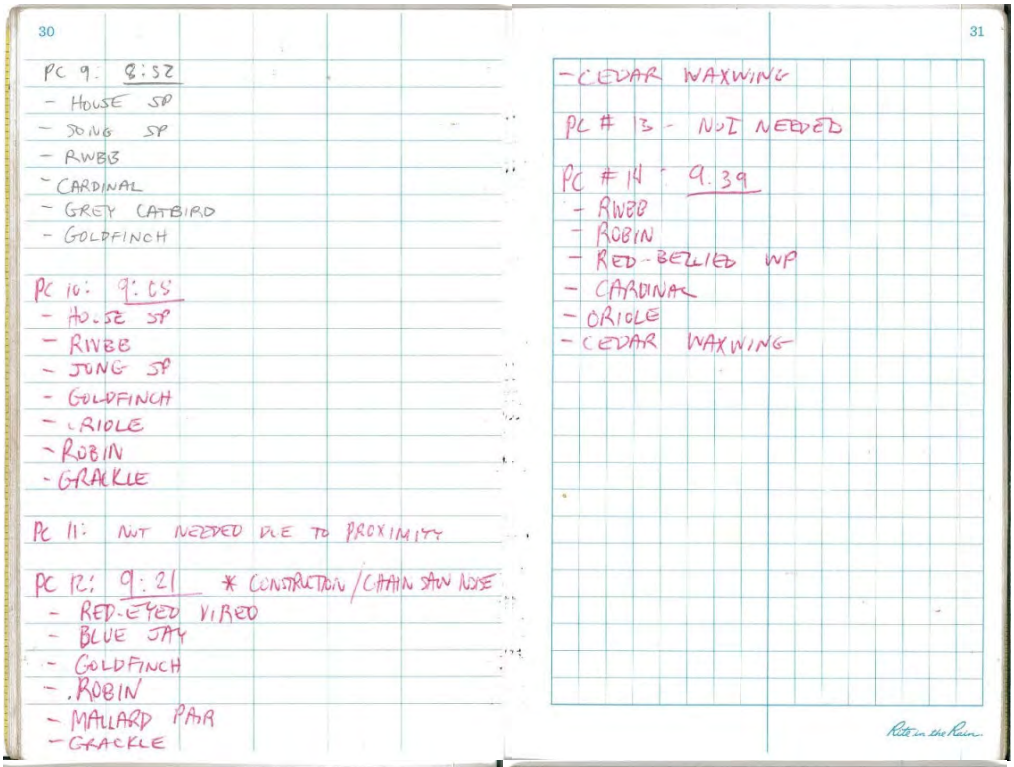
PC#5: 8:00
- HOUSE SP
- RWBB
- STARLING
- CARDINAL
- SONG SP
- ROBIN
- MOURNING D

PC#6: 8:15
- CATBIRD
- ORIOLE

29
- CARDINAL
- ROBIN
- RWBB
- SONG SP
- MOURNING D FLYOVER
- GRACKLE

PC#7: 8:35
- RING BILL FLYOVER
- ROBIN
- STARLING
- HOUSE SP
- RWBB
- GRACKLE
- CROW
- F/M GOLDFINCH

PC#8: 8:40
- HOUSE SP
- RWBB
- STARLING
- SONG SP
- GRACKLE
- CARDINAL
- CANADA GOOSE F/O
- GOLDFINCH
- FEMALE ORIOLE
- WARBLING VIREO



30

PC 9: 8:52
- HOUSE SP
- SONG SP
- RWBB
- CARDINAL
- GREY CATBIRD
- GOLDFINCH

PC 10: 9:05
- HOUSE SP
- RWBB
- JUNG SP
- GOLDFINCH
- ORIOLE
- ROBIN
- GRACKLE

PC 11: NOT NEEDED DUE TO PROXIMITY

PC 12: 9:21 * CONSTRUCTION / CHAIN SAW NOISE
- RED-EYED VIREO
- BLUE JAY
- GOLDFINCH
- ROBIN
- MALLARD PAIR
- GRACKLE

31

- CEDAR WAXWING

PC # 13 - NOT NEEDED

PC # 14 9.39
- RWBB
- ROBIN
- RED-BELLIED WP
- CARDINAL
- ORIOLE
- CEDAR WAXWING

35

J: APPLEBY BBS 2/2
D: JUNE 26, 2018
C: GE

WEATHER @ START: 6:30
TEMP: 13°C
HUM: 67%
PRESS: 1023.71 mbar
VIS: 16.09k
WIND: 8kph 340° WNW
SUNRISE: 5:39

EQUIPMENT: BINOCULARS

PC # 1: 6:50 LOUD HIGHWAY NOISE
- GOLDFINCH
- YELLOW WARBLER
- CARDINAL
- SONG SPARROW
- RWBB
- CANADA GOOSE F/O
- RING BILL F/O

36

PC # 2 7:05 LOUD HIGHWAY NOISE
- GRAY CATBIRD - VERY VOCAL
- GOLDFINCH
- SONG SP
- BCCH
- CARDINAL
- RWBB
- ROBIN

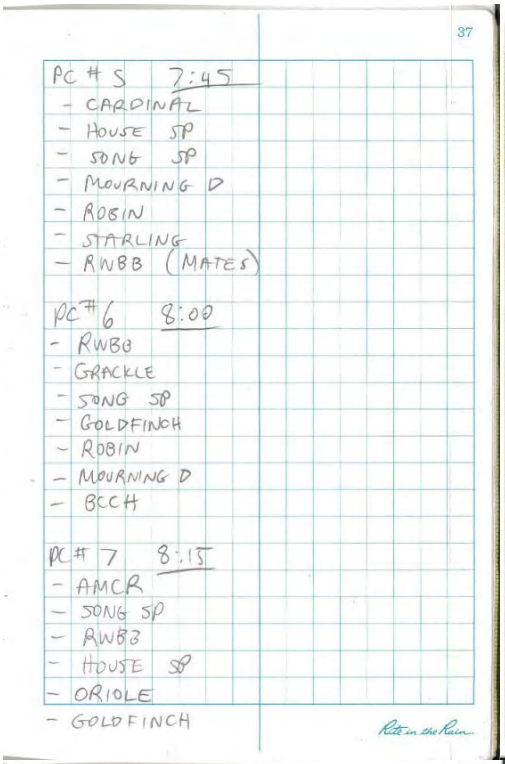
HARVESTER CROSSING - NO NESTS

GO PARKING CROSSING - NO NESTS

PC # 4 7:20
- RWBB
- GRACKLE
- SONG SP
- ROBIN F/O
- GOLDFINCH

GO LINE CROSSING - NO NESTS

FAIRVIEW CROSSING - NO NESTS

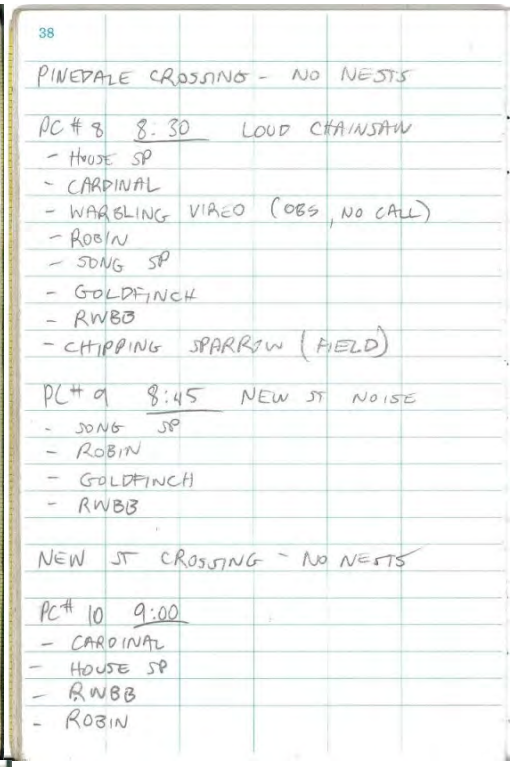


37

PC # 5 7:45
- CARDINAL
- HOUSE SP
- SONG SP
- MOURNING D
- ROBIN
- STARLING
- RWBB (MATES)

PC # 6 8:00
- RWBB
- GRACKLE
- SONG SP
- GOLDFINCH
- ROBIN
- MOURNING D
- BCCH

PC # 7 8:15
- AMCR
- SONG SP
- RWBB
- HOUSE SP
- ORIOLE
- GOLDFINCH



38

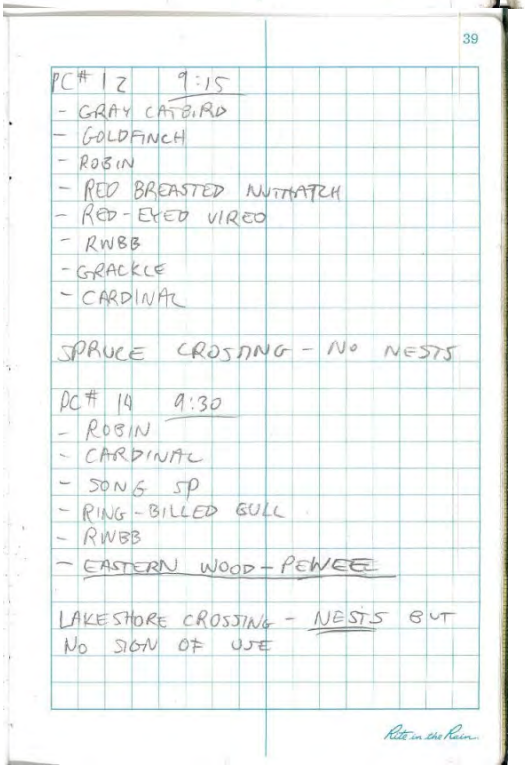
PINEDALE CROSSING - NO NESTS

PC # 8 8:30 LOUD CHAINSAW
- HOUSE SP
- CARDINAL
- WARBLING VIREO (OBS, NO CALL)
- ROBIN
- SONG SP
- GOLDFINCH
- RWBB
- CHIPPING SPARROW (FIELD)

PC # 9 8:45 NEW ST NOISE
- SONG SP
- ROBIN
- GOLDFINCH
- RWBB

NEW ST CROSSING - NO NESTS

PC # 10 9:00
- CARDINAL
- HOUSE SP
- RWBB
- ROBIN



39

PC # 12 9:15
- GRAY CATBIRD
- GOLDFINCH
- ROBIN
- RED BREASTED NUTHATCH
- RED-EYED VIREO
- RWBB
- GRACKLE
- CARDINAL

SPRUCE CROSSING - NO NESTS

PC # 14 9:30
- ROBIN
- CARDINAL
- SONG SP
- RING-BILLED GULL
- RWBB
- EASTERN WOOD-PEWEE

LAKESHORE CROSSING - NESTS BUT NO SIGN OF USE

Appendix C6 –

Ontario Stream Assessment Protocol (OSAP)

Organization(s): Aquafor Beech Limited
Project(s): Appleby Creek Erosion EA
Date Report Printed (y/m/d): 2019/06/25

Channel Structure

Stream Name: **Appleby Creek**	Stream Code: **APB**	Site Code: **APB-1**	Year: **2019**	Sample: **1**
Average Wetted Width: 10.19 m	Minimum Width: 8 m	Site Length: 41.7 m	Number of Transects: 10	Transect Spacing: 4.63 m
Usable Area: 424.92 m²				

Physical Habitat Summary Statistics

Depth (mm)	Hydraulic Head (mm)				
	0 - 2	3 - 7	8 - 15	> 15	Total
0 - 100	5	0	0	0	5
101 - 600	63.3	10	0	0	73.3
601 - 1000	21.7	0	0	0	21.7
> 1000	0	0	0	0	0
Total	90	10	0	0	100

Islands: 0 (0 %)

Number of points unclassified: 0

Percent Unembedded Cover Distribution

Depth (mm)	Hydraulic Head (mm)				
	0 - 2	3 - 7	8 - 15	> 15	Total
0 - 100	3.3	0	0	0	3.3
101 - 600	26.7	6.7	0	0	33.3
601 - 1000	13.3	0	0	0	13.3
> 1000	0	0	0	0	0
Total	43.3	6.7	0	0	50

Unmeasurable:

Percent Embedded Cover Distribution

Depth (mm)	Hydraulic Head (mm)				
	0 - 2	3 - 7	8 - 15	> 15	Total
0 - 100	0	0	0	0	0
101 - 600	5	1.7	0	0	6.7
601 - 1000	1.7	0	0	0	1.7
> 1000	0	0	0	0	0
Total	6.7	1.7	0	0	8.3

Percent Unembedded Cover Types

Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other
3.3	13.3	30	5	0	0

Note that more than one cover type can be present at an observation point.

Percent Embedded Cover Types

Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other
0	3.3	5	0	0	0

Note that more than one cover type can be present at an observation point.

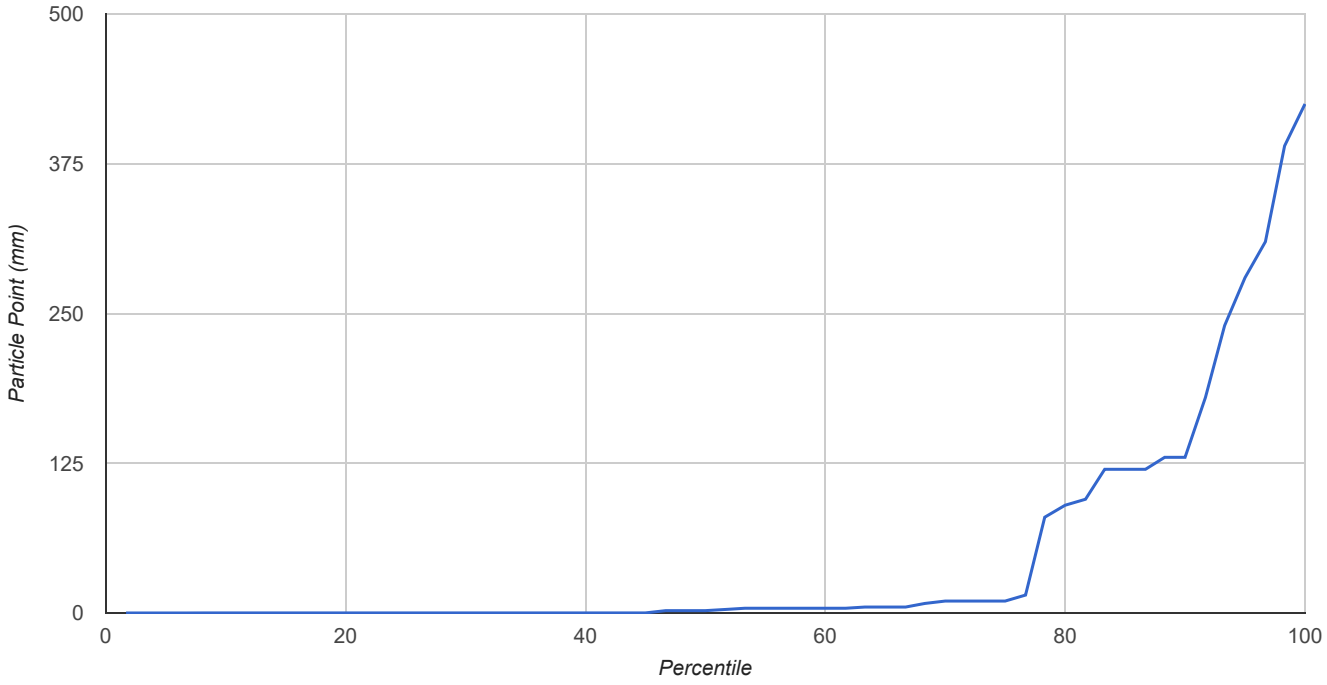
Percent Vegetation Types

Filamentous Algae (FL)	Non-Filamentous (AL)	Moss (SS)	Macrophytes (MC)	Watercress (WC)	Grass (GR)	Terrestrial Plants (TR)
0	0	0	10	0	0	3.3

Note that more than one vegetation type can be present at an observation point.

Substrate: d15 = 0.1, d50 = 2.5, d85 = 120

Substrate


500
375
250
125
0
Particle Point (mm)
0
20
40
60
80
100
Percentile

Organization(s): Aquafor Beech Limited
Project(s): Appleby Creek Erosion EA
Date Report Printed (y/m/d): 2019/06/25

Channel Structure

Stream Name: **Appleby Creek**	Stream Code: **APB**	Site Code: **APB-2**	Year: **2019**	Sample: **1**
Average Wetted Width: 6.38 m	Minimum Width: 6 m	Site Length: 49 m	Number of Transects: 10	Transect Spacing: 5.44 m
Usable Area: 312.62 m²				

Physical Habitat Summary Statistics

Depth (mm)	Hydraulic Head (mm)				
	0 - 2	3 - 7	8 - 15	> 15	Total
0 - 100	8.2	4.9	3.3	8.2	24.6
101 - 600	27.9	6.6	6.6	31.1	72.1
601 - 1000	1.6	0	0	0	1.6
> 1000	0	0	0	0	0
Total	37.7	11.5	9.8	39.3	98.4

Islands: 1 (1.6 %)

Number of points unclassified: 0

Percent Unembedded Cover Distribution

Depth (mm)	Hydraulic Head (mm)				
	0 - 2	3 - 7	8 - 15	> 15	Total
0 - 100	3.3	3.3	3.3	6.7	16.7
101 - 600	11.7	1.7	3.3	13.3	30
601 - 1000	0	0	0	0	0
> 1000	0	0	0	0	0
Total	15	5	6.7	20	46.7

Unmeasurable:

Percent Embedded Cover Distribution

Depth (mm)	Hydraulic Head (mm)				
	0 - 2	3 - 7	8 - 15	> 15	Total
0 - 100	0	0	0	1.7	1.7
101 - 600	3.3	3.3	3.3	8.3	18.3
601 - 1000	1.7	0	0	0	1.7
> 1000	0	0	0	0	0
Total	5	3.3	3.3	10	21.7

Percent Unembedded Cover Types

Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other
1.7	1.7	45	0	0	0

Note that more than one cover type can be present at an observation point.

Percent Embedded Cover Types

Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other
0	3.3	18.3	0	0	0

Note that more than one cover type can be present at an observation point.

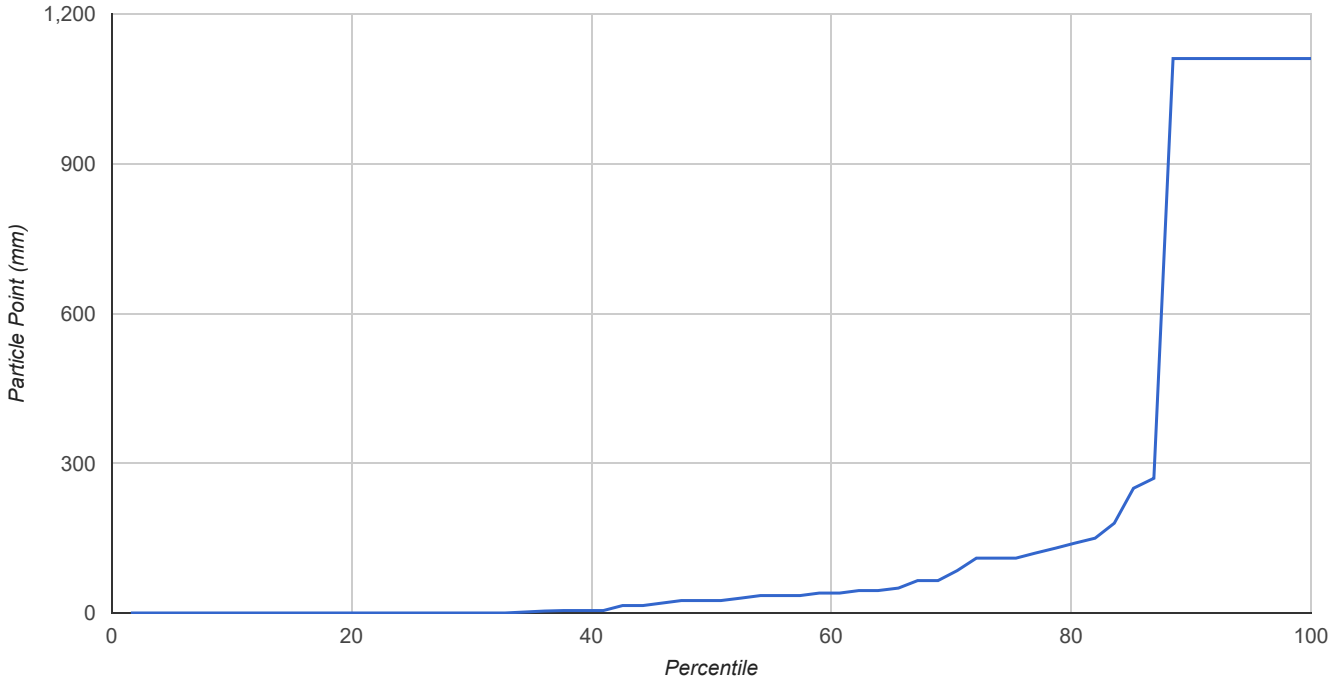
Percent Vegetation Types

Filamentous Algae (FL)	Non-Filamentous (AL)	Moss (SS)	Macrophytes (MC)	Watercress (WC)	Grass (GR)	Terrestrial Plants (TR)
0	0	0	3.3	0	0	1.7

Note that more than one vegetation type can be present at an observation point.

Substrate: d15 = 0.1, d50 = 25, d85 = 239.5

Substrate


1,200
900
600
300
0
Particle Point (mm)
0
20
40
60
80
100
Percentile

Organization(s): Aquafor Beech Limited
Project(s): Appleby Creek Erosion EA
Date Report Printed (y/m/d): 2019/06/25

Channel Structure

Stream Name: **Appleby Creek**	Stream Code: **APB**	Site Code: **APB-3**	Year: **2019**	Sample: **1**
Average Wetted Width: 7.26 m	Minimum Width: 5 m	Site Length: 54.3 m	Number of Transects: 10	Transect Spacing: 6.03 m
Usable Area: 394.04 m²				

Physical Habitat Summary Statistics

Depth (mm)	Hydraulic Head (mm)				
	0 - 2	3 - 7	8 - 15	> 15	Total
0 - 100	8.3	13.3	1.7	48.3	71.7
101 - 600	0	5	0	21.7	26.7
601 - 1000	0	0	0	0	0
> 1000	0	0	0	0	0
Total	8.3	18.3	1.7	70	98.3

Islands: 1 (1.7 %)

Number of points unclassified: 0

Percent Unembedded Cover Distribution

Depth (mm)	Hydraulic Head (mm)				
	0 - 2	3 - 7	8 - 15	> 15	Total
0 - 100	0	1.7	0	0	1.7
101 - 600	0	3.4	0	0	3.4
601 - 1000	0	0	0	0	0
> 1000	0	0	0	0	0
Total	0	5.1	0	0	5.1

Unmeasurable:

Percent Embedded Cover Distribution

Depth (mm)	Hydraulic Head (mm)				
	0 - 2	3 - 7	8 - 15	> 15	Total
0 - 100	0	0	0	0	0
101 - 600	0	0	0	0	0
601 - 1000	0	0	0	0	0
> 1000	0	0	0	0	0
Total	0	0	0	0	0

Percent Unembedded Cover Types

Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other
0	1.7	3.4	0	0	0

Note that more than one cover type can be present at an observation point.

Percent Embedded Cover Types

Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other
0	0	0	0	0	0

Note that more than one cover type can be present at an observation point.

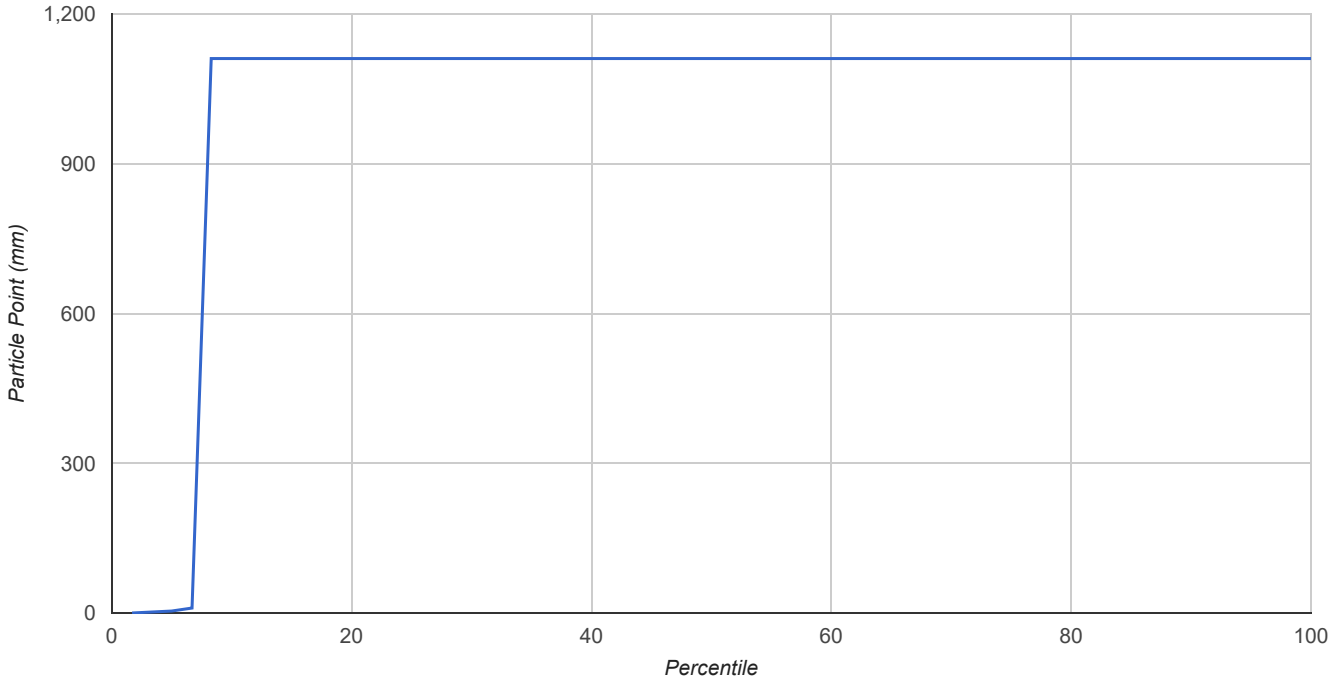
Percent Vegetation Types

Filamentous Algae (FL)	Non-Filamentous (AL)	Moss (SS)	Macrophytes (MC)	Watercress (WC)	Grass (GR)	Terrestrial Plants (TR)
15.3	0	0	0	0	0	0

Note that more than one vegetation type can be present at an observation point.

Substrate: d15 = 1111, d50 = 1111, d85 = 1111

Substrate


1,200
900
600
300
0
Particle Point (mm)
0
20
40
60
80
100
Percentile

Organization(s): Aquafor Beech Limited
Project(s): Appleby Creek Erosion EA
Date Report Printed (y/m/d): 2019/06/25

Channel Structure

Stream Name: **Appleby Creek**	Stream Code: **APB**	Site Code: **APB-4**	Year: **2019**	Sample: **1**
Average Wetted Width: 4.14 m	Minimum Width: 3 m	Site Length: 49.8 m	Number of Transects: 10	Transect Spacing: 5.53 m
Usable Area: 206.26 m²				

Physical Habitat Summary Statistics

Depth (mm)	Hydraulic Head (mm)				
	0 - 2	3 - 7	8 - 15	> 15	Total
0 - 100	9.7	4.8	0	6.5	21
101 - 600	38.7	27.4	0	12.9	79
601 - 1000	0	0	0	0	0
> 1000	0	0	0	0	0
Total	48.4	32.3	0	19.4	100

Islands: 0 (0 %)

Number of points unclassified: 0

Percent Unembedded Cover Distribution

Depth (mm)	Hydraulic Head (mm)				
	0 - 2	3 - 7	8 - 15	> 15	Total
0 - 100	4.8	1.6	0	1.6	8.1
101 - 600	24.2	14.5	0	8.1	46.8
601 - 1000	0	0	0	0	0
> 1000	0	0	0	0	0
Total	29	16.1	0	9.7	54.8

Unmeasurable:

Percent Embedded Cover Distribution

Depth (mm)	Hydraulic Head (mm)				
	0 - 2	3 - 7	8 - 15	> 15	Total
0 - 100	1.6	1.6	0	1.6	4.8
101 - 600	3.2	1.6	0	3.2	8.1
601 - 1000	0	0	0	0	0
> 1000	0	0	0	0	0
Total	4.8	3.2	0	4.8	12.9

Percent Unembedded Cover Types

Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other
1.6	16.1	32.3	8.1	3.2	0

Note that more than one cover type can be present at an observation point.

Percent Embedded Cover Types

Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other
0	4.8	8.1	0	0	0

Note that more than one cover type can be present at an observation point.

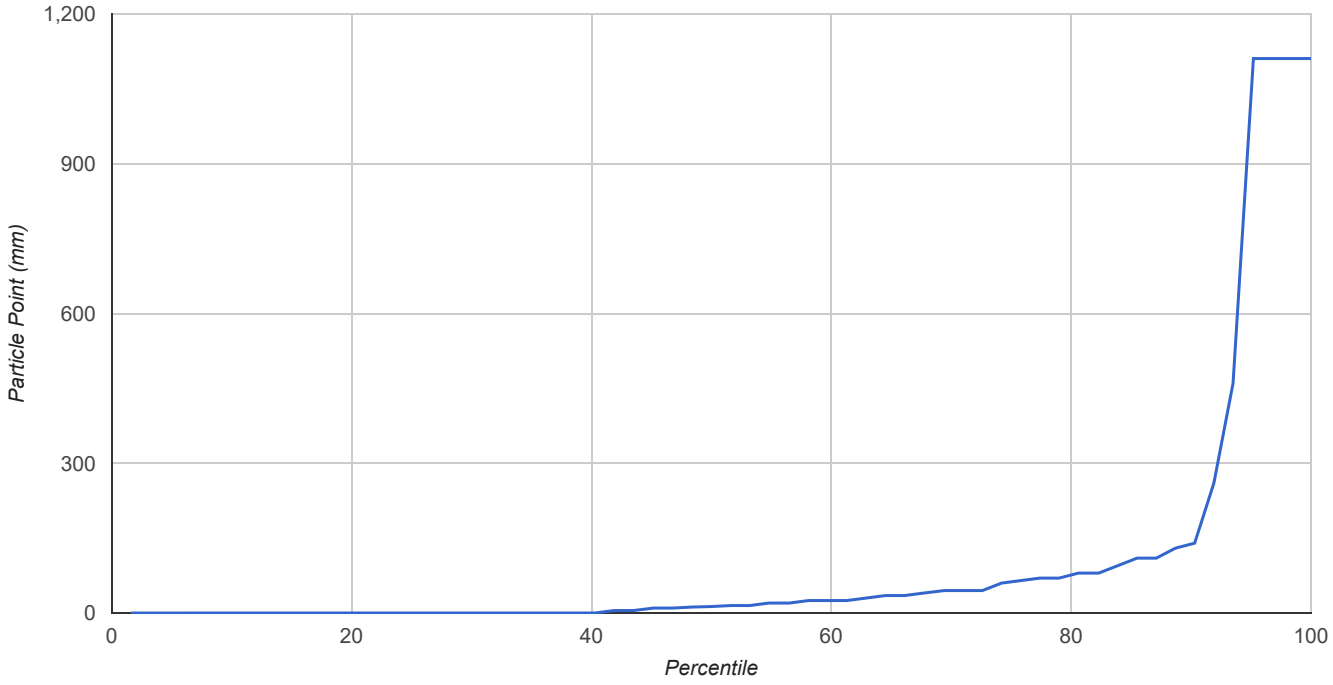
Percent Vegetation Types

Filamentous Algae (FL)	Non-Filamentous (AL)	Moss (SS)	Macrophytes (MC)	Watercress (WC)	Grass (GR)	Terrestrial Plants (TR)
14.5	0	0	16.1	0	0	0

Note that more than one vegetation type can be present at an observation point.

Substrate: d15 = 0.1, d50 = 13.5, d85 = 105.5

Substrate


1,200
900
600
300
0
Particle Point (mm)
0
20
40
60
80
100
Percentile

Organization(s): Aquafor Beech Limited
Project(s): Appleby Creek Erosion EA
Date Report Printed (y/m/d): 2019/06/25

Channel Structure

Stream Name: **Appleby Creek**	Stream Code: **APB**	Site Code: **APB-6**	Year: **2019**	Sample: **1**
Average Wetted Width: 4.98 m	Minimum Width: 3.7 m	Site Length: 46.2 m	Number of Transects: 10	Transect Spacing: 5.13 m
Usable Area: 230.08 m²				

Physical Habitat Summary Statistics

Depth (mm)	Hydraulic Head (mm)				
	0 - 2	3 - 7	8 - 15	> 15	Total
0 - 100	20	6.7	6.7	18.3	51.7
101 - 600	36.7	3.3	5	3.3	48.3
601 - 1000	0	0	0	0	0
> 1000	0	0	0	0	0
Total	56.7	10	11.7	21.7	100

Islands: 0 (0 %)

Number of points unclassified: 0

Percent Unembedded Cover Distribution

Depth (mm)	Hydraulic Head (mm)				
	0 - 2	3 - 7	8 - 15	> 15	Total
0 - 100	3.3	0	0	0	3.3
101 - 600	20	0	0	0	20
601 - 1000	0	0	0	0	0
> 1000	0	0	0	0	0
Total	23.3	0	0	0	23.3

Unmeasurable:

Percent Embedded Cover Distribution

Depth (mm)	Hydraulic Head (mm)				
	0 - 2	3 - 7	8 - 15	> 15	Total
0 - 100	0	0	0	0	0
101 - 600	1.7	0	0	0	1.7
601 - 1000	0	0	0	0	0
> 1000	0	0	0	0	0
Total	1.7	0	0	0	1.7

Percent Unembedded Cover Types

Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other
0	8.3	13.3	8.3	3.3	0

Note that more than one cover type can be present at an observation point.

Percent Embedded Cover Types

Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other
0	1.7	0	0	0	0

Note that more than one cover type can be present at an observation point.

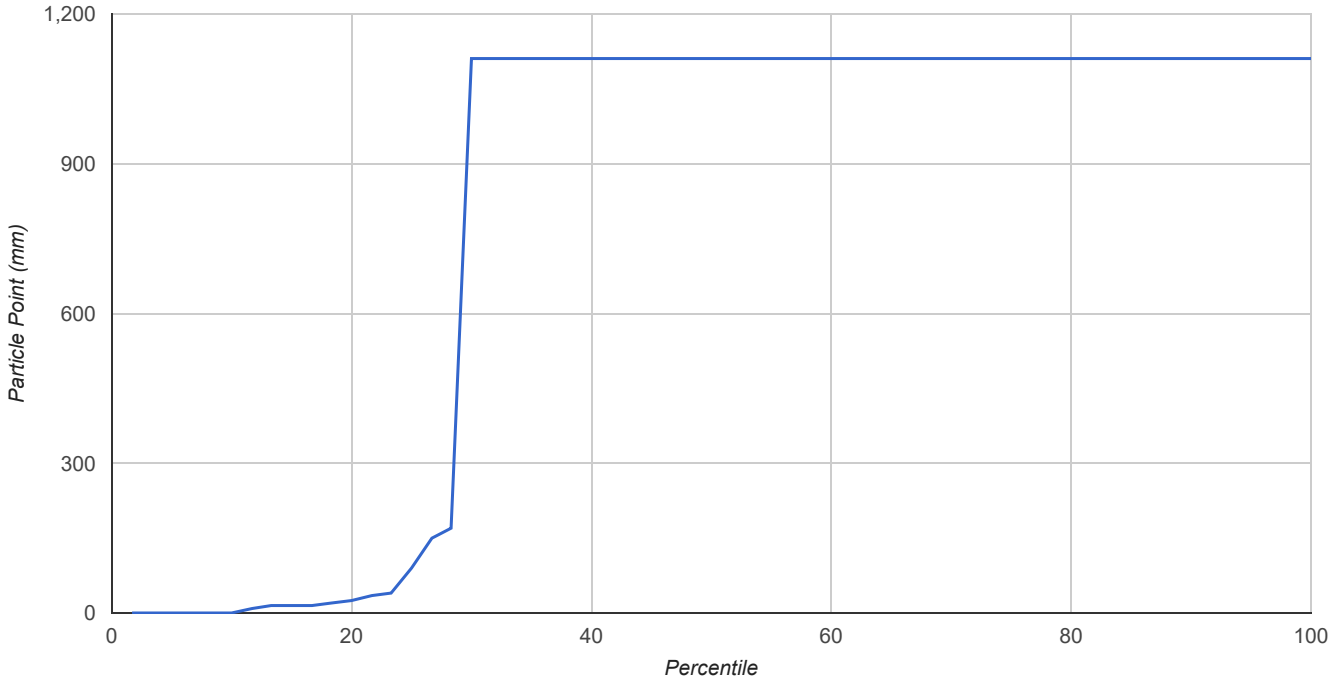
Percent Vegetation Types

Filamentous Algae (FL)	Non-Filamentous (AL)	Moss (SS)	Macrophytes (MC)	Watercress (WC)	Grass (GR)	Terrestrial Plants (TR)
43.3	0	0	11.7	0	0	0

Note that more than one vegetation type can be present at an observation point.

Substrate: d15 = 15, d50 = 1111, d85 = 1111

Substrate


1,200
900
600
300
0
Particle Point (mm)
0
20
40
60
80
100
Percentile

Organization(s): Aquafor Beech Limited
Project(s): Appleby Creek Erosion EA
Date Report Printed (y/m/d): 2019/06/25

Channel Structure

Stream Name: **Appleby Creek**	Stream Code: **APB**	Site Code: **APB-7**	Year: **2019**	Sample: **1**
Average Wetted Width: 2.22 m	Minimum Width: 1.4 m	Site Length: 40.4 m	Number of Transects: 15	Transect Spacing: 2.88 m
Usable Area: 89.69 m²				

Physical Habitat Summary Statistics

Depth (mm)	Hydraulic Head (mm)				
	0 - 2	3 - 7	8 - 15	> 15	Total
0 - 100	45.7	4.3	0	8.7	58.7
101 - 600	32.6	4.3	2.2	2.2	41.3
601 - 1000	0	0	0	0	0
> 1000	0	0	0	0	0
Total	78.3	8.7	2.2	10.9	100

Islands: 0 (0 %)

Number of points unclassified: 0

Percent Unembedded Cover Distribution

Depth (mm)	Hydraulic Head (mm)				
	0 - 2	3 - 7	8 - 15	> 15	Total
0 - 100	26.1	4.3	0	4.3	34.8
101 - 600	10.9	4.3	2.2	2.2	19.6
601 - 1000	0	0	0	0	0
> 1000	0	0	0	0	0
Total	37	8.7	2.2	6.5	54.3

Unmeasurable:

Percent Embedded Cover Distribution

Depth (mm)	Hydraulic Head (mm)				
	0 - 2	3 - 7	8 - 15	> 15	Total
0 - 100	4.3	0	0	2.2	6.5
101 - 600	4.3	0	0	0	4.3
601 - 1000	0	0	0	0	0
> 1000	0	0	0	0	0
Total	8.7	0	0	2.2	10.9

Percent Unembedded Cover Types

Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other
0	34.8	10.9	15.2	2.2	0

Note that more than one cover type can be present at an observation point.

Percent Embedded Cover Types

Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other
0	8.7	2.2	2.2	0	0

Note that more than one cover type can be present at an observation point.

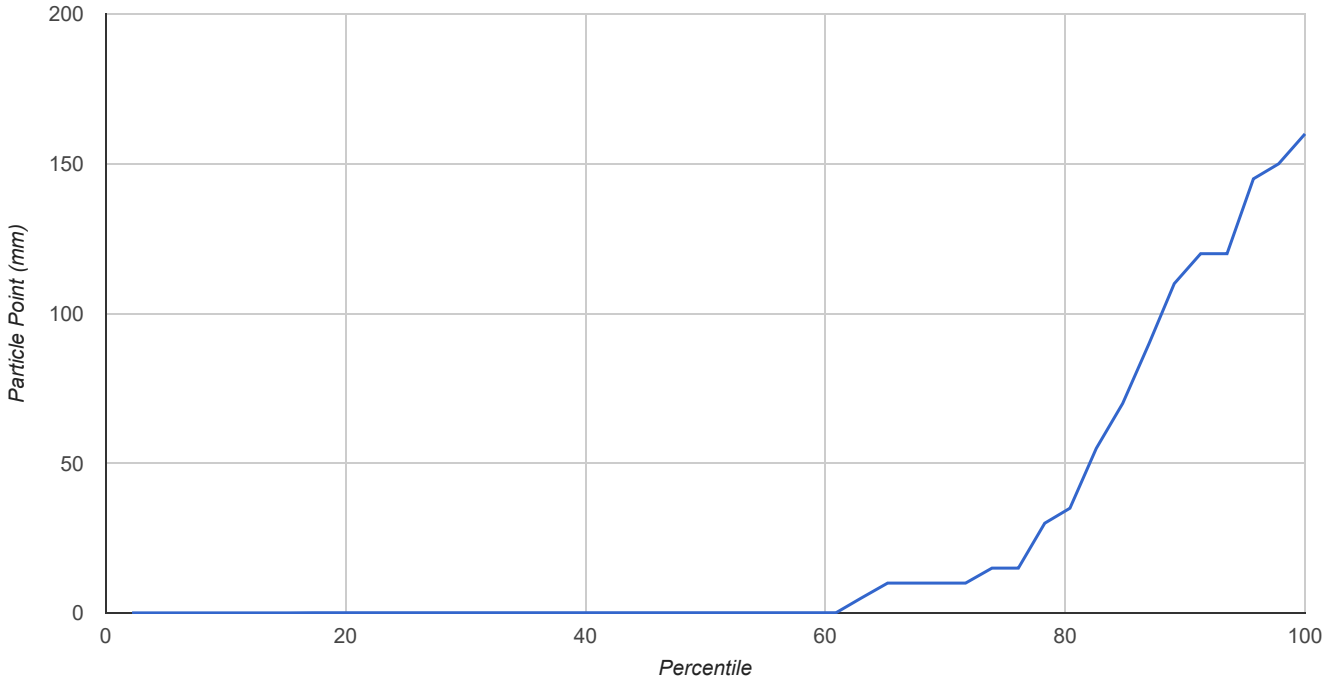
Percent Vegetation Types

Filamentous Algae (FL)	Non-Filamentous (AL)	Moss (SS)	Macrophytes (MC)	Watercress (WC)	Grass (GR)	Terrestrial Plants (TR)
47.8	0	0	28.3	0	0	0

Note that more than one vegetation type can be present at an observation point.

Substrate: d15 = 0.05, d50 = 0.1, d85 = 72

Substrate



Site Identification

Stream Name: APPLEBY

Stream Code: APB

Date (yyyy-mm-dd): 2019-06-06

Site Code: APB-1

Alternate Site Code:

Sample: 01

Site Length (m): 11.7

*** Record using NAD83 datum

	Zone	Easting	Northing
Uncorr. UTM	17	601935.7	4801723.7
Corr. UTM	1	.	.

OR → Lat. / Long. (DD MM SS.sss)

Source of Uncorrected UTM Coord.: GPS/DGPS ☐ GIS ☐ OBM ☐ Other

Source of CorrectedUTM Coordinates: FWIS ☐ Ortho-photos ☐ GIS ☐ Other

Name of Layer Used for Correction

Access Route

SOUTH ON APPLEBY LINE, EASTON LAKESHORE ROAD, LEFT INTO SMALL PARK, PARK

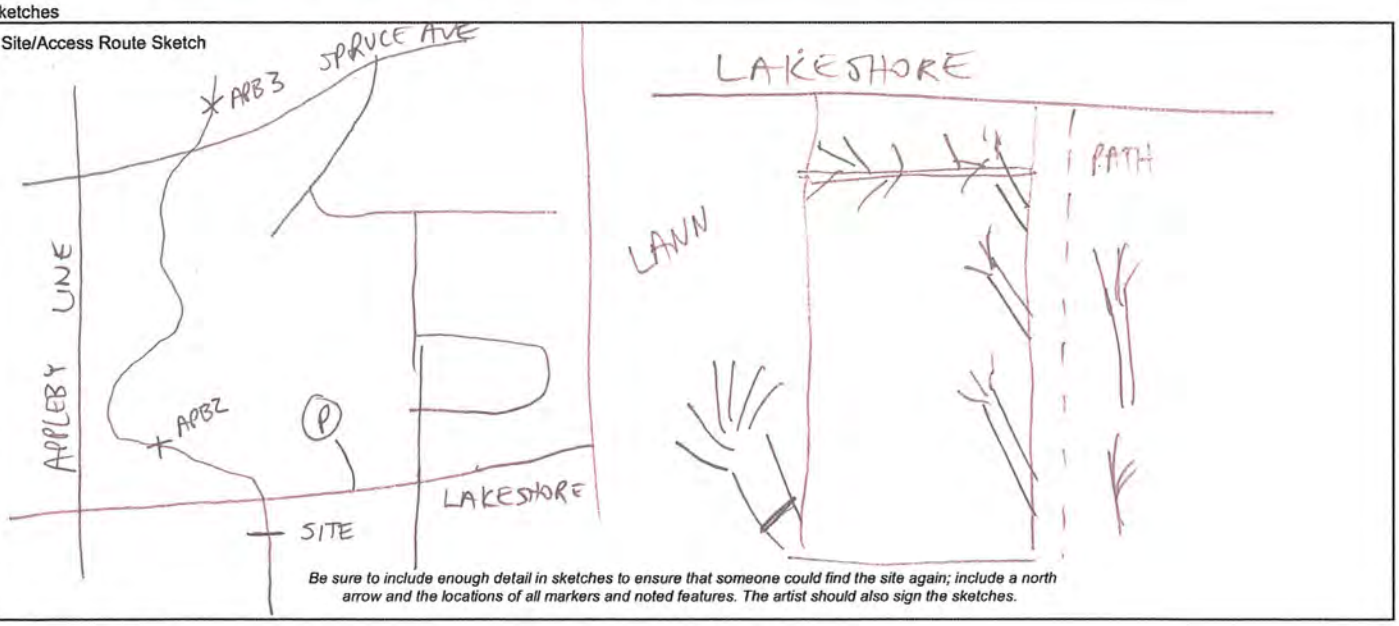
Site Description

SITE IS IMMEDIATELY D/S OF LAKESHORE RD

☐ **Site Was Unsampleable** - *add reason on reverse*

Sketches

Site/Access Route Sketch



Be sure to include enough detail in sketches to ensure that someone could find the site again; include a north arrow and the locations of all markers and noted features. The artist should also sign the sketches.

Photo No. | Photo Name | Photo Description

Comments

Crew Leader (init. & last name): GEBY

Crew	Recorder	Entered	Verified	Corrected
MB				

29
12.7
41.7

Site Marker Details

SITE MARKER DESCRIPTION

Upstream Marker (measure from stake to site) — Bearing (D): | | | | Distance (m): | | | . | | | Photo No. — Upstream: | | | Downstream: | | | Photo Name: | | | | | | | | | | | | | | |

Upstream Description: FLAGGED MAPLE RB (TAG NO. 796)

Downstream Marker (measure from stake to site) — Bearing (D): | | | 0 | Distance (m): | | 0 . 0 | Photo No. — Upstream: | | | Downstream: | | | Photo Name: | | | | | | | | | | | | | | |

Downstream Description: FLAGGED WILLOW ON L/B

Site is Unsampleable

- ☐ Stream dry
- ☐ Insufficient water to sample effectively
- ☐ Stream is no longer present at location (tiled or relocated, etc)
- ☐ Naturally unwadeable (i.e. > 1.5 m deep)
- ☐ Unwadeable due to ponding from a permanent barrier — What is the permanent barrier?
- ☐ Unwadeable due to ponding from temporary barrier (eg. beaver dam) — What is the temporary barrier?
- ☐ Landowner could not be contacted
- ☐ Landowner refused access
- ☐ Inaccessible for safety reasons *(add details in comments below)*
- ☐ Stream is wadeable but not appropriate for the intended sampling

Modules to have been used (e.g. S2.M1, S3.M1): | | | | | |

Comments

Site Features

Mandatory Fields In Grey
Must be filled out for processing

Stream Code: APB

Site Code: APB-1

Sample: 01

Date (mm-dd): 2019 06-06

Stream Name: APPLEBY

For each landuse, check box that applies. Be sure to include comments explaining the particulars, including names and numbers of contacts

Site Features	Ongoing & Active	Historical Evidence	No Evidence but Reported	No Evidence	Unknown	Comments
Potential Point or Non-point Source Contaminant Sources	☒	☐	☐	☐	☐	ROAD, PUMPING STN U/S
Major Nutrient Sources Upstream	☒	☐	☐	☐	☐	"
Channel Hardening or Straightening	☐	☐	☐	☒	☐	LAWN CUTTING
Adjacent Landuses that Destabilize Banks	☒	☐	☐	☐	☐	
Sediment Loading or Deprivation	☐	☐	☐	☒	☐	
Instream Habitat Modifications	☐	☐	☐	☒	☐	
Barriers and/or Dams in the Vicinity of the Site	☐	☐	☐	☒	☐	
High Fishing Pressure	☐	☐	☐	☒	☐	
Log Jam Deflectors	☒	☐	☐	☐	☐	MAJOR
Springs or Seeps at the Site	☐	☐	☐	☒	☐	
Impervious Substrate Limiting Burrowing Depth of Fish	☐	☐	☐	☒	☐	
Fish Stocked Near Sample Site	☐	☐	☐	☒	☐	
Other Activities that Could Influence Biota or Habitat	☐	☐	☐	☒	☐	
Intensive Logging Activitties within the Riparian Zone	☐	☐	☐	☒	☐	

Sources of Information
Visual Immediate ☒ Visual Extended ☐ Interview ☐ Maps & Photos ☐

Temperatures
Time (24hr): 9:15
Air Temp (°C):
Water Temp (°C):
Max Air Temp (°C):
Max. Water Temp (°C):
Source of Max. Air Temp:

Riparian Vegetation Community
Only check one box for each bank and zone.

Riparian Zone	Left Bank: None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-lands	Right Bank: None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-lands
1.5-10m	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☐
10-30m	☐	☒	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐
30-100m	☐	☒	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐

Comments:

Crew Leader (initial & last name): G EBT

Crew Initials	Recorder	Ent/Scanned	Verified	Corrected
MB				

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Date (mm-dd): 2019-06-06

Stream Code: APB

Site Code: APB-1

Sample: 01

Transect No.: 01 of 10

Bearing (D): 310

Min. Width (m): 6.0

No. of Transects: 10

Points per Transect: 6

Site Length (m): 41.7

Transect Spacing (m): 4.63

Active Channel Width (m): 9.6

Point Spacing (m): 1.6

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring	Cover: Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	Aquatic Vegetation Types Present: FL	AL	SS	MC	WC	GR	TR
1	0.80	170	0	2	5	☐	2	☒	☐	☐	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐
2	2.40	775	0	8.1	4	☐	2	☐	☐	☐	☒	☐	☐	☐	☐	☐	☒	☐	☐	☐
3	4.00	940	0	2	350	☐	2	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	5.60	760	0	0.1	530	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	7.20	880	0	4	370	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	8.80	495	0	5	490	☐	2	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	Height: > 2 m	Substrate Diameters: 0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	☐	170	100	20	0	0	12
		0.10	0.10	0.10	0.10		
Right Bank	☐	765	670	60	0	300	0
		0.05	0.05	0.05	0.05		

Dominant Vegetation Type
(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☐	☐	☒	☐
Right Bank	☐	☐	☐	☐	☐	☒	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name)

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Stream Code: APB

Site Code: APB-1

Sample: 61 | Transect No.: C2 of | Bearing (D): 300

Min. Width (m): 9.0 | Site Length (m): 41.7 | Active Channel Width (m): 9.4

No. of Transects: 10 | Transect Spacing (m): 4.63 | Point Spacing (m): 1.57

Points per Transect: 6

Date (mm-dd): 2019-06-06

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Depth (mm) (Measure depth & hydraulic head to nearest 5 mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Particle Sizes (mm): Max. in Ring
1	0.79	65	0	0.05	6.10
2	2.49	670	0	4	140
3	4.06	795	0	6.10	80
4	5.63	920	2	310	310
5	7.20	620	0	425	425
6	8.77	350	0	0.10	180

Point No.	Cover: Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	Aquatic Vegetation Types Present: FL	AL	SS	MC	WC	GR	TR
1		2				X									X
2		2		X								X			
3		0													
4		1			X										
5		2		X											
6		2		X											

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	75	50	20	0	0	15
	Substrate Diameters	0.05	0.05	0.05	0.05		
Right Bank	Height ☐	790	240	50	0	780	13
	Substrate Diameters	0.10	90	0.05	0.05		

Dominant Vegetation Type
(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-land
Left Bank	X						
Right Bank						X	

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments:

Crew Leader (initial & last name): GEBY

Crew	Recorder	Ent/Scanned	Verified	Corrected
MB	MB			

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Stream Code: APB

Site Code: APB-1

Sample: 01

Transect No.: 3 of 10

Bearing (D): 290

Min. Width (m): 9.0

Site Length (m): 41.7

Active Channel Width (m): 6.7

No. of Transects: 10

Transect Spacing (m): 4.63

Point Spacing (m): 1.45

Points per Transect: 6

Date (mm-dd): 2019-06-06

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No. Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring
1	0.73	515	0	0.05	0.110
2	2.18	650	0	4	90
3	3.63	765	0	3	60
4	5.08	770	0	300	390
5	6.53	755	0	130	330
6	7.98	415	0	8	380

Point No.	Cover: Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	Aquatic Vegetation Types Present: FL	AL	SS	MC	WC	GR	TR
1	☐	2	☐	☐	☐	☒	☐	☐	☐	☐	☐	☒	☐	☐	☐
2	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	☐	2	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	Height: > 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	☐	90	60	45	0	0	12
	Substrate Diameters	0.05	0.05	0.05	0.05		
Right Bank	☐	800	460	390	0	280	10
	Substrate Diameters	400	140	0.05	0.05		

Dominant Vegetation Type (Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☐	☒	☐	☐	☐	☐	☐
Right Bank	☐	☐	☐	☐	☐	☒	☐

Table Codes

Particle Sizes: *Measure all particles between 2.00mm and 1000mm*

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name)

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLE-4

Stream Code: APB

Site Code: APB-1

Sample: 01

Transect No.: 04 of 10

Bearing (D): 296

Min. Width (m): 9.0

No. of Transects: 10

Points per Transect: 6

Site Length (m): 41.7

Transect Spacing (m): 4.63

Active Channel Width (m): 10.1

Point Spacing (m): 1.68

Date (mm-dd): 2019-06-06

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No. Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Depth (mm)	Hydraulic Head (mm)	Particle Size Point	Particle Size Max. in Ring
1	0.84	455	0	180	205
2	2.52	580	2	0.10	2
3	4.20	615	2	0.10	2
4	5.88	750	2	80	170
5	7.56	470	0	0.10	225
6	9.16	100	0	0.05	140

Measure depth & hydraulic head to nearest 5 mm

Particle Sizes (mm)

Point No.	Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	FL	AL	SS	MC	WC	GR	TR
1	☐	2	☒	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	☐	2	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒

Cover

Aquatic Vegetation Types Present

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	60	110	5	0	0	10
	Substrate Diameters	0.05	0.05	0.05	0.05		
Right Bank	Height ☐	865	650	60	0	80	0
	Substrate Diameters	0.05	0.05	0.05	0.05		

Dominant Vegetation Type
(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-land
Left Bank	☐	☒	☐	☐	☐	☐	☐
Right Bank	☒	☐	☐	☐	☐	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): CE

Crew	Recorder	Ent/Scanned	Verified	Corrected
MB				

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Stream Code: APB

Site Code: APB-1

Sample: 01

Transect No.: 5 of 10

Bearing (D): 290

Min. Width (m): 9.0

Site Length (m): 41.7

Active Channel Width (m): 9.2

No. of Transects: 10

Transect Spacing (m): 4.63

Point Spacing (m): 1.53

Points per Transect: 6

Date (mm-dd): 2017-06-06

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring	Cover: Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	Aquatic Vegetation Types Present: FL	AL	SS	MC	WC	GR	TR
1	0.77	410	0	0.10	170	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	2.30	470	0	0.10	320	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	3.83	480	2	2	4	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	5.36	510	4	0.10	130	☐	1	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	6.89	525	2	0.10	230	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	8.42	360	0	280	280	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

		> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height	☐	770	100	10	0	0	08
	Substrate Diameters		0.05	0.05	0.05	0.05		
Right Bank	Height	☐	340	170	230	0	0	00
	Substrate Diameters		10	40	0.05	0.05		

Dominant Vegetation Type
(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-land
Left Bank	☐	☒	☐	☐	☐	☐	☐
Right Bank	☐	☐	☐	☐	☒	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments:

Crew Leader (initial & last name): GEBT

Crew	Recorder	Ent/Scanned	Verified	Corrected
MB				

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Stream Code: APB

Site Code: APB-1

Sample: 01

Transect No.: 6 of 10

Bearing (D): 290

Min. Width (m): 1.0

No. of Transects: 10

Points per Transect: 6

Site Length (m): 41.7

Transect Spacing (m): 4.63

Active Channel Width (m): 10.3

Point Spacing (m): 1.72

Date (mm-dd): 2019-06-06

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring
1	0.86	330	0	0.10	230
2	2.58	425	3	120	205
3	4.30	460	4	4	315
4	6.02	440	0	0.10	4
5	7.74	510	0	0.10	330
6	9.46	280	0	240	240

Point No.	Cover: Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	Aquatic Vegetation Types Present: FL	AL	SS	MC	WC	GR	TR
1	☐	1	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	480	0	10	130	100	16
	Substrate Diameters	0.05	0.05	0.05	0.05		
Right Bank	Height ☐	355	150	0	250	0	12
	Substrate Diameters	190	180	20	0.10		

Dominant Vegetation Type
(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-land
Left Bank	☐	☒	☐	☐	☐	☐	☐
Right Bank	☐	☐	☐	☐	☐	☒	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments:

Crew Leader (initial & last name): GEBT

Crew	Recorder	Ent/Scanned	Verified	Corrected
MB				

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Stream Code: APB

Site Code: APB-1

Sample: 01

Transect No.: 7 of 10

Bearing (D): 290

Min. Width (m): 9.0

Site Length (m): 41.7

Active Channel Width (m): 10.9

No. of Transects: 10

Transect Spacing (m): 4.63

Point Spacing (m): 1.82

Points per Transect: 6

Date (mm-dd): 2019-06-06

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Depth (mm)	Hydraulic Head (mm)	Particle Size Point	Particle Size Max. in Ring
1	0.91	216	4	130	130
2	2.73	340	3	0.10	110
3	4.55	400	2	0.10	90
4	6.37	305	0	0.10	0.10
5	8.19	415	0	0.10	90
6	10.01	170	0	90	200

Measure depth & hydraulic head to nearest 5 mm

Particle Sizes (mm)

Point No.	Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	FL	AL	SS	MC	WC	GR	TR
1	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	☐	1	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Cover

Aquatic Vegetation Types Present

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	410	30	0	60	130	12
	Substrate Diameters	0.05	0.05	0.05	0.05		
Right Bank	Height ☐	600	280	0	430	0	0
	Substrate Diameters	70	35	30	230		

Dominant Vegetation Type

(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-land
Left Bank	☐	☒	☐	☐	☐	☐	☐
Right Bank	☒	☐	☐	☐	☐	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): GEB

Crew	Recorder	Ent/Scanned	Verified	Corrected
MB				

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Stream Code: APB

Site Code: APB-1

Sample: 01

Transect No.: 8 of 10

Bearing (D): 290

Min. Width (m): 9.0

No. of Transects: 10

Points per Transect: 6

Site Length (m): 41.7

Transect Spacing (m): 4.63

Active Channel Width (m): 11.3

Point Spacing (m): 1.88

Date (mm-dd): 2019-06-06

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Measure depth & hydraulic head to nearest 5 mm

Particle Sizes (mm)

Cover

Aquatic Vegetation Types Present

Point No.	Location (m)	Depth (mm)	Hydraulic Head (mm)	Particle Point	Particle Max. in Ring	Cover: Unmeasurable	Cover: Quality	Cover: Wood	Cover: Round Rock	Cover: Flat Rock	Cover: Macrophyte	Cover: Bank	Cover: Other	Aquatic Vegetation: FL	AL	SS	MC	WC	GR	TR
1	0.94	295	2	120	200	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	2.82	510	0	4	6	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	4.70	360	2	0.10	35	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	6.58	235	0	110	25	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	8.46	340	0	0.10	10	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	10.34	240	0	0.10	140	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	420	50	5	0	110	10
	Substrate Diameters	0.05	0.05	0.05	0.05		
Right Bank	Height ☐	410	160	100	0	0	0
	Substrate Diameters	0.05	15	10	15		

Dominant Vegetation Type

(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-land
Left Bank	☐	☒	☐	☐	☐	☐	☐
Right Bank	☒	☐	☐	☐	☐	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): GEBY

Crew	Recorder	Ent/Scanned	Verified	Corrected
MB				

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Stream Code: APB

Site Code: APB-1

Sample: 01

Transect No.: 9 of 10

Bearing (D): 290

Min. Width (m): 9.0

Site Length (m): 41.7

Active Channel Width (m): 11.2

No. of Transects: 10

Transect Spacing (m): 4.63

Point Spacing (m): 1.87

Points per Transect: 6

Date (mm-dd): 2019-06-06

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Depth (mm)	Hydraulic Head (mm)	Particle Size Point	Particle Size Max. in Ring
1	0.94	510	0	120	210
2	2.81	530	0	010	15
3	4.68	250	4	10	36
4	6.55	160	0	10	40
5	8.42	190	0	5	25
6	10.29	170	0	95	95

Measure depth & hydraulic head to nearest 5 mm

Particle Sizes (mm)

Point No.	Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	FL	AL	SS	MC	WC	GR	TR
1	☐	2	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Cover

Aquatic Vegetation Types Present

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	300	80	5	0	200	15
	Substrate Diameters	0.05	0.05	0.10			
Right Bank	Height ☐	510	290	80	220	0	0
	Substrate Diameters	15	120	65	0.05		

Dominant Vegetation Type

(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-land
Left Bank	☐	☒	☐	☐	☐	☐	☐
Right Bank	☒	☐	☐	☐	☐	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name)

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLE CR

Stream Code: APB-

Site Code: APB-1

Sample: 01

Transect No.: 10 of 10

Bearing (D): 290

Min. Width (m): 9.0

Site Length (m): 41.7

Active Channel Width (m): 11.2

No. of Transects: 10

Transect Spacing (m): 4.63

Point Spacing (m): 1.87

Points per Transect: 6

Date (mm-dd): 2019-06-06

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Depth (mm)	Hydraulic Head (mm)	Particle Size (mm) Point	Particle Size (mm) Max. in Ring	Cover: Unmeasurable	Cover: Quality	Cover: Wood	Cover: Round Rock	Cover: Flat Rock	Cover: Macrophyte	Cover: Bank	Cover: Other	Aquatic Vegetation Types Present: FL	AL	SS	MC	WC	GR	TR
1	0.94	480	0	0.10	180	☐	1	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	2.81	590	2	5	10	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	4.68	490	0	4	15	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	6.55	250	0	10	30	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	8.42	160	0	15	20	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	10.29	170	0	0.05	0.10	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters
(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	470	105	40	0	90	16
	Substrate Diameters	0.05	0.05	0.05	0.05		
Right Bank	Height ☐	190	150	110	0	0	2
	Substrate Diameters	0.10	0.10	0.05	0.05		

Dominant Vegetation Type
(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-land
Left Bank	☐	☒	☐	☐	☐	☐	☐
Right Bank	☒	☐	☐	☐	☐	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): GEB

Crew	Recorder	Ent/Scanned	Verified	Corrected
MB				

Site Identification

Stream Name: APPLEBY

Stream Code: APB

Date (yyyy-mm-dd): 2019-06-06

Site Code: APB-2

Alternate Site Code:

Sample: 01

Site Length (m): 49.0

*** Record using NAD83 datum

	Zone	Easting	Northing
Uncorr. UTM	17	601717.0	4801867.0
Corr. UTM			

OR → Lat. / Long. (DD MM SS.sss)

Source of Uncorrected UTM Coord.: GPS/DGPS ☐ GIS ☐ OBM ☐ Other

Source of CorrectedUTM Coordinates: FWIS ☐ Ortho-photos ☐ GIS ☐ Other

Name of Layer Used for Correction

Access Route

SOUTH ON APPLEBY LINE, EAST ON LAKESHORE ROAD, LEFT INTO SMALL DARK PARK

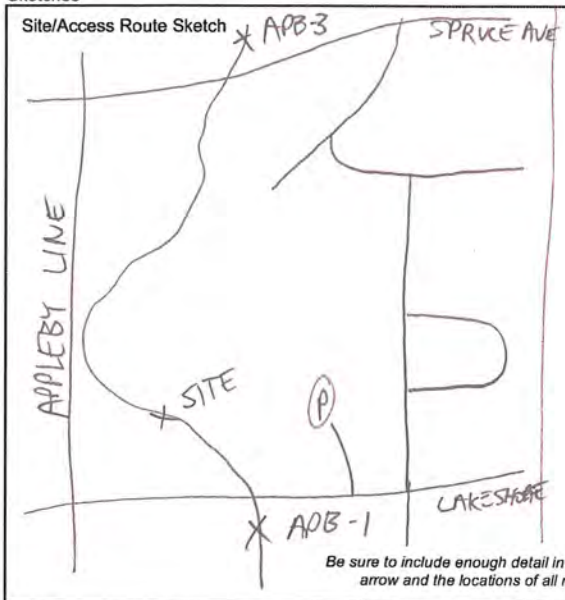
Site Description

WALK U/S FROM PARK, SITE IS U/S OF LAKESHORE, D/S OF RESIDENTIAL AREA

☐ **Site Was Unsampleable** - *add reason on reverse*

Sketches

Site/Access Route Sketch





Be sure to include enough detail in sketches to ensure that someone could find the site again; include a north arrow and the locations of all markers and noted features. The artist should also sign the sketches.

Photo No. | Photo Name | Photo Description

Comments

OBSERVED PAIR OF RAINBOWS D/S KIDDLE CREST

Crew Leader (init. & last name): G EBY

Crew	Recorder	Entered	Verified	Corrected
MB				

Site Marker Details

29
13.5
6.5
49

SITE MARKER DESCRIPTION

Upstream Marker (measure from stake to site) — Bearing (D): ___ — Distance (m): ___.___ — Upstream / Downstream — Photo No. — Photo Name

Upstream Description: FALLEN WILLOW ACROSS STREAM

Downstream Marker (measure from stake to site) — Bearing (D): 0 — Distance (m): ___.0 — Upstream / Downstream — Photo No. — Photo Name

Downstream Description: Flagged tree (tag#: 927) Left bank

Site is Unsampleable

- ☐ Stream dry
- ☐ Insufficient water to sample effectively
- ☐ Stream is no longer present at location (tiled or relocated, etc)
- ☐ Naturally unwadeable (i.e. > 1.5 m deep)
- ☐ Unwadeable due to ponding from a permanent barrier — What is the permanent barrier?
- ☐ Unwadeable due to ponding from temporary barrier (eg. beaver dam) — What is the temporary barrier?
- ☐ Landowner could not be contacted
- ☐ Landowner refused access
- ☐ Inaccessible for safety reasons *(add details in comments below)*
- ☐ Stream is wadeable but not appropriate for the intended sampling

Modules to have been used (e.g. S2.M1, S3.M1):

Comments

Site Features

Mandatory Fields In Grey
Must be filled out for processing

Stream Code: APB

Site Code: APB-Z

Sample: 01

Date (mm-dd): 2014 06-06

Stream Name: APPLEBY

For each landuse, check box that applies. Be sure to include comments explaining the particulars, including names and numbers of contacts

Site Features	Ongoing & Active	Historical Evidence	No Evidence but Reported	No Evidence	Unknown	Comments
Potential Point or Non-point Source Contaminant Sources	☐	☐	☐	☒	☐	
Major Nutrient Sources Upstream	☒	☐	☐	☐	☐	RES / ROADS
Channel Hardening or Straightening	☐	☐	☐	☒	☐	
Adjacent Landuses that Destabilize Banks	☒	☐	☐	☐	☐	RESIDENTS
Sediment Loading or Deprivation	☐	☐	☐	☒	☐	
Instream Habitat Modifications	☐	☐	☐	☒	☐	
Barriers and/or Dams in the Vicinity of the Site	☐	☐	☐	☒	☐	
High Fishing Pressure	☐	☐	☐	☒	☐	
Log Jam Deflectors	☒	☐	☐	☐	☐	
Springs or Seeps at the Site	☐	☐	☐	☒	☐	
Impervious Substrate Limiting Burrowing Depth of Fish	☐	☐	☐	☒	☐	
Fish Stocked Near Sample Site	☐	☐	☐	☒	☐	
Other Activities that Could Influence Biota or Habitat	☐	☐	☐	☒	☐	
Intensive Logging Activitties within the Riparian Zone	☐	☐	☐	☒	☐	

Sources of Information
Visual Immediate ☒ Visual Extended ☐ Interview ☐ Maps & Photos ☐

Temperatures
Time (24hr): 11:15
Air Temp (°C):
Water Temp (°C):
Max Air Temp (°C):
Max. Water Temp (°C):
Source of Max. Air Temp:

Riparian Vegetation Community
Only check one box for each bank and zone.

Riparian Zone	Left Bank: None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-lands	Right Bank: None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-lands
1.5-10m	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☒	☐
10-30m	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☒	☐
30-100m	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☒	☐

Comments:

Crew Leader (initial & last name): GEBY

Crew Initials	Recorder	Ent/Scanned	Verified	Corrected
MB				

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Stream Code: APB

Site Code: APB-2

Sample: 01

Transect No.: 1 of 10

Bearing (D): 320

Min. Width (m): 73.0

No. of Transects: 10

Points per Transect: 6

Site Length (m): 49.0

Transect Spacing (m): 5.44

Active Channel Width (m): 8.0

Point Spacing (m): 1.33

Date (mm-dd): 2019-06-06

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Depth (mm)	Hydraulic Head (mm)	Particle Size Point (mm)	Particle Size Max. in Ring (mm)	Cover: Unmeasurable	Cover: Quality	Cover: Wood	Cover: Round Rock	Cover: Flat Rock	Cover: Macrophyte	Cover: Bank	Cover: Other	Aquatic Vegetation: FL	AL	SS	MC	WC	GR	TR
1	0.67	170	0	0.10	20	☐	2	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	2.00	180	50	20	75	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	3.33	90	30	40	150	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	4.66	95	50	50	120	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	5.99	80	50	25	280	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	7.32	130	25	180	180	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m Height	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	☐	1350	1165	240	0	340	0
	Substrate Diameters	0.110	250	0.05	0.05		
Right Bank	☐	550	350	240	0	0	6
	Substrate Diameters	0.110	0.05	0.05	0.05		

Dominant Vegetation Type

(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☐	☐	☒	☐
Right Bank	☐	☐	☐	☐	☒	☐	☐

Table Codes

Particle Sizes: *Measure all particles between 2.00mm and 1000mm*

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): EBT

Crew	Recorder	Ent/Scanned	Verified	Corrected
MB				

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Date (mm-dd): 2019-06-05

Stream Code: APB

Site Code: APB-2

Sample: 01

Transect No.: 3 of 10

Bearing (D): 315

Min. Width (m): >3.0

Site Length (m): 99.0

Active Channel Width (m): 7.1

No. of Transects: 10

Transect Spacing (m): 5.44

Point Spacing (m): 1.18

Points per Transect: 6

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Depth (mm)	Hydraulic Head (mm)	Particle Size Point	Particle Size Max. in Ring	Cover Unmeasurable	Cover Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	FL	AL	SS	MC	WC	GR	TR
1	0.59	50	5	0.10	120	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	1.77	70	5	30	90	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	2.95	165	35	4	65	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	4.13	265	35	110	290	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	5.31	220	10	120	120	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	6.49	25	0	5	65	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	100	30	50	0	0	0
	Substrate Diameters	2	35	40	80		
Right Bank	Height ☐	480	65	60	0	90	8
	Substrate Diameters	0.110	0.05	0.05	0.05		

Dominant Vegetation Type

(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☒	☐	☐	☐	☐	☐	☐
Right Bank	☒	☐	☐	☐	☐	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): GEBY

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Date (mm-dd): 2017-06-06

Stream Code: APB

Site Code: APB-2

Sample: 01

Transect No.: 2 of 10

Bearing (D): 220

Min. Width (m): 13.0

Site Length (m): 49.0

Active Channel Width (m): 8.7

No. of Transects: 10

Transect Spacing (m): 5.44

Point Spacing (m): 1.45

Points per Transect: 6

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring
1	0.73	30	0	0.10	40
2	2.18	60	45	85	120
3	3.63	140	65	40	140
4	5.08	65	40	270	270
5	6.53	65	20	45	70
6	7.98	120	0	0.10	360

Point No.	Cover: Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	Aquatic Vegetation Types Present: FL	AL	SS	MC	WC	GR	TR
1	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	☐	1	☐	☐	X	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	☐	2	☐	☐	X	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	☐	2	☐	☐	X	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	☐	2	☐	X	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	Height > 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	☐	1170	595	1150	0	370	0
	Substrate Diameters	0.05	0.05	0.05	0.05		
Right Bank	☐	340	210	130	0	0	4
	Substrate Diameters	180	220	0.05	0.05		

Dominant Vegetation Type
(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☐	☐	X	☐
Right Bank	X	☐	☐	☐	☐	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments:

Crew Leader (initial & last name): GEBY

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Date (mm-dd): 2019-06-06

Stream Code: APB

Site Code: APB-2

Sample: G1

Transect No.: 4 of 10

Bearing (D): 305

Min. Width (m): >3.0

Site Length (m): 49.0

Active Channel Width (m): 6.7

No. of Transects: 10

Transect Spacing (m): 5.44

Point Spacing (m): 1.12

Points per Transect: 6

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring	Cover: Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	Aquatic Vegetation Types Present: FL	AL	SS	MC	WC	GR	TR
1	0.56	45	0	35	100	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	11.68	120	0	15	120	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	2.80	28	5	0.10	150	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	3.92	300	15	0.10	565	☐	1	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	5.12	300	10	15	230	☐	1	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	6.24	190	5	0.10	15	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	Height	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank		☐	160	100	40	0	0	0
	Substrate Diameters		0.05	35	5	0.05		
Right Bank		☐	120	195	0	0	0	0
	Substrate Diameters		0.05	0.05	0.05	0.05		

Dominant Vegetation Type
(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-land
Left Bank	☒	☐	☐	☐	☐	☐	☐
Right Bank	☐	☐	☐	☐	☒	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments:

Crew Leader (initial & last name): OEBY

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLE BT

Stream Code: APB

Site Code: APB-2

Sample: 01

Transect No.: 5 of 10

Bearing (D): 305

Min. Width (m): >3.0

Site Length (m): 49.0

Active Channel Width (m): 6.2

No. of Transects: 10

Transect Spacing (m): 5.44

Point Spacing (m): 1.03

Points per Transect: 6

Date (mm-dd): 2019-06-06

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No. Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Depth (mm) (Measure depth & hydraulic head to nearest 5 mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Particle Sizes (mm): Max. in Ring
1	0.52	140	0	0.10	0.10
2	1.55	350	0	5	55
3	2.58	510	0	0.10	15
4	3.61	625	0	0.10	800
5	4.64	520	5	1111	1111
6	5.67	350	5	1111	1111

Point No.	Cover: Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	Aquatic Vegetation Types Present: FL	AL	SS	MC	WC	GR	TR
1	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	☐	1	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	☐	1	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	☐	1	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	Height	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	☐		1005	720	0	0	380	0
	Substrate Diameters		0.05	0.05	0.05	0.05		
Right Bank	☐		470	380	375	0	0	0
	Substrate Diameters		0.10	0.10	0.10	0.10		

Dominant Vegetation Type (Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☐	☐	☒	☐
Right Bank	☒	☐	☐	☐	☐	☐	☐

Table Codes

Particle Sizes: *Measure all particles between 2.00mm and 1000mm*

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): GE34

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLE BY

Stream Code: APB

Site Code: APB-2

Sample: 01

Transect No.: 6 of 10

Bearing (D): 280

Min. Width (m): >3.0

No. of Transects: 10

Points per Transect: 6

Site Length (m): 49.0

Transect Spacing (m): 5.44

Active Channel Width (m): 4.9

Point Spacing (m): 0.82

Date (mm-dd): 2019-06-06

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring	Cover: Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	Aquatic Vegetation Types Present: FL	AL	SS	MC	WC	GR	TR
1	0.41	180	0	0.10	35	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	1.23	455	0	0.10	55	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	2.65	420	0	1111	1111	☐	1	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	2.87	360	25	1111	1111	☐	1	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	3.69	290	50	0.10	1111	☐	1	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	4.51	180	0	35	1111	☐	1	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	220	170	110	0	0	
	Substrate Diameters	5	0.10	20	0.10		
Right Bank	Height ☐	1590	170	0	0	650	0
	Substrate Diameters	1111	0.05	0.05	0.05		

Dominant Vegetation Type
(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☒	☐	☐	☐	☐	☐	☐
Right Bank	☐	☐	☐	☐	☐	☒	☐

Table Codes

Particle Sizes: *Measure all particles between 2.00mm and 1000mm*

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): C Geary

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Date (mm-dd): 2019-06-06

Stream Code: APB

Site Code: APB-2

Sample: 01

Transect No.: 7 of 10

Bearing (D): 230

Min. Width (m): >3.0

Site Length (m): 49.0

Active Channel Width (m): 5.1

No. of Transects: 10

Transect Spacing (m): 5.44

Point Spacing (m): 0.85

Points per Transect: 6

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Depth (mm)	Hydraulic Head (mm)	Particle Size Point (mm)	Particle Size Max. in Ring (mm)
1	0.43	160	0	2	110
2	1.28	120	0	0.10	75
3	2.13	165	0	48	155
4	2.98	315	10	11111	11111
5	3.83	305	55	11111	11111
6	4.68	190	15	11111	11111

Measure depth & hydraulic head to nearest 5 mm

Particle Sizes (mm)

Point No.	Cover: Unmeasurable	Cover: Quality	Cover: Wood	Cover: Round Rock	Cover: Flat Rock	Cover: Macrophyte	Cover: Bank	Cover: Other	Aquatic Vegetation Types Present: FL	AL	SS	MC	WC	GR	TR
1	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	☐	1	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	☐	1	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	☐	1	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Cover

Aquatic Vegetation Types Present

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	140	100	65	10	0	0
	Substrate Diameters	1115	0.10	55	0.10		
Right Bank	Height ☐	-99	-99	-99	-99	310	
	Substrate Diameters	-99	-99	-99	-99		

99

Dominant Vegetation Type

(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-land
Left Bank	☒	☐	☐	☐	☐	☐	☐
Right Bank	☐	☐	☐	☐	☒	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments: poison ivy right bank

Crew Leader (initial & last name): GEBY

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Date (mm-dd): 2019-06-06

Stream Code: APB

Site Code: APB-2

Sample: 01

Transect No.: 8 of 10

Bearing (D): 2.5

Min. Width (m): >3.0

Site Length (m): 49.0

Active Channel Width (m): 5.5

No. of Transects: 10

Transect Spacing (m): 5.44

Point Spacing (m): 0.92

Points per Transect: 6

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring
1	0.46	45	0	25	120
2	1.38	115	10	110	110
3	2.30	170	60	35	140
4	3.22	210	65	130	135
5	4.14	270	70	65	180
6	5.06	240	0	0.10	310

Point No.	Cover: Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	Aquatic Vegetation Types Present: FL	AL	SS	MC	WC	GR	TR
1	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	Height	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	☐		405	380	270	0	0	0
	Substrate Diameters		220	20	50	15		
Right Bank	☐		460	360	300	0	0	4
	Substrate Diameters		240	0.10	10	0.05		

Dominant Vegetation Type

(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☒	☐	☐	☐	☐	☐	☐
Right Bank	☐	☐	☐	☒	☐	☐	☐

Table Codes

Particle Sizes: *Measure all particles between 2.00mm and 1000mm*

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments:

Crew Leader (initial & last name): GEBY

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Date (mm-dd): 2019-06-06

Stream Code: APB

Site Code: APB-7

Sample: 01 | Transect No.: 9 of 10 | Bearing (D): 25

Min. Width (m): >3.0 | Site Length (m): 49.0 | Active Channel Width (m): 5.5

No. of Transects: 10 | Transect Spacing (m): 5.44 | Point Spacing (m): 0.92

Points per Transect: 6

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring
1	0.46	110	2	65	105
2	1.38	145	10	25	120
3	2.30	210	25	0.10	20
4	3.22	200	15	5	60
5	4.14	205	15	0.10	170
6	5.06	100	110	250	250

Point No.	Cover: Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	Aquatic Vegetation Types Present: FL	AL	SS	MC	WC	GR	TR
1	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	1660	570	370	0	0	0
	Substrate Diameters	0.10	25	80	30		
Right Bank	Height ☐	780	450	260	0	80	20
	Substrate Diameters	0.05	0.05	0.05	0.05		

Dominant Vegetation Type (Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☒	☐	☐	☐	☐	☐	☐
Right Bank	☐	☐	☐	☒	☐	☐	☐

Table Codes

Particle Sizes: *Measure all particles between 2.00mm and 1000mm*

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): GEB

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Date (mm-dd): 2019-06-06

Stream Code: APB

Site Code: APB-2

Sample: 01

Transect No.: 10 of 10

Bearing (D): 25

Min. Width (m): >3.0

Site Length (m): 49.0

Active Channel Width (m): 5.5

No. of Transects: 10

Transect Spacing (m): 5.44

Point Spacing (m): 0.92

Points per Transect: 6

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring
1	0.46	165	0	0.10	80
2	1.38	240	5	150	150
3	2.30	300	15	0.10	120
4	3.22	300	0	110	110
5	4.14	300	15	0.10	200
6	5.06	370	0	140	140

Point No.	Cover: Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	Aquatic Vegetation Types Present: FL	AL	SS	MC	WC	GR	TR
1	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☒	☐	☐	☒

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	Height (> 2 m)	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	☐	580	500	280	0	0	0
	Substrate Diameters	0.10	2	35	0.05		
Right Bank	☐	580	370	280	0	80	5
	Substrate Diameters	0.05	0.05	0.05	0.05		

Dominant Vegetation Type

(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-land
Left Bank	☒	☐	☐	☐	☐	☐	☐
Right Bank	☐	☐	☐	☐	☐	☒	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): OEBY

Crew	Recorder	Ent/Scanned	Verified	Corrected

Site Identification

Stream Name: APPLEBY

Stream Code: APB

Date (yyyy-mm-dd): 2014-06-06

Site Code: APB-3

Alternate Site Code:

Sample: 01

Site Length (m): 54.3

*** Record using NAD83 datum

	Zone	Easting	Northing
Uncorr. UTM	17	601480.0	4802079.0
Corr. UTM	1	.	.

OR → Lat. / Long.: DD | MM | SS.sss

Source of Uncorrected UTM Coord.: ☐ GPS/DGPS ☐ GIS ☐ OBM ☐ Other

Source of CorrectedUTM Coordinates: ☐ FWIS ☐ Ortho-photos ☐ GIS ☐ Other

Name of Layer Used for Correction:

Access Route

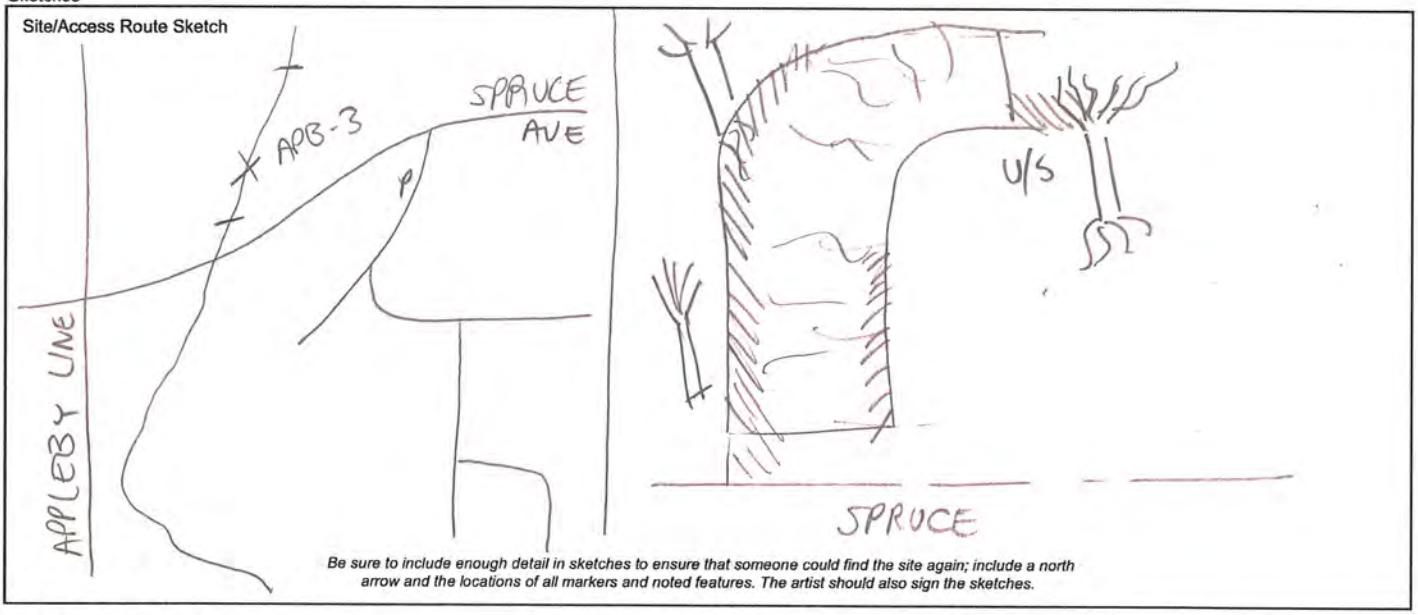
Site Description

WALK TO SPRUCE AVE LEFT U/S OF BRIDGE ON R/B IS TRAIL, FOLLOW TO STREAM

☐ **Site Was Unsampleable** - *add reason on reverse*

Sketches

Site/Access Route Sketch



Be sure to include enough detail in sketches to ensure that someone could find the site again; include a north arrow and the locations of all markers and noted features. The artist should also sign the sketches.

Photo No. | Photo Name | Photo Description

Comments

Crew Leader (init. & last name): G ERBY

Crew	Recorder	Entered	Verified	Corrected

30
14
9.3

Site Marker Details

SITE MARKER DESCRIPTION

	Bearing (D)	Distance (m)		Photo No.	Photo Name
Upstream Marker (measure from stake to site)			Upstream		
			Downstream		

Upstream Description

FLAGGED MAPLE RB

	Bearing (D)	Distance (m)		Photo No.	Photo Name
Downstream Marker (measure from stake to site)			Upstream		
			Downstream		

Downstream Description

FLAGGED TREE LIB

Site is Unsampleable

- ☐ Stream dry
- ☐ Insufficient water to sample effectively
- ☐ Stream is no longer present at location (tiled or relocated, etc)
- ☐ Naturally unwadeable (i.e. > 1.5 m deep)
- ☐ Unwadeable due to ponding from a permanent barrier — What is the permanent barrier?
- ☐ Unwadeable due to ponding from temporary barrier (eg. beaver dam) — What is the temporary barrier?
- ☐ Landowner could not be contacted
- ☐ Landowner refused access
- ☐ Inaccessible for safety reasons *(add details in comments below)*
- ☐ Stream is wadeable but not appropriate for the intended sampling

Modules to have been used (e.g. S2.M1, S3.M1):

Comments

Site Features

Mandatory Fields In Grey
Must be filled out for processing

Stream Code: APB

Site Code: APB-3

Sample: 01

Date (mm-dd): 2019 06-06

Stream Name: APPLEBY

For each landuse, check box that applies. Be sure to include comments explaining the particulars, including names and numbers of contacts

Site Features	Ongoing & Active	Historical Evidence	No Evidence but Reported	No Evidence	Unknown	Comments
Potential Point or Non-point Source Contaminant Sources	☐	☐	☐	☒	☐	
Major Nutrient Sources Upstream	☒	☐	☐	☐	☐	ROAD CROSSING / RES
Channel Hardening or Straightening	☐	☐	☐	☒	☐	
Adjacent Landuses that Destabilize Banks	☒	☐	☐	☐	☐	RES LAWNS
Sediment Loading or Deprivation	☒	☐	☐	☐	☐	BEDROCK
Instream Habitat Modifications	☐	☐	☐	☒	☐	
Barriers and/or Dams in the Vicinity of the Site	☐	☐	☐	☒	☐	
High Fishing Pressure	☐	☐	☐	☒	☐	
Log Jam Deflectors	☐	☐	☐	☒	☐	
Springs or Seeps at the Site	☐	☐	☐	☒	☐	
Impervious Substrate Limiting Burrowing Depth of Fish	☒	☐	☐	☐	☐	BEDROCK
Fish Stocked Near Sample Site	☐	☐	☐	☒	☐	
Other Activities that Could Influence Biota or Habitat	☐	☐	☐	☒	☐	
Intensive Logging Activitties within the Riparian Zone	☐	☐	☐	☒	☐	

Sources of Information
Visual Immediate ☒ Visual Extended ☐ Interview ☐ Maps & Photos ☐

Temperatures
Time (24hr): 17:13
Air Temp (°C):
Water Temp (°C):
Max Air Temp (°C):
Max. Water Temp (°C):
Source of Max. Air Temp:

Riparian Vegetation Community
Only check one box for each bank and zone.

Riparian Zone	Left Bank: None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-lands	Right Bank: None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-lands
1.5-10m	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☒	☐
10-30m	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☒	☐
30-100m	☐	☒	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☒	☐

Comments:

Crew Leader (initial & last name): GEBY

Crew Initials: MG

Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Date (mm-dd): 2019-06-06

Stream Code: APB

Site Code: APB-3

Sample: 01

Transect No.: 01 of 10

Bearing (D): 330

Min. Width (m): 73.0

No. of Transects: 10

Points per Transect: 6

Site Length (m): 54.3

Transect Spacing (m): 6.03

Active Channel Width (m): 7.4

Point Spacing (m): 1.23

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring	Cover: Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	Aquatic Vegetation Types Present: FL	AL	SS	MC	WC	GR	TR
1	0.62	5	0	1111	1111	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	1.85	45	4	1111	1111	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	3.08	90	35	1111	1111	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	4.31	135	60	1111	1111	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	5.54	110	65	1111	1111	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	6.77	45	15	1111	1111	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	600	575	450	0	280	2
	Substrate Diameters	1111	1111	20	0.05		
Right Bank	Height ☐	670	660	460	260	130	0
	Substrate Diameters	1111	1111	0.05	0.05		

Dominant Vegetation Type

(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☐	☐	☒	☐
Right Bank	☐	☐	☐	☐	☐	☒	☐

Table Codes

Particle Sizes: *Measure all particles between 2.00mm and 1000mm*

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): GEH

Crew	Recorder	Ent/Scanned	Verified	Corrected
MB				

Channel Morphology

Stream Name: APPLEBY

Mandatory Fields In Grey
Must be filled out for processing

Date (mm-dd): 2019-06-06

Stream Code: APB

Site Code: APB-3

Sample: 01

Transect No.: 2 of 10

Bearing (D): 330

Min. Width (m): >3.0

Site Length (m): 54.3

Active Channel Width (m): 7.9

No. of Transects: 10

Transect Spacing (m): 6.03

Point Spacing (m): 1.32

Points per Transect: 6

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No. Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Measure depth & hydraulic head to nearest 5 mm

Particle Sizes (mm)

Cover

Aquatic Vegetation Types Present

Point No.	Location (m)	Depth (mm)	Hydraulic Head (mm)	Particle Point	Particle Max. in Ring	Cover Unmeasurable	Cover Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	FL	AL	SS	MC	WC	GR	TR
1	0.66	30	25			☐	0	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐
2	1.98	50	30			☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	3.30	50	35			☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	4.62	110	40			☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	5.94	120	45			☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	7.26	50	20			☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

		> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height	☐	475	425	310	0	0	6
	Substrate Diameters		0111	015	010	0.05		
Right Bank	Height	☐	720	620	330	0	0	0
	Substrate Diameters		055	160	120	0.05		

Dominant Vegetation Type
(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☒	☐	☐	☐
Right Bank	☐	☐	☐	☐	☒	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): GEBY

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLE3Y

Date (mm-dd): 2019-06-06

Stream Code: APB

Site Code: APB-3

Sample: 01 | Transect No.: 3 of 10 | Bearing (D): 330

Min. Width (m): 23.0 | Site Length (m): 54.3 | Active Channel Width (m): 8.4

No. of Transects: 10 | Transect Spacing (m): 6.03 | Point Spacing (m): 1.40

Points per Transect: 6

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No. Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Depth (mm)	Hydraulic Head (mm)	Particle Size Point	Particle Size Max. in Ring	Cover Unmeasurable	Cover Quality	Cover Wood	Cover Round Rock	Cover Flat Rock	Cover Macrophyte	Cover Bank	Cover Other	Aquatic Vegetation Types Present FL	AL	SS	MC	WC	GR	TR
1	0.70	55	25			☐	0	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐
2	2.10	35	35			☐	0	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐
3	3.50	110	45			☐	0	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐
4	4.90	60	100			☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	6.30	65	50			☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	7.70	45	20			☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	560	440	330	0	0	20
	Substrate Diameters		0.05	0.05	0.05		
Right Bank	Height ☐	520	270	240	0	210	16
	Substrate Diameters			0.05	0.05		

Dominant Vegetation Type
(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☐	☒	☐	☐
Right Bank	☐	☐	☐	☒	☐	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): GEJ

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Date (mm-dd): 2019-06-06

Stream Code: AP3

Site Code: AP13-3

Sample: 01

Transect No.: 4 of 10

Bearing (D): 330

Min. Width (m): 7.0

Site Length (m): 54.3

Active Channel Width (m): 9.0

No. of Transects: 10

Transect Spacing (m): 6.03

Point Spacing (m): 1.50

Points per Transect: 6

Transect & Point Layout Use this table to determine the number of transects & points required, given the minimum stream width.		
Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring	Cover: Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	Aquatic Vegetation Types Present: FL	AL	SS	MC	WC	GR	TR
1	0.75	95	5	1	230	☐	2	☐	☐	☒	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐
2	2.25	60	35	1	1	☐	0	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐
3	3.75	70	65	1	1	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	5.25	90	55	1	1	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	6.75	70	15	1	1	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	8.25	50	25	1	1	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters
(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	750	720	290	0	230	0
	Substrate Diameters	1	1	1	0.05		
Right Bank	Height ☐	560	440	360	0	0	18
	Substrate Diameters	0	1	0.05	0.05		

Dominant Vegetation Type
(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☐	☒	☐	☐
Right Bank	☐	☐	☐	☐	☐	☒	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): GE2

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Stream Code: APB

Site Code: APB-3

Sample: 01

Transect No.: 5 of 10

Bearing (D): 330

Min. Width (m): >3.0

Site Length (m): 54.3

Active Channel Width (m): 6.3

No. of Transects: 10

Transect Spacing (m): 6.03

Point Spacing (m): 1.38

Points per Transect: 6

Date (mm-dd): 2019-06-06

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring
1	0.69	60	0		
2	2.07	85	5		
3	3.45	210	5	0.10	90
4	4.83	230	5	10	
5	6.21	90	35		
6	7.59	40	5		

Cover

Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other
	0						
	0						
	0						
	2		X				
	0						
	0						

Aquatic Vegetation Types Present

FL	AL	SS	MC	WC	GR	TR

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	540	415	300	0	90	0
	Substrate Diameters			0.05	0.05		
Right Bank	Height ☐	825	710	510	0	0	4
	Substrate Diameters		0.05	0.05	0.05		

Dominant Vegetation Type
(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank				X			
Right Bank					X		

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments:

Crew Leader (initial & last name): GEBY

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Stream Code: APB

Site Code: APB-3

Sample: 01

Transect No.: 6 of 10

Bearing (D): 330

Min. Width (m): >3.0

Site Length (m): 54.3

Active Channel Width (m): 7.9

No. of Transects: 10

Transect Spacing (m): 6.03

Point Spacing (m): 1.32

Points per Transect: 6

Date (mm-dd): 2019-06-06

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No. Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Depth (mm)	Hydraulic Head (mm)	Particle Size (mm) Point	Particle Size (mm) Max. in Ring	Cover Unmeasurable	Cover Quality	Cover Wood	Cover Round Rock	Cover Flat Rock	Cover Macrophyte	Cover Bank	Cover Other	Aquatic Vegetation Types Present FL	AL	SS	MC	WC	GR	TR
1	0.66	55	5	1111	1111	☐	0	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐
2	1.98	65	35	1111	1111	☐	0	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐
3	3.30	85	55	1111	1111	☐	0	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐
4	4.62	150	55	1111	1111	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	5.94	85	65	1111	1111	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	7.26	65	15	1111	1111	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	Height	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank		☐	1380	1260	865	0	280	0
	Substrate Diameters		1111	1111	10	0.05		
Right Bank		☐	675	490	460	0	180	2
	Substrate Diameters		1111	1111	0.05	0.05		

Dominant Vegetation Type
(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☐	☒	☐	☐
Right Bank	☐	☐	☐	☒	☐	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): GEBY

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLE34

Date (mm-dd): 2019-06-06

Stream Code: AP3

Site Code: APB3

Sample: 01

Transect No.: 7 of 10

Bearing (D): 295

Min. Width (m): 73.0

Site Length (m): 54.3

Active Channel Width (m): 6.2

No. of Transects: 10

Transect Spacing (m): 6.03

Point Spacing (m): 1.33

Points per Transect: 6

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Measure depth & hydraulic head to nearest 5 mm

Point No.	Location (m)	Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Particle Sizes (mm): Max. in Ring
1	0.52	65	0		
2	1.55	100	55		
3	2.58	110	05		
4	3.61	55	140		
5	4.64	50	65		
6	5.67	45	25		

Cover

Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other
☐	0	☐	☐	☐	☐	☐	☐
☐	0	☐	☐	☐	☐	☐	☐
☐	0	☐	☐	☐	☐	☐	☐
☐	0	☐	☐	☐	☐	☐	☐
☐	0	☐	☐	☐	☐	☐	☐
☐	0	☐	☐	☐	☐	☐	☐

Aquatic Vegetation Types Present

FL	AL	SS	MC	WC	GR	TR
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☒					280	0
	Substrate Diameters						
Right Bank	Height ☐	845	670	510	0	0	12
	Substrate Diameters		0.05	0.05	0.05		

Dominant Vegetation Type (Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☐	☒	☐	☐
Right Bank	☐	☐	☐	☒	☐	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): GEBY

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Date (mm-dd): 2019-06-06

Stream Code: APB

Site Code: APB-3

Sample: 01

Transect No.: 2 of 10

Bearing (D): 345

Min. Width (m): >3.0

Site Length (m): 54.3

Active Channel Width (m): 5.6

No. of Transects: 10

Transect Spacing (m): 6.03

Point Spacing (m): 0.93

Points per Transect: 6

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Depth (mm)	Hydraulic Head (mm)	Particle Size Point	Particle Size Max. in Ring	Cover Unmeasurable	Cover Quality	Cover Wood	Cover Round Rock	Cover Flat Rock	Cover Macrophyte	Cover Bank	Cover Other	Aquatic Vegetation Types Present FL	AL	SS	MC	WC	GR	TR
1	0.47	95	10	1111	1111	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	1.40	135	40	1111	1111	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	2.33	125	30	1111	1111	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	3.26	110	25	1111	1111	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	4.19	110	5	2	110	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	5.12	80	0	4	45	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank Height	☒					0	0
Left Bank Substrate Diameters							
Right Bank Height	☐	280	225	85	0	0	3
Right Bank Substrate Diameters		10	35	15	25		

Dominant Vegetation Type

(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☐	☐	☒	☐
Right Bank	☐	☐	☐	☒	☐	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): GE3Y

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Date (mm-dd): 2019-06-06

Stream Code: APB

Site Code: APB-3

Sample: 01

Transect No.: 9 of 10

Bearing (D): 270

Min. Width (m): 3.0

Site Length (m): 54.3

Active Channel Width (m): 6.9

No. of Transects: 10

Transect Spacing (m): 6.03

Point Spacing (m): 1.15

Points per Transect: 6

Transect & Point Layout Use this table to determine the number of transects & points required, given the minimum stream width.		
Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring	Cover: Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	Aquatic Vegetation Types Present: FL	AL	SS	MC	WC	GR	TR
1	0.58	65	5	1111	1111	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	1.73	95	5	1111	1111	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	2.88	125	100	1111	1111	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	4.03	110	95	1111	1111	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	5.18	100	5	1111	1111	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	6.33	90	0	1111	1111	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters
(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	275	200	150	0	0	10
	Substrate Diameters	1111	0.05	90	35		
Right Bank	Height ☐	270	140	45	0	0	17
	Substrate Diameters	20	0.05	20	0.05		

Dominant Vegetation Type (Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-land
Left Bank	☒	☐	☐	☐	☐	☐	☐
Right Bank	☐	☐	☐	☒	☐	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): GEary

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Date (mm-dd): 2019-06-06

Stream Code: APB

Site Code: APB-3

Sample: 01

Transect No.: 10 of 10

Bearing (D): 30

Min. Width (m): >3.0

Site Length (m): 54.3

Active Channel Width (m): 5.9

No. of Transects: 10

Transect Spacing (m): 6.03

Point Spacing (m): 0.98

Points per Transect: 6

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No. Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Measure depth & hydraulic head to nearest 5 mm

Point No.	Location (m)	Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm) Point	Particle Sizes (mm) Max. in Ring
1	0.49	35	0		
2	1.47	90	65		
3	2.45	105	95		
4	3.43	90	175		
5	4.41	90	75		
6	5.39	45	55		

Cover

Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other
☐	0	☐	☐	☐	☐	☐	☐
☐	0	☐	☐	☐	☐	☐	☐
☐	0	☐	☐	☐	☐	☐	☐
☐	0	☐	☐	☐	☐	☐	☐
☐	0	☐	☐	☐	☐	☐	☐
☐	0	☐	☐	☐	☐	☐	☐

Aquatic Vegetation Types Present

FL	AL	SS	MC	WC	GR	TR
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

		> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height	☐	280	220	0	70	0	20
	Substrate Diameters				0.05	55		
Right Bank	Height	☐	1000	975	450	0	0	0
	Substrate Diameters				0.05	0.05		

Dominant Vegetation Type (Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☒	☐	☐	☐
Right Bank	☐	☐	☐	☐	☒	☐	☐

Table Codes

Particle Sizes: *Measure all particles between 2.00mm and 1000mm*

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): G EBY

Crew	Recorder	Ent/Scanned	Verified	Corrected

Site Identification

Stream Name: APPLEBY | Stream Code: APB | Date (yyyy-mm-dd): 2019-06-07

Site Code: APB-4 | Alternate Site Code: | Sample: 01 | Site Length (m): 49.8

*** Record using NAD83 datum

Uncorr. UTM — Zone: 17 | Easting: 600712.9 | Northing: 4803512.0

Corr. UTM — Zone: 1 | Easting: | Northing:

OR → Lat. DD MM SS.sss | Long. DD MM SS.sss

Source of Uncorrected UTM Coord.: GPS/DGPS ☐ GIS ☐ OBM ☐ Other

Source of CorrectedUTM Coordinates: FWIS ☐ Ortho-photos ☐ GIS ☐ Other

Name of Layer Used for Correction

Access Route

SOUTH ON APPLEBY LINE FROM 403, EAST ON FAIRVIEW ST, LEFT INTO GO PARKING LOT, PARK IN CORNER CLOSEST TO CREEK.

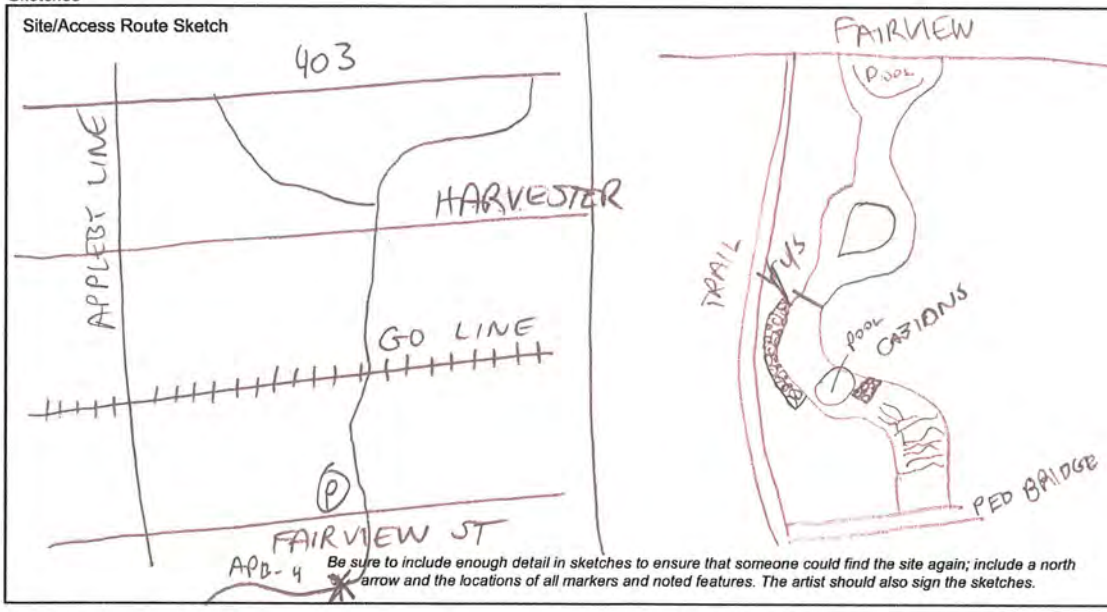
Site Description

FROM PARK, CROSS FAIRVIEW ST TO PEDESTRIAN TRAIL. SITE IS ON THE LEFT

☐ **Site Was Unsampleable** - *add reason on reverse*

Sketches

Site/Access Route Sketch



Be sure to include enough detail in sketches to ensure that someone could find the site again; include a north arrow and the locations of all markers and noted features. The artist should also sign the sketches.

Photo No. | Photo Name | Photo Description

Comments

Crew Leader (init. & last name): G EBY

Crew	Recorder	Entered	Verified	Corrected
KB				

Site Marker Details

9.8
11.8
6.9
12.3
9.0
49.8

SITE MARKER DESCRIPTION

Upstream Marker (measure from stake to site) — Bearing (D): | | | | Distance (m): | | | . | | — Upstream / Downstream — Photo No.: | | | | Photo Name: | | | | | | | | | | | | | | |

Upstream Description: FLAGGED ASH TREE L/B RIGHT NEXT TO BED TRAIL

Downstream Marker (measure from stake to site) — Bearing (D): | | | 0 | Distance (m): | | | 0 | . | 0 | — Upstream / Downstream — Photo No.: | | | | Photo Name: | | | | | | | | | | | | | | |

Downstream Description: U/S SIDE OF PEDESTRIAN BRIDGE

Site is Unsampleable

- ☐ Stream dry
- ☐ Insufficient water to sample effectively
- ☐ Stream is no longer present at location (tiled or relocated, etc)
- ☐ Naturally unwadeable (i.e. > 1.5 m deep)
- ☐ Unwadeable due to ponding from a permanent barrier — What is the permanent barrier?
- ☐ Unwadeable due to ponding from temporary barrier (eg. beaver dam) — What is the temporary barrier?
- ☐ Landowner could not be contacted
- ☐ Landowner refused access
- ☐ Inaccessible for safety reasons *(add details in comments below)*
- ☐ Stream is wadeable but not appropriate for the intended sampling

Modules to have been used (e.g. S2.M1, S3.M1): | | | | | |

Comments

Site Features

Mandatory Fields In Grey
Must be filled out for processing

Stream Code: APB

Site Code: APB-4

Sample: 01

Date (mm-dd): 2019 06-07

Stream Name: APPLEBY

For each landuse, check box that applies. Be sure to include comments explaining the particulars, including names and numbers of contacts

Site Features	Ongoing & Active	Historical Evidence	No Evidence but Reported	No Evidence	Unknown	Comments
Potential Point or Non-point Source Contaminant Sources	☒	☐	☐	☐	☐	ROAD, INPUTS, RESIDENTS
Major Nutrient Sources Upstream	☒	☐	☐	☐	☐	" ,
Channel Hardening or Straightening	☒	☐	☐	☐	☐	GABION
Adjacent Landuses that Destabilize Banks	☒	☐	☐	☐	☐	PEDESTRIAN TRAIL, RES
Sediment Loading or Deprivation	☐	☐	☐	☒	☐	
Instream Habitat Modifications	☒	☐	☐	☐	☐	GABION
Barriers and/or Dams in the Vicinity of the Site	☐	☐	☐	☒	☐	
High Fishing Pressure	☐	☐	☐	☒	☐	
Log Jam Deflectors	☐	☐	☐	☒	☐	
Springs or Seeps at the Site	☐	☐	☐	☒	☐	
Impervious Substrate Limiting Burrowing Depth of Fish	☐	☐	☐	☒	☐	
Fish Stocked Near Sample Site	☐	☐	☐	☒	☐	
Other Activities that Could Influence Biota or Habitat	☐	☐	☐	☒	☐	
Intensive Logging Activitties within the Riparian Zone	☐	☐	☐	☒	☐	

Sources of Information
Visual Immediate ☒ Visual Extended ☐ Interview ☐ Maps & Photos ☐

Temperatures
Time (24hr): 12:40
Air Temp (°C):
Water Temp (°C):
Max Air Temp (°C):
Max. Water Temp (°C):
Source of Max. Air Temp:

Riparian Vegetation Community
Only check one box for each bank and zone.

Dominant Vegetation Type

Riparian Zone	Left Bank: None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-lands	Right Bank: None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-lands
1.5-10m	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☒	☐	☐
10-30m	☒	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐
30-100m	☒	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐

Comments:

Crew Leader (initial & last name): GEBY

Crew Initials	Recorder	Ent/Scanned	Verified	Corrected
KB				

Channel Morphology

Stream Name: APPLEBY

Mandatory Fields In Grey
Must be filled out for processing

Date (mm-dd): 2019-06-07

Stream Code: APB

Site Code: APB-4

Sample: 1 | Transect No.: 1 of 10 | Bearing (D): 295

Min. Width (m): >3.0 | Site Length (m): 47.8 | Active Channel Width (m): 3.5

No. of Transects: 10 | Transect Spacing (m): 5.63 | Point Spacing (m): 0.58

Points per Transect: 6

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring	Cover: Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	Aquatic Vegetation Types Present: FL	AL	SS	MC	WC	GR	TR
1	0.27	50	2	10	140	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	0.87	110	3	40	70	☐	0	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	1.45	85	15	460	460	☐	1	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	2.03	125	20	70	150	☐	2	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	2.61	140	20	80	170	☐	2	☐	☐	☒	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐
6	3.15	80	5	35	120	☐	2	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	270	210	95	0	0	0
	Substrate Diameters	25	0.05	0.05	0.05		
Right Bank	Height ☐	370	190	135	0		5
	Substrate Diameters	120	0.05	0.05	0.05		

Dominant Vegetation Type
(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☒	☐	☐	☐	☐	☐	☐
Right Bank	☐	☐	☐	☐	☒	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): CEOT

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Stream Name: APPLEBY

Mandatory Fields In Grey
Must be filled out for processing

Date (mm-dd): 2019-06-07

Stream Code: APB

Site Code: APB14

Sample: 1

Transect No.: 2 of 10

Bearing (D): 280

Min. Width (m): >3.0

Site Length (m): 49.8

Active Channel Width (m): 3.0

No. of Transects: 10

Transect Spacing (m): 5.53

Point Spacing (m): 0.5

Points per Transect: 6

Transect & Point Layout		
Use this table to determine the number of transects & points required, given the minimum stream width.		
Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring
1	0.25	55	2	0.10 (Sand)	110
2	0.75	100	5	65	90
3	1.25	160	4	80	95
4	1.75	160	15	110	130
5	2.25	165	15	45	195
6	2.75	165	5	25	240

Cover

Point No.	Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other
1	☐	1	☐	☒	☐	☐	☐	☐
2	☐	0	☐	☐	☐	☐	☐	☐
3	☐	0	☐	☐	☐	☐	☐	☐
4	☐	2	☐	☒	☐	☐	☐	☐
5	☐	2	☐	☒	☐	☐	☐	☐
6	☐	2	☐	☒	☐	☐	☐	☐

Aquatic Vegetation Types Present

Point No.	FL	AL	SS	MC	WC	GR	TR
1	☐	☐	☐	☐	☐	☐	☐
2	☐	☐	☐	☐	☐	☐	☐
3	☐	☐	☐	☐	☐	☐	☐
4	☐	☐	☐	☐	☐	☐	☐
5	☒	☐	☐	☐	☐	☐	☐
6	☒	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters
(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	515	285	205	0	0	12
	Substrate Diameters	5	0.05	0.05	0.05		
Right Bank	Height ☐	645	215	125	0	90	5
	Substrate Diameters	0.10	0.05	0.05	0.05		

Same 3:L 5:

Dominant Vegetation Type (Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☐	☒	☐	☐
Right Bank	☐	☐	☐	☐	☒	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): GEST

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLE B4

Stream Code: APB

Site Code: APB-4

Sample: 01

Transect No.: 3 of 10

Bearing (D): 265

Min. Width (m): 23.0

No. of Transects: 10

Points per Transect: 6

Site Length (m): 49.8

Transect Spacing (m): 5.53

Active Channel Width (m): 3.5

Point Spacing (m): 0.58

Date (mm-dd): 2019-06-06

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring
1	0.29	250	0	10	90
2	0.87	280	0	12	80
3	1.45	270	5	30	50
4	2.03	210	45	70	110
5	2.61	205	5	15	70
6	3.19	225	0	0.10	120

Point No.	Cover: Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	Aquatic Vegetation Types Present: FL	AL	SS	MC	WC	GR	TR
1		2	X												
2		0													
3		0													
4		1		X					X						
5		2				X						X			
6		2		X		X						X			

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank Height	☐	560	170	125	0	160	15
Left Bank Substrate Diameters		25	0	0.05	0.05		
Right Bank Height	☐	580	510	205	0	0	2
Right Bank Substrate Diameters		150	0	0.05	0.05		

Dominant Vegetation Type
(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☒	☐	☐	☐
Right Bank	☐	☐	☐	☐	☒	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): GEBY

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Date (mm-dd): 2019-06-07

Stream Code: APB

Site Code: APB-4

Sample: 01

Transect No.: 4 of 10

Bearing (D): 255

Min. Width (m): 23.0

No. of Transects: 10

Points per Transect: 6

Site Length (m): 49.8

Transect Spacing (m): 5.53

Active Channel Width (m): 5.

Point Spacing (m): 0.83

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No. Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring	Cover: Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	Aquatic Vegetation Types Present: FL	AL	SS	MC	WC	GR	TR
1	0.42	345	0	45	200	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	11.26	210	0	60	125	☐	1	☐	☐	☒	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐
3	2.08	190	0	0.10	60	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	32.71	60	75	15	90	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	3.74	170	55	5	110	☐	1	☐	☐	☒	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐
6	4.57	120	4	0.10	35	☐	2	☐	☐	☐	☒	☒	☐	☐	☐	☐	☒	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	715	490	300	0	10	2
	Substrate Diameters	0.05	0.05	0.05	0.05		
Right Bank	Height ☐	425	170	115	0	0	5
	Substrate Diameters	0.10	0.05	0.05	0.05		

Dominant Vegetation Type
(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☐	☒	☐	☐
Right Bank	☐	☐	☐	☐	☒	☐	☐

Table Codes

Particle Sizes: *Measure all particles between 2.00mm and 1000mm*

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): GBY

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Stream Code: APO

Site Code: APB-4

Sample: 01

Transect No.: 5 of 10

Bearing (D): 285

Min. Width (m): >3.0

Site Length (m): 49.8

Active Channel Width (m): 6.1

No. of Transects: 10

Transect Spacing (m): 5.53

Point Spacing (m): 1.02

Points per Transect: 6

Date (mm-dd): 2017-06-07

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No. Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring
1	0.51	55	0	25	145
2	1.53	125	3	20	115
3	2.55	135	2	110	210
4	3.56	105	15	0.10	195
5	4.59	75	45	25	275
6	5.61	160	0	0.10	65

Cover: Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	Aquatic Vegetation Types Present: FL	AL	SS	MC	WC	GR	TR
☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐
☐	2	☐	☐	☒	☐	☐	☐	☒	☐	☐	☒	☐	☐	☐
☐	2	☐	☐	☒	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐
☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	2	☐	☐	☐	☒	☒	☐	☐	☐	☐	☒	☐	☐	☐

Bank Angle & Particle Median Diameters
(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	710	640	470	0	0	0
	Substrate Diameters	0.10	65	85	0.05		
Right Bank	Height ☐	310	140	65	0	0	6
	Substrate Diameters	0.05	0.05	0.05	0.05		

Dominant Vegetation Type
(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☐	☒	☐	☐
Right Bank	☐	☐	☐	☐	☒	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): CEBY

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY CREEK

Date (mm-dd): 2019-06-07

Stream Code: APB

Site Code: APB-4

Sample: 01

Transect No.: 6 of 10

Bearing (D): 295

Min. Width (m): >3.0

Site Length (m): 49.8

Active Channel Width (m): 4.2

No. of Transects: 10

Transect Spacing (m): 5.53

Point Spacing (m): 0.70

Points per Transect: 6

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring	Cover: Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	Aquatic Vegetation Types Present: FL	AL	SS	MC	WC	GR	TR
1	0.35	135	0	45	425	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	1.05	365	0	1111	1111	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	1.75	895	5	1111	1111	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	2.45	400	0	1111	1111	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	3.15	320	0	130	360	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	3.85	155	0	0.10	150	☐	2	☐	☒	☐	☒	☐	☐	☐	☐	☐	☒	☐	☐	☐

Bank Angle & Particle Median Diameters
(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	1095	705	220	0	⊘	0
	Substrate Diameters	0.05	0.05	0.05	0.05		
Right Bank	Height ☐	300	160	55	0	⊘	4
	Substrate Diameters	0.05	0.05	0.05	0.05		

Dominant Vegetation Type
(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☒	☐	☐	☐
Right Bank	☐	☐	☐	☐	☒	☐	☐

Table Codes

Particle Sizes: *Measure all particles between 2.00mm and 1000mm*

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments:

Crew Leader (initial & last name): BEBTO

Crew	Recorder	Ent/Scanned	Verified	Corrected
G.EBY	RV	GE		

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Date (mm-dd): 2017-06-07

Stream Code: APB

Site Code: APB-4

Sample: 01 Transect No.: 7 of 10 Bearing (D): 260

Min. Width (m): >3.0 Site Length (m): 49.8 Active Channel Width (m): 4.2

No. of Transects: 10 Transect Spacing (m): 5.53 Point Spacing (m): 0.70

Points per Transect: 6

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No. Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm) Point	Particle Sizes (mm) Max. in Ring	Cover: Unmeasurable	Cover: Quality	Cover: Wood	Cover: Round Rock	Cover: Flat Rock	Cover: Macrophyte	Cover: Bank	Cover: Other	Aquatic Vegetation Types Present: FL	AL	SS	MC	WC	GR	TR
1	0.35	285	0	260	260	☐	1	☐	☐	☒	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐
2	1.05	445	5	111	111	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	1.75	370	0	0.10	210	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	2.45	275	0	0.10	120	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	3.15	295	0	0.10	110	☐	2	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	3.85	200	02	0.05	0.10	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	810	625	440	0	0	12
	Substrate Diameters	0.05	0.05	0.05	0.05		
Right Bank	Height ☐	910	380	270	0	0	8
	Substrate Diameters	0.05	0.05	0.05	0.05		

Dominant Vegetation Type
(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☒	☐	☐	☐
Right Bank	☐	☐	☐	☐	☒	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): B. EBY

Crew	Recorder	Ent/Scanned	Verified	Corrected
B. EBY	RV	GE		

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Name: APPLEBY

Date (mm-dd): 2019-06-07

Stream Code: APB

Site Code: APB-H

Sample: 01

Transect No.: 8 of 10

Bearing (D): 290

Min. Width (m): >3.0

Site Length (m): 49.4

Active Channel Width (m): 3.0

No. of Transects: 10

Transect Spacing (m): 5.33

Point Spacing (m): 0.50

Points per Transect: 6

Transect & Point Layout		
Use this table to determine the number of transects & points required, given the minimum stream width.		
Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring
1	0.25	360	5	140	160
2	0.75	295	5	0.10	260
3	1.25	275	3	75	135
4	1.75	225	0	0.10	135
5	2.25	170	0	0.10	70
6	2.75	15	0	0.05	112

Cover

Point No.	Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other
1	☐	2	☐	☐	☒	☐	☐	☐
2	☐	2	☐	☐	☒	☐	☐	☐
3	☐	2	☐	☒	☐	☐	☐	☐
4	☐	2	☐	☐	☒	☐	☐	☐
5	☐	0	☐	☐	☐	☐	☐	☐
6	☐	2	☐	☐	☒	☒	☐	☐

Aquatic Vegetation Types Present

Point No.	FL	AL	SS	MC	WC	GR	TR
1	☒	☐	☐	☐	☐	☐	☐
2	☐	☐	☐	☐	☐	☐	☐
3	☐	☐	☐	☐	☐	☐	☐
4	☐	☐	☐	☐	☐	☐	☐
5	☐	☐	☐	☐	☐	☐	☐
6	☐	☐	☐	☒	☐	☐	☐

Bank Angle & Particle Median Diameters
(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	Height	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank		☐	1240	315	270	0	120	☒
	Substrate Diameters		140	95	65	0.05		
Right Bank	Height	☐	560	290	180	0	0	12
	Substrate Diameters		0.05	0.05	65	0.05		

Dominant Vegetation Type
(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☐	☐	☒	☐
Right Bank	☐	☐	☐	☒	☐	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments: LB Gabion

Crew Leader (initial & last name): BEBY

Crew	Recorder	Ent/Scanned	Verified	Corrected
G. EBY	RV	GE		

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Stream Code: APB

Site Code: APB-4

Sample: 01

Transect No.: 8 of 10

Bearing (D): 325

Min. Width (m): >3.0

Site Length (m): 49.6

Active Channel Width (m): 3.7

No. of Transects: 10

Transect Spacing (m): 5.53

Point Spacing (m): 0.62

Points per Transect: 6

Date (mm-dd): 2019-06-07

Transect & Point Layout Use this table to determine the number of transects & points required, given the minimum stream width.		
Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring
1	0.31	110	0	0.05	140
2	0.73	245	0	0.10	130
3	1.55	195	20	0.10	65
4	2.17	195	40	0.13	65
5	2.79	160	15	0.05	55
6	3.41	125	0	0.10	110

Point No.	Cover: Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	Aquatic Vegetation Types Present: FL	AL	SS	MC	WC	GR	TR
1	☐	2	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	☐	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	☐	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters
(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	Height	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank		☐	170	325	180	0	112	8
	Substrate Diameters		0.05	120	110	005		
Right Bank		☐	735	540	240	0	0	7
	Substrate Diameters		220	0.05	0.05	0.05		

Dominant Vegetation Type
(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☒	☐	☐	☐	☐	☐	☐
Right Bank	☐	☐	☐	☒	☐	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments: LP is gabion

Crew Leader (initial & last name): GEBI

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Date (mm-dd): 2019-06-07

Stream Code: APB

Site Code: APB-4

Sample: 1

Transect No.: 10 of 10

Bearing (D): 330

Min. Width (m): 23.0

Site Length (m): 49.8

Active Channel Width (m): 4.1

No. of Transects: 10

Transect Spacing (m): 5.53

Point Spacing (m): 0.68

Points per Transect: 6

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring
1	0.34	110	5	6.10	110
2	1.00	115	5	0.10	50
3	1.78	80	15	35	90
4	2.35	100	5	0.10	140
5	3.06	105	5	20	110
6	3.74	125	5	0.10	110

Point No.	Cover: Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	Aquatic Vegetation Types Present: FL	AL	SS	MC	WC	GR	TR
1		2			X										
2		0													
3		0													
4		1		X											
5		1			X										
6		2			X										

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank Height	☐	640	470	515	0	20	3
Left Bank Substrate Diameters		0.10	0.05	0.05	0.05		
Right Bank Height	☐	25	670	720	0	0	15
Right Bank Substrate Diameters		0.10	0.05	0.05	0.05		

Dominant Vegetation Type
(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☒	☐	☐	☐
Right Bank	☐	☐	☐	☒	☐	☐	☐

Table Codes

Particle Sizes: *Measure all particles between 2.00mm and 1000mm*

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): GEBY

Crew	Recorder	Ent/Scanned	Verified	Corrected

Site Identification

Stream Name: APPLEBY | Stream Code: APB | Date (yyyy-mm-dd): 2019-06-07

Site Code: APB-6 | Alternate Site Code: | Sample: 01 | Site Length (m): 416.2

Record using NAD83 datum

	Zone	Easting	Northing
Uncorr. UTM	17	600249.0	4863908.7
Corr. UTM	17		

OR Lat. (DD MM SS.sss) | Long. (DD MM SS.sss)

Source of Uncorrected UTM Coord.: GPS/DGPS ☐ GIS ☐ OBM ☐ Other

Source of CorrectedUTM Coordinates: FWIS ☐ Ortho-photos ☐ GIS ☐ Other

Name of Layer Used for Correction

Access Route

SOUTH ON APPLEBY FROM 403, LEFT ON HARVESTER, PARK IN GO PARKING LOT

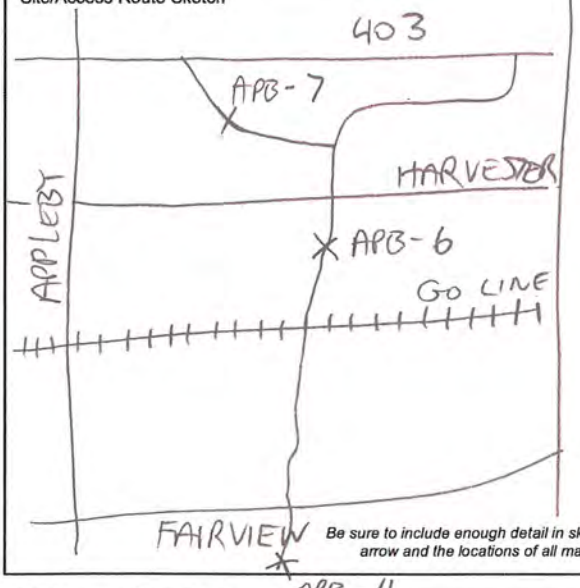
Site Description

SITE IS EAST OF PARKING LOT, D/S OF HARVESTER

☐ **Site Was Unsampleable** - *add reason on reverse*

Sketches

Site/Access Route Sketch





Be sure to include enough detail in sketches to ensure that someone could find the site again; include a north arrow and the locations of all markers and noted features. The artist should also sign the sketches.

Photo No. | Photo Name | Photo Description

Comments

Crew Leader (init. & last name): GEBY

Crew	Recorder	Entered	Verified	Corrected
KB				

Site Marker Details

24
22.2
462

SITE MARKER DESCRIPTION

	Bearing (D)	Distance (m)		Photo No.	Photo Name
Upstream Marker (measure from stake to site)			Upstream		
			Downstream		

Upstream Description: FLAGGED ASH 4B

	Bearing (D)	Distance (m)		Photo No.	Photo Name
Downstream Marker (measure from stake to site)	0	0.0	Upstream		
			Downstream		

Downstream Description: SECOND BARRIER D/S OF FAIRVIEW CROSSING

Site is Unsampleable

- ☐ Stream dry
- ☐ Insufficient water to sample effectively
- ☐ Stream is no longer present at location (tiled or relocated, etc)
- ☐ Naturally unwadeable (i.e. > 1.5 m deep)
- ☐ Unwadeable due to ponding from a permanent barrier — What is the permanent barrier?
- ☐ Unwadeable due to ponding from temporary barrier (eg. beaver dam) — What is the temporary barrier?
- ☐ Landowner could not be contacted
- ☐ Landowner refused access
- ☐ Inaccessible for safety reasons *(add details in comments below)*
- ☐ Stream is wadeable but not appropriate for the intended sampling

Modules to have been used (e.g. S2.M1, S3.M1):

Comments

Site Features

Mandatory Fields In Grey
Must be filled out for processing

Stream Code: APB

Site Code: APB-6

Sample: 01

Date (mm-dd): 2019 06-07

Stream Name: APPLEBY

For each landuse, check box that applies. Be sure to include comments explaining the particulars, including names and numbers of contacts

Site Features	Ongoing & Active	Historical Evidence	No Evidence but Reported	No Evidence	Unknown	Comments
Potential Point or Non-point Source Contaminant Sources	☒	☐	☐	☐	☐	ROAD, PARKING
Major Nutrient Sources Upstream	☒	☐	☐	☐	☐	403, FAIRVIEW, INDUSTRIAL
Channel Hardening or Straightening	☒	☐	☐	☐	☐	GABION, CONCRETE
Adjacent Landuses that Destabilize Banks	☒	☐	☐	☐	☐	GABION, PARKING
Sediment Loading or Deprivation	☒	☐	☐	☐	☐	DEPREVATION
Instream Habitat Modifications	☒	☐	☐	☐	☐	GABION, CONCRETE
Barriers and/or Dams in the Vicinity of the Site	☒	☐	☐	☐	☐	MAJOR
High Fishing Pressure	☐	☐	☐	☒	☐	
Log Jam Deflectors	☐	☐	☐	☒	☐	
Springs or Seeps at the Site	☐	☐	☐	☒	☐	
Impervious Substrate Limiting Burrowing Depth of Fish	☒	☐	☐	☐	☐	YES
Fish Stocked Near Sample Site	☐	☐	☐	☒	☐	
Other Activities that Could Influence Biota or Habitat	☐	☐	☐	☒	☐	
Intensive Logging Activitties within the Riparian Zone	☐	☐	☐	☒	☐	

Sources of Information
Visual Immediate ☐ Visual Extended ☐ Interview ☐ Maps & Photos ☐

Temperatures
Time (24hr): 10:15
Air Temp (°C):
Water Temp (°C):
Max Air Temp (°C):
Max. Water Temp (°C):
Source of Max. Air Temp:

Riparian Vegetation Community
Only check one box for each bank and zone.

Riparian Zone	Left Bank: None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-lands	Right Bank: None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-lands
1.5-10m	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☒	☒	☐
10-30m	☒	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐
30-100m	☒	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐

Comments

Crew Leader (initial & last name): GEBY

Crew Initials	Recorder	Ent/Scanned	Verified	Corrected
KB				

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Stream Code: APB

Site Code: APB-6

Sample: 01 | Transect No.: 1 of 10 | Bearing (D): 322

Min. Width (m): >3.0 | Site Length (m): 46.2 | Active Channel Width (m): 4.0

No. of Transects: 10 | Transect Spacing (m): 5.13 | Point Spacing (m): 0.67

Points per Transect: 6

Date (mm-dd): 2017-08-09

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No. Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Depth (mm)	Hydraulic Head (mm)	Particle Size: Point (mm)	Particle Size: Max. in Ring (mm)
1	0.33	70	0	20	70
2	1.00	90	0	10	125
3	1.67	160	0	15	140
4	2.34	220	5	1111	1111
5	3.01	165	15	1111	1111
6	3.68	160	2	1111	1111

Measure depth & hydraulic head to nearest 5 mm

Point No.	Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	FL	AL	SS	MC	WC	GR	TR
1	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	☐	0	☐	☐	☐	☒	☐	☐	☐	☐	☐	☒	☐	☐	☐

Cover

Aquatic Vegetation Types Present

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	575	340	10	0	☒	10
	Substrate Diameters	1111	0.05	0.05	0.05		
Right Bank	Height ☐	405	375	280	0	☒	6
	Substrate Diameters	20	10	0.05	0.05		

Dominant Vegetation Type (Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☒	☐	☐	☐
Right Bank	☐	☐	☐	☒	☐	☐	☐

Table Codes

Particle Sizes: *Measure all particles between 2.00mm and 1000mm*

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): OBY

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Stream Code: APB

Site Code: APB-6

Sample: 01

Transect No.: 2 of 10

Bearing (D): 320

Min. Width (m): >3.0

No. of Transects: 10

Points per Transect: 6

Site Length (m): 46.2

Transect Spacing (m): 5.13

Active Channel Width (m): 5.4

Point Spacing (m): 0.90

Date (mm-dd): 2019-06-07

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring	Cover: Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	Aquatic Vegetation Types Present: FL	AL	SS	MC	WC	GR	TR
1	0.45	30	0	1111	1111	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	1.25	100	0	1111	1111	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	2.25	150	0	1111	1111	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	3.15	140	5	1111	1111	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	4.05	120	15	1111	1111	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	4.95	75	0	1111	1111	☐	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters
(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	300	265	155		☒	☒
	Substrate Diameters	1111	1111	1111			
Right Bank	Height ☐	500	310	65	0	☒	☒
	Substrate Diameters	1111	75	0.065	0.05		

Dominant Vegetation Type
(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☒	☐	☐	☐
Right Bank	☐	☐	☐	☒	☐	☐	☐

Table Codes

Particle Sizes: *Measure all particles between 2.00mm and 1000mm*

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): GEOT

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLE34

Date (mm-dd): 2019-06-07

Stream Code: APB

Site Code: APB-6

Sample: 01

Transect No.: 3 of 10

Bearing (D): 320

Min. Width (m): >3.0

Site Length (m): 46.2

Active Channel Width (m): 5.6

No. of Transects: 10

Transect Spacing (m): 5.13

Point Spacing (m): 6.93

Points per Transect: 6

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring
1	0.47	50	15	1111	1111
2	1.90	35	10	1111	1111
3	2.33	75	15	1111	1111
4	3.26	90	4	1111	1111
5	4.19	130	0	1111	1111
6	5.12	105	16	1111	1111

Cover

Point No.	Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other
1	☐	0	☐	☐	☐	☐	☐	☐
2	☐	0	☐	☐	☐	☐	☐	☐
3	☐	0	☐	☐	☐	☐	☐	☐
4	☐	0	☐	☐	☐	☐	☐	☐
5	☐	0	☐	☐	☐	☐	☐	☐
6	☐	0	☐	☐	☐	☐	☐	☐

Aquatic Vegetation Types Present

Point No.	FL	AL	SS	MC	WC	GR	TR
1	☐	☐	☐	☐	☐	☐	☐
2	☐	☐	☐	☐	☐	☐	☐
3	☐	☐	☐	☐	☐	☐	☐
4	☐	☐	☐	☐	☐	☐	☐
5	☐	☐	☐	☐	☐	☐	☐
6	☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	70	66	545	0	☒	12
	Substrate Diameters	1111	0.05	0.05	125		
Right Bank	Height ☐	700	620	135	0	0	11
	Substrate Diameters	1111	1111	85	120		

Dominant Vegetation Type (Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☒	☐	☐	☐
Right Bank	☐	☐	☐	☒	☐	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): GEBT

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLE3

Stream Code: APB

Site Code: APB6

Sample: 01

Transect No.: 4 of 12

Bearing (D): 320

Min. Width (m): >3.0

No. of Transects: 10

Points per Transect: 6

Site Length (m): 46.7

Transect Spacing (m): 5.13

Active Channel Width (m): 6.1

Point Spacing (m): 1.06

Date (mm-dd): 2019-06-07

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring
1	0.51	15	5	1111	1111
2	1.52	65	0	1111	1111
3	2.55	140	10	1111	1111
4	3.57	75	4	1111	1111
5	4.59	70	10	1111	1111
6	5.61	45	0	1111	1111

Cover

Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other
☐	0	☐	☐	☐	☐	☐	☐
☐	2	☐	☐	☐	☐	☐	☐
☐	0	☐	☐	☐	☐	☐	☐
☐	2	☐	☐	☐	☐	☐	☐
☐	2	☐	☐	☐	☐	☐	☐
☐	0	☐	☐	☐	☐	☐	☐

Aquatic Vegetation Types Present

FL	AL	SS	MC	WC	GR	TR
☐	☐	☐	☐	☐	☐	☐
☒	☐	☐	☐	☐	☐	☐
☒	☐	☐	☐	☐	☐	☐
☒	☐	☐	☐	☐	☐	☐
☒	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	760	780	259	0	230	5
	Substrate Diameters	1111	75	0.05	75		
Right Bank	Height ☐	560	520	278	0	0	3
	Substrate Diameters	1111	1111	1110	0.05		

Dominant Vegetation Type
(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☒	☐	☐	☐
Right Bank	☐	☐	☐	☒	☐	☐	☐

Table Codes

Particle Sizes: *Measure all particles between 2.00mm and 1000mm*

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): GEB

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLE3 4

Stream Code: APS

Site Code: APS-6

Sample: 1 | Transect No.: 5 of 10 | Bearing (D): 320

Min. Width (m): >3.0 | Site Length (m): 46.2 | Active Channel Width (m): 5.7

No. of Transects: 10 | Transect Spacing (m): 5.13 | Point Spacing (m): 0.75

Points per Transect: 6

Date (mm-dd): 2019-06-07

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No. Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring
1	0.48	55	65	1111	1111
2	1.43	75	10	1111	1111
3	2.38	65	25	1111	1111
4	3.33	25	65	1111	1111
5	4.28	60	20	1111	1111
6	5.23	70	10	1111	1111

Cover

Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other
☐	0	☐	☐	☐	☐	☐	☐
☐	0	☐	☐	☐	☐	☐	☐
☐	0	☐	☐	☐	☐	☐	☐
☐	0	☐	☐	☐	☐	☐	☐
☐	0	☐	☐	☐	☐	☐	☐
☐	0	☐	☐	☐	☐	☐	☐

Aquatic Vegetation Types Present

FL	AL	SS	MC	WC	GR	TR
☒	☐	☐	☐	☐	☐	☐
☒	☐	☐	☐	☐	☐	☐
☒	☐	☐	☐	☐	☐	☐
☑	☐	☐	☐	☐	☐	☐
☒	☐	☐	☐	☐	☐	☐
☒	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	710	550	150	0	0	15
	Substrate Diameters	1111	140	0.05	0.05		
Right Bank	Height ☐	730	610	280	0	110	0
	Substrate Diameters	1111	0.05	0.05	0.05		

Jump the highest diameter

Dominant Vegetation Type

(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☒	☐	☐	☐
Right Bank	☐	☐	☐	☒	☐	☐	☐

Table Codes

Particle Sizes: *Measure all particles between 2.00mm and 1000mm*

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): CEB Y

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Stream Code: APB

Site Code: APB-6

Sample: 01

Transect No.: 6 of 10

Bearing (D): 320

Min. Width (m): 3.0

No. of Transects: 10

Points per Transect: 6

Site Length (m): 46.2

Transect Spacing (m): 5.13

Active Channel Width (m): 5.0

Point Spacing (m): 0.83

Date (mm-dd): 2019-06-07

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring
1	0.42	15	0		
2	1.25	90	5		
3	2.08	195	20		
4	2.71	90	0		
5	3.74	90	0		
6	4.57	130	0		

Cover

Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other
☐	0	☐	☐	☐	☐	☐	☐
☐	0	☐	☐	☐	☐	☐	☐
☐	0	☐	☐	☐	☐	☐	☐
☐	0	☐	☐	☐	☐	☐	☐
☐	0	☐	☐	☐	☐	☐	☐
☐	0	☐	☐	☐	☐	☐	☐

Aquatic Vegetation Types Present

FL	AL	SS	MC	WC	GR	TR
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

		> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height	☐	570	500	490	0	0	14
	Substrate Diameters		1111	0.05	0.05	120		
Right Bank	Height	☐	530	0	0	0	330	0
	Substrate Diameters		1111	1111	1111	1111		

Dominant Vegetation Type

(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☒	☐	☐	☐
Right Bank	☒	☐	☐	☐	☐	☐	☐

Table Codes

Particle Sizes: *Measure all particles between 2.00mm and 1000mm*

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments: on old concrete rib structure.

Crew Leader (initial & last name): OEBY

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Stream Code: APB

Site Code: APB-6

Sample: 01

Transect No.: 7 of 10

Bearing (D): 300

Min. Width (m): >3.0

No. of Transects: 10

Points per Transect: 6

Site Length (m): 46.2

Transect Spacing (m): 5.13

Active Channel Width (m): 5.9

Point Spacing (m): 0.98

Date (mm-dd): 2014-06-17

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring
1	0.49	55	30	1111	1111
2	1.47	35	120	1111	1111
3	2.45	30	190	1111	1111
4	3.43	25	100	1111	1111
5	4.41	30	25	1111	1111
6	5.39	35	0	1111	1111

Cover

Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other
☐	0	☐	☐	☐	☐	☐	☐
☐	0	☐	☐	☐	☐	☐	☐
☐	0	☐	☐	☐	☐	☐	☐
☐	0	☐	☐	☐	☐	☐	☐
☐	0	☐	☐	☐	☐	☐	☐
☐	0	☐	☐	☐	☐	☐	☐

Aquatic Vegetation Types Present

FL	AL	SS	MC	WC	GR	TR
☒	☐	☐	☐	☐	☐	☐
☒	☐	☐	☐	☐	☐	☐
☒	☐	☐	☐	☐	☐	☐
☒	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☒	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

		> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height	☐	130	275	610	0	120	8
	Substrate Diameters		1111	1111	170	145		
Right Bank	Height	☐	765	370	440	0	0	0
	Substrate Diameters		1111	120	125	130		

Dominant Vegetation Type
(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☒	☐	☐	☐	☐	☐	☐
Right Bank	☒	☐	☐	☐	☐	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments: right down stream of last fish barrier downstream of Fairview

Crew Leader (initial & last name): GEGY

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Date (mm-dd): 2018-08-07

Stream Code: APB

Site Code: APB-6

Sample: 01

Transect No.: 7 of 10

Bearing (D): 320

Min. Width (m): >3.0

Site Length (m): 46.2

Active Channel Width (m): 3.7

No. of Transects: 10

Transect Spacing (m): 5.13

Point Spacing (m): 0.62

Points per Transect: 6

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Depth (mm)	Hydraulic Head (mm)	Particle Size Point	Particle Size Max. in Ring
1	0.31	310	20	90	111
2	0.73	430	00	010	1111
3	1.55	490	00	111	1111
4	2.17	500	00	1111	1111
5	2.79	425	00	010	175
6	3.41	270	00	150	150

Measure depth & hydraulic head to nearest 5 mm

Particle Sizes (mm)

Point No.	Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	FL	AL	SS	MC	WC	GR	TR
1	☐	2	☐	☐	☐	☒	☒	☐	☒	☐	☐	☒	☐	☐	☐
2	☐	0	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐
3	☐	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	☐	2	☐	☒	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐
6	☐	2	☐	☐	☐	☒	☐	☐	☒	☐	☐	☒	☐	☐	☐

Cover

Aquatic Vegetation Types Present

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	814	470	270	0	130	12
	Substrate Diameters	1111	0.05	0.05	0.05		
Right Bank	Height ☐	725	260	300	0	0	6
	Substrate Diameters	180	145	120	115		

Dominant Vegetation Type

(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☒	☐	☐	☐
Right Bank	☐	☐	☐	☐	☒	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments: lots of black landscaping cloth on both banks

Crew Leader (initial & last name): GERY

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Stream Name: APPLEBY

Stream Code: APB

Site Code: APB-6

Sample: 01

Transect No.: 9 of 10

Bearing (D): 326

Min. Width (m): 3.0

No. of Transects: 10

Points per Transect: 6

Site Length (m): 46.2

Transect Spacing (m): 5.13

Active Channel Width (m): 4.7

Point Spacing (m): 0.78

Mandatory Fields In Grey
Must be filled out for processing

Date (mm-dd): 2017-06-07

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Depth (mm)	Hydraulic Head (mm)	Particle Size (mm) Point	Particle Size (mm) Max. in Ring
1	0.39	130	0	170	170
2	1.17	180	0	9	130
3	1.95	200	0	15	200
4	2.73	255	0	35	160
5	3.51	360	0	25	200
6	4.29	460	0	15	230

Measure depth & hydraulic head to nearest 5 mm

Particle Sizes (mm)

Cover

Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other
☐	2	☐	☐	☒	☒	☐	☐
☐	1	☐	☒	☐	☐	☐	☐
☐	2	☐	☒	☐	☐	☐	☐
☐	2	☐	☐	☒	☐	☐	☐
☐	2	☐	☐	☒	☐	☐	☐
☐	2	☐	☐	☒	☒	☐	☐

Aquatic Vegetation Types Present

FL	AL	SS	MC	WC	GR	TR
☒	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☒	☐	☐	☒	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	570	290	190	0	0	12
	Substrate Diameters	0.05	0.05	0.05	0.05		
Right Bank	Height ☐	960	460	480	0	0	20
	Substrate Diameters	0.05	0.05	0.05	0.05		

Dominant Vegetation Type

(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☒	☐	☐	☐
Right Bank	☐	☐	☐	☒	☐	☐	☐

Table Codes

Particle Sizes: *Measure all particles between 2.00mm and 1000mm*

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): GEOY

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Stream Name: APPLEBY

Mandatory Fields In Grey
Must be filled out for processing

Date (mm-dd): 2019-06-07

Stream Code: APB

Site Code: APB-6

Sample: 01

Transect No.: 10 of 10

Bearing (D): 320

Min. Width (m): >3.0

Site Length (m): 46.2

Active Channel Width (m): 3.7

No. of Transects: 10

Transect Spacing (m): 5.13

Point Spacing (m): 0.62

Points per Transect: 6

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm) Point	Particle Sizes (mm) Max. in Ring
1	0.31	260	0	0.10	120
2	0.93	410	0	0.10	120
3	1.55	470	0	1111	1111
4	2.17	425	0	1111	1111
5	2.79	330	0	40	120
6	3.41	75	0	0.10	140

Measure depth & hydraulic head to nearest 5 mm

Particle Sizes (mm)

Point No.	Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	FL	AL	SS	MC	WC	GR	TR
1	☐	2	☐	☒	☐	☒	☐	☐	☒	☐	☐	☐	☐	☐	☐
2	☐	2	☐	☐	☒	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐
3	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	☐	2	☐	☒	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐
6	☐	2	☐	☒	☐	☒	☐	☐	☒	☐	☐	☒	☐	☐	☐

Cover

Aquatic Vegetation Types Present

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	595	260	140	0	80	5
	Substrate Diameters	0.05	0.05	0.05	0.05		
Right Bank	Height ☐	705	460	270	0	70	4
	Substrate Diameters	150	190	115	125		

Dominant Vegetation Type (Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☐	☒	☐	☐
Right Bank	☐	☐	☐	☐	☒	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments: Grab cart + rope; landscaping cloth on both banks

Crew Leader (initial & last name): OEBY

Crew	Recorder	Ent/Scanned	Verified	Corrected

Site Identification

Stream Name: APPLEBY | Stream Code: APB | Date (yyyy-mm-dd): 2019-06-07

Site Code: APB-7 | Alternate Site Code: | Sample: 01 | Site Length (m): 40.4

*** Record using NAD83 datum

Uncorr. UTM — Zone: 17 | Easting: 599858.0 | Northing: 4803986.0 | OR → Lat. / Long. DD MM SS.sss

Corr. UTM — Zone: 1 | Easting: . | Northing: .

Source of Uncorrected UTM Coord.: GPS/DGPS ☐ GIS ☐ OBM ☐ Other

Source of CorrectedUTM Coordinates: FWIS ☐ Ortho-photos ☐ GIS ☐ Other | Name of Layer Used for Correction

Access Route

SOUTH ON APPLEBY FROM 403, LEFT ON HARVESTER, PARK IN GO PARKING LOT

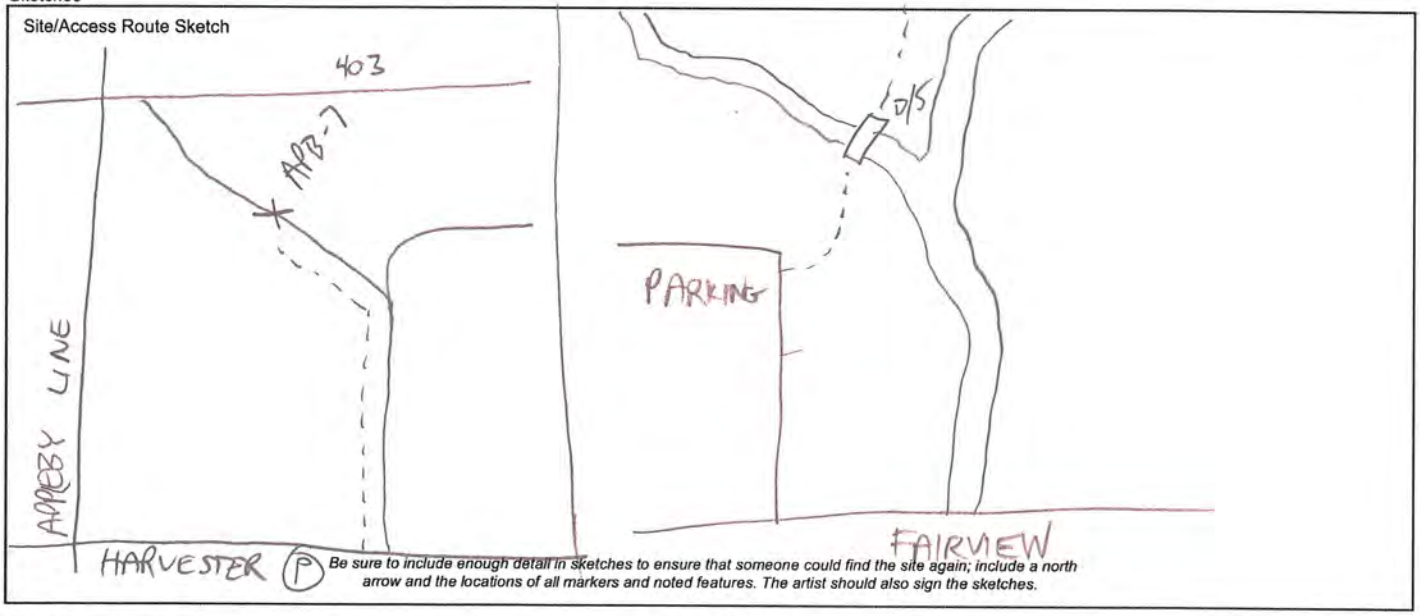
Site Description

SITE IS EAST OF PARKING LOT, U/S OF HARVESTER, LEFT @ THE FORK

☐ **Site Was Unsampleable** - *add reason on reverse*

Sketches

Site/Access Route Sketch



Be sure to include enough detail in sketches to ensure that someone could find the site again; include a north arrow and the locations of all markers and noted features. The artist should also sign the sketches.

Photo No.	Photo Name	Photo Description

Comments

Crew Leader (init. & last name): GEBY

Crew	Recorder	Entered	Verified	Corrected
KB				

Site Marker Details

SITE MARKER DESCRIPTION

18.1
3.3

Upstream Marker (measure from stake to site) | Bearing (D) | Distance (m) | Photo No. (Upstream / Downstream) | Photo Name

Upstream Description

4.0 WOODY DEBRIS JAM

15.0

40.4

Downstream Marker (measure from stake to site) | Bearing (D): 0 | Distance (m): 0.0 | Photo No. (Upstream / Downstream) | Photo Name

Downstream Description

LITTLE FOOTBRIDGE

Site is Unsampleable

- ☐ Stream dry
- ☐ Insufficient water to sample effectively
- ☐ Stream is no longer present at location (tiled or relocated, etc)
- ☐ Naturally unwadeable (i.e. > 1.5 m deep)
- ☐ Unwadeable due to ponding from a permanent barrier — What is the permanent barrier?
- ☐ Unwadeable due to ponding from temporary barrier (eg. beaver dam) — What is the temporary barrier?
- ☐ Landowner could not be contacted
- ☐ Landowner refused access
- ☐ Inaccessible for safety reasons *(add details in comments below)*
- ☐ Stream is wadeable but not appropriate for the intended sampling

Modules to have been used (e.g. S2.M1, S3.M1):

Comments

Site Features

Mandatory Fields In Grey
Must be filled out for processing

Stream Code: APB

Site Code: APB-7

Sample: 01

Date (mm-dd): 2019 06-07

Stream Name: APPLEBY

For each landuse, check box that applies. Be sure to include comments explaining the particulars, including names and numbers of contacts

Site Features	Ongoing & Active	Historical Evidence	No Evidence but Reported	No Evidence	Unknown	Comments
Potential Point or Non-point Source Contaminant Sources	☒	☐	☐	☐	☐	403, INDUSTRIAL
Major Nutrient Sources Upstream	☒	☐	☐	☐	☐	"
Channel Hardening or Straightening	☒	☐	☐	☐	☐	RIP RAP
Adjacent Landuses that Destabilize Banks	☐	☐	☐	☒	☐	
Sediment Loading or Deprivation	☐	☐	☐	☒	☐	
Instream Habitat Modifications	☒	☐	☐	☐	☐	RIP RAP
Barriers and/or Dams in the Vicinity of the Site	☐	☐	☐	☒	☐	
High Fishing Pressure	☐	☐	☐	☒	☐	
Log Jam Deflectors	☐	☐	☐	☒	☐	
Springs or Seeps at the Site	☐	☐	☐	☒	☐	
Impervious Substrate Limiting Burrowing Depth of Fish	☐	☐	☐	☒	☐	
Fish Stocked Near Sample Site	☐	☐	☐	☒	☐	
Other Activities that Could Influence Biota or Habitat	☐	☐	☐	☒	☐	
Intensive Logging Activitties within the Riparian Zone	☐	☐	☐	☒	☐	

Sources of Information
Visual Immediate ☒ Visual Extended ☐ Interview ☐ Maps & Photos ☐

Temperatures
Time (24hr): 11:30
Air Temp (°C):
Water Temp (°C):
Max Air Temp (°C):
Max. Water Temp (°C):
Source of Max. Air Temp:

Riparian Vegetation Community
Only check one box for each bank and zone.

Riparian Zone	Left Bank: None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-lands	Right Bank: None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-lands
1.5-10m	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☒	☐
10-30m	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☒	☐
30-100m	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☒	☐

Comments:

Crew Leader (initial & last name): CB4

Crew Initials	Recorder	Ent/Scanned	Verified	Corrected
KB				

Channel Morphology

Stream Name: APPLEBY

Stream Code: APB

Site Code: APB-7

Sample: 1 | Transect No.: 6 of 15 | Bearing (D): 260

Min. Width (m): 1.3 | Site Length (m): 40.4 | Active Channel Width (m): 1.4

No. of Transects: 15 | Transect Spacing (m): 2.88 | Point Spacing (m): 0.47

Points per Transect: 3

Mandatory Fields In Grey
Must be filled out for processing

Date (mm-dd): 2019-06-07

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Measure depth & hydraulic head to nearest 5 mm

Point No.	Location (m)	Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Particle Sizes (mm): Max. in Ring
1	0.23	90	0	55	110
2	0.70	145	0	0.10	175
3	1.17	135	5	120	120
4	.				
5	.				
6	.				

Cover

Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other
☐	2	☐	☒	☐	☐	☐	☐
☐	1	☐	☒	☐	☐	☐	☐
☐	2	☐	☒	☐	☐	☐	☐
☐		☐	☐	☐	☐	☐	☐
☐		☐	☐	☐	☐	☐	☐
☐		☐	☐	☐	☐	☐	☐

Aquatic Vegetation Types Present

FL	AL	SS	MC	WC	GR	TR
☒	☐	☐	☐	☐	☐	☐
☒	☐	☐	☐	☐	☐	☐
☒	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	580	435	175	0	☒	0
	Substrate Diameters	120	75	80	0.05		
Right Bank	Height ☐	550	229	165	0	50	3
	Substrate Diameters	0.05	0.05	0.05	0.05		

Dominant Vegetation Type

(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☒	☐	☐	☐	☐	☐	☐
Right Bank	☒	☐	☐	☐	☐	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments: Gabion on Left bank

Crew Leader (initial & last name): GEBY

Crew	Recorder	Ent/Scanned	Verified	Corrected
KB				

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Stream Code: APB

Site Code: APB-7

Sample: 01

Transect No.: 2 of 15

Bearing (D): 260

Min. Width (m): 1.3

No. of Transects: 15

Points per Transect: 3

Site Length (m): 40.4

Transect Spacing (m): 2.88

Active Channel Width (m): 1.4

Point Spacing (m): 0.47

Date (mm-dd): 2019-06-07

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring
1	0.23	45	0	110	130
2	0.70	110	0	010	170
3	1.17	100	5	0.10	140
4	.				
5	.				
6	.				

Cover

Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other
☐	2	☐	☒	☐	☐	☐	☐
☐	2	☐	☒	☐	☐	☐	☐
☐	2	☐	☒	☐	☒	☐	☐
☐	☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐	☐

Aquatic Vegetation Types Present

FL	AL	SS	MC	WC	GR	TR
☒	☐	☐	☐	☐	☐	☐
☒	☐	☐	☐	☐	☐	☐
☒	☐	☐	☒	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	Height	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	☐		490	320	210	0	0	0
	Substrate Diameters		120	170	0.05	0.05		
Right Bank	☐		450	170	120	0	0	5
	Substrate Diameters		0.05	0.05	0.05	0.05		

Dominant Vegetation Type (Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☒	☐	☐	☐
Right Bank	☐	☐	☐	☒	☐	☐	☐

Table Codes

Particle Sizes: *Measure all particles between 2.00mm and 1000mm*

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): GBY

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Date (mm-dd): 2019-06-07

Stream Code: APB

Site Code: APB-7

Sample: 01

Transect No.: 3 of 15

Bearing (D): 260

Min. Width (m): 1.3

Site Length (m): 40.4

Active Channel Width (m): 1.4

No. of Transects: 15

Transect Spacing (m): 2.86

Point Spacing (m): 0.47

Points per Transect: 3

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Measure depth & hydraulic head to nearest 5 mm

Point No.	Location (m)	Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Particle Sizes (mm): Max. in Ring
1	0.23	50	0	10	130
2	0.70	105	0	70	150
3	1.17	45	0	10	40
4	.				
5	.				
6	.				

Cover

Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other
☐	2	☐	☒	☐	☐	☐	☐
☐	2	☐	☒	☐	☐	☐	☐
☐	2	☐	☐	☐	☒	☐	☐
☐		☐	☐	☐	☐	☐	☐
☐		☐	☐	☐	☐	☐	☐
☐		☐	☐	☐	☐	☐	☐

Aquatic Vegetation Types Present

FL	AL	SS	MC	WC	GR	TR
☒	☐	☐	☐	☐	☐	☐
☒	☐	☐	☐	☐	☐	☐
☐	☐	☐	☒	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	225	490	240	0	0	0
	Substrate Diameters	170	130	0.05	0.05		
Right Bank	Height ☐	370	260	220	0	0	3
	Substrate Diameters	0.05	0.05	0.05	0.05		

Dominant Vegetation Type (Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☒	☐	☐	☐	☐	☐	☐
Right Bank	☐	☐	☐	☒	☐	☐	☐

Table Codes

Particle Sizes: *Measure all particles between 2.00mm and 1000mm*

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments: Gabion on LB

Crew Leader (initial & last name): CB Y

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Stream Name: APPLEBY

Mandatory Fields In Grey
Must be filled out for processing

Date (mm-dd): 2019-06-07

Stream Code: APB

Site Code: APB-7

Sample: 01

Transect No.: 4 of 15

Bearing (D): 260

Min. Width (m): 1.3

Site Length (m): 40.4

Active Channel Width (m): 1.7

No. of Transects: 15

Transect Spacing (m): 2.88

Point Spacing (m): 0.58

Points per Transect: 3

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Measure depth & hydraulic head to nearest 5 mm

Point No.	Location (m)	Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm) Point	Particle Sizes (mm) Max. in Ring
1	0.28	75	0	0.10	120
2	0.85	120	10	0.10	170
3	1.42	105	5	0.10	140
4	.				
5	.				
6	.				

Cover

Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other
☐	2	☐	☒	☐	☐	☐	☐
☐	2	☐	☒	☐	☐	☐	☐
☐	2	☐	☒	☐	☒	☐	☐
☐	☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐	☐

Aquatic Vegetation Types Present

FL	AL	SS	MC	WC	GR	TR
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☒	☐	☐	☒	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

		> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height	☐	385	205	160	0	0	0
	Substrate Diameters		0.100	80	172	0.05		
Right Bank	Height	☐	420	160	150	0	60	4
	Substrate Diameters		0.05	0.05	0.05	0.05		

Dominant Vegetation Type (Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-land
Left Bank	☒	☐	☐	☐	☐	☐	☐
Right Bank	☐	☐	☐	☐	☒	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments: Gabion on L/B

Crew Leader (initial & last name): CEBY

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Stream Name: APPLE34

Stream Code: APB

Site Code: APB-7

Sample: 01

Transect No.: 5 of 15

Bearing (D): 260

Min. Width (m): 1.3

No. of Transects: 15

Points per Transect: 3

Site Length (m): 40.4

Transect Spacing (m): 2.88

Active Channel Width (m): 1.5

Point Spacing (m): .5

Mandatory Fields In Grey
Must be filled out for processing

Date (mm-dd): 2019-06-07

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring
1	0.25	100	0	35	220
2	0.75	120	2	0.10	150
3	1.25	120	0	0.10	130
4	.				
5	.				
6	.				

Cover

Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other
☐	1	☐	☐	☒	☐	☐	☐
☐	2	☐	☒	☐	☐	☐	☐
☐	2	☐	☐	☒	☒	☐	☐
☐		☐	☐	☐	☐	☐	☐
☐		☐	☐	☐	☐	☐	☐
☐		☐	☐	☐	☐	☐	☐

Aquatic Vegetation Types Present

FL	AL	SS	MC	WC	GR	TR
☒	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☒	☐	☐	☒	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

		> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height	☐	355	280	170	0	0	5
	Substrate Diameters		80	0.05	0.00	0.05		
Right Bank	Height	☐	560	280	120	0	0	7
	Substrate Diameters		0.05	0.05	0.25	0.05		

Dominant Vegetation Type
(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☒	☐	☐	☐	☐	☐	☐
Right Bank	☐	☐	☐	☐	☒	☐	☐

Table Codes

Particle Sizes: *Measure all particles between 2.00mm and 1000mm*

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments: Gabion on L/B

Crew Leader (initial & last name): GEGY

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Date (mm-dd): 2019-06-07

Stream Code: APB

Site Code: APB-7

Sample: 91

Transect No.: 6 of 15

Bearing (D): 260

Min. Width (m): 1.3

Site Length (m): 40.4

Active Channel Width (m): 1.8

No. of Transects: 15

Transect Spacing (m): 2.88

Point Spacing (m): 0.6

Points per Transect: 3

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Measure depth & hydraulic head to nearest 5 mm

Point No.	Location (m)	Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm) Point	Particle Sizes (mm) Max. in Ring
1	0.30	30	0	160	160
2	0.50	70	5	150	150
3	1.50	110	0	0.10	140
4	.				
5	.				
6	.				

Cover

Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other
☐	2	☐	☒	☐	☐	☐	☐
☐	2	☐	☐	☒	☐	☐	☐
☐	1	☐	☒	☐	☒	☐	☐
☐		☐	☐	☐	☐	☐	☐
☐		☐	☐	☐	☐	☐	☐
☐		☐	☐	☐	☐	☐	☐

Aquatic Vegetation Types Present

FL	AL	SS	MC	WC	GR	TR
☐	☐	☐	☐	☐	☐	☐
☒	☐	☐	☐	☐	☐	☐
☐	☐	☐	☒	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	460	360	250	0	20	8
	Substrate Diameters	65	120	0.10	0.05		
Right Bank	Height ☐	660	360	250	0	0	12
	Substrate Diameters	0.10	0.05	0.05	0.05		

Dominant Vegetation Type (Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☒	☐	☐	☐	☐	☐	☐
Right Bank	☐	☐	☐	☒	☐	☐	☐

Table Codes

Particle Sizes: *Measure all particles between 2.00mm and 1000mm*

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments: LB Gabion

Crew Leader (initial & last name): GEBY

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLE3Y

Stream Code: APB

Site Code: APB-7

Sample: 01

Transect No.: 7 of 15

Bearing (D): 280

Min. Width (m): 1.3

Site Length (m): 40.4

Active Channel Width (m): 1.4

No. of Transects: 15

Transect Spacing (m): 2.88

Point Spacing (m): 0.47

Points per Transect: 3

Date (mm-dd): 2019-06-07

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring
1	0.23	65	10	0.10	150
2	0.70	75	40	1.22	185
3	1.17	45	8	10	80
4	.				
5	.				
6	.				

Point No.	Cover: Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	Aquatic Vegetation Types Present: FL	AL	SS	MC	WC	GR	TR
1	☐	2	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	☐	2	☐	☒	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐
3	☐	2	☐	☐	☐	☒	☐	☐	☐	☐	☐	☒	☐	☐	☐
4	☐		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	☐		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	☐		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	370	330	80	0	0	
	Substrate Diameters	120	125	0.10	30		
Right Bank	Height ☐	395	210	190	0	0	5
	Substrate Diameters	0.10	0.05	0.05	0.05		

Dominant Vegetation Type
(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☐	☒	☐	☐
Right Bank	☐	☐	☐	☐	☒	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): GEBY

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Stream Code: APB

Site Code: APB-7

Sample: 01

Transect No.: 8 of 15

Bearing (D): 298

Min. Width (m): 1.3

Site Length (m): 40.4

Active Channel Width (m): 1.7

No. of Transects: 15

Transect Spacing (m): 2.88

Point Spacing (m): 0.57

Points per Transect: 3

Date (mm-dd): 2019-06-07

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm) Point	Particle Sizes (mm) Max. in Ring
1	0.28	40	0	0.10	110
2	0.85	125	15	145	145
3	1.42	45	0	0.10	0.10
4	.				
5	.				
6	.				

Measure depth & hydraulic head to nearest 5 mm

Point No.	Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	FL	AL	SS	MC	WC	GR	TR
1	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	☐	2	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	☐	2	☐	☐	☐	☒	☐	☐	☒	☐	☐	☒	☐	☐	☐
4	☐		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	☐		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	☐		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Cover

Aquatic Vegetation Types Present

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	430	355	145	0	0	0
	Substrate Diameters	85	0.10	10	0.05		
Right Bank	Height ☐	385	220	130	0	0	3
	Substrate Diameters	0.10	0.10	0.10	40		

Dominant Vegetation Type

(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☐	☐	☒	☐
Right Bank	☒	☐	☐	☐	☐	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): CEBY

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLE34

Stream Code: APB

Site Code: APB-7

Sample: 01

Transect No.: 9 of 15

Bearing (D): 275

Min. Width (m): 1.3

Site Length (m): 40.4

Active Channel Width (m): 1.8

No. of Transects: 15

Transect Spacing (m): 2.88

Point Spacing (m): 0.6

Points per Transect: 3

Date (mm-dd): 2019-06-07

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring
1	0.30	75	25	15	45
2	0.90	85	0	0.10	230
3	1.50	40	0	0.05	0.10
4	.				
5	.				
6	.				

Cover: Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	Aquatic Vegetation Types Present: FL	AL	SS	MC	WC	GR	TR
☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐
☐	2	☐	☒	☐	☐	☐	☐	☒	☐	☐	☒	☐	☐	☐
☐	0	☐	☐	☐	☐	☐	☐	☒	☐	☐	☒	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

		> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height	☐	250	120	10	0	0	4
	Substrate Diameters		5	0.05	0.05	0.05		
Right Bank	Height	☐	630	400	260	0	0	7
	Substrate Diameters		0.05	0.05	0.05	0.05		

Dominant Vegetation Type
(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☐	☒	☐	☐
Right Bank	☐	☐	☐	☒	☐	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): GEBY

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLE34

Date (mm-dd): 2019-06-07

Stream Code: APB

Site Code: APB-7

Sample: 01

Transect No.: 10 of 15

Bearing (D): 250

Min. Width (m): 1.3

Site Length (m): 40.4

Active Channel Width (m): 2.0

No. of Transects: 15

Transect Spacing (m): 2.86

Point Spacing (m): 0.67

Points per Transect: 3

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Measure depth & hydraulic head to nearest 5 mm

Particle Sizes (mm)

Cover

Aquatic Vegetation Types Present

Point No.	Location (m)	Depth (mm)	Hydraulic Head (mm)	Particle Size Point	Particle Size Max. in Ring	Cover: Unmeasurable	Cover: Quality	Cover: Wood	Cover: Round Rock	Cover: Flat Rock	Cover: Macrophyte	Cover: Bank	Cover: Other	Aquatic Vegetation Types Present: FL	AL	SS	MC	WC	GR	TR
1	0.33	50	25	99	120		2		X					X						
2	1.02	90	15	0.10	110		1		X											
3	1.67	50	0	0.05	70		0										X			
4	.																			
5	.																			
6	.																			

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	440	265	0	560	0	4
	Substrate Diameters	5	0.05	0.05	0.05		
Right Bank	Height ☐	755	710	940	0	8	2
	Substrate Diameters	0.05	0.05	0.05	0.05		

Dominant Vegetation Type (Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☐	☒	☐	☐
Right Bank	☐	☐	☐	☐	☒	☐	☐

Table Codes

Particle Sizes: *Measure all particles between 2.00mm and 1000mm*

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): GET

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Stream Code: APB

Site Code: APB-7

Sample: 01

Transect No.: 13 of 15

Bearing (D): 250

Min. Width (m): 1.3

Site Length (m): 40.4

Active Channel Width (m): 2.6

No. of Transects: 15

Transect Spacing (m): 2.88

Point Spacing (m): 0.97

Points per Transect: 3

Date (mm-dd): 2019-06-07

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm) Point	Particle Sizes (mm) Max. in Ring	Cover Unmeasurable	Cover Quality	Cover Wood	Cover Round Rock	Cover Flat Rock	Cover Macrophyte	Cover Bank	Cover Other	Aquatic Vegetation Types Present FL	AL	SS	MC	WC	GR	TR
1	0.43	135	0	0.10	0.10	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	1.30	135	0	0.10	35	☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	2.17	80	0	30	140	☐	1	☐	☒	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐
4	.					☐		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	.					☐		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	.					☐		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	560	230	150	0	40	3
	Substrate Diameters	0.05	0.05	0.05	0.05		
Right Bank	Height ☐	612	380	260	0	0	4
	Substrate Diameters	0.05	0.05	0.05	0.05		

Dominant Vegetation Type

(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☐	☐	☒	☐
Right Bank	☐	☐	☐	☒	☐	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): BT

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Stream Code: APB

Site Code: APB-7

Sample: 01

Transect No.: 12 of 15

Bearing (D): 250

Min. Width (m): 1.3

Site Length (m): 40.4

Active Channel Width (m): 3.6

No. of Transects: 15

Transect Spacing (m): 2.88

Point Spacing (m): 1.2

Points per Transect: 3

Date (mm-dd): 2019-06-07

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring
1	0.60	155	0	0.25	0.10
2	1.80	185	0	0.05	25
3	3.00	106	5	0.10	35
4	.				
5	.				
6	.				

Cover: Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	Aquatic Vegetation Types Present: FL	AL	SS	MC	WC	GR	TR
☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	☒	☐	☐	☐	☐	☒	☐	☐	☐	☐	☒	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters
(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

		> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height	☐	620	330	265	0	65	8
	Substrate Diameters		0.05	0.05	0.05	0.05		
Right Bank	Height	☐	880	610	230	0	0	2
	Substrate Diameters		0.05	0.05	0.05	0.05		

Dominant Vegetation Type
(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☐	☒	☐	☐
Right Bank	☐	☐	☐	☐	☒	☐	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): GEBY

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Stream Code: APB

Site Code: APB-7

Sample: 01

Transect No.: 13 of 15

Bearing (D): 250

Min. Width (m): 1.3

No. of Transects: 15

Points per Transect: 3

Site Length (m): 40.4

Transect Spacing (m): 2.88

Active Channel Width (m): 3.6

Point Spacing (m): 1.2

Date (mm-dd): 2019-06-07

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Depth (mm)	Hydraulic Head (mm)	Particle Size Point	Particle Size Max. in Ring
1	0.60	110	0	0.10	15
2	1.80	60	0	0.10	15
3	3.00	50	0	0.05	15
4	.				
5	.				
6	.				

Measure depth & hydraulic head to nearest 5 mm

Particle Sizes (mm)

Cover

Point No.	Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other
1	☐	☒	☐	☐	☐	☐	☐	☐
2	☐	☒	☐	☐	☐	☐	☐	☐
3	☐	☒	☐	☐	☐	☐	☐	☐
4	☐	☐	☐	☐	☐	☐	☐	☐
5	☐	☐	☐	☐	☐	☐	☐	☐
6	☐	☐	☐	☐	☐	☐	☐	☐

Aquatic Vegetation Types Present

Point No.	FL	AL	SS	MC	WC	GR	TR
1	☐	☐	☐	☐	☐	☐	☐
2	☐	☐	☐	☐	☐	☐	☐
3	☐	☐	☐	☐	☐	☐	☐
4	☐	☐	☐	☐	☐	☐	☐
5	☐	☐	☐	☐	☐	☐	☐
6	☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	685	275	0	0	110	3
	Substrate Diameters	0.05	0.05	0.05	0.05		
Right Bank	Height ☐	865	560	275	0	0	2
	Substrate Diameters	0.05	0.05	0.05	0.05		

Dominant Vegetation Type

(Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☐	☒	☐	☐
Right Bank	☐	☐	☐	☐	☐	☒	☐

Table Codes

Particle Sizes:
Measure all particles between 2.00mm and 1000mm

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): GEBY

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Stream Code: APB

Site Code: APB-7

Sample: 01

Transect No.: 14 of 15

Bearing (D): 250

Min. Width (m): 1.3

Site Length (m): 40.4

Active Channel Width (m): 3.2

No. of Transects: 15

Transect Spacing (m): 2.88

Point Spacing (m): 1.1

Points per Transect: 3

Date (mm-dd): 2019-06-07

Transect & Point Layout

Use this table to determine the number of transects & points required, given the minimum stream width.

Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring
1	0.55	230		15	20
2	11.65	100	0	0.12	30
3	12.75	195	0	0.05	0.10
4	.				
5	.				
6	.				

Cover

Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other
☐	0	☐	☐	☐	☐	☐	☐
☐	3	☐	☐	☐	☐	☐	☐
☐	2	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐	☐

Aquatic Vegetation Types Present

FL	AL	SS	MC	WC	GR	TR
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters

(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	650	245	70	0	100	2
	Substrate Diameters	0.05	0.05	0.05	0.05		
Right Bank	Height ☐	1080	760	250	0	150	0
	Substrate Diameters	0.05	25	0.05	0.05		

Dominant Vegetation Type (Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Meadow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☐	☒	☐	☐
Right Bank	☐	☐	☐	☐	☒	☐	☐

Table Codes

Particle Sizes: *Measure all particles between 2.00mm and 1000mm*

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments: lots of Small Fish

Crew Leader (initial & last name): GEBY

Crew	Recorder	Ent/Scanned	Verified	Corrected

Channel Morphology

Mandatory Fields In Grey
Must be filled out for processing

Stream Name: APPLEBY

Stream Code: APB

Site Code: APB-7

Sample: 01 Transect No.: 15 of 15 Bearing (D): 255

Min. Width (m): 1.3 Site Length (m): 40.4 Active Channel Width (m):

No. of Transects: 15 Transect Spacing (m): 2.88 Point Spacing (m): 1.2

Points per Transect: 2

Date (mm-dd): 2019-06-07

Transect & Point Layout		
Use this table to determine the number of transects & points required, given the minimum stream width.		
Minimum Width (m)	No.Transects at Site	Points per Transect
> 3.0	10	6
1.5 - 3.0	12	5
1.0 - 1.49	15	3
< 1.0	20	2

Calculations:

Transect Spacing = Site Length / (No. of Transects - 1)

Point Spacing = Active Channel Width / Points per Transect

1st Point = Point Spacing / 2 (from left bank)

Point No.	Location (m)	Measure depth & hydraulic head to nearest 5 mm: Depth (mm)	Hydraulic Head (mm)	Particle Sizes (mm): Point	Max. in Ring
1	0.60	210	0	5	30
2	1.80	180	0	0.05	0.10
3	3.00	5	0	10	35
4	.	.			
5	.				
6	.				

Cover: Unmeasurable	Quality	Wood	Round Rock	Flat Rock	Macrophyte	Bank	Other	Aquatic Vegetation Types Present: FL	AL	SS	MC	WC	GR	TR
☐	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Bank Angle & Particle Median Diameters
(Bank to tape height; if a height is >2m use check box, else enter values in proper observation points)

	> 2 m	0 mm	250 mm	750 mm	1500 mm	Amount of Undercut (mm)	No. of Veg. Squares on Bank
Left Bank	Height ☐	765	400	165	0	50	2
	Substrate Diameters	0.05	0.05	0.05	0.05		
Right Bank	Height ☐	1150	1050	190		310	9
	Substrate Diameters	0.10	180	0.05	0.05		

Dominant Vegetation Type (Check box of the dominant type within the 1 x 2 m area)

	None	Lawn	Crop-land	Mea-dow	Scrub-land	Forest	Wet-land
Left Bank	☐	☐	☐	☐	☒	☐	☐
Right Bank	☒	☐	☐	☐	☐	☐	☐

Table Codes

Particle Sizes: *Measure all particles between 2.00mm and 1000mm*

Material	Size
Unconsolidated Clay	0.01
Consolidated Clay	0.011
Silt	0.05
Sand	0.10
Large Boulders	1001
Bedrock	1111

Cover Quality:
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover

Aquatic Vegetation Types:
FL = Filamentous Algae
AL = Non-Filamentous
SS = Moss
MC = Macrophytes
WC = Watercress
GR = Grass
TR = Terrestrial Plants

Comments

Crew Leader (initial & last name): GERY

Crew	Recorder	Ent/Scanned	Verified	Corrected

Appendix C7 –

Significant Wildlife Habitat

Significant Wildlife Habitat Type: Seasonal Concentrations of Animals					
Wildlife Habitat	**Wildlife Species**	**Candidate SWH**		**Confirmed SWH**	**Potential for Candidate and/or Confirmed SWH on Subject Property**
		ELC Ecosite Codes	**Habitat Criteria and Info. Sources**	**Defining Criteria**	
Waterfowl Stopover and Staging Areas (Terrestrial) **Rationale:** Habitat important to migrating waterfowl.	American Black Duck Northern Pintail Gadwall Blue-winged Teal Green-winged Teal American Wigeon Northern Shoveler Tundra Swan	CUM1 CUT1 Plus evidence of annual spring flooding from melt water or run-off within these Ecosites. - Fields with seasonal flooding and waste grains in the Long Point, Rondeau, Lk. St. Clair, Grand Bend and Pt. Pelee areas may be important to Tundra Swans.	Fields with sheet water during Spring (mid-March to May). •Fields flooding during springmelt 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.	Studies carried out and verified presence of an annual concentration of any listed species, evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • Any mixed species aggregations of 100 or more individuals required. • The flooded field ecosite habitat plus a 100-300m radius, dependant 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). •SWH MISTIndex #7 provides development effects and mitigation measures.	**Not Present**: Cultural Meadows and Cultural Thickets within the study area are sloped riparian habitats that drain into Appleby Creek; they do not hold water for migrating waterfowl.
Waterfowl Stopover and Staging Areas (Aquatic) **Rationale:** Important for local and migrant waterfowl populations during the spring or fall migration or both periods combined. Sites identified are usually only one of a few in the eco-district.	Canada Goose Cackling Goose Snow Goose American Black Duck Northern Pintail Northern Shoveler American Wigeon Gadwall Green-winged Teal Blue-winged Teal Hooded Merganser Common Merganser Lesser Scaup Greater Scaup Long-tailed Duck Surf Scoter White-winged Scoter Black Scoter Ring-necked duck Common Goldeneye Bufflehead Redhead Ruddy Duck Red-breasted Merganser Brant Canvasback Ruddy Duck	MAS1, MAS2, MAS3, SAS1, SAM1, SAF1, SWD1, SWD2, SWD3, SWD4, SWD5, SWD6, SWD7	Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration. Sewage treatment ponds and storm water ponds do not qualify as a SWH, however a reservoir managed as a large wetland or pond/lake does qualify. • These habitats have an abundant food supply (mostly aquatic invertebrates and vegetation in shallow water)	Studies carried out and verified presence of: Aggregations of 100 or more of listed species for 7 days, results in > 700 waterfowl use days. • Areas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH • The combined area of the ELC ecosites and a 100m radius area is the SWH • Wetland area and shorelines associated with sites identified within the SWHTG Appendix K are significant wildlife habitat. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • Annual Use of Habitat is Documented from Information Sources or Field Studies (Annual can be based on completed studies or determined from past surveys with species numbers and dates recorded). • SWH MIST Index #7 provides development effects and mitigation	**Not Present**: Although Appleby Creek is likely used as a stopover area during migration, a review of background information does not indicate Appleby Creek within the study area supports the concentrations of waterfowl (i.e. 700 waterfowl use days) required to be SWH. In addition, the Appleby Creek corridor within the study area does not have an abundant food supply nor candidate vegetation communities (i.e. marshes, fens, and swamps).
Shorebird Migratory Stopover Area **Rationale:** High quality shorebird stopover habitat is extremely rare and typically has a long history of use.	Greater Yellowlegs Lesser Yellowlegs Marbled Godwit Hudsonian Godwit Black-bellied Plover American Golden-Plover Semipalmated Plover Solitary Sandpiper Spotted Sandpiper Semipalmated Sandpiper Pectoral Sandpiper	BBO1 BBO2 BBS1BBS2 BBT1 BBT2 SDO1 SDS2 SDT1 MAM1 MAM2 MAM3 MAM4 MAM5	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. 1. Information Sources	Studies confirming: 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	**Not Present**: Although the Lake Ontario shoreline is at the southern end of the study area, it has been urbanized: the shoreline at the mouth of Appleby Creek is landscaped.

Significant Wildlife Habitat Type: Seasonal Concentrations of Animals					
Wildlife Habitat	**Wildlife Species**	**Candidate SWH**		**Confirmed SWH**	**Potential for Candidate and/or Confirmed SWH on Subject Property**
		ELC Ecosite Codes	**Habitat Criteria and Info. Sources**	**Defining Criteria**	
	White-rumped Sandpiper Baird's Sandpiper Least Sandpiper Purple Sandpiper Stilt Sandpiper Short-billed Dowitcher Red-necked Phalarope Whimbrel Ruddy Turnstone Sanderling Dunlin		• Western hemisphere shorebird reserve network. • Canadian Wildlife Service (CWS) Ontario Shorebird Survey. • Bird Studies Canada • Ontario Nature • Local birders and naturalist clubs • Natural Heritage Information Centre (NHIC) Shorebird Migratory Concentration Area	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" • SWH MIST Index #8 provides development effects and mitigation measures.	
Raptor Wintering Area **<u>Rationale:</u>** Sites used by multiple species, a high number of individuals and used annually are most significant	Rough-legged Hawk Red-tailed Hawk Northern Harrier American Kestrel Snowy Owl **<u>Special Concern:</u>** Short-eared Owl Bald Eagle	<u>Hawks/Owls</u>: Combination of ELC Community Series; need to have present one Community Series from each land class; Forest: FOD, FOM, FOC. Upland: CUM; CUT; CUS; CUW. Bald Eagle: Forest community Series: FOD, FOM, FOC, SWD, SWM or SWC on shoreline areas adjacent to large rivers or adjacent to lakes with open water (hunting area).	• The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors. Raptor wintering (hawk/owl) sites need to be > 20 ha with a combination of forest and upland. • Least disturbed sites, idle/fallow or lightly grazed field/meadow (>15ha) with adjacent woodlands • Field area of the habitat is to be wind swept with limited snow depth or accumulation. • Eagle sites have open water and large trees and snags available for roosting 2. <u>Information Sources</u>: • OMNRF Ecologist or Biologist • Naturalist clubs • Natural Heritage Information Centre (NHIC) Raptor Winter Concentration Area • Data from Bird Studies Canada • Results of Christmas Bird Counts • Reports and other information available from Conservation Authorities.	Studies confirm the use of these habitats by: One or more Short-eared Owls or; One of more Bald Eagles or; At least 10 individuals and two of the listed hawk/owl species • To be significant a site must be used regularly (3 in 5 years) for a minimum of 20 days by the above number of birds. • The habitat area for an Eagle winter site is the shoreline forest ecosites directly adjacent to the prime hunting area • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • SWH MIST Index #10 and • #11 provides development effects and mitigation measures.	**Not Present**: Although forests and other upland habitats are present within the study area, the fragmented, heavily disturbed natural areas are likely not conducive to supporting a large population of raptors in winter. No raptors were recorded during BBS, and only one juvenile Red-tailed Hawk was observed incidentally during vegetation community surveys in the summer. Furthermore, as ash trees have been actively removed from the study area (as recent as January 18th 2019), the quality of habitat has been greatly reduced.
Bat Hibernacula **<u>Rationale:</u>** Bat hibernacula are rare habitats in all Ontario landscapes.	Big Brown Bat Tri-coloured Bat	Bat Hibernacula may be found in these ecosites: CCR1 CCR2 CCA1 CCA2 (Note: buildings are not considered to be SWH)	• 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. <u>Information Sources</u> • OMNRF for possible locations and contact for local experts • Natural Heritage Information Centre (NHIC) Bat Hibernaculum • Ministry of Northern Development and Mines for location of mine shafts. • Clubs that explore caves (eg. Sierra Club) • University Biology Departments with bat experts.	• 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". • SWH MIST Index #1 provides development effects and mitigation measures.	**Not Present**: Potentially suitable hibernacula (i.e. mines and caves) are not present within the study area.

Significant Wildlife Habitat Type: Seasonal Concentrations of Animals					
Wildlife Habitat	**Wildlife Species**	**Candidate SWH**		**Confirmed SWH**	**Potential for Candidate and/or Confirmed SWH on Subject Property**
		ELC Ecosite Codes	**Habitat Criteria and Info. Sources**	**Defining Criteria**	

Bat Maternity Colonies
 	
Rationale: Known locations of forested bat maternity colonies are extremely rare in all Ontario landscapes.
	Big Brown Bat
	Silver-haired Bat
		Maternity colonies considered SWH are found in forested Ecosites.
		
		All ELC Ecosites in ELC Community Series:
		FOD FOM SWD SWM
			• Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not considered to be SWH).
			• Maternity roosts are not found in caves and mines in Ontario.
			• Maternity colonies located in Mature deciduous or mixed forest stands with >10/ha large diameter (>25cm dbh) wildlife trees Female Bats prefer wildlife tree (snags) in early stages of decay, class 1-3 or class 1 or 2.
			• Silver-haired Bats prefer older mixed or deciduous forest and form maternity colonies in tree cavities and small hollows. Older forest areas with at least 21 snags/ha are preferred
			
			Information Sources
			• OMNRF for possible locations and contact for local experts
			• University Biology Departments with bat experts.
				• Maternity Colonies with confirmed use by;
				  • >10 Big Brown Bats
				  • >5 Adult Female Silver-haired Bats
				• The area of the habitat includes the entire woodland or a forest stand ELC Ecosite or an Ecoelement containing the maternity colonies. Evaluation methods for maternity colonies should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for Wind Power Projects".
				• SWH MIST Index #12 provides development effects and mitigation measures.
					Candidate: In total, 17 candidate Little Brown Myotis and Northern Myotis trees occur in the surveyed area **(Table 3.12).** There were 66 candidate Tri-colored Bat maternity roost sites as well as an additional 61 potential candidate Tri-colored Bat maternity roost sites identified within and 10 m from anticipated disturbance areas **(Table 3.13)**. (Refer to **Section 6.4.1** in the principle document).

Turtle Wintering Areas **Rationale:** Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.	Midland Painted Turtle **Special Concern:** Northern Map Turtle Snapping Turtle	Snapping and Midland Painted Turtles; ELC Community Classes; SW, MA, OA and SA, ELC Community Series; FEO and BOO Northern Map Turtle; Open Water areas such as deeper rivers or streams and lakes with current can also be used as over-wintering habitat.	• 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. Information Sources: EIS studies carried out by Conservation Authorities. • Field Naturalists Clubs • OMNRF Ecologist or Biologist Natural Heritage Information Centre (NHIC)	• 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. • SWH MIST Index #28 provides development effects and mitigation measures for turtle wintering habitat.	**Not Present**: Turtles require soft mud substrates to bury into. The soil substrate of Appleby Creek is stratified clay with cobbles and shale which is not conducive to overwintering turtles. Furthermore, portions of the creek bed are composed of gabion baskets.

Significant Wildlife Habitat Type: Seasonal Concentrations of Animals					
Wildlife Habitat	**Wildlife Species**	**Candidate SWH**		**Confirmed SWH**	**Potential for Candidate and/or Confirmed SWH on Subject Property**
		ELC Ecosite Codes	**Habitat Criteria and Info. Sources**	**Defining Criteria**	
Reptile Hibernaculum **Rationale:** Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.	**Snakes:** Eastern Gartersnake Northern Watersnake Northern Red-bellied Snake Northern Brownsnake Smooth Green Snake Northern Ring-necked Snake **Special Concern:** Milksnake Eastern Ribbonsnake	For all snakes, habitat may be found in any ecosite other than very wet ones. Talus, Rock Barren, Crevice, Cave, and Alvar sites may be directly related to these habitats. Observations or congregations of snakes on sunny warm days in the spring or fall is a good indicator.	• For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural or naturalized locations. The existence of features that go below frost line; such as rock piles or slopes, old stone fences, and abandoned crumbling foundations assist in identifying candidate SWH. • Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line. Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover. Information Sources • In spring, local residents or landowners may have observed the emergence of snakes on their property (e.g. old dug wells). • Reports and other information available from Conservation Authorities. • Field Naturalist Clubs • University herpetologists • Natural Heritage Information Centre (NHIC)	Studies confirming: • Presence of snake hibernacula used by a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. • Congregations of a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. near potential hibernacula (eg. foundation or rocky slope) on sunny warm days in Spring (Apr/May) and Fall (Sept/Oct) • Note: If there are Special Concern Species present, then site is SWH Note: Sites for hibernation possess specific habitat parameters (e.g. temperature, humidity, etc.) and consequently are used annually, often by many of the same individuals of a local population (i.e. strong hibernation site fidelity). Other critical life processes (e.g. mating) often take place in close proximity to hibernacula. The feature in which the hibernacula is located plus a 30 m radius area is the SWH • SWH MIST Index #13 provides development effects and mitigation measures for snake hibernacula.	**Not Present**: Potentially suitable reptile hibernaculum was not identified during field surveys.
Colonially - Nesting Bird Breeding Habitat (Bank and Cliff) **Rationale:** 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.	Cliff Swallow Northern Rough- winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies)	Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles Cliff faces, bridge abutments, silos, barns. Habitat found in the following ecosites: CUM1 CUT1 CUS1 BLO1 BLS1 BLT1 CLO1 CLS1 CLT1	• 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. Information Sources Reports and other information available from Conservation Authorities. • Ontario Breeding Bird Atlas • Bird Studies Canada; *NatureCounts* http://www.birdscanada.org/birdmon/ Field Naturalist Clubs.	Studies confirming: • Presence of 1 or more nesting sites with 8[cxlix] 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" • SWH MIST Index #4 provides development effects and mitigation measures	**Not Present**: Evidence of burrowing birds in the creek bank was not observed during vegetation community or bird surveys.
Colonially - Nesting Bird Breeding Habitat (Tree/Shrubs) **Rationale:** Large colonies are important to local bird population, typically sites are	Great Blue Heron Black-crowned Night-Heron Great Egret Green Heron	SWM2 SWM3 SWM5 SWM6 SWD1 SWD2 SWD3	• Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used. • Most nests in trees are 11 to 15 m from ground, near the top of the tree. Information Sources	Studies confirming: • Presence of 2 or more active nests of Great Blue Heron or other listed species. • The habitat extends from the edge of the colony and a minimum 300m radius or extent of the Forest Ecosite	**Not Present**: Although one Black-crowned Night-heron was observed during BBS, it is not believed to be breeding within the study area as no nest(s) were observed during field studies.

Significant Wildlife Habitat Type: Seasonal Concentrations of Animals					
Wildlife Habitat	**Wildlife Species**	**Candidate SWH**		**Confirmed SWH**	**Potential for Candidate and/or Confirmed SWH on Subject Property**
		ELC Ecosite Codes	**Habitat Criteria and Info. Sources**	**Defining Criteria**	
only known colony in area and are used annually.		SWD4 SWD5 SWD6 SWD7 FET1	• Ontario Breeding Bird Atlas, colonial nest records. • Ontario Heronry Inventory 1991 available from Bird Studies Canada or NHIC (OMNRF). • Natural Heritage Information Centre (NHIC) Mixed Wader Nesting Colony • Aerial photographs can help identify large heronries. • Reports and other information available from Conservation Authorities. • MNRF District Offices. • Field Naturalist Clubs.	containing the colony or any island <15.0ha with a colony is the SWH • Confirmation of active heronries are to be achieved through site visits conducted during the nesting season (April to August) or by evidence such as the presence of fresh guano, dead young and/or eggshells • SWH MIST Index #5 provides development effects and mitigation measures.	Furthermore, target vegetation communities (swamps and treed fens) are not present within the study area.
Colonially - Nesting Bird Breeding Habitat (Ground) **Rationale:** Colonies are important to local bird population, typically sites are only known colony in area and are used annually.	Herring Gull Great Black-backed Gull Little Gull Ring-billed Gull Common Tern Caspian Tern Brewer's Blackbird	Any rocky island or peninsula (natural or artificial) within a lake or large river (two-lined on a 1;50,000 NTS map). Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird) MAM1 – 6; MAS1 – 3; CUM CUT CUS	• 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 or in low bushes in close proximity to streams and irrigation ditches within farmlands. Information Sources • Ontario Breeding Bird Atlas, rare/colonial species records. • Canadian Wildlife Service • Reports and other information available from Conservation Authorities. • Natural Heritage Information Centre (NHIC) Colonial Waterbird Nesting Area • MNRF District Offices. • Field Naturalist Clubs.	Studies confirming: • 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" • SWH MIST Index #6 provides development effects and mitigation measures.	**Not Present**: Target habitat (i.e. rock islands or peninsula; fields and pastures) is not within or adjacent to the study area.
Migratory Butterfly Stopover Areas **Rationale:** Butterfly stopover areas are extremely rare habitats and are biologically important for butterfly species that migrate south for the winter.	Painted Lady Red Admiral Special Concern Monarch	Combination of ELC Community Series; need to have present one Community Series from each landclass: Field: CUM CUT CUS Forest: FOC FOD FOM CUP Anecdotally, a candidate site for butterfly stopover will have a history of butterflies	A butterfly stopover area will be a minimum of 10 ha in size with a combination of field and forest habitat present, and will be located within 5 km of Lake Erie or Lake Ontario. • The habitat is typically a combination of field and forest, and provides the butterflies with a location to rest prior to their long migration south. The habitat should not be disturbed, fields/meadows with an abundance of preferred nectar plants and woodland edge providing shelter are requirements for this habitat. • Staging areas usually provide protection from the elements and are often spits of land or areas with the shortest distance to cross the Great Lakes	Studies confirm: The presence of Monarch Use Days (MUD) during fall migration (Aug/Oct). MUD is based on the number of days a site is used by Monarchs, multiplied by the number of individuals using the site. Numbers of butterflies can range from 100-500/day, significant variation can occur between years and multiple years of sampling should occur. • Observational studies are to be completed and need to be done frequently during the migration period to estimate MUD. • MUD of >5000 **or** >3000	**Candidate**: The study area is greater than 10 ha in overall size, within the Appleby Creek corridor, and connected to Lake Ontario. Although natural lands in the study area is candidate, the flora species within the study area and heavy recent disturbances (e.g. ash removal) are not favourable to high quality habitat for butterflies.

Significant Wildlife Habitat Type: Seasonal Concentrations of Animals					
Wildlife Habitat	**Wildlife Species**	**Candidate SWH**		**Confirmed SWH**	**Potential for Candidate and/or Confirmed SWH on Subject Property**
		ELC Ecosite Codes	**Habitat Criteria and Info. Sources**	**Defining Criteria**	
		being observed.	Information Sources • MNRF District Offices • Natural Heritage Information Centre (NHIC) • Agriculture Canada in Ottawa may have list of butterfly experts. • Field Naturalist Clubs • Toronto Entomologists Association • Conservation Authorities	with the presence of Painted Ladies or Red Admiral's is to be considered significant. • SWH MIST [cxlix] Index #16 provides development effects and mitigation measures.	
Landbird Migratory Stopover Areas **Rationale:** Sites with a high diversity of species as well as high numbers are most significant.	All migratory songbirds. Canadian Wildlife Service Ontario website: http://www.ec.gc.ca/nature/default.asp?lang=En&n=421B7A9D-1 All migrant raptors species: Ontario Ministry of Natural Resources: Fish and Wildlife Conservation Act, 1997. Schedule 7: Specially Protected Birds (Raptors)	All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD	• Woodlots >5 ha in size and within 5 km of Lake Erie and Lake Ontario. If woodlands are rare in an area of shoreline, woodland fragments 2-5ha can be considered for this habitat • If multiple woodlands are located along the shoreline those Woodlands <2km from Lake Erie and 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 Erie and Lake Ontario are Candidate SWH. Information Sources • Bird Studies Canada • Ontario Nature • Local birders and field naturalist clubs • Ontario Important Bird Areas (IBA) Program	Studies confirm: • 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 (Mar to May) and fall (Aug to Oct) migration using standardized assessment techniques. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • SWH MIST Index #9 provides development effects and mitigation measures.	**Candidate**: The study area is greater than 10 ha in overall size, within the Appleby Creek corridor, and connected to Lake Ontario. Although natural lands in the study area are candidate, the flora species within the study area are not favourable to provide high quality habitat for migratory birds. Furthermore, records obtained from eBird.org do not indicate Bromley Park, or natural lands adjacent support a high diversity of species.
Deer Winter Congregation Areas **Rationale:** Deer movement during winter in the southern areas of Eco-region 7E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands to reduce or avoid the impacts of winter conditions [cxlviii].	White-tailed Deer	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.	• Woodlots >100 ha in size or if large woodlots are rare in a planning area woodlots>50ha • Deer movement during winter in the southern areas of Ecoregion 7E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands. • 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 significant. Information Sources • MNRF District Offices. • LIO/NRVIS	Studies confirm: • 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. • SWH MIST Index #2 provides development effects and mitigation measures.	**Not Present**: Target vegetation communities (i.e. forests >50 ha) are not within or adjacent to the study area.

Significant Wildlife Habitat Type: Rare Vegetation Communities or Specialized Habitat for Wildlife					
Rare Vegetation Community	**Candidate SWH**			**Confirmed SWH**	**Potential for Candidate and/or Confirmed SWH on Subject Property**
	ELC Ecosite Code	**Habitat Description**	**Detailed Information and Sources**	**Defining Criteria**	
Cliffs and Talus Slopes **Rationale:** Alvars are extremely rare habitats in Ontario.	Any ELC Ecosite within Community Series: TAO CLO TAS CLS TAT CLT	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 rocky debris	Most cliff and talus slopes occur along the Niagara Escarpment. Information Sources The Niagara Escarpment Commission has detailed information on location of these habitats. • OMNRF Districts • Natural Heritage Information Centre (NHIC) has location information available on their website • Field Naturalist Clubs • Conservation Authorities	• Confirm any ELC Vegetation Type for Cliffs or Talus Slopes • SWH MIST Index #21 provides development effects and mitigation measures.	**Not Present**: Representative vegetation communities are not present within the study area.
Sand Barren **Rationale:** 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%.	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. Information Sources • OMNRF Districts. • Natural Heritage Information Centre (NHIC) has location information available on their website. • Field Naturalist Clubs • Conservation Authorities	• Confirm any ELC Vegetation Type for Sand Barrens • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). • SWH MIST[cxlix] Index #20 provides development effects and mitigation measures.	**Not Present**: Representative vegetation communities are not present within the study area.
Alvar **Rationale:** Alvars are extremely rare habitats in Ecoregion 7E.	ALO1 ALS1 ALT1 FOC1 FOC2 CUM2 CUS2 CUT2-1 CUW2 **Five Alvar Indicator Species:** 1) *Carex crawei* 2) *Panicum philadelphicum* 3) *Eleocharis compressa* 4) *Scutellaria parvula* 5) *Trichostema brachiatum* These indicator species are very specific to Alvars within Ecoregion 7E	An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. The hydrology of alvars is complex, with alternating periods of inundation and drought. Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plants. Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animals species. Vegetation cover varies from patchy to barren with a less than 60% tree cover.	An Alvar site > 0.5 ha in size. Alvar is particularly rare in Ecoregion 7E where the only known sites are found in the western islands of Lake Erie. Information Sources • Alvars of Ontario (2000), Federation of Ontario Naturalists. • Ontario Nature – Conserving Great Lakes Alvars. • Natural Heritage Information Centre (NHIC) has location information available on their website. • OMNRF Staff. • Field Naturalist Clubs. • Conservation Authorities.	• Field studies that identify four of the five **Alvar Indicator Species** at a Candidate Alvar site is Significant. • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). • The alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses • SWH MIST Index #17 provides development effects and mitigation measures.	**Not Present**: Representative vegetation communities are not present within the study area.
Old Growth Forest **Rationale:** Due to historic logging	Forest Community Series: FOD FOC FOM SWD SWC	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-	Woodland area is >0.5ha Information Sources • OMNRF Forest Resource Inventory mapping	Field Studies will determine: • If dominant trees species of the are >140 years old, then the area containing these trees is Significant	**Not Present**: Representative vegetation communities are not present within the study area.

Significant Wildlife Habitat Type: Rare Vegetation Communities or Specialized Habitat for Wildlife					
Rare Vegetation Community	**Candidate SWH**			**Confirmed SWH**	**Potential for Candidate and/or Confirmed SWH on Subject Property**
	ELC Ecosite Code	**Habitat Description**	**Detailed Information and Sources**	**Defining Criteria**	
practices and land clearance for agriculture, old growth forest is rare in Ecoregion 7E.	SWM	layered canopy and an abundance of snags and downed woody debris.	• OMNRF Districts. • Field Naturalist Clubs • Conservation Authorities • Sustainable Forestry Licence (SFL) companies will possibly know locations through field operations. • Municipal forestry departments	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 forest area containing the old growth characteristics • SWH MIST Index #23 provides development effects and mitigation measures.	
Savannah **Rationale:** Savannahs are extremely rare habitats in Ontario.	TPS1 TPS2 TPW1 TPW2 CUS2	A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60% In ecoregion 7E, known Tallgrass Prairie and savannah remnants are scattered between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and in the Toronto area (north of Lake Ontario).	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. Information Sources Natural Heritage Information Centre (NHIC) has location data available on their website. • OMNRF Districts. • Field Naturalists Clubs. • Conservation Authorities.	Field studies confirm one or more of the Savannah indicator species listed in Appendix N should be present Note: Savannah plant spp. list from Ecoregion 7E should be used· • Area of the ELC Ecosite is the SWH. Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). • SWH MIST Index #18 provides development effects and mitigation measures.	**Not Present**: Representative vegetation communities are not present within the study area.
Tallgrass Prairie **Rationale:** Tallgrass Prairies are extremely rare habitats in Ontario.	TPO1 TPO2	A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has < 25% tree cover In ecoregion 7E, known Tallgrass Prairie and savannah remnants are scattered between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and in the Toronto area (north of Lake Ontario).	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. Information Sources • OMNRF Districts. • Natural Heritage Information Centre (NHIC) has location information available on their website. • Field Naturalists Clubs. • Conservation Authorities.	Field studies confirm one or more of the Prairie indicator species listed in Appendix N should be present. Note: Prairie plant spp. list from Ecoregion 7E should be used • Area of the ELC Ecosite is the SWH. • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). • SWH MIST Index #19 provides development effects and mitigation measures.	**Not Present**: Representative vegetation communities are not present within the study area.
Other Rare Vegetation Communities **Rationale:** Plant communities that often contain rare species which depend on the habitat for survival.	Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTG. Any ELC Ecosite Code that has a possible ELC Vegetation Type that is Provincially Rare is Candidate SWH.	Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps.	ELC Ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in appendix M The OMNRF/NHIC will have up to date listing for rare vegetation communities. Information Sources • Natural Heritage Information Centre (NHIC) has location information available on their website. • OMNRF Districts.	Field studies should confirm if an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of SWHTG. • Area of the ELC Vegetation Type polygon is the SWH. • SWH MIST Index #37 provides	**Not Present**: Provincially rare vegetation communities are not present within the study area.

Significant Wildlife Habitat Type: Rare Vegetation Communities or Specialized Habitat for Wildlife					
Rare Vegetation Community	**Candidate SWH**			**Confirmed SWH**	**Potential for Candidate and/or Confirmed SWH on Subject Property**
	ELC Ecosite Code	**Habitat Description**	**Detailed Information and Sources**	**Defining Criteria**	
			• Field Naturalists Clubs. • Conservation Authorities.	development effects and mitigation measures.	

Specialized Habitat for Wildlife					
Specialized Wildlife Habitat	**Wildlife Species**	**Candidate SWH**		**Confirmed SWH**	**Potential for Candidate and/or Confirmed SWH on Subject Property**
		ELC Ecosite Codes	**Habitat Criteria and Info. Sources**	**Defining Criteria**	
Waterfowl Nesting Area **<u>Rationale:</u>** Important to local waterfowl populations, sites with greatest number of species and highest number of individuals are significant.	American Black Duck Northern Pintail Northern Shoveler Gadwall Blue-winged Teal Green-winged Teal Wood Duck Hooded Merganser Mallard	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**	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. <u>Information Sources</u> • Ducks Unlimited staff may know the locations of particularly productive nesting sites. • OMNRF Wetland Evaluations for indication of significant waterfowl nesting habitat.Reports and other information available from Conservation Authorities	Studies confirmed: • 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. • SWH MIST Index #25 provides development effects and mitigation measures.	**Not Present**: Potentially suitable habitat is not present within the study area.
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat **<u>Rationale:</u>** Nest sites are fairly uncommon in Ecoregion 7E and are used annually by these species. Many suitable nesting locations may be lost due to increasing shoreline development pressures and scarcity of habitat.	Osprey **Special Concern** Bald Eagle	ELC Forest Community Series: FOD FOM FOC SWD SWM SWC directly adjacent to riparian areas – rivers, lakes, ponds and wetlands	Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water. • Osprey nests are usually at the top a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree's canopy. • Nests located on man-made objects are not to be included as SWH (e.g. telephone poles and constructed nesting platforms). <u>Information Sources</u> • Natural Heritage Information Centre (NHIC) compiles all known nesting sites for Bald Eagles in Ontario. MNRF values information (LIO/NRVIS) will list known nesting locations. Note: data from NRVIS is provided as a point and does not represent all the habitat. • Nature Counts, Ontario Nest Records Scheme data. • OMNRF District.	Studies confirm the use of these nests by: • 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 given to the primary nest with alternate nests included within the area of the SWH. • For an Osprey, the active nest and a 300 m radius around the nest or the contiguous woodland stand is the SWH, maintaining undisturbed shorelines with large trees within this area is important. For a Bald Eagle the active nest and a 400-800 m radius around the nest is the SWH. Area ofthe habitat from 400-800m is dependant on site lines from the nest to the development and	**Not Present**: Potentially suitable habitat (i.e. forests and swamps) is not present in the study area. Furthermore, no osprey or eagle nests were observed during BBS or other natural heritage surveys.

Specialized Habitat for Wildlife					
Specialized Wildlife Habitat	**Wildlife Species**	**Candidate SWH**		**Confirmed SWH**	**Potential for Candidate and/or Confirmed SWH on Subject Property**
		ELC Ecosite Codes	**Habitat Criteria and Info. Sources**	**Defining Criteria**	
			• Check the Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented • Reports and other information available from Conservation Authorities. • Field Naturalists clubs	inclusion of perching and foraging habitat [cvi] • To be significant a site must be used annually. When found inactive, the site must be known to be inactive for ≥ 3 years or suspected of not being used for >5 years before being considered not significant. • Observational studies to determine nest site use, perching sites and foraging areas need to be done from early March to mid August. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" SWH MIST Index #26 provides development effects and mitigation measures	
Woodland Raptor Nesting Habitat **Rationale:** Nests sites for these species are rarely identified; these area sensitive habitats are often used annually by these species	Northern Goshawk Cooper's Hawk Sharp-shinned Hawk Red-shouldered Hawk Barred Owl Broad-winged Hawk	May be found in all forested ELC Ecosites. May also be found in SWC SWM SWD CUP3	All natural or conifer plantation woodland/forest stands >30ha with >4ha of interior habitat. Interior habitat determined with a 200m buffer 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 old nest. Information Sources • OMNRF Districts. • Check the Ontario Breeding Bird Atlas [ccv] or Rare Breeding Birds in Ontario for species documented. • Check data from Bird Studies Canada. • Reports and other information available from Conservation Authorities.	Studies confirm: • Presence of 1 or more active nests from species list is considered significant. Red-shouldered Hawk and Northern Goshawk – A 400m radius around the nest or 28 ha area of habitat is the SWH [ccvii]. (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 early 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. • SWH MIST Index #27 provides development effects and mitigation measures.	**Not Present**: Potentially suitable habitat (i.e. interior forest habitat) is not present within the study area.
Turtle Nesting Areas **Rationale:** These habitats are rare and when identified will often be the only breeding site	Midland Painted Turtle Special Concern Species Northern Map Turtle Snapping Turtle	Exposed mineral soil (sand or gravel) areas adjacent (<100m) or within the following ELC Ecosites: MAS1 MAS2	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	Studies confirm: Presence of 5 or more nesting Midland Painted Turtles • One or more Northern Map Turtle or Snapping Turtle nesting is a SWH.	**Not Present**: Potentially suitable nesting habitat (i.e. sunny sites with sand or gravel soils) is not present within the study area. Soils within the study area are clay-based.

Specialized Habitat for Wildlife					
Specialized Wildlife Habitat	**Wildlife Species**	**Candidate SWH**		**Confirmed SWH**	**Potential for Candidate and/or Confirmed SWH on Subject Property**
		ELC Ecosite Codes	**Habitat Criteria and Info. Sources**	**Defining Criteria**	
for local populations of turtles.		MAS3 SAS1 SAM1 SAF1 BOO1 FEO1	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. <u>Information Sources</u> • Use Ontario Soil Survey reports and maps to help find suitable substrate for nesting turtles (well-drained sands and fine gravels). • Check the Ontario Herpetofaunal Summary Atlas records or other similar atlases for uncommon turtles; location information may help to find potential nesting habitat for them. • Natural Heritage Information Centre (NHIC) • Field Naturalist Clubs	• 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 dependant 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. • SWH MIST Index #28 provides development effects and mitigation measures for turtle nesting habitat.	
Seeps and Springs **<u>Rationale:</u>** Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.	Wild Turkey Ruffed Grouse Spruce Grouse White-tailed Deer Salamander spp.	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	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. <u>Information Sources</u> • Topographical Map. • Thermography. • Hydrological surveys conducted by Conservation Authorities and MOE. • Field Naturalists Clubs and landowners. • Municipalities and Conservation Authorities may have drainage maps and headwater areas mapped.	Field Studies confirm: Presence of a site with 2 or more seeps/springs should be considered SWH. • The area of a ELC forest ecosite or an ecoelement 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. • SWH MIST Index #30 provides development effects and mitigation measures	**Not Present**: seeps and springs were not identified in the study area during field surveys.
Amphibian Breeding Habitat (Woodland). **<u>Rationale:</u>** These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations	Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Wood Frog	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	• Presence of a wetland, pond or woodland pool (including vernal pools) >500m^2 (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 <u>Information Sources</u> • Ontario Herpetofaunal Summary Atlas (or other similar atlases) for records • Local landowners may also provide assistance as they may hear spring-time choruses of amphibians on their property.	Studies confirm; • 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	**Not Present**: Potentially suitable habitat (forests and swamps) is not present within the study area. In addition, no other wetlands are within the study area.

Specialized Habitat for Wildlife					
Specialized Wildlife Habitat	**Wildlife Species**	**Candidate SWH**		**Confirmed SWH**	**Potential for Candidate and/or Confirmed SWH on Subject Property**
		ELC Ecosite Codes	**Habitat Criteria and Info. Sources**	**Defining Criteria**	
			• OMNRF Districts and wetland evaluations • Field Naturalist clubs • Canadian Wildlife Service Amphibian Road Call Survey • Ontario Vernal Pool Association: http://www.ontariovernalpools.org	wetland area is adjacent to a woodland, a travel corridor connecting the wetland to the woodland is to be included in the habitat. • SWH MIST [cxlix] Index #14 provides development effects and mitigation measures.	
Amphibian Breeding Habitat (Wetlands) **Rationale:** Wetlands supporting breeding for these amphibian species are extremely important and fairly rare within Central Ontario landscapes.	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	ELC Community Classes SW, MA, FE, BO, OA and SA. 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.	• Wetlands>500m^2 (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 breeding habitats. • 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. Information Sources • Ontario Herpetofaunal Summary Atlas (or other similar atlases) • Canadian Wildlife Service Amphibian Road Surveys and Backyard Amphibian Call Count. • OMNRF Districts and wetland evaluations. • Reports and other information available from Conservation Authorities.	Studies confirm: • Presence of breeding population of 1 or more of the listed 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. 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 as outlined in Table 1.4.1 of this Schedule. • SWH MIST Index #15 provides development effects and mitigation measures.	**Not Present**: Wetlands are not within the study area.
Woodland Area-Sensitive Bird Breeding Habitat **Rationale:** Large, natural blocks of mature woodland habitat within the settled areas of Southern Ontario are important habitats for area sensitive interior forest song birds.	Yellow-bellied Sapsucker Red-breasted Nuthatch Veery Blue-headed Vireo Northern Parula Black-throated Green Warbler Blackburnian Warbler Black-throated Blue Warbler Ovenbird Scarlet Tanager Winter Wren Pileated Woodpecker **Special Concern:** Cerulean Warbler Canada Warbler	All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD	• Habitats where interior forest breeding birds are breeding, typically large mature (>60 yrs old) forest stands or woodlots >30 ha. Interior forest habitat is at least 200 m from forest edge habitat. Information Sources • Local birder clubs. • Canadian Wildlife Service (CWS) for the location of forest bird monitoring. • Bird Studies Canada conducted a 3-year study of 287 woodlands to determine the effects of forest fragmentation on forest birds and to determine what forests were of greatest value to interior species Reports and other information available from Conservation Authorities.	Studies confirm: • Presence of nesting or breeding pairs of 3 or more of the listed wildlife species. • Note: any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH. Conduct field investigations 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" • SWH MIST Index #34 provides	**Not Present**: Potentially suitable habitat (i.e. forests with interior habitat) is not present within the study area. Red-breasted Nuthatch was recorded within Bromley Park on the second breeding bird survey only; therefore it is unlikely this species is breeding. No other target species was recorded during breeding bird surveys.

Specialized Habitat for Wildlife					
Specialized Wildlife Habitat	**Wildlife Species**	**Candidate SWH**		**Confirmed SWH**	**Potential for Candidate and/or Confirmed SWH on Subject Property**
		ELC Ecosite Codes	**Habitat Criteria and Info. Sources**	**Defining Criteria**	
				development effects and mitigation measures.	

Significant Wildlife Habitat Type: Habitats of Species of Conservation Concern Considered SWH					
Wildlife Habitat	**Wildlife Species**	**Candidate SWH**		**Confirmed SWH**	**Potential for Candidate and/or Confirmed SWH on Subject Property**
		ELC Ecosite Codes	**Habitat Criteria and Info. Sources**	**Defining Criteria**	
Marsh Breeding Bird Habitat **<u>Rationale:</u>** Wetlands for these bird species are typically productive and fairly rare in Southern Ontario landscapes.	American Bittern Virginia Rail Sora Common Moorhen American Coot Pied-billed Grebe Marsh Wren Sedge Wren Common Loon Green Heron Trumpeter Swan **Special Concern:** Black Tern Yellow Rail	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SAS1 SAM1 SAF1 FEO1 BOO1 For Green Heron: All SW, MA and CUM1 sites.	• 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. <u>Information Sources</u> • OMNRF District and wetland evaluations. • Field Naturalist clubs • Natural Heritage Information Centre (NHIC) Records. • Reports and other information available from Conservation Authorities. • Ontario Breeding Bird Atlas.	Studies confirm: • Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren **or** breeding by any combination of 4 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" • SWH MIST Index #35 provides development effects and mitigation measures	**Not Present**: Potentially suitable habitat (i.e. marsh, fens, and bogs) is not present within the study area.
Open Country Bird Breeding Habitat **<u>Rationale:</u>** This wildlife habitat is declining throughout Ontario and North America. Species such as the Upland Sandpiper have declined significantly the past 40 years based on CWS (2004) trend records.	Upland Sandpiper Grasshopper Sparrow Vesper Sparrow Northern Harrier Savannah Sparrow **Special Concern** Short-eared Owl	CUM1 CUM2	Large grassland areas (includes natural and cultural fields and meadows) >30 ha • Grasslands not Class 1 or 2 agricultural lands, and not being actively used for farming (i.e. no row cropping or intensive hay or livestock pasturing in the last 5 years). • Grassland sites considered significant should have a history of longevity, either abandoned fields, mature hayfields and pasturelands that are at least 5 years or older. • The Indicator bird species are area sensitive requiring larger grassland areas than the common grassland species. <u>Information Sources</u> • Agricultural land classification maps, Ministry of Agriculture. • Local bird clubs. • Ontario Breeding Bird Atlas • EIS Reports and other information available from Conservation Authorities.	Field Studies confirm: • 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 SWH. • The area of SWH is the contiguous ELC ecosite field areas. • 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" • SWH MIST Index #32 provides development effects and mitigation measures	**Not Present**: Potentially suitable habitat (i.e. meadow > 30 ha) is not present within the study area.

Specialized Habitat for Wildlife					
Specialized Wildlife Habitat	**Wildlife Species**	**Candidate SWH**		**Confirmed SWH**	**Potential for Candidate and/or Confirmed SWH on Subject Property**
		ELC Ecosite Codes	**Habitat Criteria and Info. Sources**	**Defining Criteria**	
Shrub/Early Successional Bird Breeding Habitat **Rationale:** 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.	Indicator Spp: Brown Thrasher Clay-coloured Sparrow Common Spp. Field Sparrow Black-billed Cuckoo Eastern Towhee Willow Flycatcher **Special Concern:** Yellow- breasted Chat Golden-winged Warbler	CUT1 CUT2 CUS1 CUS2 CUW1 CUW2 Patches of shrub ecosites can be complexed into a larger habitat for some bird species	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. Information Sources • Agricultural land classification maps, Ministry of Agriculture. • Local bird clubs. • Ontario Breeding Bird Atlas • Reports and other information available from Conservation Authorities.	Field Studies confirm: 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" • SWH MIST Index #33 provides development effects and mitigation measures.	**Not Present**: Potentially suitable habitat (i.e. thicket, savannah, and woodland >10 ha) is not present within the study area.
Terrestrial Crayfish **Rationale:** Terrestrial Crayfish are only found within SW Ontario in Canada and their habitats are very rare.	Chimney or Digger Crayfish; (Fallicambarus fodiens) Devil Crayfish or Meadow Crayfish; (Cambarus diogenes)	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.	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. Information Sources • Information sources from "Conservation Status of Freshwater Crayfishes" by Dr. Premek Hamr for the WWF and CNF March 1998	Studies Confirm: • 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 ecoelement 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 • SWH MIST Index #36 provides development effects and mitigation measures.	**Not Present**: Evidence of terrestrial crayfish (i.e. chimney structures) was not identified during field surveys.
Special Concern and Rare Wildlife Species **Rationale:** These species are quite rare or have experienced significant population declines in Ontario.	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).	All plant and animal element occurrences (EO) within a 1 or 10km grid. Older element occurrences were recorded prior to GPS being available, therefore location information may lack accuracy	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 Information Sources • Natural Heritage Information Centre (NHIC) will have Special Concern and Provincially Rare (S1-S3, SH) species lists with element occurrences data. • NHIC Website "Get Information" : http://nhic.mnr.gov.on.ca • Ontario Breeding Bird Atlas • Expert advice should be sought as many of the rare spp. have little information available about their requirements.	Studies Confirm: • 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.	**Candidate/Confirmed**: Potentially suitable foraging and dispersal habitat for Snapping Turtle (SC) is within the study area along the Appleby Creek corridor. One male Black-crowned Night-heron was observed on both BBS dates foraging on both sides of the Appleby GO Station. Monarch butterflies (adults) were observed foraging on wildflowers within the study area, mainly in vegetation communities 3 and 4.

Specialized Habitat for Wildlife					
Specialized Wildlife Habitat	**Wildlife Species**	**Candidate SWH**		**Confirmed SWH**	**Potential for Candidate and/or Confirmed SWH on Subject Property**
		ELC Ecosite Codes	**Habitat Criteria and Info. Sources**	**Defining Criteria**	
				• SWH MIST Index #37 provides development effects and mitigation measures.	Canada Warbler was recorded on eBird.org within vegetation community #5 close to Pinedale Avenue. Eastern Wood-pewee was recorded in Bromley Park during breeding bird surveys.