

2.0

INVENTORY AND ANALYSIS

Chapter 2 summarizes the Inventory and Analysis of existing conditions in Edwards Gardens and Toronto Botanical Garden. This section of the report provides direction for the Master Plan and Management Plan.

2.1 HABITAT (FLORA)

The site has a wide variety of vegetation types which transition from botanical gardens to natural forest ravines. The themed gardens contain a variety of horticultural plants that are framed by manicured lawns which extend along the northeast side of Wilket Creek. The wooded slopes along the rest of the ravine are comprised of a mix of forest types such as mixed hardwood-cedar forests, sugar maple (*Acer saccharum*) and eastern hemlock (*Tsuga canadensis*) mixed forests, and various sugar maple deciduous forests.

Although these forests contain a variety of native Ontario plants, many of these areas are in a state of degradation. Localized areas of heavy degradation have occurred in areas where foot traffic has compacted soils and eliminated forest ground cover and understory vegetation. The disturbed understory has allowed for the colonization of invasive species such as European buckthorn (*Rhamnus cathartica*) and garlic mustard (*Alliaria petiolata*) which negatively affect the local plant diversity of the area.

Despite the growing level of degradation, the slope forests, wetlands and watercourse at the

south end of the property form part of a larger Environmentally Significant Area associated with the Wilket Creek ravine lands. Many areas have been identified as areas of sensitive species and communities. Species at risk flora that have been historically recorded in the vicinity of the gardens include the endangered butternut (*Juglans cinerea*) and the endangered red mulberry (*Morus rubra*).

Flora at the Toronto Botanical Garden and Edwards Garden represents a mix of ornamental plant species within grassy landscaped areas integrated with relatively-undisturbed ravine corridors along Wilket Creek (a Don River tributary). Ravine corridors extend west from Leslie Street along the southern property boundary towards Wilket Creek, ending at a buffer area of mowed grass and paved walking paths with tree and shrub plantings on both sides. A ravine area on the west side of Wilket Creek separates the stream buffer from a maintained landscape with mowed grass and planted trees east of The Bridle Path. Among others, tree species within this landscaped area include Norway spruce (*Picea abies*), Colorado and blue spruce (*Picea pungens*), Norway maple

(*Acer platanoides*), and ginkgo (*Ginkgo biloba*), with a grove of red pine (*Pinus resinosa*) in the northwest corner. Another planted area with mowed grass is located in the northwest corner of the property south of Lawrence Avenue, with weeping willow (*Salix xsepulcralis*), European beech (*Fagus sylvatica*), and ginkgo observed most frequently and a variety of ornamental trees, shrubs, and herbs planted around buildings. A small area for ecological restoration is located in a narrow strip north of the parking lot on the east side of the property.

In general the ravine corridors are of high habitat value, with relatively low concentrations of invasive plant species and an abundance of mature native tree species compared to many Toronto ravines, and only moderate erosion.

Ornamental plantings are found throughout the property along the edges of natural forests. Native species of natural origin are mixed with ornamentals and planted natives in varying arrangements.

White ash (*Fraxinus americana*) and green ash (*Fraxinus pennsylvanica*) were historically a canopy component, but all observed large

specimens have been killed by the emerald ash borer (*Agrilus planipennis*). As sugar maple is the dominant tree species in ravine corridors, an ELC classification (refer to ELC map on page 139) of Dry-Fresh Sugar Maple Deciduous Forest FOD5-1 is most appropriate. Mature oaks form the most important secondary canopy component on the east side of Wilket Creek, with many mature specimens existing. American beech is the most important secondary tree species west of Wilket Creek on the south side, while groves of eastern hemlock, red oak, black walnut, and eastern white cedar are more evident further north. Native shrubs are present in ravine areas on both sides of the creek, including witch hazel (*Hamamelis virginiana*), chokecherry (*Prunus virginiana*), blue beech (*Carpinus caroliniana*), alternate-leaved dogwood (*Cornus alternifolia*), and red osier dogwood (*Cornus stolonifera*). Most herbaceous species were dormant at the time of assessment (November 2016), but some native species such as zigzag goldenrod (*Solidago flexicaulis*) and ferns were still visible. A variety of moisture regimes are present given the topographical variation on site, but this has not yet been assessed in detail.

The buffer area along Wilket Creek is dominated by mowed grass integrated with mature weeping willows (*Salix × sepulcralis*) and a variety of conifers, such as Norway spruce (*Picea abies*) and white spruce (*Picea glauca*), in addition to a variety of planted ornamental and memorial trees. Red osier dogwood (*Cornus stolonifera*) and woolly-headed willow (*Salix eriocephala*) are the most prominent shrub species along the stream bank, integrated with engineered erosion control measures.

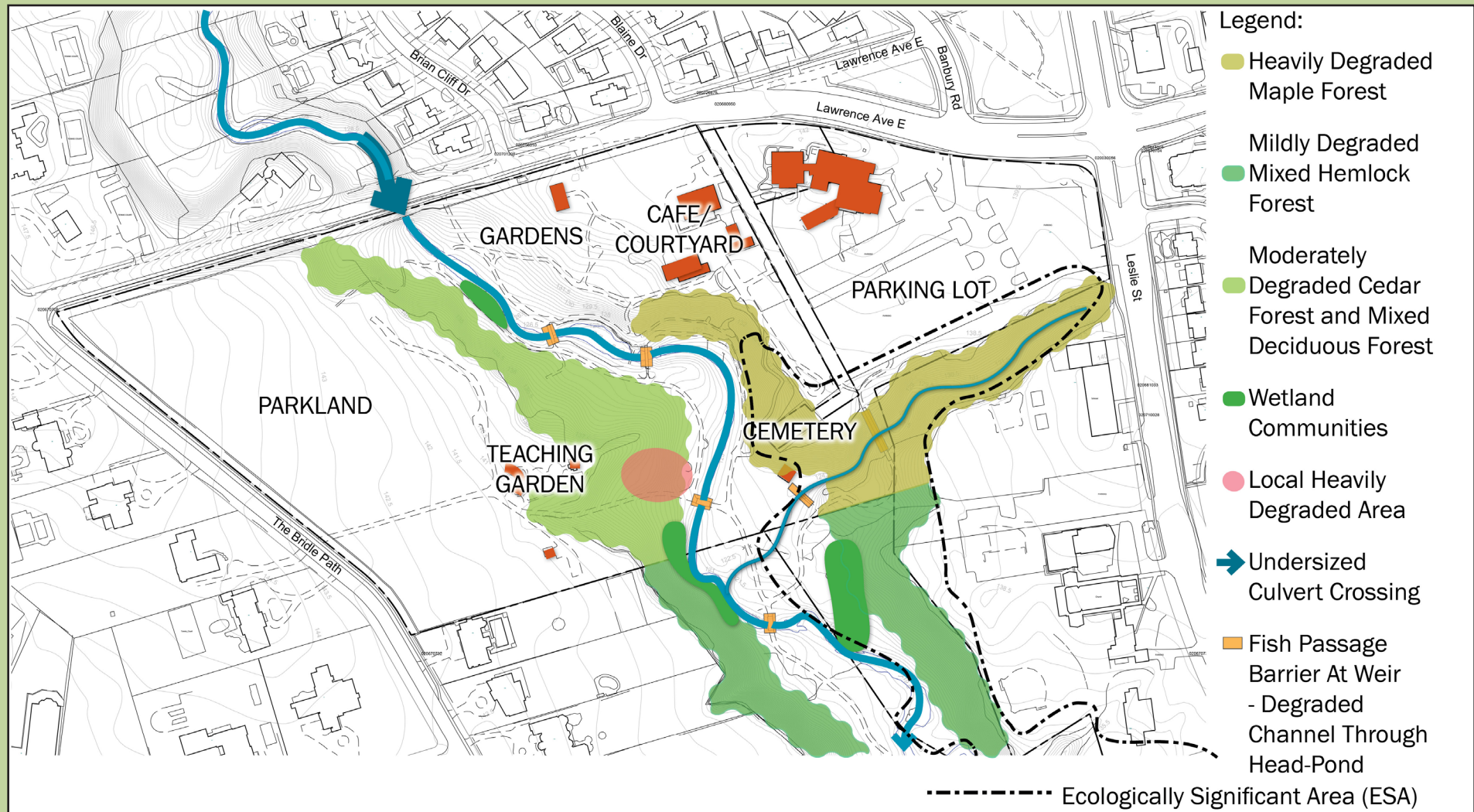
The ravine south of the parking lot is part of the ESA #89 – Wilket Creek Forest, part of the Natural Heritage System of the City. Many areas of the slopes represent some of the highest quality forest communities that remain in Toronto, where spring wildflowers can still be seen and old conifers are still present between other species.

Some indications of degradation are present in the ravine corridors, such as the dumping of organic material from maintenance crews (especially south of the parking lot on the east side of the property), erosion on ravine slopes, and colonies of invasive plant species. Most invasive species do not dominate the canopy or

understory except in selected areas.

The ravine south of the parking lot has experienced significant down-cutting due to geological steep slopes in nature and stormwater flows over time, resulting in very steep slopes and bare soils on the lower areas and occasional mature trees falling into the stream. This is particularly noticeable near Leslie Street. Erosion on the main channel of Wilket Creek has damaged vegetation in many places but is most noticeable immediately south of the Lawrence Avenue culvert. Erosion works and plantings that were installed on some of the smaller creeks flowing into Wilket Creek from the property appear to be doing a good job of preventing bank erosion, and the plantings are growing vigorously. Ornamental plantings of new weeping willows have been installed between some of the native willows in places, and some invasive tree saplings are also becoming established.

HABITAT



2.2 HABITAT (FAUNA)



The continuous vegetated habitat along Wilket Creek acts as a local hub of biodiversity and a corridor for the movement of wildlife, and contributes to the natural flow of genetic materials within the city.

The terrestrial environment provides habitat for a variety of common animals such as Gray Squirrel, Eastern Chipmunk, Woodchuck (Groundhog), Black-Capped Chickadee and Downy Woodpecker – species that live in the area year round. The valley lands have potential to provide habitat for breeding birds and migrating birds during various parts of the year.

Wilket Creek is a warm water fishery including tolerant fish species such as White Sucker, Creek Chub and Blacknose Dace. Aquatic and riparian systems in Wilket Creek valley also provide habitat to other wildlife such as Mink, Beaver, Muskrat, Belted Kingfisher, and Mallard ducks.

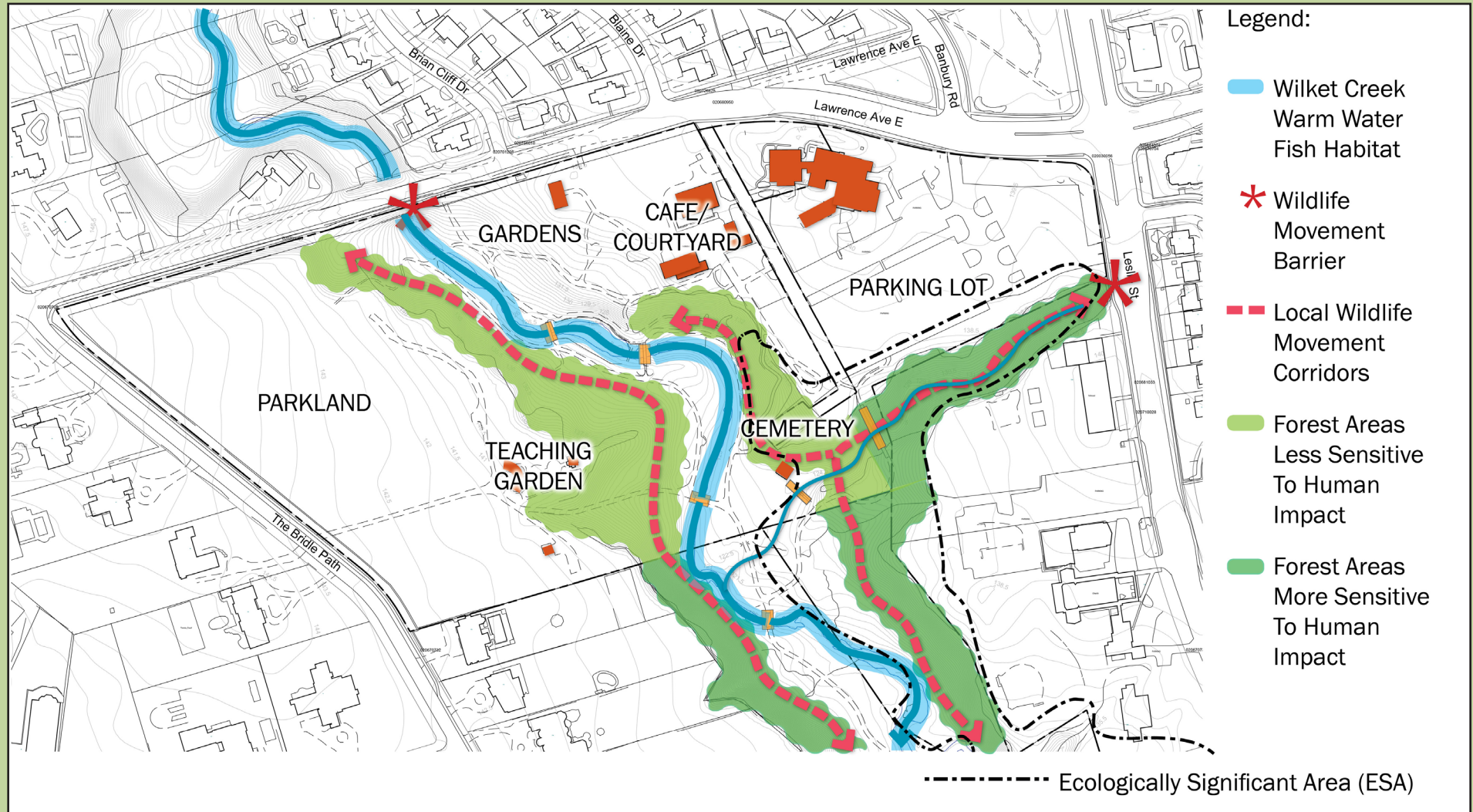
The Ministry of Natural Resources and Forestry (MNR) has indicated that there are a number of species of concern recorded within the vicinity of Edwards Gardens which include:

- Barn Swallow (threatened)
- Chimney Swift (threatened)
- Eastern Wood-pewee (special concern)
- Wood Thrush (special concern)

There is also potential for endangered bat species (e.g., Little Brown Myotis, Northern Myotis, Tri-colored Bat) to be roosting in larger tree specimens occurring in the ravine.



WILDLIFE MOVEMENT



2.3 FLOODING AND HYDROLOGY

Wilket Creek, a Don River tributary, bisects the study area. The creek is prone to flash flooding and shows signs of severe erosion in several locations within the site. The upstream watershed of Wilket Creek is completely urbanized and without significant stormwater management infrastructure, resulting in significant fluctuations in flows at the Lawrence Avenue culvert and erosion and flood damage downstream.

Peak flows typically rise above the banks of Wilket Creek within the study area two to four times annually. These flows can be a result of both precipitation and snow melt events, but occur mostly in summer.

As a by-product of flooding, debris is frequently carried downstream and deposited on pathways within the floodplain or against bridges and other structures. The accumulation of debris

can exacerbate flooding conditions, especially at culverts and bridges where the creek channel is narrow. Currently, flood debris is viewed as a nuisance, requiring consistent maintenance; however, it also serves as an educational feature explaining the effects of flooding on the gardens.

Recent rehabilitation works have been completed downstream within Wilket Creek Park. These projects were developed as part of the Wilket Creek Rehabilitation Master Plan and represent the established best practices for creek erosion control measures within Wilket Creek. Given past natural channel systems constructed in Edwards Gardens over the past two decades, adaptive environmental management including periodic rehabilitation of the existing channel may be necessary to assist with enhancing the channel and floodplain of Wilket Creek within Edwards Gardens to fulfill

the Master Plan

Within the creek, existing features, such as a weir, provide positive riverine and aesthetic function, but may negatively impact fish habitat and need to be reviewed to ensure ecological and hydrological benefits are balanced within the study area.

Uncontrolled surface runoff from parking lots has negatively impacted ravine slopes within the site. Recent installations of low impact development (LID) features, such as the permeable parking lot and bioswale adjacent to the Toronto Botanical Garden Visitor Centre have been designed to reduce surface runoff flowing unchecked from vehicular areas into the sensitive ravine areas. These features also contribute to reducing flow velocities and volumes from hard-surfaced areas, reducing erosion within the ravine slopes.



Historic pre-flooding

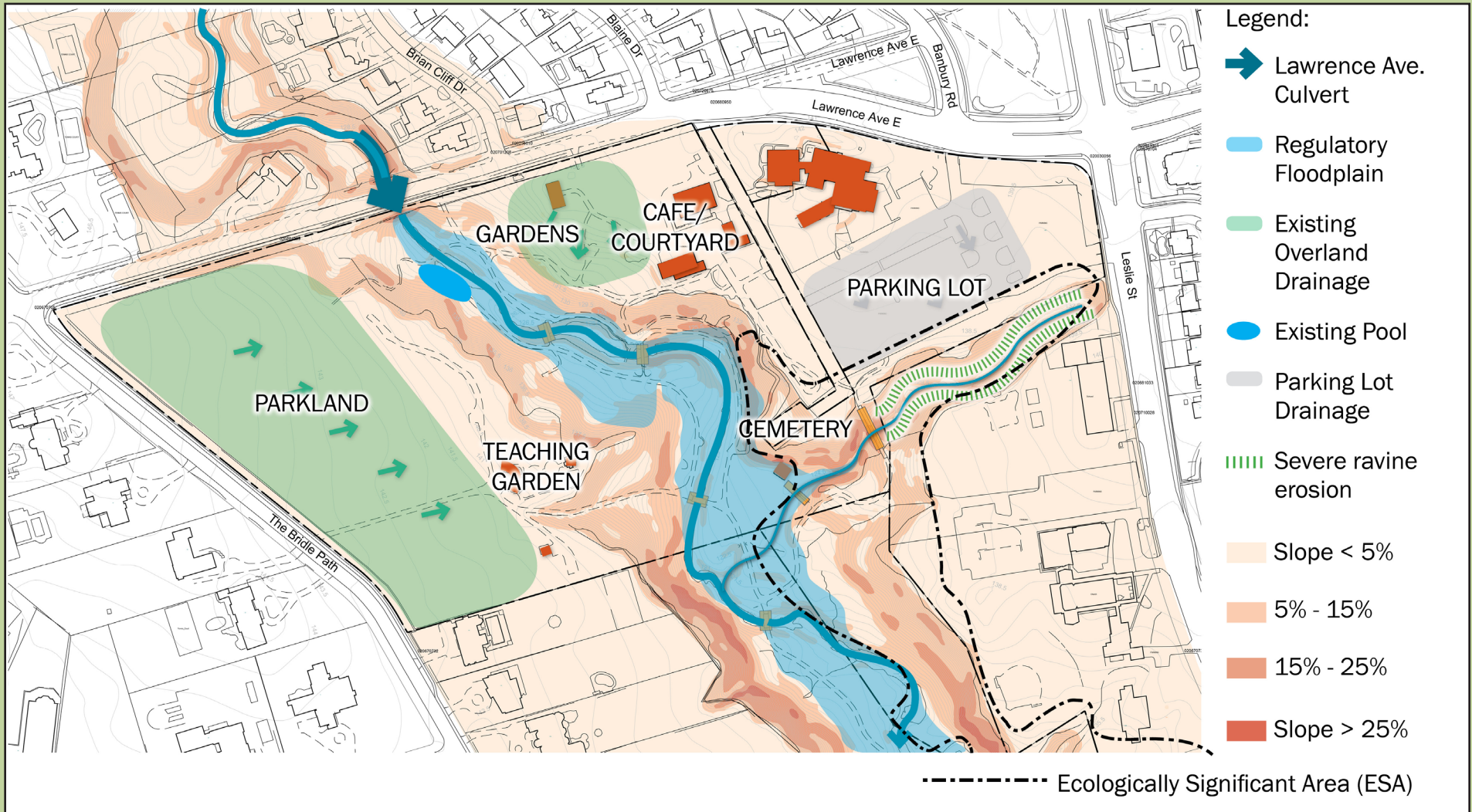


Flooding



Flood debris

SLOPE AND FLOOD RISK



2.4 STRUCTURES



Moriyama Pavilion



Visitor Centre

The Edwards Gardens and Toronto Botanical Gardens properties house buildings, bridges and structures for retaining slopes. While the majority are in good condition, a number of these assets show signs of disrepair and will require maintenance. The following is an inventory and brief description of these structures.

BUILDINGS

The main visitor centre was built in stages over the last 50 years. The original building, the “Civic Garden Centre” was designed by Raymond Moriyama in 1964. Jerome Markson Architects designed a substantial addition in 1976. In 2005, the “The George and Kathy Dembroski Centre for Horticulture”, designed by Montgomery Sisam was completed, which added the front gift shop and entry pavilion, and included a major interior renovation of the original two buildings.

A small collection of buildings used for maintenance, gardening functions, a public café and user group functions is clustered around the “Café Courtyard” located just to the west of the main visitor centre. Several of these are historic structures dating back to pre-1942. Most of these buildings are in generally good condition structurally, but would need significant interior and exterior upgrades if the intention is to convert them to a more intensive public use. These buildings all appear to be on a shared single-phase electrical service, which would likely need to be upgraded. They all likely contain asbestos or other hazardous materials to some extent. A detailed hazardous materials investigation should be undertaken for these structures. The original barn structure shows signs of water damage at the North and East foundation walls. The roof structure



The Barn

appears to have been reinforced and repaired in the past. The roofing was in significantly poor shape at the time of the visit, but was replaced in early 2017.

The adjacent garage building is being used for various maintenance and horticultural activities on the ground floor level. The second floor is underused. A 14kW stand-alone generator is used to provide back-up power to this building, as well as to the attached and nearby greenhouses. Despite their age (apparently dating back to the 1950's), these greenhouses are in quite good condition. Their structure is light aluminum framing with clear glass as opposed to a more modern and efficient polycarbonate glazing.

Further to the west, the Moriyama garden pavilion is still in fundamentally sound condition. The polycarbonate sky light panels and the joists supporting them show some signs of rot or animal damage and would require some maintenance and repair. Some areas of the soffit cladding are worn and would benefit from maintenance. At least 50% of the roof is covered in moss and needs to be replaced soon in order to prevent further decay to the roof structure below.

BRIDGES

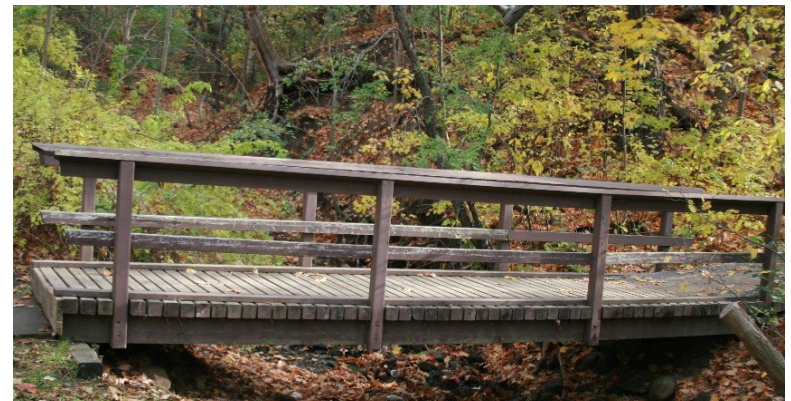
The Honeymoon Bridge is a steel arched structure clad in wood. The girders and foundations appear to be sound, with nominal corrosion requiring paint touch-up. The bridge guard assembly is wood and susceptible to decay from moisture and rot. These items would be readily repaired and replaced.

Two steel bridges on site are engineered structures and are in a state of good repair. These bridges are unpainted and appear to be designed to allow for corrosion of exposed surfaces.

There are two wood bridges. One is currently closed for necessary repairs. The other is a short span structure that is in serviceable condition.



Honeymoon Bridge





STRUCTURES FOR RETAINING SLOPES

The Gardens' site slopes to Wilket Creek, requiring a number of retaining walls for erosion control and to establish walkways. The majority of the walls are gravity walls constructed from quarried stone blocks. There are also walls constructed from unit masonry. These structures allow for significant drainage, can accommodate reasonable movements, and many of them are performing well. Gravity walls adjacent to the ramped walkway at the east of the tableland have been affected by the adjacent forest and have experienced significant displacements over time. An evaluation, maintenance and construction strategy involving a geotechnical engineer and an arborist needs to be developed to assess these walls and their ongoing maintenance or replacement.

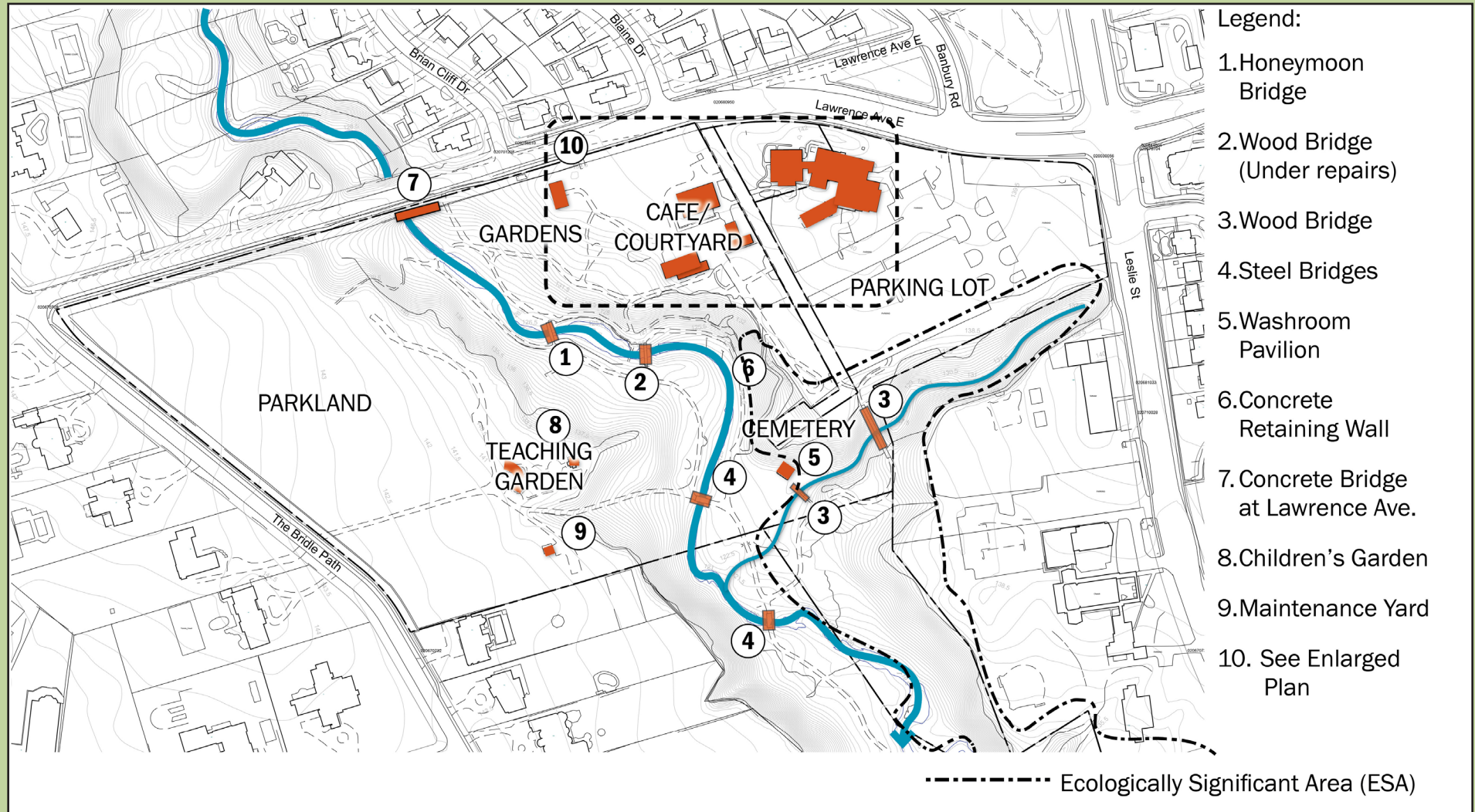
A reinforced concrete wall on the North side of Wilket Creek is showing significant cracking, leaking and spalling of concrete. This wall requires remedial work and a maintenance plan. The damage appears to be a result of lack of adequate drainage and possibly frost-susceptibility of the concrete itself.

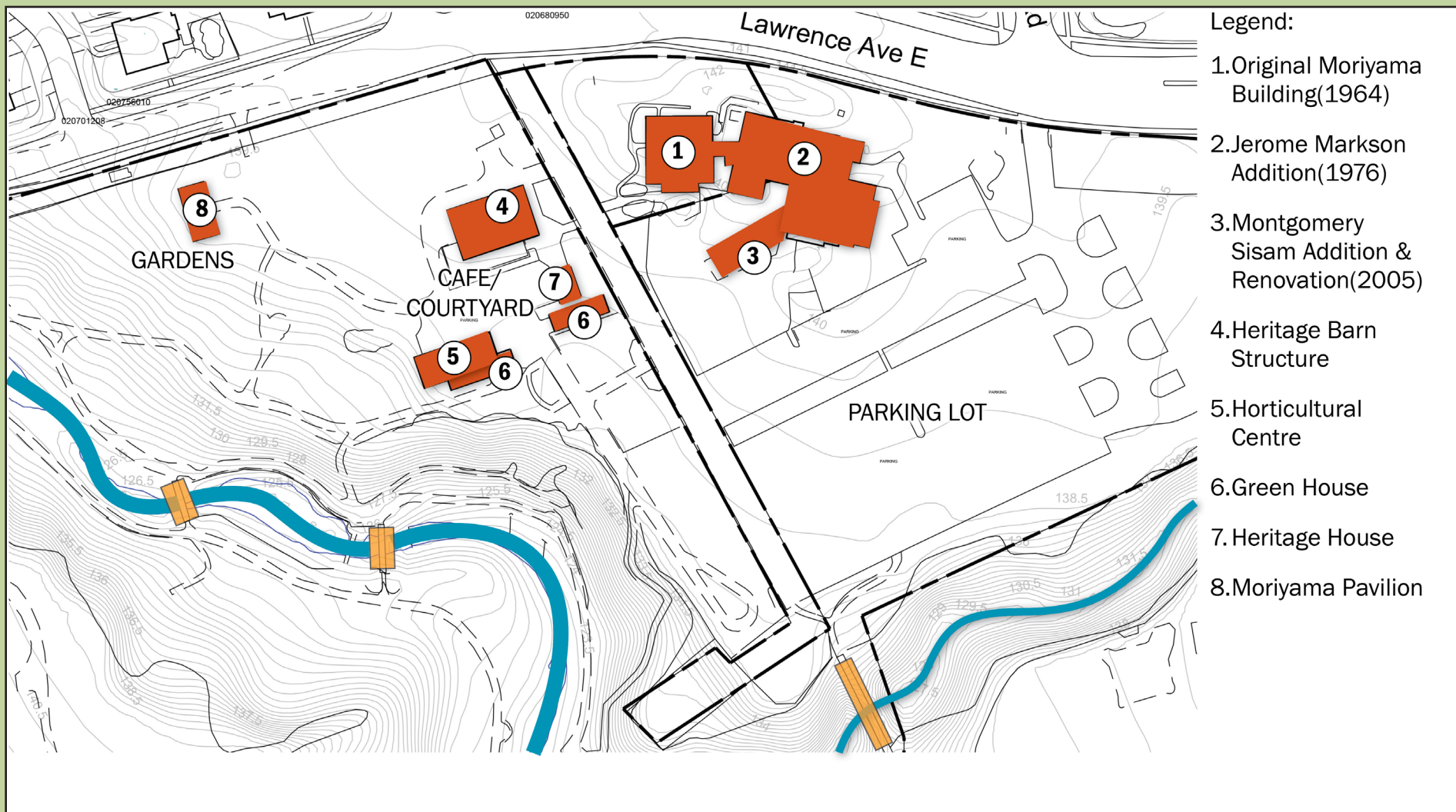


CULTURAL HERITAGE

Within the study area there are several structures that have heritage value. The Moriyama Pavilion and the buildings of the Civic Garden Centre were listed Oct. 6, 1997 under the Ontario Heritage Act. The Milne Family Cemetery is a cultural heritage asset within the study area, however it is not formally listed as a heritage property. Maintenance of the cemetery is required in perpetuity as a condition of the purchase agreement for the land.

STRUCTURES





2.5 VIEWS AND VISTAS

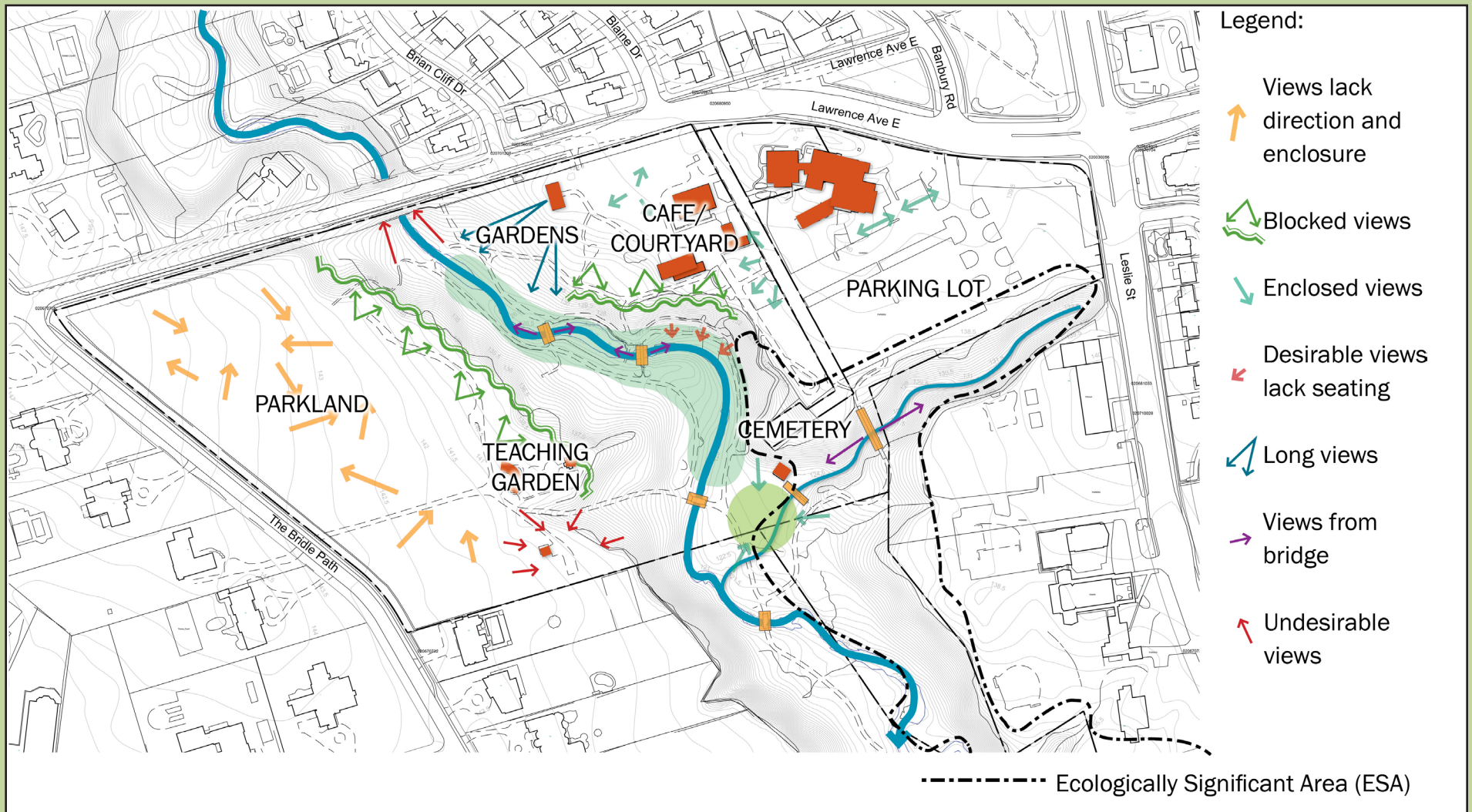


The majority of high quality views are within the ravine and on the eastern tablelands, although these could be improved by managing invasive vegetation to open up vistas and control sight lines. In the western tablelands, potential views down into the ravine are blocked by invasive shrubby growth along the wooded slopes. Views within the arboretum area are poorly defined or directed.

The eastern section of the site offers many attractive vistas across the ravine; however, vistas from the western side are obscured by dense vegetation that has grown up along woodland edges. On the floodplain, many potential vistas up and down Wilket Creek are obscured by dense vegetation along the banks.

Many of the benches throughout the site are not oriented to take best advantage of existing high quality views. There are several spaces throughout the site that have great potential to be major viewing areas, but currently lack a sense of enclosure or direction.

VIEWS AND VISTAS



2.6 ACCESSIBILITY



The study area is composed of flat tablelands on the east and west sides of the site, while steep and inaccessible slopes frame the edges of Wilket Creek in the centre. Program areas for Edwards Gardens and Toronto Botanical Garden are distributed on both sides of the valley with few accessible pathways between the two sides.

PEDESTRIAN

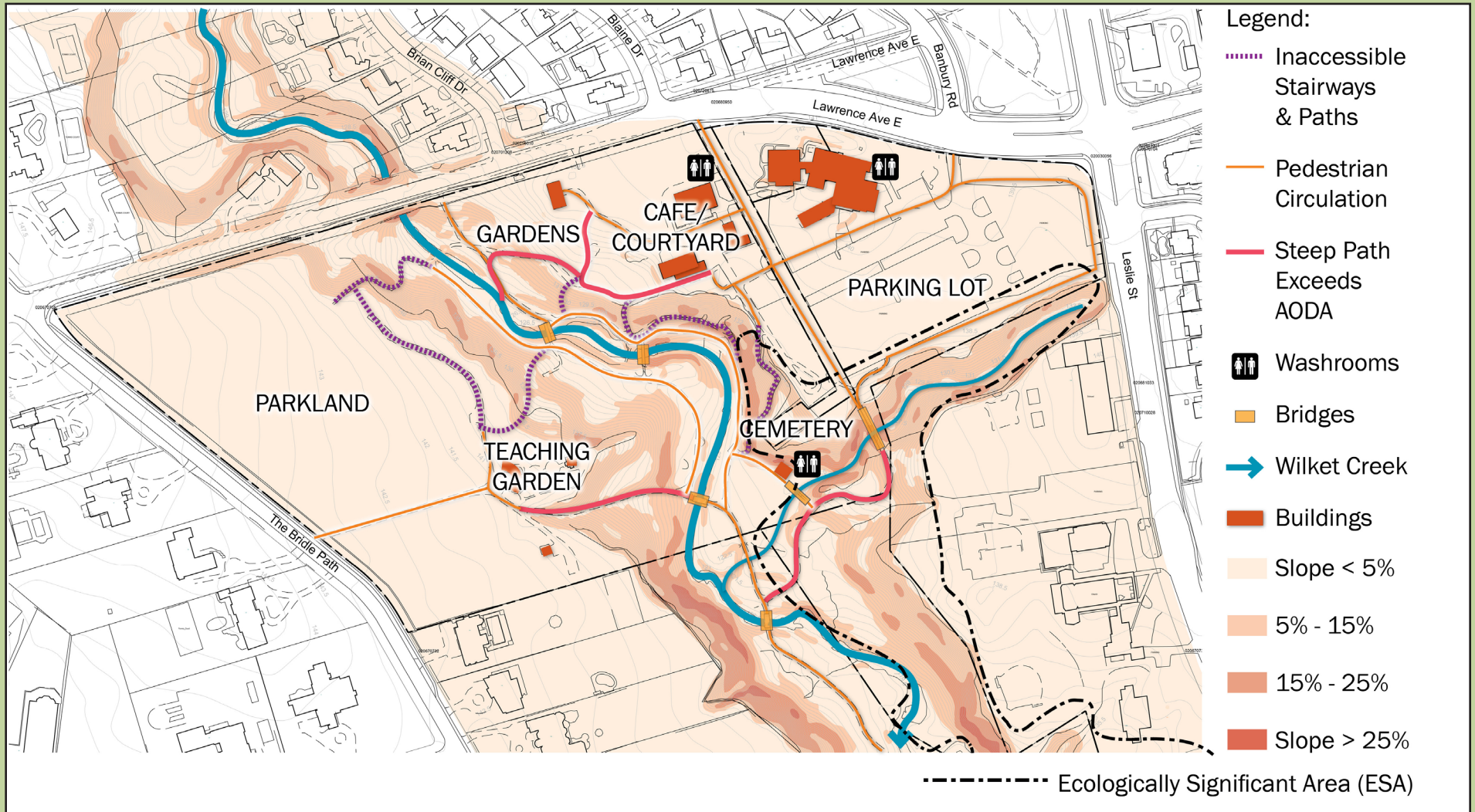
Some paths have stable surfaces, but the slopes exceed 5% and therefore require additional handrails, landings and curbs to conform to AODA and Toronto Accessibility Guidelines. Other pathways meet the slope requirements for AODA, but the materials create a discontinuous, uneven or unstable surface and are not suitable for mobility devices or the visually impaired.

Existing stairs are inconsistently maintained seasonally and treads lack visual contrast. Runs of stairs are sometimes long with few landings and rest areas. Handrails are typically installed on one side only, forcing users to travel in one direction at a time over the length of the stairs or rely on companions to assist in navigating the steps.

VEHICULAR

There is no publicly accessible drop-off or pickup area for the west tablelands, which forces users to navigate the existing inaccessible paths in order to access the western site. For maintenance, most vehicles must travel outside the site along Lawrence Avenue East and the Bridle Path to access the Barn and West Tablelands maintenance yard.

CIRCULATION - ACCESSIBILITY



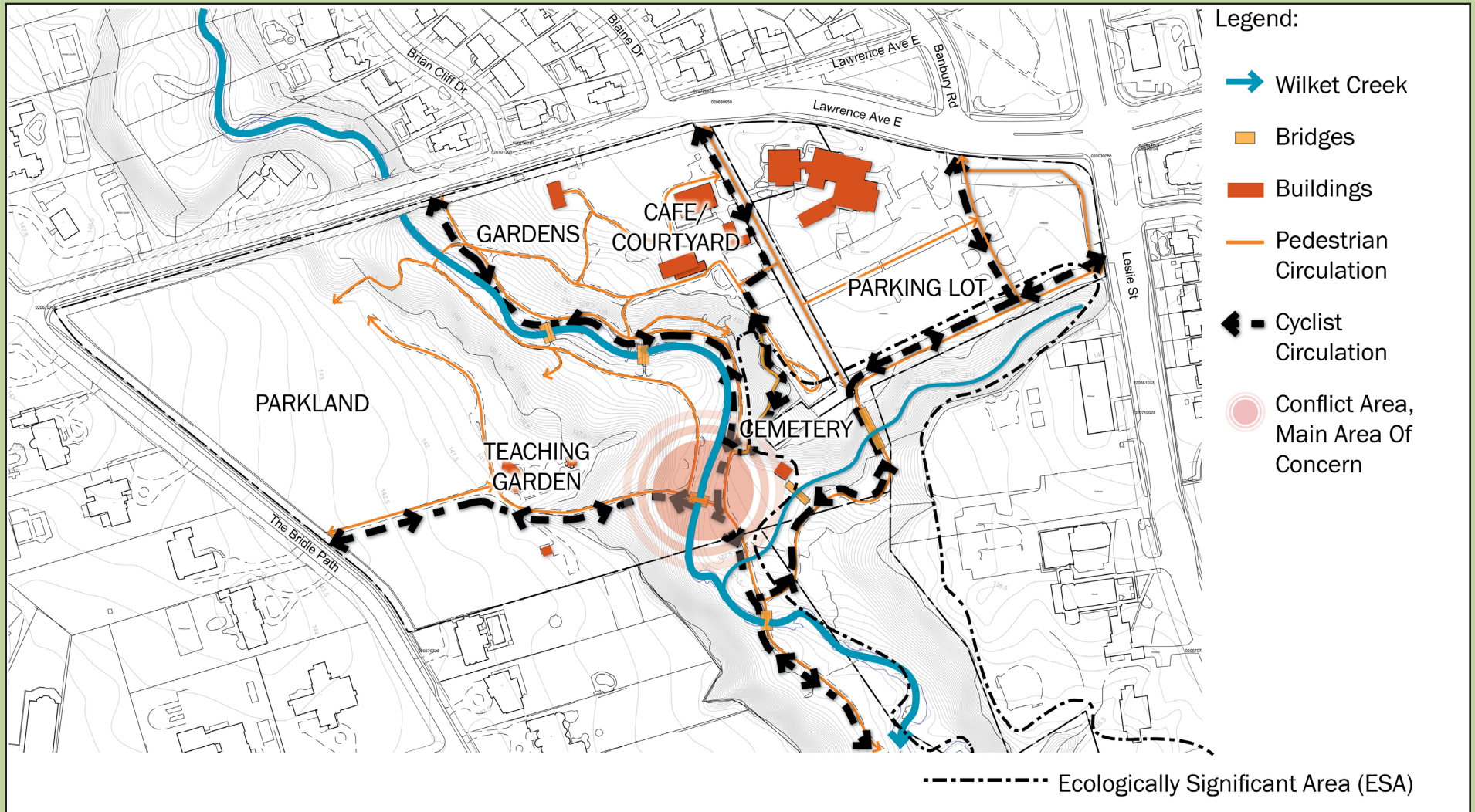
2.7 PEDESTRIAN AND CYCLING INTERFERENCE



Currently, there are no separate, designated paths for cyclists. Most cyclists enter the site at various locations at Lawrence Avenue, Leslie Street and the Bridle Path, and continue down the ravine by cutting through the parking lot and the gardens. Since most pathways are seen as multi-use, cyclists tend not to slow down when traveling through the site. One of the major areas of concern is the north steel bridge, where three popular cycling routes come together. The sharp turns that enter and exit the bridge present a potential safety hazard for pedestrians. There is no pavement marking, signage or speed bumps near the bridge to inform pedestrians and cyclists of this interference.

Generally, there is poor hierarchy and continuity in path width and surface material. Many paved surfaces are in disrepair, and some are difficult and unsafe to use. There is no clear gateway signage at the entrance to Toronto Botanical Garden, and a lack of directional signage make visiting the site confusing—especially for first time visitors. Lack of separation between pathways for pedestrians, cyclists and service vehicles can make moving throughout the site unsafe and unpleasant for visitors.

CIRCULATION - PEDESTRIAN AND CYCLING



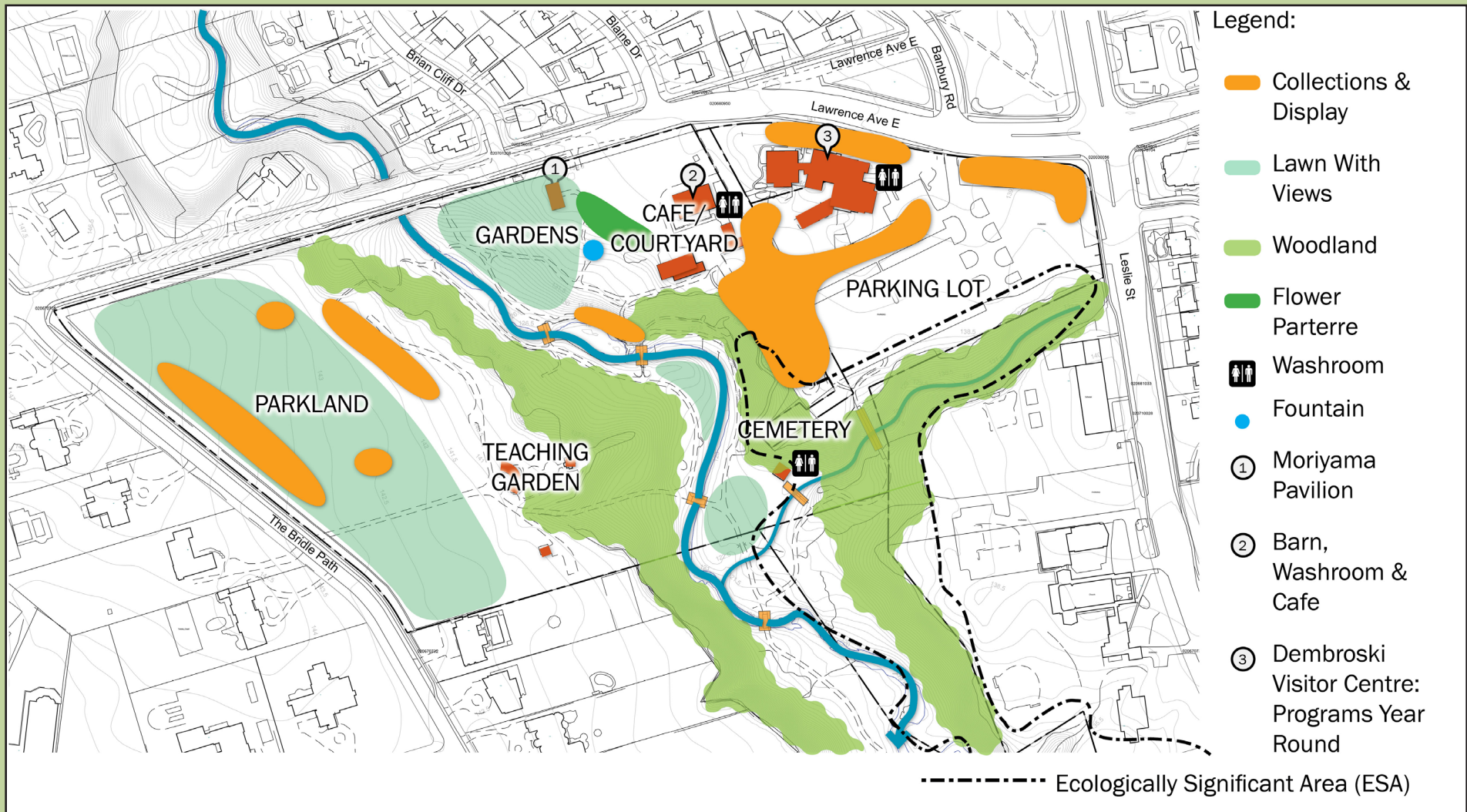
2.8 VISITOR EXPERIENCE (MAY TO OCTOBER)



Outdoor activities in Edwards Gardens and Toronto Botanical Garden occur primarily during May through October, when the weather permits. On the western tablelands most activities are passive—such as sunning, visiting with friends, tossing a ball—while places around the Toronto Botanical Garden Visitor Centre offer more structured educational activities, as well as unstructured enjoyment of the Themed Gardens. In the Teaching Garden in the western tablelands, members of Toronto Botanical Garden’s education staff offer a wealth of programmed activities for school groups and families.

In the eastern tablelands of Edwards Gardens, visitors enjoy strolling among the flowerbeds and along the slopes leading down to Wilket Creek. Activities in the floodplain include strolling and relaxing on the many benches, guided tours conducted by Toronto Botanical Garden volunteers, and educational activities related to the ecology of Wilket Creek. Wedding photography is frequently staged throughout Edwards Gardens and Toronto Botanical Garden.

VISITOR EXPERIENCE (MAY TO OCTOBER)

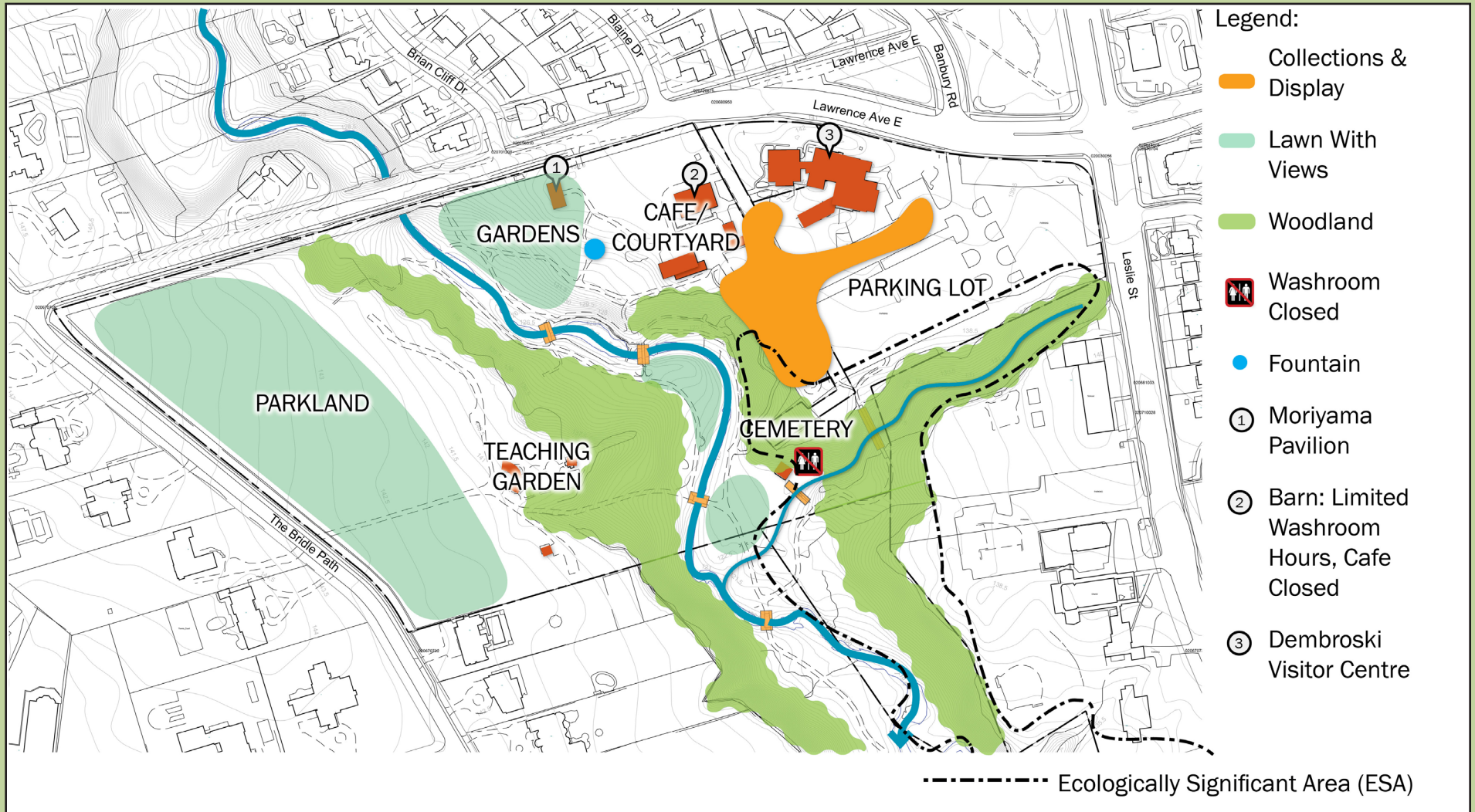


2.9 VISITOR EXPERIENCE (NOVEMBER TO APRIL)



Outdoor activities from November through April are reduced due to the weather, although walking, hiking, and biking remain popular. The schedule of indoor activities at the Toronto Botanical Garden Visitor Centre is robust throughout the year. School programs are conducted in the Teaching Garden in fall and spring.

VISITOR EXPERIENCE (NOVEMBER TO APRIL)



2.10 VISITOR EXPERIENCE (CALENDAR OF EVENTS)

MONTH	EVENT	TYPE/DEPARTMENT	LOCATION
JANUARY			
Thursday	TBG Lecture #1	Education	Floral Hall
Tuesday-Friday	School Visits	Education	Allan Gardens
Thursday	Farmers' Market	Administration	Lobby
Weekday/Weekends	Adult Courses	Education	Various Locations in the building
FEBRUARY			
Saturday	Get the Jump on Spring: Horticultural Open House	Event	Entire Building
Saturday	Documentary Screening	Library	Library
Saturday	City Critters Family Program	TBGKids	JBCC/Teaching Garden
Saturday	Seedy Saturday	Library	Entire Building
Thursday	TBG Lecture #2	Education	Floral Hall
Thursday	Farmers' Market	Administration	Lobby
Tuesday-Friday	School Visits	Education	Allan Gardens
Weekday/Weekends	Adult Courses	Education	Various Locations in the building
MARCH			
10 days	Canada Blooms	Event	Enercare Building -Booth
Monday-Friday	March Break Camps	TBGKids	JBCC/Teaching Garden
Saturday	Screening: Open Sesame: The Story of Seeds	Library	Library
Saturday	City Critters: Toronto Raptors	TBGKids	JBCC/Teaching Garden
Thursday	Farmers' Market	Administration	Lobby
Weekday/Weekends	Adult Courses	Education	Various Locations in the building
APRIL			
Thursday	TBG Lecture #3	Education	Flora Hall
Thursday	Farmers' Market	Administration	Lobby/Arrival Courtyard
Tuesday-Friday	School Visits	Education	JBCC/Teaching Garden
Saturday	Earth Day Celebrations	TBGKids	JBCC/Teaching Garden
Saturday	Documentary Screening	Library	Library
Weekday/Weekends	Adult Courses	Education	Various Locations in the building

MONTH	EVENT	TYPE/DEPARTMENT	LOCATION
MAY			
Thursday- Sunday	Plant Sale	Horticulture	Floral Hall
Thursday	Contributing Member Plant Sale Preview	Development	Floral Hall/Lobby
Thursday	TBG Lecture #4 & AGM	Education	Floral Hall
Tuesday-Friday	School Visits	Education	JBCC/Teaching Garden
Thursdays	Farmers' Market	Administration	Arrival Courtyard
Tuesday	Woman to Woman: Lunch in the Garden	Development	Entire Building/Gardens
Wednesday	TTGG Media Tour	Communications	Off-site
Weekday/Weekends	Adult Courses	Education	Various Locations: building and gardens
Saturday & Sunday	Doors Open Toronto	City Event	Entire Building/Gardens
JUNE			
Thursday	Toronto Life Garden Party	Communications	Entire Building/Courtyards/EG Courtyard
Thursdays	Edwards Summer Music Series	Events	EG Courtyard/Rain Back up in the Floral
Thursdays	Farmers' Market	Administration	Hall
Tuesday-Friday	School Visits	Education	Arrival Courtyard
Friday-Sunday	Canada's Garden Days	National Event	JBCC/Teaching Garden
Saturday & Sunday	Through the Garden Gate	Development	Off-site
Weekday/Weekends	Adult Courses	Education	Various Locations in the building

MONTH	EVENT	TYPE/DEPARTMENT	LOCATION
JULY			
Thursdays	Edwards Summer Music Series	Events	EG Courtyard/Rain Back up in the Floral Hall
Monday-Friday	Summer Camps	TBGKids	JBCC/Teaching Garden
Weekday	Community Citizenship Ceremony	Communication	Floral Hall/Garden Hall/Garden
Thursdays	Farmers' Market	Administration	Arrival Courtyard
Weekday/Weekends	Adult Courses	Education	Various Locations in the building
AUGUST			
Thursdays	Edwards Summer Music Series	Events	EG Courtyard/Rain Back up in the Floral Hall
Thursdays	Farmers' Market	Administration	Lobby/Arrival Courtyard
Monday-Friday	Summer Camps	TBGKids	JBCC/Teaching Garden
Weekday/Weekends	Adult Courses	Education	Various Locations in the building
SEPTEMBER			
Thursday	TBG Lecture #5	Education	Floral Hall
Thursdays	Farmers' Market	Administration	Arrival Courtyard
Thursday	Hearts and Flowers Launch Event	Development	Floral Hall/Garden Hall
Tuesday-Friday	School Visits	Communications	JBCC/Teaching Garden
Weekday/Weekends	Adult Courses	Education	Various Locations: building and gardens
Saturday	Harvest Day	TBGKids	JBCC/Teaching Garden/Arrival Courtyard
OCTOBER			
Thursday	Halloween Volunteer Appreciation Party	Volunteers	Floral Hall
Thursday	TBG Lecture #5	Education	Floral Hall
Thursdays	Farmers' Market	Administration	Arrival Courtyard/Lobby
Tuesday-Friday	School Visits	Education	JBCC/Teaching Garden
Friday	Symposium	Education	Entire Building
Saturday	Halloween Howl	TBGKids	JBCC/Teaching Garden
Weekday/Weekends	Adult Courses	Education	Various Locations in the building

MONTH	EVENT	TYPE/DEPARTMENT	LOCATION
NOVEMBER			
Thursday	Aster Awards	Development	Floral Hall
Thursday	TBG Lecture #7	Education	Floral Hall
Tuesday-Friday	School Visits	Education	Allan Gardens
Thursdays	Farmers' Market	Administration	Lobby
Weekday/Weekends	Adult Courses	Education	Various Locations in the building
DECEMBER			
Thursday	Members Holiday Reception	Development	Floral Hall Lobby/Arrival Courtyard
Thursday	Holiday Market and Open House	Development	Entire Building
Tuesday-Friday	School Visits	Education	Allan Gardens
Sunday	Family Nature Walk	Education	Ravine & Gardens
Thursdays	Framer's Market	Administration	Lobby
Weekday/Weekends	Adult Courses	Education	Various Locations in the building



2.11 EDUCATIONAL PROGRAMMING

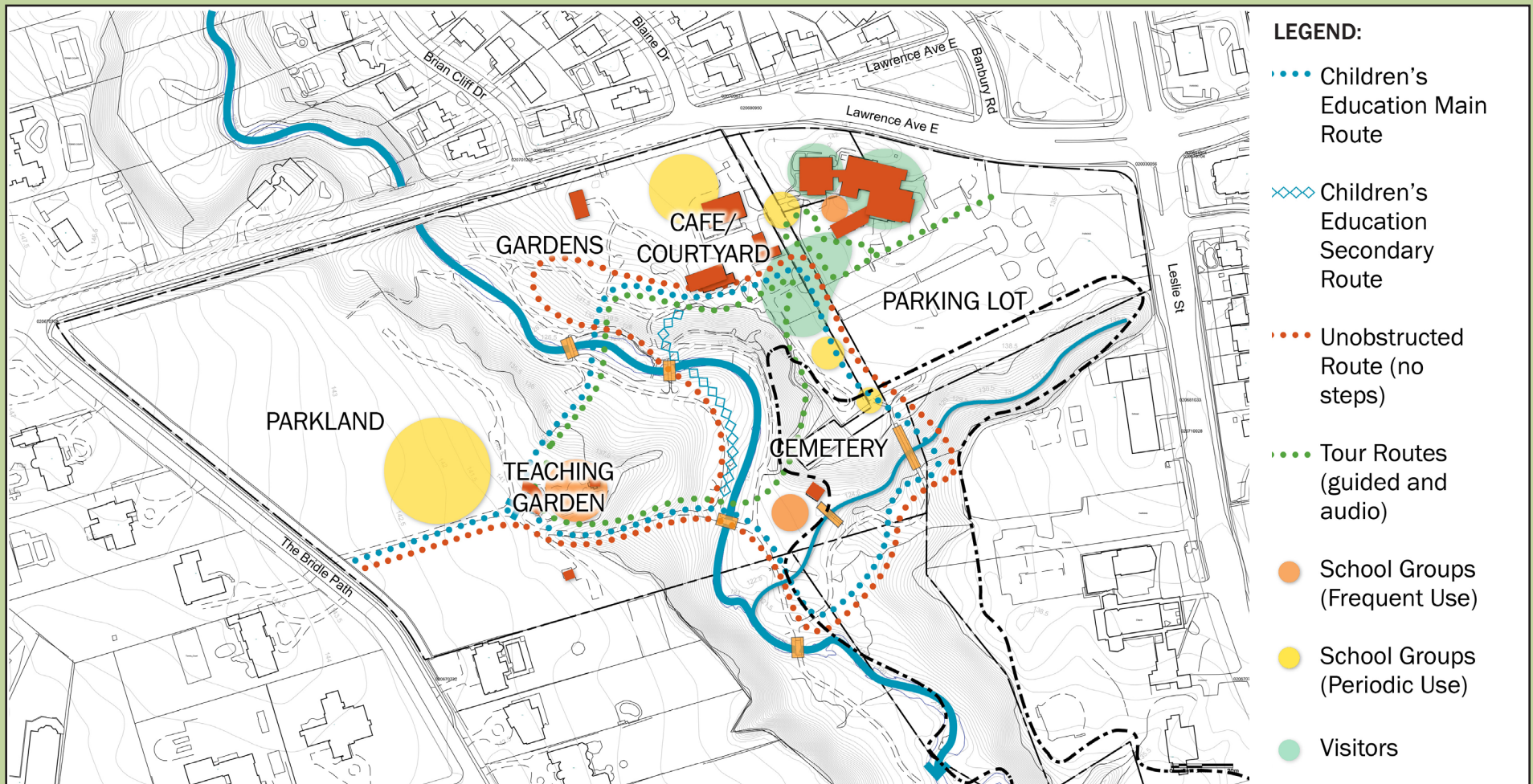


Toronto Botanical Garden's current educational programming serves school groups and families, as well as amateur and professional horticulturists, ecologists and garden designers. School programs are offered for Kindergarten to grade 8, serving approximately 7,500 Toronto school children each year in curricula related to gardening, ecology and science.

10,000 adults participate each year in adult education programs. The Toronto Botanical Garden Visitor Centre and Teaching Garden are the two primary locations for educational activities, with many programs also offered throughout the Edwards Gardens/Wilket Creek ravine. A wide range of subject matter includes ecology, gardening, photography, wellness, and beekeeping. Certification programs are offered in garden design, floral design, and horticultural therapy.

The existing facilities are currently being used to their capacity, and the existing Themed Gardens at the Visitor Centre have proved to provide insufficient space for hands-on learning outdoors. To meet increasing demand for educational programming, there is a need for increased indoor—as well as outdoor—classroom space, outdoor teaching areas, and outdoor restrooms. Current teaching staff is operating to its maximum capacity; therefore, consideration for additional staff will be required before educational offerings can be expanded.

EDUCATIONAL PROGRAMMING



EDUCATION AT TORONTO BOTANICAL GARDEN

WESTON FAMILY LIBRARY AT TORONTO BOTANICAL GARDEN

Canada's largest privately held horticultural library was established in 1961 with a donated collection from the Garden Club of Toronto. The library consists of more than 10,000 books, an extensive periodical collection and a multimedia collection. Only members enjoy borrowing privileges but the public is free to browse and use the computer workstations. The library hosts author talks and documentary screenings.

ADULT EDUCATION

Approximately 100 courses are offered every year. Tried and true offerings like floral design are paired with new classes that engage more diverse audiences as well as offer new partnership opportunities. Eight to ten lectures and one symposium, focusing on horticulture and ecology, are delivered yearly.

Certificate programs are offered in urban beekeeping, horticultural therapy, floral design and garden design. The latter is delivered in partnership with George Brown College at its downtown campus.

CHILDREN'S EDUCATION

The majority of children's education programs offered by Toronto Botanical Garden occur within the study site. However, teachers also deliver programs at a few branches of the Toronto Public Library and at the city-run Allan Gardens. Some programs are paid for by participants, while others are funded so that participation is free.

Living Winter is a funded program that engages about 2,000 children from approximately 100 schools every winter. It takes place at Toronto Botanical Garden, and is mostly an outdoor experience.

Growing Under Glass is a City of Toronto-funded program that brings in more than 1,000 grade 3 students from schools in priority neighbourhoods.

Green Adventure is a funded one-day camp that engages children from various daycares that serve vulnerable communities. It takes place at Toronto Botanical Garden in early August.

Green Explorers is a one-week camp that engages a small group of grade 6 students

from Flemingdon Park. It takes place at Toronto Botanical Garden in early July.





2.12 FRAGMENTATION

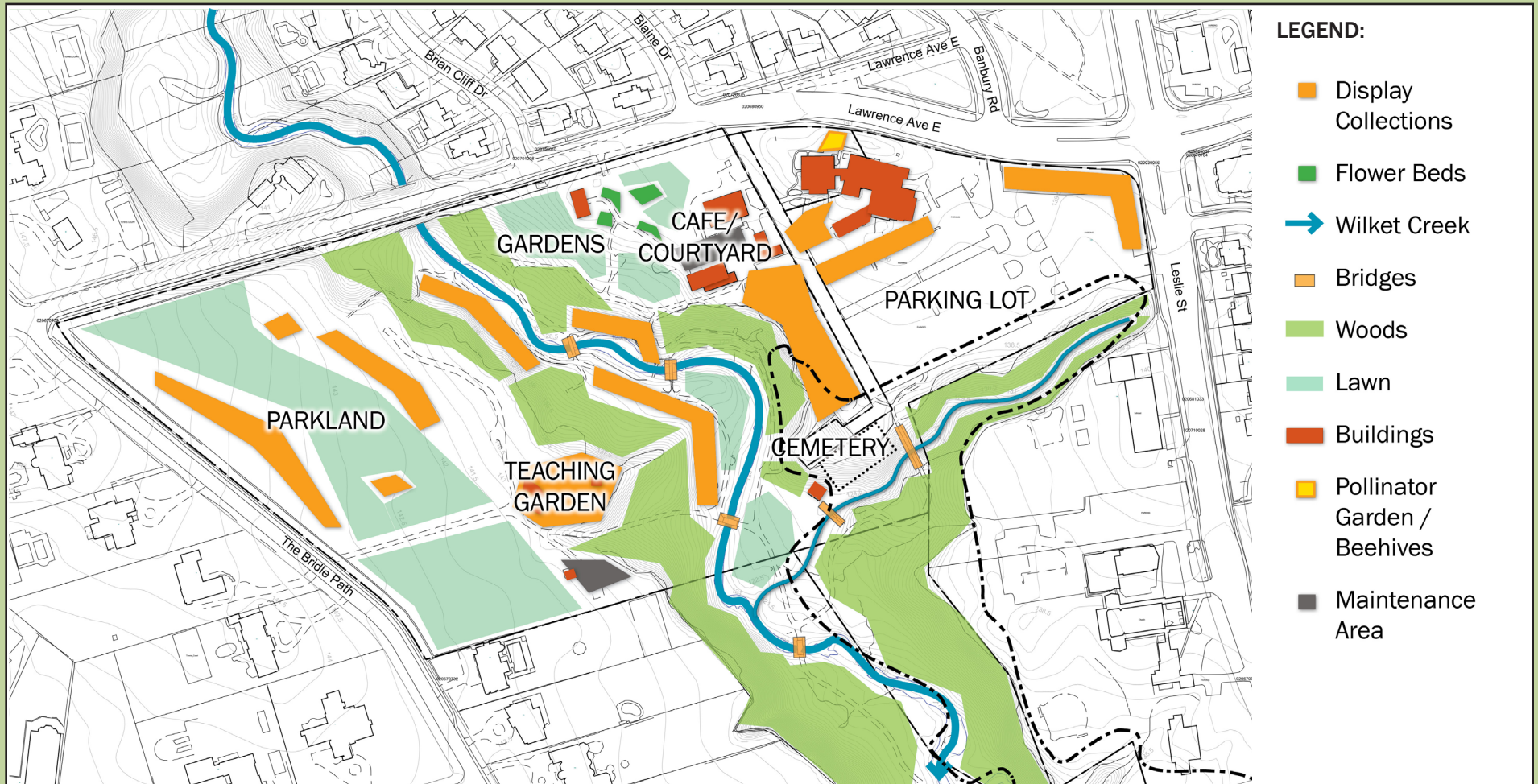


The site offers a variety of attractions and destinations to its visitors. While these present an interesting array of visitor experiences, they are scattered throughout the site in such a way as to prevent an overall sense of journey or connection. The site lacks an overall sense of design cohesiveness or integration. This fragmentation makes the site confusing to navigate, especially for first time visitors.

Plant collections and displays include shrub and rose beds on the western tablelands, a rhododendron garden along the west edge of the Wilket Creek floodplain, and a rock garden along the eastern bank of the ravine. There is a sharp stylistic contrast between the summer flowerbeds west of the barn, and the Themed Gardens near the Visitor Centre. A maintenance yard between these two areas adds to the overall sense of fragmentation.

Existing built elements and architectural components -- such as paved surfaces, benches, stairways, railings, trash cans, and signage -- lack unity of style and/or material. The site offers at least nine different types of benches, many of which are in poor condition. At least seven different paving materials are presented in a wide variety of patterns. Retaining walls, steps, and railings are also installed throughout the site in an uncoordinated variety of materials and styles. Railings, for example, vary in style from rustic wood to modern steel pipe, and are placed in various locations without apparent regard for immediate design context.

FRAGMENTATION



2.13 SITE INVENTORY AND ANALYSIS SUMMARY

FLORA	FAUNA	FLOODING & HYDROLOGY	VISTAS	ACCESSIBILITY
Ravine and the slope plant communities represent some of the highest quality forest communities that remain in Toronto. However, certain degree of degradation are present and continuing maintenance on the invasive species control is required. .	Terrestrial environment provides habitat for a variety of common animals and offers opportunity for habitat to breeding and migrating birds. Wilket Creek is a warm water fishery that provides habitat for a variety of fish species as well other wildlife.	With no stormwater management infrastructure upstream Wilket Creek, flush flooding is estimated to occur 2 to 4 times per year. Uncontrolled run off from paved surfaces has negative impact onto sensitive areas of the ravine and its slopes.	Eastern tablelands offer many attractive vistas across the site.	There are only a few accessible pathways between western and eastern tablelands. Maintenance vehicles interfere with pedestrian pathway. Western lands do not offer vehicular drop off. Main entrance to the gardens lacks a grand gateway feature.
CYCLISTS & PEDESTRIANS	VISITOR EXPERIENCE	EDUCATIONAL PROGRAMMING	FRAGMENTATION	STRUCTURES
There is no clear delineation between pedestrians and cyclists for both pathways and bridges. Intersections at bridges create serious conflicts.	Between the months of May and October outdoor activities are divided between eastern and western tablelands. Some of them include: strolling through themed gardens, attending outdoor classes at teaching garden, etc. From November to April activities are reduced to walking, hiking and biking. Indoor activities are happening throughout the year.	Toronto Botanic Garden's education programming serves a range of users from school groups to professionals. Majority of the classes occur at TBG centre and the Teaching Garden. There is a demand for more programs, larger indoor and outdoor spaces and more teaching staff.	Many of the gardens and attractions are scattered throughout the site with no direct connections. The site lacks design cohesion and integration.	The existing buildings, some of which include historic structures, need exterior and interior upgrades. Bridges are generally in good condition, with ongoing maintenance required over time. Retaining walls are performing well.

2.14 CONSTRAINTS AND OPPORTUNITIES

SENSITIVE ECOSYSTEM

Constraint	Opportunity	Aspects of Botanical Gardens				Category			Time Frame			Budget	
		Beauty & Display	Conservation	Education	Research	Programming	Partnership	Capital Investment	Quick Win (1-3 years)	Mid Term (3-5 years)	Long Term (5+ years)	\$	Multi-Year/Single Year
Flora and Fauna Several fauna species of concern; Diminished ecological diversity; Forests in a state of degradation; Compacted soils; Eliminated forest ground cover and understory vegetation; Numerous invasive species; Many floral species of concern, requiring protection and care	Wooded slopes and floodplain provide enriched habitat Invasive species Management	●	●	●	●		●	●		●	●		Multi
Flooding and Hydrology Intense flooding is estimated to occur 2 to 4 times per year; Large existing debris deposits; Existing weir is part of dam, which creates an on-line sedimentation facility. It creates a fish barrier, continued erosion of creek banks	Existing ravine offers a connection to the Don Valley ecosystem	●	●	●	●		●	●		●	●		Multi
FRAGMENTED AND UNDERWHELMING BOTANICAL GARDEN EXPERIENCE													
Western table lands not seen as part of the experience; Many spaces with similar/complimentary programming physically separated from each other; Teaching Gardens situated in remote location; too small to accommodate larger programs		●	●	●	●	●	●	●		●			Multi

OPERATIONAL ISSUES

Constraint	Opportunity	Aspects of Botanical Gardens				Category			Time Frame			Budget	
		Beauty & Display	Conservation	Education	Research	Programming	Partnership	Capital Investment	Quick Win	Mid Term	Long Term	\$	Multi-Year/ Single Year
Many benches in poor condition and inaccessible from pathways; Lack of visual unity for components (paving, benches, railings, signage, etc.) within and beyond site;	Upgrade seating, paving, railing and signage to create safe and enjoyable visitor's experience	●	●					●		●			
Maintenance facility adjacent to barn intrudes on visitors in gathering spaces; Site inconsistently served by washroom facilities	Facilities upgraded as state of good repair and regular scheduled maintenance improvements can also improve safety, connection and visitor experience	●						●	●				
Existing structures may limit significant changes to the site	Existing structures can be repurposed and enhanced to provide more or diverse uses; Existing greenhouse may provide opportunities for a variety of uses	●	●	●				●		●			
Insufficient parking; confusing connection between parking lot and Visitor's Centre; parking lot surface showing signs of deterioration, safety hazards	Convert existing parking area into multi-level parking structure						●	●			●		

OBSTACLES TO ACCESSIBILITY

Constraint	Opportunity	Aspects of Botanical Gardens				Category			Time Frame			Budget	
		Beauty & Display	Conservation	Education	Research	Programming	Partnership	Capital Investment	Quick Win (1-3 years)	Mid Term (3-5 years)	Long Term (5+ years)	\$	Multi-Year/ Single Year
Conflicts between pedestrians, cyclists and maintenance vehicles; Many steep walkways create slippery and dangerous conditions year round; Erosion and flooding cause repeated damage to walkways and bridges; Insufficient accommodation for visitors of all ages, abilities and languages	The system needs to be upgraded to create a safe and functional circulation system	●	●					●	●	●			Multi
Poor directional signage and lack of wayfinding; Wayfinding system is insufficient;	Safe street crossing and signage around and outside the site	●	●	●				●	●				
Limited connections to other cultural institutions; Lack of access for winter activities	Proximity and partnerships can provide linkages with other gardens and natural and cultural heritage sites; Provide linkages to other gardens and natural areas; Opportunity for access with other nearby cultural institutions	●	●		●		●						

INFRASTRUCTURE AND AMENITIES CLOSE OR AT END OF LIFECYCLE

Constraint	Opportunity	Aspects of Botanical Gardens				Category			Time Frame			Budget	
		Beauty & Display	Conservation	Education	Research	Programming	Partnership	Capital Investment	Quick Win	Mid Term	Long Term	\$	Multi-Year/ Single Year
Café with limited seasonal schedule and hours of operation; too small to accommodate visitors in the peak season; too small to accommodate large parties	Expand food and beverage availability					●	●		●				
Moriyama Pavilion underused, in poor condition	Repair Moriyama Pavilion and create ceremonial space next to it			●		●	●	●		●			
No large outdoor gathering space for lectures, performances, etc.	Area between barn and greenhouses offers an opportunity to become a new gathering space and to celebrate site heritage			●		●			●				
Barn underused because of location adjacent to maintenance facility and lack of space for gatherings; Greenhouse too small for educational purposes and located too far from western table lands maintenance area.	One integrated sequence of places that supports a variety of programs and activities			●	●	●			●				
Existing benches are not located to take advantage of desirable views or gathering	Provide lookouts and vantage points with seating	●						●		●			
Minimal covered or shaded spaces in the western table lands and floodplain	Provide more shelter opportunities throughout the entire site	●		●				●	●		●		

PROGRAMMING AND EVENT/LEARNING SPACES NOT MAXIMIZED FOR YEAR ROUND ACTIVITY

Constraint	Opportunity	Aspects of Botanical Gardens				Category			Time Frame			Budget	
		Beauty & Display	Conservation	Education	Research	Programming	Partnership	Capital Investment	Quick Win (1-3 years)	Mid Term (3-5 years)	Long Term (5+ years)	\$	Multi-Year/Single Year
Insufficient space dedicated to teaching, events, programmed activities and enhanced experience	Utilize both Edwards Gardens and Toronto Botanical Garden to host programs; western table lands offer opportunities to relocate horticultural collections;	●	●	●	●	●	●				●		
Existing teaching staff operating at full capacity, lacking variety of programs	Education about integration of both native and non-native plants; Provide more programs for urban agriculture; Provide affordable programming for young adults; Expanded programming for all seasons	●	●	●	●	●	●				●		
No interpretive signage or self-guided tours, take-away and out reach programs	Provide visitor accessible wi-fi systems; Integration with technology for layered interpretation and improved communication with people with disabilities and in a variety of languages; Expand take-away & outreach programs for visitors; Develop and showcase online (and virtual off-site) experience	●	●	●		●				●			



Photo: Ed Krolow