



APPENDIX
Environmental Overview

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**To:** Strathcona County**Date:** May 1, 2019**Attention:** Tony Maghee, P. Eng**Project No.:** 14985**Cc:** Shelly Moulds, P. Eng, ISL Engineering**Reference:** Range Road 231 and 232, Desktop Environmental Review**From:** Brent Piche, P. Biol, ISL Engineering and Land Services

1.0 Introduction

Range Roads 231 and 232 provide vital north-south access to the county residential and rural areas between Highway 628 and Wye Road (Highway 630). These roads connect local residents from approximately 3,500 parcels of land to amenities in Sherwood Park, Alberta and to the provincial highway network. Both of these roads require improvements to better serve the traffic volumes this area requires.

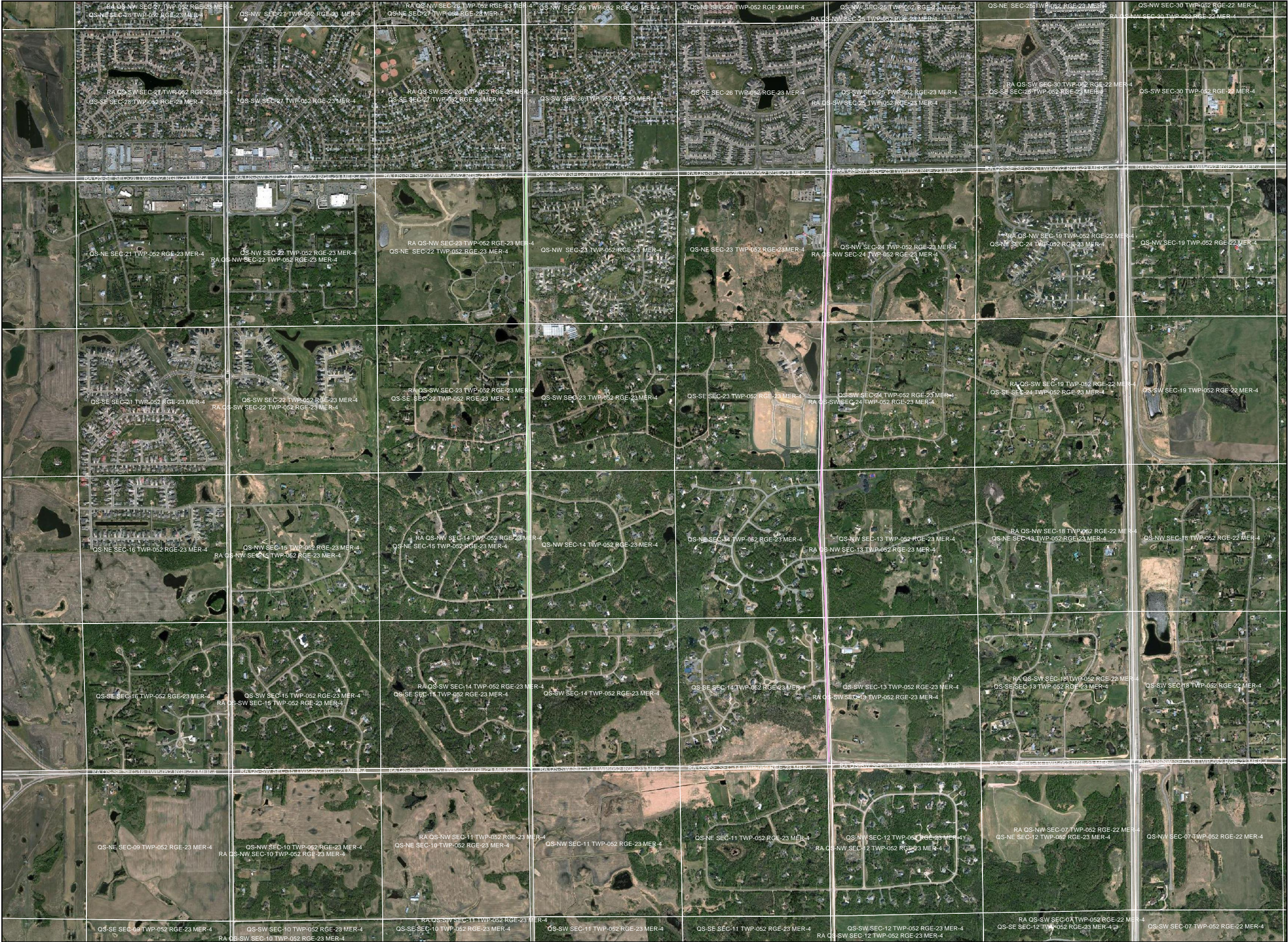
1.1 Project Footprint

The Project Footprint includes Range Roads 231 and 232, including 10 m on either side of each road (Figure 1.1). RR 231 is bordered to the west by quarter sections NE, SE-23-052-23-W4M and NE, SE-14-052-23-W4M, and to the east by NW, SW-24-052-23-W4M and NW, SW-13-052-23-W4M. NW, SW-23-052-23-W4M and NW, SW-14-052-23-W4M border RR 232 to the west, and quarter sections NE, SE-22-052-23-W4M, and NE, SE-15-052-23-W4M to the east.

1.2 Study Area

ISL Engineering and Land Services Ltd. (ISL) was contracted by Strathcona County to conduct an environmental desktop review for the Study Area (within 5 km of the Project Footprint; Figure 1.2). Both RR 231 and RR 232 are adjacent to multiple wetlands. Road improvements may require field studies to confirm wetland locations.

This desktop-level review identifies sensitive biological and physical features within or adjacent to the Study Area that have the potential to be impacted by the Project. When the Project enters preliminary and detailed design, it is recommended that this document is referred to direct future regulatory studies.



Legend

Range Road 231

Range Road 232

Coordinate System:
CANA83-3TM114

1:20,000

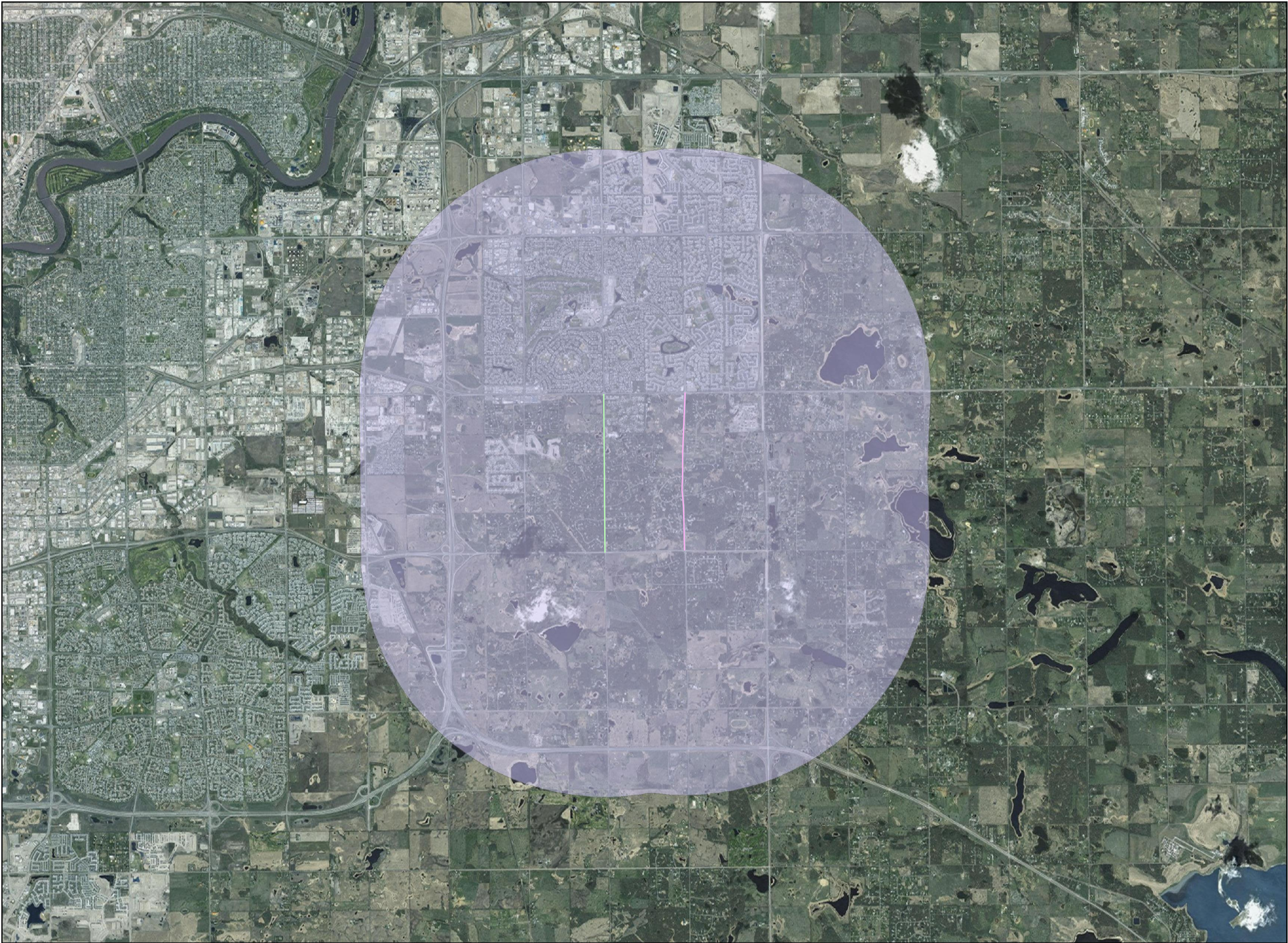
Meters

0200400800

PROJECT OVERVIEW



Date: 10/16/2017 Document: Z:\149001\4985_RR_231_232_Functional_Plan\01_Design\10_By_Discipline\ENV\Historic_Photos\StudyArea5km.mxd



Legend

- Range Road 231
- Range Road 232
- Study Area (5 km)

Coordinate System:
CANA83-3TM114
1:75,000

0 750 1,500 3,000 Meters

STUDY AREA
(5 KM BUFFER)



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2.0 Desktop Review

This review includes the following components:

- Landscape Analysis Tool Report (Attachment A)
- Report of the Alberta Merged Wetland Inventory (AMWI) (Figure 2.3.5.1)
- Historical aerial photographs for wetland analysis (Attachment B)
- Map of potential water features (Figure 2.3.5.2)
- Precipitation analysis (Table 2.1)
- Table of common central parkland vegetation species (Table 2.2)
- List of rare ecological communities and rare plant species potentially occurring within the Study Area (Tables 2.3 and 2.4, respectively)
- Maps of rare plants and rare ecological communities nearby (Figure 5)
- List of previously identified fish and wildlife within the Study Area (Table 2.5)
- Fisheries and Wildlife Management Information System (FWMIS) database search results (Attachment C);
- MDP and ASP reviews.

2.1 Ecological Context

The Study Area is located in the Central Parkland Subregion of the Parkland Natural Region. The Central Parkland Subregion is the most densely populated region in Alberta with Edmonton, Red Deer, and Calgary all lying within its boundaries (Natural Regions Committee [NRC] 2006). The Parkland Natural Region accounts for approximately 9% of the province (60,747 km²) and the Central Parkland Subregion occupies approximately 88% of the Parkland Natural Region (53,706 km²; NRC 2006).

Native vegetation covers approximately 5% of the Subregion as it has been intensely cultivated for over a century. It is dominated by plains rough fescue (*Festuca hallii*), with scattered aspen groves in the south, increasing in density towards the north (NRC 2006).

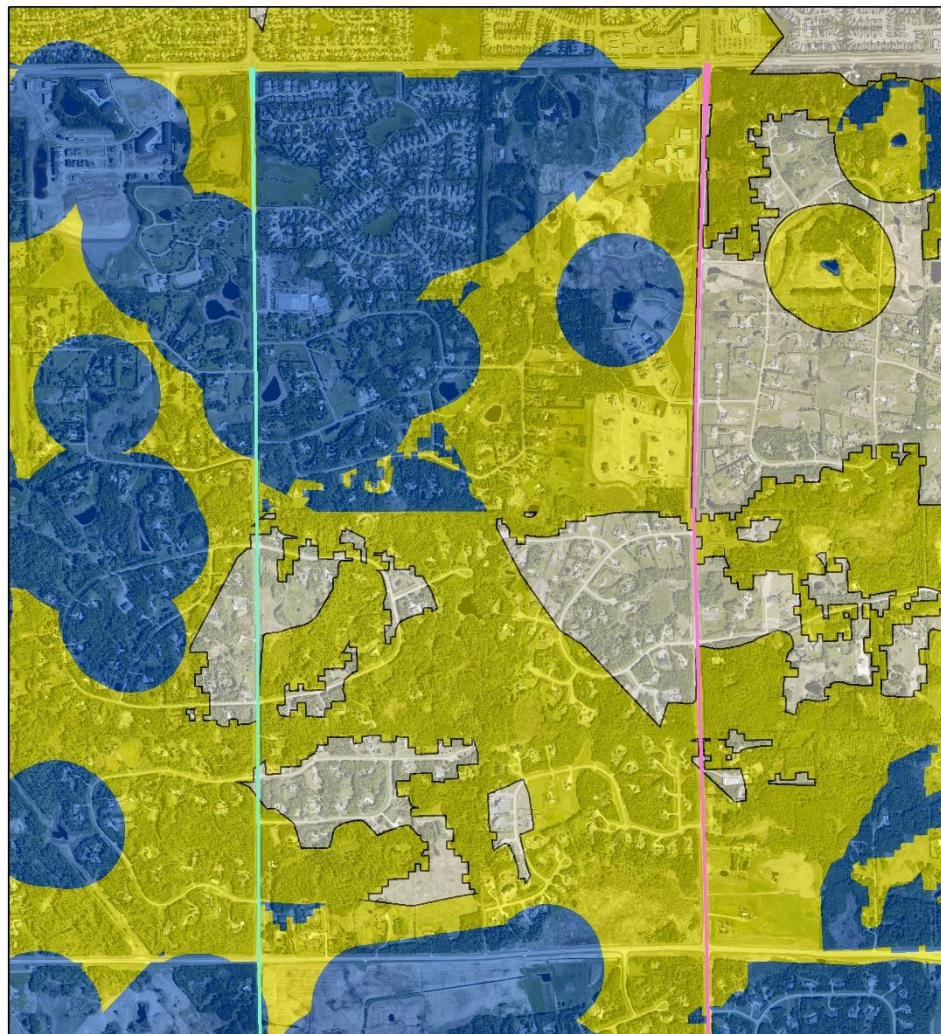
Wetlands cover approximately 10% of the Subregion, with other waterbodies covering 2%. Major watercourses include the Red Deer, Battle, and North Saskatchewan Rivers (NRC 2006).

2.2 LAT Report

The Landscape Analysis Tool (LAT) report results show an intersection of the Project footprint with Other Sensitive and Endangered Species; Sensitive Raptor Range; and Sharp-tailed Grouse Survey (Attachment A).

2.3 Priority Environmental Management Areas

Environmental sensitivity was examined in a 2005 report by Spencer Environmental Management Services Ltd. (Spencer 2005). Environmental sensitivity is built on an additive model based on resources present in an area (e.g. protected areas, wetlands, soils, rare species, groundwater etc.). Areas of high environmental sensitivity will have more than 3 natural resources, medium will have 1 to 2 and low sensitivity will have none.



Priority Environment Management Area

Legend

— RNG RD 232

— RNG RD 231

Priority Environment Management Area

Description

High PEMA

Medium PEMA

Low PEMA



Figure 2.3.1: Priority Environment Management Area (Provided by Strathcona County, Assessment of Environmental Sensitivity and Sustainability in Support of the Strathcona County MDP Review (2005))

2.4 Waterbodies

2.3.1 Watershed

The Project footprint is located within the North Saskatchewan Watershed and the Beaverhill Sub Watershed. The largest tributaries to the North Saskatchewan River include the Braseau, Nordegg, Ram, Clearwater, Sturgeon, and Vermillion Rivers. The river basin begins in the Rocky Mountains (*i.e.*, icefields of Banff and Jasper National Parks) and flows east through the prairies to the Alberta – Saskatchewan border. The North Saskatchewan River Basin covers approximately 80,000 km² of Alberta (Alberta Environment and Parks [AEP] 2014).

The Beaverhill Subwatershed contains numerous small wetlands, ponds and watercourses that flow towards the North Saskatchewan River (North Saskatchewan Watershed Alliance, 2019). The Project occurs on the eastern portion of the watershed, just to the north of the Fulton Creek headwaters. Fulton Creek is a major tributary of the North Saskatchewan River, and flows through the City of Edmonton providing numerous recreational and natural benefits. Goldbar Creek, which the Project crosses, flows through the City of Edmonton, before it enters the North Saskatchewan River.



2.3.2 Relative Wetland Value Assessment Unit

With respect to wetland replacement pursuant to the Wetland Policy, the Study Area is located within the Relative Wetland Value Assessment Unit (RVWU) 2, where in lieu rates are \$19,400/ha (Government of Alberta 2017).

2.3.3 Alberta Merged Wetland Inventory

The Alberta Merged Wetland Inventory (AMWI) is a merged dataset containing a number of wetland delineation products of varying resolution, age, and accuracy. It is not intended to replace fieldwork. It can be used to inform proponents of the number, size, and location of potential wetlands, as well as the potential wetland classification. However, an assessment of historical photographs and satellite imagery by a trained wetland specialist results in a better predictor of wetland presence. The AMWI for the Study Area is provided in Figure 2.3.5.1.

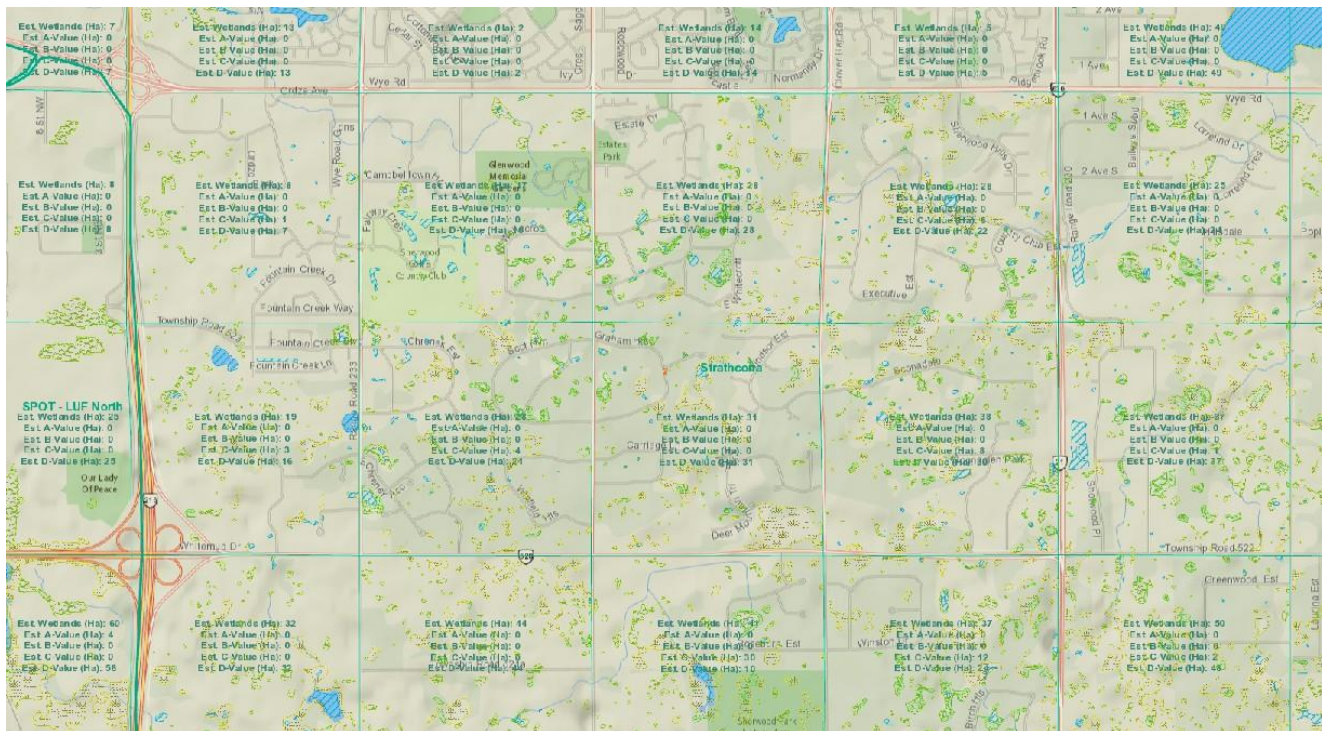
2.3.4 Historical Imagery

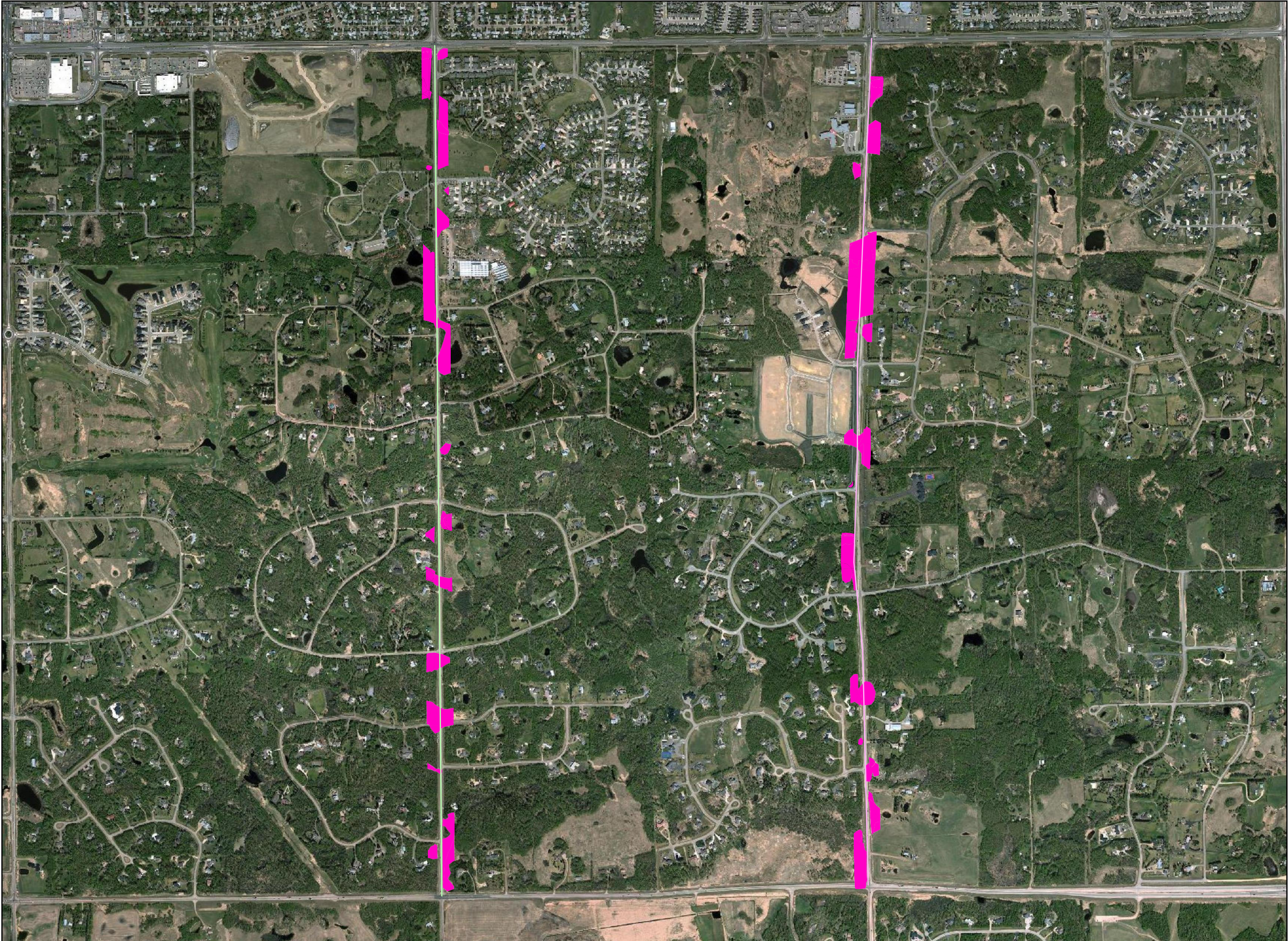
Documentation of historical imagery (Attachment B) and a precipitation analysis was completed pursuant to the Alberta Wetland Identification and Delineation Directive (Government of Alberta 2015). Precipitation data is provided in Table 2.1. The mean precipitation is 443.64 mm (\pm 9.57 mm standard error of the mean). The highest yearly-accumulated precipitation recorded was in 1994 at 606.07 mm and the lowest in 2002 at 258.62 mm (Alberta Agriculture and Forestry 2015). The results of the wetland delineation are provided in Figure 2.3.5.2.

2.3.5 Wetland Permanence

Some wetlands display permanent characteristics and are likely eligible for Crown ownership pursuant to the Guide for Assessing Permanence of Wetland Basins (AEP 2016). All reasonably permanent wetlands must be submitted to the Water Boundary group for determination of Crown ownership through an Assessment of Permanence for Wetland Basins. This process can take six to twelve months.

Figure 2.3.5.1: Alberta Merged Wetland Inventory





Legend

- Range Road 231
- Range Road 232
- Potential Wetlands

Coordinate System:
CANA83-3TM114
1:14,000

0 140 280 560 Meters

POTENTIAL WETLAND
LOCATIONS



Table 2.1: Documentation of Historic Imagery used for Wetland Delineation

Air Photo Date ^{1,2}	Air Photo ID	Scale	Annual Precipitation ³	Monthly Precipitation ³	Daily Precipitation ³
May-2011	G1106018; 135, 137, 178, 180	1:20,000	Below average (~33 mm below average)	Below average (13.01 mm)	Data unavailable
1997	AS 4750, AS 4755; 14, 16	1:20,000	Above average (85 mm above average)	Data unavailable	Data unavailable
May-1993	AS 4385; 50	1:20,000	Within average (~9 mm below average)	Above average (50.53 mm)	Data unavailable
28-Mar-1989	AS 3840; 164, 166, 148, 150	1:25,000	Above average (~44 mm above average)	Below average (7.74 mm; 4.72 mm in the two weeks prior)	4.72 mm
Sept-1982	AS 2648; 204	1:30,000	Above average (~26 mm above average)	Below average (30.69 mm)	Data unavailable
Sept-1976	AS 1546; 139, 140	1:20,000	Within average (~4 mm below average)	Below average (32.51 mm)	Data unavailable
June-1967	AS 0979; 121,122	1:31,680	Below average (~58 mm below average)	Below average (48.06 mm)	Data unavailable

Notes:

- 1 Where collection date is available.
- 2 All aerial imagery sourced from AEP's Aerial Photo Record System (APRS) (AEP 2015b) and are all black and white. See Appendix C for historic aerial photographs.
- 3 All historical precipitation data from Alberta Agriculture and Forestry 2015a,b.
- 4 W = Water present/inundated.
D = Dry
VC = Vegetated and Consistent with wetland class.
VI = Vegetated and Indistinguishable from surrounding uplands.
- 5 Yes = estimated permanent waterbody, i.e., a wetland regulated under the Water Act and Crown claimable under the Public Lands Act.
No = estimated not permanent, i.e., a wetland regulated under the Water Act yet not subject to Public Lands Act claim.



2.3.6 Watercourses

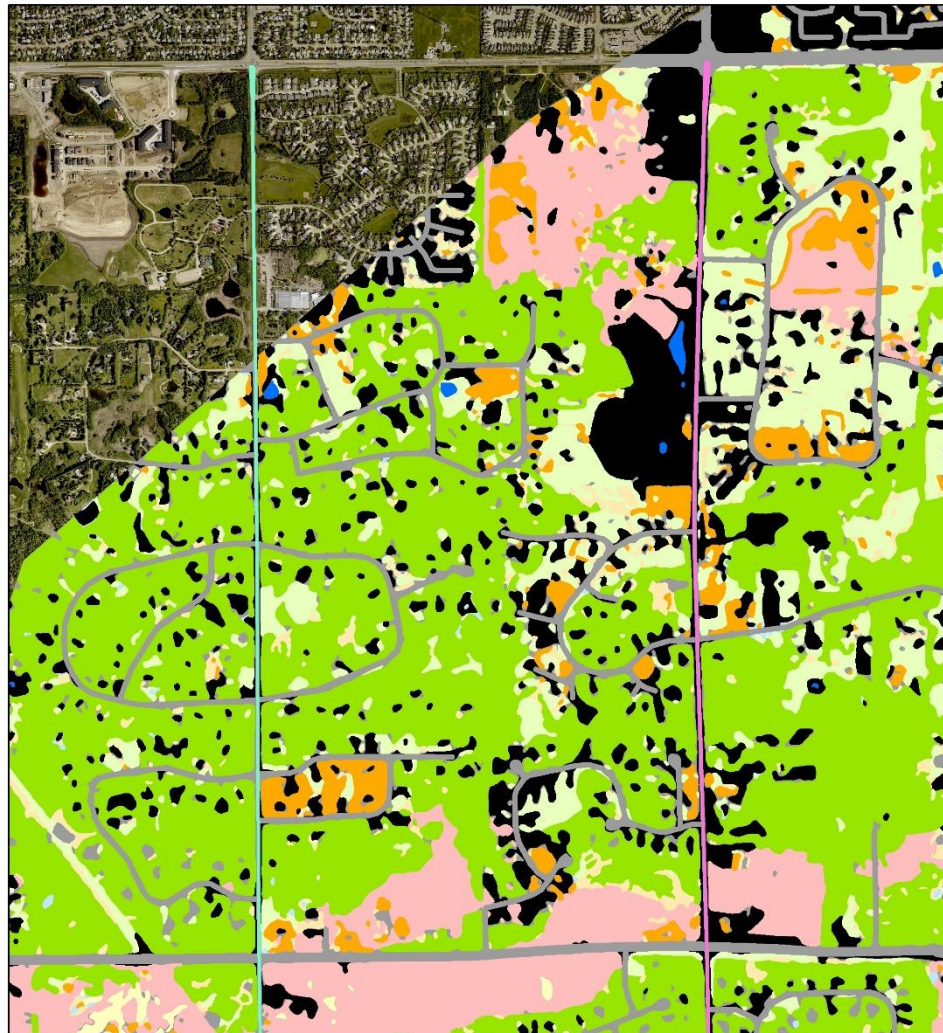
Range Road 232 crosses Goldbar Creek, according to FWMIS mapping (see Figure 2.3.5.2). Goldbar Creek at the crossing site is an Unmapped Class D waterbody, as it flows into the mapped section of Goldbar Creek. Being a Class D waterbody, no Restricted Activity Period is noted. Previous fisheries assessments located numerous non-sportfish species, including brook stickleback, fathead minnow, lake chub and spottail shiners in the watercourse.

2.4 Vegetation

The most commonly occurring vegetation found throughout the Central Parkland Subregion is presented in Table 2.2. It is likely that many of these species occur within the Study Area. Land Cover information is provided in Figure 2.4.1, The Priority Landscape Ecology Assessment is provided in Figure 2.4.2.

Table 2.2: Vegetation Typically Found within the Central Parkland Subregion

Common Name	Scientific Name
Porcupine grass	<i>Miscanthus sinensis</i>
June grass	<i>Koeleria macrantha</i>
Needle-and-thread	<i>Hesperostipa comata</i>
Blue grama	<i>Bouteloua gracilis</i>
Plains rough fescue	<i>Festuca hallii</i>
Slender wheat grass	<i>Elymus trachycaulus</i>
Northern wheat grass	<i>Agropyron cristatum</i>
Prairie crocus	<i>Anemone patens</i>
Prairie sagewort	<i>Artemisia frigida</i>
Wild blue flax	<i>Linum lewisii</i>
Northern bedstraw	<i>Galium boreale</i>
Three-flowered avens	<i>Geum triflorum</i>
Bearberry	<i>Arctostaphylos uva-ursi</i>
Beaked hazelnut	<i>Corylus cornuta</i>
Bunchberry	<i>Cornus canadensis</i>
Wild lily-of-the-valley	<i>Maianthemum canadense</i>
Wild sarsaparilla	<i>Aralia nudicaulis</i>
Prickly rose	<i>Rosa acicularis</i>
Buckbrush	<i>Ceanothus cuneatus</i>
Silverberry	<i>Elaeagnus commutata</i>
Chokecherry	<i>Prunus virginiana</i>
Saskatoon berry	<i>Amelanchier alnifolia</i>
Labrador tea	<i>Rhododendron groenlandicum</i>
Aspen	<i>Populus tremuloides</i>
Jack pine	<i>Pinus banksiana</i>
White spruce	<i>Picea glauca</i>
Black spruce	<i>Picea mariana</i>



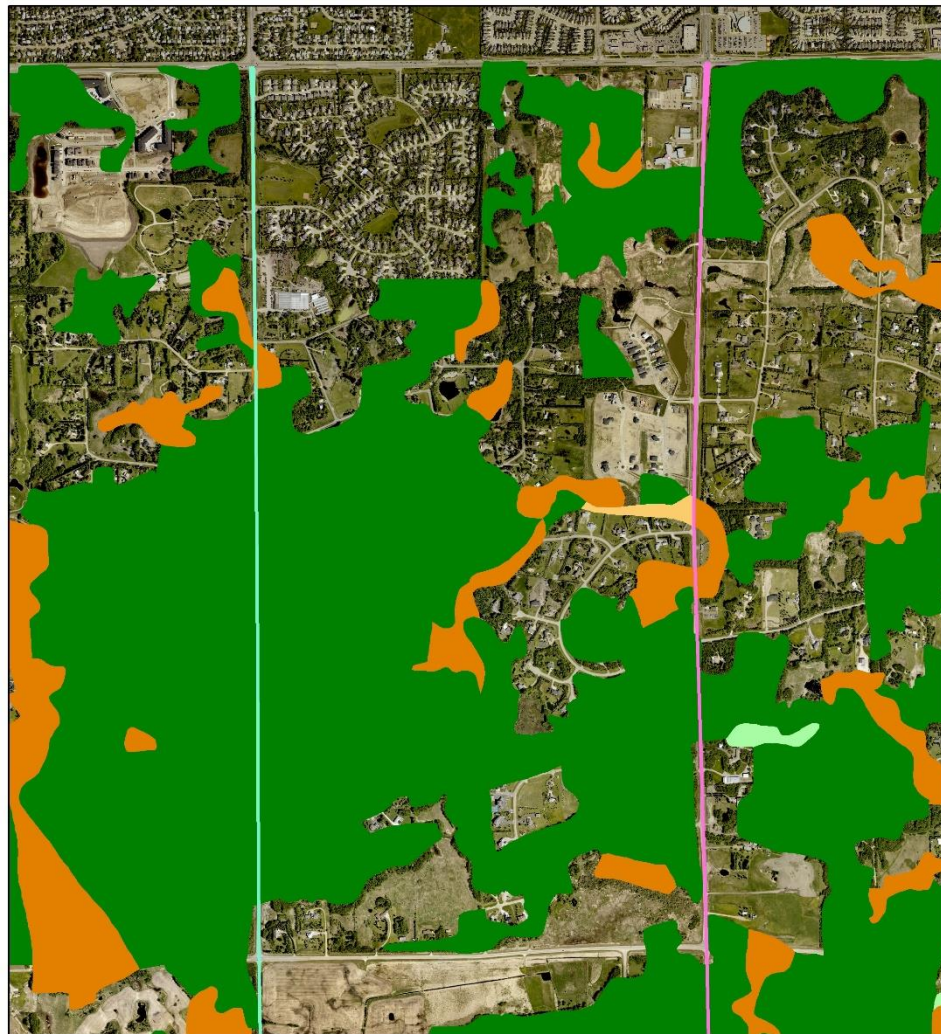
BHI Land Cover

Legend

- RNG RD 232
- RNG RD 231
- Bare
- Coniferous Trees
- Crops
- Deciduous Trees
- Developed
- Ephemeral Water Body-Dry
- Ephemeral Water Body-Wet
- Forage
- Grasslands
- Shallow Open Water
- Shrub
- Trees



Figure 2.4.1: Land Cover (Provided by Strathcona County, from the Beaver Hills Initiative [BHI])



Priority Landscape Ecology Assessment

Legend

- RNG RD 232
- RNG RD 231
- Lake Wildlife Habitat
- Lake Restoration
- Upland Wildlife Habitat
- Upland Restoration
- Wetland Wildlife Habitat
- Wetland Restoration



Figure 2.4.2: Priority Landscape Ecology Assessment (Provided by Strathcona County, from the 1997 Prioritized Landscape Ecology Assessment)

2.4.1 Elements of Concern

An ACIMS database search returned no rare vascular plant occurrences within the Study Area (ACIMS 2015a, Figure 2.4.1). ACIMS element occurrence data was reviewed to identify known rare plant and rare ecological community occurrences in Central Parkland Natural Subregion. Rare ecological communities and rare vascular plant species known to occur within this Natural Subregion are presented in Tables 2.3 and 2.4, respectively. There are no COSEWIC (Committee on the Status of Endangered Wildlife in Canada) or SARA (*Species at Risk Act*) listed species expected to be found in the central parkland.



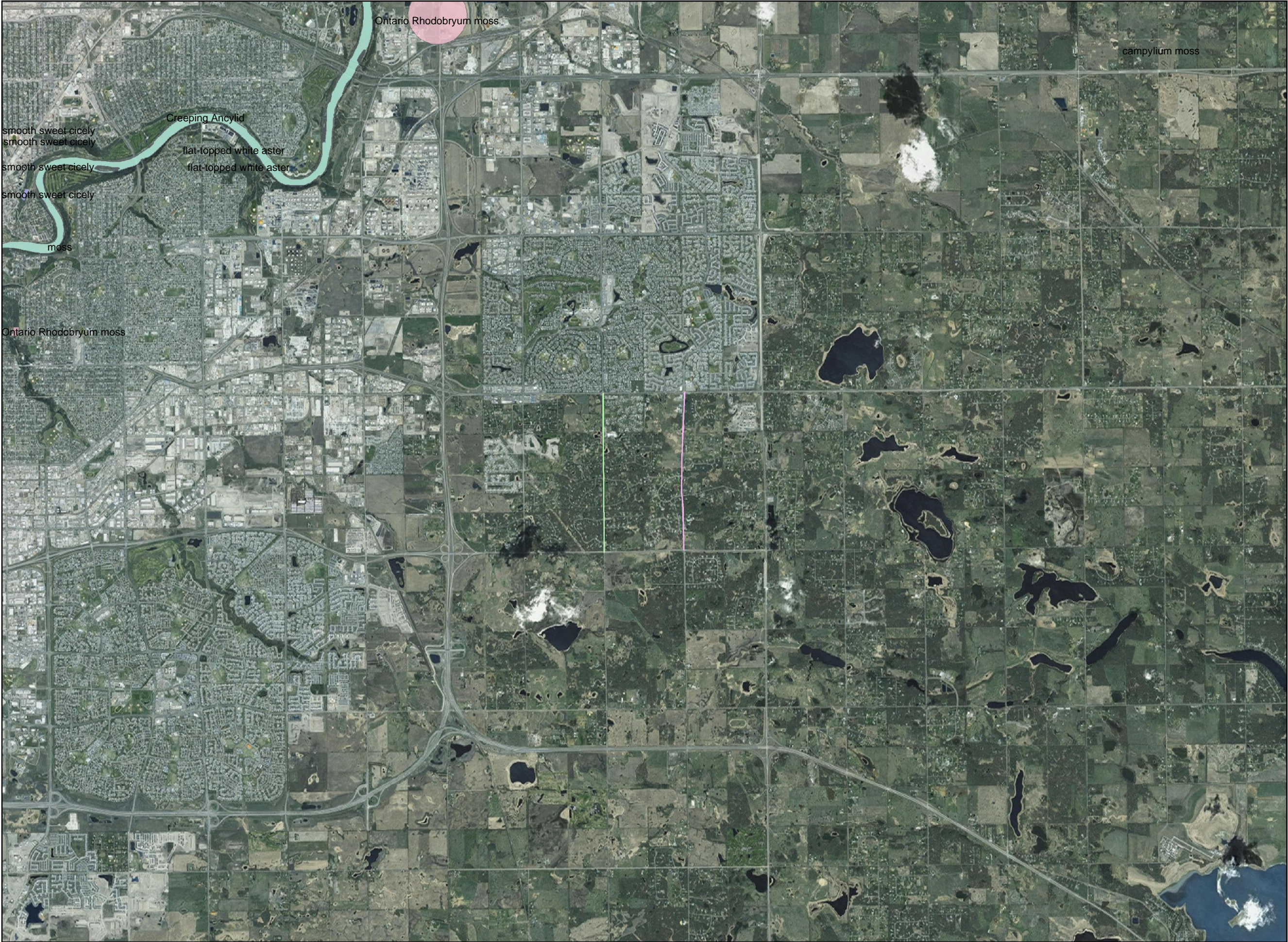
Table 2.3: Rare Ecological Communities Known to Occur in the Central Parkland Natural Subregion

Common Name	Scientific Name	Provincial Rank ^{1,2}
Ecological Communities		
Plains rough fescue - western porcupine grass grassland	<i>Festuca hallii</i> - <i>Hesperostipa curtiseta</i> grassland	S2S3
Plains rough fescue - sand grass	<i>Festuca hallii</i> - <i>Calamovilfa longifolia</i>	S1
Plains rough fescue - June grass / juniper / forbs	<i>Festuca hallii</i> - <i>Koeleria macrantha</i> / <i>Juniperus horizontalis</i> / forbs	S2
Balsam poplar / high-bush cranberry / ostrich fern	<i>Populus balsamifera</i> / <i>Viburnum opulus</i> / <i>Matteuccia struthiopteris</i>	S1S2
Creeping juniper / (June grass) / green reindeer lichen	<i>Juniperus horizontalis</i> / (<i>Koeleria macrantha</i>) / <i>Cladina mitis</i>	S1S2
Nevada bulrush - (seaside arrow-grass)	<i>Scirpus nevadensis</i> - (<i>Triglochin maritima</i>)	S2S3
Alkali cord grass - (western wheat grass)	<i>Spartina gracilis</i> - (<i>Pascopyrum smithii</i>)	S2S3
Seaside arrow-grass emergent marsh	<i>Triglochin maritima</i> emergent marsh	S2?
Plains rough fescue grassland	<i>Festuca hallii</i> grassland	S1
Little bluestem - sand grass	<i>Schizachyrium scoparium</i> - <i>Calamovilfa longifolia</i>	S2
Sand dropseed semi-active dune	<i>Sporobolus cryptandrus</i> semi-active dune	S2
Salt grass - western wheat grass	<i>Distichlis stricta</i> - <i>Pascopyrum smithii</i>	S2
Sand grass - sand dropseed	<i>Calamovilfa longifolia</i> - <i>Sporobolus cryptandrus</i>	S2S3
Aspen / creeping juniper / hay sedge woodland	<i>Populus tremuloides</i> / <i>Juniperus horizontalis</i> / <i>Carex siccata</i> woodland	S2S3
Tamarack - black spruce / red-osier dogwood - wild red raspberry	<i>Larix laricina</i> - <i>Picea mariana</i> / <i>Cornus stolonifera</i> - <i>Rubus idaeus</i>	S1S2
Black spruce / red-osier dogwood / feathermoss	<i>Picea mariana</i> / <i>Cornus stolonifera</i> / feathermoss	S1S2
Alaska birch - white spruce / pussy willow / common horsetail swamp forest community	<i>Betula neoalaskana</i> - <i>Picea glauca</i> / <i>Salix discolor</i> / <i>Equisetum arvense</i> swamp forest community	S1S2
Manitoba maple / choke cherry	<i>Acer negundo</i> / <i>Prunus virginiana</i>	S1S2
Sand grass - needle-and-thread grassland	<i>Calamovilfa longifolia</i> - <i>Stipa comata</i> grassland	S3
Nuttall's salt-meadow grass community	<i>Puccinellia nuttalliana</i> community	S3?
Samphire emergent marsh	<i>Salicornia rubra</i> emergent marsh	S2

Sources: ACIMS 2015a,b,c,d, NatureServe 2017.

**Notes:**

1. S1 (Critically Imperiled): Five or fewer occurrences, or especially vulnerable to extirpation due to other factor(s).
S2 (Imperiled): Twenty or fewer occurrences, or vulnerable to extirpation due to other factor(s).
S3 (Vulnerable): One hundred or fewer occurrences, or somewhat vulnerable due to other factors, such as restricted range, relatively small population sizes, or other factor(s).
S_S: Denotes the range of uncertainty about the status rank of the element.
SNA: Not applicable because the species or ecosystem is not a suitable target for conservation activities (e.g., introduced species).
W: Species may become rare following significant alterations to the environment.
T: Current information suggests species is rare or of conservation concern.
2. Alberta general status ranks are based in part on ACIMS ranks, but are only updated every five years while ACIMS ranks are updated annually; the general status ranks are therefore not considered to be current nor particularly informative for the purposes of this report. The current general status ranks of these species were reviewed, but have not been included in this report.



Legend

- Range Road 231
- Range Road 232

Coordinate System:
CANA83-3TM114
1:75,000

0 750 1,500 3,000 Meters

HISTORICAL RARE PLANT
OCCURENCES





Table 2.4: Rare Plant Species Known to Occur in Central Parkland Natural Subregion

Common Name	Scientific Name	Provincial Rank ^{1,2}
Vascular Plants		
Smooth sweet cicely	<i>Osmorhiza longistylis</i>	S3 (T)
Tall blue lettuce	<i>Lactuca biennis</i>	S3 (T)
Annual skeletonweed	<i>Shinnersoseris rostrata</i>	S3 (T)
Flat-topped white aster	<i>Doellingeria umbellata</i> var. <i>pubens</i>	S3 (T)
Few-flowered aster	<i>Almutaster pauciflorus</i>	S3 (T)
Kelsey's cat's eye	<i>Cryptantha kelseiana</i>	S3 (T)
Wild comfrey	<i>Cynoglossum virginianum</i> var. <i>boreale</i>	S1
Blunt-leaved watercress	<i>Rorippa curvipes</i>	S3 (T)
Dark-green goosefoot	<i>Chenopodium atrovirens</i>	S1
Fremont's goosefoot	<i>Chenopodium fremontii</i>	S2
Pallas' bugseed	<i>Corispermum pallasii</i>	S2
Marsh gentian	<i>Gentiana fremontii</i>	S3 (T)
Shrubby evening-primrose	<i>Oenothera serrulata</i>	S3 (T)
Lance-leaved loosestrife	<i>Lysimachia hybrida</i>	S3 (T)
Yellow water-crowfoot	<i>Ranunculus flabellaris</i>	S1
Low cinquefoil	<i>Potentilla plattensis</i>	S2
Sandhills cinquefoil	<i>Potentilla lasiodonta</i>	S3 (T)
Long-leaved bluets	<i>Houstonia longifolia</i>	S3 (T)
Clammy hedge-hyssop	<i>Gratiola neglecta</i>	S3 (T)
Smooth monkeyflower	<i>Mimulus glabratus</i>	S1
Crowfoot violet	<i>Viola pedatifida</i>	S3 (T)
Open sedge	<i>Carex aperta</i>	S2
Crawe's sedge	<i>Carex crawei</i>	S3 (T)
Porcupine sedge	<i>Carex hystericina</i>	S2
Fox sedge	<i>Carex vulpinoidea</i>	S3 (T)
Ovate spikerush	<i>Eleocharis ovata</i>	S1
Slender beak-rush	<i>Rhynchospora capillacea</i>	S2
River bulrush	<i>Bolboschoenus fluviatilis</i>	S1
Nevada rush	<i>Juncus nevadensis</i>	S1
Columbia watermeal	<i>Wolffia columbiana</i>	S2
Slender naiad	<i>Najas flexilis</i>	S3 (T)
Bog adder's-mouth	<i>Malaxis paludosa</i>	S2S3 (T)
Canada brome	<i>Bromus latiglumis</i>	S1



Common Name	Scientific Name	Provincial Rank ^{1,2}
Leiberg's millet	<i>Dichanthelium leibergii</i>	S1
Wilcox's panicgrass	<i>Dichanthelium wilcoxianum</i>	S2
Rough barnyard grass	<i>Echinochloa muricata</i> var. <i>microstachya</i>	S1
False buffalo grass	<i>Munroa squarrosa</i>	S3 (T)
Canadian rice grass	<i>Piptatherum canadense</i>	S2
Widgeon-grass	<i>Ruppia cirrhosa</i>	S3 (T)
Hairy pepperwort	<i>Marsilea vestita</i>	S3 (T)
Dwarf grape fern	<i>Botrychium simplex</i>	S2
Field grape fern	<i>Botrychium campestre</i>	S3 (T)
Spatulate grape fern	<i>Botrychium spathulatum</i>	S3 (T)

Sources: ACIMS 2015a,b,c,d, NatureServe 2017.

Notes:

1. See Note 1 in Table 2.3.
2. See Note 2 in Table 2.3.



2.5 Fish and Wildlife

2.5.1 Important Habitat

The Project footprint is not located within or in close proximity (i.e., 5 km) to any:

- Ramsar Wetlands of International Importance (Bureau of the Convention on Wetlands 2017)
- Western Hemisphere Shorebird Reserves (Western Hemisphere Shorebird Reserve Network 2012)
- Important Bird Areas (Bird Studies Canada and Nature Canada 2015)
- National Wildlife Areas (Environment and Climate Change Canada 2017a)
- Migratory Bird Sanctuaries (Environment and Climate Change Canada 2017b)
- Ducks Unlimited Canada Projects (DUC 2017)

2.5.2 Elements of Concern

A FWMIS search of the Study Area identified historical occurrences of three fish species and 23 bird species (see Table 2.5). The FWMIS report is provided in Attachment C.

Table 2.5: Fish and Wildlife Species Records Occurring within the Study Area.

Common Name	Scientific Name	Provincial Status ³	COSEWIC Status ⁴
Fish			
Brook stickleback	<i>Culaea inconstans</i>	S5; Secure	G5; Not listed
Fathead minnow	<i>Pimephales promelas</i>	S5; Secure	G5; Not listed
Lake chub	<i>Couesius plumbeus</i>	S5; Secure	G5; Not listed
Birds			
American bittern	<i>Botaurus lentiginosus</i>	S3S4 (W); Sensitive	G4; Not listed
American kestrel	<i>Falco sparverius</i>	S5 (W); Sensitive	G5; Not listed
American white pelican	<i>Pelecanus erythrorhynchos</i>	S2S3 (T); Sensitive	G4; Not at risk
Baltimore oriole	<i>Icterus galbula</i>	S4 (W); Sensitive	G5; Not listed
Bank swallow	<i>Riparia riparia</i>	S5; Sensitive	G5; Threatened
Barn swallow	<i>Hirundo rustica</i>	S4 (W); Sensitive	G5; Threatened
Black tern	<i>Chlidonias niger</i>	S4 (W); Sensitive	G4; Not at risk
Black-crowned night-heron	<i>Nycticorax nycticorax</i>	S2 (T); Sensitive	G5; Not listed
Common yellowthroat	<i>Geothlypis trichas</i>	S4 (W); Sensitive	G5; Not listed
Eastern kingbird	<i>Tyrannus tyrannus</i>	S5; Sensitive	G5; Not listed
Eastern phoebe	<i>Sayornis phoebe</i>	S4 (W); Sensitive	G5; Not listed
Forster's tern	<i>Sterna forsteri</i>	S2S3 (T); Sensitive	G5; Not listed
Grasshopper sparrow	<i>Ammodramus savannarum</i>	S3S4 (W); Sensitive	G5; Special concern
Great blue heron	<i>Ardea herodias</i>	S3 (W); Sensitive	G5; Special concern
Great gray owl	<i>Strix nebulosa</i>	S4 (W); Sensitive	G5; Not at risk
Horned grebe	<i>Podiceps auritus</i>	S3 (W); Sensitive	G5; Special concern



Least flycatcher	<i>Empidonax minimus</i>	S5 (W); Sensitive	G5; Not listed
Long-tailed weasel	<i>Mustela frenata</i>	S3 (W); May be at risk	G5; Not listed
Northern goshawk	<i>Accipiter gentilis</i>	S3S4; Sensitive	G5; Not listed
Northern pygmy-owl	<i>Glaucidium gnoma</i>	S3 (W); Sensitive	G4G5; Not listed
Peregrine falcon	<i>Falco peregrinus</i>	S2S3 (T); At risk	G4; Not listed
Pied-billed grebe	<i>Podilymbus podiceps</i>	S4 (W); Sensitive	G5; Not listed
Purple martin	<i>Progne subis</i>	S3S4 (W); Sensitive	G5; Not listed
Sharp-tailed grouse	<i>Tympanuchus phasianellus</i>	S3S4 (W); Sensitive	G5; Not listed
Short-eared owl	<i>Asio flammeus</i>	S3 (T); May be at risk	G5; Special concern
Sora	<i>Porzana carolina</i>	S5 (W); Sensitive	G5; Not listed
Trumpeter Swan	<i>Cygnus buccinator</i>	S2S3 (T) Sensitive	G4; Not at risk
Western wood-pewee	<i>Contopus sordidulus</i>	S4 (W); May be at risk	G5; Not listed

Sources: ACIMS 2014, Alberta Environment and Parks (AEP) 2017b, NatureServe 2017, Government of Canada 2017

Notes:

1. Alberta general status ranks are based in part on ACIMS ranks, but are only updated every five years while ACIMS ranks are updated annually; the general status ranks are therefore not considered to be current nor particularly informative for the purposes of this report. The current general status ranks of these species were reviewed, but have not been included in this report.
2. Naming convention consistent with ACIMS (ACIMS 2014). ACIMS for vertebrates has not been updated from 2015-2017.
3. See Note 1 in Table 2.3.
4. See Note 2 in Table 2.3.

2.6 Parks and Protected Areas

Sherwood Park Natural Area

The Sherwood Park Natural Area is located within the Study Area (Alberta Tourism, Parks and Recreation 2013). The closest corner of the Natural Area is approximately 0.83 km away from the Project Footprint.

The landscape is dominated by rolling hills where aspen, balsam poplar, white spruce, and paper birch thrive. Wetlands are scattered throughout and there is a large slough in the northwest corner (AEP 2017a).

This Natural Area is home to various bird species including hairy owl, downy woodpecker, great horned owl, northern saw-whet owl, black-capped chickadee, and white-breasted nuthatch. Wildlife species that are commonly found here include whitetail deer, moose, coyote, snowshoe hare, porcupine, and red squirrel (AEP 2017a).

Beaver Hill Biosphere

The Project lies within the eastern portion of the Beaver Hill Biosphere, which was designated a Biosphere on March 19, 2016 by the United Nations Educational, Scientific and Cultural Organization (UNESCO) (Beaver Hills Initiative 2019). This designation provided global recognition of the community's commitment to conservation and sustainable development within the area. The Beaver Hills/Cooking Lake moraine is a distinct geomorphological feature that encompasses 1572 km² that includes an island of boreal mixedwood forest and "knob and kettle" terrain of the moraine that forms a patchwork of depressional areas, many of which support wetlands, small lakes and streams (Beaver Hills Initiative 2019.) Due to the complexity of the area, with both boreal and parkland features, numerous vegetation and wildlife species that frequent both those areas occur within the Biosphere.

A review of the Biosphere map indicated that no rare species have been found within the Project footprint, however directed field studies prior to development (i.e., rare plant; wildlife surveys) would be valuable in determining potential occurrences.



2.7 Municipal Development Plan

The Municipal Development Plan for the County (Strathcona County, 2019) considers the Project Area as part of their Country Residential Policy Area, where the major environmental policy requires conservation of the environment by requiring environmental reserves or environmental reserve easements to be developed through a biophysical assessment. It also promotes the retention of natural topography, retention of tree stands and wetlands, as well as to incorporate conservation design into ASPs.

Environmental reserves are discussed further in Section 3.3.



3.0 Relevant Regulatory Requirements

3.1 Federal

3.1.1 Fisheries Act

The Federal Fisheries Act includes provisions to avoid causing serious harm to fish. This would apply to work being conducted in or near waterbodies supporting fish that are part of or that support a commercial, recreational or Aboriginal fishery. If any activities associated with the Project could result in death of fish or a permanent alteration to or destruction of fish habitat, a review by Fisheries and Oceans Canada (DFO) may be required to determine the requirement for an Authorization and potentially an offsetting plan.

DFO has developed a self-assessment tool to guide proponents on the need for a submission for DFO review, which should be completed for any change to the crossing of Goldbar Creek.

3.1.2 Migratory Birds Convention Act

The *Migratory Birds Convention Act (MBCA)* is administered by Environment and Climate Change Canada (ECCC) to ensure protection of migratory birds, their nests, and their eggs. Birds protected by the *MBCA* include waterfowl (such as ducks, geese and swans), insectivorous birds (such as wrens, robins, shrikes and woodpeckers), and some nongame birds (such as herons and gulls) (ECCC 2013).

To protect migratory birds, ECCC provides general nesting periods based on geographic location (ECCC 2014). The general nesting period covers the majority of species covered under the *MBCA*, however, it may not be accurate for species that can breed at any time during optimal conditions (e.g., Crossbill species), or species that may nest earlier or later (ECCC 2014). It is important to note that this period may not include those nesting periods for species not covered under the *MBCA* but are covered under Alberta's *Wildlife Act*.

The general migratory bird-nesting period for the Study Area (located within zone B4) is mid-April to late August (ECCC 2014). During this period, construction activities require a pre-construction nest sweep to avoid disturbance, and nest sweeps every four days where habitat occurs. If there is no habitat on the Project, but adjacent to the footprint, nest sweeps are also required as some species have large setbacks. In the event that nesting migratory birds are identified during the nest sweep, a setback may be identified through consultation with ECCC where feasible, or a permit would be required to remove the nest.

3.2 Provincial

3.2.1 Water Act

The *Water Act* manages Alberta's water resources. Through AEP, the *Act* governs activities affecting waterbodies in Alberta, including construction, water diversions and infilling of wetlands. *Water Act* approval is required to alter flow or level of water; change the location of water; change the direction of water flow, cause the siltation of water; cause erosion of bed or shore of any waterbody; divert and use groundwater; or any effect on the aquatic environment.

Any impacts to the wetlands due to road development will fall under a Water Act approval, while any impacts to the Goldbar Creek crossing may occur under a Code of Practice for Watercourse Crossings, provided the crossing meets the code.

Wetland Policy

Under the authority of the *Water Act*, wetlands must be identified and delineated according to the Wetland



Identification and Delineation Directive; classified using the Alberta Wetland Classification System; and assigned an ecological wetland value using the Alberta Wetland Rapid Evaluation Tool (AB WRET-A). A *Water Act* application requires a Wetland Assessment and Impact Report (WAIR). In addition to the above information, a WAIR will include the required in lieu fee replacement value; based on the AB WRET-A results (i.e., wetland value) as well as land value pursuant to the Alberta Wetland Mitigation Directive.

3.2.2 Public Lands Act

In addition to the *Water Act*, some wetlands are regulated by the *Public Lands Act (PLA)* and require a surface disposition be issued for the use of them, if they are located on public lands in Alberta. The *PLA* is responsible for administering lands owned by the Crown. Under Section 3 of the *PLA*, public lands include the bed and shore of all permanent and naturally occurring waterbodies, including wetlands, unless the title has been previously granted to a private landowner.

It is likely that some wetlands traversed by the proposed Project are considered 'reasonably permanent' as identified by the Assessment of Permanence for Wetland Basins (AEP, 2016) based on the results of the historical imagery review (Attachment B).

3.2.3 Wildlife Act

In addition to the federal *MBCA*, birds may be protected provincially under the *Wildlife Act*. AEP administers the *Wildlife Act*, which influences and controls human activities that may have adverse effects on wildlife or wildlife habitat on both Crown and privately owned land. Section 36(1) of the *Wildlife Act* states that a person shall not willfully molest, disturb or destroy a house, nest or den of prescribed wildlife or beaver dam in prescribed areas and prescribed times. This applies to nests and dens of endangered wildlife, migratory birds, snakes (except prairie rattlesnakes), bats and prairie rattlesnake hibernacula. Additionally, Section 36(1) also applies to beaver dens and houses on land that is not privately owned as well as houses, nests, and dens of all wildlife in a wildlife sanctuary and nests of game birds in game bird sanctuaries. As a result of the *Wildlife Act*, setbacks and Restricted Activity Dates (RADs) have been defined for important species.

RADs are based on existing knowledge of species-specific seasonal life history traits, such as breeding, nesting, and rearing activities. Generally, inter-annual climate variation is captured within the dates, however, there may be occurrences where the RAD does not cover the entire trait (i.e., young still in the nest) (Government of Alberta 2011). As a result, the RAD should be extended to avoid disturbance. Setback distances are based on thresholds where human disturbance will adversely affect key wildlife areas or sites (Government of Alberta 2011).

3.2.4 Alberta Weed Control Act

The *Weed Control Act* protects stakeholders from economic and invasive losses caused by weeds. Some weed species exhibit extreme growth habits, which can have consequences for line of sight at intersections, wildlife control along roadways, culvert and outfall maintenance, agricultural production, livestock forage quality, and many others. The *Act* prescribes activities that must be undertaken should a noxious or restricted weed be encountered. Each Municipality is responsible for enforcing the *Act* (Government of Alberta 2010).



3.3 Municipal

3.3.1 Dedication of Conservation Easement (SER-009-031)

The County has the ability to hold an interest in partnership with a private landowner a Conservation Easement, such that private landowners can protect the stewardship of their land in perpetuity (Strathcona County 2005). Conservation easements are legal agreements that allows a landowner to continue to manage and own the land, while providing a limit on future land use to help conserve natural features.

3.3.2 Municipal Reserve (Bylaw 1-2007)

Municipal Reserves (MR) are lands that have been dedicated to the municipality by a developer. A minimum of 10% of the gross developable land to be subdivided must be dedicated to the County as Municipal Reserve. Municipal reserve will be used to protect areas identified as High and Medium Priority Management Areas by Strathcona County (Strathcona County 2007).

3.3.3 Environmental Reserve (Bylaw 1-2007)

Environmental Reserves (ER) are lands that have been dedicated to the municipality by a developer. Environmental reserves are land considered undevelopable and may consist of swamp, gully, ravine, coulee, drainage course, lands subject to flooding or that are unstable (Strathcona County 2007).

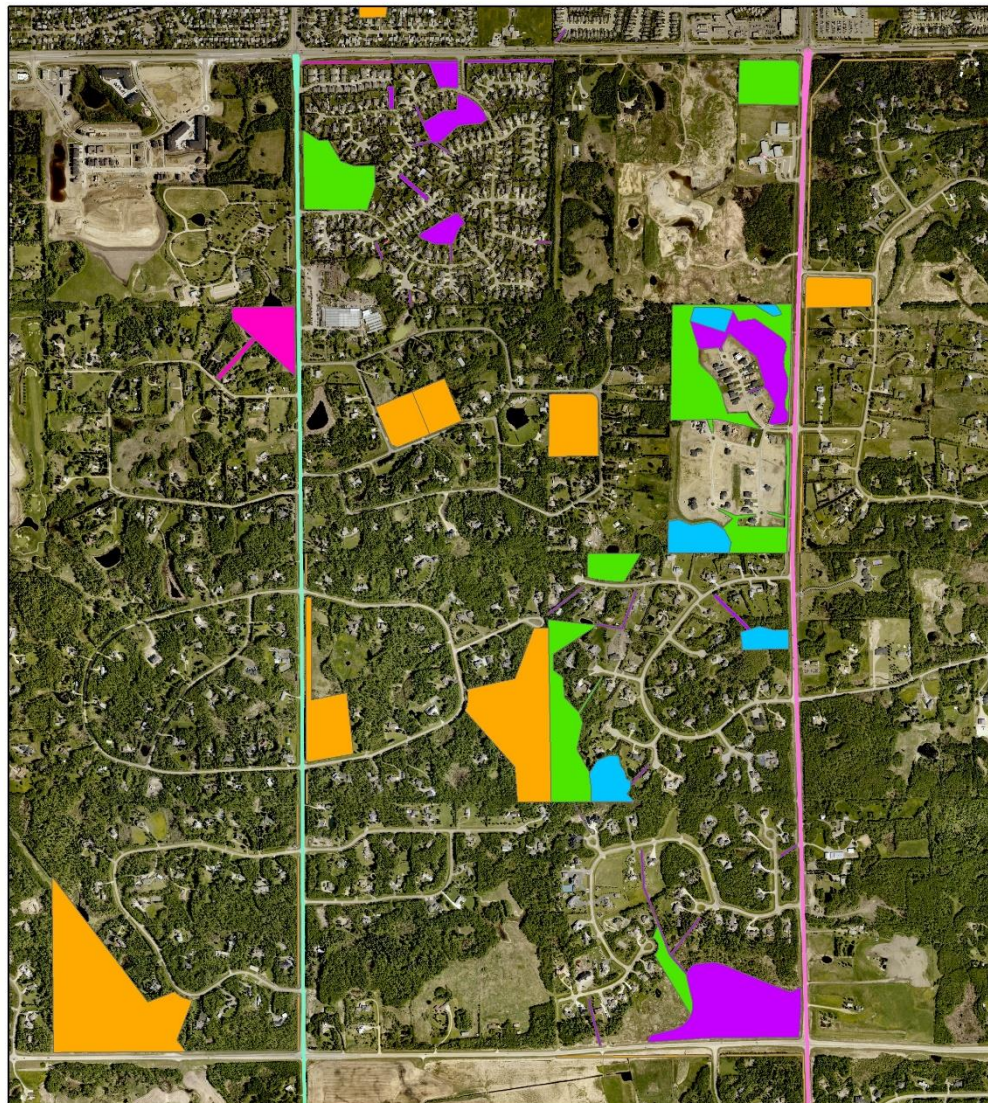
3.3.4 Environmental Reserve Easement (Bylaw 1-2007)

Environmental Reserve Easement (ERE) is land that remains in private ownership, as opposed to County ownership (e.g., Environmental Reserve). The purpose of an Environmental Reserve Easement is to protect the natural environment (Strathcona County 2007).

Conservation Easement, Environmental Reserve and Municipal Reserve should be avoided during development. Some Reserves of various types have been dedicated on Range Road 231 and Range Road 232 and this is depicted in Figure 3.3.1 and 3.1.2 below.



County Land



Legend

- Other
- Reserve
- ER
- MR
- PUL
- RNG RD 232
- RNG RD 231



Figure 3.3.1: Environmental Reserve, Municipal Reserve and Reserve (Provided by Strathcona County)



Legend




-  Potential Impacted Conservation Easement
-  RNG RD 232
-  RNG RD 231

Figure 3.3.2: Conservation Easement (Provided by Strathcona County)

3.3.5 Biophysical Assessment (SER-009-032)

As part of the County's Conservation Goal to protect the integrity of their heritage and natural resources, while providing opportunities for future growth, the County requires a biophysical assessment for all future development areas. The biophysical assessments can then be used by the County to develop potential Environmental Reserves, Municipal Reserves and Conservation Easements, typically developed during the Area Concept Plan, Area Structure Plan and subdivision application process.

3.3.6 Tree Conservation During Development (SER-009-034)

The County has developed a policy to protect trees within the urban and rural areas of the County, based on municipal, community and environmental needs (Strathcona County 2011a). To conserve trees, a Tree Conservation Report (TCR) and Tree Protection Plan (TPP) will be required for any works that may impact trees. When the Project goes to construction, a TCR and TPP should be completed to protect trees within the work area.



3.3.7 Tree Management (SER-009-035)

Further to the Tree Conservation During Development Policy, the County has a Tree Management Policy that ensures the conservation of trees following development (Strathcona County 2011b). Following construction of an area and Final Acceptance Certificate, the County will provide the community with safe and healthy trees, by continual inspection and maintenance of trees within the County.

3.3.8 Wetland Conservation Policy (SER-009-036)

The County has a wetland conservation policy that recognizes the value of wetlands as important parts of the infrastructure of the County that provide environmental, social and economic benefits within the County boundaries (Strathcona County 2009). As part of the Wetland Conservation Policy, the County puts in place procedures to meet the goal of No Net Loss of wetland function through the implementation of Avoidance, Minimize and Compensate for wetland damage. All development within the County will be subject to this policy. As part of the Project, wetlands may be impacted and must follow the Alberta Wetland Policy.

4.0 Conclusion

ISL recommends that wetlands considered reasonably permanent be submitted to the Water Boundary Group at Alberta Environment and Parks for an Assessment of Permanence. This process can take approximately 12 months and must be completed before submission of a *Water Act* application.

Water Act applications for wetlands are expected to be required for this Project; however, data for wetlands expires three years following fieldwork and therefore are not completed at a functional planning study level. To avoid repeating fieldwork, ISL recommends conducting wetland assessments approximately 1 - 2 years prior to construction to provide appropriate regulatory approval timelines.

Any changes to the crossing of Goldbar Creek will require a Code of Practice notification, as well as a DFO self-assessment to ensure that the crossing does not impact fish and fish habitat.



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Attachment A
Landscape Analysis Tool Report



Landscape Analysis Tool (LAT) Report

License of Occupation

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LAT Number:	000004CDA3	LAT Date:	2017-10-06	11:40:49
Project Name:	14985			
Project Description:				
Disposition Type:	DLO	License of Occupation		
Purpose Type:	ACES	Access		
Activity Type:	ACES02DLOP	Class I - All Weather		

Responsibility of Applicants:

It is the applicant's responsibility to conduct a full review of the generated LAT Report, ensuring that you are aware and have a full understanding of the identified standards and conditions, and any additional limitations that may also be imposed by an approved higher level plan, reservation or notation or any other law or Order of the Province or the Government of Canada that may impact the placement, construction or operation of the proposed disposition, purpose and activity.

The applicant must assess if the proposed disposition, purpose and activity can meet the applicable standards, conditions and any limitations which will subsequently determine if the application can be submitted to the regulatory body. Applicants should complete a thorough review of regulatory and application processes including supporting procedural documents and the generated LAT Reports prior to making this determination.

Where the applicant chooses not to meet, or is not able to meet, one or more Approval Standards or higher level plans within the generated LAT Report as submitted as part of the application, or any affected reservations as identified within the land status report, the applicant is required to complete the appropriate mitigation as part of their supplement submission that addresses individually each of the items not being met.

The information provided within the LAT Tool is a spatial representation of features provided to the applicant for activity and land use planning. The accuracy of these layers varies depending on the resource value being represented. The regulatory body insists that site visits, wildlife surveys and groundtruthing efforts are completed to ensure that you, the applicant can meet the procedures detailed within the *Pre-Application Requirements for Formal Dispositions*, the identified approval standards, operating conditions and *Best Management Practices* as represented within the *Master Schedule of Standards and Conditions*.

Proximity to Watercourse/Waterbodies:

Applicants will ensure that standards or conditions for Watercourse/Waterbody features as identified within the generated LAT Report are followed. It is the responsibility of the applicant to ensure the identified setbacks and buffers are properly established through a pre-site assessment and maintained.

NOTE: Be aware that the submission of a LAT Report as part of an application submission does not infer approval of the activity. The standards and conditions identified within the LAT Report may be subject to change based on regulatory review.

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Base Features

Green/White Area:	White Area	FMA:	
Municipality:			
Higher Level Plans:		FMU:	
		Provincial Grazing Reserve:	
		Rocky Mountain Forest Reserve:	
		PLUZ Areas:	

Provincial Sanctuaries

Wildlife Corridors:		Game Bird:	Zone 4
Restricted Area:		Seasonal:	

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Additional Application Requirements

Wildlife Survey	Yes	DND Area	
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Sensitive Features

Wildlife and Other Sensitive Species			
Intersected		Intersected	
Burrowing Owl Range		Piping Plover Waterbodies	
Caribou Range		Sensitive Amphibians Ranges	
Colonial Nesting Birds		Sensitive Raptor Range	Yes
Eastern Short-horned Lizard Range		Sensitive Snake Species Range	
Endangered and Threatened Plants Ranges		Sharp-tailed Grouse Leks and Buffer	
Greater Sage Grouse Range		Sharp-tailed Grouse Survey	Yes
Greater Sage Grouse Leks and Buffer		Special Access Zone	
Grizzly Bear Zone		Swift Fox Range	
Key Wildlife and Biodiversity Areas		Trumpeter Swan Buffer	
Mountain Goat and Sheep Areas		Trumpeter Swan Waterbodies/Watercourse	
Ord's Kangaroo Rat Range			
Other Sensitive and Endangered Species	Yes		

Federal Orders:

Intersected	
Greater Sage Grouse	

Grassland and Parkland Natural Region:

Intersected	
Grassland and Parkland Natural Region	Yes

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Alberta Township System (ATS) Land List

Quarter	Section	Township	Range	Meridian	Road Allow.	Sensitive Features Identified
NE	22	52	23	4		Grassland and Parkland Natural Region, Sensitive Raptor Range, Sharp-tailed Grouse Survey, Other Sensitive and Endangered Species
SE	25	52	23	4	RS	Grassland and Parkland Natural Region, Sensitive Raptor Range, Sharp-tailed Grouse Survey, Other Sensitive and Endangered Species
NW	14	52	23	4		Grassland and Parkland Natural Region, Sensitive Raptor Range, Sharp-tailed Grouse Survey, Other Sensitive and Endangered Species
NW	13	52	23	4	RW	Grassland and Parkland Natural Region, Sensitive Raptor Range, Sharp-tailed Grouse Survey, Other Sensitive and Endangered Species
NW	23	52	23	4		Grassland and Parkland Natural Region, Sensitive Raptor Range, Sharp-tailed Grouse Survey, Other Sensitive and Endangered Species
SE	13	52	23	4		Grassland and Parkland Natural Region, Sensitive Raptor Range, Sharp-tailed Grouse Survey, Other Sensitive and Endangered Species
SW	14	52	23	4	RW	Grassland and Parkland Natural Region, Sensitive Raptor Range, Sharp-tailed Grouse Survey, Other Sensitive and Endangered Species
NE	15	52	23	4		Grassland and Parkland Natural Region, Sensitive Raptor Range, Sharp-tailed Grouse Survey, Other Sensitive and Endangered Species
SW	13	52	23	4	RW	Grassland and Parkland Natural Region, Sensitive Raptor Range, Sharp-tailed Grouse Survey, Other Sensitive and Endangered Species
SE	13	52	23	4	RS	Grassland and Parkland Natural Region, Sensitive Raptor Range, Sharp-tailed Grouse Survey, Other Sensitive and Endangered Species
SW	25	52	23	4	RS	Grassland and Parkland Natural Region, Sensitive Raptor Range, Sharp-tailed Grouse Survey, Other Sensitive and Endangered Species
SW	26	52	23	4	RS	Grassland and Parkland Natural Region, Sensitive Raptor Range, Sharp-tailed Grouse Survey, Other Sensitive and Endangered Species
SW	24	52	23	4		Grassland and Parkland Natural Region, Sensitive Raptor Range, Sharp-tailed Grouse Survey, Other Sensitive and Endangered Species
SW	13	52	23	4		Grassland and Parkland Natural Region, Sensitive Raptor Range, Sharp-tailed Grouse Survey, Other Sensitive and Endangered Species
SW	14	52	23	4		Grassland and Parkland Natural Region, Sensitive Raptor Range, Sharp-tailed Grouse Survey, Other Sensitive and Endangered Species
SE	23	52	23	4		Grassland and Parkland Natural Region, Sensitive Raptor Range, Sharp-tailed Grouse Survey, Other Sensitive and Endangered Species

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NW	24	52	23	4	RW	Grassland and Parkland Natural Region,Sensitive Raptor Range,Sharp-tailed Grouse Survey,Other Sensitive and Endangered Species
NW	13	52	23	4		Grassland and Parkland Natural Region,Sensitive Raptor Range,Sharp-tailed Grouse Survey,Other Sensitive and Endangered Species
SE	14	52	23	4		Grassland and Parkland Natural Region,Sensitive Raptor Range,Sharp-tailed Grouse Survey,Other Sensitive and Endangered Species
SW	25	52	23	4	RI	Grassland and Parkland Natural Region,Sensitive Raptor Range,Sharp-tailed Grouse Survey,Other Sensitive and Endangered Species
SE	15	52	23	4		Grassland and Parkland Natural Region,Sensitive Raptor Range,Sharp-tailed Grouse Survey,Other Sensitive and Endangered Species
SW	24	52	23	4	RW	Grassland and Parkland Natural Region,Sensitive Raptor Range,Sharp-tailed Grouse Survey,Other Sensitive and Endangered Species
SE	26	52	23	4	RS	Grassland and Parkland Natural Region,Sensitive Raptor Range,Sharp-tailed Grouse Survey,Other Sensitive and Endangered Species
NW	23	52	23	4	RW	Grassland and Parkland Natural Region,Sensitive Raptor Range,Sharp-tailed Grouse Survey,Other Sensitive and Endangered Species
NW	14	52	23	4	RW	Grassland and Parkland Natural Region,Sensitive Raptor Range,Sharp-tailed Grouse Survey,Other Sensitive and Endangered Species
NE	13	52	23	4		Grassland and Parkland Natural Region,Sensitive Raptor Range,Sharp-tailed Grouse Survey,Other Sensitive and Endangered Species
NW	24	52	23	4		Grassland and Parkland Natural Region,Sensitive Raptor Range,Sharp-tailed Grouse Survey,Other Sensitive and Endangered Species
SE	27	52	23	4	RS	Grassland and Parkland Natural Region,Sensitive Raptor Range,Sharp-tailed Grouse Survey,Other Sensitive and Endangered Species
NE	14	52	23	4		Grassland and Parkland Natural Region,Sensitive Raptor Range,Sharp-tailed Grouse Survey,Other Sensitive and Endangered Species
SE	22	52	23	4		Grassland and Parkland Natural Region,Sensitive Raptor Range,Sharp-tailed Grouse Survey,Other Sensitive and Endangered Species
NE	23	52	23	4		Grassland and Parkland Natural Region,Sensitive Raptor Range,Sharp-tailed Grouse Survey,Other Sensitive and Endangered Species
SW	23	52	23	4		Grassland and Parkland Natural Region,Sensitive Raptor Range,Sharp-tailed Grouse Survey,Other Sensitive and Endangered Species
NE	24	52	23	4		Grassland and Parkland Natural Region,Sensitive Raptor Range,Sharp-tailed Grouse Survey,Other Sensitive and Endangered Species
SW	26	52	23	4	RI	Grassland and Parkland Natural Region,Sensitive Raptor Range,Sharp-tailed Grouse Survey,Other Sensitive and Endangered Species

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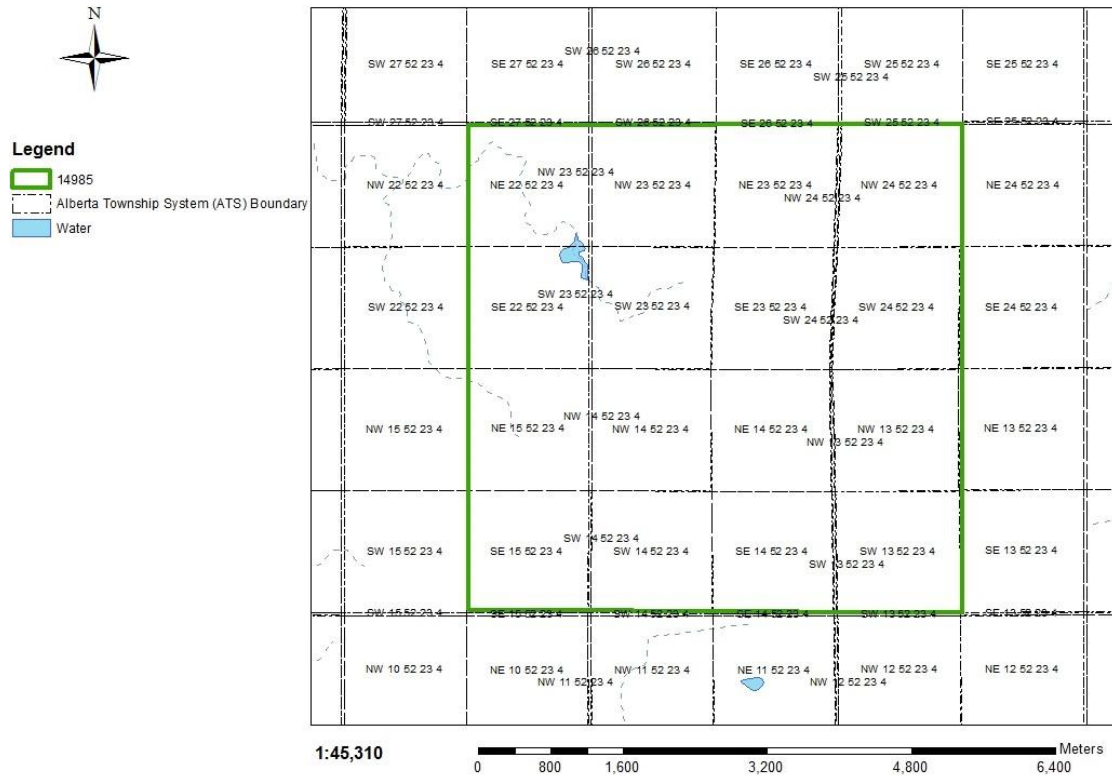
SW	13	52	23	4	RS	Grassland and Parkland Natural Region,Sensitive Raptor Range,Sharp-tailed Grouse Survey,Other Sensitive and Endangered Species
SW	23	52	23	4	RW	Grassland and Parkland Natural Region,Sensitive Raptor Range,Sharp-tailed Grouse Survey,Other Sensitive and Endangered Species
SE	24	52	23	4		Grassland and Parkland Natural Region,Sensitive Raptor Range,Sharp-tailed Grouse Survey,Other Sensitive and Endangered Species

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Land Management

Report ID	Approval	Condition
1	1000-AS	To reduce fragmentation and integrate land development, the location of the proposed activity for linear access developments shall be located as follows; a) Utilize existing unoccupied linear disturbances (≥ 4 metres wide), and; b) Adjoin existing occupied linear industrial dispositions, and; c) Use surveyed road allowances. ROW width shall not exceed the government road allowance width, and; d) Ensure access development is not created within 400 metres of already existing parallel access.
2	1004-AS	The road class for new linear route developments shall not be greater than the road class of the route from which they originate, or branch off from.
3	1005-AS	The disposition holder shall locate wellsites, production facilities and roads outside of natural forest openings (> 10 hectares) such as meadows when planning development activities.
4	1011-AS	Incidental Activities as referenced on the associated supplement that fall within the sizing parameters, as defined within the PLAR Approvals and Authorizations Administrative Procedure's as amended, identified at the time of application are subject to the conditions of the associated disposition and shall be available for use for a term of four years from date of disposition approval.
5	1013-AS	Where an Integrated Resource Plan or a Reservation/Protective Notation identifies a greater set back, the greater set back shall prevail.
6	1014-AS	Additional applications for access will not be permitted if access under disposition already exists.
7	1015-AS	Where a Higher Level Plan exists, the direction provided within that plan shall be followed.
8	1017-AS	For activities that fall within any Protective Notation (PNT) lands with a purpose code 400 Series encompassing a section of land (259 hectares) or less, located in the Provincial White Area (i.e., Provincial settled lands), all construction activities shall be built and occur within lands developed as range improvement. Where no range improvement exists, activities shall occur within 100 metres of the perimeter (i.e., outside boundary), with the following exceptions: • pipeline construction activities

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9	1018	<p>Access control measures are intended to restrict unauthorized access of on-highway vehicles. The access control measures identified below shall be effective, maintained, and monitored. Access control measures may include one or more of the following:</p> <ul style="list-style-type: none"> • earthen berms (not to be used within native grassland) • permanent or temporary removal of water crossing structures • barricades • locked gates • manned checkpoints • pre-existing access controls <p>Where effective access control measures already exist, additional access control measures are not required. If a pre-existing access control is selected, it must effectively control all access to the new road. The applicant must ensure all travel occurs through the pre-existing access control, and success of access management is subject to the pre-existing access control as a term or condition of this disposition.</p>
10	1019	<p>Where access control is required, the disposition holder will erect a sign at the access entry point with the following text:</p> <p>NOTICE:</p> <p>Under the authority of the section 54.01 of the Public Lands Act this road is closed beyond this point for the purpose of:</p> <ul style="list-style-type: none"> o Wildlife Management o Fisheries Management o Water Management o Vegetation Management o Security <p>Unauthorized on-highway motor vehicles are prohibited. Operators of unauthorized vehicles beyond this point may be found guilty of an offence.</p> <p>WARNING: GATE MAY BE LOCKED WITHOUT NOTICE.</p> <p>NOTE: Contact information is provided for those eligible for use of this access.</p> <p>In case of an emergency call: 1-XXX-XXX-XXXX Company contact information</p> <p>For general inquiries please call: 1-XXX-XXX-XXXX Company contact information</p> <p>Commercial Users may contact the disposition holder at: 1-XXX XXX-XXXX Company Phone Number</p> <p>LOC or DLO # <_____></p> <p>All Signage must meet the following criteria:</p> <ul style="list-style-type: none"> • Be a minimum size of 1 metre x 1 metre • Have a white reflective background with a checkered border. • All text shall be a minimum of 5 centimetres (2 in.) black lettering • The Company name or logo should be placed on the bottom right hand corner • Sign must be located at a visible spot at least 1.5 metres off the ground and not be obscured by plowed snow or vegetation.

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11	1020	Where access control is required, the disposition holder shall report to the regulatory body immediately if the access control method is ineffective at preventing unauthorized access.
12	1021	When gates are used for access control, the disposition holder shall ensure: a) Gates remain closed and locked at all times except to allow for the passage of an authorized vehicle. b) Locks are placed within a structure on the gate that is designed to protect them from being broken. c) Any locks that are lost or destroyed are replaced immediately of the disposition holder becoming aware. d) Gates are designed and installed at key locations to ensure that passage of any on-highway vehicle is restricted through or around the gate. All gates will be installed in such a manner that a safety hazard is not created. e) When combination locks are utilized, the gate lock combination is only provided to authorized users of the access, including the regulatory body. f) Where keyed locks are utilized, a double locking method is to be applied by the disposition holder.. (Double locking refers to a disposition holder providing a means of access where multiple authorized users including the regulatory body have their individual locks on the same gate, allowing each party to pass using their own keys). g) The regulatory body and authorized users are notified of all combination lock changes prior to changing a combination lock or code.
13	1022	The disposition holder shall close inactive portion(s) of the access that lead to non-producing wells to highway vehicle traffic within 1 year of well non-production. Method and location of access control features shall be provided to the issuing regulatory body office in writing.
14	1023	The disposition holder shall repair or replace any identified improvements (e.g., fences, water control structures, and signage) that were damaged as a result of industry activities on the land to pre-existing condition within 30 days of entry or immediately if occupied by livestock.
15	1024	The disposition holder shall maintain all activities for proper drainage of surface water.
16	1026	For activities that occur on Canadian Forces Bases, the disposition holder shall coordinate all activities through Energy Industry Control at (780) 842-5850 for activity on Canadian Forces Base/Area Support Unit, Wainwright, and (780) 573-7206 for activity on Canadian Forces Base/Area Support Unit, Cold Lake.
17	1028	The disposition holder shall comply with all requirements and direction as defined within the Pre-Application Requirements for Formal Dispositions as amended.
18	1029	The disposition holder shall develop access in accordance with the Pre-Application Requirements for Formal Dispositions as amended.
19	1030	The disposition holder shall not cause surface disturbance in coulees or through river benchland areas-excluding access, pipelines and linear easements crossing the watercourse feature..

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20	1032	In addition to complying with Federal, provincial and local laws and regulations respecting the environment, including release of substances, the disposition holder shall, to the regulatory body's satisfaction, take necessary precautions to prevent contamination of land, water bodies and the air with particulate and gaseous matter, which, in the opinion of the regulatory body in its sole discretion, is or may be harmful.
21	1033	The disposition holder shall remove all garbage and waste material from this site to the satisfaction of the regulatory body, in its sole discretion.
22	1037	Entry is not allowed within the boundaries of any research or sample plot.
23	1038	When planned activities cross designated or recreation trail(s) or when operations encroach on those trail(s), the disposition holder shall ensure that: <ul style="list-style-type: none"> • Lines crossing trail(s) are constructed in a manner that will not remove snow from the trail(s), produce ruts in the trail(s), or otherwise adversely affect travel. • No mechanical equipment is permitted to travel along the trail(s), unless approved in writing by an officer of the regulatory body. • Warning signs are posted along trail(s) during construction and reclamation activities advising trail users of the upcoming crossing location. • Any recording devices or equipment laid along the trail(s) are placed off of the travel portion so that the geophones do not interfere with travel.
24	1039	Where oil and gas or industrial activities overlap grazing dispositions during the grazing season, the disposition holder shall install a Texas gate where the access road enters the grazing disposition. Texas gates shall be a minimum of 2.25 metres in width and installed over a pit that is a minimum of 76 centimeters deep and must be maintained and free of dirt.
25	1046	Where a Wildfire Prevention Plan and/or FireSmart Plan is required for review and approval by the Wildfire Management Branch, the disposition holder shall ensure any proposed clearing on public land has been agreed to by the regulatory body.

Vegetation

Report ID	Approval	Condition
26	1101	Manage all weeds as per the Weed Control Act.
27	1102	The Disposition Holder shall not conduct vegetation control including but not limited to mechanical mowing or brush removal during the following periods: <ul style="list-style-type: none"> a) Between April 15th and August 15th within the Grassland and Parkland Natural regions except for the purpose of mowing vegetation no more than 4 metres in width for vehicle access; b) Between May 1st and August 10th for all other Natural regions except for the purpose of mowing vegetation no more than 4 metres in width for vehicle access, notwithstanding the requirement to control weeds as per the Weed Control Act

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28	1105	Chemical application for the purpose of vegetation control, shall occur in accordance with the Pesticide Regulation and Environmental Code of Practice for Pesticides.
29	1106	The disposition holder shall salvage all merchantable timber and haul to the location of end use unless a request for waiver is approved under the Forests Act.
30	1107	The disposition holder shall salvage timber according to the utilization standards for the overlapping timber disposition(s) (i.e., FMA, CTL, DTL) or, where no overlapping timber disposition exists, as per the approved forest management plan.
31	1108	The disposition holder must slash, limb and buck flat to the ground all woody debris and leaning trees created by the activity. The length of slashed woody debris shall not exceed 2.4 metres.
32	1109	On forested lands, the disposition holder shall dispose of excess coarse woody debris remaining after rollback or stockpiling for interim/final reclamation.
33	1110	The disposition holder shall dispose of coarse woody debris within FireSmart Community Zones by burning unless a Debris Management Plan has been approved under the Forest and Prairie Protection Act.
34	1112	The disposition holder shall not allow timber storage piles or windrows to encroach into standing timber.

Soil

Report ID	Approval	Condition
35	1130-AS	Permafrost degradation is not permitted. Onsite permafrost depth must be maintained to the same depth as offsite control.
36	1131-AS	In permafrost areas, surface stripping shall not occur.
37	1133	The Disposition holder shall suspend all activities during adverse ground conditions.
38	1134	The disposition holder shall prevent and control erosion (surface and subsurface) and sedimentation on all disturbed lands.
39	1135	The disposition holder must install and maintain erosion control measures (e.g., silt fences, matting, gravel, and check dams).
40	1136	The disposition holder shall not remove soil from the disposition unless authorized. This includes all soil horizons and all soil types (e.g. leaf litter, organic soils such as muskeg, and clay fill material are all included).
41	1137	The Disposition holder must not bury topsoil.

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42	1138	Where soil disturbance occurs from site construction or linear trenching of a minimum of 12 inches or greater, the disposition holder must salvage all topsoil if present (topsoil includes the leaf litter layer (LFH) and the A horizon) as follows; <ul style="list-style-type: none"> • Where two-lift stripping occurs, topsoil and part or all of the upper subsoil (B horizon) must be stripped and stored separately. • Where topsoil is less than 15 centimetres, conservation shall include the topsoil plus part of the upper subsoil (B horizon) up to a total depth of 15 centimetres (unless the B horizon is considered chemically unsuitable as outlined in the May 2001 Salt Contamination Assessment Guidelines, as amended).
43	1139	The disposition holder shall store reclamation materials separately (topsoil, subsoil,) on the disposition, such that it can be distributed evenly over the disturbed area for progressive (interim) and/or final reclamation. LFH and coarse woody debris are suitable for storage with topsoil. Reclamation materials must not be buried.
44	1140	Wood chips shall not be mixed with forest floor and/or surface soil. It cannot be spread to a depth greater than 5 cm as defined in the directive ID 2009-01 Management of Wood Chips on Public Land.
45	1141	Storage piles/windrows of reclamation material shall not encroach into standing timber.
46	1142	Soil sterilants are prohibited.
47	1144	In permafrost areas, the disposition holder shall utilize snow (natural or man-made) to establish a level surface.

Watercourse / Waterbody

Report ID	Approval	Condition
48	1171-AS	The disposition holder shall not interrupt natural drainage (including ephemeral and fens), block water flow or alter the water table.
49	1173-AS	The disposition holder shall construct activities outside the appropriate watercourse setbacks , except for vehicle or pipeline crossings: <ul style="list-style-type: none"> a) Intermittent watercourses and springs shall have a setback of at least 45 metres from the top of the break. b) Small Permanent watercourses shall have a setback of at least 45 metres from the top of the break. c) Large Permanent watercourses shall have a setback of at least 100 metres from the top of the break.
50	1174-AS	The disposition holder shall maintain the following waterbody setbacks from the disposition edge for all site activities, or paralleling linear dispositions, or pipeline bore site: <ul style="list-style-type: none"> a) A minimum setback of 45 metres of undisturbed vegetation shall be maintained from non-permanent seasonal wetlands. b) A minimum setback of 100 metres from the bed and shore of semi-permanent and permanent ponds/wetlands, shallow open water ponds and lakes.

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51	1176-AS	The disposition holder shall ensure all crossings maintain fish passage. Crossings shall be compliant with the departments Code of Practice under the Water Act, Water (Ministerial) Regulation.
52	1178-AS	For all fish-bearing watercourses that support commercial, recreational and aboriginal fisheries being crossed by permanent access (Class I, II, or III access); the disposition holder shall install a bridge or bridge-like structure that maintains the channel, channel flow and fish passage.
53	1179	The disposition holder shall not deposit or place debris, soil or other deleterious materials into or through any watercourse and/or waterbody, or on the ice of any watercourse and/or waterbody.
54	1180	The disposition holder shall maintain the access (e.g. crossing structures, ditches, etc.) to ensure proper drainage.
55	1181	The disposition holder shall keep watercourse crossings free of accumulated debris or ice that will impede the flow of water.
56	1182	The disposition holder shall not strip the organic soil layer and lesser vegetation from portions of the disposition not needed for the road grade on approaches to watercourse crossings.
57	1183	Where crossings have been removed, the disposition holder shall immediately stabilize the bank or shoreline of all affected watercourses and/or waterbodies and/or make alterations or modifications to the bank or shoreline to restored to native vegetative species found in the adjacent area.
58	1184	Access (off-disposition) for water withdrawal requires an Approval or Authorization from the regulatory body.
59	1185	The disposition holder through the installation of watercourse crossing structures, including bridge abutments, shall not constrict the normal watercourse channel. Bridge spans shall extend beyond stream banks and abutment walls.
60	1186	Where surface disturbance will occur and a risk of surface erosion exists, the disposition holder shall install and maintain sediment control structures to dissipate the flow of water and capture sediment prior to it entering a watercourse or waterbody.
61	1187	During watercourse structure maintenance, the disposition holder must install sediment and erosion control measures.

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62	1189	<p>The disposition holder shall construct logfill crossings as per the following:</p> <ul style="list-style-type: none"> a) Enough logs must be available to adequately fill an ephemeral draw or watercourse channel so that when the logs are removed there is little or no damage to the banks or channel bottom. <ul style="list-style-type: none"> i. Logs delimbed and bucked to at least 1.5 metres longer than the grade fill at each end. ii. Provisions for removal that do not disturb the banks or watercourse. b) Logs used in crossing must be strapped or cabled for ease of removal where no bed and bank disturbance will occur. c) Log fills must have a geo-textile separation layer between the watercourse channel and the logs. d) Log fills must have a geo-textile separation layer between any foreign material (clay cap) used as a running surface with enough material to ensure foreign material and debris from road maintenance does not enter the watercourse channel. e) Log fills must be removed prior to spring break-up and active channel flow.
63	1190	<p>The disposition holder shall construct and utilize native timber bridges on small permanent or intermittent watercourses or ephemeral draws, provided that:</p> <ul style="list-style-type: none"> a) Bridge abutments do not restrict watercourse channel. b) A brow log is installed on both sides of the bridge deck to prevent soil from entering the watercourse. c) No equipment enters the watercourse channel. d) Timber of suitable size and strength is available for construction. e) The span extends beyond watercourse bank and abutment walls. f) A geo-textile separation layer must be used between soil cap and timber that prevents foreign material from entering the watercourse.
64	1191	<p>The disposition holder shall construct and utilize snow fills on ephemeral watercourses during frozen conditions, provided that:</p> <ul style="list-style-type: none"> a) Sufficient snow exists to fill creek channel. b) Any soil cap installed over the snow must have a layer of fabric to separate soils from the snow fill. <p>Unless otherwise directed by the regulatory body, the snow fill must be completely removed prior to spring break up or active channel flows.</p>
65	1192	<p>The disposition holder shall construct and utilize ice bridges provided that:</p> <ul style="list-style-type: none"> a) No capping material is used on the ice bridge. b) Winter watercourse flows are not impeded. c) Approaches of snow and ice are constructed of sufficient thickness to protect the stream bank. d) Appropriate ice thickness exists to bear necessary load requirements. e) No alterations to streambed or bank are required. f) Ice bridge size construction will be limited to that required for vehicle and equipment crossing.
66	1194	<p>The disposition holder shall not remove or use water from dugouts, surface ponds, springs, or water wells within the grazing disposition unless an approval is issued from the Environment and Parks (GoA) agrologist.</p>

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67	1196	<p>All licences, authorizations and approvals issued under the Alberta Environmental Protection and Enhancement Act, Water Act or Public Lands Act should not be taken to mean the proponent (applicant) has complied with federal legislation. Proponents should contact Habitat Management, Fisheries and Oceans in relation to the application of federal laws relating to the Fisheries Act (Canada).</p> <p>Fisheries Protection Program, Fisheries and Oceans Canada 867 Lakeshore Road, Burlington, Ontario, L7R 4A6 Telephone: 1-855-852-8320 Email: Fisheriesprotection@dfo-mpo.gc.ca Web address: www.dfo-mpo.gc.ca</p> <p>Proponents should also contact the Navigation Protection Program, Canadian Coast Guard, 4253-97 Street, Edmonton, Alberta, T6E 5Y7, phone: (780) 495-4220, relating to the Navigation Protection Act.</p>
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Reclamation

Report ID	Approval	Condition
68	1202	<p>The disposition holder shall utilize natural recovery, on all native landscapes (forested, wetlands, riparian, and peatlands) for all areas of the site, not required for operations or padded with clay. Natural recovery is to be implemented within 1 growing season of completions (post-drill) or for sites that are not drilled within 1 growing season of construction.</p> <p>Assisted natural recovery is allowed on high erosion sites, sites prone to weeds, agronomic invasion, or padded sites (forested and peatland).</p> <p>a) During assisted natural recovery when reseeding with herbaceous seed native to the Natural Subregion or agronomic annuals and seed mixes as approved by the regulatory body, shall be free of the species listed in the Weed Control Act. A seed certificate (under the rules and regulation of the Canada Seeds Act) for each species shall be provided to the regulatory body upon request.</p> <p>b) Assisted natural recovery can be used for planting woody species for the purpose of accelerated reclamation. The woody species must be native to the Natural Subregion and follow the Alberta Forest Genetic Resource Management and Conservation Standards as amended.</p>
69	1203	<p>The disposition holder shall when seeding pasture or cultivated lands, use agronomic or forage seed that meets or exceeds Certified #1 as outlined in the Canada Seeds Act and Seeds Regulations. Seed mixes are to be free of species listed in the Weed Control Act. A seed certificate (under the rules and regulation of the Canada Seeds Act) for each species shall be provided to the regulatory body upon request.</p>
70	1204	<p>Revegetation with trees or shrubs within the Green Area shall be consistent with the Alberta Forest Genetic Resource Management and Conservation Standards document.</p>
71	1206	<p>Coarse woody debris that is stored for final reclamation for greater than 12 months must be mixed with the top soil (LFH/Ae).</p>
72	1207	<p>Slash and rollback accumulations are not permitted within 5 meters of the perimeter of the disposition boundary greater than what is already occurring on the surrounding undisturbed forest floor.</p>

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73	1210	Upon cancellation and abandonment, the disposition holder shall contour the disturbed land to an acceptable land form using chemically suitable overburden and/or subsoil. The disposition holder shall replace topsoil and restore the natural drainage by removing any culverts and fills.
74	1211	Upon abandonment or as directed by the regulatory body, the disposition holder shall reclaim the disposition to the pre-disturbance land use (forested, grassland, cultivated, mineral wetland and peatlands) unless a change in land use is approved in writing by the regulatory body.

Wildlife

Report ID	Approval	Condition
75	1280	The disposition holder is required to conduct a wildlife sweep of the immediate area (site plus 100 metres) prior to entry and construction to identify wildlife features. All observations must be reported to the regional AEP Wildlife Biologist, the issuing regulatory body, and entered into the Fisheries and Wildlife Management Information System (FWMIS).
76	1281-AS	Where the presence of an important wildlife feature including; mineral licks, raptor nests, active den sites, and hibernacula, is known or identified through a Wildlife Sweep, the disposition holder shall leave a buffer zone of a minimum width of 100m undisturbed vegetation, where an established buffer does not already exist (e.g. Species at Risk). If species are identified during the wildlife sweep, the disposition holder must produce the Wildlife Sweep to the regulatory body for review before continuing with the approved activity. Results from Wildlife Sweeps must be provided to the regulatory body upon request.
77	1286	All licences, authorizations and approvals issued under the Alberta Environmental Protection and Enhancement Act, Water Act or Public Lands Act should not be taken to mean the proponent (applicant) has complied with federal legislation. Proponents should contact Environment Canada, Canadian Wildlife Service in relation to the application of federal laws relating to the Migratory Birds Convention Act (protection of eggs and nests) and the Species at Risk Act. Environmental Stewardship Branch Prairie & Northern Region Environment Canada Eastgate Offices, 9250 – 49th Street Edmonton, Alberta T6B 1K5 Telephone: 1-780-951-8600 Email: Enviroinfo@ec.gc.ca Web address: http://www.ec.gc.ca/paom-itmb/default.asp?lang=En&n=AB36A082-1 Web address: http://www.sararegistry.gc.ca/

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Sensitive Raptor Range

Report ID	Approval	Condition
78	1310-AS	The disposition holder shall conduct appropriate pre-construction wildlife surveys for all activities occurring within the identified Species At Risk ranges of the Landscape Analysis Tool, as per the direction of the Pre-Application Requirements for Formal Dispositions as amended. Any and all observed Species At Risk features (such as leks, nests, dens, etc.,) shall be buffered by the setbacks and timing restrictions specified on the LAT Report for that species at risk.
79	1311-AS	The disposition holder shall not conduct any activities within 1000 metres from an active sensitive raptor species nest.

Sharp-Tailed Grouse Survey / Leks and Buffers

Report ID	Approval	Condition
80	1350-AS	The disposition holder shall conduct appropriate pre-construction wildlife surveys for all activities occurring within the identified Species At Risk ranges of the Landscape Analysis Tool, as per the direction of the Pre-Application Requirements for Formal Dispositions as amended with the following exception; a) Activities that occur between October 31st and March 15th can occur without a sharp-tailed grouse survey. Any and all observed Species At Risk features (such as leks, nests, dens, etc.,) shall be buffered by the setbacks and timing restrictions specified on the LAT Report for that species at risk.
81	1351-AS	The disposition holder shall not conduct any activities within 500 meters of the perimeter of any known or identified active sharp-tailed grouse lek sites.
82	1355-AS	The disposition holder shall not conduct any activities within 500 metres from the perimeter of an active sharp-tailed grouse lek.

Other Sensitive and Endangered Species

Report ID	Approval	Condition
83	1420-AS	The disposition holder shall not construct activities on native grassland within the Grassland and Parkland Natural Region between April 15th and August 15th , unless grassland bird surveys are completed as per the Sensitive Species Inventory Protocol as amended.
84	1421-AS	The disposition holder shall not conduct any activities within 100 meters of an active nest site between April 15th and August 15th for the following species: <ul style="list-style-type: none">• short-eared owl• mountain plover• long-billed curlew• upland sandpiper• Sprague's pipit• Chestnut-collared longspur• Loggerhead Shrike• Bank Swallow

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Grassland and Parkland Natural Region

Report ID	Approval	Condition
85	1500-AS	The disposition holder shall locate activities outside of Fescue Grasslands by using existing disturbances or locate adjacent to existing occupied dispositions (e.g., transportation corridors, cultivated lands, existing access trails, previously disturbed and/or non-native cover areas).
86	1501-AS	The disposition holder shall not conduct activities on Fescue Grasslands in the Montane and Foothills Fescue Natural subregions from Dec16th to July 31st
87	1502-AS	<p>The disposition holder must use existing trails. Where trails do not exist on native grasslands, the disposition holder shall use Class VI roads with a right-of-way width that shall not exceed 10 metres. The disposition holder shall not grade or develop a road, with the following exceptions:</p> <p>a) On native grasslands, two track (strip) gravelling is permitted once the well is proven.</p> <p>b) Gravel shall be clean, weed and seed free and is not to exceed a depth of 5 centimetres, or a width of 70 centimetres per strip. This gravelling is permitted on minimal disturbance access.</p> <p>c) If gravelling is required to fill existing ruts or undulating ground surface, the gravel shall not exceed 5 centimetres above the surrounding ground level. Access along these trails shall only occur during dry or frozen ground conditions.</p> <p>d) Natural drainage must be maintained.</p>
88	1503	The disposition holder shall only straw crimp on native grasslands where native species from the same ecological range site are used, tested and in compliance with the Weed Control Act. A seed certificate (under the rules and regulation of the Canada Seeds Act) shall be provided to the regulatory body prior to approval and application.
89	1504	The disposition holder shall use mechanical equipment that will not cause adverse impacts to the land in coulees or through river benchland areas.

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90	1505	<p>The disposition holder shall in all native grasslands, re-vegetate using natural recovery techniques on all minimal disturbance activities except as follows:</p> <p>a) In the Dry Mixed Grass Natural subregion on high erosion and/or sites with soil disturbance greater than 50m²: Assisted Natural Recovery is allowed. The application rate is a 50:50 ratio of no greater than 1/2 bushel (25-30 lbs/ac) of Fall rye and flax only. A seed certificate (under the rules and regulation of the Canada Seeds Act) for each species shall be provided to the regulatory body prior to approval and application.</p> <p>b) In the Dry Mixed Grass subregion on sites prone to invasion from agronomic or weed species: Seed mixes are to be designed based on adjacent native plant communities within the immediate vicinity and must correspond with the onsite ecological range site (refer to the Range Plant Community Guide and Recovery Strategies for Industrial Development in the Dry Mixed Grass manuals).</p> <p>c) Native Grasslands found outside of the Dry Mixed Grass subregion (eg. Foothills fescue, Montane, Central Parkland subregions) where sites are located in high erosion areas, prone to invasion from agronomic or weed: Seed mixes are to be designed based on adjacent native plant communities within the immediate vicinity and must correspond with the onsite ecological range site (refer to the Range Plant Community Guide and Recovery Strategies for Industrial Development for the appropriate subregion). Rationale for seeding and seed mix must be submitted to the regulatory body for approval. Seed mixes are to be free of species listed in the Weed Control Act. Seed mixes are to be free of all agronomic species (excepting those identified for assisted recovery techniques). A seed certificate (under the rules and regulation of the Canada Seeds Act) for each species shall be provided to the issuing regulatory body prior to seed mix approval.</p>
91	1509	<p>The disposition holder shall not construct activities on native grassland within the Grassland and Parkland Natural Region between April 15th and August 15th, unless grassland bird surveys are completed as per the Sensitive Species Inventory Guidelines Protocol as amended.</p>
92	1510	<p>The disposition holder shall not conduct any activities within 100 meters of an active nest site between April 15th and August 15th for the following species:</p> <ul style="list-style-type: none"> • short-eared owl • mountain plover • long-billed curlew • upland sandpiper • Sprague's pipit • Chestnut-collared longspur • Loggerhead Shrike • Bank Swallow
93	1511	<p>The disposition holder shall locate activities outside of loamy soils in native grasslands within the Central Parkland and Northern Fescue layer by using existing disturbances or locate adjacent to existing occupied dispositions (e.g., transportation corridors, cultivated lands, existing access trails, previously disturbed and/or non-native cover areas).</p>

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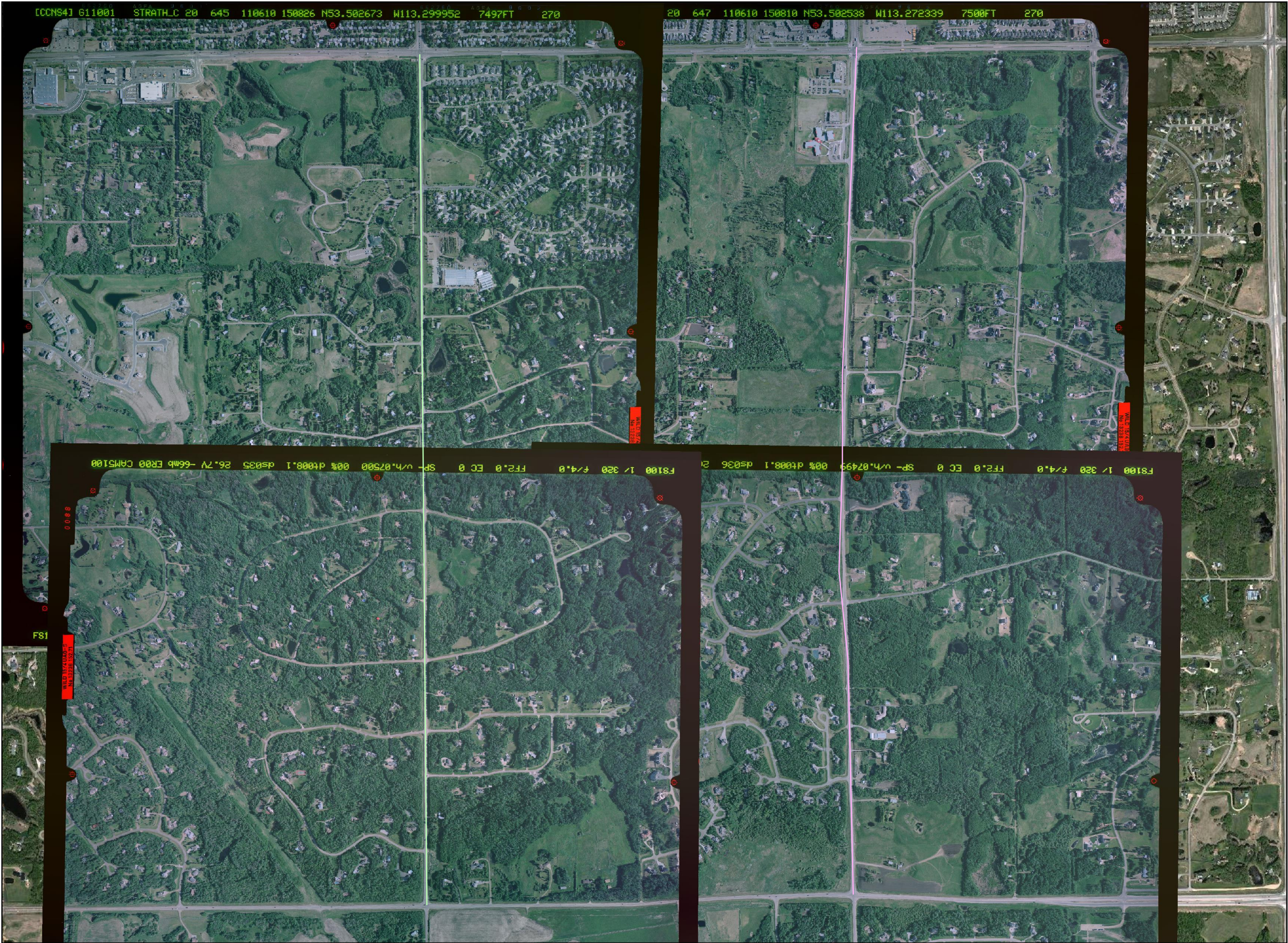
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94	1512	The disposition holder shall within the Central Parkland and Northern Fescue layer conduct an assessment of pre-disturbance vegetation composition and soils, and documentation must be provided to the regulatory body upon request.
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Attachment B
Historical Aerial Photographs



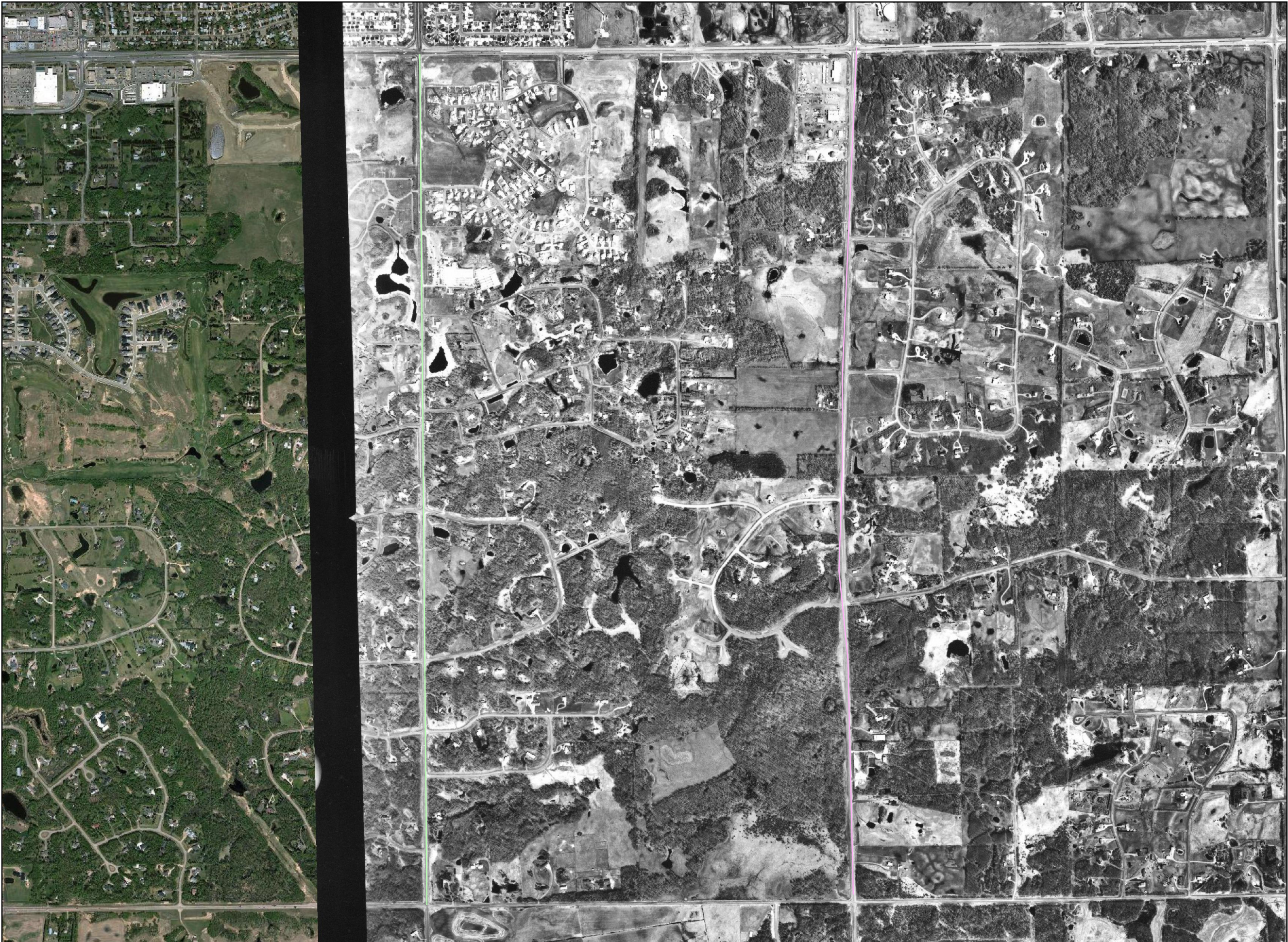




ISL Engineering
and Land Services



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Legend

- Range Road 231
- Range Road 232

Coordinate System:
CANA83-3TM114

1:14,000

0 140 280 560 Meters

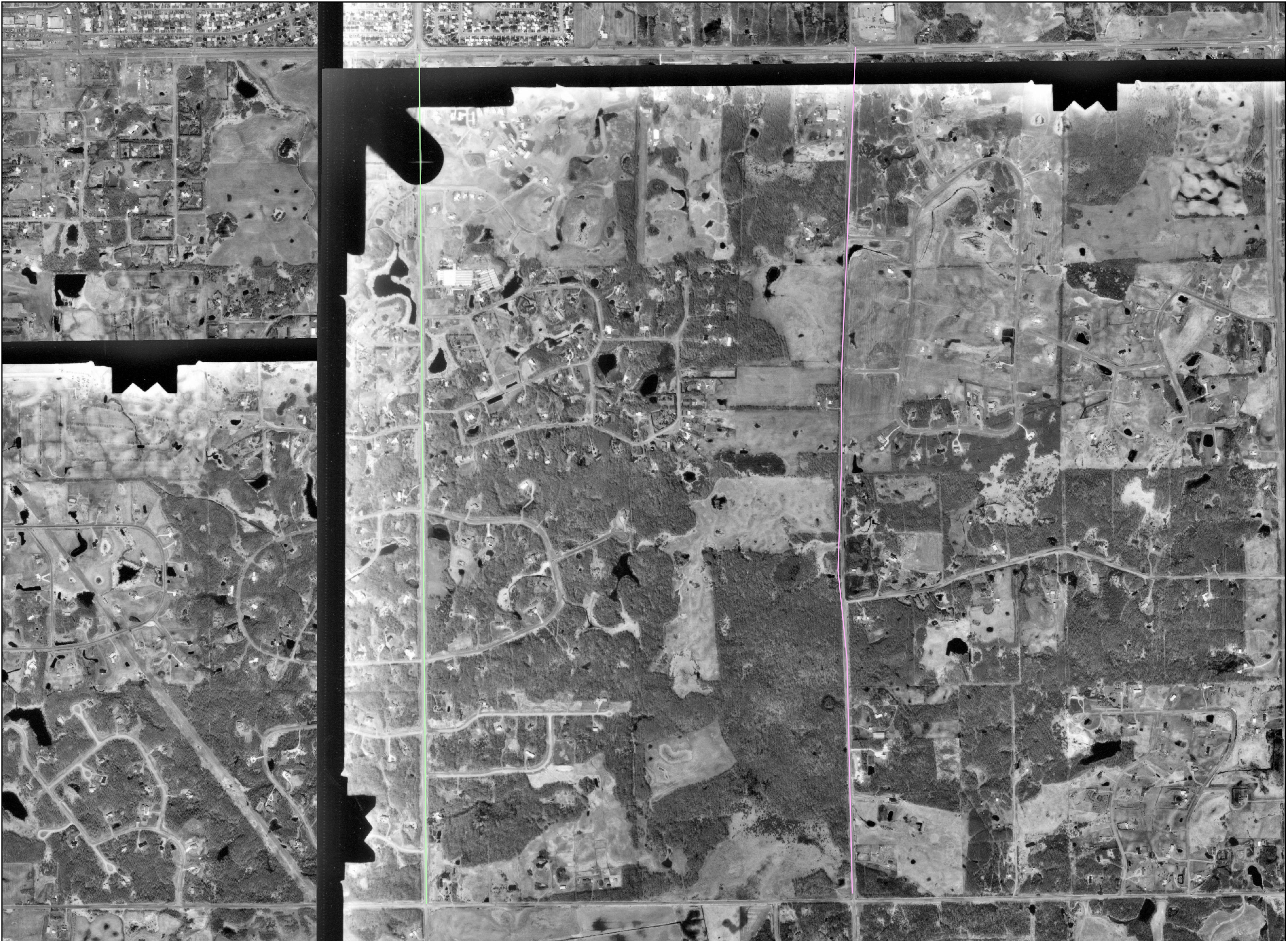
HISTORICAL AERIAL
PHOTOGRAPH
(1993)



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



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Legend

- Range Road 231
- Range Road 232

Coordinate System:
CANA83-3TM114

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0 140 280 560 Meters

HISTORICAL AERIAL
PHOTOGRAPH
(1989)



**Engineering
and Land Services**

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Legend

- Range Road 231
- Range Road 232

Coordinate System:
CANA83-3TM114
1:14,000

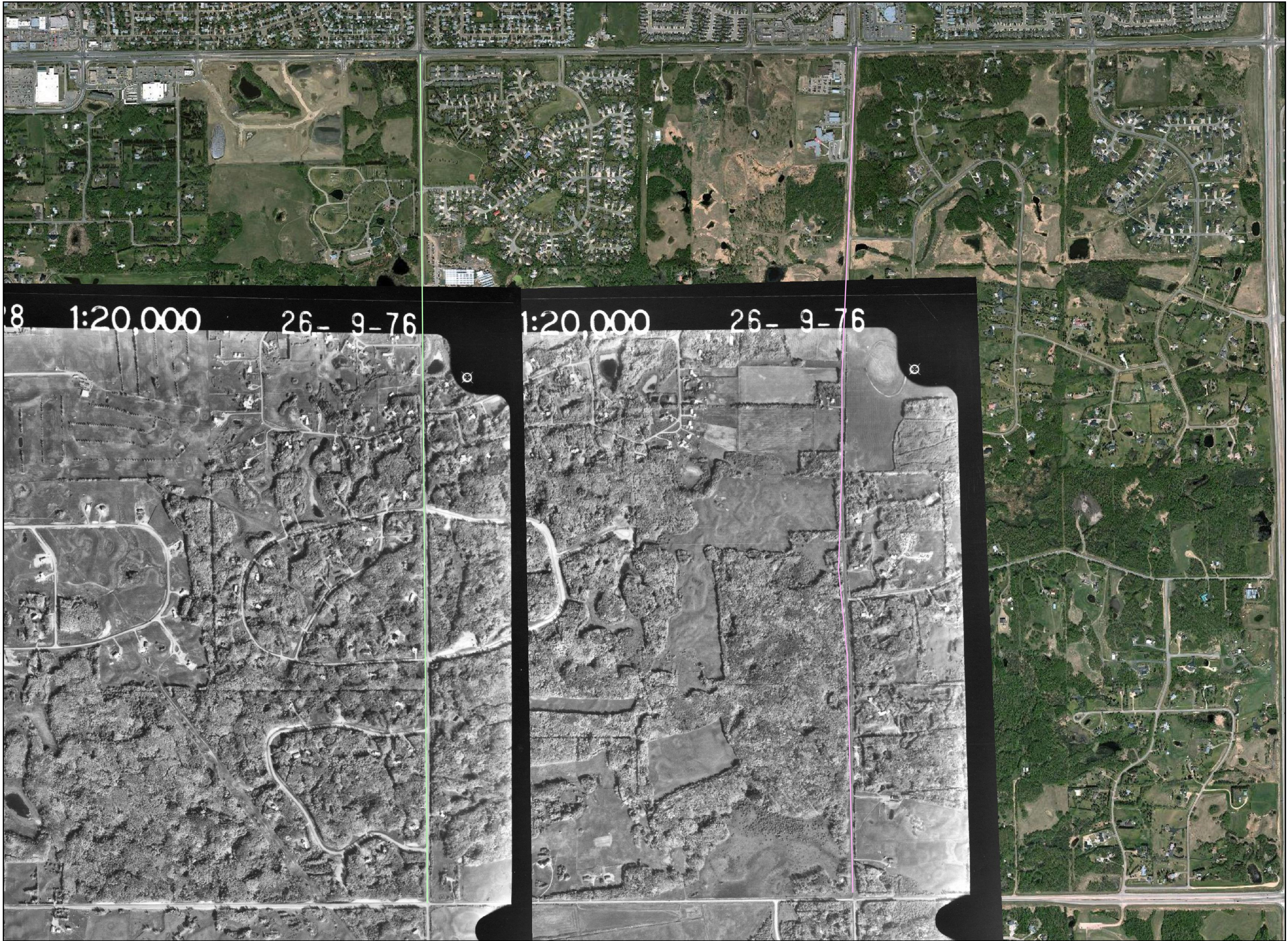
0 140 280 560 Meters

HISTORICAL AERIAL
PHOTOGRAPH
(1982)



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community





Legend

- Range Road 231
- Range Road 232

Coordinate System:
CANA83-3TM114

1:14,000

0 140 280 560 Meters

HISTORICAL AERIAL
PHOTOGRAPH
(1976)



Date: 10/6/2017 Document: \\edms\Projects\14900\14985_RR_231_232_Functional_Plan01_Design\10_By_Discipline\ENV\Historic_Photos\ExhibitMap_Basic1147_3TM114_Land.mxd



Legend

- Range Road 231
- Range Road 232

Coordinate System:
CANA83-3TM114

1:14,000

0 140 280 560 Meters

HISTORICAL AERIAL
PHOTOGRAPH
(1967)



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community





Attachment C
FWMIS Search Results



Fish and Wildlife Internet Mapping Tool (FWIMT)

(source database: Fish and Wildlife Management Information System (FWMIS))

Species Summary Report

Report Created: 17-Oct-2017 10:39

Species present within the current extent :

Fish Inventory

BROOK STICKLEBACK
FATHEAD MINNOW
LAKE CHUB

Wildlife Inventory

AMERICAN KESTREL
AMERICAN WHITE PELICAN
BALTIMORE ORIOLE
BANK SWALLOW
BARN SWALLOW
BLACK-CROWNED NIGHT-HERON
COMMON YELLOWTHROAT
EASTERN KINGBIRD
GRASSHOPPER SPARROW
GREAT BLUE HERON
LEAST FLYCATCHER
LONG-TAILED WEASEL
NORTHERN GOSHAWK
NORTHERN PYGMY-OWL
PEREGRINE FALCON
SHARP-TAILED GROUSE
SHORT-EARED OWL
SORA

Stocked Inventory

RAINBOW TROUT

Buffer Extent

Centroid (X,Y):

612973, 5928230

Projection

10-TM AEP Forest

Centroid: (Qtr Sec Twp Rng Mer)

SW 26 52 23 4

Radius or Dimensions

5 kilometers

Contact Information

For contact information, please visit:

<http://aep.alberta.ca/about-us/contact-us/fisheries-wildlife-management-area-contacts.aspx>

Fish and Wildlife Internet Mapping Tool (FWIMT)

(source database: Fish and Wildlife Management Information System (FWMIS))

Species Summary Report

Report Created: 17-Oct-2017 10:42

Species present within the current extent :

Fish Inventory

BROOK STICKLEBACK
FATHEAD MINNOW
LAKE CHUB

Wildlife Inventory

AMERICAN KESTREL
BARN SWALLOW
COMMON YELLOWTHROAT
GRASSHOPPER SPARROW
GREAT BLUE HERON
LONG-TAILED WEASEL
SHORT-EARED OWL
SORA

Stocked Inventory

RAINBOW TROUT

Buffer Extent

Centroid (X,Y):

614597, 5928230

Projection

10-TM AEP Forest

Centroid: (Qtr Sec Twp Rng Mer)

NE 23 52 23 4

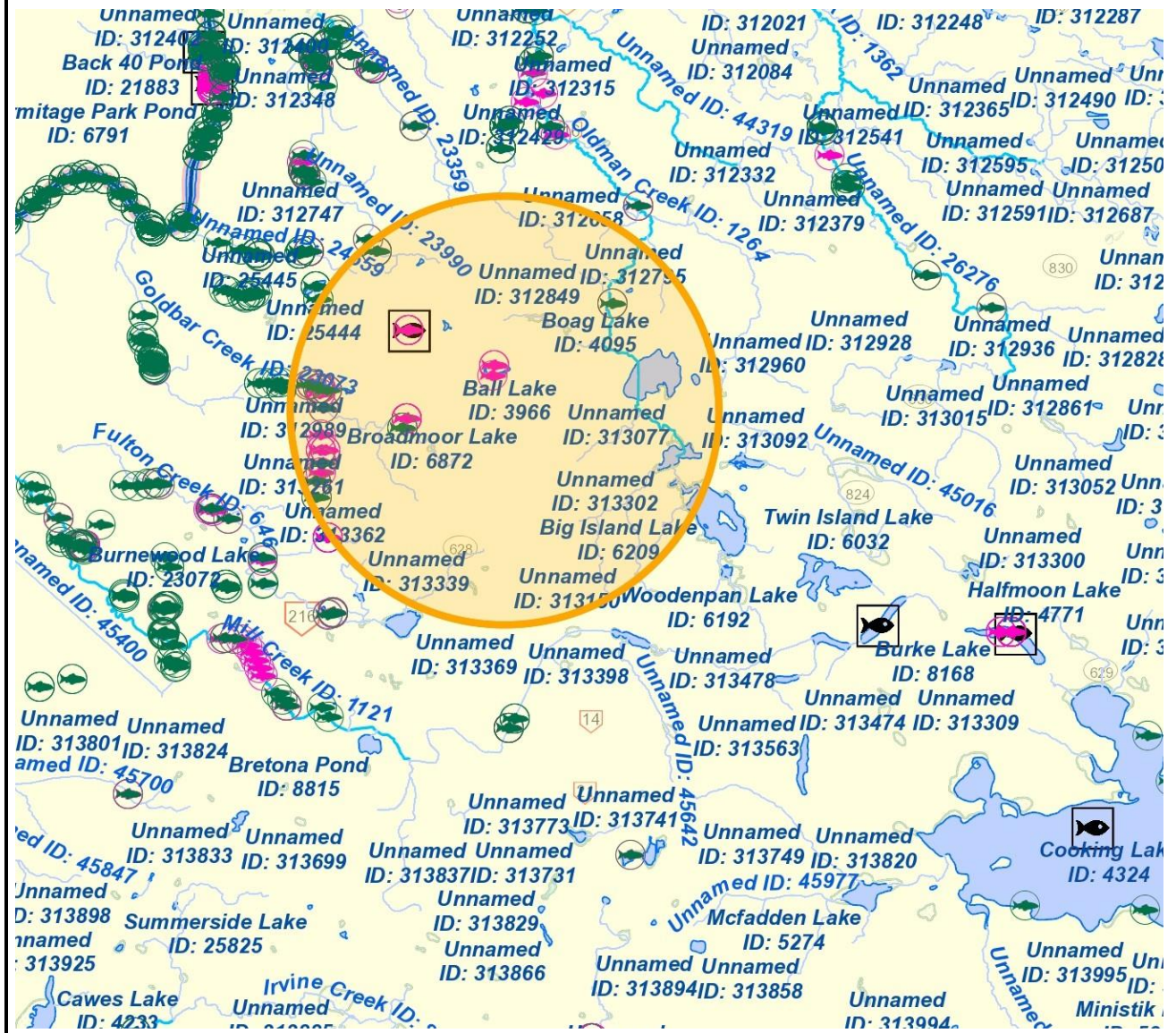
Radius or Dimensions

5 kilometers

Contact Information

For contact information, please visit:

<http://aep.alberta.ca/about-us/contact-us/fisheries-wildlife-management-area-contacts.aspx>



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Fish and Wildlife Internet Mapping Tool (FWIMT)

(source database: Fish and Wildlife Management Information System (FWMIS))

Species Summary Report

Report Created: 17-Oct-2017 10:44

Species present within the current extent :

Fish Inventory

BROOK STICKLEBACK
FATHEAD MINNOW

Wildlife Inventory

AMERICAN BITTERN
AMERICAN KESTREL
BANK SWALLOW
BARN SWALLOW
BLACK TERN
BOREAL TOAD
COMMON YELLOWTHROAT
EASTERN KINGBIRD
EASTERN PHOEBE
GRASSHOPPER SPARROW
GREAT BLUE HERON
GREAT GRAY OWL
HORNED GREBE
LEAST FLYCATCHER
LONG-TAILED WEASEL
NORTHERN PYGMY-OWL
PIED-BILLED GREBE
PURPLE MARTIN
SHORT-EARED OWL
SORA
TRUMPETER SWAN
WESTERN WOOD-PEWEE

Stocked Inventory

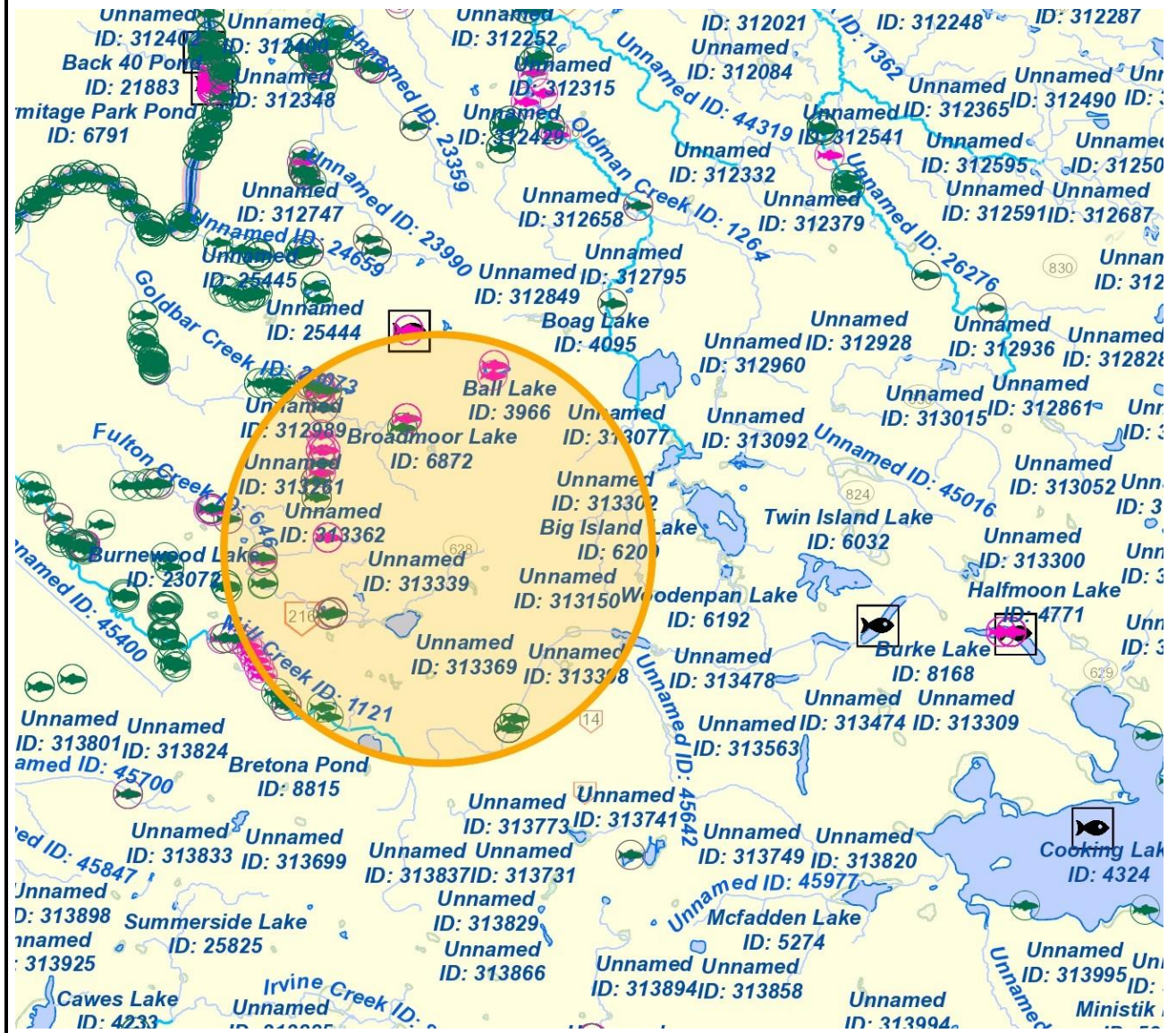
Buffer Extent

Centroid (X,Y):	Projection	Centroid: (Qtr Sec Twp Rng Mer)	Radius or Dimensions
613049, 5925000	10-TM AEP Forest	SW 14 52 23 4	5 kilometers

Contact Information

For contact information, please visit:

<http://aep.alberta.ca/about-us/contact-us/fisheries-wildlife-management-area-contacts.aspx>



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Fish and Wildlife Internet Mapping Tool (FWIMT)

(source database: Fish and Wildlife Management Information System (FWMIS))

Species Summary Report

Report Created: 17-Oct-2017 10:46

Species present within the current extent :

Fish Inventory

BROOK STICKLEBACK
FATHEAD MINNOW

Wildlife Inventory

BANK SWALLOW
BARN SWALLOW
BLACK TERN
BLACK-CROWNED NIGHT-HERON
COMMON YELLOWTHROAT
EASTERN KINGBIRD
EASTERN PHOEBE
FORSTER'S TERN
GREAT BLUE HERON
GREAT GRAY OWL
LEAST FLYCATCHER
LONG-TAILED WEASEL
NORTHERN PYGMY-OWL
PURPLE MARTIN
SHORT-EARED OWL
SORA
WESTERN WOOD-PEWEE

Stocked Inventory

Buffer Extent

Centroid (X,Y):

614654, 5925039

Projection

10-TM AEP Forest

Centroid: (Qtr Sec Twp Rng Mer)

SE 14 52 23 4

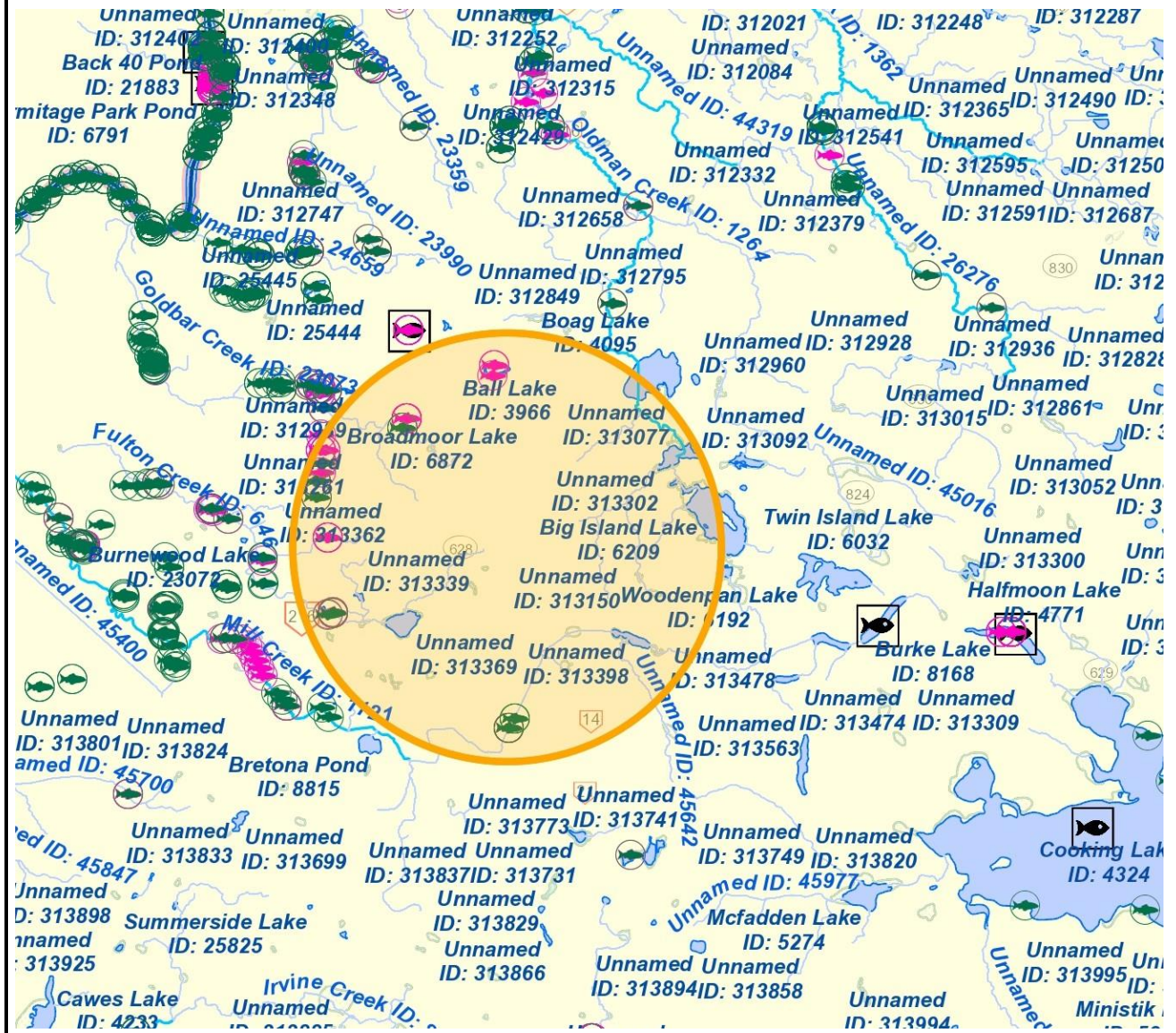
Radius or Dimensions

5 kilometers

Contact Information

For contact information, please visit:

<http://aep.alberta.ca/about-us/contact-us/fisheries-wildlife-management-area-contacts.aspx>



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