Belle River Wind Project
Natural Heritage Environmental Impact Study Report

Prepared for:
AECOM
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NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Belle River Wind Project
Natural Heritage Environmental Impact Study Report

Project Team:

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Report submitted on May 25, 2015

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1.0 Project Description

Natural Resource Solutions Inc. (NRSI) was retained in April 2014 by AECOM, on behalf of SP Belle River Wind, LP, by its general partner, SP Belle River Wind, GP Inc. (Belle River Wind), to conduct a natural heritage assessment in accordance with the Renewable Energy Approval (REA) Regulation, Ontario Regulation 359/09. This assessment includes a records review, site investigation, evaluation of significance, and impact assessment of any potentially significant natural features or wildlife habitats at a proposed wind energy generating facility of up to 50 operational wind turbines totaling 100 megawatts (MW).

The Belle River Wind Project ('the Project' or 'Belle River') is being proposed by Belle River Wind, a joint venture limited partnership owned by affiliates of Pattern Renewable Holdings Canada, ULC (Pattern Development) and Samsung Renewable Energy, Inc. (Samsung Renewable Energy). Belle River Wind is proposing to develop a wind project in the Town of Lakeshore in the County of Essex, Ontario. The Project will be located south of the community of Belle River, and is generally bounded by County Road 42 and the Canadian Pacific Railway line to the north, Lakeshore Road 111 to the west, Highway 401 and South Middle Road to the south, and Comber Sideroad to the east. The Project will be located primarily on privately owned land with some components (e.g., electrical collector lines) being placed along public right-of-ways, none of which are proposed on provincial Crown land.

According to Ontario Regulation (O. Reg.) 359/09, and per the Natural Heritage Assessment Guide for Renewable Energy Projects (MNR 2012a), the project location is defined as "...*a part of land and all or part of any building or structure in, on or over which a person is engaging in or proposes to engage in the project and any air space in which a person is engaging in or proposes to engage in the project*". As described therein, the project location boundary is the outer limit of where site preparation and construction activities will occur (i.e., disturbance areas described below) and where permanent infrastructure will be located, including the air space occupied by turbine blades.

In accordance with Section 38 of the REA Regulation, NRSI has prepared an environmental impact study that identifies and assesses negative environmental effects on significant natural features located within 120m of the project location. This includes areas within 120m of proposed turbines, measured from blade tip, as well as within 120m of areas that may be used as temporary lay-down areas, crane pads, access roads, and collection, distribution, and transmission lines. For the purposes of this report, NRSI will refer to the areas within 120m of the project location as the 'project area'.

Land use within the project area is dominated by active agriculture, with soybeans, corn, wheat and hay representing the most prevalent crops on the landscape. Natural features are generally small and isolated from other features within the project area. Habitats within the project area include woodlands, swamps, meadows, thickets, drainage ditches, ponds, creeks and hedgerows. The Belle River Project Area, as well as natural features, can be seen on Map 1.

2.0 REA Requirements

Ontario Regulation (O. Reg.) 359/09 – *Renewable Energy Approvals under Part V.0.1 of the Act*, (herein referred to as the REA Regulation) made under the *Environmental Protection Act* identifies the requirements for the development of renewable energy projects in Ontario. In accordance with the REA Regulation, the Belle River Wind Project, classified as a Class 4 wind facility, is required to complete a REA.

Section 38 of the REA Regulation specifies that no development activities shall be permitted within 120m of a significant natural feature unless an environmental impact study report is prepared in accordance with any procedures established by the Ministry of Natural Resources and Forestry (MNRF). As per Subsection 2, this report should:

1. Identify and assess any negative environmental effects of the project on a natural feature, provincial park or conservation reserve,
2. Identify mitigation measures in respect of any negative environmental effects mentioned in the subclause above,
3. Describe how the environmental effects monitoring plan…addresses any negative environmental effects mentioned in subclause 1, and
4. Describe how the construction plan report…addresses any negative environmental effects mentioned in subclause 1.

This Natural Heritage Assessment report has been organized and prepared to satisfy the requirements of the environmental impact study as outlined in the REA Regulation.

3.0 Summary of Evaluation of Significance

In accordance with the REA Regulation, NRSI biologists have completed a detailed evaluation of significance of all potentially significant natural features or wildlife habitats within the Belle River project area. The results of these determinations have been discussed in detail within the *Belle River Wind Project: Natural Heritage Evaluation of Significance Report* (NRSI 2015), and have been summarized in Table 1 below. This table summary includes the results of the evaluation of significance for the woodlands, wetlands, significant wildlife habitats, including species of conservation concern, and whether each of these features or wildlife habitats require detailed consideration as part of this environmental impact study. All significant natural features (woodlands and wetlands) have been mapped on Map 2. Significant wildlife habitats have been mapped on Maps 3-5. Generalized significant wildlife habitats are mapped on Map 6.

Table 1. Summary of Significant Natural Features and Wildlife Habitats Identified During Evaluations of Significance for the Belle River Wind Project

Feature ID	Distance to Closest Turbine (from blade tip) (m)	Distance to Closest Other Project Infrastructure (m)	Distance to Project Infrastructure With a Potential Operational Effect (m)	EIS Required (Y/N/Generalized)
Woodlands				
WOD-002	>120	AR, CB, CA – 103	N/A	**Yes**
WOD-006	47 (T19)	AR, CB, CA – >0.1	N/A	**Yes**
WOD-008	28 (T62)	AR, CB, CA – >0.1	N/A	**Yes**
WOD-009	51 (T41)	AR, CB, CA – >0.1	N/A	**Yes**
WOD-010	>120	CB, CA – >0.1	N/A	**Yes**
WOD-011	>120	CB, CA – 109	N/A	**Yes**
WOD-012	>120	CB, CA – >0.1	N/A	**Yes**
WOD-013	>120	CB, CA – 98	N/A	**Yes**
WOD-014	>120	CB, CA – >0.1**	N/A	**Yes**
WOD-015	>120	CB, CA – 0.5	N/A	**Yes**
WOD-016	>120	CB, CA – >0.1	N/A	**Yes**
WOD-017	51 (T205)	AR, CB, CA – 27	N/A	**Yes**
WOD-018	13 (T215)	AR, CB, CA – >0.1	N/A	**Yes**
WOD-019	>120	AR, CB, CA – >0.1	N/A	**Yes**
WOD-020	>120	CB, CA – >0.1	N/A	**Yes**
WOD-021	>120	CB – Overlapping* CA – Overlapping*	N/A	**Yes**

Feature ID	Distance to Closest Turbine (from blade tip) (m)	Distance to Closest Other Project Infrastructure (m)	Distance to Project Infrastructure With a Potential Operational Effect (m)	EIS Required (Y/N/Generalized)
WOD-023	27 (T213)	AR, CB, CA – >0.1**	N/A	**Yes**
WOD-024	>120	CB, CA – 31	N/A	**Yes**
WOD-026	>120	CB, CA – >0.1	N/A	**Yes**
WOD-027	118 (T211)	CB – Overlapping* CA – Overlapping*	N/A	**Yes**
WOD-028	37 (T52)	AR – Overlapping CB – Overlapping CA – Overlapping	N/A	**No**
WOD-029	>120	CB, CA – >0.1	N/A	**Yes**
WOD-030	94 (T202)	AR, CB, CA – >0.1**	N/A	**Yes**
WOD-031	>120	CB, CA – >0.1	N/A	**Yes**
WOD-032	>120	CB, CA – >0.1	N/A	**Yes**
WOD-034	>120	CB, CA – 48	N/A	**Yes**
Wetlands				
WET-001	>120	CB, CA – >0.1	N/A	**Yes**
WET-002	>120	CB, CA – 7	N/A	**Yes**
WET-003	27 (T213)	AR, CB, CA – >0.1**	N/A	**Yes**
WET-005	13 (T215)	AR, CB, CA – >0.1	N/A	**Yes**
WET-006	51 (T205)	AR, CB, CA – 27	N/A	**Yes**
WET-007	>120	CB, CA – >0.1	N/A	**Yes**
WET-008	>120	CB, CA – >0.1**	N/A	**Yes**
WET-009	47 (T19)	CB – Overlapping* CA – Overlapping*	N/A	**Yes**
WET-013	>120	CB, CA – >0.1	N/A	**Yes**
WET-014	>120	CB, CA – >0.1	N/A	**Yes**
WET-015	51 (T41)	AR, CB, CA – >0.1	N/A	**Yes**
WET-016	>120	CB, CA – 9	N/A	**Yes**
Wildlife Habitats				
WST-017	22 (T35)	AR, CB, CA – Overlapping	WT – 22 (T35)	**No (Not Significant)**
WST-021	Overlapping (T44, T45, T46)	AR, CB, CA – Overlapping	WT – Overlapping (T44, T45, T46)	**No (Not Significant)**
WST-023	Overlapping (T48, T49, T59)	AR, CB, CA – Overlapping	WT – Overlapping (T48, T49, T59)	**No (Not Significant)**
WST-024	Overlapping (T58)	AR, CB, CA – Overlapping	WT – Overlapping (T58)	**No (Not Significant)**
WST-025	>120	CB, CA – >0.1	WT – >120	**Yes (Generalized)**

Feature ID	Distance to Closest Turbine (from blade tip) (m)	Distance to Closest Other Project Infrastructure (m)	Distance to Project Infrastructure With a Potential Operational Effect (m)	EIS Required (Y/N/Generalized)
RWA-001	>120	CB, CA, SI – >0.1	WT – >120 CB – >0.1	**Yes (Treated as Significant)**
RWA-002	91 (T213)	AR, CB, CA – >0.1	WT – 98 (T213) CB – >0.1	**Yes (Treated as Significant)**
BMA-001	47 (T19)	AR, CB, CA – >0.1	WT – 54 (T19)	**Yes (Treated as Significant)**
AWO-002	47 (T19)	AR, CB, CA – >0.1	AR – >0.1	**Yes (Treated as Significant)**
AWO-003	28 (T62)	AR, CB, CA – >0.1	AR – >0.1	**Yes (Treated as Significant)**
AWO-004	51 (T41)	AR, CB, CA – >0.1	AR – >0.1	**Yes (Treated as Significant)**
AWO-006	>120	CB, CA – >0.1	AR – 37	**Yes (Treated as Significant)**
AWO-007	51 (T205)	AR, CB, CA – 27	AR – 27	**Yes (Treated as Significant)**
AWO-008	13 (T215)	AR, CB, CA – >0.1	AR – >0.1	**Yes (Treated as Significant)**
AWO-009	>120	AR, CB, CA – >0.1**	AR – >0.1**	**Yes (Treated as Significant)**
AWO-011	27 (T213)	AR, CB, CA – >0.1**	AR – >0.1**	**Yes (Treated as Significant)**
AWO-012	118 (T211)	CB – Overlapping* CA – Overlapping*	AR – 93	**Yes (Treated as Significant)**
AWO-013	94 (T202)	AR, CB, CA – >0.1**	AR – >0.1**	**Yes (Treated as Significant)**
AWO-014	>120	AR, CB, CA – 103	AR – 103	**Yes (Treated as Significant)**
MBB-001	51 (T41)	AR, CB, CA – >0.1	WT – 58 (T41)	**Yes (Treated as Significant)**

Feature ID	Distance to Closest Turbine (from blade tip) (m)	Distance to Closest Other Project Infrastructure (m)	Distance to Project Infrastructure With a Potential Operational Effect (m)	EIS Required (Y/N/Generalized)
MBB-002	91 (T213)	AR, CB, CA – >0.1	WT – 98 (T213)	**Yes (Treated as Significant)**
OCB-001	91 (T213)	AR, CB, CA – >0.1	WT – 98 (T213)	**Yes (Treated as Significant)**
EWP-002	47 (T19)	AR, CB, CA – >0.1	WT – 54 (T19)	**Yes (Treated as Significant)**
EWP-003	28 (T62)	AR, CB, CA – >0.1	WT – 35 (T62)	**Yes (Treated as Significant)**
EWP-004	51 (T41)	AR, CB, CA – >0.1	WT – 58 (T41)	**Yes (Treated as Significant)**
EWP-006	27 (T213)	AR, CB, CA – >0.1	WT – 34 (T213)	**Yes (Treated as Significant)**
EWP-007	51 (T205)	AR, CB, CA – 27	WT – 58 (T205)	**Yes (Treated as Significant)**
EWP-008	13 (T215)	AR, CB, CA – >0.1	WT – 20 (T215)	**Yes (Treated as Significant)**
WTH-001	28 (T62)	AR, CB, CA – >0.1	WT – 35 (T62)	**Yes (Treated as Significant)**
WTH-002	28 (T213)	AR, CB, CA – >0.1	WT – 34 (T213)	**Yes (Treated as Significant)**
PMI-001	103 (T205)	AR, CB, CA – 30	AR – 30	**Yes (Treated as Significant)**
PMI-002	68 (T41)	AR, CB, CA – 12	AR – 12	**Yes (Treated as Significant)**
PMI-003	>120	AR, CB, CA – 82	AR – 82	**Yes (Treated as Significant)**
PAW-001	28 (T62)	AR, CB, CA – >0.1	AR – >0.1	**Yes (Treated as Significant)**
PAW-002	>120	CB, CA – >0.1	AR – 37	**Yes (Treated as Significant)**

Feature ID	Distance to Closest Turbine (from blade tip) (m)	Distance to Closest Other Project Infrastructure (m)	Distance to Project Infrastructure With a Potential Operational Effect (m)	EIS Required (Y/N/Generalized)
PAW-003	13 (T215)	AR, CB, CA – >0.1	AR – >0.1	**Yes (Treated as Significant)**
PAW-004	>120	AR, CB, CA – >0.1**	AR – >0.1*	**Yes (Treated as Significant)**
PAW-005	60 (T210)	AR, CB, CA – >0.1**	AR – >0.1**	**Yes (Treated as Significant)**
PAW-006	118 (T211)	CB – Overlapping* CA – Overlapping*	AR – 93	**Yes (Treated as Significant)**
MSE-002	28 (T62)	AR, CB, CA – >0.1	AR – >0.1	**Yes (Treated as Significant)**
MSE-003	>120	CB, CA – >0.1	AR – 37	**Yes (Treated as Significant)**
MSE-004	13 (T215)	AR, CB, CA – >0.1	AR – >0.1	**Yes (Treated as Significant)**
MSE-005	>120	AR, CB, CA – >0.1**	AR – >0.1**	**Yes (Treated as Significant)**
MSE-006	60 (T210)	AR, CB, CA – >0.1**	AR – >0.1**	**Yes (Treated as Significant)**
MSE-007	118 (T211)	CB – Overlapping* CA – Overlapping*	AR – 93	**Yes (Treated as Significant)**
FDO-001	>120	AR, CB, CA – 82	AR – 82	**Yes (Treated as Significant)**
SFL-001	50 (T12)	AR, CB, CA – >0.1	AR – >0.1	**Yes (Treated as Significant)**
DTP-001	60 (T210)	AR, CB, CA – >0.1**	AR – >0.1**	**Yes (Treated as Significant)**
WHP-001	50 (T12)	AR, CB, CA – >0.1	AR – >0.1	**Yes (Treated as Significant)**
BBU-001	28 (T62)	AR, CB, CA – >0.1	AR – >0.1	**Yes (Treated as Significant)**

Feature ID	Distance to Closest Turbine (from blade tip) (m)	Distance to Closest Other Project Infrastructure (m)	Distance to Project Infrastructure With a Potential Operational Effect (m)	EIS Required (Y/N/Generalized)
BBU-002	>120	CB, CA – >0.1	AR – 37	**Yes (Treated as Significant)**
BBU-003	103 (T205)	AR, CB, CA – 30	AR – 30	**Yes (Treated as Significant)**
BBU-004	13 (T215)	AR, CB, CA – >0.1	AR – >0.1	**Yes (Treated as Significant)**
BBU-005	>120	AR, CB, CA – >0.1**	AR – >0.1**	**Yes (Treated as Significant)**
BBU-006	60 (T210)	AR, CB, CA – >0.1**	AR – >0.1**	**Yes (Treated as Significant)**
BBU-007	118 (T211)	CB – Overlapping* CA – Overlapping*	AR – 93	**Yes (Treated as Significant)**
MPW-001	47 (T19)	AR, CB, CA – >0.1	AR – >0.1	**Yes (Treated as Significant)**
MPW-002	51 (T205)	AR, CB, CA – 27	AR – 27	**Yes (Treated as Significant)**
MPW-003	27 (T213)	AR, CB, CA – >0.1	AR – >0.1	**Yes (Treated as Significant)**
MPW-004	94 (T202)	AR, CB, CA – >0.1**	AR – >0.1**	**Yes (Treated as Significant)**
MPW-005	>120	AR, CB, CA – 82	AR – 82	**Yes (Treated as Significant)**
WLO-001	47 (T19)	AR, CB, CA – >0.1	AR – >0.1	**Yes (Treated as Significant)**
WLO-002	51 (T205)	AR, CB, CA – 27	AR – 27	**Yes (Treated as Significant)**
WLO-003	27 (T213)	AR, CB, CA – >0.1	AR – >0.1	**Yes (Treated as Significant)**
WLO-004	94 (T202)	AR, CB, CA – >0.1**	AR – >0.1**	**Yes (Treated as Significant)**

Feature ID	Distance to Closest Turbine (from blade tip) (m)	Distance to Closest Other Project Infrastructure (m)	Distance to Project Infrastructure With a Potential Operational Effect (m)	EIS Required (Y/N/Generalized)
WLO-005	>120	AR, CB, CA – 82	AR – 82	**Yes (Treated as Significant)**
BGA-001	50 (T12)	AR, CB, CA – >0.1	AR – >0.1	**Yes (Treated as Significant)**
SHU-001	27 (T213)	AR, CB, CA – >0.1	AR – >0.1	**Yes**
SHU-002	47 (T19)	AR, CB, CA – >0.1	AR – >0.1	**Yes**
CPR-001	50 (T12)	AR, CB, CA – >0.1	AR – >0.1	**Yes (Treated as Significant)**
CPR-002	68 (T41)	AR, CB, CA – 12	AR – 12	**Yes**
CPR-003	>120	AR, CB, CA – 82	AR – 82	**Yes (Treated as Significant)**
UCF-001	103 (T205)	AR, CB, CA – 30	AR – 30	**Yes (Treated as Significant)**
UCF-002	60 (T210)	AR, CB, CA – >0.1**	AR – >0.1**	**Yes (Treated as Significant)**
UCF-003	118 (T211)	CB – Overlapping* CA – Overlapping*	AR – 93	**Yes (Treated as Significant)**
UCF-004	68 (T41)	AR, CB, CA – 12	AR – 12	**Yes**
UCF-005	13 (T215)	AR, CB, CA – >0.1	AR – >0.1	**Yes (Treated as Significant)**
ICF-001	103 (T205)	AR, CB, CA – 30	AR – 30	**Yes (Treated as Significant)**
ICF-002	60 (T210)	AR, CB, CA – >0.1**	AR – >0.1**	**Yes (Treated as Significant)**
ICF-003	118 (T211)	CB – Overlapping* CA – Overlapping*	AR – 93	**Yes (Treated as Significant)**
ICF-004	13 (T215)	AR, CB, CA – >0.1	AR – >0.1	**Yes (Treated as Significant)**
GIW-001	47 (T19)	AR, CB, CA – >0.1	AR – >0.1	**Yes (Treated as Significant)**

Feature ID	Distance to Closest Turbine (from blade tip) (m)	Distance to Closest Other Project Infrastructure (m)	Distance to Project Infrastructure With a Potential Operational Effect (m)	EIS Required (Y/N/Generalized)
GIW-002	50 (T12)	AR, CB, CA – >0.1	AR – >0.1	**Yes (Treated as Significant)**
GIW-003	>120	AR, CB, CA – 82	AR – 82	**Yes (Treated as Significant)**
SHH-001	47 (T19)	AR, CB, CA – >0.1	AR – >0.1	**Yes**
SHH-002	51 (T205)	AR, CB, CA – 27	AR – 27	**Yes**
SHH-003	13 (T215)	AR, CB, CA – >0.1	AR – >0.1	**Yes**
SHH-004	27 (T213)	AR, CB, CA – >0.1**	AR – >0.1**	**Yes**
SHH-005	103 (T205)	AR, CB, CA – 30	AR – 30	**Yes**
LTA-001	47 (T19)	AR, CB, CA – >0.1	AR – >0.1	**Yes (Treated as Significant)**
LTA-002	28 (T62)	AR, CB, CA – >0.1	AR – >0.1	**Yes (Treated as Significant)**
LTA-003	>120	CB, CA – >0.1	AR – 37	**Yes (Treated as Significant)**
LTA-004	51 (T205)	AR, CB, CA – 27	AR – 27	**Yes (Treated as Significant)**
LTA-005	13 (T215)	AR, CB, CA – >0.1	AR – >0.1	**Yes (Treated as Significant)**
LTA-006	>120	AR, CB, CA – >0.1**	AR – >0.1**	**Yes (Treated as Significant)**
LTA-007	27 (T213)	AR, CB, CA – >0.1	AR – >0.1	**Yes (Treated as Significant)**
LTA-008	118 (T211)	CB – Overlapping* CA – Overlapping*	AR – 93	**Yes (Treated as Significant)**
LTA-009	94 (T202)	AR, CB, CA – >0.1**	AR – >0.1**	**Yes (Treated as Significant)**
MIW-002	47 (T19)	AR, CB, CA – >0.1	AR – >0.1	**Yes (Treated as Significant)**
MIW-003	>120	CB, CA – >0.1	AR – 37	**Yes**

Feature ID	Distance to Closest Turbine (from blade tip) (m)	Distance to Closest Other Project Infrastructure (m)	Distance to Project Infrastructure With a Potential Operational Effect (m)	EIS Required (Y/N/Generalized)
MIW-004	51 (T205)	AR, CB, CA – 27	AR – 27	**Yes (Treated as Significant)**
MIW-005	13 (T215)	AR, CB, CA – >0.1	AR – >0.1	**Yes (Treated as Significant)**
MIW-006	27 (T213)	AR, CB, CA – >0.1	AR – >0.1	**Yes (Treated as Significant)**
MIW-007	118 (T211)	CB – Overlapping* CA – Overlapping*	AR – 93	**Yes (Treated as Significant)**
MIW-008	94 (T202)	AR, CB, CA – >0.1**	AR – >0.1**	**Yes (Treated as Significant)**
MIW-009	>120	AR, CB, CA – 82	AR – 82	**Yes (Treated as Significant)**
PGH-001	>120	AR, CB, CA – >0.1**	AR – >0.1**	**Yes**
DIS-001	51 (T205)	AR, CB, CA – 27	WT – 58 (T205)	**Yes (Treated as Significant)**
DIS-002	13 (T215)	AR, CB, CA – >0.1	WT – 20 (T215)	**Yes (Treated as Significant)**
DIS-003	27 (T213)	AR, CB, CA – >0.1	WT – 34 (T213)	**Yes (Treated as Significant)**
DIS-004	94 (T202)	AR, CB, CA – >0.1**	WT – 101 (T202)	**Yes (Treated as Significant)**
DUS-001	51 (T205)	AR, CB, CA – 27	WT – 58 (T205)	**Yes (Treated as Significant)**
DUS-002	13 (T215)	AR, CB, CA – >0.1	WT – 20 (T215)	**Yes (Treated as Significant)**
DUS-003	27 (T213)	AR, CB, CA – >0.1	WT – 34 (T213)	**Yes (Treated as Significant)**
DUS-004	94 (T202)	AR, CB, CA – >0.1**	WT – 101 (T202)	**Yes (Treated as Significant)**

Feature ID	Distance to Closest Turbine (from blade tip) (m)	Distance to Closest Other Project Infrastructure (m)	Distance to Project Infrastructure With a Potential Operational Effect (m)	EIS Required (Y/N/Generalized)
GSW-001	103 (T205)	AR, CB, CA – 30	WT – 110 (T205)	**Yes (Treated as Significant)**
GSW-002	50 (T12)	AR, CB, CA – >0.1	WT – 57 (T12)	**Yes (Treated as Significant)**
CSO-001	50 (T12)	AR, CB, CA – >0.1	WT – 57 (T12)	**Yes (Treated as Significant)**
HHA-002	47 (T19)	AR, CB, CA – >0.1	WT – 54 (T19)	**Yes (Treated as Significant)**
HHA-003	28 (T62)	AR, CB, CA – >0.1	WT – 35 (T62)	**Yes (Treated as Significant)**
HHA-004	51 (T41)	AR, CB, CA – >0.1	WT – 58 (T41)	**Yes (Treated as Significant)**
HHA-006	51 (T205)	AR, CB, CA – 27	WT – 58 (T205)	**Yes (Treated as Significant)**
HHA-007	13 (T215)	AR, CB, CA – >0.1	WT – 20 (T215)	**Yes (Treated as Significant)**
HHA-009	118 (T211)	CB – Overlapping* CA – Overlapping*	WT – 118 (T211)	**Yes (Treated as Significant)**
HHA-010	94 (T202)	AR, CB, CA – >0.1**	WT – 101 (T202)	**Yes (Treated as Significant)**
HSC-001	50 (T12)	AR, CB, CA – >0.1	WT – 57 (T12)	**Yes (Treated as Significant)**
SCL-001	50 (T12)	AR, CB, CA – >0.1	WT – 57 (T12)	**Yes (Treated as Significant)**
Generalized Significant Wildlife Habitats				
Waterfowl Stopover and Staging Areas (Terrestrial)	N/A	N/A	WT – >120	**Yes**

Feature ID	Distance to Closest Turbine (from blade tip) (m)	Distance to Closest Other Project Infrastructure (m)	Distance to Project Infrastructure With a Potential Operational Effect (m)	EIS Required (Y/N/Generalized)
Waterfowl Stopover and Staging Areas (Aquatic)	N/A	N/A	WT – >120	**Yes**
Shorebird Migratory Stopover Area	N/A	N/A	WT – >120	**Yes**
Bat Maternity Colonies	N/A	N/A	WT – >120	**Yes**
Turtle Wintering Areas	N/A	N/A	No development within habitat	**Yes**
Snake Hibernaculum	N/A	N/A	WT – >120 AR – >120	**Yes**
Colonially – Nesting Bird Breeding Habitat (Tree/Shrubs)	N/A	N/A	WT – >120 AR – >120	**Yes**
Colonially – Nesting Bird Breeding Habitat (Ground)	N/A	N/A	WT – >120 AR – >120	**Yes**
Savannah	N/A	N/A	AR – >120	**Yes**
Waterfowl Nesting Area	N/A	N/A	WT – >120	**Yes**
Woodland Raptor Nesting Habitat	N/A	N/A	No development within habitat	**Yes**
Turtle Nesting Area	N/A	N/A	AR – >120	**Yes**
Amphibian Breeding Habitat (Woodland)	N/A	N/A	AR – >120	**Yes**
Marsh Bird Breeding Habitat	N/A	N/A	WT – >120	**Yes**

Feature ID	Distance to Closest Turbine (from blade tip) (m)	Distance to Closest Other Project Infrastructure (m)	Distance to Project Infrastructure With a Potential Operational Effect (m)	EIS Required (Y/N/Generalized)
Shrub/Early Successional Bird Breeding Habitat	N/A	N/A	WT – >120	**Yes**
Terrestrial Crayfish	N/A	N/A	No development within habitat	**Yes**
Eastern Wood-Pewee	N/A	N/A	WT – >120	**Yes**
Wood Thrush	N/A	N/A	WT – >120	**Yes**
Red-headed Woodpecker	N/A	N/A	No development within habitat	**Yes**
Prairie Milkweed	N/A	N/A	AR – >120	**Yes**
Pawpaw	N/A	N/A	AR – >120	**Yes**
Trumpet Creeper	N/A	N/A	AR – >120	**Yes**
Muskingum Sedge	N/A	N/A	AR – >120	**Yes**
Field Dodder	N/A	N/A	AR – >120	**Yes**
Schweinitz's Flatsedge	N/A	N/A	AR – >120	**Yes**
Deer-tongue Panicgrass	N/A	N/A	AR – >120	**Yes**
White-haired Panicgrass	N/A	N/A	AR – >120	**Yes**
Coast Barnyard Grass	N/A	N/A	AR – >120	**Yes**
Burning Bush	N/A	N/A	AR – >120	**Yes**
Swamp Rose-mallow	N/A	N/A	AR – >120	**Yes**
Many-fruit Primrose-willow	N/A	N/A	AR – >120	**Yes**
Winged Loosestrife	N/A	N/A	AR – >120	**Yes**
Biennial Gaura	N/A	N/A	AR – >120	**Yes**

Feature ID	Distance to Closest Turbine (from blade tip) (m)	Distance to Closest Other Project Infrastructure (m)	Distance to Project Infrastructure With a Potential Operational Effect (m)	EIS Required (Y/N/Generalized)
Shumard Oak	N/A	N/A	AR – >120	**Yes**
Climbing Prairie Rose	N/A	N/A	AR – >120	**Yes**
Upright Carrion Flower	N/A	N/A	AR – >120	**Yes**
Illinois Carrion Flower	N/A	N/A	AR – >120	**Yes**
Giant Ironweed	N/A	N/A	AR – >120	**Yes**
Shellbark Hickory	N/A	N/A	AR – >120	**Yes**
Lizard's Tail	N/A	N/A	AR – >120	**Yes**
Missouri Ironweed	N/A	N/A	AR – >120	**Yes**
Pignut Hickory	N/A	N/A	AR – >120	**Yes**
Mottled Darner	N/A	N/A	WT – >120	**Yes**
Hackberry Emperor	N/A	N/A	WT – >120	**Yes**
Tawny Emperor	N/A	N/A	WT – >120	**Yes**
Dion Skipper	N/A	N/A	WT – >120	**Yes**
Duke's Skipper	N/A	N/A	WT – >120	**Yes**
Giant Swallowtail	N/A	N/A	WT – >120	**Yes**
Common Sootywing	N/A	N/A	WT – >120	**Yes**
Hickory Hairstreak	N/A	N/A	WT – >120	**Yes**
Hayhurst's Scallopwing	N/A	N/A	WT – >120	**Yes**
Southern Cloudywing	N/A	N/A	WT – >120	**Yes**

**Directional drilling will be used to bore beneath this feature in order to avoid impacts to the feature itself*

***On the mapping, this woodland appears to be overlapped; however, all project components, including the construction disturbance area, will be located adjacent to the woodland (>0.1m)*

Legend

WT: Wind Turbine
AR: Access Road
CB: Cabling
CA: Construction Activity/Temporary Infrastructure/Balance of Operations
SI: Supporting Infrastructure - Building/Substation/Laydown Area/Point of Interconnect

4.0 Description of the Proposed Undertaking

In accordance with the REA Regulation, the presence of significant natural features within the Belle River project area has been reviewed by NRSI biologists. Based on natural features, vegetation communities, and wildlife species present within the project area, summarized in the previous section, NRSI biologists have examined the potential for this project to impact the surrounding features. NRSI biologists have completed a detailed records review, site investigation, and evaluation of significance of all potentially significant natural features and wildlife habitats within the Belle River project area in accordance with the Natural Heritage Assessment Guide for Renewable Energy Projects (MNR 2012a), Significant Wildlife Habitat Technical Guide (SWHTG) (MNR 2000), and the Draft Significant Wildlife Habitat Ecoregion 7E Criterion Schedule (MNR 2012b). NRSI biologists have identified several significant, or treated as significant, natural features and wildlife habitats within the Belle River project area.

Additional information relating to the development of this project, including detailed descriptions of the construction activities, have been provided in the *Construction Plan Report*, prepared by AECOM under a separate cover. Additional information relating to the operation and decommissioning of this project has been provided in the *Design and Operations Report* and *Decommissioning Plan Report*, prepared by AECOM under a separate cover. This document provides construction details and potential environmental impacts associated with the construction of the Belle River Wind Project. The specific environmental impacts relating to the natural features and wildlife habitats have been discussed in detail within the following sections. All identified impacts are discussed in this section assuming no mitigation measures are applied, and therefore are described as a "worst case scenario" for impacts to natural features and wildlife habitats. Recommendations to mitigate identified impacts as well as monitoring of effectiveness of these mitigation measures are discussed in Section 5.0.

4.1 Site Preparation and Servicing

Several site preparation activities will be required at the Belle River Wind Project in advance of specific construction activities. These activities include clearing and leveling

of the project location. Potential vegetation removal and grading activities associated with the development of this project have been considered in Table 2 below.

Table 2. Summary of Site Preparation and Servicing Activities and Potential Negative Environmental Effects within the Belle River Project Area

Project Activity	Extent of Effect	Potential Negative Effects
Vegetation Removal (Shoreline/Riparian Habitat)	A total of 33 watercourses have been identified as crossing the Belle River project location in at least 1 location, sometimes with multiple crossings of the same water body, totaling 73 individual crossing locations. Minor removal of riparian vegetation may occur where watercourse crossings are required. In addition, these watercourse crossing locations may overlap with significant wildlife habitats. Areas of vegetation removal will be extremely limited, and in most cases will occur perpendicular to watercourses to limit the amount of vegetation (if any) that may require removal. Details of proposed crossing locations including structure and specific location are not known at this time and will be addressed during the permitting phase of the project.	• Loss of shade, resulting in possible increase in water temperatures • Reduced bank stability • Increased erosion, sedimentation and turbidity • Reduced stability and increased erosion of sensitive landforms • Loss or disturbance of riparian vegetation and wildlife species
Vegetation Removal (Wetland Habitat)	None expected	N/A
Vegetation Removal (Upland Habitat)	The detailed site investigation and evaluation of significance have confirmed that no vegetation removal will occur within significant woodlands. Site preparation activities are proposed immediately adjacent to some of these woodlands, and incidental vegetation damage/removal may occur. Other areas of upland	• Loss of vegetation and wildlife habitat • Loss of natural linkages and corridors for animal movement • Temporary disturbance of wildlife species

Project Activity	Extent of Effect	Potential Negative Effects
	vegetation clearing will be limited to hedgerow crossings or roadside right-of-ways which will occur perpendicular to the hedgerow orientation and/or be limited to the right-of-way.	
Grading	Relatively minor grading activities are expected to occur throughout the project area. Grading is important to ensure crane pads, staging areas, and other construction areas are level.	• Increased erosion, sedimentation and turbidity • Changes in natural drainage and altered surface runoff • Changes in soil moisture • Soil compaction • Disturbance of wildlife species • Alteration or destruction of landforms (e.g. kames, eskers, sand dunes)

4.2 Construction

The construction phase of the Belle River Wind Project will involve the installation of up to 50 operational wind energy generating turbines, as well as all supporting infrastructure, such as temporary construction offices, temporary lay-down areas, crane pads, operation and maintenance building, access roads, meteorological towers, pad mount transformers, collection lines, collector substation, microwave tower, transmission lines, and interconnection station. The details of these construction activities, and potential negative effects that may be associated with each activity, have been outlined in Table 3 below.

Table 3. Summary of Construction Activities and Potential Negative Environmental Effects within the Belle River Project Area

Project Activity	Extent of Effect	Potential Negative Effects
Ancillary Facility Construction	Five types of supporting facilities may be associated with the Belle River Wind Project. These include a collector substation, a microwave tower, 3 meteorological towers, a point of interconnection, and an operations and maintenance (O&M) building.	• Accidental vegetation removal • Increased erosion, sedimentation, and turbidity • Fugitive dust emission • Changes in soil moisture and compaction • Potential for spills and leaks (oil, gas, etc.), and contamination of nearby natural features • Increase in impervious surfaces and increased surface run-off • Temporary noise, and potential avoidance or disturbance of wildlife species • Increased species competition through introduction of invasive species
Turbine Erection	A total of 50 proposed turbine locations will be permitted for the Belle River Wind Project. It	• Accidental vegetation removal • Increased erosion, sedimentation, and turbidity • Fugitive dust emission

Project Activity	Extent of Effect	Potential Negative Effects
	is proposed that up to 44 wind turbines will be installed. As part of the turbine erection, laydown areas and crane pads will be placed around the base of the turbine. The crane pads, measuring approximately 0.2 acres, will require the removal of topsoil and subsoil, and crane pad locations will be filled with a varying mixture of granular base material and crushed gravel depending on site specific conditions. Following the erection of wind turbines, the crane pad, granular base materials and crushed gravel will be removed, native topsoil replaced, and crane pads returned to their pre-construction condition, at the discretion of the landowners. It is possible that during excavation for turbine foundations, groundwater or precipitation entering the excavation will require pumping.	• Changes in soil moisture and compaction • Potential for spills and leaks (oil, gas, etc.), and contamination of nearby natural features • Increase in impervious surfaces and increased surface run-off • Changes in surface water drainage. • Direct wildlife (avian and bat) mortality due to collisions with turbines • Disturbance of wildlife species • Increased species competition through introduction of invasive species If dewatering of excavated wind turbine foundations is required: • Reduced groundwater discharge • Reduced stream baseflows and upwelling • Increased water temperatures • Reduced water quality • Increased water quantity
Roads – Water Crossings	A total of 73 crossings of water bodies have been identified. Most of these represent crossings with collection lines along the road right-of-way. The type of cabling (overhead vs. underground) to be used in the road right-of-way is still being finalized, and impacts associated with each type are considered as part of this EIS. The remaining watercourses will be crossed by underground cabling, either through horizontal directional drilling or through open cut burying in dry conditions and/or by access roads following appropriate in-water guidelines (if applicable). Twenty-four of the crossing locations are associated with new access roads, requiring the installation of a new water	• Accidental vegetation removal • Changes in stream alignment or flow regimes • Increased erosion, sedimentation, and turbidity • Fugitive dust emission • Changes in soil moisture and compaction • Increase in impervious surfaces and increased surface run-off • Changes in surface water drainage. • Loss of riparian vegetation • Interruption of a linkage along a watercourse • Potential for spills and leaks (oil, gas, etc.), and contamination of nearby natural features • Barriers to wildlife movement • Increased wildlife mortality due to vehicle collisions • Disturbance of wildlife species • Increased species competition through introduction of invasive species

Project Activity	Extent of Effect	Potential Negative Effects
	crossing structure. Additional water crossing locations situated along existing municipal roads may also require upgrades, and therefore new crossing structures. However, the need for these upgrades and exact locations (if any) must be determined through consultation with the contractors completing this work.	
Roads	Access roads will be constructed to be up to 15m wide during the construction phase in order to accommodate cranes and transportation equipment. After construction, these roads will be reduced to a width of 4-8m to allow access to turbines and associated infrastructure for maintenance and repairs.	• Accidental vegetation removal • Increased surface runoff and reduced infiltration • Increased erosion, sedimentation, and turbidity • Fugitive dust emission • Potential for spills and leaks (oil, gas, etc.), and contamination of nearby natural features • Changes in surface water drainage. • Changes in soil moisture and compaction • Increase in impervious surfaces and increased surface run-off • Loss of wildlife habitat • Barriers to wildlife movement • Increased wildlife mortality due to vehicle collisions • Disturbance of wildlife species • Increased species competition through introduction of invasive species
Cabling (Collector Lines)	Underground and overhead cabling are both being considered as options for this project. Most of the underground cabling within the project area will be installed by way of open cut trenches. This will include all cabling on private land and all of the roadside collector system. Where possible, underground electrical collector lines will be installed within the access road construction disturbance area in order to minimize the area of disturbed land. Underground electrical collector lines will be buried at a minimum depth of approximately 1m. Horizontal directional drilling will also be required within the Belle River project area. Directional drilling will be used in some locations to extend cabling beneath natural features, wildlife habitats, or water bodies without	<u>Underground Cabling – Open Cut/ Directional Drilling</u> • Accidental vegetation removal • Increased erosion, sedimentation, and turbidity • Fugitive dust emission • Changes in soil moisture and compaction • Disturbance of wildlife species • Potential for spills and leaks (oil, gas, etc.), and contamination of nearby natural features • Potential for 'frac-out' into significant natural features and/or wildlife habitats where directional drilling is proposed • Reduced flood attenuation • Reduced water quality • Reduced infiltration and groundwater discharge • Increased species competition through introduction of invasive species • Removal of vegetation within the right-of-way <u>Overhead Cabling</u> • Accidental vegetation removal • Increased erosion, sedimentation, and turbidity • Fugitive dust emission • Changes in soil moisture and compaction • Potential for spills and leaks (oil, gas, etc.), and contamination of nearby natural features • Loss of upland vegetation • Direct wildlife (avian) mortality due to collisions with

Project Activity	Extent of Effect	Potential Negative Effects
	direct impact. Although currently the exact locations of directional drilling are unknown, impacts associated with this construction activity have been considered as part of this EIS. Overhead cabling is being considered as an option along the public road allowance in some locations. Overhead cabling will require installation of wood, steel or concrete monopoles to a depth of 5-6m.	lines • Disturbance of wildlife species • Increased species competition through introduction of invasive species • Removal of vegetation within the right-of-way
Construction Staging Area	A temporary construction staging area will be located within the Belle River project area and will range in size from 10-15ha. Topsoil and subsoil will be stripped and stockpiled on-site and the construction staging areas will be constructed of compacted surface material suitable for vehicular traffic and equipment / component storage. The depth of the graveled areas will vary and will be dependent on conditions encountered during the time of construction. Following construction, the temporary construction laydown area will be restored to pre-existing conditions to allow agricultural or prior activities to resume, at the discretion of landowners.	• Accidental vegetation removal • Increased erosion, sedimentation, and turbidity • Fugitive dust emission • Changes in soil moisture and compaction • Potential for spills and leaks (oil, gas, etc.), and contamination of nearby natural features • Increase in impervious surfaces and increased surface run-off • Changes in surface water drainage. • Disturbance of wildlife species • Increased species competition through introduction of invasive species

4.3 Operation

The operational phase of the Belle River Wind Project will include the operation of up to 50 wind energy generating turbines, as well as all associated regular maintenance activities. The potential negative effects of this facility during the operational phase of the project have been summarized in Table 4 below.

Table 4. Summary of Operation Activities and Potential Negative Environmental Effects within the Belle River Project Area

Project Activity	Extent of Effect	Potential Negative Effects
Water Taking	During operation of the project, it is expected that approximately up to 15 full time employees will regularly use the operations and maintenance building. Non-potable water taking during operation will be limited to regular personnel requirements.	• Reduced groundwater discharge • Reduced stream baseflows and upwelling • Increased water temperatures
Application of Herbicides	None expected	N/A
Mechanical Vegetation Control	Mechanical vegetation control will be required around the transmission line and collector lines, if installed on poles, to prevent any damage to the lines and ensure safe operation. The vegetation is typically cleared by mechanized equipment (e.g., chainsaw / hydro axe).	• Loss of natural vegetation • Potential for spills and leaks (oil, gas, etc.), and contamination of nearby natural features • Direct mortality to local wildlife
Turbine Operation	A total of 50 proposed turbine locations will be permitted for the Belle River Wind Project. It is proposed that up to 44 wind turbines will be operational.	• Disturbance to wildlife species • Direct mortality to avian and bat species
Turbine Maintenance	Regular maintenance will occur at all of the operational turbines at the Belle River Wind Project. In addition to regularly scheduled maintenance, occasional unscheduled maintenance activities may be required.	• Potential for spills and leaks (oil, gas, etc.), and contamination of nearby natural features • Disturbance to wildlife species • Increased wildlife mortality due to vehicle collisions

4.4 Decommissioning

The decommissioning phase of the Belle River Wind Project will include the disassembly and removal of the project infrastructure associated with this project. The details of this project phase, along with potential negative effects, have been provided in Table 5 below.

Table 5. Summary of Decommissioning Activities and Potential Negative Environmental Effects Within the Belle River Project Area

Project Activity	Extent of Effect	Potential Negative Effects
Removal of Ancillary Facilities	Five types of supporting facilities may be associated with the Belle River Wind Project. These include a collector substation, a microwave tower, 3 meteorological towers, a point of interconnection, and an O&M building. The collector substation, microwave tower, and operations and maintenance building, as well as all associated infrastructure will be dismantled and removed from the project area. The 3 meteorological towers will be removed unless otherwise requested by County of Essex, the Town of Lakeshore or local aviation groups (and agreed to by Belle River Wind).	• Increased erosion, sedimentation, and turbidity • Soil compaction • Potential for spills and leaks (oil, gas, etc.), and contamination of nearby natural features • Disturbance of wildlife species
Removal of Turbine Infrastructure	A total of 50 proposed turbine locations will be permitted for the Belle River Wind Project. It is proposed that up to 44 wind turbines will be removed as part of the decommissioning plan. A crane pad and wind turbine laydown area will be constructed at each turbine location to accommodate the dismantling of the wind turbine generators. Following the removal of turbines, crane pads will be removed and the land will be restored to land use present prior to turbine installation, to allow for agricultural activities to continue. Removal of turbine components will also include the removal of 1m of the underground foundation. Excavated foundation areas will be backfilled with subsoil and topsoil to match the original soil horizons and elevation, and the area will be graded and contoured.	• Increased erosion, sedimentation, and turbidity • Soil compaction • Potential for spills and leaks (oil, gas, etc.), and contamination of nearby natural features • Disturbance of wildlife species
Removal of Access Roads	Access road removal will be dependent on the requirements and agreements in place with the individual landowner. Impacted lands will be restored to land use present prior to access road	• Increased erosion, sedimentation, and turbidity • Soil compaction • Potential for spills and leaks (oil, gas, etc.), and contamination of nearby natural features • Disturbance of wildlife species

Project Activity	Extent of Effect	Potential Negative Effects
	construction, at the discretion of landowners.	
Removal of Cabling (Collector Lines)	Underground and overhead cabling are both being considered as options for this project. Overhead cables and transmission poles that are not shared with Hydro One or other utilities will be removed. Underground collector lines are expected to remain in place at the end of the project life; however at the connection points, where the underground collector lines come to the surface, the collector lines will be cut to a depth of approximately 1 m below grade. Any collector lines located at directionally drilled watercourse crossings or underneath significant natural features and wildlife habitats will remain in place; however, the connection point will be severed at a point located outside of the Essex Region Conservation Authority (ERCA) Regulated Area, where possible, and outside of significant natural features and/or wildlife habitats.	<u>Underground Cabling – Open Cut:</u> • Increased erosion, sedimentation, and turbidity • Soil compaction • Potential for spills and leaks (oil, gas, etc.), and contamination of nearby natural features • Disturbance of wildlife species <u>Overhead Cabling</u> • Increased erosion, sedimentation, and turbidity • Soil compaction • Potential for spills and leaks (oil, gas, etc.), and contamination of nearby natural features • Disturbance of wildlife species
Construction Staging Area	Upon decommissioning of the project, temporary staging and laydown areas will be constructed and all decommissioning activities will be carried out within these designated areas.	• Increased erosion, sedimentation, and turbidity • Soil compaction • Potential for spills and leaks (oil, gas, etc.), and contamination of nearby natural features • Increase in impervious surfaces and increased surface run-off • Disturbance of wildlife species

4.5 Approach to Impact Assessment

For the purposes of this report, the analysis of potential impacts has been divided into the different classifications of significant natural features, as identified by the evaluation of significance section of this report, with significant wildlife habitat further subdivided based on the distance to project location, type of wildlife habitat, and methods of determining significance, as follows:

- Significant Woodlands
- Significant Wetlands

- Significant Wildlife Habitat (SWH)
    - Project Location within SWH
    - Project Location within 120m of Confirmed SWH
    - Project Location within 120m of SWH Treated as Significant
    - Generalized Impacts to Wildlife Habitat

Potential impacts on each of the significant features or wildlife habitats within the Belle River project area are discussed collectively based on their respective distance to the closest project location. Although grouped by closest distance to project location, all potential impacts of the proposed development within 120m of each feature are encompassed within the tables. Given the potential impacts at various distances to project location, NRSI has grouped the natural features or wildlife habitats that are within 120m of the project location into 3 more specific distance categories from the project location with an operational impact: overlapping, 0-30m, and greater than 30-120m. These distance categories have been chosen as they each have the potential for different types of impacts on wildlife habitats and natural features. Although there is an expected gradual increase in potential impacts as development occurs closer to natural features or wildlife habitats, a distance of 30m has been chosen as a suitable division between specific types of impacts. For areas where the project location is within 30m of a natural feature or significant wildlife habitat, there is increased potential for impacts relating to sedimentation and erosion, visual and noise disturbance to wildlife, impacts from accidental spills, and other localized impacts. The impacts within each of these distance categories are expected to be relatively consistent within the given distance, with slightly different impacts (and related mitigation measures) associated with each distance category.

5.0 Environmental Impact Study

In accordance with the REA Regulation, the presence of significant natural features within the Belle River project area has been reviewed by NRSI biologists. Based on natural features, vegetation communities, and wildlife habitats present within the project area, summarized in previous sections, NRSI biologists have evaluated the project area for potentially significant natural areas and wildlife habitats. NRSI biologists have identified several significant, or treated as significant, natural features and wildlife habitats within the Belle River project area in accordance with the Natural Heritage Assessment Guide for Renewable Energy Projects (MNR 2012a) and the Draft Significant Wildlife Habitat Ecoregion 7E Criterion Schedule (MNR 2012b).

Each of these significant natural features are discussed in more detail below, including potential impacts and proposed mitigation measures. Additional consideration will be given to mitigation measures and monitoring programs for this project in the Environmental Effects Monitoring Plan, which will be prepared under a separate cover. This report summarizes the potential environmental effects of the project and details the monitoring programs that will be implemented during the various phases of the Belle River Wind Project.

5.1 Significant Natural Features

No natural features, including provincial parks, conservation reserves, or Areas of Natural and Scientific Interest (Life Science or Earth Science) were identified within the Belle River project area.

5.2 Significant Woodlands and Wetlands

NRSI biologists have identified several significant woodlands and wetlands within the Belle River project area. Potential negative impacts and proposed mitigation measures for each of these features has been detailed in Table 6 below. This table discusses each of these natural feature types (woodland and wetland) based on the general distances that they are found from the project location. As described above, for the purposes of impact assessment and recommended mitigation measures, the general

distance categories have been established as overlapping, 0-30m, and greater than 30-120m from the project location.

Table 6. Summary of Significant Woodlands and Wetlands within the Belle River Project Area

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Mitigation Measures	Performance Objectives, Monitoring, and Contingency Plans
Woodlands				
WOD-021 WOD-027	Overlapping (horizontal directional drilling under feature)	• Accidental vegetation removal (direct vegetation removal is not anticipated due to directional drilling at these locations)	• Clearly delineate work area using erosion fencing or other barrier to avoid accidental damage to retained species. • Where construction is within 10m of a significant woodland, erect erosion fencing to correspond to the disturbance area limits. • Place the erosion fencing as far away as possible from the significant woodland and no closer to the significant woodland than the dripline. • Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate. The environmental monitor(s) will be an independent contractor with experience providing environmental recommendations on a large-scale construction site. • No use of herbicides (project related activities only) within significant features or wildlife habitats.	Performance Objective: • Minimize direct impacts on vegetation communities and protect rare/sensitive habitats. Monitoring: • Undertake regular monitoring of the dripline within 10m of construction activities for the duration of the construction and decommissioning phases of this project. This monitoring will be conducted at a minimum frequency of once per week when construction is anticipated within 10m of a significant woodland. • Undertake regular monitoring of the dripline to ensure the work area is clearly delineated and dripline boundaries are respected when construction is anticipated to occur within 10-30m of significant woodlands, at a minimum frequency of once per month. Contingency Measure: • Prune any tree limbs or roots that are accidentally damaged by construction activities using proper arboricultural techniques. • Accidental damage to trees, or unexpected vegetation removal, may require re-planting of similar, native species. If re-planting is required consult the MNRF to determine appropriate contingency measures, which may include a re-planting strategy.
		• Disturbance of local wildlife	• Avoid construction activities during the breeding bird period (May 1st – July 31st), wherever possible, to limit disturbance of local wildlife. • If construction activities must occur	Performance Objective: • Avoid direct impacts on breeding birds and their habitats. • Minimize impacts on species that are relatively inactive at night and not accustomed to

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Mitigation Measures	Performance Objectives, Monitoring, and Contingency Plans
			during the breeding bird period (May 1st – July 31st), a biologist will conduct nest searches, in areas where natural vegetation will be removed, to ensure there will be no impact to breeding birds. • Schedule construction activities within 30m of significant woodlands to occur during daylight hours to avoid excessive noise and/or light disturbances to wildlife, wherever possible. • If construction activities within 30m of significant woodlands must occur outside of daylight hours, spotlights will be directed downward and/or away from the woodland to limit potential light disturbance to breeding birds. • Implement and enforce on-site speed limits.	nighttime disturbances. No monitoring or contingency plan required.
		• Sedimentation and erosion	• Implement a sediment and erosion control plan. • Install, monitor, and maintain erosion and sediment control measures (i.e. silt fences) around the construction area, as identified within the sediment and erosion control plan. • Schedule grading to avoid times of high runoff volumes wherever possible and suspend work if an excessive sediment discharge occurs, as determined by an environmental monitor, until mitigation measures have been established. • Locate all directional drill entry and exit pits a sufficient distance from the edge of the natural feature to maintain a vertical depth of at least 1.5m at all times below the natural feature to protect the critical root zone. • Collect directional drill cuttings as they are generated and placed in a soil bin or	Performance Objective: • Minimize impacts to natural features and associated wildlife habitats. Monitoring: • Undertake regular construction monitoring and routine inspections to ensure proper installation of erosion control measures and that proper fugitive dust control measures are in place. • Monitor sediment and erosion control measures, such as silt fence, check dams, and dust control measures daily in areas where work is taking place and prior to and after any storm events. • Monitor sediment and erosion control measures weekly in areas where active construction is not occurring until the construction phase is complete. • Correct silt fencing, or other applicable sediment and erosion control measures, that

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Mitigation Measures	Performance Objectives, Monitoring, and Contingency Plans
			bag for off-site disposal. • Restore and re-vegetate directional drill entry/exit pits to pre-construction conditions as soon as possible after construction.	is not working properly. • An environmental monitor will be present, as required, when active directional drilling is occurring. Contingency Measure: • If deficiencies in sediment and erosion control measures are noted, the environmental monitor will notify the contract administrator and recommend remedial actions. • If 'frac-out' occurs, immediately implement 'frac-out' contingency plan. • If sedimentation and erosion control measures fail or and degradation of the natural feature occurs, consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • If fugitive dust control measures fail and degradation of the natural feature occurs, consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.
		• Fugitive Dust Emission	• Implement and enforce speed limits for construction equipment and trucks. • Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression. • Re-vegetate cleared areas as soon as reasonably possible. • Install wind fences, where determined to be necessary by the on-site Environmental Monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.	
		• Spills (i.e. oil, gasoline, grease, etc.)	• Develop a spill response plan and train staff on appropriate procedures. • Develop a 'frac-out' contingency plan and train staff on appropriate procedures. • Keep emergency spill kits on site. • Keep contact information for the Ministry of the Environment and Climate Change (MOECC) Spills Action Centre in a designated area on the construction site. • Dispose of waste material by authorized	

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Mitigation Measures	Performance Objectives, Monitoring, and Contingency Plans
			and approved off-site vendors. • Store hazardous materials in designated areas.	
		• Changes in soil moisture and compaction	• Minimize the use of impervious surfaces where possible, such as utilizing and contouring permeable surface material (i.e. gravel) to increase infiltration, and reduce surface water runoff. • Minimize paved surfaces and design roads to promote infiltration.	Performance Objective: • Minimize impact to soil moisture regime and vegetation species composition. No monitoring or contingency plan required.
WOD-006 WOD-008 WOD-009 WOD-010 WOD-012 WOD-014 WOD-015 WOD-016 WOD-017 WOD-018 WOD-019 WOD-023 WOD-026 WOD-029 WOD-030 WOD-031 WOD-032	0-30m	• Accidental vegetation removal (project locations are sited outside of woodlands - impact to vegetation is not anticipated)	• Clearly delineate work area using erosion fencing, or other barrier, to avoid accidental damage to retained species. • Where construction is within 10m of a significant woodland, erect erosion fencing to correspond to the disturbance area limits. • Place the erosion fencing as far away as possible from the significant woodland and no closer to the significant woodland than the dripline. • Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate. The environmental monitor may also consider substituting other demarcating types for fencing, such as staking and flagging, where it is determined that there is no apparent risk to nearby natural features. This could include situations where the natural feature is at higher elevation than construction activity. • No use of herbicides (project related activities only) within significant features or wildlife habitats.	Performance Objective: • Minimize direct impacts on vegetation communities and protect rare/sensitive habitats. Monitoring: • Undertake regular monitoring of the dripline to ensure the work area is clearly delineated within 10m of construction activities for the duration of the construction and decommissioning phases of this project. This monitoring will be conducted at a minimum frequency of once per week when construction is anticipated within 10m of a significant woodland. • Undertake regular monitoring of the dripline to ensure the work area is clearly delineated and dripline boundaries are respected when construction is anticipated to occur within 10-30m of significant woodlands, at a minimum frequency of once per month. Contingency Measure: • Prune any tree limbs or roots that are accidentally damaged by construction activities using proper arboricultural techniques. • Accidental damage to trees, or unexpected vegetation removal, may require re-planting of similar, native species. If re-planting is

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Mitigation Measures	Performance Objectives, Monitoring, and Contingency Plans
				required, a re-planting strategy will be provided to the MNRF.
		• Disturbance of local wildlife	• Avoid construction activities within 30m of significant woodlands during the breeding bird period (May 1st – July 31st), wherever possible, to limit disturbance of local wildlife. • If construction activities will occur during the breeding bird season (May 1st-July 31st), a biologist will conduct nest searches, where natural vegetation will be removed, to ensure there will be no impact to breeding birds. • Schedule construction activities within 30m of significant woodlands to occur during daylight hours to avoid excessive noise and/or light disturbances to wildlife, wherever possible. • If construction activities within 30m of significant woodlands must occur outside of daylight hours, any spotlights will be directed downward and/or away from the woodland to limit potential light disturbance to breeding birds. • Implement and enforce on-site speed limit.	Performance Objective: • Avoid direct impacts on breeding birds and their habitats. • Minimize impacts on species that are relatively inactive at night and not accustomed to nighttime disturbances. No monitoring or contingency plan required.
		• Sedimentation and erosion	• Implement a sediment and erosion control plan. • Install, monitor, and maintain erosion and sediment control measures (i.e. silt fences) around the construction area as identified within the sediment and erosion control plan. • Suspend work if high runoff volume is noted or excessive sediment discharge occurs, as determined by an environmental monitor.	Performance Objective: • Minimize impacts to natural features and associated wildlife habitats. Monitoring: • Undertake regular construction monitoring and routine inspections to ensure proper installation of erosion control measures and that proper fugitive dust control measures are in place. • Monitor sediment and erosion control measures, such as silt fence, check dams, and dust control measures daily in areas
		• Fugitive Dust Emission	• Implement and enforce speed limits for construction equipment and trucks.	

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Mitigation Measures	Performance Objectives, Monitoring, and Contingency Plans
			• Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. • Re-vegetate cleared areas as soon as reasonably possible. • Install wind fences, where determined to be necessary by the on-site Environmental Monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.	where work is taking place and prior to and after any storm events. • Monitor sediment and erosion control measures weekly in areas where active construction is not occurring until the construction phase is complete. • Correct silt fencing, or other applicable sediment and erosion control measures, that is not working properly. Contingency Measure: • If deficiencies in sediment and erosion control measures are noted, the environmental monitor will notify the contract administrator and recommend remedial actions. • If sedimentation and erosion control measures fail and degradation of the natural feature(s) occurs, consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • If fugitive dust control measures fail and degradation of the natural feature occurs, consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.
		• Spills (i.e. oil, gasoline, grease, etc.)	• Locate all maintenance activities, vehicle refueling or washing, as well as the storage of chemical and construction equipment more than 30m from significant woodlands. • Develop a spill response plan and train staff on appropriate procedures. • Keep emergency spill kits on site. • Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site. • Dispose of waste material by authorized and approved off-site vendors. • Store hazardous materials in designated areas.	
		• Changes in soil moisture and compaction	• Minimize the use of impervious surfaces where possible, such as utilizing and contouring permeable surface material (i.e. gravel) to increase infiltration, and reduce surface water runoff. • Minimize paved surfaces and design	Performance Objective: • Minimize impact to soil moisture regime and vegetation species composition. No monitoring or contingency plan required.

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Mitigation Measures	Performance Objectives, Monitoring, and Contingency Plans
			roads to promote infiltration. • Clearly delineate the dripline and root zone of all trees within 10m of construction activities with erosion fencing or similar barrier.	
WOD-002 WOD-011 WOD-013 WOD-024 WOD-034	>30-120m	• Spills (i.e. oil, gasoline, grease, etc.)	• Develop a spill response plan and train staff on appropriate procedures. • Keep emergency spill kits on site. • Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site. • Dispose of waste material by authorized and approved off-site vendors. • Store hazardous materials in designated areas.	Performance Objective: • Minimize impacts to natural features and associated wildlife habitats. Monitoring: • None required. Contingency Measure: • In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.
		• Changes in soil moisture and compaction	• Minimize the use of impervious surfaces where possible, such as utilizing and contouring permeable surface material (i.e., gravel) to increase infiltration, and reduce surface water runoff. • Minimize paved surfaces and design roads to promote infiltration.	Performance Objective: • Minimize impact to soil moisture regime and vegetation species composition. No monitoring or contingency plan required.
Wetlands				
WET-009	Overlapping (horizontal directional drilling under feature)	• Reduced flood attenuation	• Clearly delineate work area using erosion fencing, or other barrier, to avoid accidental damage to retained wetland vegetation and to avoid impacting hydrological connectivity. • Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate. • Re-vegetate cleared areas as soon as	Performance Objective: • Minimize direct impacts on vegetation communities and protect rare/sensitive habitats. • Minimize impacts to hydrological connectivity. • Minimize impacts to water quality. Monitoring: • Undertake regular monitoring of the wetland to ensure proper erosion and sediment control measures, including fencing, are in place within 10m of construction activities for the

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Mitigation Measures	Performance Objectives, Monitoring, and Contingency Plans
			reasonably possible.	duration of the construction and decommissioning phases of the project. This monitoring will be conducted at a minimum frequency of once per week when construction is anticipated within 10m of a significant wetland. • Undertake regular monitoring of the wetland to ensure proper erosion and sediment control measures, including fencing, are in place when construction is anticipated to occur within 10-30m of significant wetlands, at a minimum frequency of once per month. Depending on the season and site-specific conditions, such as topography, surface water flow patterns, and the presence or absence of vegetative buffers, monitoring frequency will be increased at the discretion of the Environmental Monitor. Contingency Plan: • If sedimentation and erosion or fugitive dust control measures fail and degradation of the natural feature occurs, consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • If negative impacts such as reduced water quality, infiltration and/or groundwater discharge are observed, consult the MNRF to determine appropriate contingency measures.
		• Reduced water quality	• Clearly delineate work area using erosion fencing, or other barrier, to avoid accidental damage to retained wetland vegetation and to avoid impacting water quality. • Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate. • Implement and enforce speed limits for construction equipment and trucks. • Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression. • Re-vegetate areas adjacent to the wetland as soon as possible. • Install wind fences, where determined to be necessary by the on-site Environmental Monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.	
		• Reduced infiltration and groundwater discharge	<u>For groundwater taking (if necessary):</u> • Control rate and timing of water pumping. • Restrict taking of groundwater and surfacewater during extreme low flow	

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Mitigation Measures	Performance Objectives, Monitoring, and Contingency Plans
			time periods. • Control quantity and quality of stormwater discharge using best management practices, and avoid direct discharge into wetlands or watercourses.	
		• Disturbance of local wildlife	• Avoid construction activities during the breeding bird period (May 1st – July 31st), wherever possible, to limit the disturbance of local wildlife. • If construction activities will occur during the breeding bird season (May 1st-July 31st), a biologist will conduct nest searches, where natural vegetation is to be removed, to ensure there will be no impact to breeding birds. • Schedule construction activities within 30m of significant wetlands to occur during daylight hours to avoid excessive noise and/or light disturbances to wildlife, wherever possible. • If construction activities within 30m of significant woodlands must occur outside of daylight hours, spotlights will be angled downwards and/or away from the wetland to limit the potential impact to breeding birds. • Implement and enforce on-site speed limits. • No use of herbicides (project related activities only) within significant features or wildlife habitats.	Performance Objective: • Avoid direct impacts on breeding birds and their habitats. • Minimize impacts on species that are relatively inactive at night and not accustomed to nighttime disturbances. No monitoring or contingency plan required.
		• Sedimentation and erosion	• Implement a sediment and erosion control plan. • Install, monitor, and maintain erosion and sediment control measures (i.e., silt fences) around the construction area as identified within the sediment and erosion control plan.	Performance Objective: • Minimize impacts to natural features and associated wildlife habitats. Monitoring: • Undertake regular construction monitoring and routine inspections to ensure proper

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Mitigation Measures	Performance Objectives, Monitoring, and Contingency Plans
			• Erect erosion fencing to correspond to the construction disturbance area limits. • Place the erosion fencing as far away as possible from the significant wetland and no closer to the significant wetland than the dripline. • Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate. • Schedule grading to avoid times of high runoff volumes wherever possible and suspend work if an excessive sediment discharge occurs, as determined by an environmental monitor, until mitigation measures have been established. • Locate all directional drill entry and exit pits a sufficient distance from the edge of the natural feature to maintain a vertical depth of at least 1.5m at all times below the natural feature to protect the critical root zone. • Collect directional drill cuttings as they are generated and place in a soil bin or bag for off-site disposal. • Restore and re-vegetate directional drill entry/exit pits to pre-construction conditions as soon as possible after construction.	installation of erosion control measures and that proper fugitive dust control measures are in place. • Monitor sediment and control measures, such as silt fence. Check dams, and dust control measures daily in areas where work is taking place and prior to and after any storm events. • Monitor sediment and erosion control measures weekly in areas where active construction is not occurring until the construction phase is complete. • Correct silt fencing, or other applicable sediment and erosion control measure, that is not working properly. Contingency Measure: • If deficiencies in sediment and erosion control measures are noted, the environmental monitor will notify the contract administrator and recommend remedial actions, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas • If 'frac-out' occurs, immediately implement 'frac-out' contingency plan. • If sedimentation and erosion control measures fail and degradation of the natural feature(s) occurs, consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • If fugitive dust control measures fail and degradation of the natural feature occurs, consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • In the event of a spill, notify the MOECC Spills
		• Fugitive Dust Emission	• Implement and enforce speed limits for construction equipment and trucks. • Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site specific weather	

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Mitigation Measures	Performance Objectives, Monitoring, and Contingency Plans
			conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression. • Re-vegetate areas adjacent to the wetland as soon as possible. • Install wind fences, where determined to be necessary by the on-site Environmental Monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.	Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.
		• Spills (i.e. oil, gasoline, grease, etc.)	• Develop a spill response plan and train staff on appropriate procedures. • Develop a 'frac-out' contingency plan and train staff on appropriate procedures. • Keep emergency spill kits on site. • Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site. • Dispose of waste material by authorized and approved off-site vendors. • Store hazardous materials in designated areas.	
		• Changes in soil moisture and compaction	• Minimize the use of impervious surfaces where possible, such as utilizing and contouring permeable surface material (i.e., gravel) to increase infiltration, and reduce surface water runoff. • Minimize paved surfaces and design roads to promote infiltration.	Performance Objective: • Minimize impact to soil moisture regime and vegetation species composition. No monitoring or contingency plan required.
WET-001 WET-002 WET-003 WET-005	0-30m	• Reduced flood attenuation	• Clearly delineate work area using erosion fencing, or other barrier, to avoid accidental damage to retained wetland vegetation and to avoid	Performance Objective: • Minimize direct impacts on vegetation communities and protect rare/sensitive habitats.

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Mitigation Measures	Performance Objectives, Monitoring, and Contingency Plans
WET-006 WET-007 WET-008 WET-013 WET-014 WET-015 WET-016			impacting hydrological connectivity. • Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate. • Where the temporary construction area is proposed to be within 5m of, but not overlapping, a wetland (excluding along existing municipal roads), design any permanent infrastructure (i.e., access roads) to be 5m from the wetland edge and plant native vegetation in the 5m buffer between the infrastructure and wetland edge. • Re-vegetate cleared areas as soon as reasonably possible.	• Minimize impacts to hydrological connectivity. • Minimize impacts to water quality. Monitoring: • Undertake regular monitoring of the wetland to ensure proper erosion and sediment control measures, including fencing, are in place within 10m of construction activities for the duration of the construction and decommissioning phases of the project. This monitoring will be conducted at a minimum frequency of once per week when construction is anticipated within 10m of a significant wetland. • Undertake regular monitoring of the wetland to ensure proper erosion and sediment control measures, including fencing, are in place when construction is anticipated to occur within 10-30m of significant wetlands, at a minimum frequency of once per month. Depending on the season and site-specific conditions, such as topography, surface water flow patterns, and the presence or absence of vegetative buffers, monitoring frequency will be increased at the discretion of the environmental monitor. Contingency Plan: • If sedimentation and erosion or fugitive dust control measures fail and degradation of the natural feature(s) occurs, consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • If negative impacts, such as reduced water quality, infiltration and/or groundwater discharge are observed, consult the MNRF to determine appropriate contingency measures.
		• Reduced water quality	• Clearly delineate work area using erosion fencing, or other barrier, to avoid accidental damage to retained wetland vegetation and to avoid impacting water quality. • Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate. • Implement and enforce speed limits for construction equipment and trucks. • Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site specific weather conditions, including recent	

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Mitigation Measures	Performance Objectives, Monitoring, and Contingency Plans
			precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression. • Where the temporary construction area is proposed to be within 5m of, but not overlapping, a wetland (excluding along existing municipal roads), design any permanent infrastructure (i.e. access roads) to be 5m from the wetland edge and plant native vegetation in the 5m buffer between the infrastructure and wetland edge. • Re-vegetate cleared areas as soon as reasonably possible. • Install wind fences, where determined to be necessary by the on-site Environmental Monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.	
		• Reduced infiltration and groundwater discharge	• Minimize the use of impervious surfaces where possible, such as utilizing and contouring permeable surface material (i.e. gravel) to increase infiltration, and reduce surface water runoff. <u>For groundwater taking (if necessary):</u> • Control rate and timing of water pumping. • Restrict taking of groundwater and surfacewater during extreme low flow time periods. • Control quantity and quality of stormwater discharge using best management practices, and avoid direct discharge into wetlands or watercourses.	
		• Disturbance of local	• Avoid construction activities within 30m	Performance Objective:

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Mitigation Measures	Performance Objectives, Monitoring, and Contingency Plans
		wildlife	of significant wetlands during the breeding bird period (May 1st – July 31st), wherever possible, to limit the disturbance of local wildlife. • If construction activities will occur during the breeding bird season (May 1st-July 31st), a biologist will conduct nest searches, where natural vegetation will be removed, to ensure there will be no impact to breeding birds. • Schedule construction activities within 30m of significant wetlands to occur during daylight hours to avoid excessive noise and/or light disturbances to wildlife, wherever possible. • If construction activities within 30m of significant woodlands must occur outside of daylight hours, spotlights will be angled downwards and/or directed away from the wetland to limit potential impacts to breeding birds. • Implement and enforce on-site speed limits.	• Avoid direct impacts on breeding birds and their habitats. • Minimize impacts on species that are relatively inactive at night and not accustomed to nighttime disturbances. No monitoring or contingency plan required.
		• Sedimentation and erosion	• Implement a sediment and erosion control plan. • Install, monitor, and maintain erosion and sediment control measures (i.e. silt fences) around the construction area as identified within the sediment and erosion control plan. • Suspend work if an excessive sediment discharge occurs, as determined by an environmental monitor, until mitigation measures have been established. • Where the temporary construction area is proposed to be within 5m of, but not overlapping, a wetland (excluding along existing municipal roads), design any permanent infrastructure (i.e. access roads) to be 5m from the wetland edge	Performance Objective: • Minimize impacts to natural features and associated wildlife habitats. Monitoring: • Undertake regular construction monitoring and routine inspections to ensure proper installation of erosion control measures and that proper fugitive dust control measures are in place. • Monitor sediment and erosion control measures, such as silt fence, check dams, and dust control measures daily in areas where work is taking place and prior to and after any storm events. • Monitor sediment and erosion control measures weekly in areas where active

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Mitigation Measures	Performance Objectives, Monitoring, and Contingency Plans
			and plant native vegetation in the 5m buffer between the infrastructure and wetland edge. • Re-vegetate areas adjacent to the wetland as soon as possible.	construction is not occurring until the construction phase is complete. • Correct silt fencing, or other applicable sediment and erosion control measures, that is not working properly. Contingency Measure: • If deficiencies in sediment and erosion control measures are noted, the environmental monitor will notify the contract administrator and recommend remedial actions, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • If sedimentation and erosion control measures fail and degradation of the natural feature(s) occurs, consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • If fugitive dust control measures fail and degradation of the natural feature occurs, consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.
		• Fugitive Dust Emission	• Implement and enforce speed limits for construction equipment and trucks. • Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression. • Where the temporary construction area is proposed to be within 5m of, but not overlapping, a wetland (excluding along existing municipal roads), any permanent infrastructure (i.e. access roads) will be placed 5m from the wetland edge and native vegetation will be planted in the 5m buffer between the infrastructure and wetland edge. • Re-vegetate areas adjacent to the wetland as soon as possible. • Install wind fences, where determined to be necessary by the on-site Environmental Monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.	
		• Spills (i.e. oil, gasoline, grease, etc.)	• Locate all maintenance activities, vehicle refueling or washing, as well as the storage of chemical and construction equipment more than 30m	

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Mitigation Measures	Performance Objectives, Monitoring, and Contingency Plans
			from significant woodlands. • Develop a spill response plan and train staff on appropriate procedures. • Keep emergency spill kits on site. • Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site. • Dispose of waste material by authorized and approved off-site vendors. • Store hazardous materials in designated areas.	
		• Changes in soil moisture and compaction	• Minimize the use of impervious surfaces where possible, such as utilizing and contouring permeable surface material (i.e. gravel) to increase infiltration, and reduce surface water runoff. • Minimize paved surfaces and design roads to promote infiltration.	Performance Objective: • Minimize impact to soil moisture regime and vegetation species composition. No monitoring or contingency plan required.

5.3 Significant Wildlife Habitat

NRSI biologists have completed an evaluation of significance of all potentially significant wildlife habitats within the Belle River project area. These studies have determined the presence of 123 significant wildlife habitats within the project area. Eleven of these wildlife habitats have been confirmed as significant wildlife habitats, and 111 have been treated as significant. In accordance with the REA Regulation, each of these features in, or within 120m of, a project component that have the potential to incur an operational impact, as per Appendix D of the Natural Heritage Assessment Guide (MNR 2012a), has been specifically addressed below. Other wildlife habitats, treated as significant, that are present within 120m of (but not overlapping) project components that will not have an operational impact on the habitat have been collectively addressed as part of the generalized mitigation measures. As described above, for the purposes of impact assessment and recommended mitigation measures, the general distance categories have been established as overlapping, 0-30m, and greater than 30-120m from the project location. These measurements coincide with the distance from a significant wildlife habitat to the closest project component.

5.3.1 Project Location Overlapping Wildlife Habitat

NRSI biologists have identified a total of 9 individual wildlife habitats, representing 9 habitat types, which overlap with the Belle River Wind Project location. All 9 of these wildlife habitats have been treated as significant for the purposes of this report, and will be surveyed in detail prior to the construction to confirm significance of each individual habitat. Each of these wildlife habitats have been addressed in Table 7 below, including potential impacts of the development, pre-construction surveys, and recommended mitigation measures if pre-construction surveys confirm significance.

Table 7. Potential Impacts, Mitigation Measures, and Survey Methods for Wildlife Habitats Overlapping the Belle River Wind Project Location

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if significant)	Performance Objectives, Monitoring, and Contingency Plans
AWO-012 Amphibian Breeding Habitat (Woodland)	Overlapping (horizontal directional drilling under feature)	• Accidental loss of habitat (damage to vegetation, including root zones)	On the first visit each habitat will be assessed for seasonal flooding to determine if suitable habitat exists. If suitable habitat exists, the following methods will be applied: NRSI will conduct 3 evening amphibian call surveys, once in each of April, May and June 2015. Each survey will last 3 minutes, following the accepted Marsh Monitoring Program protocol, and will begin no earlier than one half hour after sunset and end before midnight. Semi-circular point counts will be conducted at each habitat to monitor calling amphibians. Several point counts may be required at a single habitat in order to	• Clearly delineate work area using erosion fencing, or other barrier, to avoid accidental vegetation damage within amphibian breeding habitat. • Avoid direct impacts to specific breeding habitat (i.e. vernal pools or other aquatic habitat), or to the immediately surrounding woodland habitat	Performance Objective: • Minimize impacts to amphibian breeding habitat and minimize amphibian mortality. • Minimize impacts to woodland/wetland integrity and diversity. Monitoring: • Conduct post-construction amphibian call surveys for 1 year following pre-construction survey methods to assess any potential changes in amphibian breeding populations or species distribution if deemed significant. Full details of this monitoring will be provided in the EEMP. • Undertake regular construction monitoring and routine inspections to ensure proper installation of erosion control measures and that proper fugitive dust control measures are in place. • Monitor sediment and erosion control measures, such as silt fence, check dams, and dust control measures daily in areas where work is taking place and prior to and after any storm events. • Monitor sediment and erosion control measures weekly in areas where active construction
		• Disturbance of local wildlife		• Construction activities located within 30m of significant amphibian woodland breeding habitats should avoid the peak frog breeding season (April 15th – June 15th), wherever possible, or install drift fencing (erosion fencing) to help control amphibian movements around construction activity. • Schedule construction activities to occur during daylight hours, wherever possible, to limit potential impacts from light, noise, or vehicle interactions.	
		• Habitat degradation caused by sedimentation and erosion		• Implement a sediment and erosion control plan. • Install, monitor, and maintain erosion and sediment control measures (i.e. silt fences) around the construction area as identified within the sediment and erosion control plan.	

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if significant)	Performance Objectives, Monitoring, and Contingency Plans
			adequately survey the area. Point counts will be located at least 500m apart to prevent counting duplicate amphibian calls. These surveys will be conducted within habitats where site access has been granted. Where site access has not been granted, point counts will be conducted along the roadside or adjacent property. During each survey, biologists will record species and calling abundance codes, along with other appropriate information (date, time, weather, etc.). A UTM will be taken for each call location to ensure consistency between survey visits. Two amphibian egg mass searches will also be conducted during daylight	• Schedule grading to avoid times of high runoff volumes wherever possible and suspend work if an excessive sediment discharge occurs, as determined by an environmental monitor, until mitigation measures have been established. • Locate all directional drilling entry and exit pits a sufficient distance from the edge of the natural feature to maintain a vertical depth of at least 1.5m at all times below the natural feature to protect the critical root zone. • Collect directional drill cuttings as they are generated and placed in a soil bin or bag for off-site disposal. • Restore and re-vegetate directional drill entry/exit pits to pre-construction conditions as soon as possible after construction.	is not occurring until the construction phase is complete. • Correct silt fencing, or other applicable sediment and erosion control measures, that is not working properly. • An environmental monitor will be present, as required, when active directional drilling is occurring. Contingency Measure: • If deficiencies in sediment and erosion control measures are noted, the environmental monitor will notify the contract administrator and recommend remedial actions, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • If 'frac-out' occurs, immediately implement 'frac-out' contingency plan. • If sedimentation and erosion control measures fail and degradation of the habitat(s) occurs, consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • If fugitive dust control measures fail and degradation of the habitat(s) occurs, consult the MNRF to determine appropriate
		• Habitat degradation caused by fugitive dust emission		• Implement and enforce speed limits for construction equipment and trucks. • Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures,	

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if significant)	Performance Objectives, Monitoring, and Contingency Plans
			hours, with one visit in April after the breeding season has begun. The second visit will occur on the same date as the May or June call survey. The timing of the surveys will be dependent on 2015 spring conditions and when amphibians are expected to be breeding within the general vicinity of the project area. A minimum search effort of 30 minutes will be used on each visit, in each habitat. These area searches will include walking within the wetland or vernal pool along the perimeter, looking for egg masses. Due to the composition and attributes of the candidate amphibian breeding habitats, special equipment will not be required to identify egg masses; however,	and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression. • Re-vegetate cleared areas as soon as reasonably possible. • Install wind fences, where determined to be necessary by the on-site Environmental Monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.	contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events. • Given the short-term and temporary nature of increased traffic and the restriction of construction activities to daylight hours, wherever possible, risk of increased mortality during construction is considered low. • Restore vegetated buffers, including riparian zones, if accidentally damaged, as soon as possible. • If the results of the monitoring indicate a feature is no longer significant, the MNRF will be consulted to discuss the need (if any) for additional post-construction surveys.
		• Habitat degradation caused by spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.)		• Develop a spill response plan and train staff on appropriate procedures in the event that a spill or 'frac-out' occurs. • Develop a 'frac-out' contingency plan and train staff on appropriate procedures. • Locate all maintenance activities, vehicle refueling or washing, as well as storage of chemicals and construction equipment more than 30m from significant features. • Keep emergency spill kits on site. • Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site. • Dispose of waste material by authorized and approved off-	

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if significant)	Performance Objectives, Monitoring, and Contingency Plans
			visual surveys conducted in breeding ponds with high water levels will require the use of chest waders. This approach is expected to effectively identify egg masses, while minimizing any disturbance effects caused by sampling. If candidate significant habitat (vernal pools) is determined to be not present during the first site visit, no specific studies will be conducted and the habitat(s) will be confirmed not significant. The locations of monitoring sites within the candidate significant habitats will be determined based on conditions of the site. The locations of the candidate significant habitat can be seen on	site vendors.	

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if significant)	Performance Objectives, Monitoring, and Contingency Plans
			Map 4.		
PAW-006 (SCC-E) Pawpaw Habitat MSE-007 (SCC-E) Muskingum Sedge Habitat BBU-007 (SCC-E) Burning Bush Habitat UCF-003 (SCC-E) Upright Carrion Flower Habitat ICF-003 (SCC-E) Illinois Carrion Flower Habitat LTA-008 (SCC-E) Lizard's Tail Habitat MIW-007 (SCC-E) Missouri Ironweed Habitat	Overlapping (horizontal directional drilling under feature)	• Accidental damage to vegetation	One standardized area search will be conducted for each habitat. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted at a time of year when the species can be identified (refer to Table 11 for specific survey timing). The locations of the candidate significant habitats can be seen on Map 5.	• Clearly delineate work area using erosion fencing, or other barrier, to avoid accidental damage to species to be retained and habitat. • Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate. • Directional drilling entry and exit pits will be located a sufficient distance from the edge of the natural feature to maintain a vertical depth of at least 1.5m at all times below the natural feature to protect the critical root zone. • Directional drilling will be a minimum of 1.5m below the surface of this habitat.	Performance Objective: • Minimize direct impacts to plant species of conservation concern. • Protection of plant species of conservation concern habitat. • Minimize impacts on current species composition. • Reduce the potential spread of non-native or invasive species. Monitoring: • Conduct post-construction monitoring in years 1, 3, and 5 of operation. Surveys will be conducted at a time of year when the species can be identified (refer to Table 11 for specific survey timing) to assess any potential changes in species populations or distribution. Contingency Measure: • Replace any plant species of conservation concern which are damaged or destroyed at a 1:1 ratio with plantings in the habitat. The success of any planted specimens will be monitored for 2 years after planting. • If any potential changes in species populations or distribution are noted during post-construction surveys, consult the MNRF to determine appropriate contingency

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if significant)	Performance Objectives, Monitoring, and Contingency Plans
					measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas.
		• Sedimentation and erosion		• Implement a sediment and erosion control plan. • Install, monitor, and maintain erosion and sediment control measures (i.e. silt fences) around the construction area as identified within the sediment and erosion control plan. • Locate all directional drilling entry and exit pits a sufficient distance from the edge of the natural feature to maintain a vertical depth of at least 1.5m at all times below the natural feature to protect the critical root zone. • Collect directional drill cuttings as they are generated and placed in a soil bin or bag for off-site disposal. • Restore and re-vegetate directional drill entry/exit pits to pre-construction conditions as soon as possible after construction.	Performance Objective • Minimize impacts to plant species of conservation concern. • Protect plant species of conservation concern habitat. • Maintain vegetated buffers, including riparian zones. • Avoid contamination of plant species of conservation concern habitat. Monitoring: • Conduct post-construction monitoring in years 1, 3, and 5 of operation following pre-construction survey methods. Surveys will be conducted at a time of year when the species can be identified (refer to Table 11 for specific survey timing) to assess any potential changes in species populations or distribution. Full details of this monitoring will be provided in the EEMP. • Undertake regular construction monitoring and routine inspections to ensure proper installation of erosion control measures and that proper fugitive dust control measures are in place.
		• Fugitive dust emission		• Implement and enforce speed limits for construction equipment and trucks. • Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the	

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if significant)	Performance Objectives, Monitoring, and Contingency Plans
				environmental monitor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression. • Re-vegetate areas adjacent to these habitats as soon as possible. • Install wind fences, where determined to be necessary by the on-site Environmental Monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.	• Monitor sediment and erosion control measures, such as silt fence, check dams, and dust control measures daily in areas where work is taking place and prior to and after any storm events. • Monitor sediment and erosion control measures weekly in areas where active construction is not occurring until the construction phase is complete. • Correct silt fencing, or other applicable sediment and erosion control measures, that is not working properly. • An environmental monitor will be present, as required, when active directional drilling is occurring. Contingency Measure: • If any potential changes in species population or distribution are noted during post-construction surveys, consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • If deficiencies in sediment and erosion control measures are noted, the environmental monitor will notify the contract administrator and recommend remedial actions, which may
		• Spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.)		• Develop a spill response plan and train staff on appropriate procedures in the event that a spill or 'frac-out' occurs. • Develop a 'frac-out' contingency plan and train staff on appropriate procedures. • Locate all maintenance activities, vehicle refueling or washing, as well as storage of chemicals and construction equipment more than 30m from significant features. • Keep emergency spill kits on	

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if significant)	Performance Objectives, Monitoring, and Contingency Plans
				site. • Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site. • Dispose of waste material by authorized and approved off-site vendors.	include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • If 'frac-out' occurs, immediately implement 'frac-out' contingency plan. • If sedimentation and erosion control measures fail and degradation of the habitat(s) occurs, consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • If fugitive dust control measures fail and degradation of the habitat(s) occurs, consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events. • Restore vegetated buffers, including riparian zones, if accidentally damaged, as soon as possible.
		• Increased species competition through introduction of invasive species		• Clearly delineate work area using erosion fencing, or other barrier, to minimize seed transfer into suitable habitat. • Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate. • Regularly clean vehicles and equipment. • Vehicle use will occur primarily on access roads and in agricultural habitats, where invasive and non-native vegetation species are less likely to be concentrated.	
Butterfly Species of Conservation	Overlapping (horizontal	• Accidental loss of habitat (damage to	Three standardized area searches will	• Clearly delineate work area using erosion fencing, or other	Performance Objective: • Minimize direct impacts to

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if significant)	Performance Objectives, Monitoring, and Contingency Plans
Concern: HHA-009 (SCC-E)	directional drilling under feature)	vegetation)	be conducted within the habitat. Individuals will be captured through the use of a standard insect sweep net, and will be released upon identification. Surveys will be conducted once in each of late June, early July and early August, separated by at least one week, during the flight period for when this species is likely to be encountered. Surveys will be conducted between 0800-1700hrs during warm, sunny conditions with low wind and no precipitation, when temperatures exceed 15°C. Search effort will cover the extent of the candidate significant habitat; however, effort may be focused on areas favoured by the species (such	barrier, to avoid accidental damage to butterfly species of conservation concern habitat. • Depending on site-specific conditions, such as topography and surface water flow patterns, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate. • Restore temporary construction areas to pre-construction conditions as soon as possible. • No use of herbicides (project related activities only) within significant butterfly species of conservation concern habitats. • Directional drilling entry and exit pits will be located at a sufficient distance from the edge of the natural feature to maintain a vertical depth of at least 1.5m at all times below the natural feature to protect the critical root zone. • Directional drilling will be a minimum of 1.5m below the surface of this habitat.	butterfly species of conservation concern habitat. Monitoring: • Conduct 1 year of post-construction surveys of the habitat to assess the potential project disturbance on this habitat. Full details of this monitoring will be provided in the EEMP. Contingency Plan: • Maintain butterfly species of conservation concern habitat quality within the project area in consultation with the MNRF, which may include restoring habitats with suitable host plants for butterfly species of conservation concern.
		• Disturbance/ avoidance behaviour		• Schedule construction and regular (non-critical) maintenance activities located within 30m of significant butterfly species of conservation concern habitat to occur outside of the flight period for when this species is	Performance Objective: • Minimize disturbance/avoidance behavior of butterfly species of conservation concern. Monitoring: • Conduct 1 year of post-

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if significant)	Performance Objectives, Monitoring, and Contingency Plans
			as where host plants are known to be found). All observations of the species, as well as behavioural information and plant associations will be recorded for each individual. The locations of the candidate significant habitat can be seen on Map 5.	likely to be encountered (late June to early August), whenever possible. • If construction and maintenance must occur during the peak flight period, have a biologist confirm that this species will not be impacted by construction or maintenance activities.	construction surveys of the habitat to assess the potential project disturbance on this habitat. Full details of this monitoring will be provided in the EEMP. Contingency Plan: • If the results of the monitoring indicate a feature is no longer significant, consult the MNRF to discuss the need (if any) for additional post-construction surveys.
		• Direct mortalities through collisions with operational turbines		• Develop post-construction monitoring plan.	Performance Objective: • Minimize the mortality of butterfly species of conservation concern from collisions with operational turbines. Monitoring: • Record any incidental butterfly species of conservation concern mortalities observed during the first 3 years of post-construction mortality monitoring occurring for birds and bats (MNR 2011a, MNR 2011b). Contingency Plan: • If any mortality of a butterfly species of conservation concern is observed during the first 3 years of post-construction mortality monitoring occurring for birds and bats, MNRF will be

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if significant)	Performance Objectives, Monitoring, and Contingency Plans
					informed of the occurrence.
		• Habitat degradation caused by sedimentation and erosion		• Implement a sediment and erosion control plan. • Install, monitor, and maintain erosion and sediment control measures (i.e. silt fences) around the construction area as identified within the sediment and erosion control plan. • Locate all directional drilling entry and exit pits a sufficient distance from the edge of the natural feature to maintain a vertical depth of at least 1.5m at all times below the natural feature to protect the critical root zone. • Collect directional drill cuttings as they are generated and placed in a soil bin or bag for off-site disposal. • Restore and re-vegetate directional drill entry/exit pits to pre-construction conditions as soon as possible after construction.	Performance Objective • Maintain vegetated buffers, including riparian zones. • Minimize impacts to butterfly species of conservation concern habitats. • Avoid contamination of butterfly species of conservation concern habitat. Monitoring: • Undertake regular construction monitoring and routine inspections to ensure proper installation of erosion control and that proper fugitive dust control measures are in place. • Monitor sediment and erosion control measures, such as silt fence, check dams, and dust control measures daily in areas where work is taking place and prior to and after any storm events. • Monitor sediment and erosion control measures weekly in areas where active construction is not occurring until the construction phase is complete. • Correct silt fencing, or other applicable sediment and erosion control measures, that is not working properly. • An environmental monitor will be present, as required, when active directional drilling is occurring.
		• Habitat degradation caused by fugitive dust emission		• Implement and enforce speed limits for construction equipment and trucks. • Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site specific weather	

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if significant)	Performance Objectives, Monitoring, and Contingency Plans
				conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression. • Re-vegetate cleared areas as soon as reasonably possible. • Install wind fences, where determined to be necessary by the on-site Environmental Monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.	Contingency Measure: • Restore vegetated buffers, including riparian zones, if accidentally damaged, as soon as possible. • If deficiencies in sediment and erosion control measures are noted, the environmental monitor will notify the contract administrator and recommend remedial actions, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • If 'frac-out' occurs, immediately implement 'frac-out' contingency plan. • If sedimentation and erosion control measures fail and degradation of the habitat occurs, consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • If fugitive dust control measures fail and degradation of the habitat occurs, consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • In the event of a spill, notify the
		• Habitat degradation caused by spills (i.e. oil, gasoline, grease, and/or drilling frac-out, etc.)		• Develop a spill response plan and train staff on appropriate procedures in the event that a spill or 'frac-out' occurs. • Develop a 'frac-out' contingency plan and train staff on appropriate procedures. • Develop a spill response plan and train staff on appropriate procedures. • Locate all maintenance activities, vehicle refueling or washing, as well as storage of chemicals and construction equipment more than 30m from significant features. • Keep emergency spill kits on site. • Keep contact information for	

Feature ID	Closest Distance to Project Location	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if significant)	Performance Objectives, Monitoring, and Contingency Plans
				the MOECC Spills Action Centre in all vehicles as well as posted in a designated area on the construction site. • Dispose of waste material by authorized and approved off-site vendors.	MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.

5.3.2 Project Location within 120m of Confirmed Significant Wildlife Habitat

NRSI biologists have identified a total of 11 significant wildlife habitats, representing 6 habitat types, within 120m of (but not overlapping) project components that may have operational impacts on these wildlife habitat types. These wildlife habitats, potential negative effects, and mitigation measures to be implemented, are discussed in Table 8 below.

Table 8. Potential Impacts and Mitigation Measures for Confirmed Significant Wildlife Habitats within the Belle River Project Area

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Mitigation Measures	Performance Objectives, Monitoring, and Contingency Plans
SHU-001 (SCC-C) SHU-002 (SCC-P) Shumard Oak Habitat CPR-002 (SCC-T) Climbing Prairie Rose Habitat UCF-004 (SCC-T) Upright Carrion Flower Habitat SHH-001 (SCC-P) SHH-002 (SCC-H) SHH-003 (SCC-K) SHH-004 (SCC-B) SHH-005 (SCC-G) Shellbark Hickory Habitat MIW-003 (SCC-I) Missouri Ironweed Habitat PGH-001 (SCC-L) Pignut Hickory Habitat	0-30m	• Accidental damage to vegetation	• Clearly delineate work area using erosion fencing, or other barrier, to avoid accidental damage to species to be retained and habitat. • Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate. • Document all trees (>10cm dbh) to be removed and retained within 5m of construction activities, prior to construction, for all tree species of conservation concern habitats. • Prune damaged trees through implementation of proper arboricultural techniques. • No use of herbicides (project related activities only) within significant features or wildlife habitats.	Performance Objective: • Minimize direct impacts to plant species of conservation concern. • Protect plant species of conservation concern habitat. • Minimize impacts on current species composition. • Reduce the potential spread of non-native or invasive species. Monitoring: • Conduct post-construction monitoring in years 1, 3, and 5 of operation following pre-construction survey methods. Surveys will be conducted at a time of year when the species can be identified (refer to Table 11 for specific survey timing) to assess any potential changes in species populations or distribution. Full details of this monitoring will be provided in the EEMP. Contingency Measure: • Replace any plant species of conservation concern which are damaged or destroyed at a 1:1 ratio with plantings in the habitat. The success of any planted specimens will be monitored for 2 years after planting. • If any potential changes in species population or distribution are noted during post-construction surveys, the consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas.
		• Sedimentation and erosion	• Implement a sediment and erosion control plan. • Install, monitor, and maintain erosion and sediment control measures (i.e. silt fences) around the construction area	Performance Objective • Minimize impacts to plant species of conservation concern. • Protect plant species of conservation concern habitat. • Maintain vegetated buffers, including riparian zones.

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Mitigation Measures	Performance Objectives, Monitoring, and Contingency Plans
			as identified within the sediment and erosion control plan.	• Avoid contamination of plant species of conservation concern habitat. Monitoring: • Conduct post-construction monitoring in years 1, 3, and 5 of operation following pre-construction survey methods. Surveys will be conducted at a time of year when the species can be identified (refer to Table 11 for specific survey timing) to assess any potential changes in species populations or distribution. Full details of this monitoring will be provided in the EEMP. • Undertake regular construction monitoring and routine inspections to ensure proper installation of erosion control measures and that proper fugitive dust control measures are in place. • Monitor sediment and erosion control measures, such as silt fence, check dams, and dust control measures daily in areas where work is taking place and prior to and after any storm events. • Monitor sediment and erosion control measures weekly in areas where active construction is not occurring until the construction phase is complete. • Correct silt fencing, or other applicable sediment and erosion control measures, that is not working properly. Contingency Measure: • If any potential changes in species populations or distribution are noted during post-construction surveys, the consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • Restore vegetated buffers, including riparian zones, if accidentally damaged, as soon as possible. • If deficiencies in sediment and erosion control measures are noted, the environmental monitor will notify the contract administrator and recommend remedial actions, which may include re-establishing
		• Fugitive dust emission	• Implement and enforce speed limits for construction equipment and trucks. • Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression. • Re-vegetate cleared areas as soon as reasonably possible. • Install wind fences, where determined to be necessary by the on-site Environmental Monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.	
		• Spills (i.e. oil, gasoline, grease, etc.)	• Develop a spill response plan and train staff on appropriate procedures. • Locate all maintenance activities, vehicle refueling or washing, as well as storage of	

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Mitigation Measures	Performance Objectives, Monitoring, and Contingency Plans
			chemicals and construction equipment more than 30m from significant features. • Keep emergency spill kits on site. • Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site. • Dispose of waste material by authorized and approved off-site vendors.	mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • If sedimentation and erosion control measures fail and degradation of the habitat(s) occurs, MNRF will be informed of the additional action(s) that will be taken. • If fugitive dust control measures fail and degradation of the habitat(s) occurs, consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.
		• Increased species competition through introduction of invasive species	• Clearly delineate work area using erosion fencing, or other barrier, to minimize seed transfer into suitable habitat. • Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate. • Regularly clean vehicles and equipment. • Vehicle use will occur primarily on access roads and in agricultural habitats, where invasive and non-native vegetation species are less likely to be concentrated.	

5.3.3 Project Location within 120m of Wildlife Habitat Treated as Significant

NRSI biologists have identified a total of 102 individual wildlife habitats, representing 31 habitat types, which are within 120m of (but not overlapping) the Belle River Wind Project location. These wildlife habitats have been treated as significant for the purposes of this report, and will be surveyed in detail prior to the construction to confirm significance of each individual habitat. These wildlife habitats have been specifically addressed in Table 9 below, including potential impacts of the development, pre-construction surveys, and recommended mitigation measures if pre-construction surveys confirm significance.

Table 9. Potential Impacts, Mitigation Measures, and Survey Methods for Wildlife Habitats within 120m of, but not Overlapping, the Belle River Wind Project Location that have been Treated as Significant

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
RWA-001 RWA-002 Raptor Wintering Area	0-30m	• Accidental damage to habitat, including tree limbs	NRSI will conduct winter raptor surveys approximately every 7 days, on 4 visits in January 2016 and 4 visits in February 2016. Surveys will be carried out during daylight hours, between 9am and 4pm, when raptors are expected to be most visible at potential perching locations. Surveys will be carried out using binoculars and/or a spotting scope. All individuals will be recorded along with information on species, behaviour, movement and time observed. Optimal weather conditions for these surveys are clear, sunny days with little to no precipitation. Surveys will be postponed and re-scheduled if poor weather conditions are encountered, specifically if high winds or heavy precipitation are noted. Where site access is granted, standardized area searches will be conducted	• Clearly delineate work area using erosion fencing, or other barrier, to avoid accidental vegetation damage within significant raptor wintering areas. • No use of herbicides (project related activities only) within significant features or wildlife habitats.	Performance Objective: • Protect raptor wintering area habitat • Limit disturbance to raptors overwintering within the project area. Monitoring: • Conduct post-construction surveys of this wildlife habitat for 1 year after construction, following pre-construction methods if the habitats are deemed significant. Full details of this monitoring will be provided in the EEMP. • If surveys indicate that there is an avoidance effect, an additional 2 years of post-construction monitoring will occur following pre-construction methods. The need to conduct an addition 2 years of monitoring will be determined in consultation with MNRF. Contingency Measures: • MNRF will be consulted to determine contingency measures.
		• Noise disturbance/ avoidance behaviour		• Use underground cabling or single-wooded overhead poles, wherever possible. • Minimize use of turbine lighting while maintaining Transport Canada requirements. • Schedule construction and regular (non-critical) maintenance activities to occur outside of the peak raptor wintering period (January - February), wherever possible, unless specifically required in accordance with manufacturer specifications.	

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
		• Direct mortalities through collisions with operational turbines	following a prescribed route along the woodland edge, searching for perching raptors or other raptor activity indicative of winter foraging areas. Where site access is unavailable, 30 minute visual behavioural point counts will be conducted, along the roadside, which will identify perching/foraging raptors along the woodland/field edge. At the end of January 2016, NRSI will review the results to determine if surveys should continue for the remaining 4 week survey period in February. In the event that none of the 6 indicator species are observed during any of the first 4 visits, NRSI will conclude that these habitats are not significant raptor wintering areas and will discontinue surveys at these locations for the remainder of the monitoring program. In this instance, an email notification to the MNRF will be provided to deliver initial results and inform the MNRF of the approach to	• Develop post-construction monitoring plan in accordance with MNRF's Birds and Bird Habitats (MNR 2011a) guidance. • Minimize use of turbine lighting while maintaining Transport Canada requirements.	Performance Objective: • Minimize the mortality of raptors and operational turbines. Monitoring: • Conduct post-construction mortality monitoring at this facility for at least 3 years following MNRF guidelines (MNR 2011a). Full details of this monitoring will be provided within the EEMP. Contingency Plan: • If high avian mortality is observed, appropriate mitigation measures will be discussed with the MNRF.
		• Habitat degradation caused by sedimentation and erosion		• Implement a sediment and erosion control plan. • Install, monitor, and maintain erosion and sediment control measures (i.e. silt fences) around the construction area as identified within the sediment and erosion control plan.	Performance Objective • Maintain vegetated buffers, including riparian zones. • Minimize impacts to raptor wintering areas. • Avoid contamination of raptor wintering area habitat.
		• Habitat degradation caused by fugitive dust emission		• Implement and enforce speed limits for construction equipment and trucks. • Apply dust suppressants	Monitoring: • Undertake regular construction monitoring and routine inspections to ensure proper

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
			discontinue studies. The locations of monitoring sites within candidate significant habitats will be determined based on conditions of the site. The locations of each of the candidate significant habitats can be seen on Map 3.	to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. • Re-vegetate cleared areas as soon as reasonably possible. • Install wind fences, where determined to be necessary by the on-site Environmental Monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.	installation of erosion control measures and that proper fugitive dust control measures are in place. • Monitor sediment and erosion control measures, such as silt fence, check dams, and dust control measures daily in areas where work is taking place and prior to and after any storm events. • Monitor sediment and erosion control measures weekly in areas where active construction is not occurring until the construction phase is complete. • Correct silt fencing, or other applicable sediment and erosion control measures, that is not working properly. Contingency Measure: • Restore vegetated buffers, including riparian zones, if accidentally damaged, as soon as possible. • If deficiencies in sediment and erosion control measures are noted, the environmental monitor will notify the
		• Habitat degradation caused by spills (i.e. oil, gasoline, grease, etc.)		• Develop a spill response plan and train staff on appropriate procedures. • Locate all maintenance activities, vehicle refueling or washing, as well as storage of chemicals and construction equipment more than 30m from significant features. • Keep emergency spill kits on site. • Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site. • Dispose of waste	

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
				material by authorized and approved off-site vendors.	contract administrator and recommend remedial actions, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • If sedimentation and erosion control measures fail and degradation of the habitat(s) occurs, consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • If fugitive dust control measures fail and degradation of the habitat(s) occurs, consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • In the event of a spill, notify the MOECC Spills Action Centre,

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
					immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.
BMA-001 Bat Maternity Colony	0-30m	• Accidental damage to habitat, including tree limbs (project locations are sited outside of habitats – vegetation removal is not anticipated)	<u>Selection of monitoring sites:</u> Monitoring sites will be selected within candidate bat maternity colony habitats identified through the site investigation using the criteria outlined in the Bats and Bat Habitats guidelines (MNR 2011b). A total of 10 suitable cavity trees will be selected within the 1 candidate bat maternity colony habitat since it is less than 10ha in size. If during the surveys, the candidate significant habitat is reassessed and is determined not to meet habitat requirements, the feature will not be monitored further and will not be carried forward to the EIS. <u>Monitoring:</u> Following the Bats and Bat Habitats guidelines (MNR 2011b), exit surveys will be conducted during the	• Clearly delineate work area using erosion fencing, or other barrier, to avoid accidental damage to potentially significant bat roosting trees. • Depending on site-specific conditions, such as topography and surface water flow patterns, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate. • No use of herbicides (project related activities only) within significant features or wildlife habitats.	Performance Objective: • Protection of bat maternity colony habitat. Monitoring: • Conduct post-construction monitoring of this feature for 3 years after construction, following pre-construction methods, for all features deemed significant. Full details of this monitoring will be provided in the EEMP. • Conduct post-construction mortality monitoring at this facility for at least 3 years following MNRF guidelines (MNR 2011b). The turbine closest to this habitat (T19) will be included with the subsample of turbines monitored during post-construction mortality monitoring, if this habitat is confirmed to be significant. Full details of this monitoring will be provided within the EEMP.
		• Noise disturbance/ avoidance behaviour during construction		• Impacts are expected to be minimal, and temporary, in nature, and no specific mitigation measures have been determined necessary. • Schedule construction and regular (non-critical) maintenance activities to occur outside of the critical roosting period	
		• Avoidance of habitat during operation phase			

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
			month of June. Observers will choose a viewing station with a clear aspect of cavity opening or crevice. Cavity opening or crevice should be monitored from 30 minutes before dusk until 60 minutes after dusk for evidence of bats exiting. An acoustic bat detector paired with a digital recorder will be used in conjunction with visual surveys to determine species. Each candidate tree will only be monitored once. Night-vision or infrared video equipment may be substituted for observers. Equipment specifications will be provided to the MNRF for confirmation prior to use. Once an evening's monitoring is completed (60 minutes after sunset), the cameras will be collected by the NRSI staff	(June), unless specifically required in accordance with manufacturer specifications.	Contingency Measure: • If a permanent disturbance has been noted within this wildlife habitat, the MNRF will be contacted to determine whether additional mitigation measures will be needed. • If high bat mortality is observed at Turbine T19, discuss appropriate mitigation measures with the MNRF.
		• Direct mortality during operation phase		• Develop post-construction monitoring plan in accordance with MNRF's Bats and Bat Habitats (MNR 2011b) guidance.	
		• Habitat degradation caused by sedimentation and erosion		• Implement a sediment and erosion control plan. • Install, monitor, and maintain erosion and sediment control measures (i.e. silt fences) around the construction area as identified within the sediment and erosion control plan.	Performance Objective • Maintain vegetated buffers, including riparian zones. • Minimize impacts to bat maternity colony habitats. • Avoid contamination of bat maternity colony habitat. Monitoring: • Undertake regular

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
		• Habitat degradation caused by fugitive dust emission	members conducting visual surveys in the same candidate significant habitat and the visual recordings for each video recorder will be reviewed for evidence of significant bat roosting activity. The locations of monitoring sites within the candidate significant habitat will be determined based on conditions of the site. The locations of the candidate significant habitat can be seen on Map 3.	• Implement and enforce speed limits for construction equipment and trucks. • Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. • Re-vegetate cleared areas as soon as reasonably possible. • Install wind fences, where determined to be necessary by the on-site Environmental Monitor.	construction monitoring and routine inspections to ensure proper installation of erosion control measures and that proper fugitive dust control measures are in place. • Monitor sediment and erosion control measures, such as silt fence, check dams, and dust control measures daily in areas where work is taking place and prior to and after any storm events. • Monitor sediment and erosion control measures weekly in areas where active construction is not occurring until the construction phase is complete. • Correct silt fencing, or other applicable sediment and erosion control measures, that is not working properly. Contingency Measure: • Restore vegetated buffers, including riparian zones, if accidentally damaged, as soon as possible. • If deficiencies in sediment and erosion
		• Habitat degradation caused by spills (i.e. oil, gasoline, grease, etc.)		• Develop a spill response plan and train staff on appropriate procedures. • Locate all maintenance activities, vehicle refueling or washing, as well as storage of chemicals and construction equipment more than 30m from significant features. • Keep emergency spill kits on site. • Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site. • Dispose of waste material by authorized and approved off-site	

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
				vendors.	control measures are noted, the environmental monitor will notify the contract administrator and recommend remedial actions, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • If sedimentation and erosion control measures fail and degradation of the habitat occurs, consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • If fugitive dust control measures fail and degradation of the habitat occurs, consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas.

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
					• In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.
AWO-002 AWO-003 AWO-004 AWO-006 AWO-007 AWO-008 AWO-009 AWO-011 AWO-013 Amphibian Breeding Habitat (Woodland)	0-30m	• Accidental loss of habitat (damage to vegetation, including root zones)	On the first visit each habitat will be assessed for seasonal flooding to determine if suitable habitat exists. If suitable habitat exists, the following methods will be applied: NRSI will conduct 3 evening amphibian call surveys, once in each of April, May and June 2015. Each survey will last 3 minutes, following the accepted Marsh Monitoring Program protocol, and will begin no earlier than one half hour after sunset and end before midnight. Semi-circular point counts will be conducted at each habitat to monitor calling amphibians. Several point counts may be required at a single habitat in order to	• Clearly delineate work area using erosion fencing, or other barrier, to avoid accidental vegetation damage within amphibian breeding habitat. • Avoid direct impacts to specific breeding habitat (i.e. vernal pools or other aquatic habitat), or immediately surrounding woodland habitat. • No use of herbicides (project related activities only) within significant features or wildlife habitats.	Performance Objective: • Minimize impacts to amphibian breeding habitat and minimize amphibian mortality. • Minimize impacts to woodland/wetland integrity and diversity. Monitoring: • Conduct post-construction amphibian call surveys for 1 year following pre-construction survey methods to assess any potential changes in amphibian breeding populations or species distribution for all habitats deemed significant. Full details of this monitoring will be provided within the EEMP.
		• Disturbance of local wildlife		• Schedule construction activities to occur outside of the peak frog breeding season (April 15th-June 15th). • If construction activities must occur during the	

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
			adequately survey the area. Point counts will be located at least 500m apart to prevent counting duplicate amphibian calls. These surveys will be conducted within habitats where site access has been granted. Where site access has not been granted, point counts will be conducted along the roadside or adjacent property. During each survey, biologists will record species and calling abundance codes, along with other appropriate information (date, time, weather, etc.). A UTM will be taken for each call location to ensure consistency between survey visits. Two amphibian egg mass searches will also be conducted during daylight hours, with one visit in April after the breeding season has begun. The second visit will occur on the same date as the May or June call survey. The timing of the surveys will be dependent on 2015 spring conditions and when	peak frog breeding season, install temporary drift fencing (erosion fencing) to help control amphibian movements around construction activity. • Schedule construction activities during daylight hours, wherever possible, to limit potential impacts from light, noise, or vehicle interactions. • If construction activities within 30m of significant amphibian breeding habitats must occur outside of daylight hours, spotlights will be directed downwards and/or away from the woodland to limit potential impacts to breeding amphibians.	• Undertake regular construction monitoring and routine inspections to ensure proper installation of erosion control measures and that proper fugitive dust control measures are in place. • Monitor sediment and erosion control measures, such as silt fence, check dams, and dust control measures daily in areas where work is taking place and prior to and after any storm events. • Monitor sediment and erosion control measures weekly in areas where active construction is not occurring until the construction phase is complete. • Correct silt fencing, or other applicable sediment and erosion control measures, that is not working properly. Contingency Measure: • Given the short-term and temporary nature of increased traffic and the restriction of construction activities to daylight hours, wherever
		• Habitat degradation caused by sedimentation and erosion		• Implement a sediment and erosion control plan. • Install, monitor, and maintain erosion and sediment control measures (i.e. silt fences) around the construction area as identified within the sediment and erosion control plan. • Schedule grading to avoid times of high runoff volumes wherever possible and suspend work if an excessive sediment discharge	

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
			amphibians are expected to be breeding within the general vicinity of the project area. A minimum search effort of 30 minutes will be used on each visit, in each habitat. These area searches will include walking within the wetland or vernal pool along the perimeter, looking for egg masses. Due to the composition and attributes of the candidate amphibian breeding habitats, special equipment will not be required to identify egg masses; however, visual surveys conducted in breeding ponds with high water levels will require the use of chest waders. This approach is expected to effectively identify egg masses, while minimizing any disturbance effects caused by sampling. If candidate significant habitat (vernal pools) is determined to be not present during the first site visit, no specific studies will be conducted and the habitat(s) will be confirmed not significant. The locations of monitoring sites within the candidate	occurs, as determined by an environmental monitor, until mitigation measures have been established.	possible, the timing restriction during breeding period, the risk of increased mortality during construction is considered low.
		• Habitat degradation caused by fugitive dust emission		• Implement and enforce speed limits for construction equipment and trucks. • Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression. • Re-vegetate cleared areas as soon as reasonably possible. • Install wind fences, where determined to be necessary by the on-site Environmental Monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of	• Restore vegetated buffers, including riparian zones, if accidentally damaged, as soon as possible. • If the results of the monitoring indicate a feature is no longer significant, consult the MNRF to discuss the need (if any) for additional post-construction surveys. • If deficiencies in sediment and erosion control measures are noted, the environmental monitor will notify the contract administrator and recommend remedial actions, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • If sedimentation and erosion control measures fail and degradation of the habitat(s) occurs, consult the MNRF to

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
			significant habitats will be determined based on conditions of the site. The locations of the candidate significant habitat can be seen on Map 4.	surrounding natural wind breaks.	determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • If fugitive dust control measures fail and degradation of the habitat(s) occurs, consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.
		• Habitat degradation caused by spills (i.e. oil, gasoline, grease, etc.)		• Develop a spill response plan and train staff on appropriate procedures. • Locate all maintenance activities, vehicle refueling or washing, as well as storage of chemicals and construction equipment more than 30m from significant features. • Keep emergency spill kits on site. • Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site. • Dispose of waste material by authorized and approved off-site vendors.	
MBB-001 MBB-002 Marsh Bird Breeding Habitat	0-30m	• Accidental loss of habitat (damage to vegetation)	Surveys will consist of 15 minute point counts within each candidate significant habitat during the breeding season, and will occur on the same nights as amphibian breeding surveys, occurring once in each of April, May, and	• Clearly delineate work area using erosion fencing, or other barrier, to avoid accidental vegetation damage within significant marsh bird breeding habitats. • Depending on site-specific conditions, such	Performance Objective: • Minimize impacts to marsh bird breeding habitat and minimize marsh bird mortality. • Minimize impacts to wetland integrity and diversity.

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
			June, no less than 10 days apart, following the accepted Marsh Monitoring Program protocol (Bird Studies Canada 2008). Each survey will be conducted in the evening, occurring no earlier than 4 hours before sunset and ending before dark, when marsh birds are actively nesting in wetland habitats. Each survey will be conducted under near optimal weather conditions, on clear, warm (at least 16°C), evenings, with no precipitation and little or no wind. NRSI biologists will conduct point counts within the habitat where site access has been granted, or from the property adjacent to the habitat, where site access has not been granted. Each point count will last for 15 minutes, and will be sub-divided into three 5 minute components: a 5 minute passive (silent) observation period, a 5 minute call playback period, and a second 5 minute passive observation period. If candidate significant	as topography and surface water flow patterns, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate. • No use of herbicides (project related activities only) within significant features or wildlife habitats.	Monitoring: • Conduct post-construction monitoring of this feature for 3 years after construction, following pre-construction methods, for all features deemed significant. Full details of this monitoring will be provided within the EEMP. Contingency Measure: • If a permanent disturbance has been noted within this wildlife habitat, consult the MNRF to determine whether additional mitigation measures will be needed.
		• Noise disturbance/ avoidance behaviour		• Schedule construction and regular (non-critical) maintenance activities to occur outside of the peak marsh bird breeding season (April- June), wherever possible. • If construction must occur during this peak breeding season, have a biologist confirm birds will not be impacted by construction activities.	
		• Direct mortalities through collisions with operational turbines		• Develop post-construction monitoring plan in accordance MNRF's Birds and Bird Habitats (MNR 2011a) guidance.	Performance Objective: • Minimize marsh bird mortalities from collisions with operational turbines. Monitoring: • Conduct post-construction mortality monitoring at this facility for at least 3 years following MNRF guidelines (MNR

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
			habitat (shallow water with emergent aquatic vegetation) is determined to be not present on the first site visit, no specific studies will be conducted and the habitat(s) will be confirmed not significant. The locations of monitoring sites within the candidate significant habitat will be determined based on conditions of the site. The locations of the candidate significant habitat can be seen on Map 5.		2011a). Full details of this monitoring will be provided within the EEMP. Contingency Plan: • If high avian mortality is observed, discuss appropriate mitigation measures with the MNRF.
		• Habitat degradation caused by sedimentation and erosion		• Implement a sediment and erosion control plan. • Install, monitor, and maintain erosion and sediment control measures (i.e. silt fences) around the construction area as identified within the sediment and erosion control plan.	Performance Objective • Maintain vegetated buffers, including riparian zones. • Minimize impacts to marsh bird breeding habitats. • Avoid contamination of marsh bird breeding habitat.
		• Habitat degradation caused by fugitive dust emission		• Implement and enforce speed limits for construction equipment and trucks. • Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may	Monitoring: • Undertake regular construction monitoring and routine inspections to ensure proper installation of erosion control measures and that proper fugitive dust control measures are in place. • Monitor sediment and erosion control measures, such as silt fence, check dams, and dust control measures daily in areas where work is taking place and

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
				also warrant an increased frequency of dust suppression. • Re-vegetate cleared areas as soon as reasonably possible. • Install wind fences, where determined to be necessary by the on-site Environmental Monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.	prior to and after any storm events. • Monitor sediment and erosion control measures weekly in areas where active construction is not occurring until the construction phase is complete. • Correct silt fencing, or other applicable sediment and erosion control measures, that is not working properly. Contingency Measure: • Restore vegetated buffers, including riparian zones, if accidentally damaged, as soon as possible. • If deficiencies in sediment and erosion control measures are noted, the environmental monitor will notify the contract administrator and recommend remedial actions, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • If sedimentation and erosion control measures fail and
		• Habitat degradation caused by spills (i.e. oil, gasoline, grease, etc.)		• Develop a spill response plan and train staff on appropriate procedures. • Locate all maintenance activities, vehicle refueling or washing, as well as storage of chemicals and construction equipment more than 30m from significant features. • Keep emergency spill kits on site. • Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site. • Dispose of waste material by authorized and approved off-site	

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
				vendors.	degradation of the habitat(s) occurs, consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • If fugitive dust control measures fail and degradation of the habitat(s) occurs, consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.
OCB-001 Open Country Bird Breeding Habitat	0-30m	• Accidental loss of habitat (damage to vegetation)	NRSI will conduct 3 open country breeding bird point count surveys at the 1 survey location in June and early July 2015, each no less than 10 days apart,	• Clearly delineate work area using erosion fencing, or other barrier, to avoid accidental vegetation damage within significant open country	Performance Objective: • Protection of open country bird breeding habitat. Monitoring:

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
			following the Birds and Bird Habitat Guidelines (MNR 2011a). Surveys will be carried out between dawn (half hour before sunrise) and 3 hours after sunrise, during a time period when males are singing and defending territories. The observer will walk along a standardized transect, stopping at each point count to undertake 10 minutes of observations and listening. Optimal weather conditions for these surveys are clear, calm, sunny days with little to no precipitation. During each visit, the highest observed breeding evidence will be recorded for each species. Since there is no direct overlap proposed between the 1 candidate habitat and the project location, indicating a greatly reduced potential for significant or permanent impacts, breeding bird surveys will be conducted through point count locations, each separated by at least 250m to avoid counting the same species multiple times. Point counts will be strategically	bird breeding habitats. • Depending on site-specific conditions, such as topography and surface water flow patterns, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate. • No use of herbicides (project related activities only) within significant features or wildlife habitats.	• Conduct post-construction monitoring of this feature for 3 years after construction, following pre-construction methods, for all features deemed significant. Full details of this monitoring will be provided within the EEMP. Contingency Measure: • If a permanent disturbance has been noted within this wildlife habitat, contact the MNRF to determine whether additional mitigation measures will be needed.
		• Noise disturbance/ avoidance behaviour during construction		• Clearly delineate work area using erosion fencing, or other barrier, to avoid accidental damage to breeding habitat. • Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate. • Restore temporary construction areas to pre-construction conditions as soon as possible. • Schedule construction activities to occur outside	

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
			placed within the habitat to ensure that surveys will be repeatable during post-construction monitoring, if required. If candidate significant habitat (meadow habitat) is determined to be not present during the first site visit, no specific studies will be conducted and the habitat(s) will be confirmed not significant. The locations of monitoring sites within the candidate significant habitat will be determined based on conditions of the site. The locations of the candidate significant habitat can be seen on Map 5.	of the peak breeding bird season (May 1st – July 31st), wherever possible. • If construction must occur during the breeding bird period (May 1st – July 31st), have a biologist confirm no nests will be impacted by construction.	
		• Avoidance of habitat during operation phase		• Schedule regular (non-critical) maintenance activities located within 30m of open country bird breeding habits to occur outside of the peak breeding bird season (May 1st-July 31st), if possible. • If regular maintenance must occur during the breeding bird period (May 1st – July 31st), have a biologist confirm no nests will be impacted by maintenance activities.	
		• Direct mortalities through collisions with operational turbines		• Develop post-construction monitoring plan in accordance MNRF's Birds and Bird Habitats (MNR 2011a) guidance.	Performance Objective: • Minimize open country bird mortalities from collisions with operational turbines. Monitoring: • Conduct post-construction mortality monitoring at this facility for at least 3 years following MNRF guidelines (MNR 2011a). Full details of

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
					this monitoring will be provided within the EEMP. Contingency Plan: • If high avian mortality is observed, discuss appropriate mitigation measures with the MNRF.
		• Habitat degradation caused by sedimentation and erosion		• Implement a sediment and erosion control plan. • Install, monitor, and maintain erosion and sediment control measures (i.e. silt fences) around the construction area as identified within the sediment and erosion control plan.	Performance Objective • Maintain vegetated buffers, including riparian zones. • Minimize impacts to open country bird breeding habitats. • Avoid contamination of open country bird breeding habitat.
		• Habitat degradation caused by fugitive dust emission		• Implement and enforce speed limits for construction equipment and trucks. • Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an	Monitoring: • Undertake regular construction monitoring and routine inspections to ensure proper installation of erosion control and that proper fugitive dust control measures are in place. • Monitor sediment and erosion control measures, such as silt fence, check dams, and dust control measures daily in areas where work is taking place and prior to and after any storm events.

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
				increased frequency of dust suppression. • Re-vegetate cleared areas as soon as reasonably possible. • Install wind fences, where determined to be necessary by the on-site Environmental Monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.	• Monitor sediment and erosion control measures weekly in areas where active construction is not occurring until the construction phase is complete. • Correct silt fencing, or other applicable sediment and erosion control measures, that is not working properly. Contingency Measure: • Restore vegetated buffers, including riparian zones, if accidentally damaged, as soon as possible. • If deficiencies in sediment and erosion control measures are noted, the environmental monitor will notify the contract administrator and recommend remedial actions, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • If sedimentation and erosion control measures fail and degradation of the habitat(s) occurs,
		• Habitat degradation caused by spills (i.e. oil, gasoline, grease, etc.)		• Develop a spill response plan and train staff on appropriate procedures. • Locate all maintenance activities, vehicle refueling or washing, as well as storage of chemicals and construction equipment more than 30m from significant features. • Keep emergency spill kits on site. • Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site. • Dispose of waste material by authorized and approved off-site vendors.	

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
					consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • If fugitive dust control measures fail and degradation of the habitat occurs, consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.
Bird Species of Conservation Concern: EWP-002 (SCC-P) EWP-003 (SCC-N) EWP-004 (SCC-S) EWP-006 (SCC-A)	0-30m	• Accidental loss of habitat (damage to vegetation, including root zones)	NRSI will conduct 10 minute point count surveys within each of the 9 habitats for bird species of conservation concern in June and early July, 2015. Each point count station will be surveyed 3 times	• Clearly delineate work area using erosion fencing, or other barrier, to avoid accidental damage to bird species of conservation concern habitat. • Restore temporary	Performance Objective: • Minimize impacts to bird species of conservation concern habitat. • Minimize impacts to woodland/wetland integrity and diversity.

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
EWP-007 (SCC-H) EWP-008 (SCC-K) Eastern Wood-Pewee Habitat WTH-001 (SCC-N) WTH-002 (SCC-A) Wood Thrush Habitat			during early, mid and late season (spring and early summer) no less than 10 days apart. The number of point counts required within each habitat depends on the size and habitat diversity at each site. If more than one point count will be conducted within the habitats, a standardized transect will also be conducted between point count sites. Surveys will be conducted between dawn (one half hour before sunrise) and 3 hours after sunrise. These surveys will occur during a time period when males are busy singing and defending territories. Days with high wind speeds and rain will be avoided. During each visit, the highest observed breeding evidence will be recorded for each species. The monitoring site locations within the habitat will be determined based on conditions of the site. The location of the candidate significant	construction areas to pre-construction conditions as soon as possible. • No use of herbicides (project related activities only) within significant features or wildlife habitats.	Monitoring: • Conduct post-construction behaviour surveys of this habitat for 3 years following pre-construction survey methods to assess the potential project disturbance on this habitat. Full details of this monitoring will be provided within the EEMP. Contingency Plan: • Maintain bird species of conservation concern habitat quality and quantity within the project area, using baseline conditions as a minimum standard.
		• Noise disturbance/ avoidance behaviour		• Schedule construction and regular (non-critical) maintenance activities located within 30m of significant bird species of conservation concern habitat to occur outside of the peak breeding bird season (May 1st – July 31st), whenever possible. • If construction or regular maintenance must occur during the breeding bird period (May 1st – July 31st), have a biologist confirm birds will not be impacted by construction	Performance Objective: • Minimize noise disturbance/avoidance behavior of bird species of conservation concern. Monitoring: • Conduct post-construction behaviour surveys of the habitat for 3 years following pre-construction survey methods to assess the potential project disturbance on this habitat. Full details of this monitoring will be

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
			habitat can be seen on Map 5.	or maintenance activities.	provided within the EEMP. Contingency Plan: • If considerable, and consistent, disturbance impacts are noted, discuss appropriate mitigation measures directly with the MNRF.
		• Direct mortalities through collisions with operational turbines		• Develop post-construction monitoring plan in accordance with the Birds and Bird Habitat Guidelines (MNR 2011a).	Performance Objective: • Minimize the mortality of bird species of conservation concern from collisions with operational turbines. Monitoring: • Conduct post-construction mortality monitoring at this facility for at least 3 years following MNRF guidelines (MNR 2011a). Full details of this monitoring will be provided within the EEMP. Contingency Plan: • If high avian mortality is observed, discuss appropriate mitigation measures with the MNRF.
		• Habitat degradation caused by sedimentation and erosion		• Implement a sediment and erosion control plan. • Install, monitor, and maintain erosion and	Performance Objective • Maintain vegetated buffers, including riparian zones.

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
				sediment control measures (i.e. silt fences) around the construction area as identified within the sediment and erosion control plan.	• Minimize impacts to bird species of conservation concern habitats. • Avoid contamination of bird species of conservation concern habitat. Monitoring: • Undertake regular construction monitoring and routine inspections to ensure proper installation of erosion control and that proper fugitive dust control measures are in place. • Monitor sediment and erosion control measures, such as silt fence, check dams, and dust control measures daily in areas where work is taking place and prior to and after any storm events. • Monitor sediment and erosion control measures weekly in areas where active construction is not occurring until the construction phase is complete. • Correct silt fencing, or other applicable sediment and erosion control measures, that is not working properly.
		• Habitat degradation caused by fugitive dust emission		• Implement and enforce speed limits for construction equipment and trucks. • Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. • Re-vegetate cleared areas as soon as reasonably possible. • Install wind fences, where determined to be necessary by the on-site Environmental Monitor.	
		• Habitat degradation caused by spills (i.e. oil, gasoline, grease, etc.)		• Develop a spill response plan and train staff on appropriate procedures. • Locate all maintenance activities, vehicle refueling or washing, as well as storage of chemicals and construction equipment more than 30m from significant features. • Keep emergency spill kits on site. • Keep contact information for the MOECC Spills	

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
				Action Centre in a designated area on the construction site. • Dispose of waste material by authorized and approved off-site vendors.	Contingency Measure: • Restore vegetated buffers, including riparian zones, if accidentally damaged, as soon as possible. • If deficiencies in sediment and erosion control measures are noted, the environmental monitor will notify the contract administrator and recommend remedial actions, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • If sedimentation and erosion control measures fail and degradation of the habitat(s) occurs, consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • If fugitive dust control measures fail and degradation of the habitat(s) occurs,

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
					consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.
Plant Species of Conservation Concern: PMI-001 (SCC-G) PMI-002 (SCC-T) Prairie Milkweed Habitat PAW-001 (SCC-N) PAW-002 (SCC-I) PAW-003 (SCC-K) PAW-004 (SCC-L) PAW-005 (SCC-B) Pawpaw Habitat MSE-002 (SCC-N) MSE-003 (SCC-I) MSE-004 (SCC-K) MSE-005 (SCC-L) MSE-006 (SCC-B)	0-30m	• Accidental damage to vegetation	One standardized area search will be conducted for each habitat. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted at a time of year when the species can be identified (refer to Table 11 for specific survey timing). The locations of the candidate significant habitats can be seen on Map 5.	• Clearly delineate work area using erosion fencing, or other barrier, to avoid accidental damage to species to be retained and habitat. • No use of herbicides (project related activities only) within significant features or wildlife habitats. • Re-vegetate cleared areas as soon as reasonably possible.	Performance Objective: • Minimize direct impacts to plant species of conservation concern. • Protect plant species of conservation concern habitat. • Minimize impacts on current species composition. • Reduce the potential spread of non-native or invasive species. Monitoring: • Conduct post-construction monitoring in years 1, 3, and 5 of operation following pre-construction survey methods. Surveys will

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
Muskingum Sedge Habitat SFL-001 (SCC-M) Schweinitz's Flatsedge Habitat DTP-001 (SCC-B) Deer-tongue Panicgrass Habitat WHP-001 (SCC-M) White-haired Panicgrass Habitat BBU-001 (SCC-N) BBU-002 (SCC-I) BBU-003 (SCC-G) BBU-004 (SCC-K) BBU-005 (SCC-L) BBU-006 (SCC-B) Burning Bush Habitat MPW-001 (SCC-P) MPW-002 (SCC-F) MPW-003 (SCC-C) MPW-004 (SCC-D) Many-fruit Primrose-willow Habitat WLO-001 (SCC-P) WLO-002 (SCC-H) WLO-003 (SCC-C) WLO-004 (SCC-D) Winged Loosestrife Habitat					be conducted at a time of year when the species can be identified (refer to Table 11 for specific survey timing) to assess any potential changes in species populations or distribution. Full details of this monitoring will be provided within the EEMP. Contingency Measure: • Replace any plant species of conservation concern which are damaged or destroyed at a 1:1 ratio with plantings in the habitat. The success of any planted specimens will be monitored for 2 years after planting. • If degradation of the habitat(s) occurs, consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas.
		• Sedimentation and erosion		• Implement a sediment and erosion control plan. • Install, monitor, and maintain erosion and	Performance Objective • Minimize impacts to plant species of conservation concern.

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
BGA-001 (SCC-M) Biennial Gaura Habitat CPR-001 (SCC-M) Climbing Prairie Rose Habitat UCF-001 (SCC-G) UCF-002 (SCC-B) UCF-005 (SCC-K) Upright Carrion Flower Habitat ICF-001 (SCC-G) ICF-002 (SCC-B) ICF-004 (SCC-K) Illinois Carrion Flower Habitat GIW-001 (SCC-P) GIW-002 (SCC-M) Giant Ironweed Habitat LTA-001 (SCC-P) LTA-002 (SCC-N) LTA-003 (SCC-I) LTA-004 (SCC-H) LTA-005 (SCC-K) LTA-006 (SCC-L) LTA-007 (SCC-A) LTA-009 (SCC-D) Lizard's Tail Habitat MIW-002 (SCC-P) MIW-004 (SCC-F) MIW-005 (SCC-K) MIW-006 (SCC-A)		• Fugitive dust emission		sediment control measures (i.e. silt fences) around the construction area as identified within the sediment and erosion control plan. • Implement and enforce speed limits for construction equipment and trucks. • Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression. • Re-vegetate cleared areas as soon as reasonably possible. • Install wind fences, where determined to be necessary by the on-site Environmental Monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover,	• Protect plant species of conservation concern habitat. • Maintain vegetated buffers, including riparian zones. • Avoid contamination of plant species of conservation concern habitat. Monitoring: • Conduct post-construction monitoring in years 1, 3, and 5 of operation following pre-construction survey methods. Surveys will be conducted at a time of year when the species can be identified (refer to Table 11 for specific survey timing) to assess any potential changes in species populations or distribution. Full details of this monitoring will be provided within the EEMP. • Undertake regular construction monitoring and routine inspections to ensure proper installation of erosion control and that proper fugitive dust control measures are in place.

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
MIW-008 (SCC-D) Missouri Ironweed Habitat				and the extent of surrounding natural wind breaks. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.	• Monitor sediment and erosion control measures, such as silt fence, check dams, and dust control measures daily in areas where work is taking place and prior to and after any storm events. • Monitor sediment and erosion control measures weekly in areas where active construction is not occurring until the construction phase is complete. • Correct silt fencing, or other applicable sediment and erosion control measures, that is not working properly. Contingency Measure: • Restore vegetated buffers, including riparian zones, if accidentally damaged, as soon as possible. • If deficiencies in sediment and erosion control measures are noted, the environmental monitor will notify the contract administrator and recommend remedial actions, which may include re-establishing mitigation
		• Spills (i.e. oil, gasoline, grease, etc.)		• Develop a spill response plan and train staff on appropriate procedures. • Locate all maintenance activities, vehicle refueling or washing, as well as storage of chemicals and construction equipment more than 30m from significant features. • Keep emergency spill kits on site. • Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site. • Dispose of waste material by authorized and approved off-site vendors.	
		• Increased species competition through introduction of invasive species		• Clearly delineate work area using erosion fencing, or other barrier, to minimize seed transfer into suitable habitat.	

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
				• Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate. • Regularly clean vehicles and equipment. • Vehicle use will occur primarily on access roads and in agricultural habitats, where invasive and non-native vegetation species are less likely to be concentrated.	measures, habitat remediation, and/or seeding of permanently damaged areas. • If sedimentation and erosion control measures fail and degradation of the habitat(s) occurs, consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • If fugitive dust control measures fail and degradation of the habitat(s) occurs, consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
					rain events. • If any potential changes in species populations or distribution are noted during post-construction surveys, consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas.
Butterfly Species of Conservation Concern: DIS-001 (SCC-H) DIS-002 (SCC-K) DIS-003 (SCC-C) DIS-004 (SCC-D) Dion Skipper Habitat DUS-001 (SCC-H) DUS-002 (SCC-K) DUS-003 (SCC-C) DUS-004 (SCC-D) Duke's Skipper Habitat GSW-001 (SCC-G) GSW-002 (SCC-M) Giant Swallowtail Habitat CSO-001(SCC-M)	0-30m	• Accidental loss of habitat (damage to vegetation)	Three standardized area searches will be conducted within each of the habitats. Individuals will be captured through the use of a standard insect sweep net, and will be released upon identification. Surveys will be conducted once in each of late June, early July and early August, separated by at least one week, during the flight period for when these species are likely to be encountered. Surveys will be conducted between 0800-1700hrs during warm, sunny conditions with low wind and no precipitation, when temperatures exceed 15°C.	• Clearly delineate work area using erosion fencing, or other barrier, to avoid accidental damage to butterfly species of conservation concern habitat. • Depending on site-specific conditions, such as steep topography and the presence of direct, or regular, surface water flow, the environmental monitor may consider substituting other styles of fencing for erosion fencing, when appropriate. • Restore temporary construction areas to pre-construction conditions as soon as possible. • No use of herbicides (project related activities	Performance Objective: • Minimize direct impacts to butterfly species of conservation concern habitat. Monitoring: • Conduct 1 year of post-construction surveys of the habitat to assess the potential project disturbance on this habitat. Full details of this monitoring will be provided in the EEMP. Contingency Plan: • Maintain butterfly species of conservation concern habitat quality within the project area in consultation with the MNRF, which may include restoring

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
Common Sootywing Habitat HHA-002 (SCC-P) HHA-003 (SCC-N) HHA-004 (SCC-S) HHA-006 (SCC-H) HHA-007 (SCC-K) HHA-010 (SCC-D) Hickory Hairstreak Habitat HSC-001 (SCC-M) Hayhurst's Scallopwing Habitat SCL-001(SCC-M) Southern Cloudywing Habitat			Search effort will cover the extent of all candidate significant habitats; however, effort may be focused on areas favoured by the species (such as where host plants are known to be found). All observations of the species, as well as behavioural information and plant associations will be recorded for each individual. The locations of each of the candidate significant habitats can be seen on Map 5.	only) within significant butterfly species of conservation concern habitats.	habitats with suitable host plants for butterfly species of conservation concern.
		• Disturbance/ avoidance behaviour		• Schedule construction and regular (non-critical) maintenance activities located within 30m of significant butterfly species of conservation concern habitat to occur outside of the flight period for when this species is likely to be encountered (late June to early August), whenever possible. • If construction and maintenance must occur during the peak flight period, have a biologist confirm that this species will not be impacted by construction or maintenance activities.	Performance Objective: • Minimize disturbance/avoidance behavior of butterfly species of conservation concern. Monitoring: • Conduct 1 year of post-construction surveys of the habitat to assess the potential project disturbance on this habitat. Full details of this monitoring will be provided in the EEMP. Contingency Plan: • If the results of the monitoring indicate a feature is no longer significant, consult the MNRF to discuss the need (if any) for additional post-construction surveys.
		• Direct mortalities through collisions with operational turbines		• Develop post-construction monitoring plan.	Performance Objective: • Minimize the mortality of butterfly species of conservation concern from collisions with operational turbines. Monitoring:

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
					• Record any incidental butterfly species of conservation concern mortalities observed during the first 3 years of post-construction mortality monitoring occurring for birds and bats (MNR 2011a, MNR 2011b). Contingency Plan: • If any mortality of a butterfly species of conservation concern is observed during the first 3 years of post-construction mortality monitoring occurring for birds and bats, MNRF will be informed of the occurrence.
		• Habitat degradation caused by sedimentation and erosion		• Implement a sediment and erosion control plan. • Install, monitor, and maintain erosion and sediment control measures (i.e. silt fences) around the construction area as identified within the sediment and erosion control plan.	Performance Objective • Maintain vegetated buffers, including riparian zones. • Minimize impacts to butterfly species of conservation concern habitats. • Avoid contamination of butterfly species of conservation concern habitat. Monitoring: • Undertake regular construction monitoring and routine inspections
		• Habitat degradation caused by fugitive dust emission		• Implement and enforce speed limits for construction equipment and trucks. • Apply dust suppressants to unpaved areas when necessary to suppress	

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
				dust, as determined by the environmental monitor. • Re-vegetate cleared areas as soon as reasonably possible. • Install wind fences, where determined to be necessary by the on-site Environmental Monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.	to ensure proper installation of erosion control and that proper fugitive dust control measures are in place. • Monitor sediment and erosion control measures, such as silt fence, check dams, and dust control measures daily in areas where work is taking place and prior to and after any storm events. • Monitor sediment and erosion control measures weekly in areas where active construction is not occurring until the construction phase is complete. • Correct silt fencing, or other applicable sediment and erosion control measures, that is not working properly. Contingency Measure: • Restore vegetated buffers, including riparian zones, if accidentally damaged, as soon as possible. • If deficiencies in sediment and erosion control measures are noted, the environmental monitor will notify the
		• Habitat degradation caused by spills (i.e. oil, gasoline, and/or grease, etc.)		• Develop a spill response plan and train staff on appropriate procedures. • Locate all maintenance activities, vehicle refueling or washing, as well as storage of chemicals and construction equipment more than 30m from significant features. • Keep emergency spill kits on site. • Keep contact information for the MOECC Spills Action Centre in all vehicles as well as posted in a designated area on the construction site.	

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
				• Dispose of waste material by authorized and approved off-site vendors.	contract administrator and recommend remedial actions, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • If sedimentation and erosion control measures fail and degradation of the habitat(s) occurs, consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • If fugitive dust control measures fail and degradation of the habitat(s) occurs, consult the MNRF to determine appropriate contingency measures, which may include re-establishing mitigation measures, habitat remediation, and/or seeding of permanently damaged areas. • In the event of a spill, notify the MOECC Spills Action Centre,

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
					immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
AWO-014 Amphibian Breeding Habitat (Woodland)	>30-120m	• Habitat degradation caused by spills (i.e. oil, gasoline, grease, etc.)	This habitat is being treated as significant, as potential negative effects can be mitigated through site specific construction mitigation measures.	• Develop a spill response plan and train staff on appropriate procedures. • Locate all maintenance activities, vehicle refueling or washing, as well as storage of chemicals and construction equipment more than 30m from significant features. • Keep emergency spill kits on site. • Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site. • Dispose of waste material by authorized and approved off-site vendors.	Performance Objective: • Minimize impacts to woodland/wetland integrity and diversity. Monitoring: • None required. Contingency Measure: • Restore vegetated buffers, including riparian zones, if accidentally damaged, as soon as possible. • In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.
Plant Species of Conservation Concern:	>30-120m	• Spills (i.e. oil, gasoline, grease, etc.)	These habitats are being treated as significant, as potential negative effects can be mitigated through	• Develop a spill response plan and train staff on appropriate procedures. • Locate all maintenance	Performance Objective: • Minimize impacts to plant species of conservation concern.

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
PMI-003 (SCC-U) Prairie Milkweed Habitat FDO-001 (SCC-U) Field Dodder Habitat MPW-005 (SCC-U) Many-fruit Primrose-willow Habitat WLO-005 (SCC-U) Winged Loosestrife Habitat CPR-003 (SCC-U) Climbing Prairie Rose Habitat GIW-003 (SCC-U) Giant Ironweed Habitat MIW-009 (SCC-U) Missouri Ironweed Habitat			site specific construction mitigation measures.	activities, vehicle refueling or washing, as well as storage of chemicals and construction equipment more than 30m from significant features. • Keep emergency spill kits on site. • Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site. • Dispose of waste material by authorized and approved off-site vendors.	• Protect plant species of conservation concern habitat. • Avoid contamination of plant species of conservation concern habitat. • Maintain vegetated buffers, including riparian zones. Monitoring: • None required. Contingency Measure: • Restore vegetated buffers, including riparian zones, if accidentally damaged, as soon as possible. • In the event of a spill, notify the MOECC Spills Action Centre, immediately stop work, and ensure all efforts are made to completely remediate affected areas, especially prior to rain events.
		• Increased species competition through introduction of invasive species		• Clearly delineate work area using erosion fencing, or other barrier, to minimize seed transfer into suitable habitat. The environmental monitor may also consider substituting other demarcating types for fencing, such as staking and flagging, where it is determined that there is no apparent risk to nearby natural features. This could include situations where the natural feature is at a higher elevation than construction activity. • Regularly clean vehicles and equipment.	

Feature ID	Closest Distance to Project Location (m)	Potential Negative Effects	Pre-construction Surveys	Mitigation Measures (if Significant)	Performance Objectives, Monitoring, and Contingency Plans
				• Vehicle use will occur primarily on access roads and in agricultural habitats, where invasive and non-native vegetation species are less likely to be concentrated.	

5.3.4 Generalized Impacts to Wildlife Habitat

In addition to the wildlife habitats identified above, NRSI biologists have also identified a number of wildlife habitat types that may be present within the Belle River project area, but are located within 120m of project components that are not expected to have an operational impact on these habitats. In accordance with the Natural Heritage Assessment Guide for Renewable Energy Projects (MNR 2012a), potential impacts to these habitats are typically associated with the temporary disturbance of construction activity and can be grouped together as generalized impacts and mitigation measures.

NRSI biologists have reviewed the full suite of wildlife habitats that require generalized consideration, and have compiled a comprehensive list of mitigation measures that will be implemented during the construction and decommissioning phases of the Belle River Wind Project in Table 10.

Table 10. Summary of Potential Effects and Mitigation Measures for Generalized Wildlife Habitat during the Construction and Decommissioning Phases of the Belle River Wind Project

Project Component	Project Activity	Potential Negative Effects	Mitigation Measures	Objectives
Buildings (collector substation, microwave tower, meteorological towers, point of interconnection, and operations and maintenance building)	Clearing, grubbing, grading, and topsoil removal.	• Increased erosion and sedimentation into woodlands, wetlands, and other natural features. • Soil compaction	• Develop and implement an erosion and sediment control plan. • Utilize erosion blankets, silt fencing, straw bales, etc. for construction activities within 30m of a wetland, woodland, or water body. • Maintain erosion control measures for the duration of construction or decommissioning activities. • Suspend work if high runoff volume is noted or excessive sediment discharge occurs, as determined by an environmental monitor. • Implement and enforce speed limits for construction equipment and trucks. • Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression. • Re-vegetate cleared areas as soon as reasonably possible. • Install wind fences, where determined to be necessary by the on-site Environmental Monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks. • Store any stockpiled material more than 30m from a wetland, woodland, or water body. • Minimize vehicle traffic on exposed soils during site clearing, grubbing, grading and top soil removal.	• Minimize direct impacts on vegetation communities and protect rare/sensitive habitats. • Maintain vegetated buffers, particularly within riparian zones. • Minimize the impacts of sedimentation on nearby natural features.

Project Component	Project Activity	Potential Negative Effects	Mitigation Measures	Objectives
	Noise/human activity.	• Disturbance and/or mortality to local wildlife.	• Schedule all construction and decommissioning activities within 30m of generalized wildlife habitats outside of the core breeding period for migratory birds (May 1st – July 31st), wherever possible, to limit disturbance to migratory birds, or their nests. • If construction and decommissioning activities within 30m of generalized wildlife habitats will occur during the breeding bird season (May 1st-July 31st), a biologist will conduct nest searches, where natural vegetation will be removed, to ensure there will be no impact to breeding birds. • Schedule construction and decommissioning activities within 30m of woodlands or wetlands to occur during daylight hours, wherever possible. • Clearly post construction speed limits.	• Minimize impacts to migratory birds and their nests. • Limit potential wildlife road mortalities.
	Accidental damage to vegetation.	• Damage or removal of vegetation adjacent to the project location.	• Where construction activity occurs within 30m of a naturally vegetated feature (i.e. woodland, wetland, etc.), clearly delineate the construction area with protective fencing, such as silt fencing or other barrier, to avoid accidental damage to species to be retained. The environmental monitor may also consider substituting other demarcating types for fencing, such as staking and flagging, where it is determined that there is no apparent risk to nearby natural features. This could include situations where the natural feature is at a higher elevation than construction activity. • Document all trees (>10cm dbh) to be removed and retained within the disturbance area limit, prior to construction. • Prune damaged trees through implementation of proper arboricultural techniques.	• Minimize impacts to natural vegetation.
	Chemical spills or	• Soil or water	• Develop a spill response plan and train	• Minimize impacts to natural

Project Component	Project Activity	Potential Negative Effects	Mitigation Measures	Objectives
	accidental fluid release (i.e. oil, gasoline, grease, etc.).	contamination.	staff on appropriate procedures. • Keep emergency spill kits on site. • Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site. • Locate vehicle washing, refueling stations, and chemical storage more than 30m from natural features or water bodies. • Dispose of waste material by authorized and approved off-site vendors.	features and wildlife habitats. • Avoid contamination of water or wetland features.
Turbines	Clearing, grubbing, grading, and topsoil removal.	• Increased erosion and sedimentation into woodlands, wetlands, and other natural features. • Soil compaction.	• Develop and implement an erosion and sediment control plan. • Utilize erosion blankets, silt fencing, straw bales, etc. for construction activities within 30m of a wetland, woodland, or water body. • Maintain erosion control measures for the duration of construction or decommissioning activities. • Suspend work if high runoff volume is noted or excessive sediment discharge occurs, as determined by an environmental monitor. • Implement and enforce speed limits for construction equipment and trucks. • Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression. • Re-vegetate cleared areas as soon as reasonably possible. • Install wind fences, where determined to be necessary by the on-site Environmental Monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land	• Minimize direct impacts on vegetation communities and protect rare/sensitive habitats. • Maintain vegetated buffers, particularly within riparian zones. • Minimize the impacts of sedimentation on nearby natural features.

Project Component	Project Activity	Potential Negative Effects	Mitigation Measures	Objectives
			cover, and the extent of surrounding natural wind breaks. • Store any stockpiled material more than 30m from a wetland, woodland, or water body. • Minimize vehicle traffic on exposed soils during site clearing, grubbing, grading and top soil removal.	
	Noise/human activity.	• Disturbance and/or mortality to local wildlife.	• Schedule all construction and decommissioning activities within 30m of generalized wildlife habitats outside of the core breeding period for migratory birds (May 1st – July 31st), wherever possible, to limit disturbance to migratory birds, or their nests. • If construction and decommissioning activities within 30m of generalized wildlife habitats will occur during the breeding bird season (May 1st-July 31st), a biologist will conduct nest searches, where natural vegetation will be removed, to ensure there will be no impact to breeding birds. • Schedule construction and decommissioning activities within 30m of woodlands or wetlands to occur during daylight hours, wherever possible. • Clearly post construction speed limits.	• Minimize impacts to migratory birds and their nests. • Limit potential wildlife road mortalities.
	Accidental damage to vegetation.	• Damage or removal of vegetation adjacent to the project location.	• Where construction activity occurs within 30m of a naturally vegetated feature (i.e. woodland, wetland, etc.), clearly delineate the construction area with protective fencing, such as silt fencing or other barrier, to avoid accidental damage to species to be retained. The environmental monitor may also consider substituting other demarcating types for fencing, such as staking and flagging, where it is determined that there is no apparent risk to nearby natural features. This could include situations where the natural feature is at	• Minimize impacts to natural vegetation. • Re-vegetate areas as soon as possible.

Project Component	Project Activity	Potential Negative Effects	Mitigation Measures	Objectives
			higher elevation than construction activity. • Document all trees (>10cm dbh) to be removed and retained within the disturbance area limit, prior to construction. • Prune damaged trees through implementation of proper arboricultural techniques.	
	Chemical spills or accidental fluid release (i.e. oil, gasoline, grease, etc.).	• Soil or water contamination.	• Develop a spill response plan and train staff on appropriate procedures. • Keep emergency spill kits on site. • Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site. • Locate vehicle washing, refueling stations, and chemical storage more than 30m from natural features or water bodies. • Dispose of waste material by authorized and approved off-site vendors.	• Minimize impacts to natural features and wildlife habitats. • Avoid contamination of water or wetland features.
	Dewatering activities (if necessary)	• Reduced stream flow rate. • Increased water temperature.	• Control rate and timing of water pumping. • Control quantity and quality of stormwater discharge using best management practices. • Avoid direct discharge into wetlands or watercourses. • Restrict taking of water during periods of extreme low flow.	• Maintain ground and surface water conditions with those near pre-construction conditions.
	Installation of impervious surfaces.	• Increase surface run-off. • Changes in surface water drainage.	• Maintain vegetative buffers around water bodies. • Control quantity and quality of stormwater discharge using best management practices. • Minimize grading activities to maintain existing drainage patterns as much as possible.	• Limit disturbances to surface water drainage patterns.
Permanent Access Roads	Clearing, grubbing, grading, and topsoil removal.	• Increased erosion and sedimentation into woodlands, wetlands, and other natural features. • Soil compaction	• Develop and implement an erosion and sediment control plan. • Utilize erosion blankets, silt fencing, straw bales, etc. for construction activities within 30m of a wetland, woodland, or water body. • Maintain erosion control measures for the	• Minimize direct impacts on vegetation communities and protect rare/sensitive habitats. • Maintain vegetated buffers, particularly within riparian zones.

Project Component	Project Activity	Potential Negative Effects	Mitigation Measures	Objectives
			duration of construction or decommissioning activities. • Implement and enforce speed limits for construction equipment and trucks. • Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression. • Re-vegetate cleared areas as soon as reasonably possible. • Install wind fences, where determined to be necessary by the on-site Environmental Monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks. • Store any stockpiled material more than 30m from a wetland, woodland, or water body. • Minimize vehicle traffic on exposed soils during site clearing, grubbing, grading, and top soil removal.	• Minimize the impacts of sedimentation on nearby natural features.
	Noise/human activity.	• Disturbance and/or mortality to local wildlife.	• Schedule all construction and decommissioning activities within 30m of generalized wildlife habitats outside of the core breeding period for migratory birds (May 1st – July 31st), wherever possible, to limit disturbance to migratory birds, or their nests. • If construction and decommissioning activities will occur within 30m of generalized wildlife habitats during the breeding bird season (May 1st-July 31st), a biologist will conduct nest searches, where natural vegetation will be removed, to	• Minimize impacts to migratory birds and their nests. • Limit potential wildlife road mortalities.

Project Component	Project Activity	Potential Negative Effects	Mitigation Measures	Objectives
			ensure there will be no impact to breeding birds. • Schedule construction and decommissioning activities within 30m of woodlands or wetlands to occur during daylight hours, wherever possible. • Clearly post construction speed limits.	
	Accidental damage to vegetation.	• Damage or removal of vegetation adjacent to the project location.	• Where construction activity occurs within 30m of a naturally vegetated feature (i.e. woodland, wetland, etc.), clearly delineate the construction area with protective fencing, such as silt fencing or other barrier, to avoid accidental damage to species to be retained. The environmental monitor may also consider substituting other demarcating types for fencing, such as staking and flagging, where it is determined that there is no apparent risk to nearby natural features. This could include situations where the natural feature is at higher elevation than construction activity. • Document all trees (>10cm dbh) to be removed and retained within the disturbance area limit, prior to construction. • Prune damaged trees through implementation of proper arboricultural techniques.	• Minimize impacts to natural vegetation. • Re-vegetate areas as soon as possible.
	Chemical spills or accidental fluid release (i.e. oil, gasoline, grease, etc.).	• Soil or water contamination.	• Develop a spill response plan and train staff on appropriate procedures. • Keep emergency spill kits on site. • Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site. • Locate vehicle washing, refueling stations, and chemical storage more than 30m from natural features or water bodies. • Dispose of waste material by authorized and approved off-site vendors.	• Minimize impacts to natural features and wildlife habitats. • Avoid contamination of water or wetland features.
	Installation of impervious surfaces.	• Increase surface run-off.	• Maintain vegetative buffers around water bodies.	• Limit disturbances to surface water drainage patterns.

Project Component	Project Activity	Potential Negative Effects	Mitigation Measures	Objectives
		• Changes in surface water drainage.	• Control quantity and quality of stormwater discharge using best management practices. • Minimize grading activities to maintain existing drainage patterns as much as possible.	
Cabling (Underground or Overhead)	Clearing, grubbing, grading, and topsoil removal.	• Increased erosion and sedimentation into woodlands, wetlands, and other natural features. • Soil compaction. • Removal of vegetation within the road right-of-way.	• Develop and implement an erosion and sediment control plan. • Utilize erosion blankets, silt fencing, straw bales, etc. to delineate construction activities within 30m of a wetland, woodland, or water body. • Depending on site-specific conditions, such as topography and surface water flow patterns, the environmental monitor may consider substituting other styles of fencing for silt fencing, when appropriate. • Maintain erosion control measures for the duration of construction or decommissioning activities. • Implement and enforce speed limits for construction equipment and trucks. • Apply dust suppressants to unpaved areas when necessary to suppress dust, as determined by the environmental monitor. Application frequency will vary, but will be determined by site specific weather conditions, including recent precipitation, temperatures, and wind speeds. Input from the construction team may also warrant an increased frequency of dust suppression. • Re-vegetate cleared areas as soon as reasonably possible. • Install wind fences, where determined to be necessary by the on-site Environmental Monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.	• Minimize direct impacts on vegetation communities and protect rare/sensitive habitats. • Maintain vegetated buffers, particularly within riparian zones. • Minimize the impacts of sedimentation on nearby natural features.

Project Component	Project Activity	Potential Negative Effects	Mitigation Measures	Objectives
			• Store any stockpiled material more than 30m from a wetland, woodland, or water body. • Minimize vehicle traffic on exposed soils during site clearing, grubbing, grading, and top soil removal. • For roadside collector routes, keep vegetation removal (if any) to a minimum and limited to the road right-of-way. • Locate all entry and exit pits (directional drilling) a sufficient distance from the edge of natural features (i.e. woodlands, wetlands) to maintain a vertical depth of at least 1.5m at all times below the natural features to protect the critical root zone. • Collect directional drill cuttings as they are generated and placed in a soil bin or bag for off-site disposal. • Restore and re-vegetate directional drill entry/exit pits to pre-construction conditions as soon as possible after construction.	
	Noise/human activity.	• Disturbance and/or mortality to local wildlife.	• Schedule all construction and decommissioning activities within 30m of generalized wildlife habitats outside of the core breeding period for migratory birds (May 1st – July 31st), wherever possible, to limit disturbance to migratory birds, or their nests. • If construction and decommissioning activities will occur during the breeding bird season (May 1st-July 31st), a biologist will conduct nest searches, where natural vegetation will be removed, to ensure there will be no impact to breeding birds. • Schedule construction and decommissioning activities within 30m of woodlands or wetlands to occur during daylight hours, wherever possible. • Restore and re-vegetate entry and exit pits to pre-construction conditions as soon as	• Minimize impacts to migratory birds and their nests. • Limit potential wildlife road mortalities.

Project Component	Project Activity	Potential Negative Effects	Mitigation Measures	Objectives
			possible after construction.	
	Accidental damage to vegetation.	• Damage or removal of vegetation adjacent to the project location.	• Where construction activity occurs within 30m of a naturally vegetated feature (i.e. woodland, wetland, etc.), clearly delineate the construction area with protective fencing, such as silt fencing or other barrier, to avoid accidental damage to species to be retained. The environmental monitor may also consider substituting other demarcating types for fencing, such as staking and flagging, where it is determined that there is no apparent risk to nearby natural features. This could include situations where the natural feature is at a higher elevation than construction activity. • Document all trees (>10cm dbh) to be removed and retained within the disturbance area limit, prior to construction. • Prune damaged trees through implementation of proper arboricultural techniques.	• Minimize impacts to natural vegetation.
	Chemical spills or accidental fluid release (i.e. oil, gasoline, grease, etc.).	• Soil or water contamination.	• Develop a spill response plan and train staff on appropriate procedures. • Keep emergency spill kits on site. • Develop a 'frac-out' contingency plan and train staff on appropriate procedures. • Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site. • Locate vehicle washing, refueling stations, and chemical storage more than 30m from natural features or water bodies. • Dispose of waste material by authorized and approved off-site vendors. • Ensure directional drill depth is at an appropriate level below natural features (i.e. woodlands, wetlands, etc.) or water bodies to prevent 'frac-out'. • Locate all entry and exit pits (directional drilling) a sufficient distance from the edge	• Minimize impacts to natural features and wildlife habitats. • Avoid contamination of water or wetland features.

Project Component	Project Activity	Potential Negative Effects	Mitigation Measures	Objectives
			of natural features (i.e. woodlands, wetlands) to maintain a vertical depth of at least 1.5m at all times below the natural features to protect the critical root zone.	
Construction Staging Areas	Clearing, grubbing, grading, and topsoil removal.	• Increased erosion and sedimentation into woodlands, wetlands, and other natural features. • Soil compaction	• Develop and implement an erosion and sediment control plan. • Utilize erosion blankets, silt fencing, straw bales, etc. for construction activities within 30m of a wetland, woodland, or water body. • Depending on site-specific conditions, such as topography and surface water flow patterns, the environmental monitor may consider substituting other styles of fencing for silt fencing, when appropriate. • Maintain erosion control measures for the duration of construction or decommissioning activities. • Implement fugitive dust suppression techniques, such as water application to all inactive disturbed surface areas, unpaved roads, open storage piles, and work areas when necessary to suppress dust, as determined by the environmental monitor. • Store any stockpiled material more than 30m from a wetland, woodland, or water body. • Minimize vehicle traffic on exposed soils during site clearing, grubbing, grading, and top soil removal. • Re-vegetate cleared areas to pre-construction conditions as soon as reasonably possible after construction activities are complete.	• Minimize direct impacts on vegetation communities and protect rare/sensitive habitats. • Maintain vegetated buffers, particularly within riparian zones. • Minimize the impacts of sedimentation on nearby natural features.
	Noise/human activity.	• Disturbance and/or mortality to local wildlife.	• Schedule all construction and decommissioning activities outside of the core breeding period for migratory birds (May 1st – July 31st), wherever possible, to limit disturbance to migratory birds, or their nests. • If construction and decommissioning	• Minimize impacts to migratory birds and their nests. • Limit potential wildlife road mortalities.

Project Component	Project Activity	Potential Negative Effects	Mitigation Measures	Objectives
			activities will occur during the breeding bird season (May 1st-July 31st), a biologist will conduct nest searches, where natural vegetation will be removed, to ensure there will be no impact to breeding birds. • Schedule construction and decommissioning activities within 30m of woodlands or wetlands to occur during daylight hours, wherever possible. • Clearly post construction speed limits.	
	Accidental damage to vegetation.	• Damage or removal of vegetation adjacent to the project location.	• Where construction activity occurs within 30m of a naturally vegetated feature (i.e. woodland, wetland, etc.), clearly delineate the construction area with protective fencing, such as silt fencing, or other barrier, to avoid accidental damage to species to be retained. The environmental monitor may also consider substituting other demarcating types for fencing, such as staking and flagging, where it is determined that there is no apparent risk to nearby natural features. This could include situations where the natural feature is at a higher elevation than construction activity. • Document all trees (>10cm dbh) to be removed and retained within the disturbance area limit, prior to construction. • Prune damaged trees through implementation of proper arboricultural techniques.	• Minimize impacts to natural vegetation.
	Chemical spills or accidental fluid release (i.e. oil, gasoline, grease, etc.).	• Soil or water contamination.	• Develop a spill response plan and train staff on appropriate procedures. • Keep emergency spill kits on site. • Keep contact information for the MOECC Spills Action Centre in a designated area on the construction site. • Locate vehicle washing, refueling stations, and chemical storage more than 30m from natural features or water bodies. • Dispose of waste material by authorized	• Minimize impacts to natural features and wildlife habitats. • Avoid contamination of water or wetland features.

Project Component	Project Activity	Potential Negative Effects	Mitigation Measures	Objectives
			and approved off-site vendors.	
	Installation of impervious surfaces.	• Increase surface run-off. • Changes in surface water drainage.	• Maintain vegetative buffers around water bodies. • Control quantity and quality of stormwater discharge using best management practices. • Minimize grading activities to maintain existing drainage patterns as much as possible.	• Limit disturbances to surface water drainage patterns.

6.0 Summary of Commitments

For each natural feature or wildlife habitat that has been determined to be significant (treated as significant), NRSI biologists have identified potential negative impacts, mitigation measures, and contingency plans associated with the construction, operation, and decommissioning phases of this project.

To assist in the summary of the potential impacts and mitigation measures associated with the Belle River Wind Project, NRSI has summarized the full extent of pre-construction monitoring commitments, mitigation measures, and post-construction monitoring commitments in the following sections.

6.1 Pre-Construction Monitoring Commitments

In accordance with the Natural Heritage Assessment process, NRSI biologists have identified several natural features that have been treated as significant for the purposes of this report. These features have been treated as significant until additional pre-construction surveys can be completed to confirm (or deny) the significance based on provincially accepted evaluation criteria as outlined in the Draft Significant Wildlife Habitat Ecoregion 7E Criterion Schedule (MNR 2012b). The pre-construction surveys that will be conducted as part of the commitments made in this EIS are summarized in Table 11 below.

The survey methods described below have assumed that site access will be granted. In the event that specific site access is not available for all, or part, of a specific feature, a potential alternative survey method will be discussed with appropriate MNRF staff.

Table 11. Summary of Pre-Construction Monitoring Commitments for the Belle River Wind Project

Wildlife Habitat Type	Generalized Methods	Location/Feature(s)
Raptor Wintering Area	NRSI will conduct winter raptor surveys approximately every 7 days, on 4 visits in January 2016 and 4 visits in February 2016. These surveys will be conducted at the 2 candidate raptor wintering areas identified through the site investigation.	RWA-001 RWA-002

Wildlife Habitat Type	Generalized Methods	Location/Feature(s)
	Where site access is granted, standardized area searches will be carried out following a prescribed route along woodland edges, during daylight hours, between 9am and 4pm, when raptors are expected to be most visible at potential perching locations. Surveys will be carried out using binoculars and/or a spotting scope. All individuals will be recorded along with information on species, behaviour, movement and time observed. Surveys will be conducted on clear, sunny days with little to no precipitation. Where site access is unavailable, 30 minute visual behavioural point counts will be conducted, along the roadside, which will identify perching/foraging raptors along the woodland/field edge. At the end of January 2016, NRSI will review the results to determine if surveys should continue for the remaining 4 week survey period in February. In the event that none of the 6 indicator species are observed during any of the first 4 visits, NRSI will conclude that these habitats are not significant raptor wintering areas and will discontinue surveys at these locations for the remainder of the monitoring program. In this instance, an email notification to the MNRF will be provided to deliver initial results and confirm the approach to discontinue studies. The locations of each of the candidate significant habitats can be seen on Map 3.	
Bat Maternity Colony	A total of 10 suitable cavity trees will be selected within the 1 candidate bat maternity colony habitat since it is less than 10ha in size. Surveys will be conducted in accordance with Bats and Bat Habitats (MNR 2011b). If the candidate bat maternity colony habitat meets the requirements, exit surveys will be conducted during the month of June. Observers will choose a viewing station with a clear aspect of cavity opening or crevice. Cavity opening or crevice should be monitored from 30 minutes before dusk until 60 minutes after dusk for evidence of bats exiting. An acoustic bat detector paired with a digital recorder will be used in conjunction with visual surveys to determine species. Each candidate tree will only be monitored once. Night-vision or infrared video equipment may be substituted for observers. Equipment specifications will be provided to the MNRF for confirmation prior to use. Once an evening's monitoring is completed	BMA-001

Wildlife Habitat Type	Generalized Methods	Location/Feature(s)
	(60 minutes after sunset), the cameras will be collected by the NRSI staff members conducting visual surveys in the same candidate significant habitat and the visual recordings for each video recorder will be reviewed for evidence of significant bat roosting activity. The locations of the candidate significant habitat can be seen on Map 3.	
Amphibian Breeding Habitat (Woodland)	NRSI will conduct 3 evening amphibian call surveys at the 10 monitoring locations, once in each of April, May and June 2015. Each survey will last 3 minutes, following the accepted Marsh Monitoring Program protocol, and will begin no earlier than one half hour after sunset and end before midnight. Semi-circular point counts will be conducted at each habitat to monitor calling amphibians. Several point counts may be required at a single habitat in order to adequately survey the area. Point counts will be located at least 500m apart to prevent counting duplicate amphibian calls. These surveys will be conducted within habitats where site access has been granted. Where site access has not been granted, point counts will be conducted along the roadside or adjacent property. Two amphibian egg mass searches will also be conducted during daylight hours, with one visit in April after the breeding season has begun. The second visit will occur on the same date as the May or June call survey. The timing of the surveys will be dependent on 2015 spring conditions and when amphibians are expected to be breeding within the general vicinity of the project area. A minimum search effort of 30 minutes will be used on each visit, in each habitat. These area searches will include walking within the wetland or vernal pool along the perimeter, looking for egg masses. If candidate significant habitat (vernal pools) is determined to be not present during the first site visit, no specific studies will be conducted and the habitat(s) will be confirmed not significant. The locations of the candidate significant habitat can be seen on Map 4.	AWO-002 AWO-003 AWO-004 AWO-006 AWO-007 AWO-008 AWO-009 AWO-011 AWO-012 AWO-013
Marsh Bird Breeding Habitat	Surveys will be conducted at the 2 candidate significant marsh bird breeding habitats within the project area and will consist of a 15 minute point count within each candidate significant habitat. Surveys will be conducted during the breeding season, and will occur on the same nights as amphibian breeding surveys, occurring once in each of April, May, and June, no less than 10 days apart, following the accepted	MBB-001 MBB-002

Wildlife Habitat Type	Generalized Methods	Location/Feature(s)
	Marsh Monitoring Program protocol (Bird Studies Canada 2008). Each survey will be conducted in the evening, occurring no earlier than 4 hours before sunset and ending before dark, when marsh birds are actively nesting in wetland habitats. Each survey will be conducted under near optimal weather conditions, on clear, warm (at least 16°C), evenings, with no precipitation and little or no wind. NRSI biologists will conduct point counts within the habitat where site access has been granted, or from the property adjacent to the habitat, where site access has not been granted. Each point count will last for 15 minutes, and will be sub-divided into three 5 minute components: a 5 minute passive (silent) observation period, a 5 minute call playback period, and a second 5 minute passive observation period. If candidate significant habitat (shallow water with emergent aquatic vegetation) is determined to be not present on the first site visit, no specific studies will be conducted and the habitat(s) will be confirmed not significant. The locations of the candidate significant habitat can be seen on Map 5.	
Open Country Bird Breeding Habitat	NRSI will conduct 3 open country breeding bird point count surveys at the 1 survey location in June and early July 2015, each no less than 10 days apart, following the Birds and Bird Habitat Guidelines (MNR 2011a). Surveys will be carried out between dawn (half hour before sunrise) and 3 hours after sunrise, during a time period when males are singing and defending territories. The observer will walk along a standardized transect, stopping at each point count to undertake 10 minutes of observations and listening. Optimal weather conditions for these surveys are clear, calm, sunny days with little to no precipitation. During each visit, the highest observed breeding evidence will be recorded for each species. Since there is no direct overlap proposed between the 1 candidate habitat and the project location, indicating a greatly reduced potential for significant or permanent impacts, breeding bird surveys will be conducted through point count locations, each separated by at least 250m to avoid counting the same species multiple times. Point counts will be strategically placed within the habitat to ensure that surveys will be repeatable during post-construction monitoring, if required.	OCB-001

Wildlife Habitat Type	Generalized Methods	Location/Feature(s)
	If candidate significant habitat (meadow habitat) is determined to be not present during the first site visit, no specific studies will be conducted and the habitat(s) will be confirmed not significant. The locations of the candidate significant habitat can be seen on Map 5.	
Eastern Wood-Pewee *(Contopus virens)*	NRSI will conduct 10 minute point count surveys within each of the 6 habitats for eastern wood-pewee in June and early July 2015. Each point count station will be surveyed 3 times during early, mid and late season (spring and early summer) no less than 10 days apart. The number of point counts required depends on the size and habitat diversity at each site. Where more than one point count will be conducted within each candidate habitat, a standardized transect will also be conducted between point count sites. Surveys will be conducted between dawn (one half hour before sunrise) and 3 hours after sunrise. These surveys will occur during a time period when males are busy singing and defending territories. Days with high wind speeds and rain will be avoided. During each visit, the highest observed breeding evidence will be recorded for each species. The locations of each of the candidate significant habitats can be seen on Map 5.	EWP-002 EWP-003 EWP-004 EWP-006 EWP-007 EWP-008
Wood Thrush *(Hylocichla mustelina)*	NRSI will conduct 10 minute point count surveys within each of the 2 habitats for wood thrush in June and early July 2015. Each point count station will be surveyed 3 times during early, mid and late season (spring and early summer) no less than 10 days apart. The number of point counts required depends on the size and habitat diversity at each site. Where more than one point count will be conducted within each candidate habitat, a standardized transect will also be conducted between point count sites. Surveys will be conducted between dawn (one half hour before sunrise) and 3 hours after sunrise. These surveys will occur during a time period when males are busy singing and defending territories. Days with high wind speeds and rain will be avoided. During each visit, the highest observed	WTH-001 WTH-002

Wildlife Habitat Type	Generalized Methods	Location/Feature(s)
	breeding evidence will be recorded for each species. The locations of each of the candidate significant habitats can be seen on Map 5.	
Prairie Milkweed *(Asclepias sullivantii)*	One standardized area search will be conducted within each of the 2 candidate significant prairie milkweed habitats within the project area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably during the flowering period of June to July. The locations of each of the candidate significant habitats can be seen on Map 5.	PMI-001 PMI-002
Pawpaw *(Asimina triloba)*	One standardized area search will be conducted within each of the 6 candidate significant pawpaw habitats within the project area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably during the flowering or leaf-on period of April to September. The locations of each of the candidate significant habitats can be seen on Map 5.	PAW-001 PAW-002 PAW-003 PAW-004 PAW-005 PAW-006
Muskingum Sedge *(Carex muskingumensis)*	One standardized area search will be conducted within each of the 6 candidate significant Muskingum sedge habitats within the project area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably after the plant has flowered in June or July. The locations of each of the candidate significant habitats can be seen on Map 5.	MSE-002 MSE-003 MSE-004 MSE-005 MSE-006 MSE-007
Schweinitz's Flatsedge *(Cyperus schweinitzii)*	One standardized area search will be conducted within the one candidate significant Schweinitz's flatsedge habitat within the project area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably during the fruiting period of June to August. The location of the candidate significant habitat can be seen on Map 5.	SFL-001
Deer-tongue Panicgrass	One standardized area search will be conducted within the one candidate significant deer-tongue	DTP-001

Wildlife Habitat Type	Generalized Methods	Location/Feature(s)
(Dichanthelium clandestinum)	panicgrass habitat within the project area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably during the fruiting period of July to October. The location of the candidate significant habitat can be seen on Map 5.	
White-haired Panicgrass *(Dichanthelium praecocius)*	One standardized area search will be conducted within the one candidate significant white-haired panicgrass habitat within the project area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably during the fruiting period of July to October. The location of the candidate significant habitat can be seen on Map 5.	WHP-001
Burning Bush *(Euonymus atropurpureus)*	One standardized area search will be conducted within each of the 7 candidate significant burning bush habitats within the project area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably during the flowering or fruiting period of June to September. The locations of each of the candidate significant habitats can be seen on Map 5.	BBU-001 BBU-002 BBU-003 BBU-004 BBU-005 BBU-006 BBU-007
Many-fruit Primrose-willow *(Ludwigia polycarpa)*	One standardized area search will be conducted within each of the 4 candidate significant many-fruit primrose-willow habitats within the project area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably during the flowering period of July to September. The locations of each of the candidate significant habitats can be seen on Map 5.	MPW-001 MPW-002 MPW-003 MPW-004
Winged Loosestrife *(Lythrum alatum)*	One standardized area search will be conducted within each of the 4 candidate significant winged loosestrife habitats within the project area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably during the flowering period of July to September.	WLO-001 WLO-002 WLO-003 WLO-004

Wildlife Habitat Type	Generalized Methods	Location/Feature(s)
	The locations of each of the candidate significant habitats can be seen on Map 5.	
Biennial Gaura *(Oenothera gaura)*	One standardized area search will be conducted within the one candidate significant biennial gaura habitat within the project area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably during the flowering period of July to October. The location of the candidate significant habitat can be seen on Map 5.	BGA-001
Climbing Prairie Rose *(Rosa setigera)*	One standardized area search will be conducted within the candidate significant climbing prairie rose habitat within the project area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably during the leaf-on period of June to September. The location of the candidate significant habitat can be seen on Map 5.	CPR-001
Upright Carrion Flower *(Smilax ecirrata)*	One standardized area search will be conducted within each of the 4 candidate significant upright carrion flower habitats within the project area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably during the fruiting, flowering, or leaf-on period of June to October. The locations of each of the candidate significant habitats can be seen on Map 5.	UCF-001 UCF-002 UCF-003 UCF-005
Illinois Carrion Flower *(Smilax illinoensis)*	One standardized area search will be conducted within each of the 4 candidate significant Illinois carrion flower habitats within the project area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably during the fruiting, flowering, or leaf-on period of May to October. The locations of each of the candidate significant habitats can be seen on Map 5.	ICF-001 ICF-002 ICF-003 ICF-004
Giant Ironweed *(Vernonia gigantea)*	One standardized area search will be conducted within each of the 2 candidate significant giant ironweed habitats within the project area. The UTM location of any individuals or clusters will	GIW-001 GIW-002

Wildlife Habitat Type	Generalized Methods	Location/Feature(s)
	be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably during the flowering period of July to October. The locations of each of the candidate significant habitats can be seen on Map 5.	
Lizard's Tail (*Saururus cernuus*)	One standardized area search will be conducted within each of the 9 candidate significant lizard's tail habitats within the project area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably during the flowering period of June to September. The locations of each of the candidate significant habitats can be seen on Map 5.	LTA-001 LTA-002 LTA-003 LTA-004 LTA-005 LTA-006 LTA-007 LTA-008 LTA-009
Missouri Ironweed (*Vernonia missurica*)	One standardized area search will be conducted within each of the 6 candidate significant Missouri ironweed habitats within the project area. The UTM location of any individuals or clusters will be recorded and a stem count will be conducted. Surveys will be conducted during a time period when this species exhibits characteristics that allow for confident identification, preferably during the flowering or fruiting period of July to October. The locations of each of the candidate significant habitats can be seen on Map 5.	MIW-002 MIW-004 MIW-005 MIW-006 MIW-007 MIW-008
Dion Skipper *(Euphyes dion)*	Standardized area searches will be conducted within each of the 4 candidate significant dion skipper habitats within the project area. Individuals will be captured through the use of a standard insect sweep net, and will be released upon identification. Surveys will be conducted once in each of late June, early July and early August, separated by at least one week, during the flight period for when this species is likely to be encountered. Surveys will be conducted between 0800-1700hrs during warm, sunny conditions with low wind and no precipitation, when temperatures exceed 15°C. Search effort will cover the extent of all candidate significant habitats; however, effort may be focused on areas favoured by the species (such as where host plants are known to be found). All observations of the species, as well as behavioural information and plant associations will be recorded for each individual.	DIS-001 DIS-002 DIS-003 DIS-004

Wildlife Habitat Type	Generalized Methods	Location/Feature(s)
	The locations of each of the candidate significant habitats can be seen on Map 5.	
Duke's Skipper *(Euphyes dukesi)*	Standardized area searches will be conducted within each of the 4 candidate significant Duke's skipper habitats within the project area. Individuals will be captured through the use of a standard insect sweep net, and will be released upon identification. Surveys will be conducted once in each of late June, early July and early August, separated by at least one week, during the flight period for when this species is likely to be encountered. Surveys will be conducted between 0800-1700hrs during warm, sunny conditions with low wind and no precipitation, when temperatures exceed 15°C. Search effort will cover the extent of all candidate significant habitats; however, effort may be focused on areas favoured by the species (such as where host plants are known to be found). All observations of the species, as well as behavioural information and plant associations will be recorded for each individual. The locations of each of the candidate significant habitats can be seen on Map 5.	DUS-001 DUS-002 DUS-003 DUS-004
Giant Swallowtail *(Papilio cresphontes)*	Standardized area searches will be conducted within each of the 2 candidate significant giant swallowtail habitats within the project area and an additional habitat where this species was found in habitat that would otherwise not be considered preferable based on site investigation methods. Individuals will be captured through the use of a standard insect sweep net, and will be released upon identification. Surveys will be conducted once in each of late June, early July and early August, separated by at least one week, during the flight period for when this species is likely to be encountered. Surveys will be conducted between 0800-1700hrs during warm, sunny conditions with low wind and no precipitation, when temperatures exceed 15°C. Search effort will cover the extent of all candidate significant habitats; however, effort may be focused on areas favoured by the species (such as where host plants are known to be found). All observations of the species, as well as behavioural information and plant associations will be recorded for each individual.	GSW-001 GSW-002

Wildlife Habitat Type	Generalized Methods	Location/Feature(s)
	The locations of each of the candidate significant habitats can be seen on Map 5.	
Common Sootywing *(Pholisora catullus)*	Standardized area searches will be conducted within the one candidate significant common sootywing habitat within the project area. Individuals will be captured through the use of a standard insect sweep net, and will be released upon identification. Surveys will be conducted once in each of late June, early July and early August, separated by at least one week, during the flight period for when this species is likely to be encountered. Surveys will be conducted between 0800-1700hrs during warm, sunny conditions with low wind and no precipitation, when temperatures exceed 15°C. Search effort will cover the extent of the candidate significant habitat; however, effort may be focused on areas favoured by the species (such as where host plants are known to be found). All observations of the species, as well as behavioural information and plant associations will be recorded for each individual. The location of the candidate significant habitat can be seen on Map 5.	CSO-001
Hickory Hairstreak *(Satyrium caryaevorus)*	Standardized area searches will be conducted within each of the 7 candidate significant hickory hairstreak habitats within the project area. Individuals will be captured through the use of a standard insect sweep net, and will be released upon identification. Surveys will be conducted once in each of late June, early July and early August, separated by at least one week, during the flight period for when this species is likely to be encountered. Surveys will be conducted between 0800-1700hrs during warm, sunny conditions with low wind and no precipitation, when temperatures exceed 15°C. Search effort will cover the extent of all candidate significant habitats; however, effort may be focused on areas favoured by the species (such as where host plants are known to be found). All observations of the species, as well as behavioural information and plant associations will be recorded for each individual. The locations of each of the candidate significant habitats can be seen on Map 5.	HHA-002 HHA-003 HHA-004 HHA-006 HHA-007 HHA-009 HHA-010
Hayhurst's Scallopwing *(Staphylus*	Standardized area searches will be conducted within the one candidate significant Hayhurst's scallopwing habitat within the project area.	HSC-001

Wildlife Habitat Type	Generalized Methods	Location/Feature(s)
hayhurstii)	Individuals will be captured through the use of a standard insect sweep net, and will be released upon identification. Surveys will be conducted once in each of late June, early July and early August, separated by at least one week, during the flight period for when this species is likely to be encountered. Surveys will be conducted between 0800-1700hrs during warm, sunny conditions with low wind and no precipitation, when temperatures exceed 15°C. Search effort will cover the extent of the candidate significant habitat; however, effort may be focused on areas favoured by the species (such as where host plants are known to be found). All observations of the species, as well as behavioural information and plant associations will be recorded for each individual. The location of the candidate significant habitat can be seen on Map 5.	
Southern Cloudywing *(Thorybes bathyllus)*	Standardized area searches will be conducted within the one candidate significant southern cloudywing habitat within the project area. Individuals will be captured through the use of a standard insect sweep net, and will be released upon identification. Surveys will be conducted once in each of late June, early July and early August, separated by at least one week, during the flight period for when this species is likely to be encountered. Surveys will be conducted between 0800-1700hrs during warm, sunny conditions with low wind and no precipitation, when temperatures exceed 15°C. Search effort will cover the extent of the candidate significant habitat; however, effort may be focused on areas favoured by the species (such as where host plants are known to be found). All observations of the species, as well as behavioural information and plant associations will be recorded for each individual. The location of the candidate significant habitat can be seen on Map 5.	SCL-001

6.2 Construction Mitigation Measures

The various reporting sections above identify several mitigation measures that are recommended to limit potential impacts to significant natural features or wildlife habitats

for the development of the Belle River Wind Project. To assist in fully identifying all mitigation measures that are recommended for this development, a summary table of construction related mitigation measures has been provided below in Table 12, including the mitigation objective and specific location where each mitigation measure should be applied. The purpose of the table below is to consolidate the construction mitigation measures that are applicable to the natural heritage features and wildlife habitats that have been identified through the Natural Heritage Assessment process. These mitigation measures, along with other requirements not associated with the natural heritage, have all been included in the *Construction Plan Report* that has been prepared under a separate cover by AECOM.

Table 12. Summary of Construction Phase Mitigation Measures Recommended for the Belle River Wind Project

Mitigation Measure	Objective(s)	Location(s)
• Minimize any vegetation removal required along roadside collector lines, and occur entirely within the road right-of-way.	• Minimize vegetation removal and impacts on wildlife habitats	Roadside Collector Lines
• Prune any accidentally damaged trees through the implementation of proper arboricultural techniques	• Protect tree species from permanent damage	Entire Project
• Develop and implement an erosion and sedimentation control plan.	• Protect natural features and wildlife habitats, where appropriate	Entire Project
• Clearly delineate work area using silt fencing, erosion blankets, or other barrier (depending on site-specific conditions, such as topography and surface water flow patterns, the environmental monitor may consider substituting other styles of barriers for erosion fencing, when appropriate). The environmental monitor may also consider substituting other demarcating types for fencing, such as staking and flagging, where it is determined that there is no apparent risk to nearby natural features. This could include situations where the natural feature is at a higher elevation than construction activity.	• Minimize erosion impacts on features when construction activities are proposed within 30m of or overlapping significant natural features • Minimize direct impacts on vegetation communities and protect rare/sensitive habitats.	Within 30m of or overlapping any significant natural feature: **WOD**-006, 008, 009, 010, 012, 014, 015, 016, 017, 018, 019, 021, 023, 026, 027, 029, 030, 031, 032, **WET**-001, 002, 003, 005, 006, 007, 008, 009, 013, 014, 015, 016, **RWA-**001*, 002*, **BMA**-001*, **AWO**-002*, 003*, 004*, 006*, 007*, 008*, 009*, 011*, 012*, 013*, **MBB**-001*, 002*, **OCB**-001***, EWP**-002*, 003*, 004*, 006*, 007*, 008*, **WTH**-001*, 002*, **PMI-**001*, 002*, **PAW**-001*, 002*, 003*, 004*, 005*, 006*, **MSE**-002*, 003*, 004*, 005*, 006*, 007*, **SFL**-001*, **DTP**-001*, **WHP**-001*, **BBU**-001*, 002*, 003*, 004*, 005*, 006*, 007*, **MPW**-001*, 002*, 003*, 004*, **WLO-**001*, 002*, 003*, 004*, **BGA**-001*, **CPR**-001*, 002, **UCF**-001*, 002*, 003*, 004, 005*, **ICF**-001*, 002*, 003*, 004* **GIW-**

Mitigation Measure	Objective(s)	Location(s)
		001*, 002*, **LTA**-001*, 002*, 003*, 004*, 005*, 006*, 007*, 008*, 009*, **MIW**-002*, 004*, 005*, 006*, 007*, 008, **SHU**-001, 002, **SHH**-001, 002, 003, 004, 005, **PGH**-001, **DIS**-001*, 002*, 003*, 004*, **DUS**-001*, 002*, 003*, 004*,**GSW**-001*, 002*, **CSO**-001*, **HHA**-002*, 003*, 004*, 006*, 007*, 009*, 010*, **HSC**-001*, **SCL**-001*
• Erect erosion fencing around significant woodlands to correspond to the disturbance area limits.	• Minimize direct impacts on vegetation communities and protect rare/sensitive habitats.	Within 30m of or overlapping any significant woodland: **WOD**-006, 008, 009, 010, 012, 014, 015, 016, 017, 018, 019, 021, 023, 026, 027, 029, 030, 031, 032
• Place the erosion fencing as far away as possible from significant woodlands and no closer to significant woodlands than the dripline.	• Minimize direct impacts on vegetation communities and protect rare/sensitive habitats.	Within 30m of or overlapping any significant woodland: **WOD**-006, 008, 009, 010, 012, 014, 015, 016, 017, 018, 019, 021, 023, 026, 027, 029, 030, 031, 032
• Clearly delineate the dripline and root zone of retained trees.	• Avoid accidental damage to retained species.	Within 10m of all construction activities.
• Document all trees (>10cm dbh) to be removed and retained, prior to construction.	• Avoid accidental damage to, or removal of, retained species.	All trees within the disturbance area limit, as well as within 5m of or overlapping any significant natural feature containing tree species of conservation concern: **SHU**-001, 002, **SHH**-001, 002, 003, 004, 005, **PGH**-001
• Maintain erosion control measures for the duration of construction or decommissioning activities.	• Minimize erosion impacts on features when construction activities are proposed within 30m of or overlapping significant natural features.	Within 30m of or overlapping any significant natural feature: **WOD**-006, 008, 009, 010, 012, 014, 015, 016, 017, 018, 019, 021, 023, 026, 027, 029, 030, 031, 032, **WET**-001, 002, 003, 005, 006, 007, 008, 009, 013, 014, 015, 016, **RWA-**001*, 002*, **BMA**-001*, **AWO**-002*, 003*, 004*, 006*, 007*, 008*, 009*,011*, 012*, 013*, **MBB**-001*, 002*, **OCB**-001*, **EWP**-002*, 003*, 004* 006*, 007*, 008*, **WTH**-001*, 002*, **PMI-**001*, 002*, **PAW**-001*, 002*, 003*, 004*, 005*, 006*, **MSE**-002*, 003*, 004*, 005*, 006*, 007*, **SFL**-001*, **DTP**-001*, **WHP**-001*, **BBU**-001*, 002*, 003*, 004*, 005*, 006*, 007*, **MPW**-001*, 002*, 003*, 004*, **WLO-**001*, 002*, 003*, 004*, **BGA**-001*, **CPR**-001*, 002, **UCF**-

Mitigation Measure	Objective(s)	Location(s)
		001*, 002*, 003*, 004, 005*, **ICF**-001*, 002*, 003*, 004* **GIW-**001*, 002*, **LTA**-001*, 002*, 003*, 004*, 005*, 006*, 007*, 008*, 009*, **MIW**-002*, 004*, 005*, 006*, 007*, 008, **SHU**-001, 002, **SHH**-001, 002, 003, 004, 005, **PGH**-001, **DIS**-001*, 002*, 003*, 004*, **DUS**-001*, 002*, 003*, 004*,**GSW**-001*, 002*, **CSO**-001*, **HHA**-002*, 003*, 004*, 006*, 007*, 009*, 010*, **HSC**-001*, **SCL**-001*
• Suspend work if high runoff volume is noted or excessive sediment discharge occurs, as determined by an environmental monitor.	• Minimize erosion impacts on features when construction activities are proposed within 30m of or overlapping significant natural features.	Within 30m of or overlapping any significant natural feature: **WOD**-006, 008, 009, 010, 012, 014, 015, 016, 017, 018, 019, 021, 023, 026, 027, 029, 030, 031, 032, **WET**-001, 002, 003, 005, 006, 007, 008, 009, 013, 014, 015, 016, **RWA-**001*, 002*, **BMA**-001*, **AWO**-002*, 003*, 004*, 006*, 007*, 008*, 009*,011*, 012*, 013*, **MBB**-001*, 002*, **OCB**-001***, EWP**-002*, 003*, 004*, 006*, 007*, 008*, **WTH**-001*, 002*, **PMI-**001*, 002*, **PAW**-001*, 002*, 003*, 004*, 005*, 006*, **MSE**-002*, 003*, 004*, 005*, 006*, 007*, **SFL**-001*, **DTP**-001*, **WHP**-001*, **BBU**-001*, 002*, 003*, 004*, 005*, 006*, 007*, **MPW**-001*, 002*, 003*, 004*, **WLO-**001*, 002*, 003*, 004*, **BGA**-001*, **CPR**-001*, 002, **UCF**-001*, 002*, 003*, 004, 005*, **ICF**-001*, 002*, 003*, 004* **GIW-**001*, 002*, **LTA**-001*, 002*, 003*, 004*, 005*, 006*, 007*, 008*, 009*, **MIW**-002*, 004*, 005*, 006*, 007*, 008, **SHU**-001, 002, **SHH**-001, 002, 003, 004, 005, **PGH**-001, **DIS**-001*, 002*, 003*, 004*, **DUS**-001*, 002*, 003*, 004*,**GSW**-001*, 002*, **CSO**-001*, **HHA**-002*, 003*, 004*, 006*, 007*, 009*, 010*, **HSC**-001*, **SCL**-001*
• Minimize vehicle traffic on exposed soils during site clearing, grubbing, grading and top soil removal.	• Limit unnecessary risk of increased erosion or sedimentation.	Entire Project
• Re-vegetate temporary access roads or crane paths to pre-construction conditions as soon as possible.	• Limit the potential for erosion or sedimentation due to exposed soil conditions.	Entire Project

Mitigation Measure	Objective(s)	Location(s)
• Maintain vegetation buffers around water bodies.	• Minimize the potential for erosion, and protect wildlife habitat, within riparian areas.	Entire Project
• Schedule construction and regular (non-critical) maintenance activities to occur outside of the peak raptor wintering period (January - February), wherever possible, unless specifically required in accordance with manufacturer specifications.	• Avoid disturbing overwintering raptors.	Within 30m of any significant raptor wintering area: **RWA**-001*, 002*
• Schedule construction and regular (non-critical) maintenance activities to occur outside of the critical roosting period for bats (June), unless specifically required in accordance with manufacturer specifications.	• Avoid disturbing roosting bats.	Within 30m of any significant bat maternity colony: **BMA**-001*
• Avoid scheduling construction or regular (non-critical) maintenance activities during the peak breeding season (April-June), wherever possible.	• Avoid disturbing breeding birds in marsh bird breeding habitats.	Within 30m of any significant marsh bird breeding habitat: **MBB**-001*, 002*
• Avoid scheduling construction or regular (non-critical) maintenance activities during the peak breeding season (May 1st-July 31st), wherever possible.	• Avoid disturbing breeding birds in open country habitats.	Within 30m of any significant open country bird breeding habitat: **OCB**-001*
• If construction or regular maintenance must occur during the peak breeding season, have a biologist confirm birds will not be impacted by construction or maintenance activities.	• Avoid disturbing nesting birds.	Within 30m of, or overlapping any significant bird breeding habitat: **MBB**-001*, 002*, **OCB**-001***,** **EWP**-002*, 003*, 004*, 006*, 007*, 008*, **WTH**-001*, 002*.
• Schedule vegetation clearing and site grading outside of the core breeding period for migratory birds (May 1st – July 31st), wherever possible, in accordance with the *Migratory Birds Convention Act* (MBCA).	• Minimize impacts to migratory birds and their nests.	Entire Project
• If vegetation removal and site grading will occur during the core breeding period for migratory birds (May 1st – July 31st), a biologist will conduct nest searches, where	• Minimize impacts to migratory birds and their nests.	Entire Project

Mitigation Measure	Objective(s)	Location(s)
natural vegetation will be removed, to ensure there will be no impact to nesting birds.		
• Schedule all construction and decommissioning activities aside from vegetation clearing and site grading outside of the core breeding period for migratory birds (May 1st – July 31st), wherever possible, to limit disturbance to migratory birds or their nests.	• Minimize disturbance to migratory birds and their nests.	Entire Project
• If construction and decommissioning activities aside from vegetation clearing and site grading will occur during the breeding bird season (May 1st-July 31st), a biologist will conduct nest searches, where natural vegetation will be removed, to ensure there will be no impact to breeding birds.	• Minimize disturbance to migratory birds and their nests.	Entire Project
• Avoid construction activities during the peak frog breeding season (April 15th-June 15th), when possible, or install drift fencing (erosion fencing) to help control amphibian movements around construction activity..	• Avoid disturbing breeding amphibians.	Within 30m of significant amphibian woodland breeding habitat: **AWO**-002*, 003*, 004*, 006*, 007*, 008*, 009*, 011*, 012*, 013*.
• Schedule construction and regular (non-critical) maintenance activities to occur outside of the peak flight period for when butterfly species of conservation concern are likely to be encountered (late June to early August), whenever possible.	• Minimize disturbance/avoidance behavior of butterfly species of conservation concern.	Within 30m of or overlapping any significant butterfly species of conservation habitat: **DIS**-001*, 002*, 003*, 004*, **DUS**-001*, 002*, 003*, 004*,**GSW**-001*, 002*, **CSO**-001*, **HHA**-002*, 003*, 004*, 006*, 007*, 009*, 010*, **HSC**-001*, **SCL**-001*
• If construction and maintenance must occur during the peak flight period for butterfly species of conservation concern, have a biologist confirm that this species will not be impacted by construction or maintenance activities.	• Minimize disturbance/avoidance behavior of butterfly species of conservation concern.	Within 30m of or overlapping any significant butterfly species of conservation habitat: **DIS**-001*, 002*, 003*, 004*, **DUS**-001*, 002*, 003*, 004*,**GSW**-001*, 002*, **CSO**-001*, **HHA**-002*, 003*, 004*, 006*, 007*, 009*, 010*, **HSC**-001*, **SCL**-001*
• Schedule construction activities during daylight hours, wherever possible.	• Avoid noise/light disturbance of local wildlife in areas where construction activity will occur within 30m of or overlapping certain significant features or wildlife habitat types.	Within 30m of: **WOD**-006, 008, 009, 010, 012, 014, 015, 016, 017, 018, 019, 021, 023, 026, 027, 029, 030, 031, 032, **WET**-001, 002, 003, 005, 006, 007, 008, 009, 013, 014, 015, 016, **AWO**-002*, 003*, 004*, 006*, 007*, 008*, 009*, 011*, 012*, 013*.
• If construction activities must occur outside of daylight hours, spotlights will be directed downward and/or away from the natural feature to limit potential light disturbance to wildlife.	• Avoid noise/light disturbance of local wildlife in areas where construction activity will occur within 30m of or overlapping certain	Within 30m of: **WOD**-006, 008, 009, 010, 012, 014, 015, 016, 017, 018, 019, 021, 023, 026, 027, 029, 030, 031, 032, **WET**-001, 002, 003, 005, 006, 007, 008, 009, 013, 014, 015, 016, **AWO**-002*, 003*,

Mitigation Measure	Objective(s)	Location(s)
	significant features or wildlife habitat types.	004*, 006*, 007*, 008*, 009*, 011*, 012*, 013*.
• Suspend work if an excessive sediment discharge occurs, as determined by an environmental monitor, until mitigation measures have been established.	• Limit the potential for increased erosion within 30m of or overlapping certain significant natural features or wildlife habitat types.	Within 30m of: **WOD**-006, 008, 009, 010, 012, 014, 015, 016, 017, 018, 019, 021, 023, 026, 027, 029, 030, 031, 032, **WET**-001, 002, 003, 005, 006, 007, 008, 009, 013, 014, 015, 016, **AWO**-002*, 003*, 004*, 006*, 007*, 008*, 009*, 011*, 012*, 013*.
• Vehicle use will occur primarily on access roads and in agricultural habitats, where invasive and non-native vegetation species are less likely to be concentrated.	• Reduce the potential spread of non-native or invasive species around the project area.	Entire Project
• Implement fugitive dust suppression techniques when necessary to suppress dust, as determined by the environmental monitor.	• Limit the potential for increased sedimentation within 10m of significant natural features.	Entire Project
• Implement and enforce speed limits for construction equipment and trucks.	• Avoid contamination impacts by fugitive dust within 30m of significant natural features.	Entire Project
• Install wind fences, where determined to be necessary by the on-site Environmental Monitor. Installation of these fences will depend on site-specific conditions, including wind speeds, topography, land cover, and the extent of surrounding natural wind breaks.	• Avoid contamination impacts by fugitive dust within 30m of significant natural features.	Entire Project
• Store any stockpiled material more than 30m from a wetland, woodland, or water body.	• Limit the potential for increased erosion within 30m of significant natural features.	Entire Project
• Locate all maintenance activities, vehicle refueling or washing, and chemical storage more than 30m from any significant feature.	• Minimize the risk of contamination of chemical spill around significant natural features.	Entire Project
• Develop a spill response plan, train staff on appropriate procedures, and keep emergency spill kits on site.	• Minimize potential long-term effects or significance contaminations in the event an accidental spill occurs.	Entire Project
• Keep contact information for the Ministry of the Environment and Climate Change (MOECC) Spills Action Centre in a designated area on the construction site.	• Minimize potential long-term effects or significance contaminations in the event an accidental spill	Entire Project

Mitigation Measure	Objective(s)	Location(s)
	occurs.	
• Dispose of waste material by authorized and approved off-site vendors.	• Limit the potential for contamination of significant natural features.	Entire Project
• Store hazardous materials in designated areas.	• Limit the potential for contamination of significant natural features.	Entire Project
• Implement best management practices.	• General protection of natural features throughout the construction process.	Entire Project
• Minimize the use of impervious surfaces where possible, such as utilizing and contouring permeable surface material (i.e. gravel) to increase infiltration, and reduce surface water runoff.	• Minimize potential impacts to soil moisture regime and groundwater stores.	Entire Project
• Minimize paved surfaces and design roads to promote infiltration.	• Minimize potential impacts to soil moisture regime and groundwater stores.	Entire Project
• No use of herbicides (project related activities only) within 30m of significant features or wildlife habitats.	• Avoid impacts to natural vegetation species, significant features, and wildlife habitats.	Within 30m of any of the following: **WOD**-006, 008, 009, 010, 012, 014, 015, 016, 017, 018, 019, 021, 023, 026, 027, 029, 030, 031, 032, **WET**-001, 002, 003, 005, 006, 007, 008, 009, 013, 014, 015, 016, **RWA**-001*, 002*, **BMA**-001*, **AWO**-002*, 003*, 004*, 006*, 007*, 008*, 009*, 011*, 012*, 013*, **MBB**-001*, 002*, **OCB**-001*, **EWP**-002*, 003*, 004*, 006*, 007*, 008*, **WTH**-001*, 002*, **PMI**-001*, 002*, **PAW**-001*, 002*, 003*, 004*, 005*, 006*, **MSE**-002*, 003*, 004*, 005*, 006*, 007*, **SFL**-001*, **DTP**-001*, **WHP**-001*, **BBU**-001*, 002*, 003*, 004*, 005*, 006*, 007*, **MPW**-001*, 002*, 003*, 004*, **WLO**-001*, 002*, 003*, 004*, **BGA**-001*, **CPR**-001*, 002, **UCF**-001*, 002*, 003*, 004, 005*, **ICF**-001*, 002*, 003*, 004* **GIW**-001*, 002*, **LTA**-001*, 002*, 003*, 004*, 005*, 006*, 007*, 008*, 009*, **MIW**-002*, 004*, 005*, 006*, 007*, 008, **SHU**-001, 002, **SHH**-001, 002, 003, 004, 005, **PGH**-001, **DIS**-001*, 002*, 003*, 004*, **DUS**-001*, 002*, 003*, 004*,**GSW**-001*, 002*, **CSO**-001*, **HHA**-002*, 003*, 004*, 006*, 007*, 009*, 010*, **HSC**-001*,

Mitigation Measure	Objective(s)	Location(s)
		SCL-001*
• Avoid accidental damage to wetland vegetation which may impact hydrological connectivity.	• Maintain existing wetland flood attenuation.	Within 120m of any significant wetland: **WET**-001, 002, 003, 005, 006, 007, 008, 009, 013, 014, 015, 016.
• Avoid accidental damage to wetland vegetation which may impact water quality.	• Maintain existing water quality of wetlands.	Within 120m of any significant wetland: **WET**-001, 002, 003, 005, 006, 007, 008, 009, 013, 014, 015, 016.
• Implement fugitive dust suppression techniques to avoid impacting water quality when necessary to suppress dust, as determined by the environmental monitor.	• Maintain existing water quality of wetlands.	Within 30m of any significant wetland: **WET**-001, 002, 003, 005, 006, 007, 008, 009, 013, 014, 015, 016.
• Place the erosion fencing as far away as possible from the significant wetland and no closer to the significant wetland than the dripline.	• Minimize impacts to natural features and associated wildlife habitats.	Overlapping any significant wetland: **WET**-009.
• Where the temporary construction area is proposed to be within 5m of, but not overlapping, a wetland (excluding along existing municipal roads), place any permanent infrastructure (i.e. access roads) 5m from the wetland edge and plant native vegetation in the 5m buffer between the infrastructure and wetland edge.	• Minimize impacts to wetland functions.	Within 5m of the following significant wetlands: **WET**- 001, 003, 005, 007, 008, 009, 013, 014, 015.
• Minimize grading activities to maintain existing drainage patterns, to the fullest extent possible.	• Maintain existing surface water drainage patterns.	Entire Project
• Control rate and timing of water pumping, and restrict taking of water during periods of extreme low flow.	• Limit potential impacts on water temperature, surface water storage, and wildlife habitat.	Entire Project
• Control quantity and quality of stormwater discharge using best management practices.	• Minimize impacts to ground water stores, wetlands, or water bodies.	Entire Project
• Restore temporary construction areas to pre-construction conditions as soon as possible.	• Maintain habitat quality within the project area.	Within 30m of or overlapping any of the following: **RWA**-001*, 002*, **MBB**-001*, 002*, **OCB**-001*, **EWP**-002*, 003*, 004*, 006*, 007*, 008*, **WTH**-001*, 002*.
• Avoid direct impacts to specific amphibian breeding habitat (i.e. vernal pools or other aquatic habitat), or to the immediately surrounding woodland habitat.	• Minimize impacts to amphibian breeding habitat.	Within 30m of or overlapping significant amphibian woodland breeding habitat: **AWO**-002*, 003*, 004*, 006*, 007*, 008*, 009*, 011*, 012*, 013*.
• Post and enforce speed limits along construction access roads, and maintain signage during the operational phase of the project.	• Limit the potential for wildlife road mortality.	Within 30m of or overlapping significant amphibian woodland breeding habitat: **AWO**-002*, 003*, 004*, 006*,

Mitigation Measure	Objective(s)	Location(s)
		007*, 008*, 009*, 011*, 012*, 013*.
• Post wildlife crossing signs along construction access roads, and maintain signage during the operational phase of the project.	• Limit the potential for wildlife road mortality.	Within 30m of or overlapping amphibian woodland breeding habitat: **AWO**-002*, 003*, 004*, 006*, 007*, 008*, 009*, 011*, 012*, 013*.
• Locate all entry and exit pits (directional drilling) a sufficient distance from the edge of any significant natural feature or wildlife habitat to maintain a vertical depth of at least 1.5m at all times below the natural features to protect the critical root zone.	• Minimize impacts on significant natural features, water bodies, and wildlife habitat.	Within 10m of the following: **WOD**-021, 027, **WET**-009, **AWO**-012*, **PAW**-006*, **MSE**-007*, **BBU**-007*, **UCF**-003*, **ICF**-003*, **LTA**-008*, **MIW**-007*, **HHA**-009*.
• Collect directional drill cuttings as they are generated and placed in a soil bin or bag for off-site disposal.	• Limit the potential for soil or water contamination.	Mitigation will be implemented wherever horizontal directional drilling is expected to occur.
• Restore and re-vegetate direction drill entry/exit pits to pre-construction conditions as soon as possible after construction.	• Minimize the presence of exposed soil to reduce the potential for erosion	Mitigation will be implemented wherever horizontal directional drilling is expected to occur.

** Only if these habitats are determined to be significant through pre-construction surveys described in Section 5.3.*

6.3 Post-Construction Monitoring Commitments

In accordance with appropriate provincial guidance and the commitments made as part of this report, a series of post-construction surveys are required at the Belle River Wind Project. These post-construction monitoring commitments are outlined in Table 13 below.

Table 13. Summary of Post-Construction Monitoring Commitments for the Belle River Wind Project

Survey Type	Location(s)	Generalized Methods	Purpose
Mortality Monitoring	Entire Project	Post-construction mortality monitoring will be conducted following both the *Birds and Bird Habitats* (MNR 2011a) and *Bats and Bat Habitats* (MNR 2011b) provincial guidelines for 3 years after the project has become operational. A subset of 30% of the turbines will be selected in accordance with the *Birds and Bird Habitats* (MNR 2011a) and *Bats and Bat Habitats* (MNR 2011b) provincial guidelines, and will be searched approximately every 3-4 days (twice weekly) for	To assess the direct impact of this facility on bird and bat populations. If mortality rates surpass provincially determined thresholds, mitigation measures will be discussed with the MNRF.

Survey Type	Location(s)	Generalized Methods	Purpose
		bird and bat mortalities from May 1st to October 31st, and approximately every 7 days (weekly) throughout November for raptors. Turbines located in confirmed significant waterfowl stopover and staging habitats will be included with the subsample of turbines monitored. In addition, if bat maternity colony habitat BMA-001 is confirmed significant, the turbine closest to this habitat (T19) will be included with the subsample of turbines to be monitored. All turbines not part of the chosen sub-set will be searched once during each of March and April, specifically targeting waterfowl, and during each month from May to November, specifically targeting raptors. Searcher efficiency and carcass removal trials will be conducted in accordance with provincial guidelines. Bird and Bat mortality methods will be addressed in detail in the Environmental Effects Monitoring Plan.	
Raptor Wintering Area Surveys	RWA-001* RWA-002*	Post-construction winter raptor surveys will be repeated at these habitats, if deemed to be significant, for 1 year following the same methods utilized during pre-construction surveys. If the first year of post-construction raptor surveys indicates that this feature is no longer significant, an additional 2 years of post-construction monitoring will occur following the same methods utilized during pre-construction surveys. These surveys are only required if habitats are evaluated to be significant based on pre-construction surveys.	To assess the potential disturbance impact of wind turbines and overhead cabling on significant raptor wintering areas.
Bat Maternity Colony Surveys	BMA-001*	Post-construction acoustic bat monitoring will be repeated at any of these significant habitats within 120m of wind turbines for 3 years following the same methods utilized during pre-construction surveys. These surveys are only required if	To assess the potential disturbance impact of operational turbines on nearby significant bat maternity roosts.

Survey Type	Location(s)	Generalized Methods	Purpose
		habitats are evaluated to be significant based on pre-construction surveys.	
Amphibian Breeding Habitat (Woodland) Surveys	AWO-002* AWO-003* AWO-004* AWO-006* AWO-007* AWO-008* AWO-009* AWO-011* AWO-012* AWO-013*	Post-construction amphibian call surveys will be repeated at these habitats that are overlapping the project location, or within 120m of access roads, for 1 year following the same methods utilized during pre-construction surveys. After presenting results to the MNRF, the need for additional surveys will be addressed. These surveys are only required if habitats are evaluated to be significant based on pre-construction surveys.	To assess the potential disturbance impact of access roads on significant amphibian breeding habitats (woodland).
Marsh Bird Breeding Habitat Surveys	MBB-001* MBB-002*	Post-construction marsh bird breeding monitoring will be repeated at these habitat locations, if significant, that are located within 120m from a wind turbine for 3 years following the same methods utilized during pre-construction surveys. These surveys are only required if the habitat is evaluated to be significant based on pre-construction surveys.	To assess the potential disturbance impact of operational turbines on marsh bird breeding habitat.
Open Country Bird Breeding Habitat	OCB-001*	Post-construction open country bird breeding monitoring will be repeated at this habitat, if significant, which is located within 120m from a wind turbine for 3 years following the same methods utilized during pre-construction surveys. These surveys are only required if habitats are evaluated to be significant based on pre-construction surveys.	To assess the potential disturbance impact of operational turbines on nearby significant open country breeding bird habitat.
Bird Species of Conservation Concern Surveys: • Eastern Wood-Pewee Habitat • Wood Thrush Habitat	EWP-002 (SCC-P)* EWP-003 (SCC-N)* EWP-004 (SCC-S)* EWP-006 (SCC-A)* EWP-007 (SCC-H)* EWP-008 (SCC-K)* WTH-001 (SCC-N)* WTH-002 (SCC-A)*	Post-construction behaviour surveys of this habitat type will be repeated at any of the significant habitats within 120m of or overlapping wind turbines for 3 years following the same methods utilized during pre-construction surveys. These surveys are only required if habitat is evaluated to be significant based on pre-construction surveys.	To assess the potential disturbance impact of wind turbines on significant habitat for bird species of conservation concern.
Plant Species of Conservation Concern Surveys:	PAW-001 (SCC-N)* PAW-002 (SCC-I)* PAW-003 (SCC-K)* PAW-004 (SCC-L)* PAW-005 (SCC-B)*	Post-construction surveys of this habitat type will be repeated at any of the significant habitats in years 1, 3, and 5 of operation following the same methods utilized during pre-	To assess the potential disturbance impact of access roads on significant habitat for plant species of

Survey Type	Location(s)	Generalized Methods	Purpose
• Pawpaw Habitat • Muskingum Sedge Habitat • Burning Bush Habitat • Illinois Carrion Flower Habitat • Lizard's Tail Habitat • Prairie Milkweed Habitat • Schweinitz's Flatsedge Habitat • Deer-tongue Panicgrass Habitat • White-haired Panicgrass Habitat • Many-fruit Primrose-willow Habitat • Winged Loosestrife Habitat • Biennial Gaura Habitat • Giant Ironweed Habitat • Shumard Oak Habitat • Climbing Prairie Rose Habitat • Upright Carrion Flower Habitat • Shellbark Hickory Habitat • Missouri Ironweed Habitat • Pignut Hickory Habitat	PAW-006 (SCC-E)* MSE-002 (SCC-N)* MSE-003 (SCC-I)* MSE-004 (SCC-K)* MSE-005 (SCC-L)* MSE-006 (SCC-B)* MSE-007 (SCC-E)* BBU-001 (SCC-N)* BBU-002 (SCC-I)* BBU-003 (SCC-G)* BBU-004 (SCC-K)* BBU-005 (SCC-L)* BBU-006 (SCC-B)* BBU-007 (SCC-E)* ICF-001 (SCC-G)* ICF-002 (SCC-B)* ICF-003 (SCC-E)* ICF-004 (SCC-K)* LTA-001 (SCC-P)* LTA-002 (SCC-N)* LTA-003 (SCC-I)* LTA-004 (SCC-H)* LTA-005 (SCC-K)* LTA-006 (SCC-L)* LTA-007 (SCC-A)* LTA-008 (SCC-E)* LTA-009 (SCC-D)* PMI-001 (SCC-G)* PMI-002 (SCC-T)* SFL-001 (SCC-M)* DTP-001 (SCC-B)* WHP-001 (SCC-M)* MPW-001 (SCC-P)* MPW-002 (SCC-F)* MPW-003 (SCC-C)* MPW-004 (SCC-D)* WLO-001 (SCC-P)* WLO-002 (SCC-H)* WLO-003 (SCC-C)* WLO-004 (SCC-D)* BGA-001 (SCC-M)* GIW-001 (SCC-P)* GIW-002 (SCC-M)* SHU-001 (SCC-C) SHU-002 (SCC-P) CPR-001 (SCC-M)* CPR-002 (SCC-T) UCF-001 (SCC-G)* UCF-002 (SCC-B)* UCF-003 (SCC-E)* UCF-004 (SCC-T) UCF-005 (SCC-K)* SHH-001 (SCC-P) SHH-002 (SCC-H) SHH-003 (SCC-K) SHH-004 (SCC-B) SHH-005 (SCC-G) MIW-002 (SCC-P)*	construction surveys. Surveys will be conducted at a time of year when the species can be identified. These surveys are only required if habitat is evaluated to be significant based on pre-construction surveys.	conservation concern.

Survey Type	Location(s)	Generalized Methods	Purpose
	MIW-003 (SCC-I) MIW-004 (SCC-F)* MIW-005 (SCC-K)* MIW-006 (SCC-A)* MIW-007 (SCC-E)* MIW-008 (SCC-D) PGH-001 (SCC-L)		
Butterfly Species of Conservation Concern Surveys: • Hickory Hairstreak Habitat • Giant Swallowtail Habitat • Dion Skipper Habitat • Duke's Skipper Habitat • Common Sootywing Habitat • Hayhurst's Scallopwing Habitat • Southern Cloudywing Habitat	HHA-002 (SCC-P)* HHA-003 (SCC-N)* HHA-004 (SCC-S)* HHA-006 (SCC-H)* HHA-007 (SCC-K)* HHA-009 (SCC-E)* HHA-010 (SCC-D)* GSW-001 (SCC-G)* GSW-002 (SCC-M)* DIS-001 (SCC-H)* DIS-002 (SCC-K)* DIS-003 (SCC-C)* DIS-004 (SCC-D)* DUS-001 (SCC-H)* DUS-002 (SCC-K)* DUS-003 (SCC-C)* DUS-004 (SCC-D)* CSO-001 (SCC-M)* HSC-001 (SCC-M)* SCL-001 (SCC-M)*	Post-construction behaviour surveys of this habitat type will be repeated at any of the significant habitats within 120m of or overlapping wind turbines for 1 year following the same methods utilized during pre-construction surveys. These surveys are only required if habitat is evaluated to be significant based on pre-construction surveys.	To assess the potential disturbance impact of wind turbines on significant habitat for butterfly species of conservation concern.

** Only if these habitats are determined to be significant through pre-construction surveys described in Section 5.3.*

7.0 Environmental Impact Summary

The Belle River Wind Project will result in the installation of up to 50 operational wind turbines as well as the installation of supporting infrastructure, such as the temporary lay-down areas, crane pads, access roads, and collection and transmission lines. Through a comprehensive review of background material in conjunction with site-specific investigations and evaluation of significance surveys, NRSI biologists have identified several significant, or treated as significant, natural features and wildlife habitats within the project area.

As part of this Environmental Impact Study, NRSI biologists have recommended a series of monitoring commitments and mitigation measures to be implemented as part of the development of this project. These recommendations have been developed in association with the specific natural features and wildlife habitats that have been identified within the project area.

Assuming the implementation of the planned mitigation measures, monitoring programs, and contingency plans (if necessary), there is unlikely to be any significant impacts to natural heritage features, including woodlands, wetlands, or significant wildlife habitats.

8.0 References

Publications

Ministry of Natural Resources. 2012a. Natural Heritage Assessment Guide for Renewable Energy Projects. November 2012.

Ministry of Natural Resources. 2011a. Birds and Bird Habitats: Guidelines for Wind Power Projects. December 2011.

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Ministry of Natural Resources. 2000. Significant Wildlife Habitat Technical Guide. October 2000.

Natural Resource Solutions Inc. 2015. Belle River Wind Project: Natural Heritage Evaluation of Significance Report. May 2015.

Internet Sources

Ministry of Natural Resources. 2012b. Draft Significant Wildlife Habitat Ecoregion 7E Criterion Schedule. Available at: http://www.ebr.gov.on.ca/ERS-WEB-External/displaynoticecontent.do?noticeId=MTE1ODc5&statusId=MTczNDgy

Maps

Map 1

Belle River Wind Project

Project Area and Natural Features

Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
- Proposed Access Road
- Potential POI Parcel
- Proposed Substation/Laydown/O&M
- Potential Laydown Area
- Existing Transmission Line
- Railway
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Wooded Area
- Provincially Significant Wetland (PSW)

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Project: 1490
Date: May 25, 2015

NAD83 - UTM Zone 17
Size: 11x17"
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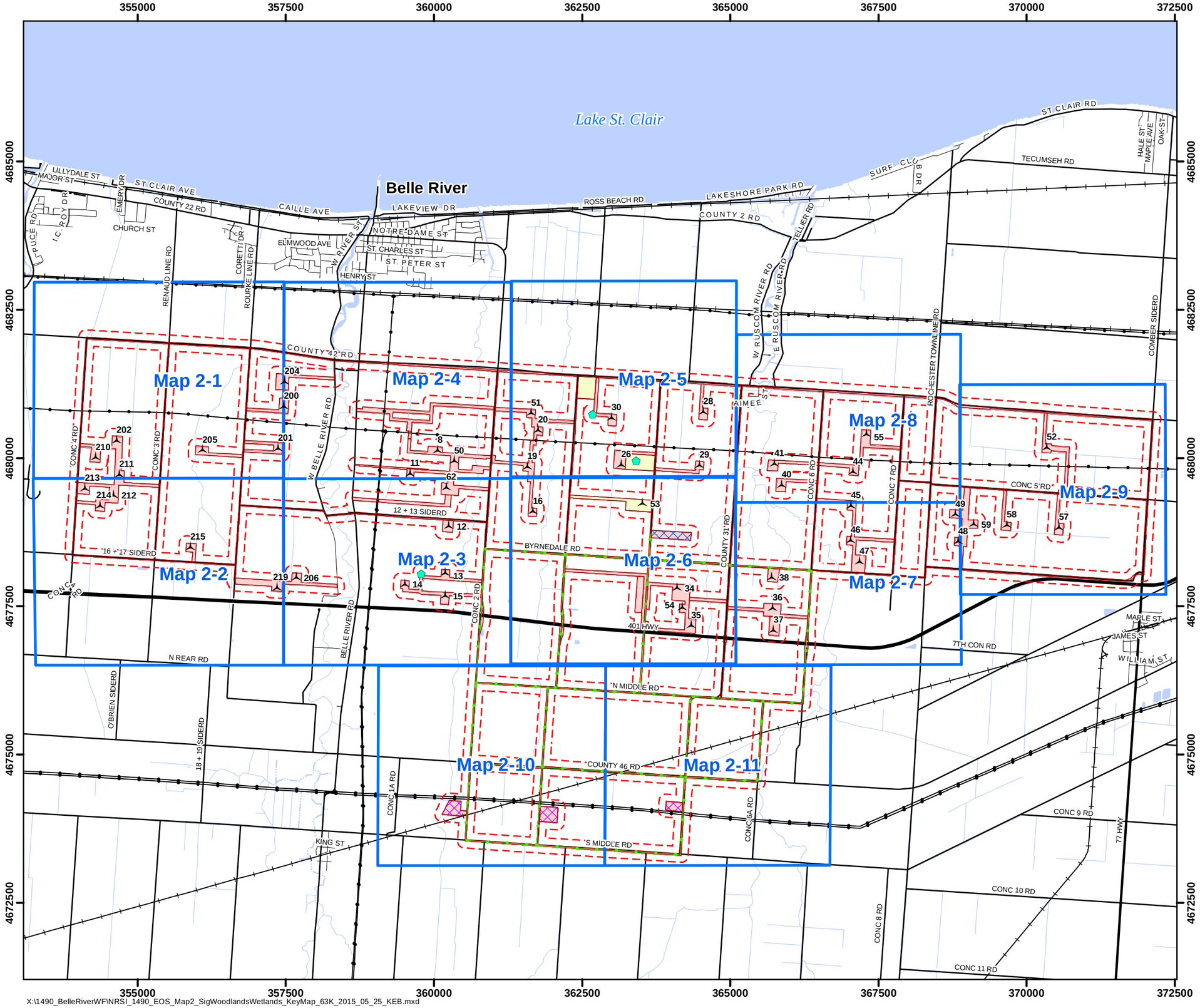
Map 2

Belle River Wind Project

Significant Woodlands and Wetlands Key Map



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Legend

- Map Extents
- Project Area (120m Buffer)
- Proposed Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Transmission Line
- Potential POI Parcel
- Proposed Substation/Laydown/O&M
- Potential Laydown Area
- Existing Trasmission Line
- Railway
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water

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Project: 1490
Date: May 25, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:63,000

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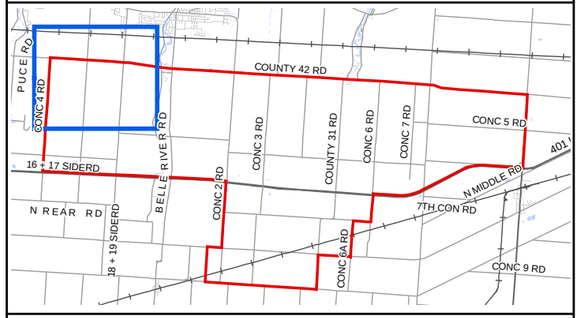
Map 2-1

Belle River Wind Project

Significant Woodlands and Wetlands



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
- Proposed Access Road
- Potential POI Parcel
- Proposed Substation/Laydown/O&M
- Potential Laydown Area
- Existing Transmission Line
- Railway
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Significant Wetland (WET)
- Significant Woodland (WOD)

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Project: P1490
Date: February 13, 2015

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Size: 11x17"
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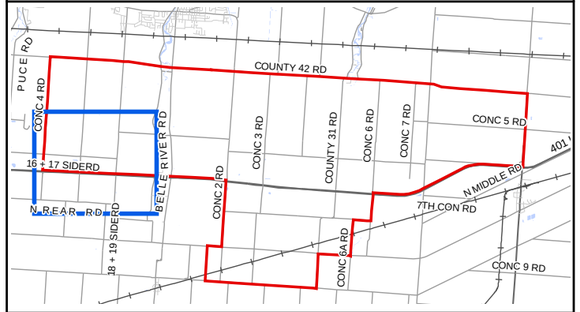
Map 2-2

Belle River Wind Project

Significant Woodlands and Wetlands



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
- Proposed Access Road
- Potential POI Parcel
- Proposed Substation/Laydown/O&M
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- Existing Transmission Line
- Railway
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Significant Wetland (WET)
- Significant Woodland (WOD)

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Date: February 13, 2015

NAD83 - UTM Zone 17
Size: 11x17"
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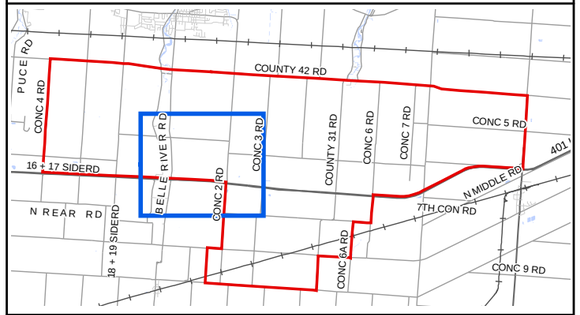
Map 2-3

Belle River Wind Project

Significant Woodlands and Wetlands



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
- Proposed Access Road
- Potential POI Parcel
- Proposed Substation/Laydown/O&M
- Potential Laydown Area
- Existing Transmission Line
- Railway
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Significant Wetland (WET)
- Significant Woodland (WOD)

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Project: P1490
Date: February 13, 2015

NAD83 - UTM Zone 17
Size: 11x17"
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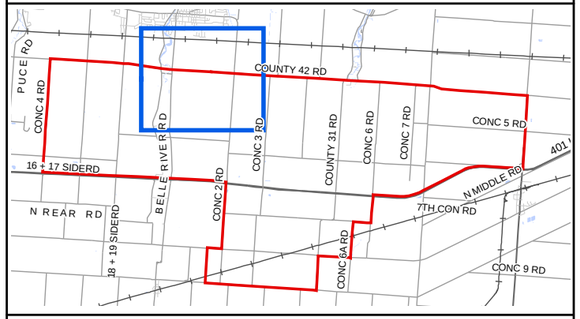
Map 2-4

Belle River Wind Project

Significant Woodlands and Wetlands



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
- Proposed Access Road
- Potential POI Parcel
- Proposed Substation/Laydown/O&M
- Potential Laydown Area
- Existing Transmission Line
- Railway
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Significant Wetland (WET)
- Significant Woodland (WOD)

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Project: P1490
Date: February 13, 2015

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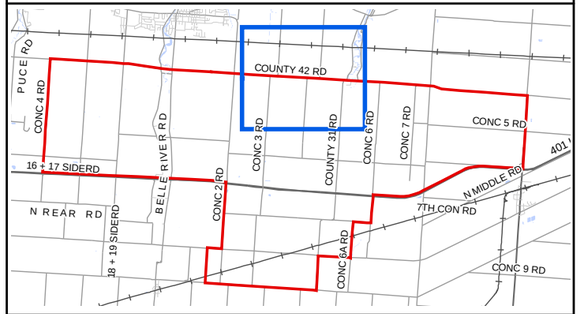
Map 2-5

Belle River Wind Project

Significant Woodlands and Wetlands



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
- Proposed Access Road
- Potential POI Parcel
- Proposed Substation/Laydown/O&M
- Potential Laydown Area
- Existing Transmission Line
- Railway
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Significant Wetland (WET)
- Significant Woodland (WOD)

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Project: P1490
Date: February 13, 2015

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S1 S2 S4

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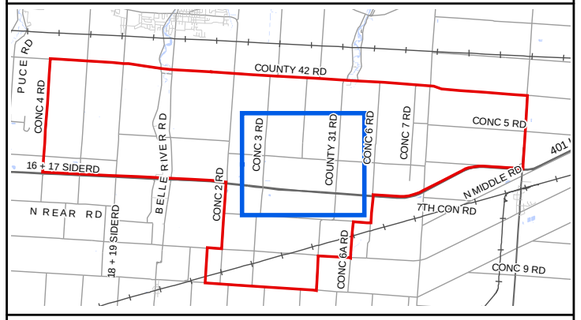
Map 2-6

Belle River Wind Project

Significant Woodlands and Wetlands



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
- Proposed Access Road
- Potential POI Parcel
- Proposed Substation/Laydown/O&M
- Potential Laydown Area
- Existing Transmission Line
- Railway
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Significant Wetland (WET)
- Significant Woodland (WOD)

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Project: P1490
Date: February 13, 2015

NAD83 - UTM Zone 17
Size: 11x17"
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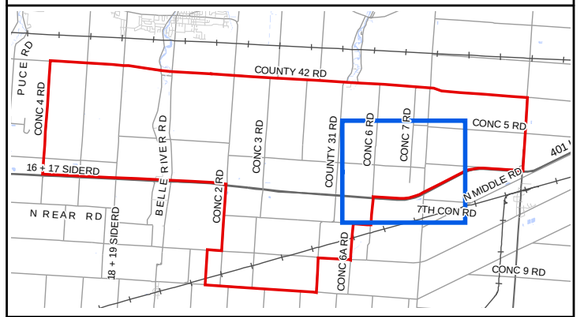
Map 2-7

Belle River Wind Project

Significant Woodlands and Wetlands



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
- Proposed Access Road
- Potential POI Parcel
- Proposed Substation/Laydown/O&M
- Potential Laydown Area
- Existing Transmission Line
- Railway
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Significant Wetland (WET)
- Significant Woodland (WOD)

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Project: P1490
Date: February 13, 2015

NAD83 - UTM Zone 17
Size: 11x17"
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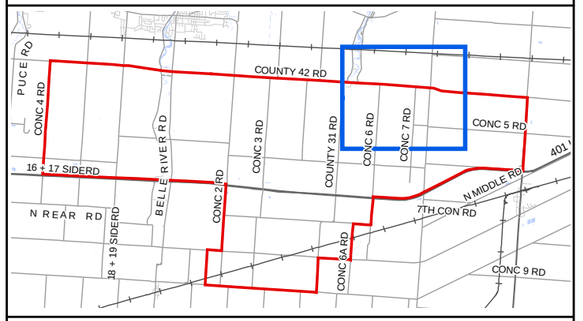
Map 2-8

Belle River Wind Project

Significant Woodlands and Wetlands



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
- Proposed Access Road
- Potential POI Parcel
- Proposed Substation/Laydown/O&M
- Potential Laydown Area
- Existing Transmission Line
- Railway
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Significant Wetland (WET)
- Significant Woodland (WOD)

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Project: P1490
Date: February 13, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

0 200 400 600 800 Meters

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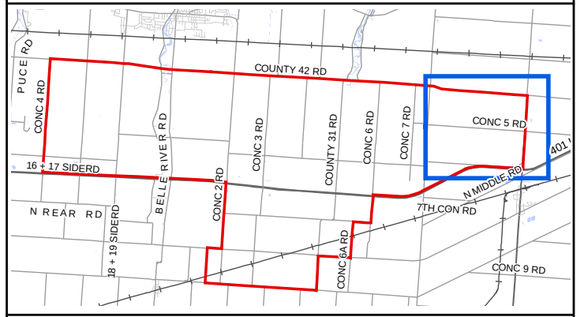
Map 2-9

Belle River Wind Project

Significant Woodlands and Wetlands



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
- Proposed Access Road
- Potential POI Parcel
- Proposed Substation/Laydown/O&M
- Potential Laydown Area
- Existing Transmission Line
- Railway
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Significant Wetland (WET)
- Significant Woodland (WOD)

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Project: P1490
Date: May 25, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

0 200 400 600 800 Meters

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359000 359500 360000 360500 361000 361500 362000 362500 363000

4676500 4676000 4675500 4675000 4674500 4674000 4673500 4673000

N MIDDLE RD

COUNTY 46 RD

S MIDDLE RD

CONC 2 RD

CONC 3 RD

CONC 1A RD

CONC 4 RD

Molson Creek

Duck Creek

WOD-010

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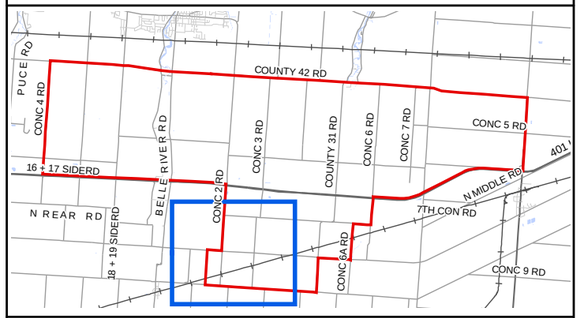
Map 2-10

Belle River Wind Project

Significant Woodlands and Wetlands



Legend

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- Construction Disturbance Area
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Project: P1490
Date: February 13, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

0 200 400 600 800 Meters

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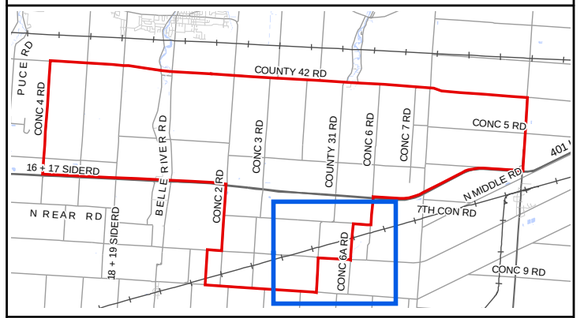
Map 2-11

Belle River Wind Project

Significant Woodlands and Wetlands



Legend

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Project: P1490
Date: February 13, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

0 200 400 600 800 Meters

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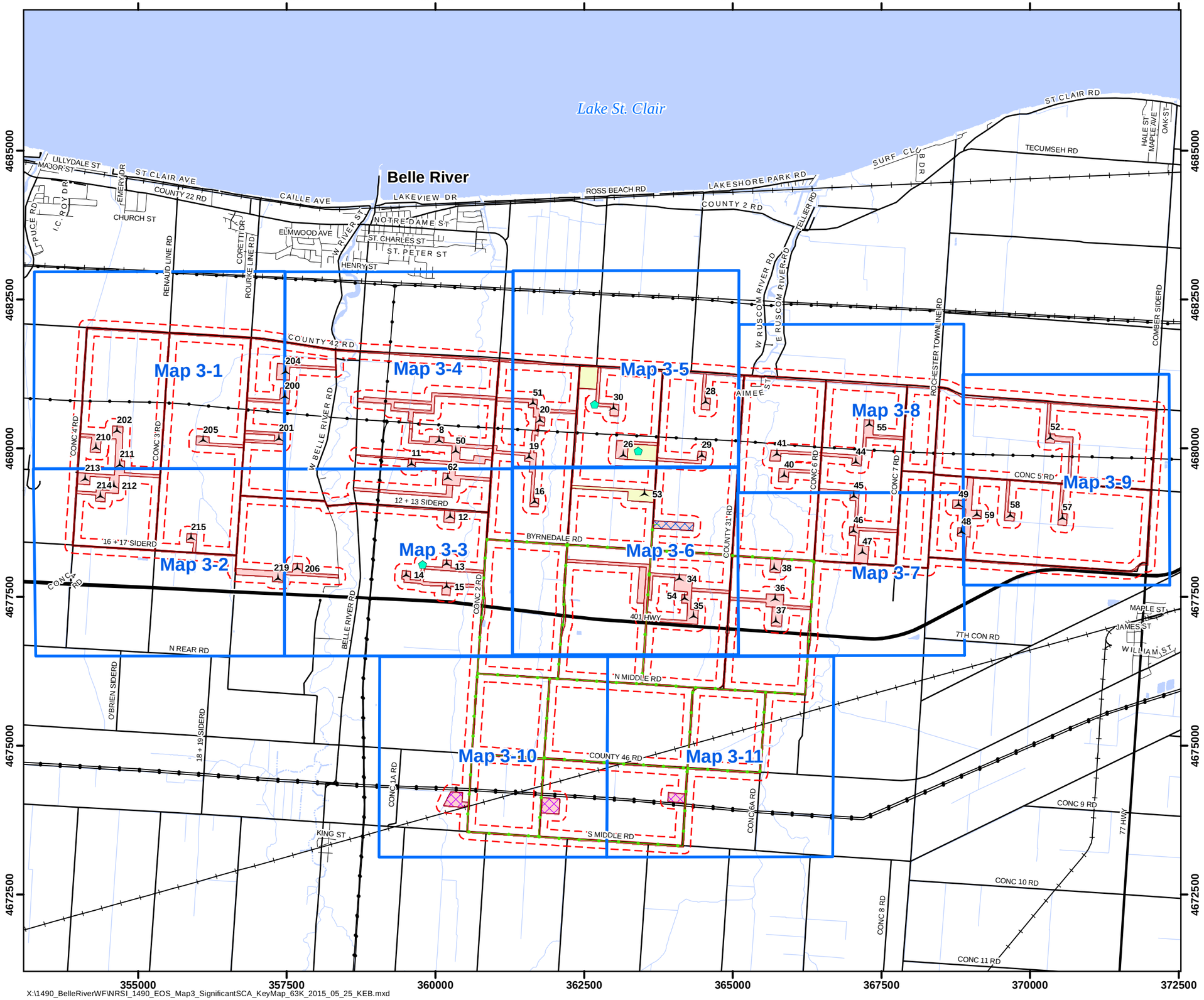

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Map 3

Belle River Wind Project

Significant Seasonal Concentration Areas Key Map

Legend

- Map Extents
- Project Area (120m Buffer)
- Proposed Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Transmission Line
- Potential POI Parcel
- Proposed Substation/Laydown/O&M
- Potential Laydown Area
- Existing Trasmission Line
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- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water

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Project: 1490 Date: May 25, 2015	NAD83 - UTM Zone 17 Size: 11x17" **1:63,000**

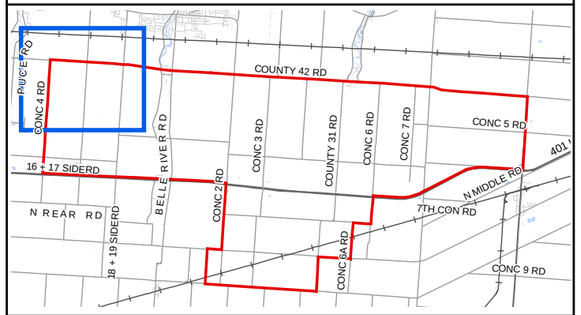
0 1 2 3 4 kms

N

Map 3-1

Belle River Wind Project

Significant Seasonal Concentration Areas



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
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- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Significant Bat Maternity Colonies (BMA)
- Significant Raptor Wintering Area (RWA)

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Project: P1490
Date: May 25, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

0 200 400 600 800 Meters

N

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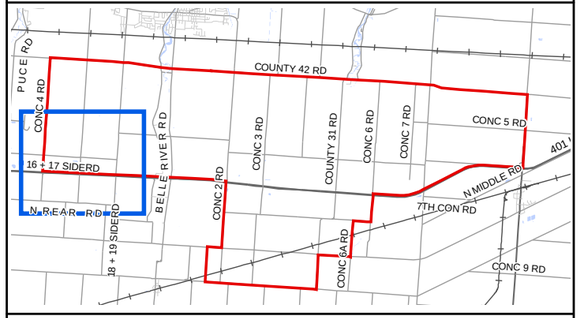
Map 3-2

Belle River Wind Project

Significant Seasonal Concentration Areas



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
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Project: P1490
Date: May 25, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

0 200 400 600 800 Meters

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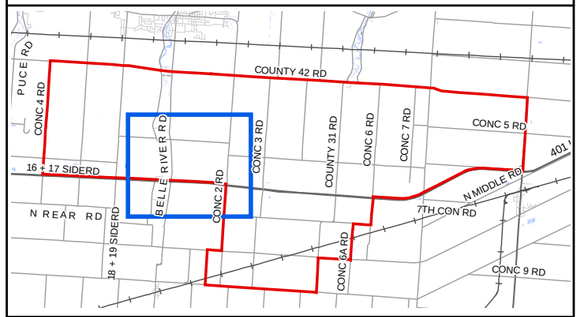
Map 3-3

Belle River Wind Project

Significant Seasonal Concentration Areas



Legend

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- Construction Disturbance Area
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- Open Water
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Project: P1490
Date: May 25, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

0 200 400 600 800 Meters

N

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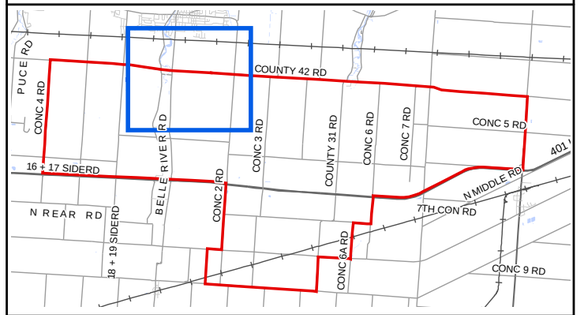
Map 3-4

Belle River Wind Project

Significant Seasonal Concentration Areas



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
- Proposed Access Road
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- Primary Road
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- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Significant Bat Maternity Colonies (BMA)
- Significant Raptor Wintering Area (RWA)

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Project: P1490
Date: May 25, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

0 200 400 600 800 Meters

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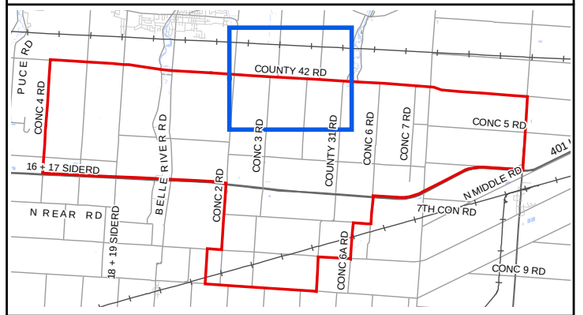
Map 3-5

Belle River Wind Project

Significant Seasonal Concentration Areas



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
- Proposed Access Road
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- Primary Road
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- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Significant Bat Maternity Colonies (BMA)
- Significant Raptor Wintering Area (RWA)

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Project: P1490
Date: May 25, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

0 200 400 600 800 Meters

N

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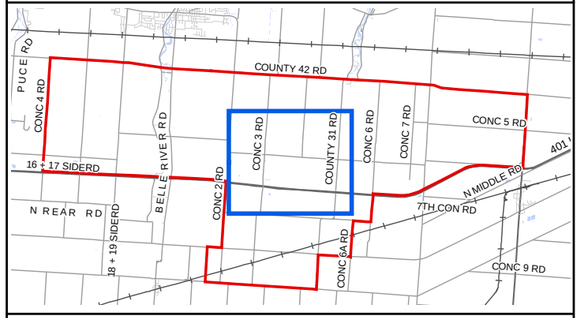
Map 3-6

Belle River Wind Project

Significant Seasonal Concentration Areas



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
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- Existing Transmission Line
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- Primary Road
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- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Significant Bat Maternity Colonies (BMA)
- Significant Raptor Wintering Area (RWA)

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Project: P1490
Date: May 25, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

0 200 400 600 800 Meters

N

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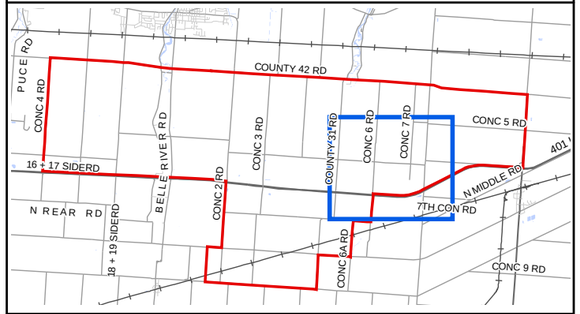
Map 3-7

Belle River Wind Project

Significant Seasonal Concentration Areas



Legend

- Project Area (120m Buffer)
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- Proposed Turbine
- Proposed MET Tower
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- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Significant Bat Maternity Colonies (BMA)
- Significant Raptor Wintering Area (RWA)

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Project: P1490
Date: May 25, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

0 200 400 600 800 Meters

N

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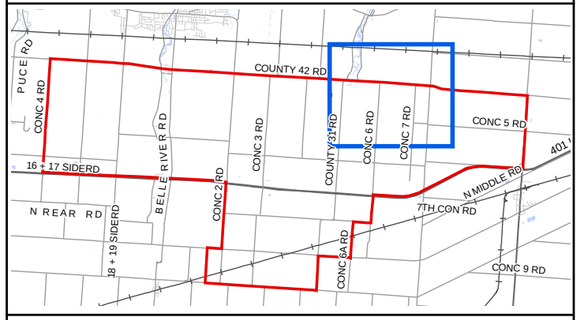
Map 3-8

Belle River Wind Project

Significant Seasonal Concentration Areas



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
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- Permanent Watercourse
- Intermittent Watercourse
- Open Water
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Project: P1490
Date: May 25, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

0 200 400 600 800 Meters

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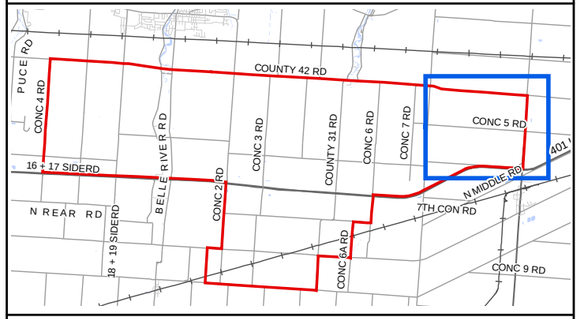
Map 3-9

Belle River Wind Project

Significant Seasonal Concentration Areas



Legend

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- Intermittent Watercourse
- Open Water
- Significant Bat Maternity Colonies (BMA)
- Significant Raptor Wintering Area (RWA)

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Project: P1490 Date: May 25, 2015	NAD83 - UTM Zone 17 Size: 11x17" **1:15,000**

0 200 400 600 800 Meters

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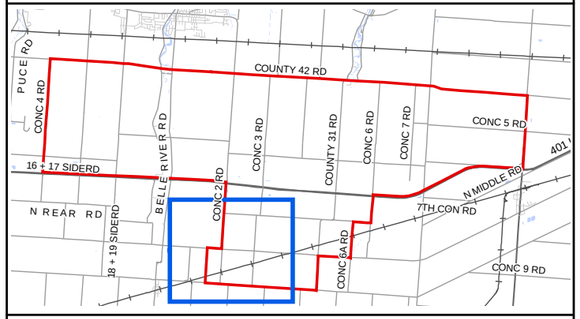
Map 3-10

Belle River Wind Project

Significant Seasonal Concentration Areas



Legend

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- Intermittent Watercourse
- Open Water
- Significant Bat Maternity Colonies (BMA)
- Significant Raptor Wintering Area (RWA)

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Project: P1490
Date: May 25, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

0 200 400 600 800 Meters

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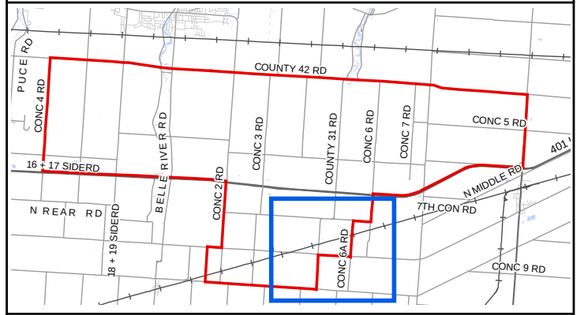
Map 3-11

Belle River Wind Project

Significant Seasonal Concentration Areas



Legend

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- Significant Bat Maternity Colonies (BMA)
- Significant Raptor Wintering Area (RWA)

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Project: P1490
Date: May 25, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

0 200 400 600 800 Meters

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Map 4

Belle River Wind Project

Significant Rare Vegetation Communities & Specialized Wildlife Habitat Key Map

Lake St. Clair

Belle River

Map 4-1

Map 4-2

Map 4-3

Map 4-4

Map 4-5

Map 4-6

Map 4-7

Map 4-8

Map 4-9

Map 4-10

Map 4-11

LILLYDALE ST
MAJOR ST
ST CLAIR AVE
COUNTY 22 RD
CAILLE AVE
LAKEVIEW DR
ROSS BEACH RD
LAKESHORE PARK RD
COUNTY 2 RD
SURF CLUB DR
ST CLAIR RD
TECUMSEH RD
HALE ST
MAPLE AVE
OAK ST
I.C. ROSS DR
EMERY DR
CHURCH ST
SPRUCE RD
RENAUD LINE RD
CORETTI DR
ROURKE LINE RD
ELMWOOD AVE
W RIVER ST
NOTRE DAME ST
ST CHARLES ST
ST PETER ST
HENRY ST
TELLIER RD
W RUSCOM RIVER RD
E RUSCOM RIVER RD
ROCHESTER TOWNLINE RD
COMBER SIDERD
COUNTY 42 RD
AIMEE ST
CONC 4 RD
CONC 3 RD
W BELLE RIVER RD
CONC 6 RD
CONC 7 RD
CONC 5 RD
12 + 13 SIDERD
'16 + 17' SIDERD
BYRNEDALE RD
COUNTY 31 RD
CONC 2 RD
401 HWY
BELLE RIVER RD
N REAR RD
O'BRIEN SIDERD
18 + 19 SIDERD
CONC 1A RD
KING ST
N MIDDLE RD
S MIDDLE RD
COUNTY 46 RD
CONC 6A RD
CONC 8 RD
CONC 9 RD
CONC 10 RD
CONC 11 RD
7TH CON RD
MAPLE ST
JAMES ST
WILLIAM ST
77 HWY

355000 357500 360000 362500 365000 367500 370000 372500

4685000 4682500 4680000 4677500 4675000 4672500

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Legend

- Map Extents
- Project Area (120m Buffer)
- Proposed Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Transmission Line
- Potential POI Parcel
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- Intermittent Watercourse
- Open Water

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Project: 1490
Date: May 25, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:63,000

0 1 2 3 4 kms

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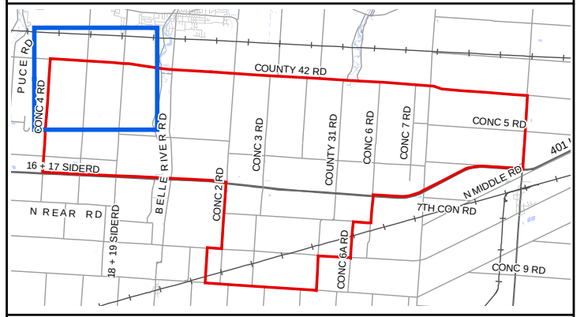
Map 4-1

Belle River Wind Project

Significant Rare Vegetation Communities & Specialized Wildlife Habitats



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- Potential Laydown Area
- Existing Transmission Line
- Railway
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Significant Amphibian Breeding Habitat (AWO)

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Project: P1490
Date: February 13, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

0 200 400 600 800 Meters

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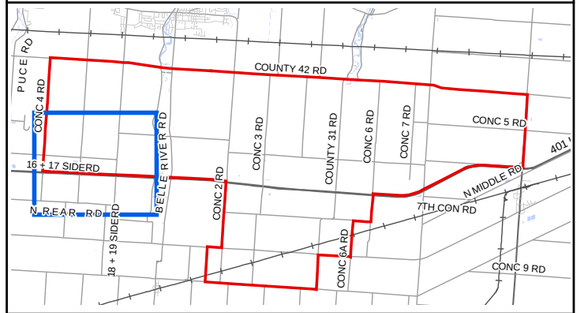
Map 4-2

Belle River Wind Project

Significant Rare Vegetation Communities & Specialized Wildlife Habitats



Legend

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- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Significant Amphibian Breeding Habitat (AWO)

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Project: P1490
Date: February 13, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

0 200 400 600 800 Meters

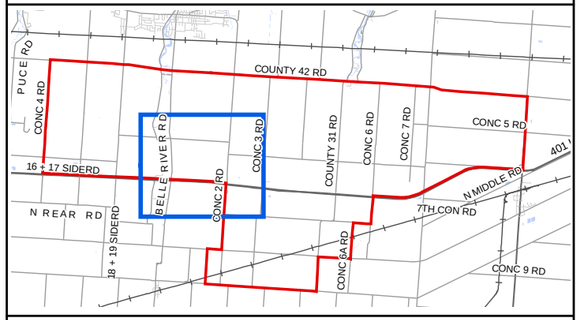
N

X:\1490_BelleRiverWF\NRSI_1490_EIS_Map4-1to4-11_SignificantRareVeg_2015_02_13_KEB.mxd

Map 4-3

Belle River Wind Project

Significant Rare Vegetation Communities & Specialized Wildlife Habitats



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
- Proposed Access Road
- Potential POI Parcel
- Proposed Substation/Laydown/O&M
- Potential Laydown Area
- Existing Transmission Line
- Railway
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Significant Amphibian Breeding Habitat (AWO)

NATURAL RESOURCE SOLUTIONS INC.
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Project: P1490
Date: February 13, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

0 200 400 600 800 Meters

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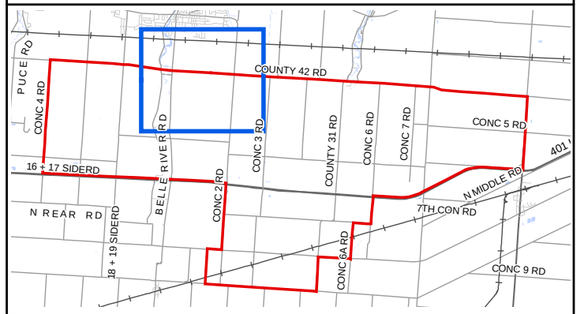
Map 4-4

Belle River Wind Project

Significant Rare Vegetation Communities & Specialized Wildlife Habitats



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
- Proposed Access Road
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- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Significant Amphibian Breeding Habitat (AWO)

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Project: P1490
Date: February 13, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

0 200 400 600 800 Meters

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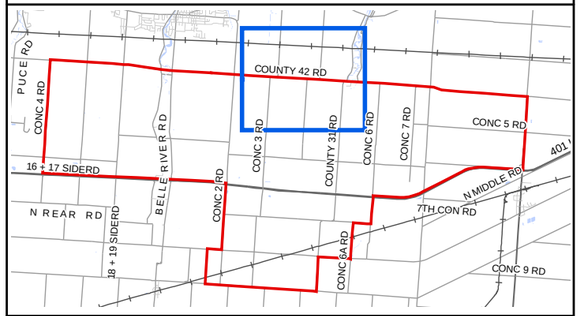
Map 4-5

Belle River Wind Project

Significant Rare Vegetation Communities & Specialized Wildlife Habitats



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
- Proposed Access Road
- Potential POI Parcel
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- Intermittent Watercourse
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- Significant Amphibian Breeding Habitat (AWO)

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Project: P1490
Date: February 13, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

0 200 400 600 800 Meters

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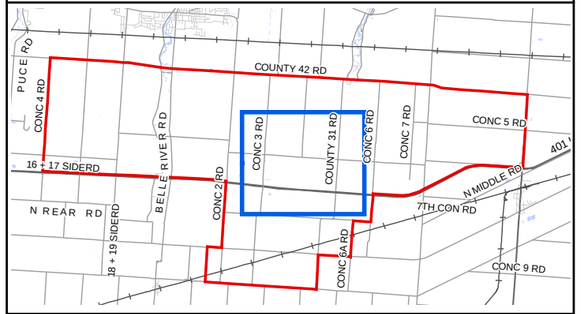
Map 4-6

Belle River Wind Project

Significant Rare Vegetation Communities & Specialized Wildlife Habitats



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
- Proposed Access Road
- Potential POI Parcel
- Proposed Substation/Laydown/O&M
- Potential Laydown Area
- Existing Transmission Line
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- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Significant Amphibian Breeding Habitat (AWO)

NATURAL RESOURCE SOLUTIONS INC.
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Project: P1490
Date: February 13, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

0 200 400 600 800 Meters

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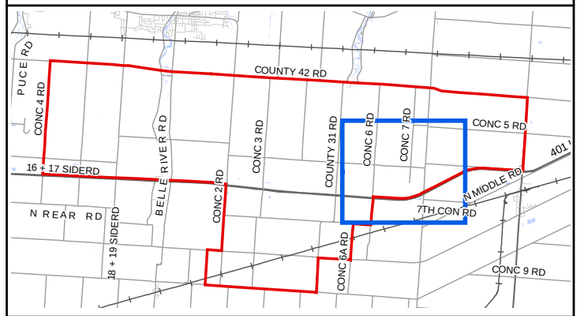
Map 4-7

Belle River Wind Project

Significant Rare Vegetation Communities & Specialized Wildlife Habitats



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
- Proposed Access Road
- Potential POI Parcel
- Proposed Substation/Laydown/O&M
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- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Significant Amphibian Breeding Habitat (AWO)

NATURAL RESOURCE SOLUTIONS INC.
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Project: P1490
Date: February 13, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

0 200 400 600 800 Meters

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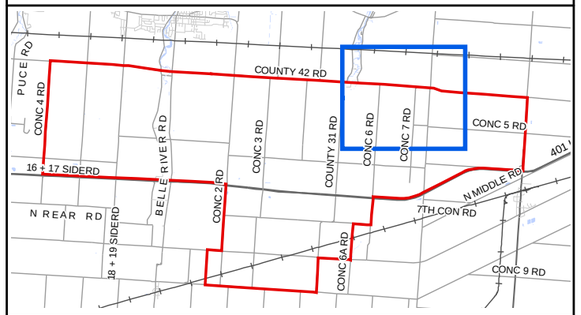
Map 4-8

Belle River Wind Project

Significant Rare Vegetation Communities & Specialized Wildlife Habitats



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
- Proposed Access Road
- Potential POI Parcel
- Proposed Substation/Laydown/O&M
- Potential Laydown Area
- Existing Transmission Line
- Railway
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Significant Amphibian Breeding Habitat (AWO)

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Project: P1490
Date: February 13, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

0 200 400 600 800 Meters

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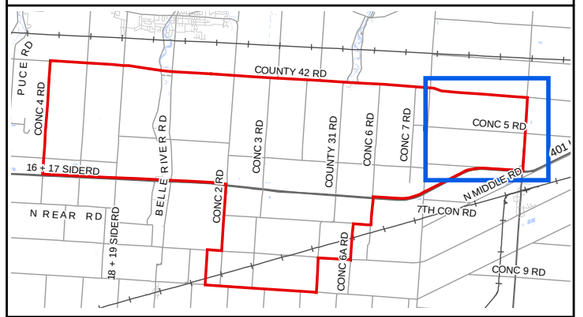
Map 4-9

Belle River Wind Project

Significant Rare Vegetation Communities & Specialized Wildlife Habitats



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
- Proposed Access Road
- Potential POI Parcel
- Proposed Substation/Laydown/O&M
- Potential Laydown Area
- Existing Transmission Line
- Railway
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- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Significant Amphibian Breeding Habitat (AWO)

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Project: P1490
Date: May 25, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

0 200 400 600 800 Meters

N

368500 369000 369500 370000 370500 371000 371500 372000 372500

4681000 4680500 4680000 4679500 4679000 4678500 4678000

X:\1490_BelleRiverWF\NRSI_1490_EIS_Map4-1to4-11_SignificantRareVeg_2015_05_25_KEB.mxd

359000 359500 360000 360500 361000 361500 362000 362500 363000

4676500 4676000 4675500 4675000 4674500 4674000 4673500 4673000

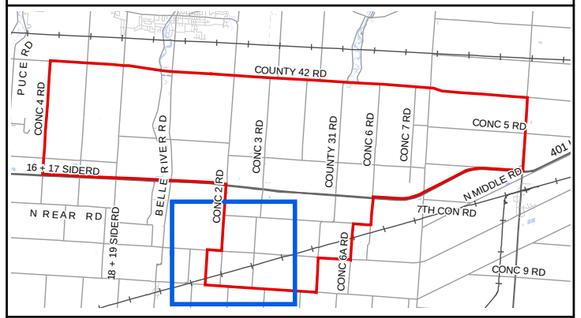
N MIDDLE RD
CONC 2 RD
Nelson Creek
COUNTY 46 RD
CONC 3 RD
CONC 1A RD
Duck Creek
S MIDDLE RD
CONC 4 RD

X:\1490_BelleRiverWF\NRSI_1490_EIS_Map4-1to4-11_SignificantRareVeg_2015_02_13_KEB.mxd

Map 4-10

Belle River Wind Project

Significant Rare Vegetation Communities & Specialized Wildlife Habitats



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
- Proposed Access Road
- Potential POI Parcel
- Proposed Substation/Laydown/O&M
- Potential Laydown Area
- Existing Transmission Line
- Railway
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Significant Amphibian Breeding Habitat (AWO)

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Project: P1490
Date: February 13, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

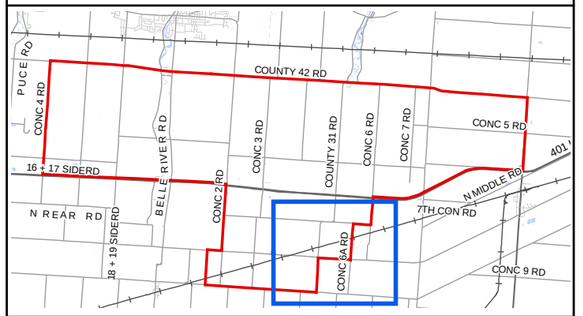
0 200 400 600 800 Meters

N

Map 4-11

Belle River Wind Project

Significant Rare Vegetation Communities & Specialized Wildlife Habitats



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
- Proposed Access Road
- Potential POI Parcel
- Proposed Substation/Laydown/O&M
- Potential Laydown Area
- Existing Transmission Line
- Railway
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Significant Amphibian Breeding Habitat (AWO)

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Aquatic, Terrestrial and Wetland Biologists

Project: P1490
Date: February 13, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

0 200 400 600 800 Meters

N

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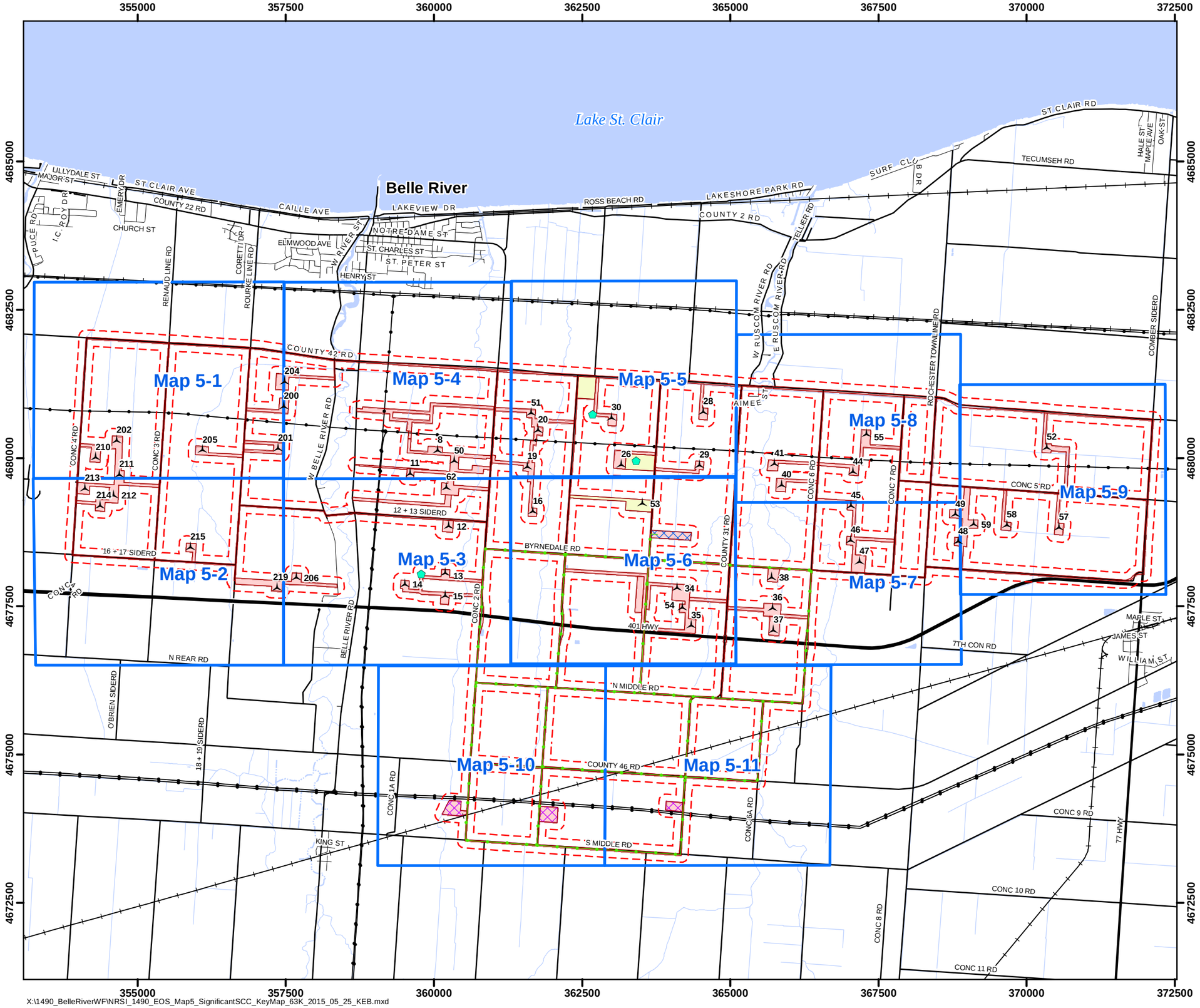
Map 5

Belle River Wind Project

Significant Habitats for Species of Special Concern Key Map



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Legend

- Map Extents
- Project Area (120m Buffer)
- Proposed Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Transmission Line
- Potential POI Parcel
- Proposed Substation/Laydown/O&M
- Potential Laydown Area
- Existing Trasmission Line
- Railway
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water

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Project: 1490
Date: May 25, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:63,000

0 1 2 3 4 kms

N

354000 354500 355000 355500 356000 356500 357000 357500 358000

4683000 4682500 4682000 4681500 4681000 4680500 4680000 4679500

RENAUD LINE RD
ROURKE LINE RD
PIROLI CRES
Stover Creek
Major Creek
COUNTY 42 RD
CONC 4 RD
CONC 3 RD
CONC 2 RD
W BELLE RIVER RD

SCC-B (2, 5, 13, 17, 18, 22, 25)
SCC-D (6, 7, 12, 14-16, 27)
SCC-A (8, 14, 16, 28)
SCC-C (6, 7, 15, 23, 27)
SCC-E (2, 12-14, 16-17, 25)
SCC-G (2, 10, 13, 19, 22, 25)
SCC-H (6-8, 12, 14, 22, 27)
SCC-F (15, 16)
SCC-I (2, 14, 16-18)
OCB-001
MBB-002

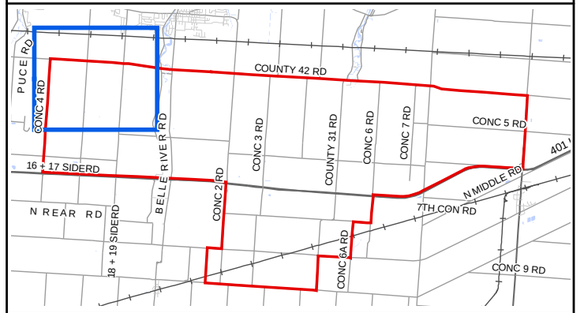
200 201 202 204 205 210 211 212 213

X:\1490_BelleRiverWF\NRSI_1490_EIS_Map5-1to5-11_SignificantSCC_2015_02_13_KEB.mxd

Map 5-1

Belle River Wind Project

Significant Habitats for Species of Conservation Concern



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
- Proposed Access Road
- Potential POI Parcel
- Proposed Substation/Laydown/O&M
- Potential Laydown Area
- Existing Transmission Line
- Railway
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Significant Open Country Bird Breeding Habitat (OCB)
- Significant Marsh Bird Breeding Habitat (MBB)
- Significant Species of Conservation Concern Habitat (SCC)

(2) Burning Bush Habitat
(5) Deer-tongue Panicgrass Habitat
(6) Dion Skipper Habitat
(7) Duke's Skipper Habitat
(8) Eastern Wood-Pewee Habitat
(10) Giant Swallowtail Habitat
(12) Hickory Hairstreak Habitat
(13) Illinois Carrion Flower Habitat
(14) Lizard`s Tail Habitat
(15) Many-fruit Primrose-willow Habitat
(16) Missouri Ironweed Habitat
(17) Muskingum Sedge Habitat
(18) Pawpaw Habitat
(19) Prairie Milkweed Habitat
(22) Shellbark Hickory Habitat
(23) Shumard Oak Habitat
(25) Upright Carrion Flower Habitat
(27) Winged Loosestrife Habitat
(28) Wood Thrush Habitat

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Project: P1490
Date: February 13, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

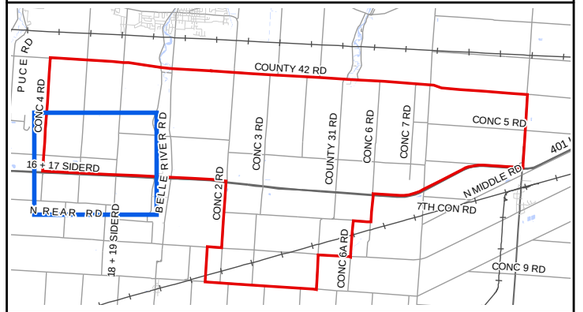
0 200 400 600 800 Meters

N

Map 5-2

Belle River Wind Project

Significant Habitats for Species of Conservation Concern



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
- Proposed Access Road
- Potential POI Parcel
- Proposed Substation/Laydown/O&M
- Potential Laydown Area
- Existing Transmission Line
- Railway
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Significant Open Country Bird Breeding Habitat (OCB)
- Significant Marsh Bird Breeding Habitat (MBB)
- Significant Species of Conservation Concern Habitat (SCC)

(2) Burning Bush Habitat
(6) Dion Skipper Habitat
(7) Duke's Skipper Habitat
(8) Eastern Wood-Pewee Habitat
(10) Giant Swallowtail Habitat
(12) Hickory Hairstreak Habitat
(13) Illinois Carrion Flower Habitat
(14) Lizard`s Tail Habitat
(15) Many-fruit Primrose-willow Habitat
(16) Missouri Ironweed Habitat
(17) Muskingum Sedge Habitat
(18) Pawpaw Habitat
(19) Prairie Milkweed Habitat
(22) Shellbark Hickory Habitat
(23) Shumard Oak Habitat
(25) Upright Carrion Flower Habitat
(27) Winged Loosestrife Habitat
(28) Wood Thrush Habitat
(30) Pignut Hickery

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Project: P1490
Date: February 13, 2015

NAD83 - UTM Zone 17
Size: 11x17"
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0 200 400 600 800 Meters

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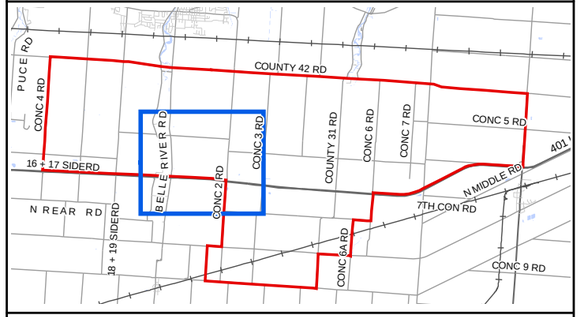
Map 5-3

Belle River Wind Project

Significant Habitats for Species of Conservation Concern



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
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- Potential POI Parcel
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- Existing Transmission Line
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- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Significant Open Country Bird Breeding Habitat (OCB)
- Significant Marsh Bird Breeding Habitat (MBB)
- Significant Species of Conservation Concern Habitat (SCC)

(1) Biennial Gaura Habitat
(2) Burning Bush Habitat
(3) Climbing Prairie Rose Habitat
(4) Common Sootywing Habitat
(8) Eastern Wood-Pewee Habitat
(9) Giant Ironweed Habitat
(10) Giant Swallowtail Habitat
(11) Hayhurst's Scallopwing Habitat
(12) Hickory Hairstreak Habitat
(14) Lizard`s Tail Habitat
(15) Many-fruit Primrose-willow Habitat
(16) Missouri Ironweed Habitat
(17) Muskingum Sedge Habitat
(18) Pawpaw Habitat
(21) Schweinitz's Flatsedge Habitat
(22) Shellbark Hickory Habitat
(23) Shumard Oak Habitat
(24) Southern Cloudywing Habitat
(26) White-haired Panicgrass Habitat
(27) Winged Loosestrife Habitat
(28) Wood Thrush Habitat

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Project: P1490
Date: February 13, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

0 200 400 600 800 Meters

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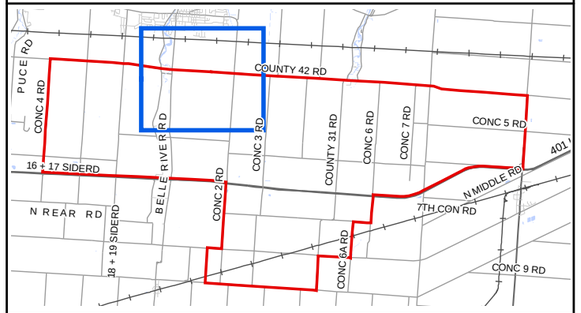
Map 5-4

Belle River Wind Project

Significant Habitats for Species of Conservation Concern



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
- Proposed Access Road
- Potential POI Parcel
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- Existing Transmission Line
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- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Significant Open Country Bird Breeding Habitat (OCB)
- Significant Marsh Bird Breeding Habitat (MBB)
- Significant Species of Conservation Concern Habitat (SCC)
  - (2) Burning Bush Habitat
  - (8) Eastern Wood-Pewee Habitat
  - (9) Giant Ironweed Habitat
  - (10) Giant Swallowtail Habitat
  - (12) Hickory Hairstreak Habitat
  - (14) Lizard`s Tail Habitat
  - (15) Many-fruit Primrose-willow Habitat
  - (16) Missouri Ironweed Habitat
  - (17) Muskingum Sedge Habitat
  - (18) Pawpaw Habitat
  - (22) Shellbark Hickory Habitat
  - (23) Shumard Oak Habitat
  - (27) Winged Loosestrife Habitat
  - (28) Wood Thrush Habitat

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Project: P1490
Date: February 13, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

0 200 400 600 800 Meters

N

358000 358500 359000 359500 360000 360500 361000 361500 362000

4683000 4682500 4682000 4681500 4681000 4680500 4680000 4679500

ISLAND DR
CYNTHIA AVE
Belle River
COUNTY 22 RD
Duck Creek
COUNTY 42 RD
BASE LINE RD
BELLE RIVER RD
BELLE RIVER RD
CONC 2 RD
Maison Creek
51
20
SCC-P
(8, 9, 12, 14-16, 22, 23, 27)
8
50
19
11
62
SCC-N
(2, 8, 12, 14, 17, 18, 28)

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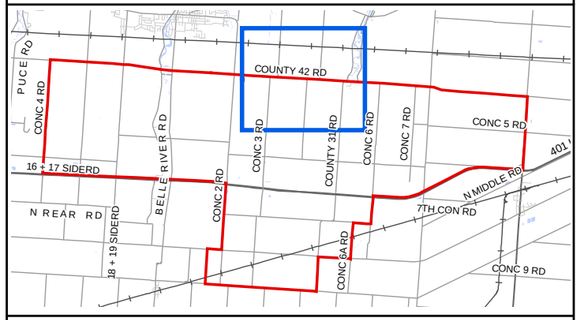
Map 5-5

Belle River Wind Project

Significant Habitats for Species of Conservation Concern



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
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- Intermittent Watercourse
- Open Water
- Significant Open Country Bird Breeding Habitat (OCB)
- Significant Marsh Bird Breeding Habitat (MBB)
- Significant Species of Conservation Concern Habitat (SCC)
  - (3) Climbing Prairie Rose Habitat
  - (8) Eastern Wood-Pewee Habitat
  - (9) Giant Ironweed Habitat
  - (10) Giant Swallowtail Habitat
  - (12) Hickory Hairstreak Habitat
  - (14) Lizard`s Tail Habitat
  - (15) Many-fruit Primrose-willow Habitat
  - (16) Missouri Ironweed Habitat
  - (17) Muskingum Sedge Habitat
  - (19) Prairie Milkweed Habitat
  - (22) Shellbark Hickory Habitat
  - (23) Shumard Oak Habitat
  - (25) Upright Carrion Flower Habitat
  - (27) Winged Loosestrife Habitat

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Project: P1490 Date: February 13, 2015	NAD83 - UTM Zone 17 Size: 11x17" **1:15,000**

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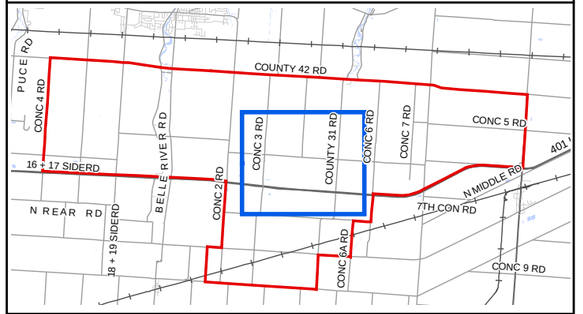
Map 5-6

Belle River Wind Project

Significant Habitats for Species of Conservation Concern



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
- Proposed Access Road
- Potential POI Parcel
- Proposed Substation/Laydown/O&M
- Potential Laydown Area
- Existing Transmission Line
- Railway
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
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- Significant Open Country Bird Breeding Habitat (OCB)
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- Significant Species of Conservation Concern Habitat (SCC)

(3) Climbing Prairie Rose Habitat
(8) Eastern Wood-Pewee Habitat
(9) Giant Ironweed Habitat
(12) Hickory Hairstreak Habitat
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(23) Shumard Oak Habitat
(25) Upright Carrion Flower Habitat
(27) Winged Loosestrife Habitat
(29) Field Dodder

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NAD83 - UTM Zone 17
Size: 11x17"
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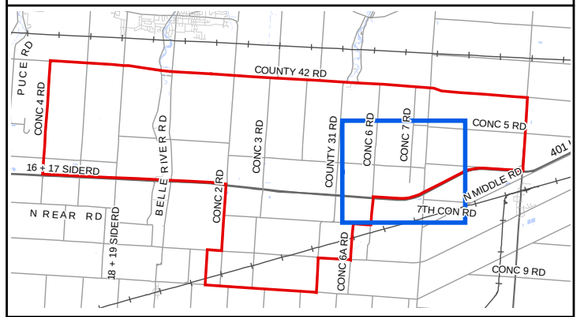
Map 5-7

Belle River Wind Project

Significant Habitats for Species of Conservation Concern



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
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  - (16) Missouri Ironweed Habitat
  - (19) Prairie Milkweed Habitat
  - (25) Upright Carrion Flower Habitat
  - (27) Winged Loosestrife Habitat
  - (29) Field Dodder

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Project: P1490
Date: February 13, 2015

NAD83 - UTM Zone 17
Size: 11x17"
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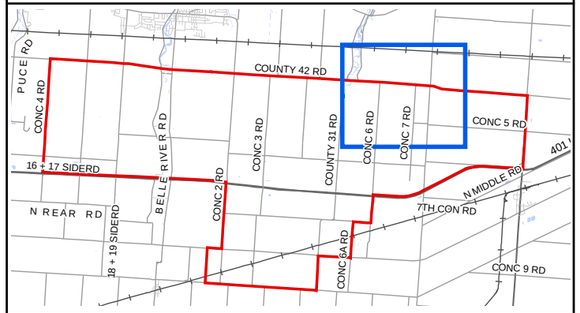
Map 5-8

Belle River Wind Project

Significant Habitats for Species of Conservation Concern



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
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  - (29) Field Dodder

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NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

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4682500 4682000 4681500 4681000 4680500 4680000 4679500 4679000

WR USCOM RIVER RD
E RUSCOM RIVER RD
Ruscom River
CONC 3 RD
AIMEE ST
COUNTY 42 RD
ROCHESTER TOWNLINE RD
CONC 6 RD
CONC 7 RD
13 + 14 SIDERD
CONC 5 RD
55
41
44
40
45
49
59
58
MBB-001
SCC-S (8, 12)
SCC-T (3, 19, 25)
SCC-U (3, 9, 15, 16, 19, 27, 29)
SCC-S (8, 12)

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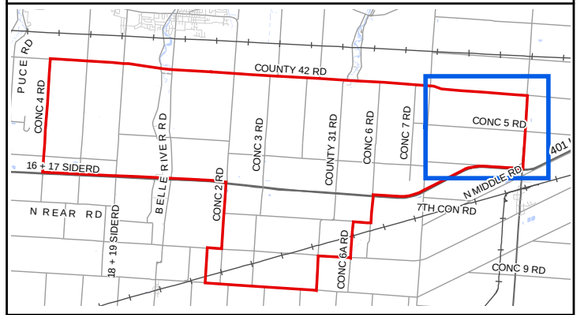
Map 5-9

Belle River Wind Project

Significant Habitats for Species of Conservation Concern



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
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- Potential POI Parcel
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- Open Water
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Project: P1490
Date: May 25, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

0 200 400 600 800 Meters

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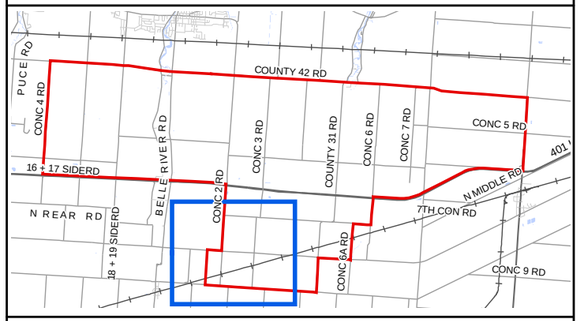
Map 5-10

Belle River Wind Project

Significant Habitats for Species of Conservation Concern



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
- Proposed Access Road
- Potential POI Parcel
- Proposed Substation/Laydown/O&M
- Potential Laydown Area
- Existing Transmission Line
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- Open Water
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- Significant Marsh Bird Breeding Habitat (MBB)
- Significant Species of Conservation Concern Habitat (SCC)

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Date: February 13, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

0 200 400 600 800 Meters

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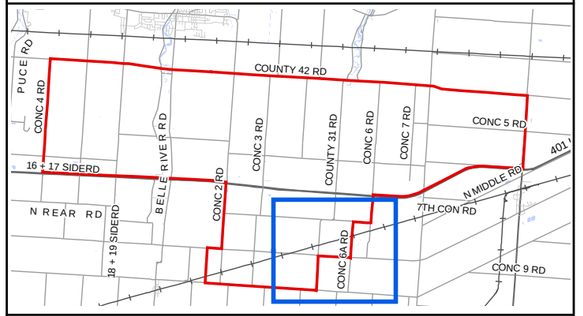
Map 5-11

Belle River Wind Project

Significant Habitats for Species of Conservation Concern



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
- Proposed Access Road
- Potential POI Parcel
- Proposed Substation/Laydown/O&M
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- Existing Transmission Line
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Date: February 13, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

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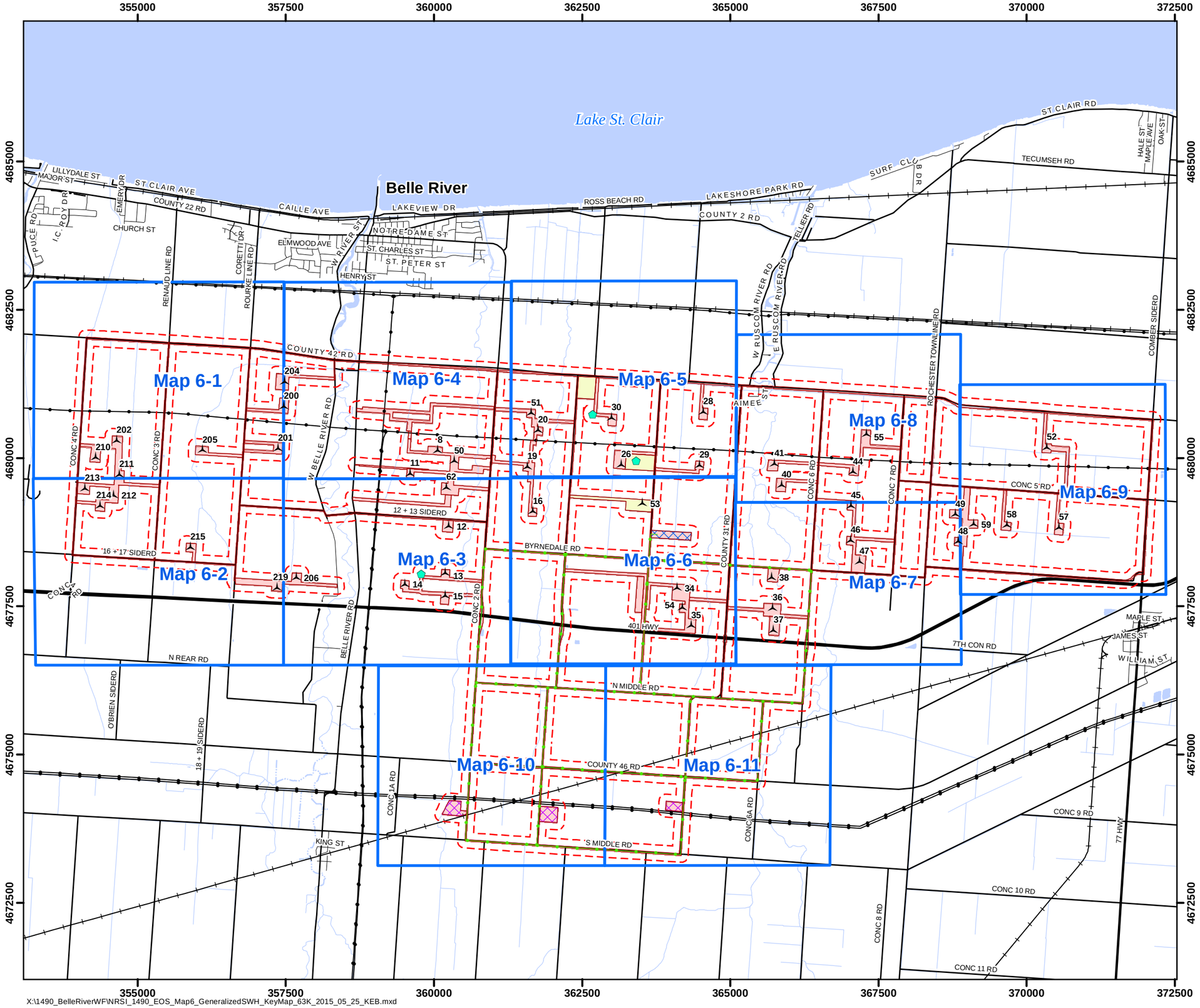
Map 6

Belle River Wind Project

Generalized Significant Wildlife Habitat Key Map



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Legend

- Map Extents
- Project Area (120m Buffer)
- Proposed Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Transmission Line
- Potential POI Parcel
- Proposed Substation/Laydown/O&M
- Potential Laydown Area
- Existing Trasmission Line
- Railway
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water

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Project: 1490 Date: May 25, 2015	NAD83 - UTM Zone 17 Size: 11x17" **1:63,000**

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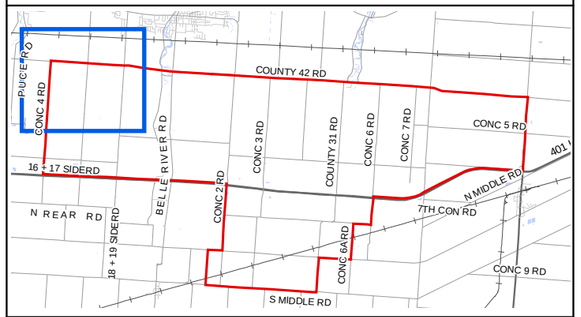
Map 6-1

Belle River Wind Project

Generalized Significant Wildlife Habitat



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
- Proposed Access Road
- Potential POI Parcel
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- Potential Laydown Area
- Existing Transmission Line
- Railway
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Generalized Significant Wildlife Habitat

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Project: P1490
Date: April 14, 2015

NAD83 - UTM Zone 17
Size: 11x17"
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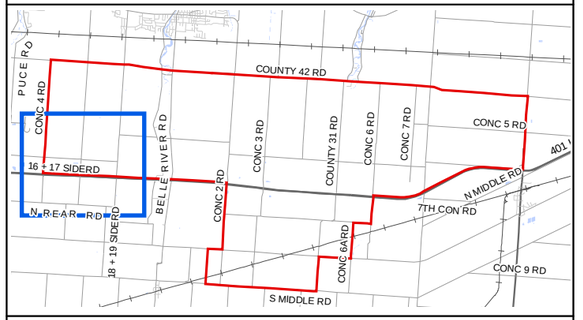
Map 6-2

Belle River Wind Project

Generalized Significant Wildlife Habitat



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
- Proposed Access Road
- Potential POI Parcel
- Proposed Substation/Laydown/O&M
- Potential Laydown Area
- Existing Transmission Line
- Railway
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Generalized Significant Wildlife Habitat

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Project: P1490
Date: April 14, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

0 200 400 600 800 Meters

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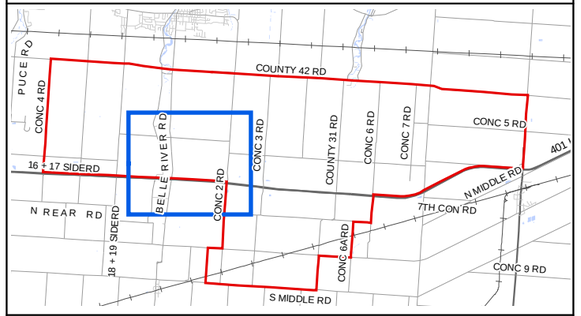
Map 6-3

Belle River Wind Project

Generalized Significant Wildlife Habitat



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
- Proposed Access Road
- Potential POI Parcel
- Proposed Substation/Laydown/O&M
- Potential Laydown Area
- Existing Transmission Line
- Railway
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Generalized Significant Wildlife Habitat

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Date: April 14, 2015

NAD83 - UTM Zone 17
Size: 11x17"
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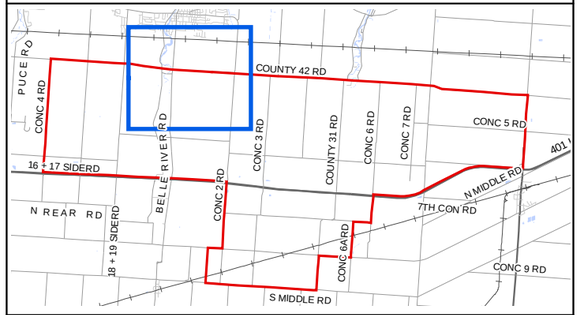
Map 6-4

Belle River Wind Project

Generalized Significant Wildlife Habitat



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
- Proposed Access Road
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- Railway
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Generalized Significant Wildlife Habitat

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Project: P1490
Date: April 14, 2015

NAD83 - UTM Zone 17
Size: 11x17"
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4683000 4682500 4682000 4681500 4681000 4680500 4680000 4679500

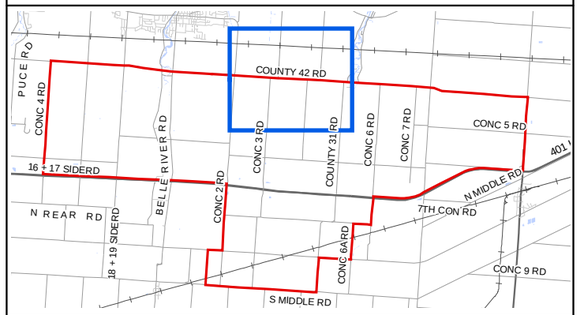
COUNTY 22 RD
CONC 4 RD
COUNTY 42 RD
WIFUSCOM RIVER RD
ALMEE ST
CONC 2 RD
CONC 3 RD
COUNTY 31 RD
Molson Creek

51 20 19 30 28 26 29

Map 6-5

Belle River Wind Project

Generalized Significant Wildlife Habitat



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
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- Proposed Transmission Line
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- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Generalized Significant Wildlife Habitat

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Project: P1490
Date: April 14, 2015

NAD83 - UTM Zone 17
Size: 11x17"
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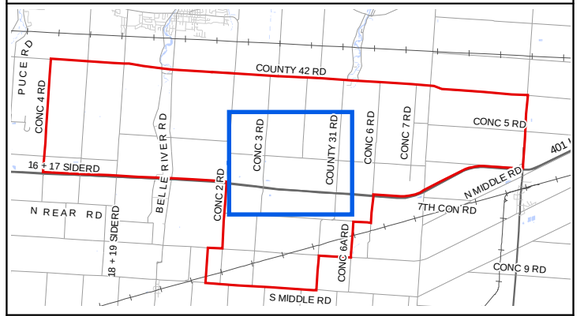
Map 6-6

Belle River Wind Project

Generalized Significant Wildlife Habitat



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
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- Proposed Collection ROW
- Proposed Transmission Line
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- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Generalized Significant Wildlife Habitat

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Project: P1490
Date: April 14, 2015

NAD83 - UTM Zone 17
Size: 11x17"
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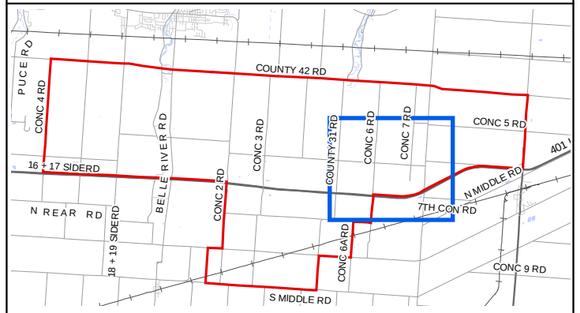
Map 6-7

Belle River Wind Project

Generalized Significant Wildlife Habitat



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
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- Open Water
- Generalized Significant Wildlife Habitat

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Project: P1490
Date: April 14, 2015

NAD83 - UTM Zone 17
Size: 11x17"
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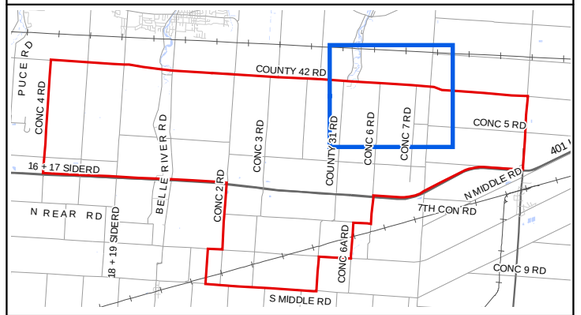
Map 6-8

Belle River Wind Project

Generalized Significant Wildlife Habitat



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
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- Intermittent Watercourse
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- Generalized Significant Wildlife Habitat

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Project: P1490
Date: April 14, 2015

NAD83 - UTM Zone 17
Size: 11x17"
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4681000 4680500 4680000 4679500 4679000 4678500 4678000

COUNTY 42 RD

ROCHESTER TOWNLINE RD

COMBER SIDERD

CONC 5 RD

CONC 6 RD

401 HWY

N MIDDLE RD

52 49 59 58 57 48

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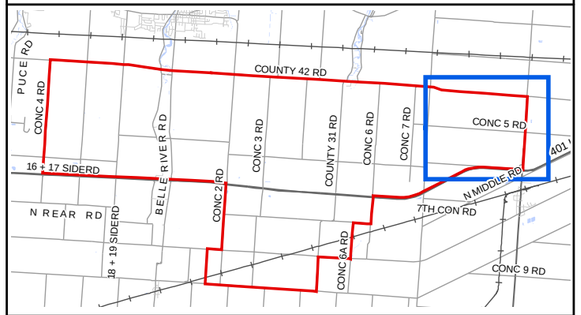
Map 6-9

Belle River Wind Project

Generalized Significant Wildlife Habitat



Legend

- Project Area (120m Buffer)
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- Intermittent Watercourse
- Open Water
- Generalized Significant Wildlife Habitat

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Project: P1490
Date: May 25, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

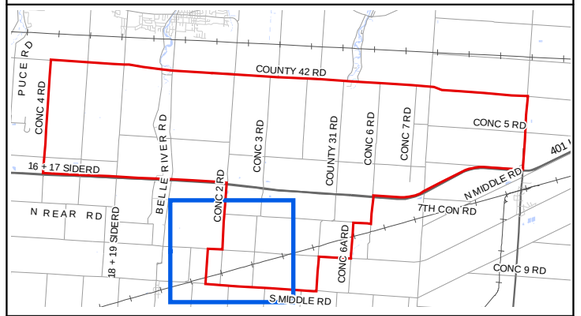
0 200 400 600 800 Meters

N

Map 6-10

Belle River Wind Project

Generalized Significant Wildlife Habitat



Legend

- Project Area (120m Buffer)
- Construction Disturbance Area
- Proposed Turbine
- Proposed MET Tower
- Proposed Collection Line
- Proposed Collection ROW
- Proposed Transmission Line
- Proposed Access Road
- Potential POI Parcel
- Proposed Substation/Laydown/O&M
- Potential Laydown Area
- Existing Transmission Line
- Railway
- Highway
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Open Water
- Generalized Significant Wildlife Habitat

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Project: P1490
Date: April 14, 2015

NAD83 - UTM Zone 17
Size: 11x17"
1:15,000

0 200 400 600 800 Meters

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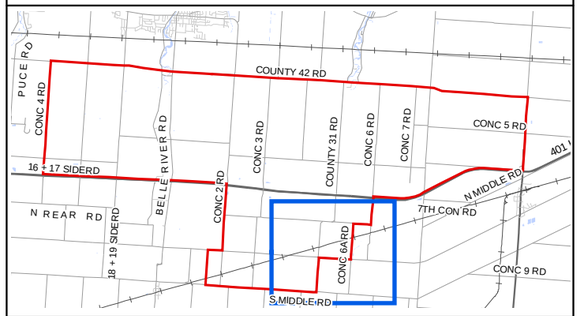
X:\1490_BelleRiverWF\NRSI_1490_EOS_Map6-1to6-11_GeneralizedSignificantSWH_2015_04_14_KEB.mxd

Map 6-11

Belle River Wind Project

Generalized Significant Wildlife Habitat



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Project: P1490 Date: April 14, 2015	NAD83 - UTM Zone 17 Size: 11x17" **1:15,000**

0 200 400 600 800 Meters

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