Canada-United States-Ontario-Michigan
Border Transportation Partnership

Urban Design and Landscape Planning Report

Recommended Plan

December 2008

Preface

The Detroit River International Crossing (DRIC) Environmental Assessment study was conducted by a partnership of the federal, state and provincial governments in Canada and the United States in accordance with the requirements of the Canadian Environmental Assessment Act (CEAA), the Ontario Environmental Assessment Act (OEAA), and the U.S. National Environmental Policy Act (NEPA). In 2005, the Canadian and U.S. Study Teams identified 15 potential river crossing locations and associated plaza and access road alternatives. The results of the assessment of these alternatives, led to the identification of an Area of Continued Analysis (ACA). Within the ACA, practical alternatives were developed for the crossings, plazas and access road alternatives.

Through the analysis of the practical alternatives, and in conjunction with ongoing consultation efforts, a new alternative was developed that combined beneficial features of the original alternatives. The new alternative was identified as The Parkway in August 2007 and included seven kilometres of below grade freeway, an optimized service road system, a green corridor with 10 tunneled sections totalling 1.5 km in length, a grade separated recreational trail system, and extensive green areas.

Upon completion of the analysis of the practical alternatives, the alternatives were evaluated. The Partnership announced the results of the evaluation for the access road component in May 2008. Referred to as The Windsor-Essex Parkway, the Technically and Environmentally Preferred Alternative (TEPA) access road, consisted of the major components of the Parkway with some refinements made to reflect additional community consultation and analysis. These refinements included an additional tunnel in the Spring Garden area, more green space and a refined trail network. The components of the TEPA for the international bridge crossing (Crossing X-10B) and Canadian plaza (Plaza B1) were announced in June 2008.

The remainder of 2008 focused on detailed analysis and identification of impacts and appropriate mitigation measures for the TEPA, along with further refinements. The June 2008 TEPA combined with the subsequent refinements and associated mitigation measures is referred to collectively as the Recommended Plan. This report summarizes the work undertaken in this regard specific to Urban Design and Landscape Planning. These measures were also documented in a draft version of the Ontario Environmental Assessment Report, which was made available to the public, agencies, municipalities, First Nations, and other interested parties for review in November 2008.

Additional reports and details are available at the study website (www.partnershipborderstudy.com).

Executive Summary

This document provides an overview of the landscape analyses completed for the Recommended Plan as part of the Detroit River International Crossing (DRIC) Environmental Assessment. The Recommended Plan includes The Windsor-Essex Parkway, Plaza B1 and Crossing X-10B. In addition, the document sets out the principles that will guide the planning and design of the open spaces, natural areas and trails associated with The Windsor-Essex Parkway and the new plaza and crossing. This document also outlines a strategy for including aesthetic and design considerations in all new construction, including, but not limited to, structural elements, landscaping, barriers, wayfinding, and lighting.

The Detroit River International Crossing study included an extensive consultation process that incorporated several types of events designed to inform stakeholders about the study and to generate feedback and public/stakeholder input on the evolving study. Landscape and urban design issues were introduced and discussed with stakeholders within a Context-Sensitive Solutions (CSS) approach.

A key goal for the communities surrounding the corridor identified through the consultation process was to improve the local quality of life. The Windsor-Essex Parkway evolved as a context sensitive approach to addressing this community goal by providing significant buffer areas between the roadway and neighbourhoods; protecting, restoring and enhancing natural areas; creating potential recreational opportunities; and improving community connectivity. The CSS workshops identified strong public support for the use of a “Carolinian” planting scheme that reflected the least ornate, most ecologically sensitive and maintenance conscious design.

During the assessment and CSS process it was determined that the landscape and visual effect of the Recommended Plan could be enhanced by incorporating urban design, aesthetic and landscape design measures. This report describes the principles that will guide the development of two separate but integrated plans: the Aesthetic and Urban Design Plan and the Landscape Design Plan.

Urban Design and Landscape Planning

As a gateway to Canada, The Windsor-Essex Parkway and the new plaza and crossing, will be a major landmarks. As such, the visual and aesthetic impact of the facility and its integration into the landscape will be the subject of an urban design and landscape plan for the highway. This plan will serve to unify the visible aspects of the form, finish and materials used in the landscape and open spaces of the facility into a central visual and formal theme that can be deployed throughout future design phases.

Open spaces that are associated with The Windsor-Essex Parkway will be designed according to the following principles:

UNIFIED The open spaces associated with the Recommended Plan will be considered as a unified whole. These spaces will be planned to function in an

integrated manner and to present a unified aesthetic and visual environment for both drivers and community users.

GREEN The vision for the Recommended Plan is to create a green corridor that supports new, viable natural communities and links existing natural areas.

CONNECTION The tunnels provide an opportunity to create connections between communities on either side of The Windsor-Essex Parkway and along its length.

INTEGRATION The Windsor-Essex Parkway travels through three municipalities, Tecumseh, LaSalle and Windsor, Ontario. The Windsor-Essex Parkway open spaces should integrate with the urban design, parks and recreation plans for these three municipalities as well as local and regional natural heritage systems.

GATEWAY The Recommended Plan will designed as a gateway to Canada, Ontario and Windsor-Essex.

Future design phases should include a CSS-based consultation process with local stakeholders to establish appropriate site-specific landscape treatments.

Landscape Types

The landscape plan divides the proposed landscape into different types that perform specific functions. Each of these landscape types employs a different combination of landscape elements such as grading, vegetation, multi-use trails and landscape amenities to create site-appropriate features:

- Gateway Landscapes function to provide an aesthetic, sculptural and memorable gateway to Canada, Ontario and Windsor-Essex . They will integrate a gateway and welcome feature into the highway design and, by creating monumental landforms, serve to accommodate some of the fill generated by highway construction.
- Screening Landscapes create a visual and noise screen / barrier between residences and road infrastructure. The screening landscape is a combination of one or more screening methods (sound barrier, vegetation, berming, fence), depending on the site characteristics and safety and engineering requirements.
- Stormwater Management Landscapes combine stormwater management with landscape amenity and are located in areas where stormwater management ponds are planned for technical design.
- Ecological Landscapes are the predominant landscape type within the Recommended Plan. Ecological landscapes will provide natural open spaces that knit the Recommended Plan into the natural landscape of the city, and provide the setting for the multi-use trail system. There are three main types: ecological protection landscapes, where existing sensitive habitat and vegetation are protected; ecological enhancement landscapes, where the ecological function and complexity of existing habitat and open spaces is improved; and ecological restoration landscapes, where new habitat will be created to extend and connect habitat within and around the Recommended Plan.

- Roadside Landscapes are located on the embankments of the freeway portion of The Windsor-Essex Parkway as well as between ramps and access roads and other areas inaccessible to pedestrians. This landscape type includes geometrically strong plantings and structural elements that provide a green, aesthetic driving experience for users of the freeway portion of The Windsor-Essex Parkway.
- The Multi-Use Trail travels through the various landscape types and allows pedestrians and cyclists to experience the landscape of The Windsor-Essex Parkway. Construction materials and alignments of the multi-use trail will vary depending on site and landscape type.

Conclusion

CSS workshops using visualizations, photography, and three-dimensional modelling have helped establish a suitable approach to the urban design and landscape plan developed for the Recommended Plan. Mitigation measures to reduce or improve visual and landscape impacts will include:

- the development of the urban design and landscape plan to guide future design phases;
- the use of landforming and vegetation strategies to improve views, aesthetics, ecological functions and screening;
- the inclusion of a multi-use trail system and pedestrian-accessible open space within the facility.

These mitigation measures will improve the visual character, aesthetic presence and landscape impact of the Recommended Plan. The result of the urban design and landscape plan will be a landscape that is unified, green, connected, integrated, and functions as a culturally significant gateway.

Urban Design and Landscape Planning Report

Recommended Plan

Table of Contents

1. Introduction

This document provides an overview of the landscape analyses completed for the Recommended Plan as part of the Detroit River International Crossing (DRIC) Environmental Assessment. The Recommended Plan includes The Windsor-Essex Parkway, Plaza B1 and Crossing X-10B. In addition, the document sets out the principles that will guide the planning and design of the open spaces, natural areas and trails associated with The Windsor-Essex Parkway and the new plaza and crossing. This document also outlines a strategy for including aesthetic and design considerations in all new construction, including, but not limited to, structural elements, landscaping, barriers, wayfinding, and lighting.

The Recommended Plan is a major undertaking that will establish a new transportation corridor in Windsor, Tecumseh and LaSalle. This facility is unique from an urban design and landscape standpoint in several ways:

- its integration into the adjacent communities through the inclusion of significant open space buffer areas accessible by pedestrians with landscaped tunnels and open spaces adjacent to the community;
- the opportunity that it provides for ecological protection, restoration and enhancement, including linking existing natural heritage areas;
- its inclusion of a multi-use trail system;
- the opportunities to incorporate gateway features into the landscape plan.

The Recommended Plan will be experienced both by drivers on The Windsor-Essex Parkway and by adjacent residents. The Recommended Plan will not simply be understood as a transportation facility, but also as an integral part of the urban fabric of the adjacent communities. This unique project requires a specialized approach to urban design and the design of the associated open spaces, natural areas and multi-use trail system. As a major international gateway, the Recommended Plan will be designed as a landmark that will be known not only for its function but its form and presence within the landscape.

Open spaces that are associated with The Windsor-Essex Parkway will be designed according to the following principles:

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Parkway open spaces should integrate with the urban design, parks and recreation plans for these three municipalities as well as local and regional natural heritage systems.

GATEWAY The Recommended Plan will designed as a gateway to Canada, Ontario and Windsor-Essex.

Future design phases should include a CSS-based consultation process with local stakeholders to establish appropriate site-specific landscape treatments.

This report will detail how these principles will be achieved.

2. Context-Sensitive Solutions Process

"Context sensitive solutions (CSS) is a collaborative, interdisciplinary approach that involves all stakeholders to develop a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic and environmental resources, while maintaining safety and mobility. CSS is an approach that considers the total context within which a transportation improvement project will exist."[1]

The Detroit River International Crossing Study has included an extensive consultation process that has incorporated several CSS events designed to inform stakeholders about the study and to generate feedback and input on the study. Landscape and urban design issues were introduced and discussed with stakeholders within a CSS approach.

Through events such as Bus Tours, Public Information Open Houses, and Workshops concepts were developed to help formulate the urban design and landscape plan for the Recommended Plan. A variety of visualization tools including three-dimensional models, precedent images, photo-simulations and videos, allowed stakeholders to clearly understand the landscape, aesthetic and urban design implications of the practical alternatives and the Recommended Plan.

Introducing Landscape Principles and Themes

At public workshops in June 2006, landscape and urban design issues were introduced and broadly discussed in relation to the practical alternatives.

Opportunities for mitigation were discussed and precedent images were presented illustrating Ontarian, Canadian and International examples of mitigation solutions. Images shown included examples of noise barriers, vegetation, landforming and berms, land bridges, stormwater management facilities, and theming and gateways.

[1] US Federal Highway Administration (USFHWA) on www.contextsensitivesolutions.org

Landscape Impacts and Visualizations

At public workshops in October 2006 a series of themes was introduced as possible landscape and urban design treatments for the future facility. Each theme was applied to representative areas within each of the practical alternatives through the use of photo-simulations and sketch images as depicted in Exhibits 2.1 to 2.3

Exhibit 2.1 – Ecologically-Sensitive 'Rose City' Theme as Presented at the Public Workshop, October 2006

Exhibit 2.2 – Photo-Simulation from October 2006, 'Carolinian' Theme

Exhibit 2.3 – Photo-Simulation from October 2006, 'Motor City' Theme

The three themes were created in order to gauge interest in different approaches to design. The "Motor City" theme showed an approach to landscape and urban design that, while sensitive to the local history of automotive production, was at the same time focused on contemporary design. The "Rose City" theme showed an approach to design that was highly ornate, higher-maintenance and included design references from the late 19th and early 20th century. Public reaction was strongly in favour of "Carolinian", the theme that reflected the least ornate, most ecologically-sensitive, and maintenance-conscious design, but that remained contemporary in its approach.

From these workshops, it was clear that landscape, environmental and urban design for the proposed facility should respect local natural heritage, focus on connections between human and natural communities and should consider maintenance of large open spaces as part of the design.

In August 2007 a PIOH was held that included high-resolution photo-simulations, such as depicted in Figure 2.4

Exhibit 2.4 – Images from August 2007 PIOH – Tunnels Crossing Over The Windsor-Essex Parkway

Moving Forward with Landscape Solutions

Following the selection of the Windsor Essex Parkway as part of the preferred alternative, consultation regarding landscape and urban design solutions turned towards the establishment of the urban design and landscape plan guidelines outlined in this report.

In July 2008 a draft landscape plan was discussed at public workshops. It was clear from the workshops that stakeholders remained focused on ecological principles and a green facility. Additionally, it was clear that the open spaces associated with the proposed facility should be focused primarily on providing

passive rather than active recreation functions and that the most ecologically sensitive solutions should be pursued.

Future CSS Process

Future design phases should include a CSS-based consultation process to establish appropriate site-specific landscape treatments.

3. Urban Design

As a major international gateway, the Recommended Plan will be a landmark and a cultural symbol. As such, the aesthetic impact of the facility and its integration into the landscape will be the subject of a more detailed Urban Design and Landscape Plan during future stages of design. This plan will build upon the the concepts and principles established at this stage. The Urban Design Plan will address the visual aspects of the form, finish and materials used in the landscape and open spaces as well as in proposed structures (e.g. bridges, abutments, retaining walls, noise attenuation and safety barriers). It will also be closely coordinated with the future Landscape Design Plan. The Urban Design Plan should be developed as part of a consultation process with local stakeholders. The planning process will also seek opportunities to establish partnerships with first nations, federal, provincial and local stakeholders to provide for the curation and funding of public art associated with potential gateway features.

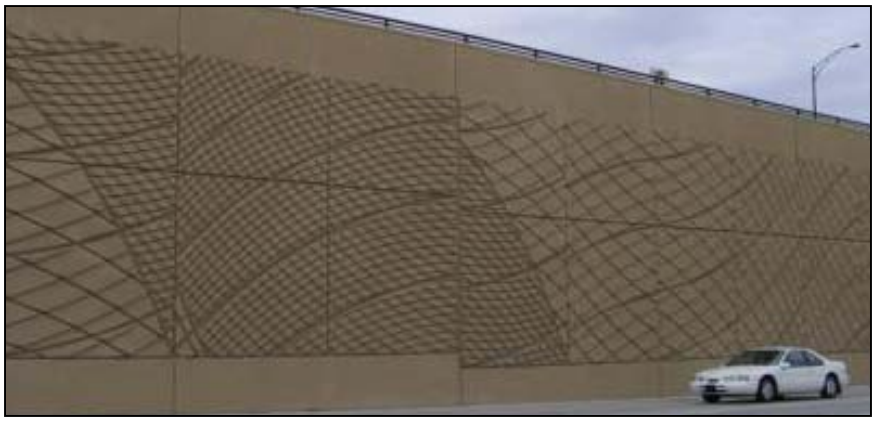
Examples

Examples of urban design plans and the integration of public art and aesthetic considerations into highway gateways can be found internationally. The EastLink Freeway in Melbourne, Australia is illustrated in Exhibit 3.1. This is a recently constructed highway that included tunnels, an ecologically sustainable landscape, 35 km of multi-use pathways and integrated urban design. The EastLink Freeway included an urban design plan with material themes including geological references incorporated into the design of its noise barrier walls, retaining walls and bridge abutments. Additionally, artists were commissioned to provide art pieces that function as gateway features and waymarkers on the highway.

The retaining walls at the Kellogg/Woodlawn Interchange in Kansas (refer to Exhibit 3.2) are an excellent example of theming and the use of natural motifs for aesthetic effect. The walls used standard highway construction materials in developingf a coordinated and themed geometrical pattern in the design of precast panels creating a strong aesthetic impact. Local agricultural fields and oak leaves inspired the themed design, and achieved an appropriately-scaled effect without including literal “pictures” of natural themes. The design is sensitive to changes in sun location and wall aspect and will change as shadows are cast at different angles. 3.2 km of walls were installed by the Kansas State Highway Administration.

Exhibit 3.1 – EastLink Freeway Traveling Through the Eastern and Southeastern Suburbs of Melbourne. Retaining walls (top), Multiuse Path (centre)

Exhibit 3.2 – Retaining wall at Kellogg/Woodlawn Interchange in Wichita, Kansas



3.1 Integrated and Coordinated Design

A successful Urban Design and Landscape Plan will require integrated design with all engineering (e.g. geotechnical, drainage and hydrology, electrical, structural and civil) aspects of the project throughout the entire design and construction process. The mechanisms for this coordinated and multi-disciplinary design approach must be established early in future design stages and be clearly defined along with an integrated and coordinated CSS process.

3.2 Urban Design Review

The CSS process will provide community input and review for the aesthetic design of the Recommended Plan. In addition, consideration should be given to curation of art which may be included in the gateway features either in a partnership with Arts Councils or by a public art consultant.

3.3 Aesthetic Design Principles

The Landscape Plan will form part of the Urban Design and Landscape Plan and will be composed of two parts: the elaboration of a theme or motif to be applied to the Recommended Plan; and a plan for incorporating public art in The Windsor-Essex Parkway corridor. The central principles of the Landscape Design Plan are unity of aesthetic experience and the creation of a gateway. The Landscape Plan will refer to the MTO Aesthetic Guidelines for Bridges[2] and will need to consider coordination with bridge and plaza designs to ensure a unified experience from one end of the proposed facility to the other. The landscape plan will consider the experience of the proposed facility from the point of view of:

- drivers on The Windsor-Essex Parkway,
- pedestrians utilizing the open spaces within The Windsor-Essex Parkway; and
- people viewing the Recommended Plan from adjacent residences, parks, streets, or businesses

The theme or motif will consider a palette of colours, forms and materials that may be used in the design of structural elements and in landscape design. The following elements will be subject to the aesthetic design plan:

- Barriers (including sound barriers, safety barriers, fencing)
- Retaining walls
- Tunnel abutments, parapets and columns
- Bridges and overpass structures
- Pedestrian and service road lighting
- Multi-use Trail crossing structures
- Landscaping

2 Aesthetic Guidelines for Bridges, Ontario Ministry of Transportation, Queen's Printer for Ontario, 2004.

- pedestrian signage and facilities.

Natural Theme/Motif

During the EA process, a theme or motif focussed on local natural heritage was expressed as a preference by many stakeholders. The development of a theme should go beyond the application of a literal image of a natural object (e.g. a tree or prairie grass or local bird) to the surface of engineered structures. Rather, inspiration can be drawn from the forms, textures and colours found in local natural areas to create a less literal, more suggestive or evocative palette of forms. Exhibits 3.1 and 3.2 shows how this has been done on the EastLink Freeway in Melbourne, Australia and at the Kellogg/Woodlawn Interchange in Wichita, Kansas.

3.4 Urban Design Principles

The Urban Design Plan forms part of the Urban Design and Landscape Plan and will address the organization of elements in the pedestrian realm and how these elements perform to create a safe, comfortable, aesthetic pedestrian experience. The Urban Design will also address the aesthetic design of elements of the municipal roads where they intersect with The Windsor-Essex Parkway.

The central principles of the Urban Design are connection and integration. The Urban Design will delineate strategies for connecting communities along and across the Windsor Essex Parkway. In consultation with municipal stakeholders and the public it will also outline methods to consider for integrating the proposed facility with the urban design, parks and recreation plans for the three adjacent municipalities.

Below is a list of the types of elements that will be subject to the Urban Design. These elements will be designed to fulfill the functions and meet the standards outlined in their associated technical reports, however the following principles govern their urban design performance. The following principles should form the basis of the Urban Design.

Service Road

The service road portion of The Windsor-Essex Parkway is the means of connecting the freeway to the surrounding municipalities, and also serves to provide efficient movement of local traffic.

The service road design should consider integrating applicable principles in the Huron Church Road Urban Design Master Plan and Development Guidelines as well as other applicable municipal urban design guidelines. The service road should be experienced as part of the three municipalities rather than as part of the proposed freeway, with its own character that highlights the natural heritage focus of the proposed facility.

In order to create a green, natural, parkway character for the service road, the following design elements should be considered:

- Unique street lighting and light standards at pedestrian and municipal road scales to create a unified character for the service road.
- Lay-bys and transit stops that will permit the service roads integration into

municipal transit systems.

Municipal Streets

Where municipal streets cross The Windsor-Essex Parkway, they will blend to the cross-sections immediately adjacent to the proposed facility. Additional pedestrian and cycling facilities (sidewalk and multi-use path) may be required to facilitate safe non-vehicular movement along municipal streets where they cross new intersections.,

Multi-Use Pathways and Sidewalks

The Windsor-Essex Parkway will include 20 kilometres of multi-use trails that will run from the Howard Avenue Diversion to Malden Road connecting communities on either side of The Windsor-Essex Parkway. This trail system will be designed in close consultation with traffic and highway engineers.

The proposed multi-use trail system associated with The Windsor-Essex Parkway will not only allow pedestrians, cyclists and rollerbladers to travel from end-to-end without encountering a motor vehicle, it will also connect communities to each other along and across The Windsor-Essex Parkway.

The vision for the trail system is to provide:

- a trail that can be used as a neighbourhood amenity for strolling, exploration and exercise;
- a trail that can be used as a viable active (non-motorized) transportation corridor through Windsor, Tecumseh and Lasalle;.
- a trail that connects communities to each other across The Windsor-Essex Parkway, providing safe routes to school, neighbours, parks, local businesses and community facilities.

The system of multi-use pathways within The Windsor-Essex Parkway is part of an active transportation network for the region and will be integrated into existing and planned cycling and active transportation networks. The multi-use pathway system will be designed with regard to the City of Windsor's Bicycle Use Master Plan, and will connect to existing and planned cycling facilities.

Size and Construction

The multi-use path will be designed according to appropriate standards in consultation with all relevant stakeholders.

Reducing user conflict

For most of the proposed facility, the multi-use pathway will act as both a walkway for pedestrians and a path for cyclists. For this reason, consideration in design must be given to interactions and conflicts between different uses on the paths (e.g. rollerbladers, cyclists, pedestrians traveling at different speeds). In areas where high levels of pedestrian activity are anticipated (e.g. near schools, malls, St. Clair College, etc.), additional pedestrian facilities or additional pathway width may be integrated to separate pedestrians from higher-speed path users.

At-grade multi-use pathway crossings

The multi-use pathway system will cross existing municipal roads and the service road in two ways: via at-grade road intersections, and via grade-separated structures. Although it will be possible for trail users to move continuously along the trail network without encountering a motor vehicle, there will be at-grade intersection crossings at various locations to provide access into the existing communities.

Where the multi-use path crosses or meets vehicular traffic at grade, safe, state-of-the art intersection design based on Geometric Design Standards for Ontario Highways, Ontario Bikeways Planning and Design Guidelines and the Bikeway Traffic Control Guidelines for Canada (revised edition forthcoming in 2009) published by the Transportation Association of Canada.

Grade-separated multi-use pathway crossings

Grade-separated crossings must not be seen as an obstacle but as an aid - pedestrians and cyclists must want to use these structures. Crossing structures should be easily negotiated by all users (maximum 5% approach slopes) and should be designed to allow visibility of approaching cyclists and pedestrians and sufficient width to allow passing.

Structures should be designed as a set, integrated into the aesthetic theme, and should take advantages of site-specific conditions to provide variations in form, colour and texture.

Consideration in design should be given to these bridges as wayfinding markers for pedestrian and cyclist traffic and drivers on the proposed service road.

Multi-use pathway amenities

A limited number of resting and meeting areas should be considered for the open spaces within The Windsor-Essex Parkway. These areas may include landscape amenities that will function as:

- Meeting places
- Rest for pedestrians and cyclists
- Safety and Emergency access

Other amenities to consider include signage, shelter, washrooms, benches, fountains, emergency telephones, etc. Small parking areas will be considered at trailhead locations of the multi-use trail.

Barriers

The Windsor-Essex Parkway is a unique facility because many parts of the proposed facility will be accessible by pedestrians. Areas such as the decks of landscaped tunnels and the open spaces above the top of the embankment of the freeway portion will be freely accessible to pedestrians. Areas below the top of the embankment of the proposed freeway will not be accessible to pedestrians. Barriers within the proposed facility will perform three main functions:

- To restrict pedestrians from accessing unsafe areas and clearly delineate

pedestrian-accessible areas from those areas that are not pedestrian-accessible (safety barriers).

- To protect the privacy of adjacent residences (privacy barriers).
- To attenuate noise generated by vehicles traveling in the proposed freeway (noise barriers).

Wherever possible, these functions will be combined in order to reduce the frequency, length and size of barriers within the proposed facility. Reducing the visual impact of barriers within the proposed facility is a key design principle and an important means of integrating the open spaces into the adjacent municipalities.

The design of each of these types of barriers should follow the principles of the Urban Design and Landscape Plan. The aesthetic and urban designers will require close coordination with the barrier designers (civil, structural and noise engineers) to ensure effective and aesthetic barriers are developed.

Additionally:

- Where possible, noise barriers will be placed at the top of the proposed freeway embankment slope, providing both a noise and safety barrier function.
- Noise barriers will be placed on the proposed facility property line only where noise attenuation design requires this location.
- Residential lots backing onto the proposed facility could incorporate a barrier at the property line to control access and to delineate private space from public space. Where possible this barrier will be composed of a privacy barrier and landscape screening.
- Barriers will be placed as far as possible from residential lots directly facing the proposed facility.
- Landscape screening will be used as a visual barrier between residential lots facing the proposed facility and any noise or safety barriers that are visible from the residential lots.
- Barriers in the Recommended Plan will be placed to avoid the creation of inaccessible spaces.

International Plaza and Detroit River Crossing

The Plaza and Crossing components of the Recommended Plan will have differing design parameters as compared to The Windsor-Essex Parkway due to their fundamentally different construction and security constraints. Nevertheless, they will be experienced as part of the proposed facility and should be incorporated into the Landscape Plan for the Recommended Plan. Coordination of finishes and forms can be achieved in the design of the Crossing, Plaza and The Windsor-Essex Parkway portions of the Recommended Plan. This will be achieved with close coordination with the building and site designers for the Plaza and Crossing.

In designing the Plaza and Crossing, security issues and issues of access will be paramount, and, like The Windsor-Essex Parkway, a clear delineation of pedestrian-accessible areas will be made using certain types of barriers.

Following are some general guidelines to be used when designing for security around the Plaza:

Design Parameters: Outside Plaza

- clear demarcation of perimeter with fence
- 3m clear zone outside fences
- controlled entrances
- no hiding places
- do not obstruct surveillance
- plaza not visible from outside

Within security parameters set out by various agencies including the Canadian Border Services Agency, the following are some guidelines for urban design:

Design Features: Inside Plaza

- High canopy trees can be planted to create shade and enhance air quality while maintaining visibility and creating a savannah atmosphere where possible.
- Consider the application of Green Building standards such as LEED in the construction of new buildings and site technologies.
- Use directed lighting to illuminate the Plaza.

Design Features: Perimeter

- The location of perimeter fence can vary in relation to the property line to limit public access to security areas while creating linkages and contiguous green areas as well as new natural edge protection to adjacent areas.
- Clearly delineate public areas from security areas with barriers that are coordinated with barriers used in other parts of the proposed facility.
- Consider providing public, pedestrian access to shoreline or bridge footing areas with landscaping and paths.

4. Landscape Design Plan

The central principles of the Landscape Design Plan are integration with local parks and natural heritage systems and the creation of a green corridor that supports viable natural communities, links existing natural areas and buffers surrounding communities from the roadway.

Vegetation

In order to achieve the goal of creating viable natural communities, future detailed Landscape Plans should follow recommendations for landscaping and mitigation from this report and outlined in the *Natural Heritage Impact Assessment, December 2008* (the "Natural Heritage Report"). The Landscape

Plan will include detailed prescriptions for vegetation management including: edge management plans, soil management plans, use of native and non-invasive plant materials, prairie disturbance regimes, control of exotic and invasive species and management of species at risk.

Vegetation within the proposed facility will perform a variety of mitigation functions, depending on its location and adjacencies. Vegetation functions include:

- screening;
- ecological restoration, enhancement and protection;
- wildlife habitat and linkage;
- aesthetics;
- erosion protection.

To the extent possible, vegetation planted as part of the proposed facility should be grown locally, within guidelines established in the Natural Heritage Report. Plant material sources should be identified and confirmed sufficiently in advance of planting to provide the project with the quantities of plants of the size and age required by the Landscape Plan. All species planted should be native to Southern Ontario or be non-invasive and non-hybridizing. Seeds for species at risk propagated and planted as part of the proposed facility could be collected within the study area.

Maintenance Plan

An on-going landscape maintenance plan should be developed as part of the detailed Landscape Plan. The Landscape Plan will include maintenance for ecological integrity as well as for aesthetics and safety. The plan will be developed in close collaboration with a Natural Heritage specialist. .

Landforming and Berms

The Landscape Plan will be created in close collaboration with engineering consultants responsible for the grading design and earth materials strategy for the proposed facility. A sensitive detailed grading plan that is developed in an integrated design process can mitigate landscape and visual impacts by creating ecological habitat, aesthetic interest; gateway features; providing visual and noise screening; and aiding with sediment and erosion control.

Locations for detailed grading will be identified as required to fulfill these functions. Detailed grading can help utilize the fill generated from excavation for the Windsor-Essex Parkway.

Experience and Character

Landscape and green open spaces will define the character and experience of the Recommended Plan. Within the parameters set out by ecological design constraints, landscapes will be designed to create aesthetically pleasing open spaces that allow for a variety of experiences and environments. The experience of drivers on the freeway and service road portions of the proposed facility will be

considered and patterns, colours, rhythm and form in the landscape will be designed to create an overall effect that is coordinated with the Urban Design.

Landscape Types

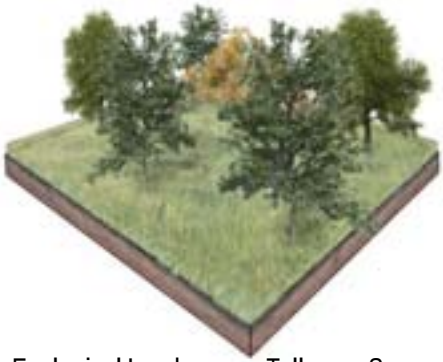
The Landscape Plan depicted in Appendix 1 shows the location of different Landscape Types discussed below. Each of these landscape types employs a different combination of landscape elements such as detailed grading, vegetation, multi-use trails and landscape site amenities to create site-appropriate mitigation measures. Each of these types performs a different set of functions within the Recommended Plan, however all the landscape types will adhere to the central principles of integration and creating viable natural communities.

Exhibit 4.1 Illustrations of Landscape Types

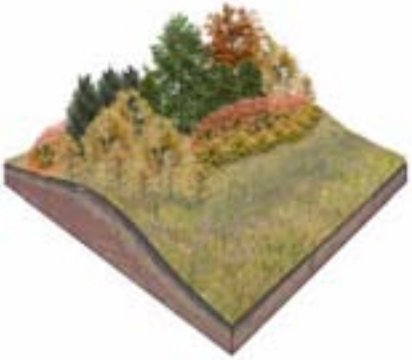
4.1

Ecological Landscape– Tallgrass Prairie

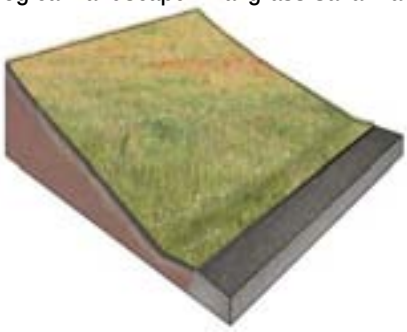
Stormwater Management Landscape



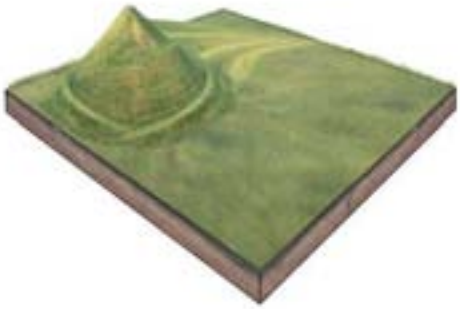
Ecological Landscape – Tallgrass Savannah



Screening Landscape



Roadside Landscape



Gateway Landscape

Ecological Landscapes

Ecological Landscapes are the predominant landscape type within the Recommended Plan. Ecological landscapes will provide natural open spaces that knit the proposed facility into the natural landscape of the city and will provide a setting for a multi-use trail system.

The ecological landscapes shown in the Landscape Plan perform three main functions: to protect existing natural remnants, to enhance the ecological function and complexity of existing habitats; and to establish new habitat to extend and connect habitat within and around the proposed facility.

Safety along paths is important, especially in large naturalized areas away from busy streets and activity. Emergency telephones, and lighting may be considered in some areas.

Size

The size and shape of ecological landscape areas will influence the approach to planning vegetation establishment and maintenance regimes. Characteristics of the ecological landscape area such as adjacent conditions, connectivity, edge to interior condition ratio, length and width will determine the potential ecological function of the area. Species selection, planting methods, soil amendments and invasive species management techniques will vary depending on the planned ecological function. Long, narrow areas are likely to include more edge species in their planting design and to function as corridors whereas larger areas may be planned to function as patches with a higher proportion of interior species in their centres.

Vegetation

Restoration techniques including seedbank preservation, sod transplantation, small stock planting, and soil preparation will be used.

Invasive species management, including removal and spread prevention, will be a central feature of the landscape plan and of establishing ecological landscapes. Common invasive plant species identified in the Natural Heritage Report have become a major concern and their management is central to the successful implementation of the landscape plan.

Only native species should be planted within the ecological landscape areas.

Plant lists will be developed based on species and community associations present in adjacent natural remnant areas as described in the Natural Heritage Report.

Target ecological community types will be identified based on adjacent natural remnants as well as proposed conditions such as slope, aspect and drainage regime.

Conifers should not be planted as part of the ecological landscape areas unless they are associated with the target ecological community of a given area.

Fisheries Compensation and Fish Habitat

As recommended in the Natural Heritage Report, Fish Habitat will be created as part of the Ecological landscape identified in the Landscape Plan. Plant types suitable for the habitat being created will be used in these areas.

Topography and Soils

Berms will be built to create visual and noise barriers where required and appropriate to the proposed ecology of the site.

Paths

The multiuse pathway will not be placed in sensitive ecological retention and restoration areas to avoid potential damage. In carefully selected locations the pathway could be used as a nature trail and educational experience

Amenities and built elements

- benches
- trail lighting [in some areas]
- fences and railings will limit direct access to sensitive areas

4.2 Stormwater Management Landscapes

Stormwater Management Landscapes combine stormwater management with landscape amenity and recreation and are located in areas where stormwater management ponds are planned for technical design. Stormwater management landscapes are designed specifically for treatment of stormwater and are not connected to ecological features but will include plantings to enhance aesthetics. Design of these landscapes will need to take into account the avoidance of invasive plant species and the potential for creation of mosquito breeding habitat.

Vegetation

Vegetation should consist of native species of aquatic, shoreline and upland herbaceous plants, shrubs and trees established through a mixture of seeding, planting and managed natural succession. Restoration techniques including seedbank preservation, sod transplantation, small stock planting, and soil preparation will be considered.

Specific species planted will be determined based on adjacent natural area ecology, size of stormwater management area, and stormwater management requirements.

Size

The size and shape of the stormwater management ponds should be determined in coordination with the landscape architect.

Topography and Soils

Detailed grading will be established where appropriate to the ecology of the site.

Paths

Where it is an aesthetic benefit and where safety is not a concern, the main multi-use trail may run adjacent to stormwater management ponds or become a boardwalk over or adjacent to shallow water.

Pedestrian access to the stormwater management ponds must be controlled carefully to maintain safety standards.

Amenities and built elements

The following site amenities may be considered for inclusion in some stormwater management landscape areas:

- benches
- trail lighting
- fences and railings will limit direct access to open water for safety and security

4.3 Screening Landscapes

Screening Landscapes create a visual barrier between residences and road infrastructure. The screening landscape is a combination of one or more screening methods (barrier, vegetation, and berming), depending on the site characteristics and safety and engineering requirements.

Screening landscapes can be used adjacent to rear-yard property lines, adjacent to noise barriers, and sometimes associated with berms and embankments.

Size

The screening landscape will generally be a minimum of 5 metres depth in order to maintain its function as a visual screen and an aesthetic amenity. The length varies depending on screening requirements.

Vegetation

Vegetation in the screening landscape will consist of a variety of plants with the following characteristics:

- densely growing flowering and fruiting shrubs native to southern Ontario
- vibrant fall colour
- Evergreen shrubs and large trees for year-round screening
- vines on some sound barriers

For fast establishment, larger caliper and height plant material may be used in the screening landscape. This will differ from vegetation establishment techniques used in ecological landscape areas.

Topography and Soils

Where possible, berms will provide aesthetic interest and visual and noise screening.

Paths

In some cases, pedestrian/multiuse paths or sidewalks will be incorporated at the edge of the landscape screen

Amenities and built elements

Benches may be included in areas adjacent to sidewalks or pedestrian walkways.

4.4 Roadside Landscapes

Roadside Landscapes are located on the embankments of the freeway portion of The Windsor-Essex Parkway as well as between ramps and access roads and other areas inaccessible to pedestrians. This landscape type includes geometrically strong plantings, mowing patterns and structural elements that provide a green, aesthetic driving experience for users of the freeway portion of The Windsor-Essex Parkway. The roadside landscape must tolerate very low maintenance while remaining attractive and functional

Size

The roadside landscape will generally occur immediately adjacent to the freeway portion of The Windsor-Essex Parkway, however the size will vary depending on the length of the slopes and distance to the top of the embankment.

Vegetation

There are significant constraints on the types of species that may be selected for establishment in roadside landscape areas. Species used in close proximity to the road will be tolerant of road salt spray, drought and exposure. Seed mixes used in this area will be designed in conjunction with MTO standards and Natural Heritage Consultant in order to include native tallgrass prairie species. Mowing patterns and other maintenance measures and ecological disturbance regimes may be aesthetically designed to create variation in scale and texture.

Topography and Soils

Roadside landscapes will be established on the engineered embankment slopes of the freeway portion of the Windsor-Essex Parkway. Detailed grading may be established for aesthetic and ecological reasons where space and engineering constraints permit. Soil composition and invasive species management techniques for supporting native tallgrass prairie species will be determined in conjunction with the Natural Heritage Consultant.

Amenities and built elements

The following built elements may occur in some roadside landscape areas:

- highway signage
- abutments and retaining walls
- natural stone may be used in combination with vegetation in some locations

4.5 Gateway Landscapes

Gateway Landscapes function to provide an aesthetic, sculptural and memorable gateway to Windsor. There is the opportunity to integrate a gateway feature into the highway design and, by creating monumental landforms, may help utilize some of the fill generated by highway construction.

The Gateway landscapes are located at the two interchanges at either end of The Windsor-Essex Parkway which provide sufficient space and restricted pedestrian access. These locations also provide good visibility and opportunities for appropriate placement of gateway features near the plaza and as vehicles enter/leave.

The Gateway landscapes are also potential locations for integrating public art into the proposed facility.

Size

Gateway landscapes will be in interchange areas, with each discrete area encompassing up to 2.3 ha.

Vegetation

The vegetation in gateway landscape areas will be similar to the roadside landscape vegetation, but may include some aesthetic planting depending on design.

Topography and Soils

The topography of the gateway landscape areas will be the most extreme of all the landscape types, and will be sculpturally designed. Mounds and berms up to 20 metres high with 3:1 or steeper slopes may be included.

4.6 Multi-Use Path

The Multi-Use Path travels through the various landscape types and allows pedestrians and cyclists to experience the landscape of the proposed facility Construction materials and alignments of the Multi-use trail will vary depending on site and landscape type.

The multi-use path will allow users to travel from one end of the parkway to the other without ever encountering a car using a series of grade-separated crossings.

Size

The multi-use pathway will be a minimum of 4.0 metres wide and will include ±20 km of pathways within the Recommended Play.

Vegetation

Trees and shrubs will be planted at least 1.5 metres away from the edge of the path and will be varied to provide interest and aesthetic variation along the route.

Topography and Soils

For accessibility and feasibility of use, the trail system should not exceed grades of 5%. Gentle berming and horizontal curves can create interest and variety for users.

Amenities and built elements

The following site amenities may be considered for inclusion along the Multi-Use Path:

- benches
- trail lighting [in some areas]
- emergency telephones

5. Applications of Landscape Types and Urban Design Principles

The goals in creating the Landscape Plan were to create connections between streets and neighbourhoods; to create a pedestrian- and cyclist-friendly public realm; and to create an aesthetically pleasing environment for drivers, pedestrians and cyclists. The Landscape Plan represents the application to the proposed facility of a set of principles (outlined in the above sections). In coordination with the noise mitigation and natural heritage information, specific areas were addressed to the extent possible. In the following section we take a 'closer look' at how several typical conditions adjacent to the Recommended Plan are addressed.

Back Yards Facing The Windsor-Essex Parkway

Portions of occupied land adjacent to the Recommended Plan will be residential, with the rear of the lot sharing a property line with the new facility. One of the central questions during the CSS process was 'what will it look like from my back yard?' Three typical conditions where a residential lot backs onto the new facility are illustrated in Appendix 2:

- Back yard Facing a Landscaped Tunnel
- Back Yard Facing The Windsor-Essex Parkway with a vegetated berm as a noise barrier and no service road
- Back Yard facing The Windsor-Essex Parkway with a noise wall at the top of the freeway embankment.

Appendix 2 also shows how the Urban Design Principles outlined in section 4 can be applied in order to:

- clearly delineate between private and public land as well as between areas accessible to pedestrian and those that are not;
- screen residential areas from public land (multi-use trail, green space and service road);

- screen residential areas from noise created by roadway; and
- create viable ecological communities between private property and road infrastructure.

Front Yards Facing The Windsor-Essex Parkway

In cases where existing residences will be directly facing The Windsor-Essex Parkway with no other residences between them, a public street will form the border between residences and The Windsor-Essex Parkway. This situation is significantly different than in the 'Back Yard' situation, since existing residences *already front onto a street*. In this situation the goals will be to:

- integrate existing streets into The Windsor-Essex Parkway landscape;
- create connections across The Windsor-Essex Parkway; and
- screen residential areas from noise created by roadway.

Appendix 2 shows three typical conditions where residences will front onto The Windsor-Essex Parkway:

- Front Yard facing landscaped tunnel;
- Front Yard facing Windsor-Essex Parkway with noise wall and service road
- Front Yard facing The Windsor-Essex Parkway with a vegetated berm and a service road

In these situations, there is an opportunity to create connections between neighbourhoods that are adjacent to the proposed facility and to integrate the proposed facility into the adjacent urban fabric.

Other Land Use Types Adjacent to The Windsor-Essex Parkway

In addition to residential adjacencies, other types of land uses will be adjacent to the proposed facility at completion. Following are some of the principles that will be considered in the urban and landscape design of areas adjacent to these uses:

Institutional Land Use Facing The Windsor-Essex Parkway (St. Clair College)

Principles:

- integrate St. Clair College lands into The Windsor-Essex Parkway landscape
- create connections across The Windsor-Essex Parkway and to the multi-use trail

Schools Near The Windsor-Essex Parkway

Principles:

- create safe, active routes to school across and along The Windsor-Essex Parkway

The Windsor-Essex Parkway connects schools and neighbourhoods by:

- providing sidewalks and multi-use trails between schools and neighbourhoods;
- providing safe intersections and signalization at major crossings;
- providing new green space for recreation and education near schools.

Industrial Land Use Facing the Plaza

Principles:

- provide a secure environment within the Plaza;
- screen Plaza activities from outside views;
- Buffer plaza and visitors to Canada from adjacent industrial activities by providing landforming and vegetative screening.

Commercial Land Use Facing The Windsor-Essex Parkway (Windsor Crossing)

Principles:

- provide drivers with visual access (views) to retail and commercial opportunities;
- facilitate safe and comfortable pedestrian and cycling access to commercial opportunities.

6. Conclusions

CSS workshops using visualizations, photography, and three-dimensional modelling have helped establish a suitable approach to the urban, landscape and aesthetic design of the Recommended Plan. Mitigation measures to reduce or improve visual and landscape impacts will include:

- the development of clear urban design and aesthetic guidelines to guide all aspects of future design
- the use of landforming and vegetation strategies to improve views, aesthetics, ecological function and screening
- the inclusion of a multi-use trail system and pedestrian-accessible open space within the facility

These mitigation measures will improve the visual character, aesthetic presence and landscape impact of The Windsor-Essex Parkway and thereby help to address the overall goal of improving the quality of life for residents achieved through buffering the communities from the roadway. The result of the landscape and visual impact mitigation will be a landscape that is unified, green, connected, integrated, and functions as a culturally significant gateway.

APPENDIX 1

LANDSCAPE PLAN

December 2008

MCKEE RD (PRIVATE)

OJIBWAY PARKWAY

TO CANADA

CANADIAN PLAZA B1

TO U.S.

W-E PARKWAY

BROADWAY ST

BEECH ST

BROADWAY ST

OJIBWAY PARKWAY

100m 0m 100m 200m

LEGEND

- HIGHWAY AT GRADE
- HIGHWAY ABOVE GRADE
- HIGHWAY BELOW GRADE (LESS THAN 4m)
- HIGHWAY BELOW GRADE (GREATER THAN 4m)
- MUNICIPAL ROAD
- HIGHWAY / MUNICIPAL ROAD GRADE TRANSITION
- FUTURE EXTENSION
- MULTI-USE TRAIL
- MULTI-USE TRAIL STRUCTURE
- PROPOSED STRUCTURE
- PROPOSED TUNNEL
- RETAINING WALL
- EXISTING NOISE WALL
- PROPOSED NOISE WALL
- BERM OR BERM/NOISE WALL COMBINATION
- TRAIL EMBANKMENT PROVIDES NOISE BENEFIT
- AQUATIC HABITAT
- MUNICIPAL BOUNDARIES
- ANSI AREA
- ENVIRONMENTALLY SENSITIVE AREA
- EXISTING PARKS LANDSCAPED AREA
- SCHOOLS
- STORM WATER MANAGEMENT POND
- STORM WATER MANAGEMENT LANDSCAPES
- SCREENING LANDSCAPES
- ROADSIDE LANDSCAPES
- GATEWAY LANDSCAPES
- ECOLOGICAL RESTORATION, PROTECTION & ENHANCEMENT LANDSCAPES

THE WINDSOR-ESSEX Parkway

LANDSCAPE PLAN

DECEMBER 2008

1

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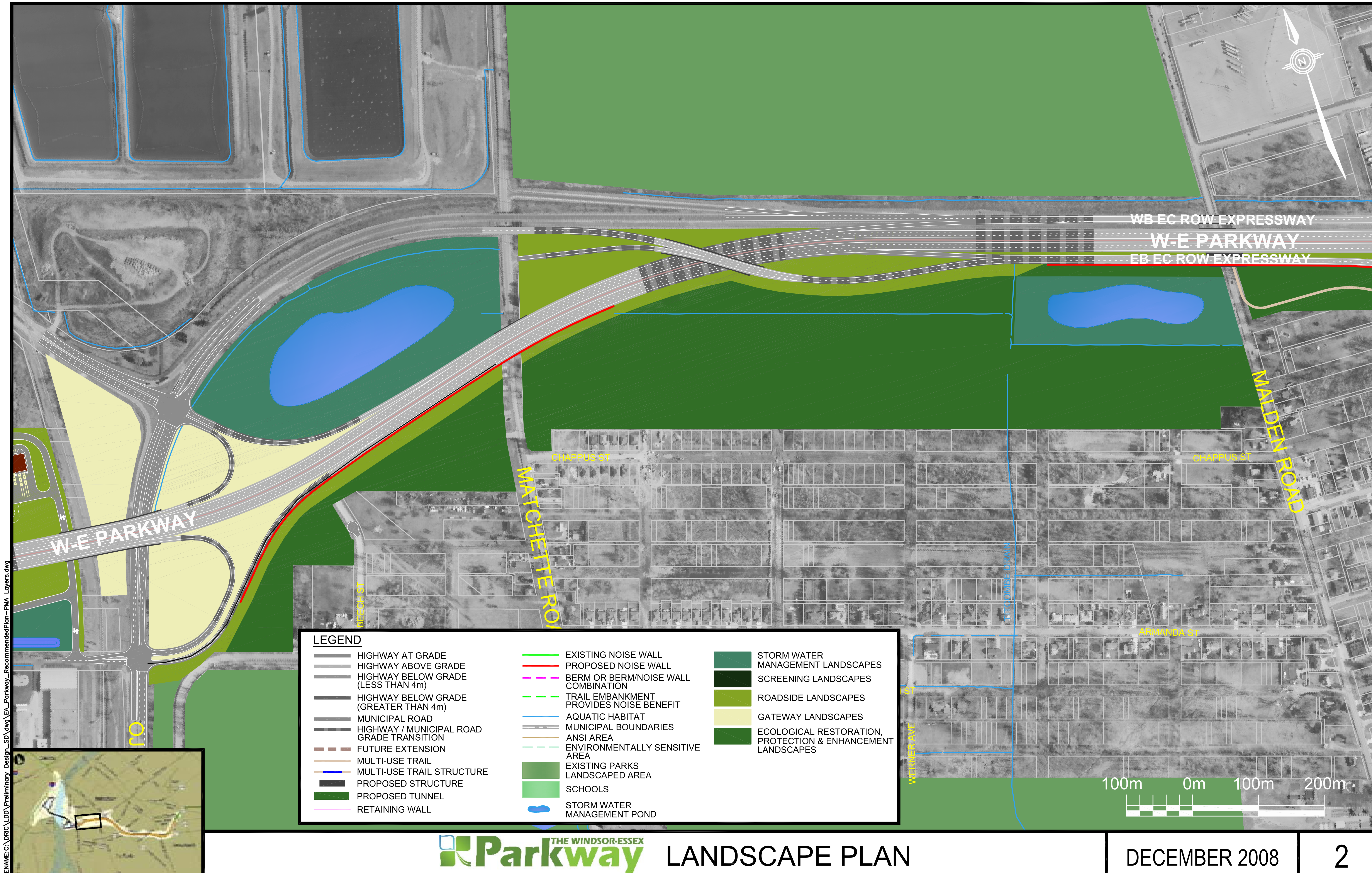

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THE WINDSOR-ESSEX Parkway

LANDSCAPE PLAN

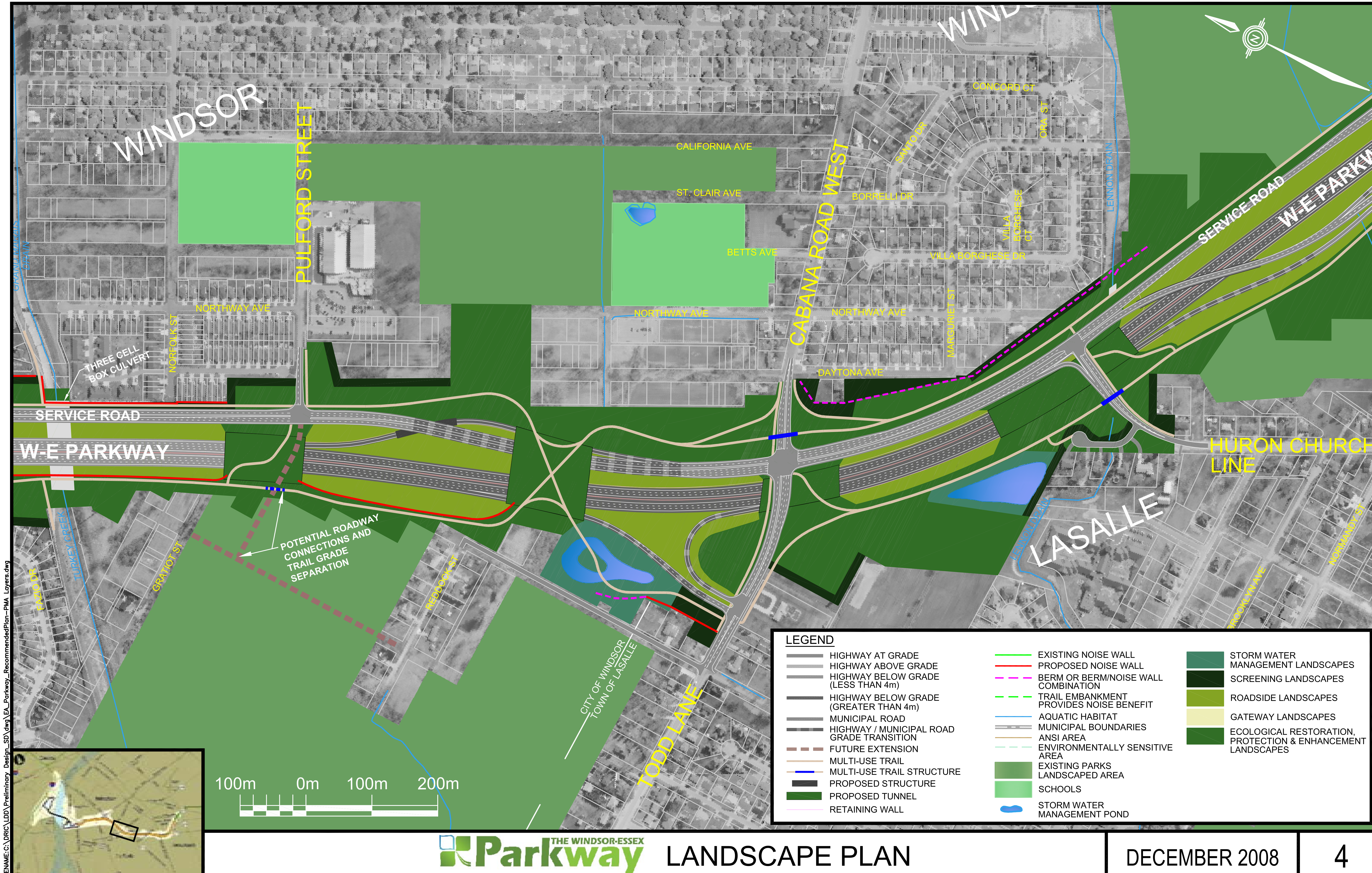
DECEMBER 2008

2

THE WINDSOR-ESSEX Parkway

LANDSCAPE PLAN

DECEMBER 2008


WINDSOR
PULFORD STREET
CALIFORNIA AVE
ST. CLAIR AVE
BETTS AVE
CABANA ROAD WEST
BORRELLI DR
SANTO DR
CONCORD CT
ORA ST
VILLA BORGHESE CT
VILLA BORGHESE DR
LENNON DRAIN
NORTHWAY AVE
MARGURIET ST
DAYTONA AVE
NORFOLK ST
THREE CELL BOX CULVERT
SERVICE ROAD
W-E PARKWAY
HURON CHURCH LINE
LASALLE
TURKEY CREEK
GRATIOT ST
FAZIO DR
REDDOCK ST
POTENTIAL ROADWAY CONNECTIONS AND TRAIL GRADE SEPARATION
CITY OF WINDSOR
TOWN OF LASALLE
TODD LANE
BROOKLYN AVE
NORMANDY ST
100m 0m 100m 200m
LEGEND
HIGHWAY AT GRADE
HIGHWAY ABOVE GRADE
HIGHWAY BELOW GRADE (LESS THAN 4m)
HIGHWAY BELOW GRADE (GREATER THAN 4m)
MUNICIPAL ROAD
HIGHWAY / MUNICIPAL ROAD GRADE TRANSITION
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MULTI-USE TRAIL STRUCTURE
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MUNICIPAL BOUNDARIES
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ENVIRONMENTALLY SENSITIVE AREA
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SCHOOLS
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STORM WATER MANAGEMENT LANDSCAPES
SCREENING LANDSCAPES
ROADSIDE LANDSCAPES
GATEWAY LANDSCAPES
ECOLOGICAL RESTORATION, PROTECTION & ENHANCEMENT LANDSCAPES

THE WINDSOR-ESSEX Parkway

LANDSCAPE PLAN

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WINDSOR
LASALLE
SERVICE ROAD
W-E PARKWAY
SERVICE ROAD
COUSINEAU ROAD
HURON CHURCH LINE
SANDWICH PARKWAY
GERAEDTS DR
REALIGNED CAHILL DRAIN
REALIGNED CAHILL DRAIN
CAHILL DRAIN
LENNON DRAIN
VILLA MARIA BLVD
ST CLAIR ST
VIA ROAD WEST
BORRELLI DR
SANTO DR
CONCORD CT
CINA ST
NORTHWAY AVE
MARGUERIET ST
VILLA BORGHESE DR
VILLA BORGHESE CT
MT SINAI DR
MT CARMEL
MITCHELL CR
MOUNT ROYAL DR
ASHFIELD CRES
COUSINEAU
LOVELL CRES
DISRAELI CRES
D'AMORE DR
HERITAGE DR
BROOKLYN AVE
100m 0m 100m 200m

LEGEND

- HIGHWAY AT GRADE
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THE WINDSOR-ESSEX Parkway

LANDSCAPE PLAN

DECEMBER 2008

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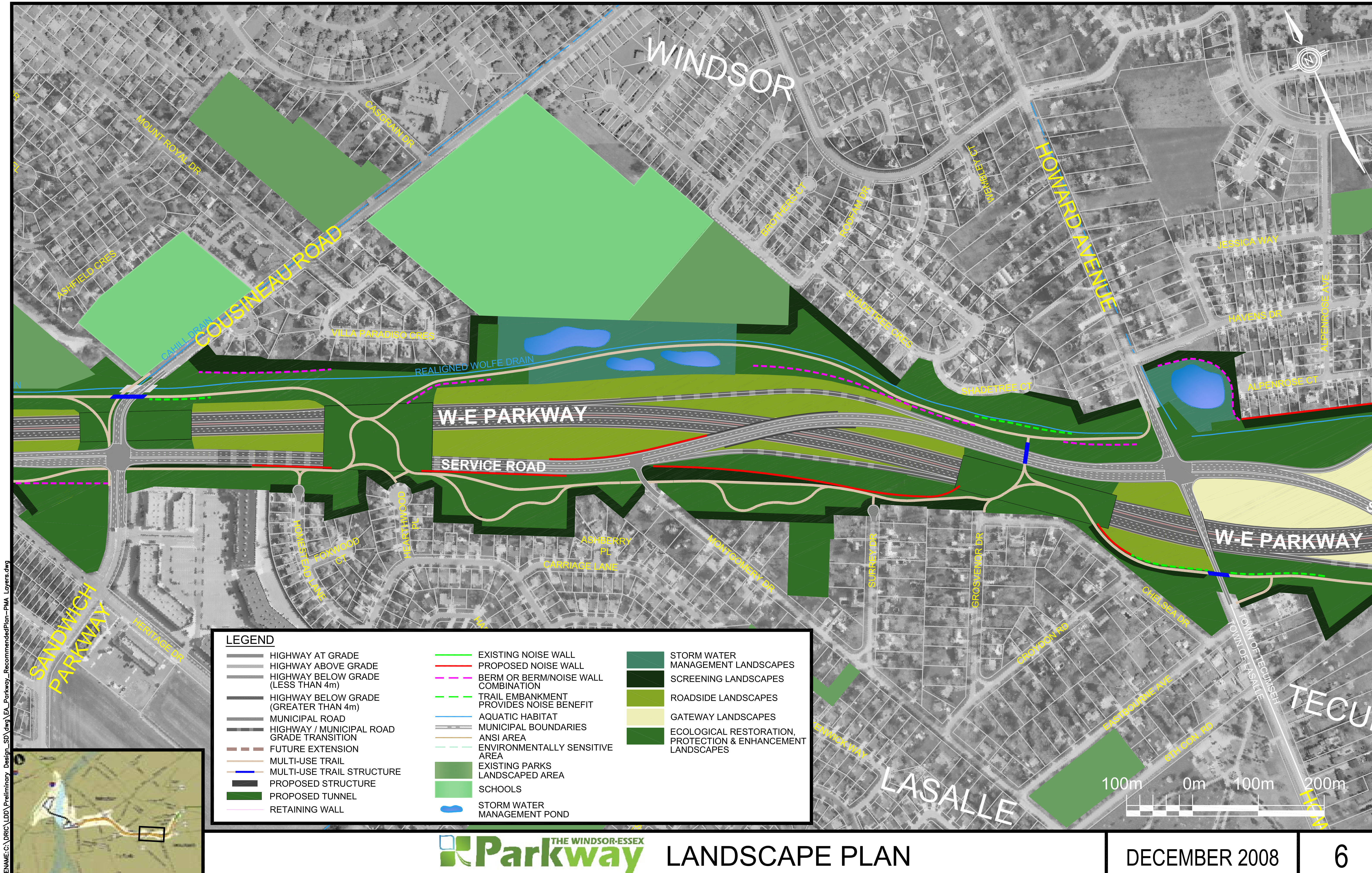
WINDSOR
LASALLE
TECUM
TOWN OF TECUMSEH
TOWN OF LASALLE
W-E PARKWAY
SERVICE ROAD
W-E PARKWAY
COUSINEAU ROAD
HOWARD AVENUE
SANDWICH PARKWAY
REALIGNED WOLFE DRAIN
CAHILL DRAIN
MOUNT ROYAL DR
CASGRAIN DR
ASHFIELD CRES
VILLA PARADISO CRES
BROTHERS CT
RODFAM DR
WEMBLEY CT
JESSICA WAY
HAVENS DR
ALPENROSE AVE
ALPENROSE CT
SHADETREE CRES
SHADETREE CT
HOMESTEAD LANE
FOXWOOD CT
HEARTHWOOD PL
ASHBERRY PL
CARRIAGE LANE
MONTGOMERY DR
SURREY DR
GROSVENOR DR
CHELSEA DR
CROYDON RD
EASTBOURNE AVE
6TH CON. RD
HERITAGE DR
FENWICK WAY
100m 0m 100m 200m
LEGEND
HIGHWAY AT GRADE
HIGHWAY ABOVE GRADE
HIGHWAY BELOW GRADE (LESS THAN 4m)
HIGHWAY BELOW GRADE (GREATER THAN 4m)
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THE WINDSOR-ESSEX Parkway

LANDSCAPE PLAN

DECEMBER 2008

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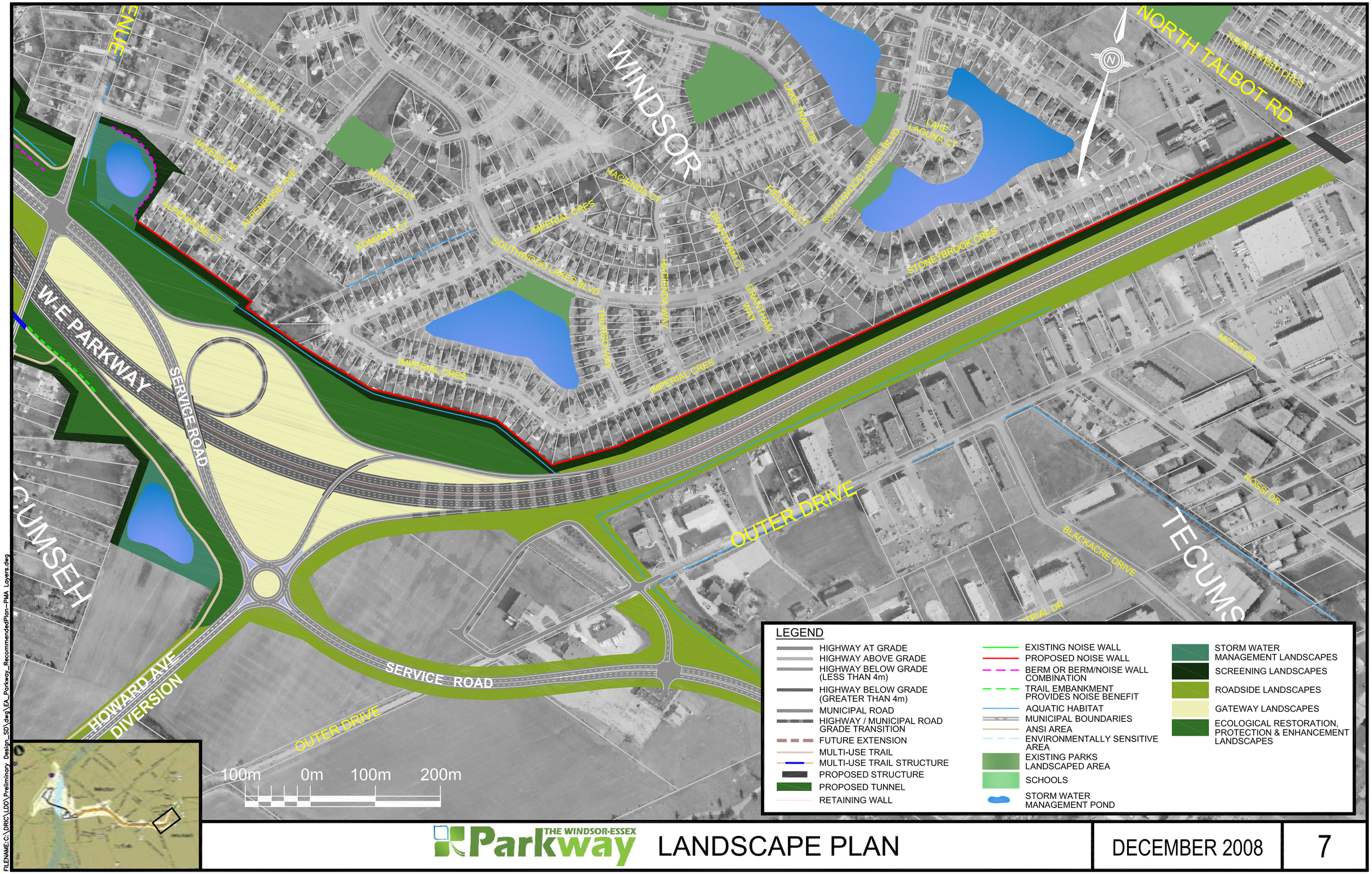

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THE WINDSOR-ESSEX Parkway

LANDSCAPE PLAN

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HOWARD AVENUE

OUTER DRIVE

HIGHWAY 3

W-E PARKWAY

SERVICE ROAD

SERVICE ROAD

SERVICE ROAD

TECUMSEH

LASALLE

HOWARD AVENUE

HOWARD AVE DIVERSION

OUTER DRIVE

POTENTIAL CARPOOL LOT

SOUTH TALBOT ROAD

FUTURE LAURIER PARKWAY

100m 0m 100m 200m

LEGEND

- HIGHWAY AT GRADE
- HIGHWAY ABOVE GRADE
- HIGHWAY BELOW GRADE (LESS THAN 4m)
- HIGHWAY BELOW GRADE (GREATER THAN 4m)
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THE WINDSOR-ESSEX Parkway

LANDSCAPE PLAN

DECEMBER 2008

8

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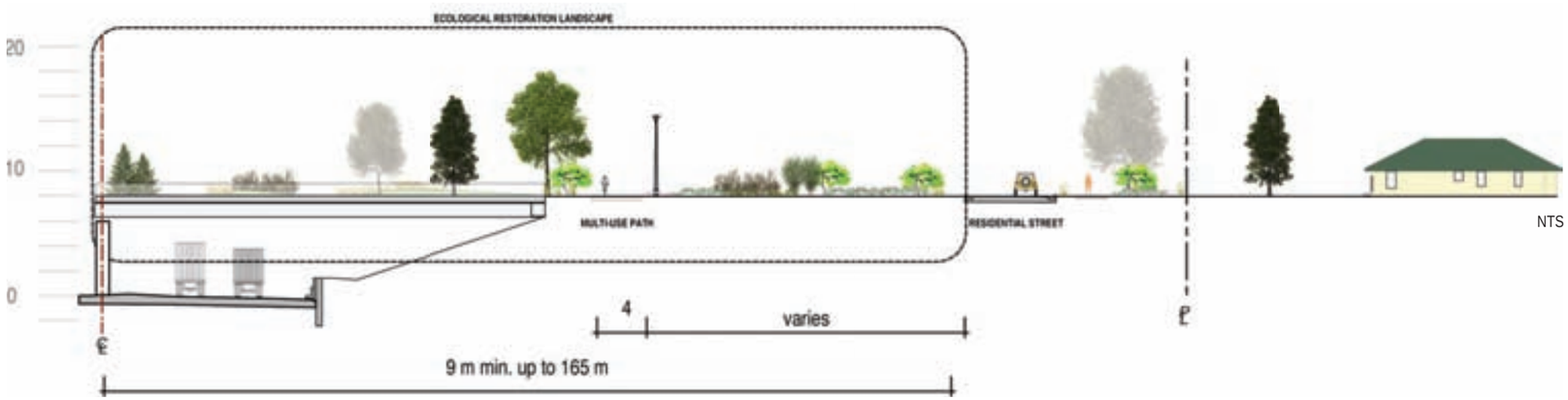
APPENDIX 2

TYPICAL APPLICATIONS OF LANDSCAPE TYPES

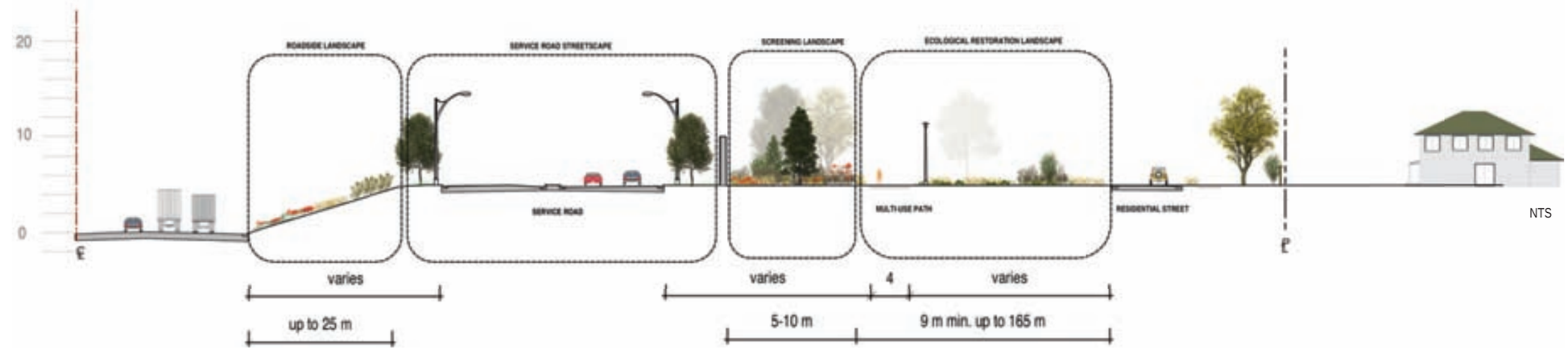
December 2008

Typical Applications of Landscape Types:
Front Yards Facing The Windsor-Essex Parkway

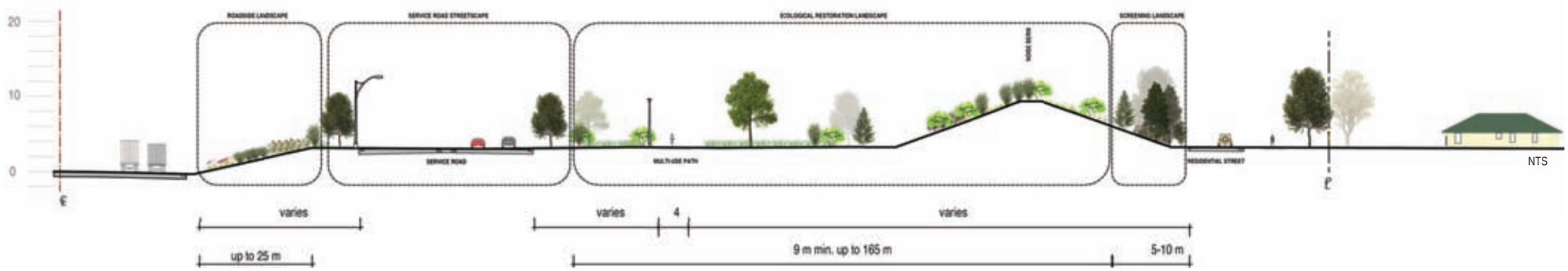
Front yard facing landscaped short tunnel



Front yard facing Windsor-Essex Parkway with noise wall and service road



Front yard facing Windsor-Essex Parkway with vegetated berm and service road



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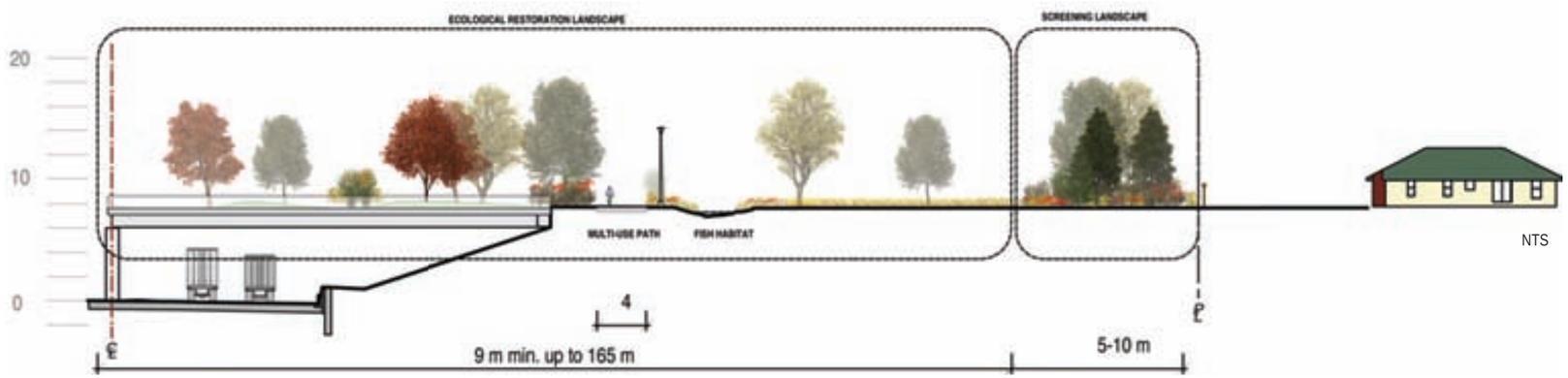
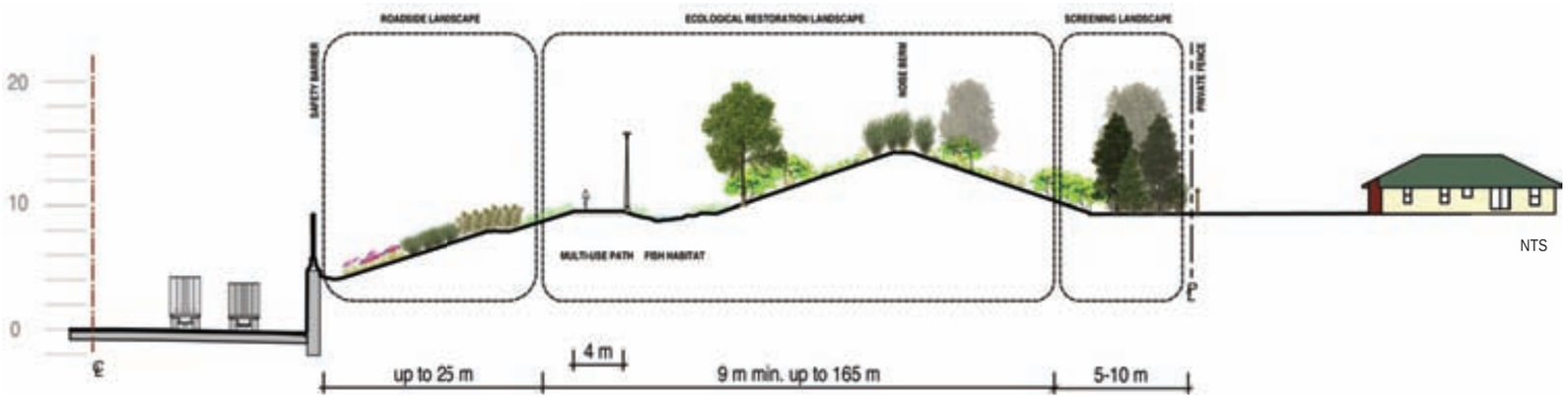
Typical Applications of Landscape Types:
Back Yards Facing The Windsor-Essex Parkway

Back yard facing landscaped short tunnel



NTS

Back yard facing Windsor-Essex Parkway with vegetated berm as noise barrier



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Back yard facing Windsor-Essex Parkway with noise wall at top of embankment and service road

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