

Ministry of
Transportation,
Ontario
Highway 6 Miller Lake
to Tobermory

Tree for Life Award

**CATEGORY
B. TRANSPORTATION**



Stantec was retained by the Ministry of Transportation Ontario (MTO) to complete the design of Highway 6 pavement rehabilitation and culvert replacements; and included 27km from Lindsay Road 20, Miller Lake to Tobermory. The scope included pavement rehabilitation with paved shoulders for cyclists to implement Active Transportation initiatives as part of the provincial cycling network, roadside safety, drainage improvements, including the replacement of 29 centreline culverts and environmental protection with mitigation measures.

Project Highlights

Q1 INNOVATION

The project was completed to address the condition of the existing culverts and partially paved shoulders within the corridor. The 27 kms of Highway 6 is predominantly coniferous with mixed forest communities, lowland areas comprised mainly of cattail marshes, swamp thickets, coniferous swamps and poplar forests.

The Dorcas Bay Provincially Significant Wetland (PSW) Complex and unevaluated wetlands were present within and adjacent to the highway right-of-way; and three Life Science Areas of Natural and Scientific Interest (ANSIs) were identified, within the corridor including the Dorcas Bay, Cameron Lake Dunes, and Johnston Harbour Pine Tree Point ANSIs. Bruce Peninsula Natural Park of Canada and Fathom Five National Marine Park of Canada fall within the Study Area.

Habitat assessments determined that six species-at-risk (SAR) have the potential to be present in the right-of-way, based on the availability of suitable environment, the species' behaviour or movement patterns, including: Gypsy Cuckoo Bumble Bee, Western Chorus Frog, Least Bittern, Blanding's Turtle, Massasauga Snake, and Spotted Turtle. The federal recovery strategy adopted by the MECP, identifies that critical habitat for the Massasauga Snake lies within much of the northern Bruce Peninsula, and the Highway 6 right-of-way.

A concentration of both Blanding's Turtle, Spotted Turtle and Massasauga Snake road mortality was pinpointed along a stretch of Highway 6 north of Cameron Lake Road, where the highway bisects a complex of wetland habitats, including open water, marsh, and swamp thicket.

In an effort to protect this wildlife, Stantec' environmental planners developed a customized web mapping program to collect and securely store environmental field investigation data. As a result of this GIS application, Stantec's design team received more accurate, real-time environmental information to fully understand the unique challenges of this corridor and how traditional environmental mitigation strategies might not be as effective. The team utilized this information to replace the existing beaver cones on culverts with versions that included both fish and turtle ports to which would reduce the mortality of these species in key locations.

Stantec also integrated small entrance tunnels for wildlife mobility, (including species-at-risk), to make the wildlife mitigation barrier more continuous and therefore more effective at protecting these species, which had not been previously utilized by MTO.



Q2 COMPLEXITY

To address species-at-risk mortality in hot spots along the corridor, Stantec responded with the design and implementation of a 4.4 km permanent wildlife exclusion fencing, two new eco-passage highway crossings, the replacement of two existing culverts to permit wildlife crossing, tunnel structures at entrances, and the replacement of existing beaver cones on culverts with new versions that include fish and turtle ports.

Wildlife fencing and crossings, specifically entrance tunnels for species-at-risk to navigate, as part of a continuous wildlife mitigation fence, were necessary measures to improve the mortality rates of these species-at-risk, specifically the Eastern Massassauga Snake, Monarch, Blanding's Turtle, Spotted Turtle, Western Chorus Frog, Gypsy Cuckoo Bumblebee and Least Bittern populations within the corridor. The existing Highway 6 corridor in this region has significant rock outcrops and swampy areas. The fractured rock outcrops presented unique challenges to the design of the continuous barrier.

Q3 SOCIAL AND/OR ECONOMIC BENEFITS

At Stantec, we design with community in mind. But what does that mean? To us, it means meaningful projects. It means celebrating the relationships that form when transportation solutions connect our populations. It means designing infrastructure to double as public spaces. It means protecting natural environments for families to enjoy.

Active transportation has many social and economic benefits. The project scope encompassed pavement rehabilitation of Highway 6 including fully paved shoulders with buffered bike lanes to accommodate cyclists, and to allow for continuity in the provincial cycling network. The use of buffered bike lanes on higher speed roads increases the safety for cyclists and the travelling public.

At Stantec, we envision, create, connect, and support communities. Communities are fundamental, they provide a sense of place and belonging. That's why we always design with community in mind.

In creating, sustaining, or revitalizing communities, we help diverse cultures and perspectives work together toward shared success. Although our work helps create physical communities, our ultimate goal is to create something far more meaningful—a sense of community.



Q4 ENVIRONMENTAL BENEFITS

To improve the mortality rate of species-at-risk (Eastern Massassauga Snake, Monarch, Blanding's Turtle, Spotted Turtle, Western Chorus Frog, Gypsy Cuckoo Bumblebee and Least Bittern) within the corridor, which was bounded by Parks Canada Lands for much of the project limit, the following environmental measures were implemented: 4.4 km of permanent wildlife exclusion fencing, two new eco-passage highway crossings, replacement of two existing culverts to permit wildlife crossing, tunnel structures at entrances, and replacement of existing beaver cones on culverts with new versions that include fish and turtle ports.

Q5 MEETING CLIENT'S NEEDS

Stantec not only delivered the main project goals set by the Ministry of Transportation Ontario (MTO), the added value of the innovation and strategy applied in some of the unique data capture and mitigation measures designed to improve mortality rates of species-at-risk, had never been utilized by MTO.

Stantec surpassed client expectations in terms of stakeholder management, project scope, innovation, social and economic benefits. Stantec maintained strong communications throughout the project, with key stakeholders (Parks Canada) regarding beaver cones, turtle nesting mounds, wildlife fencing and eco-passages.

