

# APPENDIX

# F VEGETATION AND AESTHETICS ASSESSMENT

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June 22, 2021

Highway 427 Industrial Secondary Plan Area Environmental Assessment  
Existing Vegetation/Aesthetic Assessment  
**Section B**

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INTRODUCTION

This report is prepared as part of the Environmental Assessment for the proposed road improvements in the Highway 427 Industrial Secondary Plan Area, framed by Mayfield Road to the North, Regional Road 50 to the East, Castlemore Road to the South, and The Gore Road to the West. It provides an evaluation of the aesthetics of the local environment and the general streetscape conditions including a general overview of the existing vegetation and landforms. Section B will focus on improvements to Clarkway Drive, improvements to Countryside Drive, and East-West Arterial – a new minor arterial connecting The Gore Road to future Arterial A2. Reporting on all other portions can be found in Section A.

Highway 427 Industrial Secondary Plan Area is located in the Northeast area of the City of Brampton, and strategically located at the York/Peel boundary. It is near Highway 427 and adjacent to the CP Railway Terminal. Currently the site is majority agricultural land, comprised of large annually cultivated fields, with forage and grain crops dominating where fields are still active. All acreage drains into three distinct North to South oriented tributaries and riparian zones. Gore Road Tributary, Clarkway Tributary, and Rainbow Creek. The topography is fairly flat and expansive at the Southern portion of the site, becoming slightly rolling in nature as one proceeds Northwest. The most significant topography is located along riparian zones and the North-Western Portion of the site at the intersection of Countryside and Clarkway Drive.

The Site is bisected by Clarkway Drive, running on a North-West, South-East Axis. This is the area with highest concentration of residential sites. Parallel to Clarkway Drive is Coleraine Drive to the East. Shorter in length, it provides access to several residential sites, an industrial park, a wood working facility, and a construction yard at its Southern intersection with regional Road 50. Both Coleraine Drive and Clarkway Drive are intersected by Countryside Drive, the only existing road traveling cross the parcel at the opposite Southwest to North East Axis. Additional residential sites, and an Equestrian Centre are located along this route. Industrial areas are located at the Eastern edge of the site. Canadian Pacific Railway lies at the Southeast corner, originating at the intersection of Castlemore Road and Regional Road 50 and spreading North along the East side of Regional Road 50. The Northeastern corner of the site holds the intersection of Mayfield Road and Regional Road 50, which serves as the main transit entrance to the industrial parks of Bolton.

The proposed improvements to the area are wide ranging. Several new North-South streets, along with a re-alignment of Coleraine Drive, and several local network streets to facilitate the development of neighborhoods and new business districts. Along with this work will come improvements to local hydrology in the form of riparian zone rehabilitation and improved storm water management. While the latter certainly has practical implications, these improvements will also provide an opportunity for improved natural aesthetic and ecological value, local character, and neighborhood identity. This streetscape/aesthetics/vegetation study provides:

- An overview of the existing visual character of the site.
- Existing land uses within and adjacent to the site.
- A general analysis of the existing vegetation found along existing and proposed roadways.
- Identifies the impacts of the road improvements.
- Recommended streetscape upgrades and typologies.

Section B will focus on the following sub-sections:

- Improvements to Clarkway Drive
- Improvements to Countryside Drive
- East-West Arterial – a new minor arterial connecting The Gore Road to future Arterial A2.

The vegetation/aesthetic/streetscape site analysis was carried out in Oct, Nov, and Dec 2019, September 2020, and May 2021. The vegetation analysis includes existing woody vegetation located along the road frontage, typically within or immediately beside the road right-of-way (ROW) and provides an evaluation of the proposed road improvements on the existing vegetation and the aesthetics of the streetscape. Observable landscapes within the boundaries of the existing road network are also depicted. The vegetation survey is very general in nature and is not to be considered as a detailed tree survey. Streetscape improvement recommendations are discussed for each section of the corridor.

## GENERAL SITE AESTHETICS

The Highway 427 Industrial Secondary Plan Area is largely a productive agricultural area, planted predominantly in forage and grain crops. Remnants of windrows and residual patches of riparian forest frame expansive fields. Aging farm structures punctuate open fields from time to time, underscoring the overall rural character. Residential sites are adjacent to the few major arteries and follow a traditional site layout of windbreaks and sod yards surrounding structures, composed of a mix of evergreens and large deciduous trees. Along with wind rows and riparian zone remnants, these sites represent the bulk of discernable “forested” patches. The topography is considerably flat at the Southern portion of the site where views are expansive. As one moves North, the terrain becomes more rolling and articulated, at times limiting views and giving a slight

sense of enclosure. Roadsides are mostly defined by immediately adjacent agricultural land where soils are worked annually. This continuous disturbance creates an edge of grasses and forbs containing several species of Asters, Goldenrods, and the occasional ragweed. Other areas show the establishment of various shrubs, likely dispersed by animals and wind. The 3 main riparian corridors add significant character to the area. They create noticeable topographic and vegetative variation and provide habitat for the multitude of bird species animating the skyline throughout the day.



*Image 1: Site/Rural Character – Looking east from Coleraine Drive*

### **Clarkway Drive: Castlemore Road to Mayfield Road**

Length: 4.3km

Clarkway Drive is an existing road running at a Southeast/Northwest axis and has the feel and rhythm of a typical Southern Ontario rural road. Residences are generously spaced, each with surrounding domestic landscape of varying sizes and character with stands and clusters of mature trees serving as windbreaks and enclosures. In the spaces between these residential sites, dense shrub rows line the low flow 2 lane road giving way to gaps of agriculture fields. In general, existing roadside vegetation is mostly unmanaged and has evolved to a mix of native and European grasses, and flowering meadow species including various asters and goldenrod. Patches of ragweed show in places and low points, including existing drainage ditches, have the beginnings of phragmites establishment.

Mayfield Road to Countryside Drive

Beginning at its northern terminus and intersection Mayfield Road, Clarkway drive is flanked by agricultural fields. The land here is fairly level and the fields expansive. To the west, a view of the Bhagwan 1008 Adinatha Swamy Jain Temple is unobstructed. Roadside drainage is quite close to the edge of pavement and consists of a shallow and narrow ditch. Traveling less than 100 metres south, a thick hedgerow of shrubs lines the eastern side of the roadway, consisting mostly of invasive common Buckthorn (*Rhamnus cathartica*) and the occasional Wolf Willow (*Elaeagnus commutate*). A few young Oak trees are present, but further from the edge of pavement and well outside the proposed ROW. Occasional patches of Buckthorn shrubs exist on the west side of the road as well.



**Image 1:** Clarkway Drive – Looking north to the intersection with Mayfield Road. Buckthorn hedgerow begins. Three *Quercus* spp. can be seen in the background, established well outside the proposed ROW.



**Image 2:** Clarkway Drive – Looking south from just beyond the intersection with Mayfield Road. Buckthorn hedgerow on the eastern roadside extending into the distance. Level agricultural land exists on both sides of the road.

This condition continues south for approximately .7 km. where it is broken by the first residential site. Although deciduous landscape trees exist, they are well away from the road and pose no conflict with the proposed ROW. It is also at this point that the Clarkway Tributary, running parallel and just beyond the residential site east of Clarkway Drive, begins to coalesce into a recognizable flowing body of water on its southerly route. From this point to the residential sites at the north sides of the Clarkway/Countryside Drive intersection (approximately 300 metres, the space between Clarkway Tributary and Clarkway Drive is more naturalistic in appearance, with a mix of shrubs and small trees amongst largely native grasses and forbs. However, buckthorn continues to dominate shrub species. Large trees in close proximity to the ROW are few and appear to be dead or in poor health.

As mentioned, this section ends at the north side of Countryside Drive with residential sites on the east and west. Both sites are considerably set back from Clarkway drive and pose no obstruction to the proposed right of way.



**Image 3:** Clarkway Drive – Looking south at the first encountered residential site. Deciduous trees exist in a manicured lawn but appear to be well beyond the site work needed for the proposed ROW.



**Image 4:** Clarkway Drive – Looking south beyond the first encountered residential site. Naturalistic landscape exists to the east containing invasive Buckthorn Hedgerow remnants. Large existing trees appear dead as observed throughout several points of the year. A large Willow can be seen at the western side of Clarkway Drive.

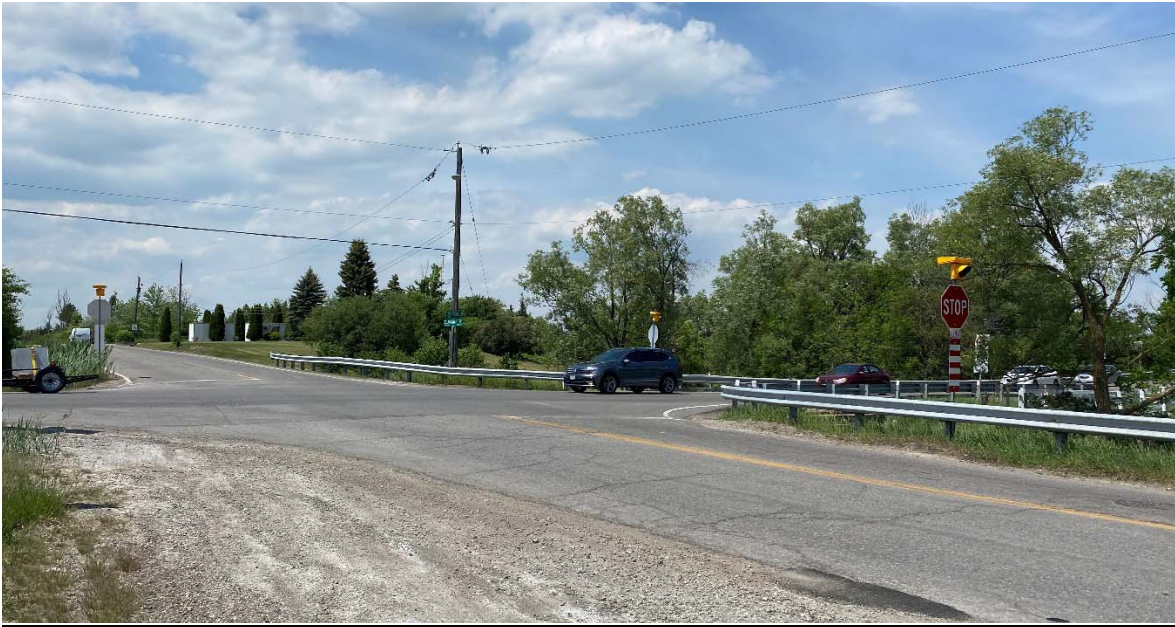


**Image 4:** Clarkway Drive – Looking south to the intersection of Clarkway and Countryside Drive. Residential sites lie on both sides of the road but pose no conflict with the proposed ROW.

### Intersection of Clarkway Drive and Countryside Drive

The approach to and intersection with Countryside Drive brings a change to the landscape character. It is here the land begins to noticeably slope and articulate due in part to the merger with the meandering Clarkway Tributary. Just east of the intersection the tributary passes below Countryside Drive and carves its way through the landscape.

The land rises from both sides of the road and views are limited. Both the road and tributary exist in the relative low point. Phragmites establishment can be seen on the west side of Clarkway Drive where small patches of wetland vegetation are beginning to develop due to the effects of both road work and adjacent earthwork/grading of the surrounding landscape on the sites drainage patterns. After a distance of approximately 130 metres Clarkway Tributary passes beneath Clarkway Drive. Once to the western side of the road a mostly intact, yet limited in cross section, riparian zone is evident.



**Image 5:** Intersection of Clarkway Drive and Countryside Drive – Looking north.



**Image 6:** Looking north on east side of Clarkway Drive – Clarkway Tributary passes beneath Countryside Drive. Riparian zone is dominated with seasonally maintained roadside grasses and forbs.





**Image 7:** Intersection of Clarkway Drive and Countryside Drive – Looking south. Road work and adjacent manipulation of the landscape mixed with the naturally occurring topography/drainage patterns has led to the beginnings of confined and limited wetland establishment. In the distance the guardrails indicate the crossing of Clarkway Tributary to the West Side of Clarkway Drive.



**Image 8:** Looking south. – Clarkway Tributary as it enters to the west side of Clarkway Drive. Riparian vegetation and cross section of creek are in much better condition with an increased localized capacity for both aquatic and terrestrial ecological function.

*Countryside Drive to Castlemore Road*

After passing over Clarkway Tributary the landscape reverts back to a classic rural agricultural landscape with expansive fields and generously spaced residential sites. No conflict of structures, drainageways or woody vegetation presents itself for approximately the next 700 meters, at which point Clarkway Tributary returns eastward and begins to run tightly parallel to Clarkway Drive.



**Image 9:** Looking east - View from Clarkway Drive south of intersection with Countryside Drive. Open agricultural lands.



**Image 10:** Looking north on the east side of Clarkway Drive. – Clarkway Tributary swings easterly towards Clarkway Drive. The roughly 700 metre stretch between this point and the tributaries crossing of Clarkway Drive to the North represent the most intake riparian conditions thus far.



**Image 11:** Looking south on the east side of Clarkway Drive. – The reflection of Clarkway Tributary can be seen beneath the shadows of overhanging trees. From this point south 400 metres the tributary clings to the roadside necessitating steel guardrails. It is assumed significant channel protection, alignment, and restoration will be needed for the proposed corridor improvements to take place.

Approximately 1.2 Kilometers south of the Clarkway Drive and Countryside Drive intersection, Clarkway Tributary begins to swing west and away from Clarkway Drive, allowing increasingly ample room between itself and the proposed ROW. For the next 350 metres Clarkway Tributary disappears from the road corridor, drifting through a relative and perceptible low point in the surrounding landscape. This area represents the largest naturalistic and vegetatively diverse area thus far in the corridor. It seems the topography has lent itself to conditions too wet for agriculture as well as seasonal flooding long enough to have been spared the plow for quite some time. No signs of channelization are present with the channel allowed to snake through the landscape in a natural pattern.



**Image 12:** Looking east of Clarkway Drive – A stretch of rolling lowlands of the Clarkway Tributary corridor. Diverse shrubs and a mix of wet meadows are most prominent, representing one of the largest perceivable patches of non-anthropocentric landscape in the Clarkway Drive corridor.



*Image 13: Aerial view of Image 12 area.*

From this point south to Castlemore Road the typical rural agricultural aesthetic persists, with wide open agricultural land and the occasional residential site. Residences are set between roughly 250 and 300 metres apart with no observable conflicts, structural or significant woody plant material, to the proposed ROW. While passing through this southern portion of Clarkway Drive the industrial character of lands East of Clarkway Drive are apparent due to the areas flat nature and lack of forest.

### **Recommendations**

- Existing hydrological patterns should be maintained or replicated.
- Consider re-aligning, restoring, and improving Clarkway Tributary where construction efforts are in conflict with existing riparian zone, in line with the Environmental Assessment for this project.
- Consider Low Impact Development (LID) strategies to treat non-point source pollution from roadways, such as bioswales, bioretention areas, treatment trains, etc.
- For minor seasonal flow areas, culverts size should be adequate for passage of appropriate wildlife species. Wildlife underpasses should also be considered where appropriate based on the Ecological Study.
- Wetlands removed should be replaced following regional guidelines for mitigation.
- Street Tree plantings should follow City of Brampton standards and prioritize diverse, appropriate species with a focus on salt tolerance and ecological value. Trees must have adequate volume of high quality, or remediated soils. City of Brampton current street tree planting standards and specification will be followed.

- Ensure species diversity. The Peel Urban Forest Strategy recommends no single Streetscaping species represents more than 5 percent of the tree population, no genus represents more than 10 percent of the tree population, and no family represents more than 20 percent of the tree population.
- Improved plantings for beautification, reduction of R.O.W. maintenance costs, and improvement of adjacent habitat. Sod/turf strips should be reconsidered, replaced by a diverse and native low growing meadow mix requiring a single seasonal mowing.
- Intersections should enhance pedestrian and cycling visibility and crossing as appropriate for the context (e.g. reducing crossing distance, cross-ride treatments, providing a pedestrian crossing island, removing right turn channels or moving to smart channels).
- tree cover for active transportation infrastructure (including sidewalks) to provide shade (trees that will grow greater than or equal to 15m tall at maturity)
- Consider planting more shrubs and perennials for increased vegetation densities suited to the growing conditions and constraints.

**Countryside Drive: from Highway 50 to 680m east of The Gore Road**

Length: Approximately 2.8km

Countryside Drive shares the general aesthetics of the project area as a whole; rural agricultural land. However, compared to the north/south corridors, Countryside Drive has much higher in traffic volume and with greater speeds, and tying into Nashville Road to the east, it serves as a regional east/west corridor. Throughout its course towards the Gore Road it crosses two significant tributaries; Rainbow Creek, and Gore Road Tributary.

**Intersection with Highway 50 to Coleraine Drive**

Countryside Drive begins at its intersection with the very busy Highway 50. Open agriculture fields lie to the north, and abandoned, overgrown farmland to the south. This southern portion has grown in considerably with dispersed shrubs and a mixture of native and European grasses and forbes associated with both disturbance and agriculture practices. This field gives way to active agriculture land as one moves westward. A cluster of three residences are situated on the north side just before the intersection with Coleraine Drive. Although the properties and their landscapes are set back considerably, a single large Weeping Willow (*Salix babylonica*) exists near the proposed ROW. Given the size of the tree and its associated dripline, it may suffer impacts from the grading work proposed and care should be taken in this area.



**Image 14:** East end of Countryside Drive – Looking south to naturalizing abandoned agriculture land. Highway 50 can be seen to the east.



**Image 15:** East of intersection of Countryside Drive and Coleraine Drive – Looking north. Clustering of three residential sites with landscapes recessed from the proposed ROW. The exception, due to its size, is this large Weeping Willow (*Salix babylonica*).

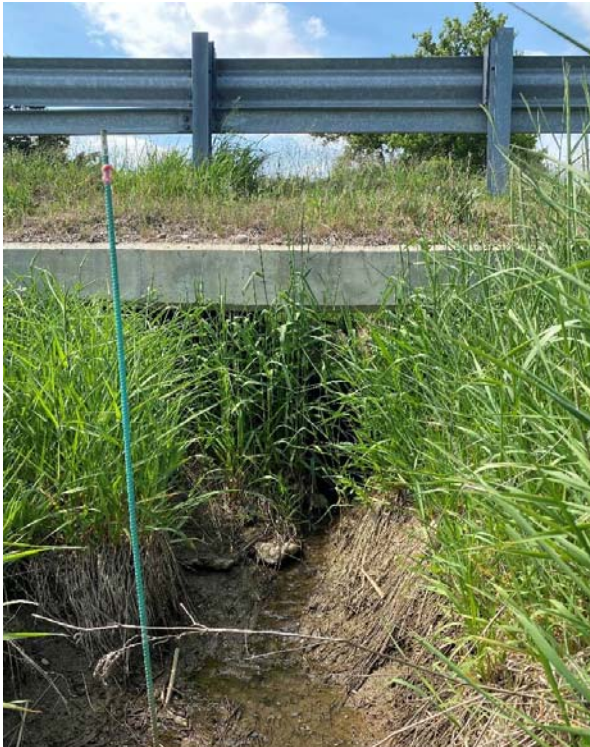
Coleraine Drive to Clarkway Drive

The existing intersection of Countryside Drive is a typical rural crossroads controlled by stop signs and surrounded by agriculture fields. It is open and obstruction free on all sides of the ROW. Just west of this intersection is the crossing of Rainbow Creek. Although the landscape does not read as a “Creek” flowing water does exist within a channel surrounded by an obvious meandering riparian zone. Currently serving more of agricultural drainage than habitat of any sort, the riparian zone has been mechanically worked and planted as close to the channel as possible for some time. No woody vegetation exists to the south for roughly 200 metres, at which point the creek passes through an abandoned farmstead which has overgrown with trees and shrubs, resembling a forest patch



**Image 16:** Just west of intersection of Countryside Drive and Coleraine Drive – Looking south. Open Farmland with abandoned treed farmstead in the distance. Most large trees in this portion are dead, as observed throughout several points in the growing season.





**Image 17:** Rainbow Creek Crossing – Looking north to Countryside drive.



**Image 18:** Rainbow Creek Crossing – Looking south. Rainbow Creek meanders through the agricultural landscape. Wolf Willow (*Elaeagnus commutate*) can be seen growing on the bank, with a young maple in the distance. The abandoned farmstead in the background appears as a residual forest patch.

As we move west along Countryside Drive we come to a residential site that is in proximity to the intersection of proposed Arterial A2. This site has been covered in detail in the previous EA, Section A. Past this point are several more residences, all recessed from the road with all structures and woody vegetation clear from the proposed ROW.

Once past the cluster of residential sites the land opens to large agricultural fields. To the south is a white wooden livestock fence parallel to the road. The distance from the current road centerline to the fence is roughly 7.25 metres, and remains so consistently throughout its 270 metre length. It appears this fence may be in conflict with the proposed ROW landscape/streetscape treatments. On the north side of the road the land drops off steeply to a stormwater ditch currently containing wetland vegetation.



**Image 19:** Countryside Drive – Looking north. After passing a cluster of residential sites the land once again opens to large agricultural fields. On the north side the land drops sharply from the shoulder to a stormwater ditch containing wetland vegetation.



**Image 20:** *Countryside Drive – Looking south. After passing a cluster of residential sites the land once again opens to large agricultural fields. On the south side a 270 metre long white wooden fence runs parallel to the road. This fence continues to the intersection of Countryside Drive and Clarkway Drive.*

As previously noted, the intersection of Countryside Drive and Clarkway Drive dips into the landscape at a relative low point, where Countryside Drive Crosses the Clarkway Tributary. See Image 5, and Image 6.

#### *Clarkway Drive to 680 metres east of The Gore Road*

Continuing west from the intersection with Clarkway Drive, the road travels uphill and out of the low point of the Clarkway Tributary. Once to the crest, the land is once again open fallow agriculture land. A collapsed farm structure exists to the south, and a dense Hedgerow of Buckthorn to the north, with fallow fields behind. Soon after Countryside Drive makes its second crossing of a significant water body, the Gore Road Tributary. Larger in width and volume, this tributary seems more deserving of the term creek at this point in the watershed. It forms a more topographically noticeable channel with comparatively robust riparian vegetation. To the west of the tributary is a pond. Likely a stock watering pond dug while the land was agriculturally still productive, it has since become nearly encircled with riparian vegetation. The pond, while set back from the tributary, is connected and free flowing in time of high water, as observed in May 2021.



**Image 21:** *The Gore Road Tributary – Carving a defined path through the landscape, The Gore Road tributary maintains a somewhat functioning riparian corridor throughout this stretch. To the west is the old stock pond, connected, and providing diverse habitat to the system.*

Over the next roughly 350 metres from The Gore Road Tributary to the projects end, open agricultural fields remain to the south. Along their roadside border are residual buckthorn hedgerow remnants and a volunteer multi-stemmed small tree. On the north one quickly approaches a residential site, hidden from view by a tall evergreen hedgerow set back from the proposed ROW.



**Image 22:** *Countryside Drive – Looking east. Tall evergreen privacy hedge can be seen on the north side. To the south; remnant buckthorn shrubs and a multi-stemmed small tree, Clearing of the south side will likely be necessary.*



**Image 23:** Typical roadside vegetation observed consistently throughout the project zone. Asters, Goldenrod, native and European grasses, and the occasional cluster of Ragweed.

## Recommendations

- Existing hydrological patterns should be maintained or replicated.
- Existing creeks, tributaries, and ponds should remain and or be enhanced for ecological value.
- Consider Low Impact Development (LID) strategies to treat non-point source pollution from roadways, such as bioswales, bioretention areas, treatment trains, etc.
- For minor seasonal flow areas, culverts size should be adequate for passage of appropriate wildlife species. Wildlife underpasses should also be considered where appropriate based on the Ecological Study.
- Street Tree plantings should follow City of Brampton standards and prioritize diverse, appropriate species with a focus on salt tolerance and ecological value. Trees must have adequate volume of high quality, or remediated soils. City of Brampton current street tree planting standards and specification will be followed.
- Ensure species diversity. The Peel Urban Forest Strategy recommends no single Streetscaping species represents more than 5 percent of the tree population, no genus represents more than 10 percent of the tree population, and no family represents more than 20 percent of the tree population.
- Improved plantings for beautification, reduction of R.O.W. maintenance costs, and improvement of adjacent habitat. Sod/turf strips should be reconsidered, replaced by a diverse and native low growing meadow mix requiring a single seasonal mowing.
- Intersections should enhance pedestrian and cycling visibility and crossing as appropriate for the context (e.g. reducing crossing distance, cross-ride treatments, providing a pedestrian crossing island, removing right turn channels or moving to smart channels).

- Tree cover for active transportation infrastructure (including sidewalks) to provide shade (trees that will grow greater than or equal to 15m tall at maturity)
- Consider planting more shrubs and perennials for increased vegetation densities suited to the growing conditions and constraints.

**East West Arterial: from The Gore Road east to Proposed Arterial A2**

Length: Approximately 2.5km

The proposed East-West Arterial is a new minor arterial connecting The Gore Road with proposed Arterial A2. From its western connection to The Gore Road it initially passes near a residential setting, then on across level, currently fallow farmland. Throughout its course to proposed Arterial A2 it crosses two significant riparian zones. First, The Gore Road Tributary, which represents the widest and most robust of the two, and second, the Clarkway Tributary. Both tributaries are important to local and regional ecosystems and ecological services and should be both protected and enhanced throughout the course of the project.

Keeping on this west to east trajectory, the proposed East-West Arterial curves northward to meet proposed Arterial A2. In doing so, it will come into contact with the riparian zone of Rainbow Creek. Once again, this riparian zone is of great ecological value and should be protected and enhanced to the greatest degree possible.

Outside of the riparian zone and creek crossings, this section of the project site is a level anthropogenic landscape with little obstruction.



**Image 24:** Approximate location of proposed East – West Arterial as it departs from The Gore Road, seen here crossing The Gore Road Tributary.



*Image 25: Approximate location of proposed East – West Arterial as it continues east to the intersection with proposed Arterial A2, seen here first crossing the Clarkway Tributary, Clarkway Drive, and intersecting with Rainbow Creek.*

## Recommendations

- Existing hydrological patterns should be maintained or replicated.
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- tree cover for active transportation infrastructure (including sidewalks) to provide shade (trees that will grow greater than or equal to 15m tall at maturity)
- Consider planting more shrubs and perennials for increased vegetation densities suited to the growing conditions and constraints.

The following chart summarizes the streetscape opportunities as noted in this report.

Opportunity/Issue	Streetscape Treatment
<b>Clarkway Drive</b>	
Boulevard Trees	A Landscape Plan will be developed at the Detailed Design Stage providing opportunities to enhance the Streetscape with doubled staggered rows, accent plantings and spacing that will be in accordance to current City of Brampton standards and recommendations.
Wetland/Riparian Zone Restoration	Repair or restore existing wetland plant communities, relocated wetlands, ponds, riparian zones, creek channels, and improved drainage areas.
R.O.W. Planting	Consider using low growing meadow species in place of Sod for beautification, reduction of R.O.W. maintenance costs, and improvement of adjacent habitat.
Low Impact Development	Consider setting aside space to accommodate Low Impact Development Strategies (LID) to improve water quality, ground water recharge, and reduce non-point source pollution; Bioretention Structures, Bioswales, etc.
Streetscape Design	A Landscape Plan will be developed at the Detailed Design Stage providing opportunities to enhance the Streetscape and include features such as Region of Peel approved rest areas in appropriate locations in consultation with and consideration of public transit.
<b>Countryside Drive</b>	
Boulevard Trees	Diverse species to be planted on 8.0m centres both sides of streets where possible. Trees should provide shade to M.U.P.
Wetland/Riparian Zone Restoration	Repair or restore existing wetland plant communities, relocated wetlands, ponds, riparian zones, creek channels, and improved drainage areas.
R.O.W. Planting	Consider using low growing meadow species in place of Sod for beautification, reduction of R.O.W. maintenance costs, and improvement of adjacent habitat.



Low Impact Development	Consider setting aside space to accommodate Low Impact Development Strategies (LID) to improve water quality, ground water recharge, and reduce non-point source pollution; Bioretention Structures, Bioswales, etc.
Streetscape Design	A Landscape Plan will be developed at the Detailed Design Stage providing opportunities to enhance the Streetscape and include features such as Region of Peel approved rest areas in appropriate locations in consultation with and consideration of public transit.
<b>East-West Arterial</b>	
Boulevard Trees	A Landscape Plan will be developed at the Detailed Design Stage providing opportunities to enhance the Streetscape with doubled staggered rows, accent plantings and spacing that will be in accordance to current City of Brampton standards and recommendations.
Wetland/Riparian Zone Restoration	Repair or restore existing wetland plant communities, relocated wetlands, ponds, riparian zones, creek channels, and improved drainage areas.
R.O.W. Planting	Consider using low growing meadow species in place of Sod for beautification, reduction of R.O.W. maintenance costs, and improvement of adjacent habitat.
Low Impact Development	Consider setting aside space to accommodate Low Impact Development Strategies (LID) to improve water quality, ground water recharge, and reduce non-point source pollution; Bioretention Structures, Bioswales, etc.
Streetscape Design	A Landscape Plan will be developed at the Detailed Design Stage providing opportunities to enhance the Streetscape and include features such as Region of Peel approved rest areas in appropriate locations in consultation with and consideration of public transit.

## RECOMMENDATIONS

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The following recommendations relate to the streetscape improvements that are to be implemented along this portion of the Highway 427 Industrial Secondary Plan Area.

### **Vegetation Assessment:**

Ensure the Vegetation Assessment is provided through the EA stage of this project, prepared by a certified ISA arborist. All existing vegetation removed should be inventoried.

### **Mitigation During Construction:**

- Construction activities are to avoid damaging existing, healthy, trees located close to the ROW wherever possible. This is to be accomplished by installing suitable tree protection fencing, extending to the 'dripline' of trees designated for protection. This tree protection zone is to remain undisturbed by excavation, storage of materials and equipment, and other construction related activities. The fencing is to remain in place through the duration of construction activities.
- Existing trees scheduled for removal are to be inspected to determine if transplanting is a feasible option (depending on size, species, and health of tree).

### **Street Tree Planting and Planting/Streetscape Design:**

- Tree planting/streetscape plans are to be prepared for the corridor by a registered landscape architect, as part of the detailed design of the roadway. These plans are to address:
  - Compensation for vegetation requiring removal on or near private property.
  - A Landscape Plan will provide opportunities to enhance the Streetscape with doubled staggered rows, accent plantings and spacing that will be in accordance to current City of Brampton standards and recommendations.
  - Restoration of Riparian Zones, Stream Channels, and Wetlands.
- All trees to be planted are to be selected from the City of Brampton Approved Street Tree List.
- The planting of new trees along the corridor is to be coordinated with existing and proposed utility corridors, and light standards.
- Construction impacts at stream crossings are to be mitigated with the planting of riparian vegetation. This vegetation should be native, non-invasive, riparian vegetation, as approved by the local Conservation Authority.
- Trees to be planted near overhead utilities to be selected to conform to mature height limitations (Hydro approved species)