

Appendix K

Headwater Drainage Feature Assessments

GEO Morphix, June 28, 2024

June 28 , 2024

Alloa Landowners Group
c/o Glen Schnarr & Associates Inc.
700-10 Kingsbridge Garden Circle
Mississauga, Ontario L5R 3K6

Attn: Jason Afonso, MCIP, RPP

**Re: Headwater Drainage Feature Assessments
Alloa Secondary Plan Area, Local Subwatershed Study
Town of Caledon, Ontario
GEO Morphix Project No. PN24009**

GEO Morphix Ltd. (GEO Morphix) was retained to complete headwater drainage feature assessments (HDFAs) in support of the Alloa Secondary Plan Area in the Town of Caledon, Ontario. The Alloa Secondary Plan Area is located southwest of the intersection of Old School Road and Chinguacousy Road. The properties, hereafter referred to as the "subject lands", are bounded by Old School Road, Mayfield Road to the south, Heritage Road to the west, and Chinguacousy Road to the east. The HDFAs were completed in support of a Local Subwatershed Study (LSWS) that is required to characterize the existing environmental features on-site and support development of an overall constraints plan for future land use planning and development.

Headwater drainage features (HDFs) can be defined as, "*non-permanently flowing drainage features that may not have defined bed or banks; they are first-order or zero-order intermittent and ephemeral channels, swales and connected headwater wetlands, but do not include rills or furrows*" (TRCA and CVC, 2014). HDFs are important sources of food, sediment, water, nutrients, and organic matter for reaches downstream (TRCA/CVC, 2014).

In support of the LSWS, GEO Morphix is completing field assessments in 2024 following the spirit of the Toronto and Region Conservation Authority (TRCA) and Credit Valley Conservation (CVC) HDFA Guidelines: *Evaluation, Classification and Management of Headwater Drainage Feature Guidelines* (2014).

As part of the headwater drainage feature assessment, we completed the following activities:

- Background review and desktop assessment of existing site conditions, including a review of site topography and drainage, as well as drainage feature and watercourse reach delineation.
- Field reconnaissance to examine existing conditions on site and verify the findings of the desktop assessment and reach delineation exercise, including HDFAs following the TRCA and CVC protocol (2014)

To date, two rounds of HDFAs have been completed. The third round of HDFAs will be completed in July/August of 2024, consistent with TRCA and CVC (2014) guidelines.

Background Review and Reach Delineation

A review of background materials was conducted to characterize the landscape based on previous reports, studies, mapping, and records of existing site conditions (topography, geology, drainage, etc.). The drainage features on site are part of four watersheds/subwatersheds: the Etobicoke Creek watershed, the Fletchers Creek subwatershed and the East and West Huttonville Creeks subwatersheds. The Etobicoke Creek watershed is situated within the jurisdictional area of the TRCA. The Fletchers Creek subwatershed and East and West Huttonville Creeks subwatersheds are situated within the jurisdictional area of the CVC.

The majority of the subject lands and associated drainage features reside in the headwaters subwatershed of Etobicoke Creek. Agricultural land use is dominant in this region, and therefore canopy cover within this subwatershed is minimal (TRCA, 2021). Multiple tributaries to Etobicoke Creek traverse the subject lands including the Alloa Drain, Lyons Drain, Fraser Drain as well as numerous headwater drainage features. The Alloa Drain flows west to east through the centre of the subject lands, while the Lyons Drain flows north to south through the northern, central portion of the subject lands. The Fraser Drain was also identified, and it flows north to south through the western portion of the subject lands. The southern limit of the subject lands contains drainage features within the Fletchers and East and West Huttonville Creeks subwatersheds, which flow south under Mayfield Road. These lands are also primarily agricultural.

Preliminary watercourse reach delineation was previously completed as part a Scoped Subwatershed Study for the Settlement Area Boundary Expansion (SABE) for the Regional Municipality of Peel by Wood et al. in 2022. Field investigations were largely based on windshield surveys due to the scope and scale of the study. HDFAs following TRCA and CVC (2014) guidelines were therefore not conducted but are being completed through this assessment for the entire Alloa Secondary Plan Area.

Reaches are homogeneous segments of channel used in geomorphological investigations. Reaches are studied semi-independently as each is expected to function in a manner that is at least slightly different from adjoining reaches. This method allows for a meaningful characterization of a watercourse as the aggregate of reaches, or an understanding of a particular reach, for example, as it relates to a proposed activity.

Reaches are typically delineated based on changes in the following:

- Channel planform
- Channel gradient
- Physiography
- Land cover (land use or vegetation)
- Flow, due to tributary inputs
- Soil type and surficial geology
- Historical channel modifications

Reach delineation follows scientifically defensible methodology proposed by Montgomery and Buffington (1997), Richards et al. (1997), and the Toronto and Region Conservation Authority (2004) as well as others.

Several stream layers and topographic data were reviewed to initially identify potential drainage features on site, which included those available through TRCA, Peel Region, and MNRF. All reaches/HDFs are graphically defined in **Appendix A**. Although a preliminary desktop reach delineation was completed, field verification was conducted to confirm the existing drainage network. Field observations are outlined below.

Headwater Drainage Feature Field Assessments

HDFAs are being completed on the subject lands in 2024 following the TRCA and CVC (2014) guidelines. This approach includes three (3) separate site visits to assess the aquatic, hydrologic, terrestrial, and geomorphic attributes of each headwater reach. Conditions along each reach and representative photographs are contained in **Appendix B**.

In accordance with TRCA and CVC (2014) guidelines, the first HDF site visit was completed on various dates including March 15, March 26 – 28, April 1, and April 4, 2024, during spring freshet conditions. The second site visit was completed on May 16, 2024, following a period of 48 consecutive hours without rainfall. The third site visit will be completed in July or August following a period of 72 consecutive hours without rainfall. If a feature that was mapped as part of the desktop assessment was dry during a round of observations, then the feature was not revisited during subsequent field assessments. A summary of HDF characteristics is provided in **Table 1**.

Table 1. Summary of HDF reach characteristics and field observations

HDF Reach	Notes/Observations
<p>AD1-1B</p>	<p>Vegetated swale feature with multiple flow pathways; limited flowing water during Round 1 site visit; standing water during Round 2 site visit; riparian area dominated by meadow and land use as pastures; limited habitat and channel definition due to multiple flow pathways; bankfull channel indicators difficult to discern.</p> <p>Feature would likely be removed based on the future Highway 413.</p>
<p>AD1-2A</p>	<p>Vegetated swale feature with multiple flow pathways; downstream portion through wetland vegetation; limited flowing water during Round 1 site visit; standing water during Round 2 site visit; riparian area dominated by meadow and land use as pastures; limited channel definition and canopy cover due to multiple flow pathways; bankfull channel indicators difficult to discern.</p> <p>Approximately 50% of the feature upstream is anticipated to be impacted based on the future Highway 413.</p>
<p>AD1-2D</p>	<p>Tile drain outlet connecting the adjacent pond to watercourse reach AD1-2; water flowing over the ground surface in Round 2 site visit; riparian area consisted of wetlands and forested buffers; limited channel definition; artificial feature associated with the adjacent dug pond.</p> <p>The feature was not identified during Round 1 of HDF Assessments but was assessed during Round 2 assessments.</p>
<p>AD1-3</p>	<p>Wetland feature with multiple flow pathways; upstream portion through woodlot; standing water during Round 1 and Round 2 site visits; riparian area dominated by wetland vegetation with meadow vegetation further from the banks; limited channel definition due to multiple flow pathways; bankfull channel indicators difficult to discern.</p> <p>Approximately 50% of the feature upstream is anticipated to be impacted based on the future Highway 413.</p>
<p>AD1-4</p>	<p>Poorly defined feature through a forested wetland; standing water during Round 1 site visit; dry during Round 2 site visit; riparian area dominated by wetland and forest riparian vegetation; woody debris frequently observed with shallow standing water and poor feature definition.</p> <p>The feature is anticipated to be impacted based on the future Highway 413.</p>
<p>AD2-1</p>	<p>Vegetated swale feature with ditching occurring downstream; standing water during Round 1; dry during Round 2 site visit; riparian area dominated by meadow vegetation with grasses dominating; limited channel definition with some definition in the ditched portion.</p>

HDF Reach	Notes/Observations
AD3-1	Feature situated in agricultural field; flowing water during Round 1 site visit; dry and no channel definition during Round 2 site visit; riparian area dominated by agricultural fields on both sides; limited habitat and no channel definition.
AD3-1B	Tiled feature with surface flows through a swale during Round 1; dry during the Round 2 site visit; riparian area dominated by meadow vegetation with grasses dominant; limited habitat and channel definition.
AD3-1C	Vegetated hedgerow between two agricultural fields; standing water during Round 1 and 2; immediate riparian buffer dominated by meadow vegetation with few trees; dominant riparian zone contains agricultural fields; limited channel definition throughout the feature without any visible evidence of a connection to downstream.
AD4-1	Defined feature with wetland vegetation; standing water present during Rounds 1 and 2; riparian buffer dominated by wetland vegetation along its immediate banks; the further riparian buffer along the right bank is agricultural fields; further riparian buffers along the left banks are a lawn and driveway. Channel is defined but lacks morphological features. Some habitat provided by the immediate riparian buffer but feature lacks canopy cover.
AD4-2	Feature situated in agricultural field; flowing water during Round 1 site visit; dry during Round 2 site visit; limited habitat and channel definition with a reduction in channel definition in Round 2; riparian area dominated by agricultural fields on both sides.
AD4-3	Tiled feature with surface flows through approximately one third of the feature during Round 1; feature was dry during Round 2 and was tilled and planted; riparian area dominated by agricultural fields; no apparent habitat or channel definition.
AD5-1 AD5-3	Straightened channel with multiple flow pathways; flowing through wetland vegetation; minimally flowing water was present during the Round 1 and Round 2 site visits; riparian area dominated by wetland vegetation with agricultural fields further from the banks; limited channel definition.
AD5-5	Feature situated in an agricultural field; flowing water during Round 1 site visit; generally dry during Round 2 site visit; minimal pooling at the furthest downstream portion; limited habitat and channel definition; riparian area dominated by agricultural fields on both sides.
AD6-2A	Ditched feature along a residential property; flowing water during Round 1 site visit; generally dry during Round 2 site visit; minimal pool with algae mid-reach; limited habitat; riparian area dominated by manicured lawn with an agricultural field to the south.

HDF Reach	Notes/Observations
AD7-1	Defined feature flowing through a woodlot and wetland; flowing water in Round 1 site visit; standing water during Round 2 site visit; riparian area dominated by forested vegetation; important terrestrial habitat and riparian vegetation.
AD8-1	<p>Straightened, defined feature flowing between two agricultural fields; flowing water in Round 1 site visit; dry during Round 2 site visit; riparian area dominated by agricultural fields with meadow vegetation on the immediate banks; limited habitat. This feature is a headwater to the Alloa drain and directly connects to the uppermost reach of the Alloa Drain.</p> <p>The feature may be impacted by the future Highway 413.</p>
LD4-2	Defined surface feature through an agricultural field; flowing water during Round 1 site visit; standing water during Round 2 site visit; limited habitat and channel definition; riparian area dominated by agricultural fields on both banks.
LD4-3	Defined feature flowing through a woodlot and wetland; flowing water during Round 1 site visit; standing water during Round 2 site visit; riparian area dominated by forests and wetlands; important terrestrial habitat and riparian vegetation.
LD4-3A	Defined feature flowing through a woodlot and wetland; flowing water during Round 1 site visit; standing water during Round 2 site visit; poorly defined banks; riparian area dominated by forests and wetlands; important terrestrial habitat and riparian vegetation.
LD4-3B	<p>Features situated in an agricultural field; flowing water during Round 1 site visit; dry during Round 2 site visit; limited habitat and channel definition; riparian area dominated by agricultural fields on both sides.</p> <p>At the furthest upstream portion, pooling was observed as a result of a depression in the agricultural field. This pooling is likely only connected to the feature during large rain events and freshet conditions and may not occur consistently each year as there was evidence of cultivation. Ecological field work conducted in 2024 confirms that this feature does not warrant a wetland classification.</p>
LD4-3C	Feature flowing through a woodlot and wetland; standing water during Round 1 and Round 2 site visits; poorly defined banks; riparian area dominated by forests and wetlands; important terrestrial habitat and riparian vegetation.
LD5	Tiled feature without any surface feature present; tile is present underneath active agricultural fields; riparian area dominated by agricultural fields. The feature directly inputs into the upstream extent of a watercourse reach (LD4). Feature may also be impacted by the future Highway 413.
LD6	Tiled feature with evidence of surface flows; defined feature on the surface through agricultural fields; surface feature dry during Round 1 and 2 site visits; riparian area

HDF Reach	Notes/Observations
	<p>dominated by agricultural fields; feature ultimately inputs into the upstream extent of the Lyons Drain.</p> <p>Feature may also be impacted by the future Highway 413.</p>
FD1-1	<p>Defined feature; flowing water during Round 1; dry during Round 2 site visit; limited feature form and habitat; riparian area dominated by meadow vegetation with a forest further south of the feature.</p>
FD2-1	<p>Ditched feature alongside a woodlot; flowing water during Round 1 site visit; standing water during Round 2 site visit; limited habitat in the immediate riparian area; immediate riparian area dominated by meadow with lawn near the right bank and forest near the left bank.</p> <p>Feature may also be impacted by the future Highway 413.</p>
FD3	<p>Tiled feature with evidence of surface flows; defined feature on the surface through agricultural fields; surface feature dry during Round 1 and 2 site visits; riparian area dominated by agricultural fields; feature ultimately inputs into the upstream extent of the Fraser Drain.</p> <p>Feature may also be impacted by the future Highway 413.</p>
FC-1B	<p>Swale feature transecting an agricultural field; standing water during Round 1 and 2 site visits; immediate riparian area dominated by meadow (grasses) along both banks; upstream reach (FC-1C) contains trees; however, site access was not permitted.</p>
FC-1D	<p>Defined feature flowing under a driveway into feature downstream; limited flow during Round 1 site visit; standing water during Round 2 site visit; canopy cover and habitat present; immediate riparian area dominated by meadow with manicured lawn further from the banks; downstream feature (Reach FC-1C) contains trees; however, site access was not permitted.</p>
FC-2A	<p>Feature situated in agricultural field; flowing water during Round 1; dry during Round 2 site visit with some standing water at the Mayfield Road culvert downstream; riparian area dominated by agricultural fields; limited channel definition and habitat. The feature flows under Mayfield Road and inputs into a natural channel design.</p>
FC-2B	<p>Feature situated in agricultural field; flowing water during Round 1 site visit; standing water during Round 2 site visit with small, intermittent pools observed; riparian area dominated by agricultural fields; limited feature form and habitat; minnows observed in one isolated pool of standing water. The feature also inputs under the road into a natural channel design downstream south of Mayfield Road.</p>

HDF Reach	Notes/Observations
AD3-2	Features situated in agricultural fields; flowing water during Round 1 site visit; dry during Round 2 site visit; limited habitat and channel definition; riparian area dominated by agricultural fields on both sides.
AD3-3	
AD3-4	
AD3-5	
AD3-6	
AD3-7	
AD3-8	
AD5-5A	
AD6-1	
AD6-2	
LD4-3D	
LD4-4	
FC-2C	
FC-2C-1	
FC-3A	
FC-3B	
FC-3C	
FC-4A	
FC-4B	
FC-4C	

We have assigned a preliminary management classification to each of the HDF reaches observed based on the approach outlined by TRCA and CVC (2014). The HDF assessment technique evaluates and classifies various attributes and functions of HDFs. A management recommendation is then selected based on a combined evaluation of all attributes, specifically with regard to hydrological regime, riparian conditions, as well as aquatic and terrestrial habitat (TRCA and CVC, 2014).

Each of the classifications come with specific management requirements which are:

- *Protection* – Important functions: protect and/or enhance the existing feature and its riparian zone and groundwater discharge or wetland in-situ
- *Conservation* – Valued functions: maintain, relocate, and/or enhance drainage feature and its riparian zone corridor
- *Mitigation* – Contributing functions: replicate or enhance functions through enhanced lot level conveyance measures for downstream connection
- *No Management Required* – Limited functions: no feature and/or functions associated with the feature are present on the ground and/or there is no downstream connection

A management classification for each of the observed HDFs is outlined in **Table 2** in **Appendix C**.

The preliminary HDF management classification assigned to **Reaches AD1-1B, AD1-2A** (upstream), **AD1-3** (upstream), **AD1-4** is "Mitigation", and the management classification assigned to **Reach AD1-2D, AD1-2A** (downstream), **AD1-3** (downstream) is "Conservation". These reaches are anticipated to be impacted by the future Highway 413. **Reaches AD1-4, AD1-3, AD1-2A**, and **AD1-2D** are also situated in either wetland or woodlots. As such, the recommendations for any of the areas of the reaches within the future Highway 413 footprint have been revised to "Mitigation" as they are likely to be heavily impacted. Areas downstream of the Highway 413 footprint that are within wetlands or woodlots have been assigned "Conservation" status due to the lack of inputs upstream should the future Highway 413 be present.

The preliminary HDF management classification assigned to **Reach FC-1B** and **FC-1D** is "Conservation". These two reaches are small sections of a larger HDF tributary. The majority of the HDF was not field

verified due to site access restrictions. However, based on our desktop mapping exercise and field observations at property boundaries the HDF is present. As such, the entirety of the HDF from **Reach FC-1A to FC-1D** is assigned "Conservation" status. Field verification is required to finalize recommendations within the reaches where site access was restricted. **Reach FC-1E** was assigned an HDF Management classification of "Mitigation – to be field verified" due to the limited feature form through a pasture as observed from the property line immediately downstream. This HDF tributary is unique due to the previous planning decisions downstream. Downstream (east) of Chinguacousy Road, this tributary has been realigned parallel to the roadway. South of Mayfield Road, this tributary is piped for approximately 600 m. The tributary has no floodplain or erosion hazard. Given the significant piped condition south of Mayfield Road in the adjacent Environmental Impact Study (EIS) it is recommended that the management of this feature be downgraded to "Mitigation" in consultation with the Town of Caledon and CVC. This would provide opportunities to realign or replicate this tributary elsewhere in the Secondary Plan Area, which could be explored as part of the LSWS process.

The preliminary HDF management classification assigned to **Reaches FC-2A and FC-2B** is "Mitigation". Both features were identified through agricultural fields with limited feature form. However, **FC-2B** had small intermittent pools of standing water still present in the Round 2 site visit. In one small, isolated pool minnows were observed in **FC-2B** during the Round 2 site visit. "Mitigation" status was assigned as it is expected that the feature has no natural riparian vegetation, has been heavily impacted by active agricultural practices, and did not have a hydrological connection to downstream reaches during Round 2 of the HDFAs. These reaches connect to a natural channel design immediately downstream of Mayfield Road, and as such, hydrological inputs to the downstream receiving channel should be maintained through mitigation.

The HDF management classification assigned to **Reaches LD4-3B, LD4-3D, and LD4-4** is "Mitigation", and the management classification assigned to **Reaches LD4-3, LD4-3A, and LD4-3C** is "Protection". It should be noted that **Reaches LD4-3, LD4-3A, and LD4-3C** are situated within a woodlot and wetland feature. Based on our understanding of existing ecological data for the site, it is anticipated that the woodlot and wetland will be maintained in the future condition. As such, **Reaches LD4-3, LD4-3A, and LD4-3C** will likely remain protected by virtue of their location within the existing woodlot and wetland. **Reach LD4-3B, LD4-3D, and LD4-4** were provided the "Mitigation" status as they directly feed the HDFs flowing through the wetland and woodlot. A pooled area in the upstream extent of **Reach LD4-3B** was discussed with the Town of Caledon during the site meeting on June 4, 2024. This location is being reviewed by Cunningham Environmental Associates, however, it is the Study Team's opinion that the pooled area is not a wetland community. It is understood that this location was previously reviewed by C.F. Crozier and Associates Inc. in consultation with the MNR and it was subsequently removed from provincial wetland mapping.

Reach LD4-2 was assigned the management classification of "Conservation". Typically, the upstream classification of "Protection" would also apply to this reach. However, due feature having limited form and flowing through an active agricultural field the classification was reduced to "Conservation". The HDFs in this area ultimately flow into the Lyons Drain watercourse and as such, hydrological inputs to the downstream receiving channel should be maintained. The Lyons Drain watercourse is constructed open drain with limited geomorphological features and / or riparian buffers.

Reaches LD5, LD6, and FD3 were assigned the management classification of "Mitigation". These features are tiled and contribute flow to the downstream watercourse (**Reach LD4** and **Reach FD2**). This function is required to be maintained to the downstream watercourse and as such the features were classified as "Mitigation".

Due to observed riparian conditions, **Reaches AD4-1, AD5-1, and AD5-3** have been classified as "Conservation", which would indicate that these features could be maintained, replicated, or restored in the future condition. **Reaches AD5-2, and AD5-4** are classified as "Conservation – to be field verified". It is recommended these reaches are field verified should site access become available. Downstream of these reaches is the Alloa Drain, to which they directly discharge. The Alloa Drain watercourse is a constructed open drain which collects flows from the Fraser Drain, Lyons Drain, and multiple headwater drainage features with limited geomorphological features and / or riparian buffers.

The preliminary HDF management classification assigned to **Reach AD7-1** is "Protection". It should be noted that this feature is situated within a woodlot and wetland feature and connects to the Alloa Drain downstream. Based on our understanding of existing ecological data for the site, it is anticipated that the woodlot and wetland will be maintained in the future condition. As such, the feature will likely remain protected by virtue of its location within the existing woodlot and wetland.

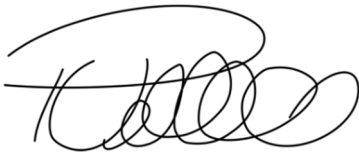
Reaches AD8-1 and **FD1-2** were assigned the management classification of "Mitigation". These straightened features are defined and are directly connected to downstream watercourse reaches (**Reach AD8** and **Reach FD1**). The contributing hydrology function is required to be maintained to the downstream watercourse and as such the reaches are classified as "Mitigation". These features are anticipated to also be impacted by the future Highway 413.

Note that several HDFs have been included in our mapping for completeness but were not field verified due to site access restrictions. Features were documented based on a desktop mapping exercise and are labelled as "Not Field Verified" on all mapping. Where the feature was observed to be connecting two field-verified features, a management classification was recommended. However, field verification is required should property access become available.

The remainder of the reaches were assigned an HDF management classification of "No Management" as they had limited or no channel form and were located in active agricultural fields or along tile drains with no surface feature apparent. These features were also observed to be dry during the Round 2 site visit.

We trust this report meets your current requirements. Should you have any questions or concerns, please contact the undersigned.

Respectfully submitted,



Paul Villard, Ph.D., P.Geo., CAN-CISEC, EP, CERP
Director, Principal Geomorphologist



Kat Woodrow, M.Sc.
Manager of Watershed Studies

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Appendix A

Reach Delineation

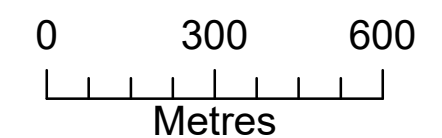
Preliminary HDF Management Recommendations
Alloa Secondary Plan Area
 Caledon, Ontario

DRAFT

Legend

- Reach Break and ID
- Preliminary HDF Recommendations**
- Mitigation
- Mitigation (Tile Drain)
- Mitigation - Not Field Verified
- Conservation
- Conservation - Not Field Verified
- Protection
- No Management
- No Management - Not Field Verified
- No Management (Tile Drain)
- Watercourse
- Not Field Assessed
- Wetlands
- Woodlands
- OHN Waterbody
- Participating Properties
- Non-Participating Properties, Access
- Non-Participating Property, No Access
- Highway 413 Footprint
- Phase 1 Lands
- Phase 2 Lands
- Alloa Secondary Plan Area and Primary Study Area

DRAFT



Reaches FC-1A to FC-1D are assigned a preliminary management recommendation of Conservation. Downstream of Mayfield Road this tributary is piped for approximately 600 m. It is recommended that the management of this feature be revised to Mitigation in consultation with the Town of Caledon and CVC.



Preliminary HDF recommendations are subject to change following Round 3 Assessments.

Imagery: Google Earth, 2022. Waterbody, Watercourse: MNRF, 2023. Alloa Phase 1 & 2 Lands, Alloa Secondary Plan Area: Crozier, 2024. HDFs, Watercourse, HDF Recommendations: GEO Morphix Ltd., 2024. 0.5 m Contour: MNRF, 2014-2016. 413 Highway Footprint: MTO, 2024. Participating Properties, Wetlands, Dripline, Woodland: Crozier, 2024. Print Date: June 2024. PN24009. Drawn By: R.A., M.O., S.S.O., K.W., G.U.





Appendix B
Reach Summary Sheets and Photographs


Reach AD1-1B

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Water flowing	Round 2 Hydrology: Standing water	Round 3 Hydrology: To be completed	
Riparian Classification: Feature flowing through a meadow.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Chinguacousy Road	
Notes: The feature lacks definition and will be impacted based on future Highway 413.			
GEO Morphix Management Recommendation: Mitigation <i>*Subject to change following round 3 HDFA*</i>			
			
Round 1: Photograph facing upstream.		Round 2: Photograph facing upstream.	
Round 3: To be completed			



Reach AD1-2A

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Water flowing	Round 2 Hydrology: Standing water	Round 3 Hydrology: To be completed	
Riparian Classification: Feature flowing through a meadow.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Chinguacousy Road and Alloa Drain	
Notes: Feature lacks definition and approximately half of the feature downstream flows through a wetland. Approximately half of the feature would be impacted based on the future Highway 413 with a lack of remaining upstream connection.			
GEO Morphix Management Recommendation: Mitigation (future Highway 413 footprint upstream) / Conservation (downstream portion flowing through wetland) <i>*Subject to change following round 3 HDFA*</i>			
			
Round 1: Photograph facing upstream.		Round 2: Photograph facing downstream.	
Round 3: To be completed			



Reach AD1-2D

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Feature not identified/observed	Round 2 Hydrology: Water flowing over ground surface from tile drain	Round 3 Hydrology: To be completed	
Riparian Classification: Feature flowing through a wetland and forest.			
Fish Observed: No	Upstream of HDF: Pond	Downstream of HDF: Alloa Drain tributary (Reach AD1-2)	
Notes: Tile drain feature connecting an adjacent dug pond to the downstream watercourse.			
GEO Morphix Management Recommendation: Conservation Feature status was lowered to Conservation due to the artificial condition associated with the adjacent pond. <i>*Subject to change following round 3 HDFA*</i>			
			
Round 2: Photograph facing upstream of tile drain (yellow arrow).			
Round 3: To be completed			



Reach AD1-3

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Standing water	Round 2 Hydrology: Standing water	Round 3 Hydrology: To be completed	
Riparian Classification: The immediate riparian vegetation consists of wetland vegetation with meadow vegetation further from the banks.			
Fish Observed: No	Upstream of HDF: Forest and wetland	Downstream of HDF: Alloa Drain Tributary (Reach AD1-2)	
Notes: Feature lacks definition and flows through a wetland and woodlot (upstream). Approximately half of the feature upstream would be impacted based on the future Highway 413 which would potentially remove the terrestrial linkage to the upstream woodlot. For this reason, the upstream portion of the reach has been lowered to Mitigation (upstream) and Conservation (downstream).			
GEO Morphix Management Recommendation: Mitigation (future Highway 413 upstream footprint) / Conservation (downstream of future Highway 413) <i>*Subject to change following round 3 HDFA*</i>			
			
Round 1: Photograph facing upstream.		Round 2: Photograph facing upstream.	
Round 3: To be completed			



Reach AD1-4

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Standing water	Round 2 Hydrology: Dry	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Feature through forested wetland.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Wetland and forest	
Notes: Feature lacks definition and flows through a wetland and woodlot. This feature would be protected based on its location within a woodlot however, it will also be impacted based on the future Highway 413 footprint. Due to the future Highway 413, the Management recommendation has been lowered to mitigation.			
GEO Morphix Management Recommendation: Mitigation <i>*Subject to change following round 3 HDFA*</i>			
			
Round 1: Photograph facing downstream.		Round 2: Photograph facing upstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			



Reach AD2-1

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Standing water	Round 2 Hydrology: Dry	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Feature through meadow vegetation with primarily grasses.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Alloa Drain and Chinguacousy Road	
Notes: Limited feature development with no water during the Round 2 site visit.			
GEO Morphix Management Recommendation: No Management			
			
Round 1: Photograph facing upstream.		Round 2: Photograph facing upstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			



Reach AD3-1

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Flowing water	Round 2 Hydrology: Dry	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Feature through an agricultural field			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Alloa Drain	
Notes: Limited feature development present with a lack of natural vegetation and lack of water or feature definition in Round 2.			
GEO Morphix Management Recommendation: No Management			
			
Round 1: Photograph facing upstream.		Round 2: Photograph facing upstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			



Reach AD3-1B

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Standing water at the tile drain	Round 2 Hydrology: Dry	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Feature through a meadow.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Alloa Drain	
Notes: Tile drain feature was identified with a lack of surface flows in the Round 1 and 2 site visits. Minor standing water was present at the tile drain during Round 1.			
GEO Morphix Management Recommendation: No Management			
			
Round 1: Photograph facing upstream.		Round 2: Photograph facing upstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			



Reach AD3-1C

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Standing water	Round 2 Hydrology: Standing water	Round 3 Hydrology: To be completed	
Riparian Classification: Immediate riparian vegetation consists of meadow vegetation with some trees. Past the immediate riparian vegetation is agricultural fields.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Woodlot, but with no observed connection between feature and woodlot	
Notes: Limited feature form identified with the feature occurring along a hedgerow with isolated pockets of standing water present in both Round 1 and 2. It also lacks a downstream connection./			
GEO Morphix Management Recommendation: No Management <i>*Note subject to change following round 3*</i>			
			
Round 1: Photograph facing downstream.		Round 2: Photograph facing downstream.	
Round 3: To be completed			



Reach AD3-2

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Flowing water	Round 2 Hydrology: Dry	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Through an agricultural field.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Alloa Drain	
Notes: Limited feature development identified with a lack of water in Round 2 of the site assessment.			
GEO Morphix Management Recommendation: No Management			
			
Round 1: Photograph facing upstream.		Round 2: Photograph facing upstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			



Reach AD3-3

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Flowing water	Round 2 Hydrology: Dry	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Through an agricultural field.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Alloa Drain	
Notes: Limited feature development identified with a lack of water in Round 2 of the site assessment.			
GEO Morphix Management Recommendation: No Management			
			
Round 1: Photograph facing downstream.		Round 2: Photograph facing downstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			



Reach AD3-4

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Flowing water	Round 2 Hydrology: Dry	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Through an agricultural field.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Alloa Drain	
Notes: Limited feature development identified with a lack of water in Round 2 of the site assessment.			
GEO Morphix Management Recommendation: No Management			
			
Round 1: Photograph facing upstream.		Round 2: Photograph facing upstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			



Reach AD3-5

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Flowing water	Round 2 Hydrology: Dry	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Through an agricultural field.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Alloa Drain	
Notes: Limited feature development identified with a lack of water in Round 2 of the site assessment.			
GEO Morphix Management Recommendation: No Management			
			
Round 1: Photograph facing upstream.		Round 2: Photograph facing upstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			



Reach AD3-6

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Flowing water	Round 2 Hydrology: Dry	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Through an agricultural field.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Alloa Drain	
Notes: Limited feature development identified with a lack of water in Round 2 of the site assessment.			
GEO Morphix Management Recommendation: No Management			
			
Round 1: Photograph facing downstream.		Round 2: Photograph facing downstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			



Reach AD3-7

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Flowing water	Round 2 Hydrology: Dry	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Through an agricultural field.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Alloa Drain	
Notes: Limited feature development identified with a lack of water in Round 2 of the site assessment.			
GEO Morphix Management Recommendation: No Management			
			
Round 1: Photograph facing upstream.		Round 2: Photograph facing upstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			



Reach AD3-8

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Flowing water	Round 2 Hydrology: Dry	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Through an agricultural field.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Alloa Drain	
Notes: Limited feature development identified with a lack of water in Round 2 of the site assessment.			
GEO Morphix Management Recommendation: No Management			
			
Round 1: Photograph facing downstream.		Round 2: Photograph facing downstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			



Reach AD4-1

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Standing water	Round 2 Hydrology: Standing water	Round 3 Hydrology: To be completed	
Riparian Classification: Immediate riparian area consists of wetland vegetation with an agricultural field south of the feature. North of the feature is a manicured lawn and driveway for a residential property.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Alloa Drain	
Notes: Defined feature with water in Round 1 and 2 with an established riparian buffer along portions of the reach.			
GEO Morphix Management Recommendation: Conservation <i>*Subject to change following round 3 HDFA*</i>			
			
Round 1: Photograph facing upstream.		Round 2: Photograph facing downstream.	
Round 3: To be completed			



Reach AD4-2

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Flowing water	Round 2 Hydrology: Dry	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Through an agricultural field.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Alloa Drain	
Notes: Limited feature development and definition with a lack of water in Round 2.			
GEO Morphix Management Recommendation: No Management			
			
Round 1: Photograph facing downstream.		Round 2: Photograph facing downstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			



Reach AD4-3

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Flowing water into the drain. Surface flows across 1/3 of the feature.	Round 2 Hydrology: Dry	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Through an agricultural field.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Alloa Drain	
Notes: Tile drain observed with a defined surface feature and flows. During Round 1 some surface flows were observed across approximately a third of the feature while Round 2 was dry.			
GEO Morphix Management Recommendation: No Management			
			
Round 1: Photograph facing upstream.		Round 2: Photograph facing upstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			



Reach AD5-1

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Minimal flowing water	Round 2 Hydrology: Minimal flowing water	Round 3 Hydrology: To be completed	
Riparian Classification: Immediate riparian vegetation consists of wetland vegetation with agricultural fields further away.			
Fish Observed: No	Upstream of HDF: Agricultural field and school property	Downstream of HDF: Alloa Drain	
Notes: Defined feature with established riparian vegetation and flowing water during Round 1 and 2.			
GEO Morphix Management Recommendation: Conservation <i>*Subject to change following round 3 HDFA*</i>			
			
Round 1: Photograph facing upstream.		Round 2: Photograph facing upstream.	
Round 3: To be completed.			



Reach AD5-3

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Flowing water minimally	Round 2 Hydrology: Flowing water minimally	Round 3 Hydrology: To be completed	
Riparian Classification: Immediate riparian vegetation consists of wetland vegetation with agricultural fields further away.			
Fish Observed: No	Upstream of HDF: Agricultural Field	Downstream of HDF: Alloa Drain	
Notes: Defined feature with established riparian vegetation and flowing water during Round 1 and 2.			
GEO Morphix Management Recommendation: Conservation <i>*Subject to change following round 3 HDFA*</i>			
			
Round 1: Photograph facing upstream.		Round 2: Photograph facing upstream.	
Round 3: To be completed.			



Reach AD5-5

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Flowing water minimally	Round 2 Hydrology: Dry	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Through an agricultural field.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Alloa Drain	
Notes: Limited feature development and with a lack of water in Round 2.			
GEO Morphix Management Recommendation: No Management			
			
Round 1: Photograph facing downstream.		Round 2: Photograph facing downstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			



Reach AD5-5A

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Flowing water minimally	Round 2 Hydrology: Dry	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Feature flowing through an agricultural field.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Agricultural field	
Notes: Limited feature development and a lack of water in Round 2.			
GEO Morphix Management Recommendation: No Management			
			
Round 1: Photograph facing downstream.		Round 2: Photograph facing downstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			



Reach AD6-1

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Flowing water	Round 2 Hydrology: Dry	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Feature flowing through agricultural fields.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Alloa Drain	
Notes: Limited feature development and a lack of water in Round 2.			
GEO Morphix Management Recommendation: No Management			
			
Round 1: Photograph facing upstream.		Round 2: Photograph facing downstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			



Reach AD6-2

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Flowing water	Round 2 Hydrology: Dry	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Feature flowing through agricultural fields.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Alloa Drain	
Notes: Limited feature development and a lack of water in Round 2.			
GEO Morphix Management Recommendation: No Management			
			
Round 1: Photograph facing upstream.		Round 2: Photograph facing upstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			



Reach AD6-2A

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Flowing water	Round 2 Hydrology: Dry	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Immediate riparian vegetation consisted of lawn with an agricultural field south of the feature.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Reach AD6-2 and ultimately Alloa Drain	
Notes: Limited feature development and a lack of water in Round 2.			
GEO Morphix Management Recommendation: No Management			
			
Round 1: Photograph facing upstream.		Round 2: Photograph facing upstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			



Reach AD7-1

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Flowing water	Round 2 Hydrology: Standing water	Round 3 Hydrology: To be completed	
Riparian Classification: Flowing through a woodlot			
Fish Observed: No	Upstream of HDF: Woodlot and wetland	Downstream of HDF: Alloa Drain	
Notes: Defined feature through a woodlot and wetland area.			
GEO Morphix Management Recommendation: Protection			
			
Round 1: Photograph facing upstream.		Round 2: Photograph facing upstream.	
Round 3: To be completed			



Reach AD8-1

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Standing water	Round 2 Hydrology: Dry	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Immediate riparian vegetation consists of meadow vegetation with agricultural fields further away on both sides.			
Fish Observed: No	Upstream of HDF: Agricultural Field	Downstream of HDF: Alloa Drain	
Notes: Defined feature with water in Round 1 but dry in Round 2. Feature may also be impacted by the future Highway 413.			
GEO Morphix Management Recommendation: Mitigation			
			
Round 1: Photograph facing downstream.		Round 2: Photograph facing downstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			



Reach LD4-2

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Flowing water	Round 2 Hydrology: Standing water	Round 3 Hydrology: To be completed	
Riparian Classification: Feature flows through agricultural fields.			
Fish Observed: No	Upstream of HDF: Woodlot and wetland	Downstream of HDF: Woodlot and wetland	
Notes: Limited feature form through active agricultural field. Upstream classification status would result in this feature being classified as Protection; however, given the impacted existing condition, it is classified as Conservation.			
GEO Morphix Management Recommendation: Conservation <i>*Subject to change following round 3 HDFA*</i>			
			
Round 1: Photograph facing upstream.		Round 2: Photograph facing downstream.	
Round 3: To be completed			



Reach LD4-3

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Flowing water	Round 2 Hydrology: Standing water	Round 3 Hydrology: To be completed	
Riparian Classification: Flowing through a woodlot and wetland			
Fish Observed: No	Upstream of HDF: Woodlot and wetland	Downstream of HDF: Alloa Drain	
Notes: Defined feature through a woodlot and wetland area.			
GEO Morphix Management Recommendation: Protection			
			
Round 1: Photograph facing downstream.		Round 2: Photograph facing downstream.	
Round 3: To be completed			



Reach LD4-3A

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Flowing water	Round 2 Hydrology: Standing water	Round 3 Hydrology: To be completed	
Riparian Classification: Flowing through a woodlot and wetland			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Woodlot and wetland	
Notes: Defined feature through a woodlot and wetland area.			
GEO Morphix Management Recommendation: Protection			
			
Round 1: Photograph facing downstream.		Round 2: Photograph facing downstream.	
Round 3: To be completed			



Reach LD4-3B

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Flowing water	Round 2 Hydrology: Dry	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Feature flows through agricultural fields.			
Fish Observed: No	Upstream of HDF: Agricultural fields	Downstream of HDF: Woodlot and wetland	
Notes: Limited feature form through agricultural fields.			
GEO Morphix Management Recommendation: Mitigation <i>*Subject to change following round 3*</i>			
			
Round 1: Photograph facing downstream.		Round 2: Photograph facing downstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			



Reach LD4-3C

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Standing water	Round 2 Hydrology: Standing water	Round 3 Hydrology: To be completed	
Riparian Classification: Feature flows through a mature forest and wetland.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Forest and wetland	
Notes: Feature through woodlot and wetland area classified as protection due to its location.			
GEO Morphix Management Recommendation: Protection			
			
Round 1: Photograph facing upstream.		Round 2: Photograph facing downstream.	
Round 3: To be completed			



Reach LD4-3D

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Flowing water	Round 2 Hydrology: Dry	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Feature flows through agricultural fields.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Woodlot and wetland	
Notes: Feature poorly defined through agricultural field.			
GEO Morphix Management Recommendation: Mitigation <i>*Subject to change following round 3*</i>			
			
Round 1: Photograph facing upstream.		Round 2: Photograph facing downstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			



Reach LD4-4

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Flowing water	Round 2 Hydrology: Dry	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Feature flows through agricultural fields.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Woodlot and wetland	
Notes: Feature poorly defined through agricultural field.			
GEO Morphix Management Recommendation: Mitigation <i>*Subject to change following round 3*</i>			
			
Round 1: Photograph facing upstream.		Round 2: Photograph facing downstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			



Reach LD5

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Water flowing in drain	Round 2 Hydrology: Water flowing in drain	Round 3 Hydrology: Round 3 site visit will not be completed as a surface feature was not identified	
Riparian Classification: Feature through a meadow.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Lyons Drain	
Notes: Tile drain feature was identified with a lack of surface flows in the Round 1 and 2 site visits. Requires a Mitigation status due to it inputting flows into the top of watercourse. Feature may also be impacted by the future Highway 413.			
GEO Morphix Management Recommendation: Mitigation			
			
Round 1: Photograph of upstream inlet.		Round 2: Photograph of downstream outlet.	
Round 3: Round 3 site visit will not be completed as a surface feature was not identified			



Reach LD6

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Dry	Round 2 Hydrology: Dry	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Feature through agricultural fields.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Tile drain and ultimately Lyons Drain	
Notes: Tile drain feature was identified with evidence of surface flows. The defined surface feature was dry during both site visits.			
GEO Morphix Management Recommendation: Mitigation			
			
Round 1: Photograph facing downstream.		Round 2: Photograph facing upstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			



Reach FD1-1

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Flowing water	Round 2 Hydrology: Dry	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Feature flowing through meadow vegetation.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Fraser Drain	
Notes: Limited feature development with a lack of water in the Round 2 site visit.			
GEO Morphix Management Recommendation: No Management			
			
Round 1: Photograph facing upstream.		Round 2: Photograph facing upstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			



Reach FD2-1

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Flowing water	Round 2 Hydrology: Standing water	Round 3 Hydrology: To be completed	
Riparian Classification: Immediate riparian vegetation consists of meadow with a lawn near the left bank and forest near the right bank.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Fraser Drain	
Notes: Defined feature with limited water during the Round 2 site visit. The future Highway 413 may impact the feature as well.			
GEO Morphix Management Recommendation: Mitigation <i>*Subject to change following round 3 HDFA*</i>			
			
Round 1: Photograph facing downstream.		Round 2: Photograph facing upstream.	
Round 3: To be completed			



Reach FD3

Location: Mayfield Road, Caledon		Watershed: Etobicoke Creek	
Round 1 Hydrology: Dry on the surface	Round 2 Hydrology: Dry on the surface	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Flowing through agricultural fields.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Fraser Drain	
Notes: Tile drain with a lack of surface feature present. Flows from the drain are present but dry on the surface. Feature likely to be impacted by the future Highway 413.			
GEO Morphix Management Recommendation: Mitigation <i>*Subject to change following round 3*</i>			
			
Round 1: Photograph facing upstream.		Round 2: Photograph facing upstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			



Reach FC-1B

Location: Mayfield Road, Caledon		Watershed: Fletchers Creek	
Round 1 Hydrology: Standing water	Round 2 Hydrology: Standing water	Round 3 Hydrology: To be completed	
Riparian Classification: Flowing through meadow vegetation (grasses).			
Fish Observed: No	Upstream of HDF: Forest	Downstream of HDF: Chinguacousy Road and Residential developments	
Notes: Defined feature with water in both site visits and establish grassy riparian area.			
GEO Morphix Management Recommendation: Conservation The portion of drainage feature east Chinguacousy Road was recently realigned and south of Mayfield Road, this tributary is piped for approximately 600 m. It is recommended that the management of this feature be revised to Mitigation. <i>*Subject to change following round 3 and consultation with the Town of Caledon and CVC*</i>			
			
Round 1: Photograph facing downstream.		Round 2: Photograph facing upstream.	
Round 3: To be completed			



Reach FC-1D

Location: Mayfield Road, Caledon		Watershed: Fletchers Creek	
Round 1 Hydrology: Flowing water minimally	Round 2 Hydrology: Standing water	Round 3 Hydrology: To be completed	
Riparian Classification: Flowing through meadow vegetation with lawn vegetation further from the banks.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Forest	
Notes: Defined feature with water in both site visits and a more established riparian area.			
GEO Morphix Management Recommendation: Conservation The portion of drainage feature east Chinguacousy Road was recently realigned and south of Mayfield Road, this tributary is piped for approximately 600 m. It is recommended that the management of this feature be revised to Mitigation. <i>*Subject to change following round 3 and consultation with the Town of Caledon and CVC *</i>			
			
Round 1: Photograph facing downstream.		Round 2: Photograph facing downstream.	
Round 3: To be completed			



Reach FC-2A

Location: Mayfield Road, Caledon		Watershed: Fletchers Creek	
Round 1 Hydrology: Flowing water	Round 2 Hydrology: Dry	Round 3 Hydrology: To be completed due to fish found upstream.	
Riparian Classification: Feature flowing through agricultural fields.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Natural Channel Design	
Notes: The feature was undefined and dry during Round 2. Minimal pooling was observed at the furthest downstream culvert. The feature inputs under the road to a natural channel design and therefore was assigned the Mitigation status.			
GEO Morphix Management Recommendation: Mitigation <i>*Subject to change following round 3 HDFA*</i>			
			
Round 1: Photograph facing downstream.		Round 2: Photograph facing downstream.	
Round 3: To be completed due to fish found upstream.			



Reach FC-2B

Location: Mayfield Road, Caledon		Watershed: Fletchers Creek	
Round 1 Hydrology: Flowing water	Round 2 Hydrology: Standing water	Round 3 Hydrology: To be completed due to the presence of fish in Round 2.	
Riparian Classification: Feature flowing through agricultural fields.			
Fish Observed: Yes (Round 2)	Upstream of HDF: Agricultural field	Downstream of HDF: Natural Channel Design south of Mayfield Road	
Notes: Limited channel definition with small, intermittent pools of standing water observed through an active agricultural field in Round 2. Minnows were observed in one isolated pool which is expected to dry up and be influenced by agricultural practices. The feature inputs under the road into a Natural Channel Design and as such, was assigned the Mitigation status.			
GEO Morphix Management Recommendation: Mitigation <i>*Subject to change following round 3 HDFA*</i>			
			
Round 1: Photograph facing upstream.		Round 2: Photograph facing downstream.	
Round 3: To be completed due to the presence of fish in Round 2.			



Reach FC-2C

Location: Mayfield Road, Caledon		Watershed: Fletchers Creek	
Round 1 Hydrology: Flowing water	Round 2 Hydrology: Dry	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Feature flowing through agricultural fields.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Mayfield Road and residential developments	
Notes: Limited feature development with a lack of water in the Round 2 site visit.			
GEO Morphix Management Recommendation: No Management			
			
Round 1: Photograph facing upstream.		Round 2: Photograph facing upstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			



Reach FC-2C-1

Location: Mayfield Road, Caledon		Watershed: Fletchers Creek	
Round 1 Hydrology: Flowing water	Round 2 Hydrology: Dry	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Feature flowing through agricultural fields.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Mayfield Road and residential developments	
Notes: Limited feature development with a lack of water in the Round 2 site visit.			
GEO Morphix Management Recommendation: No Management			
			
Round 1: Photograph facing downstream.		Round 2: Photograph facing upstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			



Reach FC-3A

Location: Mayfield Road, Caledon		Watershed: Fletchers Creek	
Round 1 Hydrology: Flowing water	Round 2 Hydrology: Dry	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Feature flowing through agricultural fields.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Mayfield Road and residential developments	
Notes: Limited feature development with a lack of water in the Round 2 site visit.			
GEO Morphix Management Recommendation: No Management			
			
Round 1: Photograph facing upstream.		Round 2: Photograph facing upstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			



Reach FC-3B

Location: Mayfield Road, Caledon		Watershed: Fletchers Creek	
Round 1 Hydrology: Flowing water	Round 2 Hydrology: Dry	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Feature flowing through agricultural fields.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Mayfield Road and residential developments	
Notes: Limited feature development with a lack of water in the Round 2 site visit.			
GEO Morphix Management Recommendation: No Management			
			
Round 1: Photograph facing downstream.		Round 2: Photograph facing upstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			



Reach FC-3C

Location: Mayfield Road, Caledon		Watershed: Fletchers Creek	
Round 1 Hydrology: Flowing water	Round 2 Hydrology: Dry	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Feature flowing through agricultural fields.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Mayfield Road and residential developments	
Notes: Limited feature development with a lack of water in the Round 2 site visit.			
GEO Morphix Management Recommendation: No Management			
			
Round 1: Photograph facing upstream.		Round 2: Photograph facing upstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			



Reach FC-4A

Location: Mayfield Road, Caledon		Watershed: Fletchers Creek	
Round 1 Hydrology: Flowing water	Round 2 Hydrology: Dry	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Feature flowing through agricultural fields.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Mayfield Road and residential developments	
Notes: Limited feature development with a lack of water in the Round 2 site visit.			
GEO Morphix Management Recommendation: No Management			
			
Round 1: Photograph facing upstream.		Round 2: Photograph facing upstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			

Reach FC-4B

Location: Mayfield Road, Caledon		Watershed: Fletchers Creek	
Round 1 Hydrology: Flowing water	Round 2 Hydrology: Dry	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Feature flowing through agricultural fields.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Mayfield Road and residential developments	
Notes: Limited feature development with a lack of water in the Round 2 site visit.			
GEO Morphix Management Recommendation: No Management			
			
Round 1: Photograph facing upstream.		Round 2: Photograph facing upstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			

Reach FC-4C

Location: Mayfield Road, Caledon		Watershed: Fletchers Creek	
Round 1 Hydrology: Flowing water	Round 2 Hydrology: Dry	Round 3 Hydrology: Round 3 site visit will not be completed as the Round 2 site visit was dry.	
Riparian Classification: Feature flowing through agricultural fields.			
Fish Observed: No	Upstream of HDF: Agricultural field	Downstream of HDF: Mayfield Road and residential developments	
Notes: Limited feature development with a lack of water in the Round 2 site visit.			
GEO Morphix Management Recommendation: No Management			
			
Round 1: Photograph facing upstream.		Round 2: Photograph facing upstream.	
Round 3: Round 3 site visit will not be completed as the Round 2 site visit was dry.			

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Appendix C

HDF Management Recommendations

Table 1. Summary of HDF Classifications and Management Recommendations

HDF Reach	Hydrology	Riparian*	Fish Habitat*	Terrestrial Habitat*	Modifier	Management Recommendation**
AD1-1B	Valued	Valued	Contributing	Limited	Future Highway 413	Mitigation
AD1-2A	Valued	Important	Contributing	Valued	Future Highway 413	Mitigation (future Highway 413 footprint)
						Conservation (downstream of future Hwy 413)
AD1-2D	Valued	Important	Contributing	Important	Artificial condition due to connection to adjacent dug pond	Conservation
AD1-3	Valued	Important	Contributing	Important	Future Highway 413	Mitigation (future Hwy 413 footprint)
						Conservation (downstream of future Hwy 413)
AD1-4	Contributing	Important	Contributing	Important	Future Highway 413	Mitigation
AD2-1	Limited	Valued	Contributing	Limited	--	No Management
AD3-1	Limited	Limited	Contributing	Limited	--	No Management
AD3-1B	Limited	Valued	Contributing	Limited	--	No Management
AD3-1C	Limited	Important	Contributing	Limited	--	No Management
AD3-2	Limited	Limited	Contributing	Limited	--	No Management

HDF Reach	Hydrology	Riparian*	Fish Habitat*	Terrestrial Habitat*	Modifier	Management Recommendation**
AD3-3	Limited	Limited	Contributing	Limited	--	No Management
AD3-4	Limited	Limited	Contributing	Limited	--	No Management
AD3-5	Limited	Limited	Contributing	Limited	--	No Management
AD3-6	Limited	Limited	Contributing	Limited	--	No Management
AD3-7	Limited	Limited	Contributing	Limited	--	No Management
AD3-8	Limited	Limited	Contributing	Limited	--	No Management
AD4-1	Valued	Important	Contributing	Valued	--	Conservation
AD4-2	Limited	Limited	Contributing	Limited	--	No Management
AD4-3	Limited	Limited	Contributing	Limited	--	No Management
AD5-1	Valued	Valued	Contributing	Limited	--	Conservation
AD5-3	Valued	Valued	Contributing	Limited	--	Conservation

HDF Reach	Hydrology	Riparian*	Fish Habitat*	Terrestrial Habitat*	Modifier	Management Recommendation**
AD5-5	Limited	Limited	Contributing	Limited	--	No Management
AD5-5A	Limited	Limited	Contributing	Limited	--	No Management
AD6-1	Limited	Limited	Contributing	Limited	--	No Management
AD6-2	Limited	Limited	Contributing	Limited	--	No Management
AD6-2A	Limited	Limited	Contributing	Limited	--	No Management
AD7-1	Valued	Important	Contributing	Important	--	Protection
AD8-1	Contributing	Limited	Contributing	Limited	--	Mitigation
LD4-2	Valued	Limited	Contributing	Limited	Upstream classification status would result in this feature being classified as Protection; however, given the existing conditions (limited form through agricultural fields) it is classified as Conservation.	Conservation
LD4-3	Valued	Important	Contributing	Important	--	Protection

HDF Reach	Hydrology	Riparian*	Fish Habitat*	Terrestrial Habitat*	Modifier	Management Recommendation**
LD4-3A	Valued	Important	Contributing	Important	--	Protection
LD4-3B	Valued	Limited	Contributing	Limited	--	Mitigation
LD4-3C	Valued	Important	Contributing	Important	--	Protection
LD4-3D	Limited	Limited	Contributing	Limited	Feature provides flow to downstream wetland	Mitigation
LD4-4	Limited	Limited	Contributing	Limited	Feature provides flow to downstream wetland.	Mitigation
LD5	Valued	Limited	Contributing	Limited	Provides flow contribution to watercourse reach.	Mitigation
LD6	Limited	Limited	Contributing	Limited	Impacted by future Highway 413 but may be required to mitigate flow conveyance function. Also provides flow contribution to watercourse reach.	Mitigation
FD1-1	Limited	Valued	Contributing	Limited	--	No Management
FD2-1	Limited	Valued	Contributing	Limited	--	Mitigation
FD3	Limited	Limited	Contributing	Limited	Feature provides flow to downstream watercourse.	Mitigation
FC-1B***	Valued	Important	Contributing	Contributing	East of Chinguacousy Road the drainage feature is realigned parallel to the	Conservation

HDF Reach	Hydrology	Riparian*	Fish Habitat*	Terrestrial Habitat*	Modifier	Management Recommendation**
					road; south of Mayfield Road the drainage feature is piped for approximately 600 m Recommend this tributary be considered for replication elsewhere in the Secondary Plan Area	
FC-1D***	Valued	Important	Contributing	Contributing	Piped condition south of Mayfield Road	Conservation
FC-2A	Limited	Limited	Contributing	Limited	The upstream reach contained fish in an isolated pool and the feature flows into a natural channel design immediately downstream.	Mitigation
FC-2B	Limited	Limited	Valued	Limited	Minnows were observed in an isolated pool. The feature has limited definition and occurs in an agricultural field with no natural riparian vegetation and evidence of disturbance. The isolated pools are expected to be absent in Round 3.	Mitigation
FC-2C	Limited	Limited	Contributing	Limited	--	No Management
FC-2C-1	Limited	Limited	Contributing	Limited	--	No Management
FC-3A	Limited	Limited	Contributing	Limited	--	No Management

HDF Reach	Hydrology	Riparian*	Fish Habitat*	Terrestrial Habitat*	Modifier	Management Recommendation**
FC-3B	Limited	Limited	Contributing	Limited	--	No Management
FC-3C	Limited	Limited	Contributing	Limited	--	No Management
FC-4A	Limited	Limited	Contributing	Limited	--	No Management
FC-4B	Limited	Limited	Contributing	Limited	--	No Management
FC-4C	Limited	Limited	Contributing	Limited	--	No Management

* Riparian, Fish Habitat, and Terrestrial Habitat classifications may be subject to refinement based on results of site-specific ecological investigations.

** Management Recommendation based on outcome of TRCA/CVC (2014) flow chart for classification. Subject to refinement pending results of site-specific ecological investigations and Round 3 HDF Assessments.

***Based on feature realignment east of Chinguacousy Road and enclosure for approximately 600 m south of Mayfield Road, it is recommended that management of this tributary be revised to Mitigation in consultation with the Town of Caledon and CVC.