A PARKWAY IN A PRAIRIE: THE RT. HON. HERB GRAY PARKWAY

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ABSTRACT
Can a new international trade corridor successfully co-exist with one of the world’s most threatened ecosystems? Through careful design and innovative mitigation, the Rt. Hon. Herb Gray Parkway (the Parkway) was built with sensitivity to the adjacent tallgrass prairie. The Parkway was approved under the Ontario Environmental Assessment Act and the Canadian Environmental Assessment Act as the new freeway connection between Highway 401 and a new crossing of the Detroit River between Windsor, Ontario and Detroit, Michigan.

Tallgrass prairie ecosystems are one of the most endangered vegetation communities on Earth and home to many rare species. The Parkway's ecological approach has resulted in an increase of over 100 ha. of Tallgrass Prairie habitat.

This presentation will explain how the design of the Parkway limited impacts to 0.4 hectares of high quality ecological habitat. Other outcomes will be highlighted, including:

- How First Nation traditional knowledge has supported Tallgrass Prairie restoration and species at risk protection
- How a tunnel top serves as an ecopassage reconnecting two natural areas for the benefit of two species at risk snakes and other wildlife
- How impacts to species at risk were minimized without compromise to the project schedule
- How an end-to-end trail system has been integrated with the surrounding natural environment
- How a unique stormwater management system will improve overall water quality and aquatic health
- How important fish habitat is being restored at an overall 3:1 ratio.

Keywords: Tallgrass prairie, ecological approach, First Nations, species at risk, below-grade highway, ecopassage

1. EXECUTIVE SUMMARY

1.1 Ecosystem Approach
The Rt. Hon. Herb Gray Parkway (the Parkway) is the Ontario access road portion of a new end-to-end border transportation system between Windsor, Ontario and Detroit, Michigan. It was identified under the Detroit River International Crossing (DRIC) study Environmental Assessment (EA). The Ontario Ministry of Transportation (MTO) faced a twofold challenge on this project working with a new procurement model (Public Private Partnership) under very tight timelines, and dealing with a rare tallgrass prairie ecosystem and the first D-permit under the Ontario Endangered Species Act, 2007(ESA).

Very little tallgrass prairie remains in North America with estimates ranging from five percent to less than one percent of the original ecosystem. The Ojibway Prairie Complex, which is adjacent to the Parkway, is the largest protected prairie in Ontario. It is home to more species at risk than anywhere in Ontario aside from Walpole Island. The project has protected tallgrass prairie by reducing the project footprint through design measures and by maximizing opportunities to restore, create and enhance the area’s ecological connectivity. As a result, over 100 ha. of tallgrass prairie habitat is being restored and less than 0.4 hectares of high quality vegetation was impacted. An ecosystem approach which aims to understand interactions between physical, biological and anthropocentric components and recognizes the need for conservation, was applied to address the unique environmental sensitivities...
within the Parkway throughout the planning, design and construction phases and will continue throughout maintenance and operation of the Parkway.

By following an integrated, ecosystem based approach to planning, the Parkway project demonstrates how transportation needs can be addressed without jeopardizing environmental health and integrity.

1.2 Sustainable Outcomes

There were a number of sustainable outcomes on the Parkway due to its unique design. By building the highway below-grade with a series of 11 tunnels, the Parkway has re-connected communities on either side of the corridor. A multi-use trail system running the length of the Parkway provides an opportunity for active transportation and links users to community features through 50 access points. The new trail also offers opportunities for users to connect with nature and to develop a better understanding of the area’s unique ecological features.

One of the 11 tunnel tops is a dedicated ecopassage. This is the largest ecopassage in Ontario with an area of 14,544m² roughly the equivalent of 9 NHL hockey rinks. This ecopassage connects two natural areas that have been separated since the construction of Huron Church Road in the 1920s.

An estimated 200,000 species at risk plants along with many rare associate plants were successfully transplanted to protected restoration areas outside the corridor. Through two years of scientific trials, successful methods were found for propagating and transplanting Colicroot. The trials were a requirement of Permits issued under the ESA, as the project impacted the largest known population of Colicroot in Ontario. The transplantation method involved moving Colicroot individuals and associated plants along with an estimated 850 tonnes of prairie soil.

Between 2008 and 2014, 504 species at risk snakes (Eastern Foxsnake and Butler’s Gartersnake) were relocated from the construction footprint to protected Tallgrass Prairie areas. Relocated snakes have successfully selected new places to hibernate, lay eggs, and give birth to live young, exhibiting adaptability to new habitats. One particularly innovative approach was to use the foundations of former houses to construct hibernacula for snakes.

A new stormwater management system improves overall water quality for the receiving watercourses through the removal of sediment from highway runoff. New fish habitat has been created to address the lifecycle needs of important fish species including a major new spawning feature on the Lennon Drain which includes naturalized, meandering channels and refuge pools that provide increased water depths during low flow periods.

1.3 Relationship with First Nations

The relationship between Walpole Island First Nation (WIFN) and MTO began during the early planning stages of the DRIC EA. With a shared interest in tallgrass prairie and the species that depend on this ecosystem, community members have taken an active interest in the Parkway. WIFN encouraged the Parkway team to consider the protection of the entire shared ecosystem, and not just individual species. This ecosystem perspective has guided MTO’s environmental approach for the Parkway. WIFN community members contributed to the archaeological and natural heritage investigations for the Parkway, and have played an important role in restoration and species at risk transplanting efforts. Through community led Ecosystem Circles, opportunities to integrate First Nation culture into the aesthetic and small scale public art elements of the Parkway landscape and urban design were identified.