

Appendix A

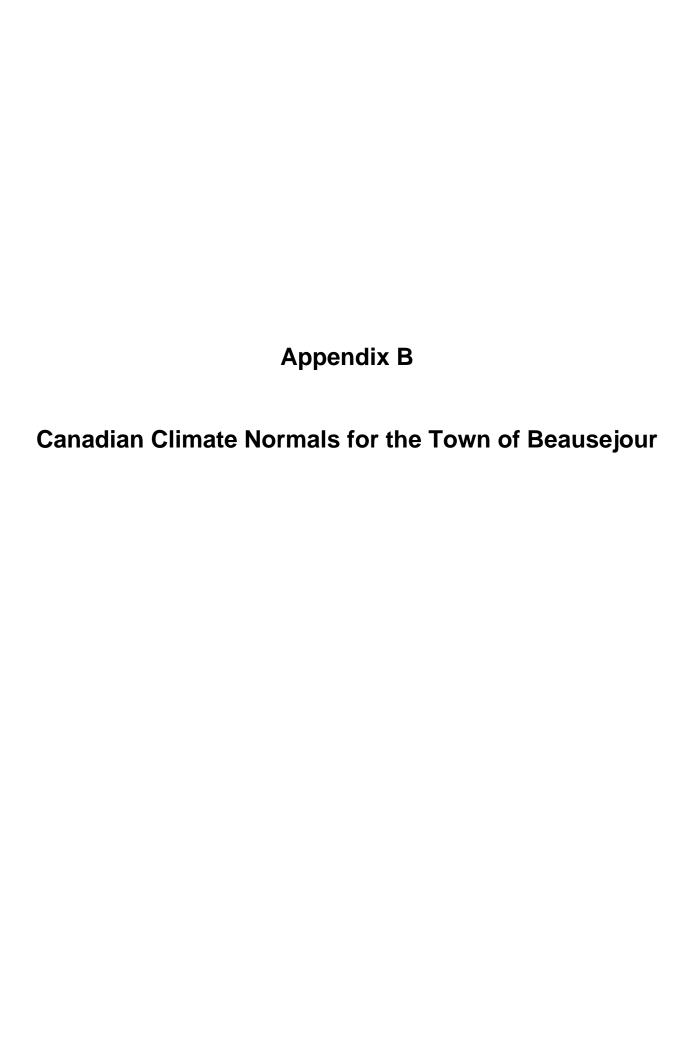
Project Activities required for the Construction of the Transmission Line and DSC

Project Components and Associated Activities

Project	Due le et Activitie	Project Phase			
Component	Project Activities	PC	C C	O/M	D
115 kV	Surveying	Χ			Х
Transmission Line	Flagging	Χ			Х
	Clearing vegetation		Х		
	Windrowing vegetation		Х		
	Removing vegetation		Х		
	Burning vegetation (possible)		X		
	Transporting equipment/materials		X		Х
	Storing equipment/materials		X		X
	Transporting/storing fuel		X	1	X
	Fueling equipment/vehicles		X		X
	Operating construction equipment	Х	X	Х	X
	Operating construction vehicles	X	X	X	X
	Installing tapping foundation		X		
	Installing tapping structure		X	+	
	Tapping to TS44		X	+	
			X		
	Installing transmission poles		X	+	
	Cleaning conductors		Λ		
	Running 115 kV transmission conductors		X		
	Connecting to DSC		Х		
	Disposing solid waste		Х		Х
	Disposing liquid waste		Х		Х
	Disposing hazardous waste		Х		Х
	Signing		Х		
	Maintaining line			Х	
	Mowing vegetation			X	
	Controlling vegetation (trees)			X	
	Removing poles				Х
	Removing tapping structure			1	X
	Removing conductors				X
	Reclaiming tapping structure/pole				X
0 MVA, 115-12.47	locations Accessing	X	X		
kV DSC		X		+	
KV DOC	Surveying Flagging	X		+	
	Transporting aguinment/materials	^	X		
	Transporting equipment/materials		X	+	X
	Storing equipment/materials				
	Transporting/storing fuel		X		X
	Fuelling equipment/vehicles		X	\ \ \ \ \	X
	Operating construction equipment	X	X	X	X
	Operating construction vehicles	Χ	X	Х	Х
	Installing culvert		X		
	Backfilling over culvert		X		
	Excavating soil		X		
	Grading site		Х		
	Spreading gravel		Х		
	Compacting gravel		X		
	Pouring concrete (possible)		X		
	Drilling for structures		Х		

Project Components and Associated Activities

Project	Dunings Antivision		Project P		
Component	Project Activities	PC	С	O/M	D
•	Anchoring for structures		Х		
	Placing structure		Х		
	Erecting DSC		Х		
	Cleaning conductors		Х		
	Connecting to 115 kV line		Х		
	Testing grounding		Х		
	Disposing solid waste		Х		Х
	Disposing liquid waste		Х		Х
	Disposing hazardous waste		Х		Х
	Signing		Х		
	Cleaning up		Х		
	Operating DSC			X	
	Maintaining DSC			X	
	Controlling vegetation			Х	
	Dismantling DSC and equipment				Х
	Removing DSC and equipment				Х
	Removing gravel				Х
	Replacing topsoil				Х
	Contouring site				Х
	Re-vegetating				Х
Garson Station and	Transporting equipment/materials				Х
components	Storing equipment/materials				Х
	Transporting/storing fuel				Х
	Fuelling equipment/vehicles				Х
	Operating construction equipment				Х
	Operating construction vehicles				Х
	Dismantling station				Х
	Removing station equipment				Х
	Removing station materials				Х
	Disposing solid waste				Х
	Disposing liquid waste				Х
	Disposing hazardous waste				Х



	Ca	anadian	Climate	Norma	als for th	ne town	of Bear	usejour	, Manito	ba				
Temperature:	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year	Code
Daily Average (°C)	-18.5	-14.2	-6.4	3.8	11.8	16.7	19.1	18	12.1	5.1	-5.3	-15.4	2.2	С
Standard Deviation	3.8	4.5	3.6	2.7	2.4	1.8	1.5	1.8	1.5	1.7	3.3	4.4	3.5	С
Daily Maximum (°C)	-12.8	-8.2	-0.8	10	18.9	23.2	25.7	24.9	18.2	10.4	-0.9	-10.1	8.2	С
Daily Minimum (°C)	-24	-20.1	-11.9	-2.5	4.5	10.1	12.4	11.1	5.9	-0.2	-9.6	-20.5	-3.7	С
Extreme Maximum (°C)	6.5	20	18.5	34	37	38	36.7	39	38	29.4	22.2	8.5		
Date (yyyy/dd)	1986/11	1988/02	2000/23	1980/21	1980/21	1988/11	1975/30	1988/06	1983/02	1961/06	1975/05	1999/01		
Extreme Minimum (°C)	-44.5	-46.7	-42.2	-30.6	-13.9	-4.4	0	-2.5	-8.3	-23	-39.5	-42.5		
Date (yyyy/dd)	1991/09	1966/18	1962/01	1979/06	1966/01	1967/05	1972/03	1982/28	1961/28	1988/29	1985/29	1989/20		
Precipitation:														
Rainfall (mm)	0.3	2.3	7.3	23.3	55.1	91.6	70.4	74.8	60.6	37.3	7.9	1.2	432	Α
Snowfall (cm)	25.6	16.3	17.3	8.2	0.5	0	0	0	0.4	8.4	25.4	24.2	126.3	Α
Precipitation (mm)	25.8	18.6	24.7	31.4	55.6	91.6	70.4	74.8	60.9	45.7	33.3	25.5	558.3	Α
Extreme Daily Rainfall (mm)	5.1	27.5	16.3	31	55.4	74.9	88.6	83.4	53.1	73.4	28.6	18		
Date (yyyy/dd)	1968/24	2000/25	1983/06	1954/28	1998/15	1975/22	2001/16	1995/18	1954/29	1994/06	2000/06	1982/01		
Extreme Daily Snowfall (cm)	20	22.9	30.5	20	15.2	0	0	0	7.9	45.7	22.9	33		
Date (yyyy/dd)	1998/05	1956/13	1964/23	1999/01	1967/01	1953/01	1953/01	1953/01	1974/30	1971/30	1958/18	1956/11		
Extreme Daily Precipitation (mm)	20	27.5	30.5	31	55.4	74.9	88.6	83.4	53.1	73.4	28.6	33		
Date (yyyy/dd)	1998/05	2000/25	1964/23	1954/28	1998/15	1975/22	2001/16	1995/18	1954/29	1994/06	2000/06	1956/11		
Extreme Snow Depth (cm)	83	84	88	62	11	0	0	0	0	10	42	69		
Date (yyyy/dd)	1997/31	1997/15	1997/01	1996/01	1996/01	1981/01	1981/01	1981/01	1981/01	2001/25	1996/30	1996/28		

Appendix C

Plant species observed in the Project area

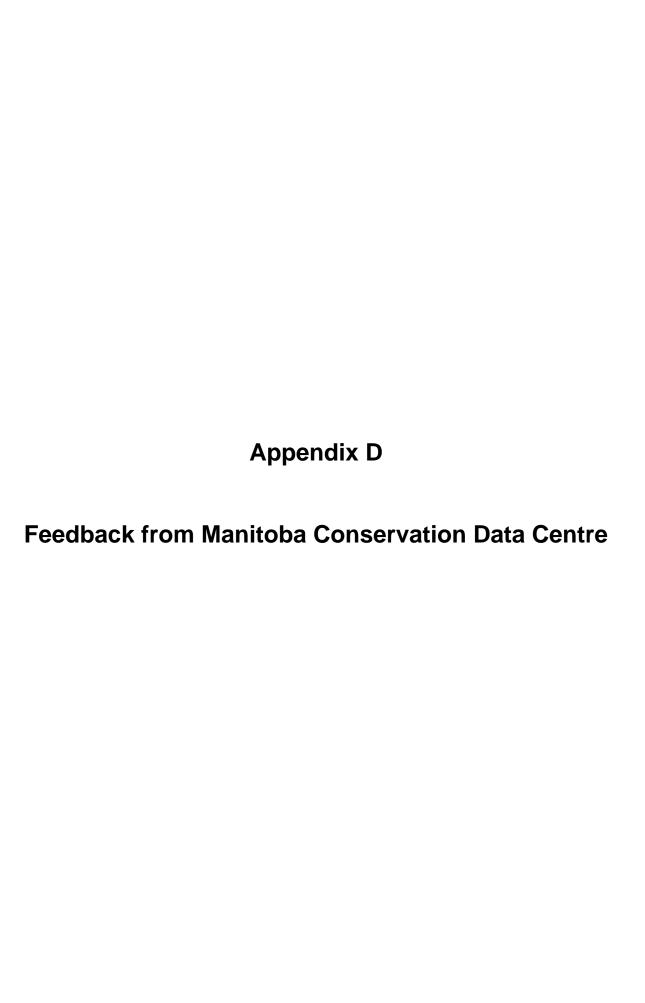
Vascular Plant Species Observed in the Local Assessment Area

Scientific Name	Common Name	Native or Non-native	Provincial Rank
Achillea millefolium	Common yarrow	Native	S5
Agastache foeniculum	Giant Hyssop	Native	S5
Anemone canadensis	Canada anemone	Native	S5
Antennaria microphylla	Everlasting	Native	S4S5
Astragalus agrestis	Milkvetch	Native	S5
Bromus inermis	Smooth brome	Non-native	SE
Calamagrostis canadensis	Marsh reed grass	Native	S5
Calamagrostis stricta	Northern reed grass	Native	S5
Cirsium arvense	Canada thistle	Non-native	SNA
Cornus sericea	Red osier dogwood	Native	S5
Fragaria virginiana	Smooth wild strawberry	Native	S5
Galium boreale	Northern bedstraw	Native	S5
Hordeum jubatum	Wild barley	Native	S5
Medicago sativa	Alfalfa	Non-native	SNA
Phalaris arundinacea	Reed canary grass	Native	S5
Phleum pratense	Timothy	Non-native	SNA
Phragmitis australis	Common reed	Native	S5
Picea glauca	White spruce	Native	S5
Plantago major	Common plantain	Non-native	SNA
Poa palustris	Fowl bluegrass	Native	S5
Poa pratensis	Kentucky blue grass	Native	S5
Populus balsamifera	Balsam poplar	Native	S5
Populus deltoides	Cottonwood	Native	S4
Populus tremuloides	Trembling aspen	Native	S5
Quercus macrocarpa	Bur oak	Native	S5
Rosa acicularis	Prickly rose	Native	S5
Rumex crispus	Curly dock	Non-native	SE
Salix discolor	Pussy willow	Native	S5
Salix sp.	Willow	Native	
Solidago canadensis	Canada goldenrod	Native	S5
Sonchus arvensis	Field sow-thistle	Non-native	SNA
Symphoricarpos albus	Snowberry	Native	S5
Symphyotrichum laeve	Smooth aster	Native	S5
Tanacetum vulgare	Common tansy	Non-native	SNA
Taraxacum officinale	Common dandelion	Non-native	SE
Thalictrum venulosum	Veiny meadow-rue	Native	S5
Thlaspi arvense	Field pennycress	Non-native	SNA
Trifolium sp.	Clover	Non-native	
Typha angustifolia	Narrow-leaved cattail	Native	S4
Typha latifolia	Common cattail	Native	S5
Note: Provincial Rank (S) rar	nge from 1 to 5 (Manitoba C	onservation Dat	ta Centre).

Vascular Plant Species Observed in the Local Assessment Area

		Native or	Provincial
Scientific Name	Common Name	Non-native	Rank

- Very rare throughout its range or in the province (5 or fewer occurrences, or very few remaining individuals). May be especially vulnerable to extirpation.
- S2 Rare throughout its range or in the province (6 to 20 occurrences). May be vulnerable to extirpation.
- S3 Uncommon throughout its range or in the province (21 to 100 occurrences).
- S4 Widespread, abundant, and apparently secure throughout its range or in the province, with many occurrences, but the element is of long-term concern (> 100 occurrences).
- Demonstrably widespread, abundant, and secure throughout its range or in the province, and essentially impossible to eradicate under present conditions.
- SNA A conservation status rank is not applicable to the element.
- SE Exotic.



Feedback from Manitoba Conservation Data Centre

Thank you for your information request. I completed a search of the Manitoba Conservation Data Centre's rare species database and found no occurrences at this time for your area of interest other than a historical occurrence of Loggerhead Shrike (Lanius Iudovicianus migrans).

The information provided in this letter is based on existing data known to the Manitoba Conservation Data Centre at the time of the request. These data are dependent on the research and observations of CDC staff and others who have shared their data, and reflect our current state of knowledge. An absence of data in any particular geographic area does not necessarily mean that species or ecological communities of concern are not present; in many areas, comprehensive surveys have never been completed. Therefore, this information should be regarded neither as a final statement on the occurrence of any species of concern, nor as a substitute for on-site surveys for species as part of environmental assessments. Also, because the Manitoba CDC's Biotics database is continually updated and because information requests are evaluated by type of action, any given response is only appropriate for its respective request.

Please contact the Manitoba CDC for an update on this natural heritage information if more than six months pass before it is utilized.

Third party requests for products wholly or partially derived from Biotics must be approved by the Manitoba CDC before information is released. Once approved, the primary user will identify the Manitoba CDC as data contributors on any map or publication using Biotics data, as follows as: Data developed by the Manitoba Conservation Data Centre; Wildlife and Ecosystem Protection Branch, Manitoba Conservation.

We would be interested in receiving a copy of the results of any field surveys that you may undertake, to update our database with the most current knowledge of the area.

If you have any questions or require further information please contact me directly at (204) 945-7747.

Chris Friesen
Biodiversity Information Manager
Manitoba Conservation Data Centre
204-945-7747
chris.friesen@gov.mb.ca
http://www.gov.mb.ca/conservation/cdc/

Appendix E

Species of Conservation Concern in the Project Study Area

Species of Concern for the Interlake Plain Ecoregion				
Scientific Name	Common Name	MBCDC		
Assemblage				
Bat Colony		SNR		
Gull Colony		SNR		
Snake Hibernaculum		SNR		
Tern Colony		SNR		
Invertebrate Animal				
Erynnis martialis	Mottled Dusky Wing	S2		
Hesperia dacotae	Dakota Skipper	S2		
Lasmigona costata	Flutedshell	SNR		
Ligumia recta	Black Sandshell	SNR		
Orconectes immunis	Calico Crayfish	SNR		
Quadrula quadrula	Mapleleaf Mussel	S2		
Strophitus undulatus	Creeper	SNR		
Terrestrial Community				
Andropogon gerardii-(calamagrostis	Big Bluestem-(Marsh Reed			
canadensis)-muhlenbergia	Grass)-mat Muhly Herbaceous	S1		
richardsonis herbaceous vegetation	Vegetation			
Andropogon gerardii-(sorghastrum	Big Bluestem-(Indian Grass)	S1		
nutans) herbaceous vegetation	Herbaceous Vegetation	<u> </u>		
Andropogon gerardii-sporobolus	Big Bluestem-prairie			
heterolepis-andropogon scoparius	Dropseed-little Bluestem	S1		
herbaceous vegetation	Herbaceous Vegetation			
Populus tremuloides/corylus	Trembling Aspen/american			
americana-(symphoricarpos	Hazel-(Snowberry) Forest	S4		
occidentalis) forest				
Quercus macrocarpa tallgrass	Bur Oak Tallgrass Wooded	S1		
wooded herbaceous vegetation	Herbaceous Vegetation			
Spartina pectinata-calamagrostis	Cord Grass-northern Reed			
inexpansa-carex spp. herbaceous	Grass-sedge Herbaceous	S1S2		
vegetation	Vegetation			
Vascular Plant	T			
Agalinis aspera	Rough Purple False-foxglove	S1S2		
Agalinis tenuifolia	Narrow-leaved Gerardia	S2S3		
Agrimonia gryposepala	Common Agrimony	S1S2		
Alisma gramineum	Narrow-leaved Water-plantain	S1		
Amorpha fruticosa	False Indigo	S1S2		
Arabis lyrata	Lyre-leaved Rock Cress	S2?		
Aralia racemosa	Spikenard	S2		
Arethusa bulbosa	Arethusa	S2		
Asarum canadense	Wild Ginger	S3S4		
Asclepias verticillata	Whorled Milkweed	S3		
Astragalus australis	Indian milkvetch	S1?		
Astragalus neglectus	Milkvetch	S1		
Astragalus pectinatus	Narrow-leaved Milkvetch	S2S3		

Species of Concern for the Interlake Plain Ecoregion				
Scientific Name	Common Name	MBCDC		
Boltonia asteroides var. recognita	White Boltonia	S2S3		
Botrychium campestre	Prairie Moonwort	S1		
Botrychium lunaria	Common Moonwort	S3S4		
Botrychium matricariifolium	Daisy-leaf Moonwort	S1?		
Botrychium multifidum	Leathery Grape-fern	S3		
Bouteloua curtipendula	Side-oats Grama	S2S3		
Bromus porteri	Porter's Chess	S3?		
Bromus pubescens	Canada Brome Grass	SNA		
Calopogon tuberosus	Swamp-pink	S2		
Carex conoidea	Field Sedge	S1		
Carex douglasii	Douglas Sedge	S3?		
Carex flava	Yellow Sedge	S2S3		
Carex hystericina	Porcupine Sedge	S3?		
Carex livida	Livid Sedge	S3		
Carex parryana	Parry's Sedge	S3?		
Carex pedunculata	Stalked Sedge	S3?		
Carex sterilis	Dioecious Sedge	S2		
Carex supina var. spaniocarpa	Weak Sedge	S2?		
Carex tetanica	Rigid Sedge	S2		
Caulophyllum thalictroides	Papoose-root	S2		
Ceanothus herbaceus	New Jersey Tea	S3		
Chrysosplenium iowense	Iowa Golden-saxifrage	S1?		
Cladium mariscoides	Twig Rush	S2		
Clematis ligusticifolia	Western Virgin's-bower	S1		
Clematis virginiana	Virgin's-bower	S2		
Corallorhiza striata	Striped Coralroot	S3S4		
Corispermum villosum	Hairy Bugseed	S1S2		
Cornus alternifolia	Alternate-leaved Dogwood	S3		
Cyperus erythrorhizos	Red-root Flatsedge	S1		
Cyperus houghtonii	Houghton's Umbrella-sedge	S2		
Cypripedium arietinum	Ram's Head Lady's-slipper	S2S3		
Cypripedium candidum	Small White Lady's-slipper	S1		
Desmodium canadense	Beggar's-lice	S2		
Drosera anglica	Oblong-leaved Sundew	S3		
Festuca hallii	Plains Rough Fescue	S3		
Gentiana rubricaulis	Closed Gentian	S2S3		
Geranium maculatum	Wild Crane's-bill	S1		
Helianthus pauciflorus ssp. pauciflorus	Stiff Sunflower	SU		
Hudsonia tomentosa	False Heather	S3		
Hypoxis hirsuta	Yellow Stargrass	S		
Krigia biflora	Cynthia	S2		
Lechea intermedia	Pinweed	S1		
Leucophysalis grandiflora	Large White-flowered Ground-	S3		

Species of Concern for the Interlake Plain Ecoregion				
Scientific Name	Common Name	MBCDC		
	cherry			
Linum sulcatum	Grooved Yellow Flax	S3		
Liparis loeselii	Yellow Twayblade	S3S4		
Lomatium foeniculaceum	Hairy-fruited Parsley	S3		
Lomatium macrocarpum	Long-fruited Parsley	S3		
Lysimachia quadriflora	Whorled Loosestrife	S2		
Malaxis paludosa	Bog Adder's-mouth	S1		
Malaxis unifolia	Green Adder's-mouth	S2?		
Muhlenbergia andina	Foxtail Muhly	<u>\$1</u>		
Nassella viridula	Green Needle Grass	S3		
Oenothera perennis	Sundrops	S1S2		
Onoclea sensibilis	Sensitive Fern	S3S4		
Ophioglossum pusillum	Northern Adder's-tongue	<u>S1</u>		
Orobanche Iudoviciana	Louisiana Broom-rape	S2		
Osmunda claytoniana	Interrupted Fern	S3		
Oxytropis lambertii	Purple Locoweed	S3S4		
Parnassia palustris var. parviflora	Small Grass-of-parnassus	<u>S1</u>		
Pellaea gastonyi	Gastony's Cliffbrake	S1		
Pellaea glabella ssp. occidentalis	Cliff-brake	S2		
Penthorum sedoides	Ditch-stonecrop	S1S2		
Physostegia virginiana	False Dragonhead	SU		
Platanthera hookeri	Hooker's Orchid	S2		
Platanthera orbiculata	Round-leaved Bog Orchid	S3		
Platanthera praeclara	Western Prairie Fringed Orchid	S1		
Polygala verticillata	Whorled Milkwort	S2		
Pyrola americana	Round-leaved Pyrola	S2		
Ranunculus hispidus var. caricetorum	Bristly Buttercup	S2		
Rhynchospora alba	White Beakrush	S3?		
Rhynchospora capillacea	Horned Beakrush	S2		
Selaginella selaginoides	Northern Spike-moss	S2		
Sisyrinchium campestre	White-eyed Grass	SU		
Solidago juncea	Sharp-toothed Goldenrod	S2		
Solidago riddellii	Riddell's Goldenrod	S2		
Spiranthes magnicamporum	Great Plains Ladies'-tresses	S1S2		
Symphyotrichum ericoides var. ericoides	White heath aster	S3?		
Symphyotrichum sericeum	Western Silvery Aster	S2		
Thalictrum revolutum	Waxleaf Meadow-rue	S1		
Utricularia cornuta	Horned Bladderwort	S3		
Utricularia minor	Lesser Bladderwort	S3		
Vaccinium caespitosum	Dwarf Bilberry	S2		
Veronicastrum virginicum	Culver's-root	S1		
Viola conspersa	Dog Violet	S3?		
Vitis riparia	Riverbank Grape	S3S4		

Species of Concern for the Interlake Plain Ecoregion				
Scientific Name	Common Name	MBCDC		
Vertebrate Animal	•			
Accipiter cooperii	Cooper's Hawk	S4S5B		
Aechmophorus occidentalis	Western Grebe	S4B		
Ambystoma laterale	Blue-spotted Salamander	S3S4		
Ammodramus savannarum	Grasshopper Sparrow	S2B		
Ardea herodias	Great Blue Heron	S4S5B		
Caprimulgus vociferus	Whip-poor-will	S3B		
Chaetura pelagica	Chimney Swift	S2B		
Charadrius melodus	Piping Plover	S1B		
Chlidonias niger	Black Tern	S4B		
Chordeiles minor	Common Nighthawk	S3B		
Contopus cooperi	Olive-sided Flycatcher	S3S4B		
Coregonus zenithicus	Shortjaw Cisco	S3		
Coturnicops noveboracensis	Yellow Rail	S3S4B		
Cygnus buccinator	Trumpeter Swan	S1S2B		
Dolichonyx oryzivorus	Bobolink	S4B		
Geomys bursarius	Plains Pocket Gopher	S3		
Ichthyomyzon castaneus	Chestnut Lamprey	S3S4		
Ixobrychus exilis	Least Bittern	S2S3B		
Lanius Iudovicianus migrans	Loggerhead Shrike	S1B		
Macrhybopsis storeriana	Silver Chub	S3		
Melanerpes erythrocephalus	Red-headed Woodpecker	S2B		
Myotis lucifugus	Little Brown Myotis	S2N,S5B		
Notropis dorsalis	Bigmouth Shiner	S3		
Nycticorax nycticorax	Black-crowned Night-heron	S3S4B		
Pelecanus erythrorhynchos	American White Pelican	S3S4B		
Phalacrocorax auritus	Double-crested Cormorant	S5B		
Pipilo erythrophthalmus	Eastern Towhee	S4B		
Podiceps auritus	Horned Grebe	S3B		
Podiceps nigricollis	Eared Grebe	S4S5B		
Rangifer tarandus caribou	Caribou	S2S3		
Sterna caspia	Caspian Tern	S3S4B		
Sterna forsteri	Forster's Tern	S4B		
Strix varia	Barred Owl	S4		
Thamnophis radix haydenii	Western Plains Garter Snake	S4		
Thamnophis sirtalis	Red-sided Garter Snake	S4		
Vermivora chrysoptera	Golden-winged Warbler	S3B		
Wilsonia canadensis	Canada Warbler	S4SB		

Appendix F

Feedback from Historic Resources Branch

Feedback from Historic Resources Branch



Memorandum

DATE: November 21, 2012

TO: Dave Block

Licensing & Environmental Assessment Department

Manitoba Hydro 820 Taylor Ave (3)

Winnipeg

FROM: Gordon Hill

Impact Assessment Archaeologist

Historic Resources Branch

Main Floor 213 Notre Dame Avenue

Winnipeg MB R3B1N3

Phone No: (204) 945-7730

SUBJECT: HERITAGE RESOURCES

HRB FILE: AAS-12-5173

DISTRIBUTION SUPPLY CENTER TYNDALL GARSON AREA SE 10-13-6 EPM

In response to your memo regarding the above-noted proposed project, I have examined Branch records for areas of potential concern. The potential to impact significant heritage resources is low, and, therefore, the Historic Resources Branch has no concerns with the project.

If at any time however, significant heritage resources are recorded in association with these lands during development, the Historic Resources Branch may require that an acceptable heritage resource management strategy be implemented by the developer to mitigate the affects of development on the heritage resources.

If you have any questions or comments, please contact me at 204-945-7730.

C. Gordon Hill