Oct 29/12 ?

Bipole III Transmission Project

Terrestrial Ecosystems and Vegetation

Background Information

- Introduction – Kevin Szwaluk
- Currently employed with Szwaluk Environmental Consulting Ltd. as a vegetation ecologist
- Szwaluk Environmental Consulting Ltd. – 5 years
- 11 years work experience and consulting
- Field of expertise – botany and vegetation ecology
- Education – B.Sc. in Biology (University of Manitoba) and M.Sc. in Resources and the Environment (University of Calgary)
- Previous Projects/Work – over 20 projects related to transmission, transportation, oil and gas and forestry
- Involvement - preparation of the Terrestrial Ecosystem and Vegetation Technical Report; responses to intervener questions

Constraints and VECs

Constraint Identification

- Used to identify alternative routes.
- Included areas or features of high ecological importance (i.e., protected areas, ASI, species of conservation concern).

Valued Environmental Components (VECs)

- VECs are elements of the biophysical or socioeconomic environment that are considered important.
- Identified and used to assist in the evaluation of alternative routes.
- Two VECs identified: Species of conservation concern and grassland/prairie areas.

Evaluation of Alternative Routes

- Routing options consisted of segments surrounded by a 3 mile buffer.
- Alternative routes were evaluated based on constraints and VECs using a rating system of high, medium and low.
- High rank segments intersected very rare to rare plant locations as well as high area and proportion values for grasslands.
- The preliminary preferred route avoided all high ranking segments with the exception of one southern segment where one rare plant species was known to occur within the three mile buffer.

Existing Environment

- Existing data and information available from provincial and federal sources were used for the existing environment description.
- Areas described included:
  - Ecological land classification
  - Important communities and habitats
  - Fire in the boreal forest
  - Plants and resource use
  - Federal and provincial legislation
  - Conservation status
  - Protected species
  - Plant species of conservation concern
  - Communities of conservation concern

Methodology

- Environmental assessment was conducted in 2010 using existing information and field studies for RoW and local study area.
- Existing Data Sources included:
  - LCCEB
  - FRI
  - Wetlands of Manitoba
  - Ducks Unlimited Salt Marsh information
  - Provincial Fire Data
  - Manitoba Conservation Data Centre database
- Using GIS, spatial queries were conducted using the data sources.
- Purpose of queries - identify vegetation types, determine ecologically important areas, locations of species of concern and calculate areas of vegetation cover types.

VECs for Preferred Route Assessment

- Initially two VECs were identified.
- Third VEC identified as a result of Aboriginal Traditional Knowledge (ATK) becoming available.
  - Plant species/communities important to Aboriginal people as identified through the ATK process
- VECs selected based on literature, scientific concern and Aboriginal values.

Aboriginal Traditional Knowledge

- ATK was assessed to understand the importance of certain plant species/communities and minimize effects to these areas.
- Information was acquired from interviews and questionnaires conducted through the ATK process and self-directed studies.
- Traditional areas used for plant gathering and harvesting for subsistence, medicinal and cultural purposes were identified.

Aboriginal Traditional Knowledge

- Many other species identified as important.
- Blueberries prefer well-drained, open areas.
- Occasionally require fire to improve growth.

Field Sampling

- 173 sites visited in 2010.
- Vegetation surveys were conducted to record composition, abundance and structure.
- Surveys for species of conservation concern were conducted in areas with high potential to support these species.

Environmental Assessment

- Results from desktop analysis and field assessments included information on:
  - ELC
  - Vegetation cover types
  - Vegetation community types
  - Riparian habitat and wetlands
  - Plants and distribution of species
  - Plant species of concern
  - ATK
  - Fire history

Environmental Assessment (Cont'd)

- 8 ecoregions intersected by local study area.
- 21 vegetation cover types.
- 457 plant taxa identified.
- 15 locations for species of concern previously known along RoW.
- In 2010, 29 locations for species of concern were observed.
- 1 protected species (threatened).
- 19 traditional plant harvesting areas identified along RoW.
- >80 species that have traditional value were noted.
- Data on terrestrial ecosystems and vegetation is included in the technical report.

Environmentally Sensitive Sites

- Dry upland prairies
- Salt marshes and flats
- Patterned fen wetlands
- Areas that support species of concern
- Areas of botanical importance identified through ATK

Environmentally Sensitive Sites (Cont'd)

Project Effects

- Potential loss of plants (individuals) of concern
- ESS may be affected
- Potential loss of habitat and plants used by Aboriginal People
- Loss of native forest vegetation
- Riparian areas may be disrupted
- Vegetation diversity will be temporarily reduced
- Abundance of non-native species may increase
- Vegetation composition and structure may be modified adjacent to disturbance zone
- Fragmentation of vegetation communities will occur

Project Effects (Cont'd)

- Wetlands may be affected
- Potential effects to vegetation from the release of fuels and hazardous substances
- Potential effect of dust from project activities on the health of plants
- Use of herbicides may affect desirable vegetation
- Increased risk of wildfire
- Potential for increased access to vegetation resources used by Aboriginal People
- Vegetation clearing can result in a loss of permafrost.

Mitigation and Follow-up

- To minimize adverse environmental effects caused by the project, mitigation measures were suggested for the effects.
- Environmental Protection Plan.
- Pre-construction surveys.
- Follow-up to include monitoring.

2012 Field Investigations

- Pre-construction surveys for the northern project components.
- 85 sites visited.
- 10 species of concern observed at 42 sites.

State of VECs

Plant species/communities of conservation concern

- Today these species exist in low numbers, some are protected, help to preserve species diversity.
- Issue is habitat loss or occurring at the edge of their range.
- Concern is low numbers.

State of VECs (Cont'd)

Native grassland/prairie areas

- Today few undisturbed areas remain, provide habitat, support species of concern.
- Issue is habitat loss.
- Concern is a threatened ecosystem.

State of VECs (Cont'd)

Plant species/communities important to Aboriginal people identified through the ATK process

- Today these areas are valued by Aboriginal people.
- Issue is traditional areas for plant gathering and berry picking.
- Concern is loss of these locations.

Project effects on VECs

Plant species/communities of conservation concern

- Potential loss of plants of concern from project activities.
- Mitigation (e.g., winter construction, setbacks and buffers, mapping, marking plants).
- Mitigation is anticipated to be effective.

Project effects on VECs (Cont'd)

Native grassland/prairie areas

- Potential for disruption of prairie areas.
- Trees will be removed.
- Dry upland prairies occupy small proportion of RoW when compared to local study area.
- Mitigation (e.g., winter construction, minimize soil and vegetation disturbance and erosion, reclaim disturbed sites with native species).
- Mitigation is anticipated to be effective.

Project effects on VECs (Cont'd)

Plant species/communities important to Aboriginal people identified through the ATK process

- Potential loss or temporary disturbance of plants and plant communities.
- Traditional harvesting areas estimated at 758 ha along RoW.
- Mitigation (e.g., winter construction, maintain understory vegetation, no herbicide use).
- Mitigation is anticipated to be effective.

Effect of Future Activities on VECs

- Potential for future projects to have effects on VECs.
- To reduce effects:
  - Assessments for species and communities of concern.
  - Continued dialogue with Aboriginal people to discuss planning of projects that may effect botanical resource areas.
  - Understanding the value of sensitive sites.
  - Mitigation needs to be recommended and implemented.

The End