

**Kanata Métis Cultural Natural Area
and Resource Extraction Project
Edmonton, Alberta**

Environmental Impact Assessment

Volume 2 of 2

Prepared for:

Kanata Métis Cultural Enterprises Ltd.
Edmonton, Alberta

Prepared by:

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Under contract to:

Kanata Métis Cultural Enterprises Ltd.
Edmonton, Alberta

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Appendix A. Gravel Supply Analysis



**KANATA MÉTIS CULTURAL ENTERPRISES LTD.
A BRIEF STUDY OF THE
EDMONTON AREA AGGREGATE MARKET**

Prepared by :

**R. J. (Bob) Sanderson, P.Eng.
RoJaS Management Ltd.
October 2009**

Executive Summary

1. The Edmonton Capital Region has experienced tremendous growth in the past six years, with the result that aggregate demand in the Capital Regional has doubled from an estimated 8 million tonne in 2002 to an estimated 17 million tonne in 2008.
2. The demand for aggregates in the area appears to be strong for the foreseeable future. The growth of Edmonton and surrounding municipalities is fueled by development of the oil sands and planned oil upgrader projects north of Edmonton stimulating residential and industrial development and further infrastructure development. The Kanata aggregate deposit is the only remaining significant source of aggregate within the boundaries of the City of Edmonton that is economically feasible to develop.
3. As demand increases, construction aggregates are delivered to meet the requirements within the City of Edmonton from locations that are considerably more distant. 1.9 million tonne of gravel is delivered to projects in the Capital Region from as far away as Ponoka.
4. Gravel haul trucks are estimated to emit 1.0 kilograms of carbon dioxide per kilometer. If Kanata replaced aggregate currently delivered from Ponoka reducing the haul distance from 120 kilometers to 30 kilometers, the emission savings would exceed 9,000,000 kilograms of carbon dioxide emissions over the life of the Kanata project. Hauling costs are 15 cents per tonne per kilometer. Over this same distance, transportation costs could be reduced by \$25,650,000 more or less, or \$472.50 per haul. It would reduce the number of man-hours required for gravel transport by 100,000. The reduction of the carbon emissions and the potential cost savings from travel are considerable.
5. Aggregates are a commodity essential to the growth of the Capital Region. Aggregates are a nonrenewable resource and it is essential that we are proficient stewards in managing this resource.

Introduction

Kanata Métis Cultural Enterprises Ltd. (“Kanata”)¹ has acquired a portion of the W ½-20-51-25-W4 within the City of Edmonton located on the east side of 199th Street in the North Saskatchewan River Valley. The property is underlain by a gravel deposit of approximately 1.9 million tonne. Kanata is developing plans to remove much of this gravel and to develop the property into a Métis Cultural Centre and Natural Area.

Kanata has asked me to prepare a brief report on the Edmonton Area aggregate market to better understand how their aggregate deposit would fit into the marketplace. They have requested the report contain a brief discussion of the environmental and economic impact that their deposit would have on the marketplace.

The method used to determine aggregate consumption and source of aggregates for this report is by having an understanding of the industry through several years of experience, by monitoring construction activity, and by interviewing industry participants.

¹ Kanata is the Métis word for clean.

All numbers stated in this report are approximations only. To the best of our knowledge they, reasonably reflect the marketplace.

Aggregate Demand

The Edmonton Capital Region is defined by the City of Edmonton and the surrounding counties of Strathcona, Sturgeon, Parkland and Leduc. The area includes the City's towns and hamlets of Sherwood Park, Fort Saskatchewan, St. Albert, Morinville, Spruce Grove, Stony Plain, Devon, Leduc, Beaumont and smaller communities. The population of the Capital Region is currently estimated at just over one million persons with the City of Edmonton accounting for approximately for 75% of the population.

Historically, the annual aggregate consumption would be approximately 10 tonne per person.

The Capital Region has experienced a population boom in the past 7 years. This is primarily attributable to the rapid expansion of oil extraction activity from north eastern Alberta oil sands deposits. Massive spending on development of these oil sands projects has created high employment growth in the Edmonton Region, which is a main supply centre for oil sand activity.

This rate of growth has caused significant growth in residential development. Housing starts in the Capital Region for 2007 and 2008 were approximately 29,000 units. Total construction spending has increased by 164% over the past decade. By late 2009 it is anticipated that the demand for serviced lots will result in increased construction activity, slowed by over-construction in 2008.

The Provincial Government of Alberta has recognized the need for infrastructure development to sustain this growth and has committed money available for such infrastructure, including utilization of alternate financing models such as public/private partnerships, which has increased the speed of development. The Anthony Henday ring-road project is a good example of this initiative.

The increased growth and construction activity has caused an increase in the demand for construction aggregates. It is estimated in 2008, the Capital Region consumed in the order of 17 million tonne of construction aggregates or 17 tonne per person.

Aggregate Pricing

Aggregates in the Edmonton area generally command higher prices than they do in other parts of Western Canada and in fact higher than in most of North America. Aggregate prices in the Capital Region at the date of this report exceed the price in Calgary by 30%, Regina by 40% and Winnipeg by 50%.

Typically, aggregates close in proximity to the end use are extracted first. It is both economical and the best to use nonrenewable resource while minimizing the impact on adjacent uses.

Historically, aggregates in the Edmonton area were mined along the North Saskatchewan River Valley within or close to the City. These river valley deposits are now substantially depleted and have been reclaimed to become some of Edmonton's most popular parks and golf courses, including William Hawrelak Park, Rundle Park, Terwillegar Park, Mayfair Golf and Country Club, Highlands Golf Club, Riverside Golf Course.

The next closest deposit of aggregate developed in the Capital Region is in the Villeneuve area. The Villeneuve deposit is a buried pre-glacial river valley and is covered by approximately 12 meters of

overburden. The cost of exposing the aggregate has limited suppliers to those with considerable financial resources resulting in almost all the aggregate in the Villeneuve area being owned by Lafarge and Inland.

Smaller aggregate suppliers had to compete from more accessible aggregate deposits further away from the market, reducing the development cost but increasing transportation cost.

The two situations of the costs of extracting aggregate in Villeneuve and the risk, cost and delays in permitting allowed Lafarge and Inland, with their greater resources, to capture a very high share of the market. This situation together with the large increase in demand particularly in the past few years has resulted in extraordinary increases in selling prices. The demand has been such that Inland and Lafarge could not produce aggregate fast enough to maintain their market share. Consequently, other producers were able to compete from sources further away.

Construction aggregates are a bulk commodity and as such transportation costs are an important factor. In the summer of 2006 the hauling industry withdrew their services in a demand for higher trucking rates. This effectively crippled the construction industry and in short order, the aggregate suppliers met demands of haulers for increasing rates. Trucking rates for aggregate delivery in the Edmonton area now average approximately \$0.15 per tonne-kilometer. This rate would be somewhat lower for long haul highway distances. Even with trucking rates as high as they are, significant amounts of gravel are trucked in from as far as 120 kilometers.

Aggregate Supply

The major aggregate sources which impact the Edmonton Capital Region market, and their distance from the market, measured from the center of the deposit to the center of the City of Edmonton are summarized below. Details respecting deposits appear in Appendix 1.

Aggregate Location	Annual Quantity (tonne)	Approximate Distance From City Center (kilometers)
Kanata	0	27
Fort Saskatchewan	500,000	31
Villeneuve	6,000,000	45
Onoway	3,200,000	60
Wabumun	1,200,000	87
Keephills	2,300,000	87
Ferintosh	700,000	110
Ponoka	1,900,000	120
Smoky Lake	200,000	125
Others	1,000,000	various

Environmental Impact

In 2004 R.D. Peel, P.Geol. presented his thesis entitled Sustainable Development of the Aggregate Resources of Alberta, which states:

“ Due to the volumes of aggregate resources being transported on a daily basis, mostly by trucks, which emit greenhouse gases, a strategy to prevent larger emission rates would be to ensure that haul distances are minimized.”

Typical haul trucks consume approximately 0.5 litres of diesel fuel per kilometer, and emit approximately 1.0 kg of carbon dioxide per kilometer.

Kanata's aggregate deposit is located 27 km from downtown Edmonton and only 7 km from the Lessard Road overpass construction currently in progress on the Anthony Henday freeway. This construction project is estimated to consume 125,000 tonne of aggregate. If, for example, the aggregate was to come from Villeneuve to supply this project the extra haul distance would be 31.5 km. The average haul truck carries 35 tonne of gravel, the extra two way trips would emit an extra 225,000 kg of carbon dioxide into the atmosphere. If the gravel were to come from Onoway the extra emission would be 332,150 kg. If the aggregate comes from Wabumun or Keephills the extra emission would be 525,000 kg of carbon dioxide.

It is very obvious that if we continue to sterilize the closest aggregate sources to the marketplace, we unnecessarily contribute to our carbon footprint.

The Economic Impact

As previously stated the average cost of hauling aggregate in the Edmonton area is \$0.15 per tonne-kilometer. If as calculated in the previous topic the aggregate for the Anthony Henday overpass project were to be hauled from Villeneuve rather than from the Kanata property, the extra cost of the project for the taxpayer to absorb would be \$590,000. If from Onoway the extra cost would be \$872,000, if from Wabumun or Keephills the extra cost would be \$1,378,000.

By not utilizing the closest aggregate sources to the end use location, there are adverse consequences to the environment and unnecessary increases in the cost of transporting aggregate to its end use location.

RoJaS MANAGEMENT LTD.

Per:

R. J. (Bob) Sanderson, P.Eng.

***About the Author**

Bob Sanderson, P.Eng. (BSCE (Hons)) has over 25 years experience in the aggregate industry managing aggregate supply business for Inland Aggregates Ltd. and others in Edmonton, Winnipeg and Regina. As President of RoJaS Management Ltd. he has through the understanding of the aggregate performed such tasks as: aggregate reserve exploration, testing and evaluation; operations planning; municipal permit applications; Alberta Environment Pit Registration; geographic aggregate market evaluation; and processing equipment recommendations and budgets. Bob has managed development of aggregate operations for 25 years, including the past 7 years in the Capital Region. Some of RoJaS's client list includes: Burnco Rock Products; Assigner Concrete, DDC Sand & Gravel, The Altus Group, Glacial Aggregates and Enviro-Crush Equipment.

**EDMONTON AREA AGGREGATE MARKET
BY R. J. (BOB) SANDERSON, P.ENG.***

APPENDIX 1

Fort Saskatchewan

This general area includes all the river valley aggregate deposits north east of Edmonton and stretching to beyond Fort Saskatchewan. These deposits are sandy with many layers of silt and are high in coal content. This area is primarily a source of granular fills for projects on the east side of Edmonton. This area is made attractive by its proximity to the market. Overburden depths vary from 2 to 4 meters. Approximately 500,000 tonne annually is supplied from this area.

Villeneuve

This area provides the majority of the aggregates for the region. As previously mentioned it is covered by an average of 12 meters of overburden. The deposit has an average thickness of 8.5 meters. It is reasonably good quality; it does contain some ironstone and some coal. The stone has an average L A abrasion loss of 22%. The uppermost two thirds of the deposit is usually of better quality and is normally utilized as concrete and asphalt aggregate. The lower one third is generally produced into road bases and granular fills. An estimated 6 million tonne of aggregate is mined from this area.

Onoway

This area is dominated by Lafarge who owns approximately 75% of the aggregate reserves. It is covered by approximately 6 meters of overburden and has an aggregate deposit thickness of approximately 8 meters. It is of reasonably good quality. Approximately 3 million tonne is supplied annually from this area.

Wabumun

This is a somewhat scattered area in the vicinity of Lake Wabumun. A portion of the aggregate overlies the coal being mined at the Hivale Mine which supplies the Wabumun thermal power plant. Yellowhead and T&T are currently the major producers operating from this area. Parkland County also extracts a portion of their needs from here. Burnco Rock Products have recently developed an estimated 16 million tonne reserve in this area. The area is generally expensive to mine with 5 meters of overburden over 3.5 meters of aggregate and a very high water table. The pit run has a high sand content and the sand is not well graded. Currently some 1,200,000 tonne is supplied annually from this area.

Keephills

This area is along the North Saskatchewan River valley south and west of Edmonton. The main aggregate producers in the area are Mixcor, Border Paving, Keehills Aggregates, and Inland. The aggregate is of reasonably good quality with only 2 meters of overburden covering 5 meters of gravel. Currently approximately 2.3 million tonne is supplied annually from this location.

Ponoka

This area includes the scattered operations to the south and west of Ponoka and down to the Morningside Road area that are supplying gravel into the Edmonton Region. There is not a continuous aggregate deposit in the area only scattered pockets of gravel. Inland, Mixcor, and T&T are the major producers of the area and supply mostly road bases into the south side of Edmonton. It is good quality aggregate and is relatively inexpensive to develop with approximately 1 meter of overburden covering approximately 8 meters of aggregate. Currently this area supplies an estimated 1,900,000 tonne annually.

Ferintosh

This area includes the scattered pits to the south and west of Camrose, which are supplying aggregate into the Edmonton area. The area is typified by small-scattered gravel deposits. Lafarge, Inland, and Mixcor all have small operations in the area. They mostly supply road bases into the south east side of Edmonton. It is reasonably good quality aggregate with not much overburden. Currently the area supplies an estimated 700,000 tonne annually to the Capital Region.

Smoky Lake

In the past this area has had very little impact on the Capital Region. There are scattered aggregate deposits in the area which may become more relevant in the future. The proposed up-grader projects north east of Edmonton are located approximately 75 kilometers away. Summit Contracting has already supplied one project from this area.

Others

The French owned highway construction giant Colas has acquired several construction companies in western North America. In Alberta these include Standard General Construction, E Construction, Wapiti Sand and Gravel, and Alberta Highway Services among others. They have acquired some 75 million tonne of aggregate reserve west of Whitecourt and have set up rail loading facilities and rail off loading facilities in the Acheson and Ft. Saskatchewan areas. They have acquired a fleet of rail cars and have begun to transport aggregate into the Capital Region. In 2008 they supplied an estimated 400,000 tonne into heavy oil upgrader projects in the Ft. Saskatchewan area. Although this aggregate deposit is approximately 180 kilometers from Edmonton rail transportation is more efficient than truck transportation. This is feasible only for very large supply projects as the development costs are very high.

Appendix B. Conceptual Natural Area Plan

Kanata Métis Cultural Natural Area

Kanata Métis Cultural Enterprises Ltd. is proposing the establishment of the Kanata Métis Cultural Natural Area on the reclaimed land to create a naturalized, environmentally conscious landscape that celebrates Métis heritage through education, experience and recreation. Based on those objectives and the reclamation contours resulting from gravel extraction, EDS Group Ltd. has designed a conceptual reclamation plan. The design intent of that plan is outlined below.

Design Intent- Natural Area Plan

Purpose: To create a naturalized, environmentally conscious landscape that celebrates Métis heritage through education, experience and recreation.

Inspiration:

- Métis Sash
- Métis Flag
- Finger weaving
- Beadwork
- Plant use
- Clothing styles
- Dance and music
- Cultural connections
- Transportation methods
- Métis sporting events

Design Components (refer to figure below):

1. Métis Commons
 - Main venue for traditional Métis interpretive opportunities
 - Provides rental space for functions such as traditional music and dance celebrations
 - Contains public washrooms
 - May provide concession opportunities
2. Accessible Trails
 - Surrounding Kanata Lake, offers easy access to popular locations for those with reduced mobility
3. Small Day Use
 - Connected via site trail system
 - Includes picnic table, waste receptacle and BBQ area
 - Offers naturalized views of Kanata Lake and treed areas
4. Reclaimed Vegetation
 - Encourages the restoration of natural habitat
 - Decreases the amount of exposed open space to eliminate wind erosion



- 1 Métis Commons**
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- Surrounding Kanata Lake, offers easy access to popular locations for those with reduced mobility

- 3 Small Day Use**
- Connected via site trail system
 - Includes picnic table, waste receptacle and BBQ area
 - Offers naturalized views of Kanata Lake and treed areas

- 4 Reclaimed Vegetation (light green)**
- Encourages the restoration of natural habitat
 - Decreases the amount of exposed open space to eliminate wind erosion
 - On-site plant material used for transplanting, where possible
 - Only native plant material proposed

- 5 Tent Camping**
- Accessible by river, provides overnight accommodation for those partaking in river canoe activities
 - Small sites promote the limited alteration of surrounding vegetation
 - Connected via 'Portage Trail' to encourage traditional methods of transportation and accommodation

- 6 Group Day Use**
- Open air picnic area with multiple covered picnic tables and waste receptacles
 - Washroom facilities
 - May include outdoor BBQ
 - For use by families, school groups, corporate groups, etc.

- 7 Kanata Lake**
- Centrally connected to all onsite amenities
 - Accommodates social gatherings and interaction
 - Surrounded by 'Accessible Trails'

- 8 Canoe Access/ Drop off**
- Used to access North Saskatchewan River from site
 - Accommodates vehicle access to drop off area
 - Centrally located and adjacent to parking and Métis Commons'
 - In agreement with River Valley Alliance (RVA) recommendations, will encourage the use of North Saskatchewan River for non-motorized water transport

- 9 Existing Vegetation (dark green)**
- Consistent with Métis cultural tradition, existing vegetation is proposed to be left untouched, where possible
 - Vegetation removed due to site development would be replaced as 'Reclaimed Vegetation' (4)

- 10 Portage Trail**
- Supports traditional land and water transport methods
 - In agreement with River Valley Alliance (RVA) recommendations, will encourage the use of North Saskatchewan River for non-motorized water transport

- 11 Preservation Area**
- Large vegetated area shown to be left in its natural states
 - No modifications proposed

- 12 Interpretive Retreat**
- Educational retreat to showcase traditional Métis culture
 - May include workshops for finger weaving, bead work and traditional medicine
 - Connected to entire site via 'Portage Trail' and 'Walking Trail'
 - May include children's educational programs

- 13 Naturalized Wetlands**
- Provides wildlife habitat
 - Offers excellent interpretive opportunity

- 14 Traditional Plant Walk**
- A variety of native plants, specifically those traditionally used in Métis medicine and cooking
 - Would support 'Interpretive Retreat' activities, such as plant identification and harvest
 - Quiet area, away from main activities

- 15 Walking Trails/ RVA Connections**
- Connected paths throughout site encourage nature appreciation and enjoyment
 - Major interest points connected to promote walking to various venues
 - Close to parking for those with reduced mobility

- 16 Outdoor Activities Field**
- Open space to support a variety of non-programmed activities
 - Combined with 'Métis Commons', may provide a venue for traditional Métis games
 - May support outdoor functions with temporary stages and tent kiosks

Imagery



- On-site plant material used for transplanting, where possible
 - Only native plant material proposed
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 7. Kanata Lake
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 8. Canoe Access/Drop off
 - Used to access North Saskatchewan River from site
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 - Centrally located and adjacent to parking and 'Métis Commons'
 - In agreement with River Valley Alliance(RVA) Plan of Action recommendations, will encourage the use of North Saskatchewan River for non-motorized water transport
 9. Existing Vegetation
 - Consistent with Métis cultural tradition, existing vegetation is proposed to be left untouched, where possible
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12. Interpretive Retreat

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- Connected paths throughout site encourage nature appreciation and enjoyment
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16. Outdoor Activities Field

- Open space to support a variety of non-programmed activities
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Comparison of Proposed Kanata Natural Area Plan to Existing River Valley Alliance (RVA) Plan of Action Framework and the Capital Region River Valley Park Plan

The following is a summary of the program features proposed for the Natural Area Plan and their relation to the framework defined by the River Valley Alliance for the Capital Region River Valley Park Plan. All identified Capital Region River Valley Park and River Valley Alliance goals and program elements have been summarized from the Executive Summary and the “Nature at its Best” cut sheets, as found on the River Valley Alliance website (www.rivervalley.ab.ca). That comparison is shown in the table below.

Comparison of Proposed Kanata Natural Area Plan to the Existing RVA Plan of Action Framework

RVA Plan of Action Framework	Kanata Métis Cultural Natural Area
Nature conservation and management	<ul style="list-style-type: none"> • 8 ha of protected vegetation in “Preservation Area” • Areas of reclaimed native vegetation to meet and/or exceed existing areas • 30 m native vegetated buffer from river top-of-bank, 8 m buffer from west property line, 3 m buffer from north property line
Access and linear trail systems	<ul style="list-style-type: none"> • Three major RVA Plan of Action recommended trail connections maintained • Hierarchy of site trails, including barrier free trail • “Portage Trail” introduces unique mode of access
Capital waterway	<ul style="list-style-type: none"> • Canoe launch, hike-to tenting and “Portage Trail” promote use of river as mode of transportation • Drive in access enables buses and groups to unload non-motorized boats with ease
Heritage preservation and interpretation	<ul style="list-style-type: none"> • Overall design programmed to promote the celebration of Métis culture via interpretive opportunities and hands-on education • Examples include traditional plant walk, Interpretive Retreat, Métis Commons- see Design Intent above for further break down
Parks and trails signage	<ul style="list-style-type: none"> • Connecting trails offer opportunity for installation of standardized river valley signage, as per RVA Plan of Action suggestions
Safety	<ul style="list-style-type: none"> • Increase of formal recreational activities to decrease existing vandalism and drug related activities through ‘user policing’ and ‘more eyes on street’

Appendix C. Public Engagement

Appendix D. Groundwater Review

Appendix E. Geotechnical Assessment

Appendix F. Plant Communities

Kanata Vegetation Inventory - 21 June 2007		Site					# of Sites	Status	Native/ Exotic
Scientific Name	Common Name	1	2	3	4	5			
TREES									
<i>Betula neoalaskana</i>	Alaska paper birch	R	R	D	O	O	5		native
<i>Populus balsamifera</i>	balsam poplar	D	O	D	D		4		native
<i>Populus tremuloides</i>	aspen poplar	O	D		O		3		native
SHRUBS									
<i>Acer negundo</i>	Manitoba maple	R					1		exotic
<i>Alnus tenuifolia</i>	speckled alder			O/A			1		native
<i>Amelanchier alnifolia</i>	saskatoon serviceberry	R	A	O	O		4		native
<i>Caragana arborescens</i>	common caragana			R			1		exotic
<i>Cornus stolonifera</i>	red-osier dogwood	D	D	D	F	O	5		native
<i>Corylus cornuta</i>	beaked hazelnut	O	O	O	O		4		native
<i>Elaeagnus commutata</i>	America silverberry			O			1		native
<i>Juniperus communis</i>	common juniper			R			1		native
<i>Lonicera dioica</i>	blue-green twining-honeysuckle	R	R	F		O	4		native
<i>Lonicera involucrata</i>	black-berry honeysuckle	O	O			O	3		native
<i>Picea glauca</i>	white spruce			R			1		native
<i>Populus balsamifera</i>	balsam poplar	O				R	2		native
<i>Populus tremuloides</i>	aspen poplar	R					1		native
<i>Prunus pensylvanica</i>	pin cherry	O		O			2		native
<i>Prunus virginianum</i>	choke cherry	F	A	F/D	A	D	5		native
<i>Ribes americanum</i>	wild black currant	F					1		native
<i>Ribes oxycanthoides</i>	northern gooseberry	O	R				2		native
<i>Ribes triste</i>	swamp red currant	O	R				2		native
<i>Rosa acicularis</i>	prickly rose	O/A	D	D	F		4		native
<i>Rubus idaeus</i>	red raspberry	F/A	O	O	A	A	5		native
<i>Salix bebbiana</i>	Bebb willow					A	1		native
<i>Salix discolor</i>	pussy willow	R				D	2		native
<i>Salix lucida</i>	shiny willow			R			1		native
<i>Salix sp.</i>	willow				D	D	2		native
<i>Sorbus aucuparia</i>	European mountain-ash		R				1		exotic
<i>Spiraea alba</i>	white spiraea					F	1		native
<i>Symphoricarpos albus</i>	common snowberry	A	F	D			3		native
<i>Viburnum edule</i>	low bush-cranberry	F	F			O	3		native
<i>Viburnum lantana</i>	wayfaring tree			R					exotic
<i>Viburnum opulus</i>	high bush-cranberry	D	D	O/A	O	O	5		native
FORBS									
<i>Achillea sibirica</i>	Siberia yarrow		O				1		native
<i>Actaea rubra</i>	red baneberry	R			O	F	3		native
<i>Agrimonia striata</i>	grooved agrimony	O	R				2		native
<i>Anemone canadensis</i>	Canada anemone	R	O	O	O	O	5		native
<i>Anemone cylindrica</i>	long-head anemone		R				1		native
<i>Apocynum androsaemifolium</i>	spreading dogbane		O				1		native
<i>Aquilegia brevistyla</i>	small blue columbine			O	R		2		native
<i>Aralia nudicaulis</i>	wild sarsaparilla	A	D		F	D	4		native

Kanata Vegetation Inventory - 21 June 2007		Site					# of Sites	Status	Native/ Exotic
Scientific Name	Common Name	1	2	3	4	5			
<i>Aster ciliolatus</i>	fringed American-aster	O	O	O		F	4	native	
<i>Aster conspicuus</i>	showy wood-aster	R					1	native	
<i>Aster laevis</i>	smooth American-aster			O			1	native	
<i>Botrychium virginianum</i>	rattlesnake moonwort		R				1	native	
<i>Circaea alpina</i>	small enchanter-nightshade	F/D					1	native	
<i>Cirsium arvense</i>	creeping thistle	R/F		R	O		3	exotic	
<i>Cornus canadensis</i>	Canada bunchberry	O	A				2	native	
<i>Disporum trachycarpum</i>	rough-fruit fairybells	R	R			R	3	native	
<i>Epilobium angustifolium</i>	common fireweed				R		1	native	
<i>Equisetum arvense</i>	common horsetail	O/A	F	O/F	D	D	5	native	
<i>Equisetum pratense</i>	meadow horsetail	O	R				2	native	
<i>Erigeron philadelphicus</i>	Philadelphia fleabane				R		1	native	
<i>Fragaria vesca</i>	woodland strawberry	O	F				2	native	
<i>Fragaria virginiana</i>	common wild strawberry	R		F			2	native	
<i>Galium boreale</i>	northern bedstraw		O	F			2	native	
<i>Galium triflorum</i>	sweet-scented bedstraw	O	F	O	O	O	5	native	
<i>Heracleum lanatum</i>	common cowparsnip	O			R	R	3	native	
<i>Hieracium umbellatum</i>	narrow-leaf hawkweed			R		R	2	native	
<i>Impatiens sp.</i>	touch-me-not	O/A					1	native	
<i>Lathyrus ochroleucus</i>	cream peavine		R	O			2	native	
<i>Maianthemum canadense</i>	wild false-lily-of-the-valley	O	F	R		O	4	native	
<i>Melilotus officinale</i>	yellow sweetclover			F			1	exotic	
<i>Mertensia paniculata</i>	tall bluebells	O	F		F	O	4	native	
<i>Mitella nuda</i>	common mitrewort	O	O				2	native	
<i>Orthilia secunda</i>	sidebells		O				1	native	
<i>Osmorhiza depauperata</i>	blunt-fruit sweet-cicely	O					1	native	
<i>Osmorhiza longistylis</i>	smooth sweet-cicely	O					1	S2 native	
<i>Oxytropis deflexa</i>	pendent-pod locoweed			O			1	native	
<i>Oxytropis monticola</i>	yellow mountain locoweed			R			1	native	
<i>Petasites palmatus</i>	fingered sweet-coltfoot	O	F/A			F	3	native	
<i>Plantago major</i>	common plantain		R				1	exotic	
<i>Pyrola asarifolia</i>	pink wintergreen		F				1	native	
<i>Rubus pubescens</i>	common dewberry	A	F/A			O	3	native	
<i>Sanicula marilandica</i>	snakeroot sanicle		R			O	2	native	
<i>Smilacina stellata</i>	star-flower false-lily-of-the-valley	F	O	F	F	F	5	native	
<i>Solidago sp.</i>	goldenrod	O/D	O	F			3	native	
<i>Sonchus uliginosus</i>	perennial sowthistle			O			1	exotic	
<i>Stachys palustris</i>	swamp hedgenettle	O		R			2	native	
<i>Taraxacum officinale</i>	common dandelion		R			R	2	exotic	
<i>Thalictrum venulosum</i>	veiny meadowrue	O	F/A	F	F	O	5	native	
<i>Trifolium pratense</i>	red clover			O			1	exotic	
<i>Vicia americana</i>	America vetch		O	O			2	native	
<i>Viola canadensis</i>	Canada violet	F/D	O			F	3	native	
GRAMINOIDS									

Kanata Vegetation Inventory - 21 June 2007		Site					# of Sites	Status	Native/ Exotic
Scientific Name	Common Name	1	2	3	4	5			
<i>Bromus inermis</i>	smooth brome		R	F/D	F/D	R	4		exotic
<i>Calamagrostis canadensis</i>	bluejoint reedgrass	F	F	F/A	F/D	O	5		native
<i>Carex deweyana</i>	Dewey sedge	O	O				2		native
<i>Carex eburnea</i>	bristle-leaf sedge		R				1	S3	native
<i>Carex peckii</i>	Peck sedge		O				1		native
<i>Phleum pratense</i>	common timothy			F			1		exotic
<i>Poa pratensis</i>	Kentucky bluegrass		R	O	F		3		exotic
	# of Species	53	54	45	27	33	90		
Key to Abbreviations									
D=Dominant	O=Occasional								
A=Abundant	R=Rare (at this site)								
F=Frequent									

Appendix G. Historical Air Photos

Appendix H. Wildlife Species Potentially Found in the Study Area

	Scientific Name	Provincial Status (General Status of AB Wild Species)	Wildlife Act Designation and New Species Assessed by ESCC (see Comments)	COSEWIC Designation	SARA Designation	EDMONTON AREA (within 100 km)	Observed During Surveys in 2007	Potential Habitat Use for Special Status Species	Likelihood of Special Status Species Occurring in Local Project Area
Tiger Salamander	<i>Ambystoma tigrinum</i>	Secure		Not at Risk		Resident			
Western Toad	<i>Bufo boreas</i>	Sensitive		Special Concern	Schedule 1 (Special Concern)	Resident		Breeding/Foraging	Low
Canadian Toad	<i>Bufo hemiophrys</i>	May be At Risk	Data Deficient	Not at Risk		Resident		Breeding/Foraging	Low
Wood Frog	<i>Rana sylvatica</i>	Secure				Resident			
Boreal Chorus Frog	<i>Pseudacris maculata</i>	Secure				Resident			
Plains Garter Snake	<i>Thamnophis radix</i>	Sensitive				Resident		Breeding/Foraging	Moderate
Red-sided Garter Snake	<i>Thamnophis sirtalis</i>	Sensitive				Resident		Breeding/Foraging	Moderate
Canada Goose	<i>Branta canadensis</i>	Secure				Breeding			
Eurasian Wigeon	<i>Anas penelope</i>	Accidental/Vagrant				Migrant			
American Wigeon	<i>Anas americana</i>	Secure				Breeding			
Mallard	<i>Anas platyrhynchos</i>	Secure				Breeding			
Blue-winged Teal	<i>Anas discors</i>	Secure				Breeding			
Cinnamon Teal	<i>Anas cyanoptera</i>	Secure				Breeding			
Northern Shoveler	<i>Anas clypeata</i>	Secure				Breeding			
Northern Pintail	<i>Anas acuta</i>	Sensitive				Breeding		Migration	Low
Green-winged Teal	<i>Anas crecca</i>	Sensitive				Breeding		Breeding/Foraging	High
Canvasback	<i>Aythya valisineria</i>	Secure				Breeding			
Redhead	<i>Aythya americana</i>	Secure				Breeding			
Ring-necked Duck	<i>Aythya collaris</i>	Secure				Breeding			
Bufflehead	<i>Bucephala albeola</i>	Secure				Breeding			
Common Goldeneye	<i>Bucephala clangula</i>	Secure				Breeding			
Barrow's Goldeneye	<i>Bucephala islandica</i>	Secure				Breeding			
Ruddy Duck	<i>Oxyura jamaicensis</i>	Secure				Breeding			
Gray Partridge	<i>Perdix perdix</i>	Exotic/Alien				Resident			
Ruffed Grouse	<i>Bonasa umbellus</i>	Secure				Resident			
Pied-billed Grebe	<i>Podilymbus podiceps</i>	Sensitive				Breeding		Breeding/Foraging	Low

	Scientific Name	Provincial Status (General Status of AB Wild Species)	Wildlife Act Designation and New Species Assessed by ESCC (see Comments)	COSEWIC Designation	SARA Designation	EDMONTON AREA (within 100 km)	Observed During Surveys in 2007	Potential Habitat Use for Special Status Species	Likelihood of Special Status Species Occurring in Local Project Area
Horned Grebe	<i>Podiceps auritus</i>	Sensitive				Breeding		Breeding/Foraging	Low
Eared Grebe	<i>Podiceps nigricollis</i>	Secure				Breeding			
American Bittern	<i>Botaurus lentiginosus</i>	Sensitive				Breeding		Breeding/Foraging	Low
Great Blue Heron	<i>Ardea herodias</i>	Sensitive				Breeding		Foraging	Moderate
Osprey	<i>Pandion haliaetus</i>	Sensitive				Breeding		Breeding/Foraging	Moderate
Bald Eagle	<i>Haliaetus leucocephalus</i>	Sensitive		Not at Risk		Breeding		Breeding/Foraging	Moderate
Northern Harrier	<i>Circus cyaneus</i>	Sensitive		Not at Risk		Breeding		Breeding/Foraging	Moderate
Sharp-shinned Hawk	<i>Accipiter striatus</i>	Secure		Not at Risk		Breeding			
Cooper's Hawk	<i>Accipiter cooperii</i>	Secure		Not at Risk		Breeding			
Northern Goshawk	<i>Accipiter gentilis atricapillus</i>	Sensitive		Not at Risk		Resident		Breeding/Foraging	Moderate
Broad-winged Hawk	<i>Buteo platypterus</i>	Sensitive				Breeding		Foraging	Low
Swainson's Hawk	<i>Buteo swainsoni</i>	Sensitive				Breeding		Breeding/Foraging	Low
Red-tailed Hawk	<i>Buteo jamaicensis</i>	Secure		Not at Risk		Breeding			
Rough-legged Hawk	<i>Buteo lagopus</i>	Secure		Not at Risk		Migrant			
American Kestrel	<i>Falco sparverius</i>	Secure				Breeding			
Merlin	<i>Falco columbarius</i>	Secure		Not at Risk		Breeding			
Gyr Falcon	<i>Falco rusticolus</i>	Secure		Not at Risk		Winter			
Peregrine Falcon	<i>Falco peregrinus anatum</i>	At Risk	Threatened	Special Concern		Breeding		Foraging	Moderate
Yellow Rail	<i>Coturnicops noveboracensis</i>	Undetermined		Special Concern	Schedule 1 (Special Concern)	Breeding			
Sora	<i>Porzana carolina</i>	Sensitive				Breeding		Breeding/Foraging	High
American Coot	<i>Fulica americana</i>	Secure		Not at Risk		Breeding			
Killdeer	<i>Charadrius vociferous</i>	Secure				Breeding			
Spotted Sandpiper	<i>Actitis macularia</i>	Secure				Breeding			
Solitary Sandpiper	<i>Tringa solitaria</i>	Secure				Breeding			
Greater Yellowlegs	<i>Tringa melanoleuca</i>	Secure				Breeding			
Willet	<i>Catoptrophorus semipalmatus</i>	Secure				Breeding			

	Scientific Name	Provincial Status (General Status of AB Wild Species)	Wildlife Act Designation and New Species Assessed by ESCC (see Comments)	COSEWIC Designation	SARA Designation	EDMONTON AREA (within 100 km)	Observed During Surveys in 2007	Potential Habitat Use for Special Status Species	Likelihood of Special Status Species Occurring in Local Project Area
Lesser Yellowlegs	<i>Tringa flavipes</i>	Secure				Breeding			
Wilson's Snipe	<i>Gallinago delicata</i>	Secure				Breeding			
Wilson's Phalarope	<i>Phalaropus tricolor</i>	Secure				Breeding			
Rock Pigeon	<i>Columba livia</i>	Exotic/Alien				Resident			
Mourning Dove	<i>Zenaida macroura</i>	Secure				Breeding			
Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	Undetermined				Breeding			
Great Horned Owl	<i>Bubo virginianus</i>	Secure				Resident			
Northern Hawk Owl	<i>Surnia ulula</i>	Sensitive		Not at Risk		Winter		Foraging	Low
Barred Owl	<i>Strix varia</i>	Sensitive	Special Concern			Resident		Breeding/Foraging	High
Long-eared Owl	<i>Asio otus</i>	Secure				Breeding			
Short-eared Owl	<i>Asio flammeus</i>	May be At Risk		Special Concern	Schedule 3 (Special Concern)	Breeding		Breeding/Foraging	Low
Boreal Owl	<i>Aegolius funereus</i>	Secure		Not at Risk		Resident			
Northern Saw-whet Owl	<i>Aegolius acadicus</i>	Secure				Resident			
Ruby-throated Hummingbird	<i>Archilochus colubris</i>	Secure				Breeding			
Belted Kingfisher	<i>Ceryle alcyon</i>	Secure				Breeding			
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	Secure				Breeding			
Downy Woodpecker	<i>Picoides pubescens</i>	Secure				Resident			
Hairy Woodpecker	<i>Picoides villosus</i>	Secure				Resident			
Northern Flicker	<i>Colaptes auratus</i>	Secure				Breeding			
Pileated Woodpecker	<i>Dryocopus pileatus</i>	Sensitive				Resident		Breeding/Foraging	High
Western Wood-pewee	<i>Contopus sordidulus</i>	Secure				Breeding			
Yellow-bellied Flycatcher	<i>Empidonax flaviventris</i>	Undetermined				Migrant			
Alder Flycatcher	<i>Empidonax alnorum</i>	Secure				Breeding			
Least Flycatcher	<i>Empidonax minimus</i>	Sensitive				Breeding	√	Breeding/Foraging	High
Eastern Phoebe	<i>Sayornis phoebe</i>	Sensitive				Breeding		Breeding/Foraging	High
Great-crested Flycatcher	<i>Myiarchus crinitus</i>	Sensitive				Breeding		Breeding/Foraging	Low

	Scientific Name	Provincial Status (General Status of AB Wild Species)	Wildlife Act Designation and New Species Assessed by ESCC (see Comments)	COSEWIC Designation	SARA Designation	EDMONTON AREA (within 100 km)	Observed During Surveys in 2007	Potential Habitat Use for Special Status Species	Likelihood of Special Status Species Occurring in Local Project Area
Eastern Kingbird	<i>Tyrannus tyrannus</i>	Secure				Breeding			
Northern Shrike	<i>Lanius exubitor</i>	Secure				Winter			
Blue-headed Vireo/ Solitary Vireo	<i>Vireo solitarius</i>	Secure				Breeding			
Warbling Vireo	<i>Vireo gilvus</i>	Secure				Breeding			
Philadelphia Vireo	<i>Vireo philadelphicus</i>	Secure				Breeding			
Red-eyed Vireo	<i>Vireo olivaceus</i>	Secure				Breeding			
Blue Jay	<i>Cyanocitta cristata</i>	Secure				Resident			
Black-billed Magpie	<i>Pica hudsonia</i>	Secure				Resident			
American Crow	<i>Corvus brachyrhynchos</i>	Secure				Resident			
Common Raven	<i>Corvus corax</i>	Secure				Resident			
Purple Martin	<i>Progne subis</i>	Sensitive				Breeding		Breeding/Foraging	Low
Tree Swallow	<i>Tachycineta bicolor</i>	Secure				Breeding			
Barn Swallow	<i>Hirundo rustica</i>	Sensitive		HP Candidate		Breeding		Breeding/Foraging	Moderate
Black-capped Chickadee	<i>Poecile atricapillus</i>	Secure				Resident			
Boreal Chickadee	<i>Poecile hudsonica</i>	Secure				Resident			
Red-breasted Nuthatch	<i>Sitta canadensis</i>	Secure				Resident			
White-breasted Nuthatch	<i>Sitta carolinensis</i>	Secure				Resident			
House Wren	<i>Troglodytes aedon</i>	Secure				Breeding			
Marsh Wren	<i>Cistothorus palustris</i>	Secure				Breeding			
Mountain Bluebird	<i>Sialia currucoides</i>	Secure				Breeding			
Veery	<i>Catharus fuscescens</i>	Secure				Breeding			
Gray-cheeked Thrush	<i>Catharus minimus</i>	Undetermined				Migrant			
Swainson's Thrush	<i>Catharus ustulatus</i>	Secure				Breeding			
American Robin	<i>Turdus migratorius</i>	Secure				Breeding			
Gray Catbird	<i>Dumetella carolinensis</i>	Secure				Breeding			
European Starling	<i>Sturnus vulgaris</i>	Exotic/Alien				Breeding			

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American Pipit	<i>Anthus rubescens</i>	Secure				Migrant			
Bohemian Waxwing	<i>Bombycilla garrulus</i>	Secure				Winter			
Cedar Waxwing	<i>Bombycilla cedrorum</i>	Secure				Breeding			
Tennessee Warbler	<i>Vermivora peregrina</i>	Secure				Breeding			
Orange-crowned Warbler	<i>Vermivora celata</i>	Secure				Breeding			
Yellow Warbler	<i>Dendroica petechia</i>	Secure				Breeding			
Magnolia Warbler	<i>Dendroica magnolia</i>	Secure				Breeding			
Yellow-rumped Warbler	<i>Dendroica coronata</i>	Secure				Breeding			
Black-Throated Green Warbler	<i>Dendroica virens</i>	Sensitive	Special Concern			Migrant		Migration	Low
Blackpoll Warbler	<i>Dendroica striata</i>	Secure		LP Candidate		Migrant			
Black-and-white Warbler	<i>Mniotilta varia</i>	Secure				Migrant			
American Redstart	<i>Setophaga ruticilla</i>	Secure				Breeding			
Ovenbird	<i>Seiurus aurocapillus</i>	Secure				Breeding			
Northern Waterthrush	<i>Seiurus noveboracensis</i>	Secure				Migrant			
Connecticut Warbler	<i>Oporornis agilis</i>	Secure				Migrant			
Mourning Warbler	<i>Oporornis philadelphia</i>	Secure				Migrant			
Common Yellowthroat	<i>Geothypis trichas</i>	Sensitive				Breeding		Breeding/Foraging	Moderate
Wilson's Warbler	<i>Wilsonia pusilla</i>	Secure				Migrant			
Canada Warbler	<i>Wilsonia canadensis</i>	Sensitive				Migrant		Migration	Low
Western Tanager	<i>Piranga ludoviciana</i>	Sensitive				Breeding	√	Breeding/Foraging	High
American Tree Sparrow	<i>Spizella arborea</i>	Secure				Migrant			
Chipping Sparrow	<i>Spizella passerina</i>	Secure				Breeding			
Clay-colored Sparrow	<i>Spizella pallida</i>	Secure				Breeding			
Vesper Sparrow	<i>Pooecetes gramineus</i>	Secure				Breeding			
Savannah Sparrow	<i>Passerculus sandwichensis</i>	Secure				Breeding			

	Scientific Name	Provincial Status (General Status of AB Wild Species)	Wildlife Act Designation and New Species Assessed by ESCC (see Comments)	COSEWIC Designation	SARA Designation	EDMONTON AREA (within 100 km)	Observed During Surveys in 2007	Potential Habitat Use for Special Status Species	Likelihood of Special Status Species Occurring in Local Project Area
Le Conte's Sparrow	<i>Ammodramus leconteii</i>	Secure				Breeding			
Song Sparrow	<i>Melospiza melodia</i>	Secure				Breeding			
Lincoln's Sparrow	<i>Melospiza lincolni</i>	Secure				Breeding			
Swamp Sparrow	<i>Melospiza georgiana</i>	Secure				Breeding			
White-throated Sparrow	<i>Zonotrichia albicollis</i>	Secure				Breeding			
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	Secure				Migrant			
Dark-eyed Junco	<i>Junco hyemalis</i>	Secure				Breeding			
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	Secure				Breeding			
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	Secure				Breeding			
Yellow-headed Blackbird	<i>Xanthocephalus xanthocephalus</i>	Secure				Breeding			
Rusty Blackbird	<i>Euphagus carolinus</i>	Sensitive		Special Concern		Breeding		Breeding/Foraging	Moderate
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>	Secure				Breeding			
Common Grackle	<i>Quiscalus quiscula</i>	Secure				Breeding			
Brown-headed Cowbird	<i>Molothrus ater</i>	Secure				Breeding			
Baltimore Oriole	<i>Icterus galbula</i>	Sensitive				Breeding	√	Breeding/Foraging	High
Purple Finch	<i>Carpodacus purpureus</i>	Secure				Breeding			
House Finch	<i>Carpodacus mexicanus</i>	Secure				Resident			
Common Redpoll	<i>Carduelis flammea</i>	Secure				Winter			
Hoary Redpoll	<i>Carduelis hornemanni</i>	Secure				Winter			
Pine Siskin	<i>Carduelis pinus</i>	Secure				Resident			
American Goldfinch	<i>Carduelis tristis</i>	Secure				Breeding			
Evening Grosbeak	<i>Coccothraustes vespertinus</i>	Secure				Resident			
House Sparrow	<i>Passer domesticus</i>	Exotic/Alien				Resident			
Masked Shrew	<i>Sorex cinereus</i>	Secure				Resident			
Hayden's Shrew/Prairie Shrew	<i>Sorex haydeni</i>	Secure				Resident			
Dusky Shrew	<i>Sorex monticolus</i>	Secure				Resident			

	Scientific Name	Provincial Status (General Status of AB Wild Species)	Wildlife Act Designation and New Species Assessed by ESCC (see Comments)	COSEWIC Designation	SARA Designation	EDMONTON AREA (within 100 km)	Observed During Surveys in 2007	Potential Habitat Use for Special Status Species	Likelihood of Special Status Species Occurring in Local Project Area
Water Shrew	<i>Sorex palustris</i>	Secure				Resident			
Arctic Shrew	<i>Sorex arcticus</i>	Secure				Resident			
Pygmy Shrew	<i>Sorex hoyi</i>	Secure				Resident			
Little Brown Bat	<i>Myotis lucifugus</i>	Secure				Resident			
Northern Bat	<i>Myotis septentrionalis</i>	May be At Risk				Resident		Breeding/Foraging	Moderate
Silver-haired Bat	<i>Lasionycteris noctivagans</i>	Sensitive				Resident		Breeding/Foraging	Moderate
Big Brown Bat	<i>Eptesicus fuscus</i>	Secure				Resident			
Hoary Bat	<i>Lasiurus cinereus</i>	Sensitive				Resident		Foraging	Moderate
Snowshoe Hare	<i>Lepus americanus</i>	Secure				Resident			
White-tailed Jack Rabbit	<i>Lepus townsendii</i>	Secure				Resident			
Least Chipmunk	<i>Tamias minimus</i>	Secure				Resident			
Woodchuck	<i>Marmota monax</i>	Secure				Resident			
Thirteen-lined Ground Squirrel	<i>Spermophilus tridecemlineatus</i>	Undetermined				Resident			
Franklin's Ground Squirrel	<i>Spermophilus franklinii</i>	Undetermined				Resident			
Red Squirrel	<i>Tamiasciurus hudsonicus</i>	Secure				Resident			
Northern Flying Squirrel	<i>Glaucomys sabrinus</i>	Secure				Resident			
Northern Pocket Gopher	<i>Thomomys talpoides</i>	Secure				Resident			
American Beaver	<i>Castor canadensis</i>	Secure				Resident			
Deer Mouse	<i>Peromyscus maniculatus</i>	Secure				Resident			
Southern Red-backed Vole	<i>Clethrionomys gapperi</i>	Secure				Resident			
Meadow Vole	<i>Microtus pennsylvanicus</i>	Secure				Resident			
Prairie Vole	<i>Microtus ochrogaster</i>	Secure				Resident			
Muskrat	<i>Ondatra zibethicus</i>	Secure				Resident			
House Mouse	<i>Mus musculus</i>	Exotic/Alien				Resident			
Meadow Jumping Mouse	<i>Zapus hudsonius</i>	Secure				Resident			
Western Jumping Mouse	<i>Zapus princeps</i>	Secure				Resident			

	Scientific Name	Provincial Status (General Status of AB Wild Species)	Wildlife Act Designation and New Species Assessed by ESCC (see Comments)	COSEWIC Designation	SARA Designation	EDMONTON AREA (within 100 km)	Observed During Surveys in 2007	Potential Habitat Use for Special Status Species	Likelihood of Special Status Species Occurring in Local Project Area
Common Porcupine	<i>Erethizon dorsatum</i>	Secure				Resident			
Coyote	<i>Canis latrans</i>	Secure				Resident			
Red Fox	<i>Vulpes vulpes</i>	Secure				Resident			
Long-tailed Weasel	<i>Mustela frenata</i>	May be At Risk		Not at Risk		Resident		Breeding/Foraging	Moderate
Ermine	<i>Mustela erminea</i>	Secure				Resident			
Least Weasel	<i>Mustela nivalis</i>	Secure				Resident			
Mink	<i>Mustela vison</i>	Secure				Resident			
Striped Skunk	<i>Mephitis mephitis</i>	Secure				Resident			
Mountain Lion/Cougar	<i>Felis concolor</i>	Secure				Resident			
Moose	<i>Alces alces</i>	Secure				Resident			
Mule Deer	<i>Odocoileus hemionus</i>	Secure				Resident			
White-tailed Deer	<i>Odocoileus virginianus</i>	Secure				Resident			

Appendix I. Fisheries Assessment of the NSR Backwater Channel

Appendix J. Noise Impact Assessment

Appendix K. Traffic Assessment

Appendix L. Historical Resources