

## **Protection of the Natural Environment: Natural Heritage Investigation**

Assessing the potential impacts of the Practical Alternatives on natural heritage features such as fisheries, vegetation, wildlife and designated natural areas is an important part of the Detroit River International Crossing (DRIC) Environmental Assessment. The assessment of natural heritage falls under the "Protection of the Natural Environment" evaluation factor. This is one of the seven major factors being used throughout the DRIC study.

### **How the Analysis was Done**

Background data on natural heritage features was collected through review of existing information, consultation with local experts and multi-season, detailed field investigations. An Area of Investigation (AOI) located within the Area of Continued Analysis (ACA) was defined for each biological discipline based on the potential for displacement or disturbance effects. The data collected was used to compare the implications of the access road, plaza and crossing alternatives on the basis of the potential impacts to natural heritage features. The details of the data collected to date are documented in the *Draft Practical Alternatives Working Paper – Natural Heritage* (Border Transportation Partnership 2007).

### **Findings to Date**

The most important natural heritage features in the AOI are designated as Areas of Natural or Scientific Interest (ANSIs), Environmentally Sensitive Areas (ESAs) and Candidate Natural Heritage Sites (CNHSs).

- The Ojibway Prairie Complex is a provincially significant life science ANSI that is comprised of the following areas: Ojibway Prairie Provincial Nature Reserve; Ojibway Park; Titcombe Road North; Spring Garden Road; Black Oak Woods; and Prairie Remnants (southeast of Nature Reserve).
- A total of five ESAs are located in the AOI and its vicinity including: Ojibway Prairie Complex (#3); Sandwich West Woodlot/LaSalle Woods (#18); Ojibway Black Oak Woods (#19); Spring Garden Road Prairie (#29); and St. Clair College Prairie (#49).
- A total of three CNHSs are identified in LaSalle and 10 CNHSs are identified in Windsor.

The ACA avoids most of these designated natural areas.

The AOI supports a large diversity of plant and animal species (617 and 139 respectively). A total of 63 provincially rare plants and three provincially rare terrestrial vertebrates were recorded in the AOI during field investigations. Numerous provincially rare insects are also reported from the Ojibway Prairie Complex and its vicinity. A total of nine vegetation community types located in the AOI are listed as provincially and globally rare, including tallgrass prairie remnants located outside of the designated natural areas.

Most watercourses in the AOI are designated as agricultural municipal drains and are altered by agricultural or urban development. No watercourses or waterbodies in the AOI support coolwater or coldwater fish communities, with the exception of the Detroit River. The Detroit River, Turkey Creek, Lennon Drain, McKee Creek and Cahill Drain directly support warmwater sportfish communities (i.e. bass, sunfish, etc.). No critical fish habitat or fish species at risk were identified in "inland" watercourses. Species at risk and

their habitat are present in the Detroit River; however, no specialized habitat for species at risk is located in the vicinity of the proposed piers.

### **Analysis of Practical Alternatives**

The crossing and plaza combinations and access road alternatives were analyzed based on the following five criteria:

- Impacts to landscapes located in the facility footprint
- Impacts to terrestrial communities/ecosystems located in the facility footprint
- Impacts to aquatic communities/ecosystems located in the facility footprint
- Impacts to species/populations at risk located in the facility footprint
- Impacts to designated natural areas located on adjacent lands.

Indicators were used, where appropriate, to measure the number, area, type and significance of natural heritage features.

An arithmetic evaluation was conducted using the simple additive weighting method. Weights were assigned to criteria and indicators to reflect their level of importance. The results of the arithmetic evaluation were reviewed against the original data to ensure that the numerical results could be supported through reasoned argument. The evaluation of the Practical Alternatives using natural heritage criteria resulted in the identification of preferred plazas, crossings and access roads.

### **Practical Alternatives**

- None of the access road alternatives directly impact any designated Areas of Natural and Scientific Interest (ANSIs) including the Ojibway Prairie Complex.
- Access roads alternatives that connect Plazas B and C with the existing Highway 401 have relatively low impacts because these alternatives result in less displacement of provincially rare vegetation communities and species at risk in the Malden Road area.
- Access roads that connect Plaza A with the existing Highway 401 have relatively moderate impacts because these alternatives have the potential to displace more provincially rare vegetation communities and species at risk in the Malden Road area.
- There is no significant difference among at-grade, below-grade and end-to-end tunnel alternatives because footprint impacts are comparable. A below-grade alternative and (to a greater extent) an end-to-end tunnel may increase the potential risk to nearby natural heritage areas due to dewatering requirements.
- Access roads alternatives 1A and 1B and 3 encroach on the St. Clair College Prairie ESA and access road alternatives 2A and 2B do not.

### **Plazas and Crossings**

- Crossing C to Plaza C is considered to have a relatively low impact because this combination avoids the natural heritage features associated with the Brighton Beach area and the area north of Chappus Street.

- Crossing C to Plaza B1, Crossing B to Plaza B and Crossing C to Plaza A along Ojibway Parkway are considered to have a relatively moderate impact. Plaza B1 encroaches on the Ojibway Black Oak Woods ANSI/ESA.
- Crossing C to Plaza A through the Brighton Beach area, Crossing B to Plaza A and Crossing A to Plaza A are considered to have the potential to displace more provincially rare vegetation communities and species at risk in the Brighton Beach area and the area north of Chappus Street.
- The impacts associated with Plaza A are reduced by accessing Plaza A from Crossing C along the Ojibway Parkway because this combination avoids the Brighton Beach area.

### **Environmental Protection Measures**

All crossings, plazas and access roads have the potential to displace provincially rare vegetation communities, wildlife habitat and species at risk. Since total avoidance cannot be achieved, environmental protection measures will be required to address the impacts of displacement and disturbance on natural heritage features. Potential mitigation measures to be considered by the DRIC study team include:

#### **Provincially Rare Vegetation Communities**

- Maintain no net loss of the area or function of provincially rare vegetation communities through habitat creation, restoration and enhancement

#### **Species at Risk**

- Relocate plant and animal species at risk where feasible
- Implement construction timing restrictions

#### **Groundwater**

- Use cut-off walls to reduce effects of groundwater drawdown on nearby natural heritage features

#### **Surface Water**

- Maintain no net loss of the productive capacity of fish habitat through fish habitat compensation measures
- Implement construction timing restrictions

### **Remaining Activities**

The assessment of crossings, plazas and access roads by the natural heritage discipline will be incorporated into the multi-disciplinary evaluation of Practical Alternatives. A site-specific impact assessment will be performed and environmental protection measures will be identified once a technically and environmentally preferred alternative is selected. No additional field investigations are proposed at this time.