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Rocky View County

Environmental Screening Report

Janet Area Structure Plan (ASP) Amendment Boundary

Prepared for:
Rocky View County

Project number:
22042

November 2022

DISTRIBUTION:

| | |
|--------|----------------------|
| 1 Copy | Rocky View County |
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Submitted To:

Rocky View County

Kaitlyn Luster, RPP, MCIP
262075 Rocky View Point | Rocky View County | AB | T4A 0X2

Submitted By:

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October 28, 2022

Kaitlyn Luster, RPP, MCIP
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Dear Kaitlyn Luster:

Project No: 22042

**Regarding: Rocky View County - Environmental Screening Report -
Janet Area Structure Plan (ASP) Amendment Boundary**

At the request of Rocky View County, RC BioSolutions Ltd. has completed an Environmental Screening Report for the Janet Area Structure Plan (ASP) Amendment Boundary.

If you have any questions or comments regarding the report, please contact our office at your convenience.

Sincerely,
RC BioSolutions Ltd.



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Appendix A. Janet Area Structure Plan Land Use Map

1 Project Description

1.1 Purpose and Scope

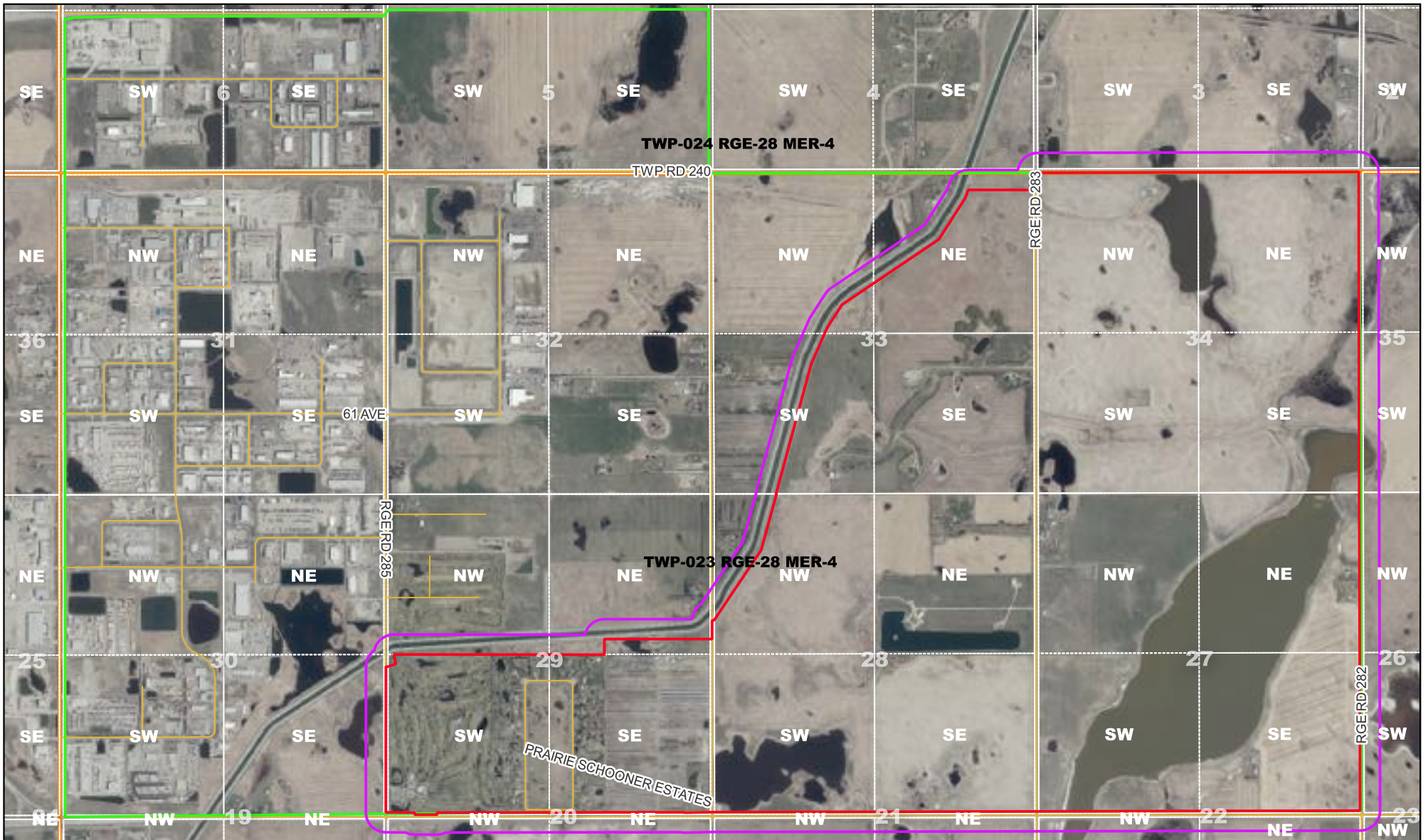
RC BioSolutions Ltd. (RC Bio) was contracted by Rocky View County to provide an Environmental Screening Report for the Janet Area Structure Plan (ASP) amendment area (Figure 1). The purpose of this Environmental Screening is to complete desktop level investigations, determine the existing environmental conditions of the area, and to assess potential and actual environmental impacts that may occur as a result of disturbance based on the type and scope of the proposed development. It is also meant to address the Regional Evaluation Framework (REF) policy surrounding Environmentally Sensitive Areas. The intention of the Environmentally Sensitive Area policies is to identify and mitigate the effects of development on larger patterns of ecosystem functions and services (i.e. regionally significant natural area components).

The Janet Area Structure Plan (Rocky View County 2014) was approved by Council in 2014. The Janet Area Structure Plan (Rocky View County 2022) is currently being amended to include updated information for all areas east of the canal (current project area). All plans should comply with the *Municipal Government Act*. All Area Structure Plans must now comply with the new Regional Evaluation Framework (CMRB Land Use & Servicing Committee 2022) to meet the practices and procedures of the Calgary Metropolitan Region Board (CMRB).

As per the CMRB Land Use & Servicing Committee (2022) Regional Evaluation Framework Interpretation Guide, Environmentally Sensitive Areas are defined within the Growth Plan as “key natural area components of the regional landscape, providing essential ecosystem functions and services. These functions and services include flood mitigation, drinking water supply, maintenance of regional biodiversity, preservation and connectivity of unique habitats and landscapes, and provision of culturally and economically valued resources and opportunities.” The Environmentally Sensitive Areas definition found in the Growth Plan glossary also notes that these areas:

- Maintain the provision of water quality and quantity and provide protection against drought and flood events. Includes water courses, water bodies, and riparian areas
- Provide habitat for identified local species of interest, designated species of conservation concern (SCC), or identified focal species groups
- Provide rare, unique or biologically diverse ecosystems or unique landforms
- Contribute to other important Ecosystems Services or functions at the local scale
- Include provincial Environmentally Significant Areas.

For the purposes of this report, we will not use the abbreviation “ESA” for Environmentally Sensitive Areas because the provincial Environmentally Significant Areas uses the same acronym. As such, we will not use “ESA” for either environmentally significant areas or environmentally sensitive areas to avoid confusion and will use the full name in every instance.

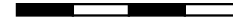


Legend

- ASP Boundary
- ASP Amendment Boundary
- ASP Amendment Boundary (100 m buffer)



0 200 400 600 800 m



Scale: 1:27,000

NAD83 / Alberta 3TM ref merid 114 W

**Rocky View County
Janet Environmental Screening Report**

**Figure 1
Janet Area Structure Plan Boundary**

1.2 Location and Size

The project is located east of Calgary, south of Chestermere, and surrounding the hamlet of Janet in Rocky View County, Alberta. The project area falls within the following quarter sections fully or in part (Figure 2):

Table 1 – Quarter Sections Involved in the Janet ASP Amendment Area

| | | | | |
|-----------------|-----------------|-----------------|-----------------|-----------------|
| NE 27-23-28-W4M | NE 28-23-28-W4M | NE 29-23-28-W4M | NE 33-23-28-W4M | NE 34-23-28-W4M |
| NW 27-23-28-W4M | NW 28-23-28-W4M | | NW 33-23-28-W4M | NW 34-23-28-W4M |
| SE 27-23-28-W4M | SE 28-23-28-W4M | SE 29-23-28-W4M | SE 33-23-28-W4M | SE 34-23-28-W4M |
| SW 27-23-28-W4M | SW 28-23-28-W4M | SW 29-23-28-W4M | SW 33-23-28-W4M | SW 34-23-28-W4M |

The Janet ASP Amendment area is 1,046.51 ha. As per the CMRB Land Use & Servicing Committee (2022) Regional Evaluation Framework Interpretation Guide, a 100 m buffer has been added to the Janet ASP Amendment area for all desktop searches. This makes the study area a total of 1,202.50 ha.

**Rocky View County
Janet Environmental Screening Report**

Figure 2

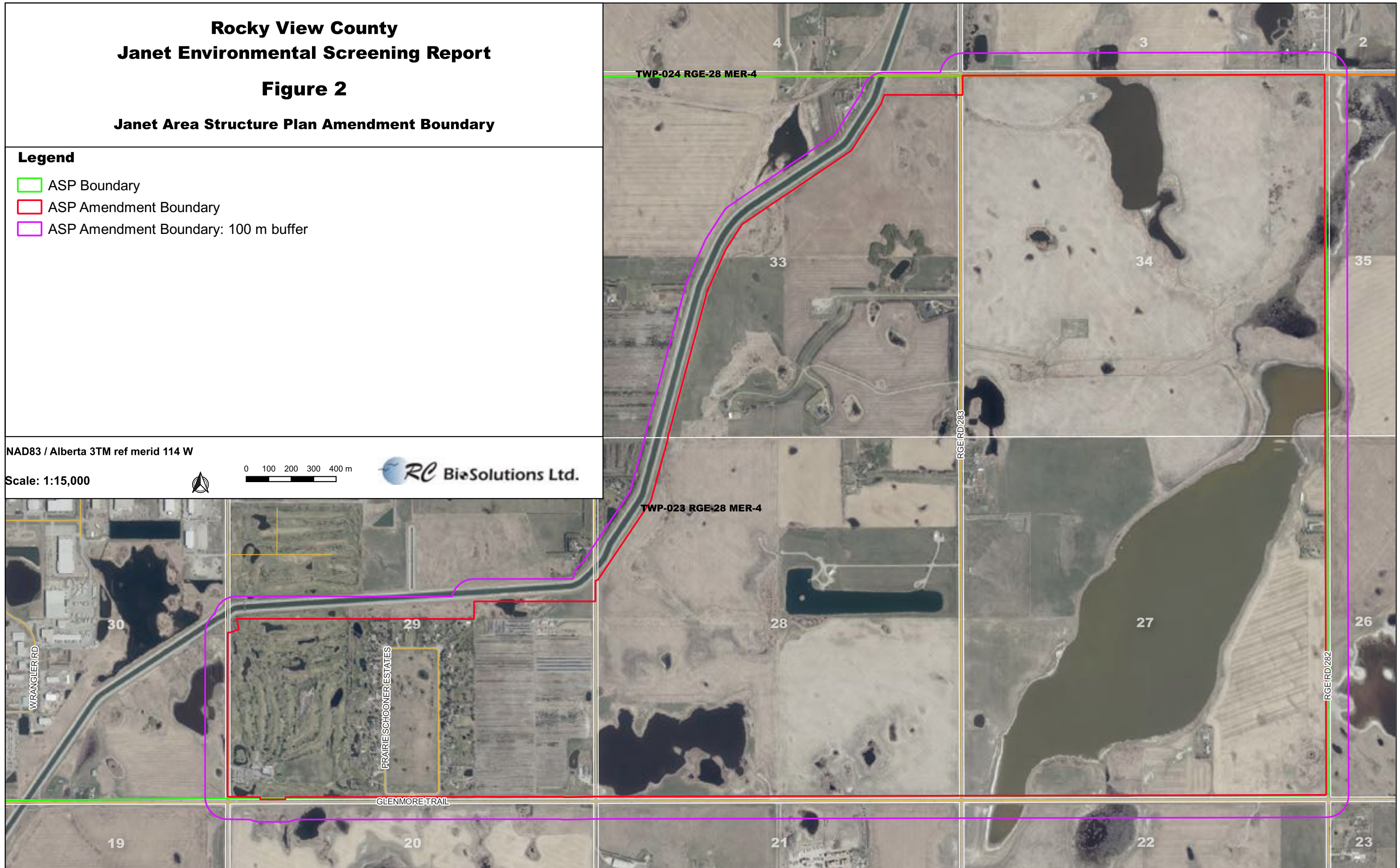
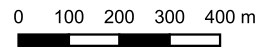
Janet Area Structure Plan Amendment Boundary

Legend

- ASP Boundary
- ASP Amendment Boundary
- ASP Amendment Boundary: 100 m buffer

NAD83 / Alberta 3TM ref merid 114 W

Scale: 1:15,000



2 Biophysical Inventory

2.1 Land Use

The current land use of the project footprint is agriculture and small acreage residential developments (Rocky View County 2022; Appendix A). As per the ASP, there is one key area of country residential within the amendment area, which is located in the southwest. The Prairie Schooner Estates community is on the north side of Glenmore Trail and next to the Heather Glen Golf Course on the west and the Western Headworks Canal on the north. The Western Headworks Canal is Crown Land that forms the west border of the amendment area. It is used to satisfy irrigation requirements of local agricultural operations. The land also contains a regions pathway and trail system that provides recreational opportunities (Rocky View County 2022).

The proposed ASP amendment will result in the conversion of the project area from a combination of country residential and agriculture into commercial in four eastern sections, country residential in the existing location of Prairie Schooner Estates, and commercial to the west and east of Prairie Schooner Estates, and along Township Road 240 in the north (Map 5; Rocky View County 2022).

2.2 Biological Resources

2.2.1 Natural Subregion

The project is located within the Foothills Fescue Grassland Natural Subregion of Alberta (Adams et al. 2003) and is near to the Central Parkland, Northern Fescue, Foothills Parkland, and Mixedgrass Natural Subregions. This area is unique due to the micro-climatic conditions and the number of species common to different parts of Alberta that are found together in one location. The historically dominant vegetation in the uplands would have been *Festuca campestris* (foothills rough fescue) and in wetlands would be *Typha latifolia*, *Carex atherodes*, and *Scirpus validus*, depending on the site characteristics.

The land use surrounding the site is generally cultivated or grassland, with limited farmyard, industrial, and recreational development. The wetlands in this region are typically prairie pothole marshes with willow or poplar buffers around the edges. The plant communities are generally cultivated consisting mostly of annual crops and tame pasture. In areas with no cultivation, there are native grassland communities interspersed with wetlands.

2.2.2 Vegetation – Plant Community Composition

2.2.2.1 Methodology

The Grassland Vegetation Inventory (GVI) database (Government of Alberta 2011) was utilized to determine vegetation/habitat types, as this was the only vegetation mapping database available in this location.

2.2.2.2 Results

The project area is primarily crop (irrigated and non-irrigated), tame pasture or hay, and wetland. Thirteen GVI categories occur within the project area (Table 2), with an additional three categories (Developed – Dev, Lotic (Herbaceous) – LtcH, and Lotic (River) – LtcR) occurring within the 100 m buffer (Figure 3). Please note that the GVI data set for this area was completed in 2009 so any changes to the landscape since that time have not been captured.

Rocky View County Janet Environmental Screening Report

Figure 3

Vegetation Types from Grassland Vegetation Inventory (GVI)

Legend

- ASP Boundary
- ASP Amendment Boundary
- ASP Amendment Boundary: 100 m buffer

Grassland Vegetation Index

- | | |
|---|--|
| <ul style="list-style-type: none"> Blowouts/Solonchic - BIO Crop (Irrigated) - CI Crop (Non-irrigated) - CN Developed - Dev Lentic (Alkali) - LenA Lentic (Open Water) - LenW Lentic (Seasonal) - LenS Lentic (Semi-Permanent to Permanent) - LenSP | <ul style="list-style-type: none"> Lentic (Temporary) - LenT Loamy - Lo Lotic (Herbaceous) - Ltch Lotic (River) - LtchR Rural - Ru Subirrigated - Sb Tame Pasture or Hay (Non-irrigated) - PN Urban - Ur |
|---|--|

NAD83 / Alberta 3TM ref merid 114 W

Scale: 1:15,000



0 100 200 300 400 m

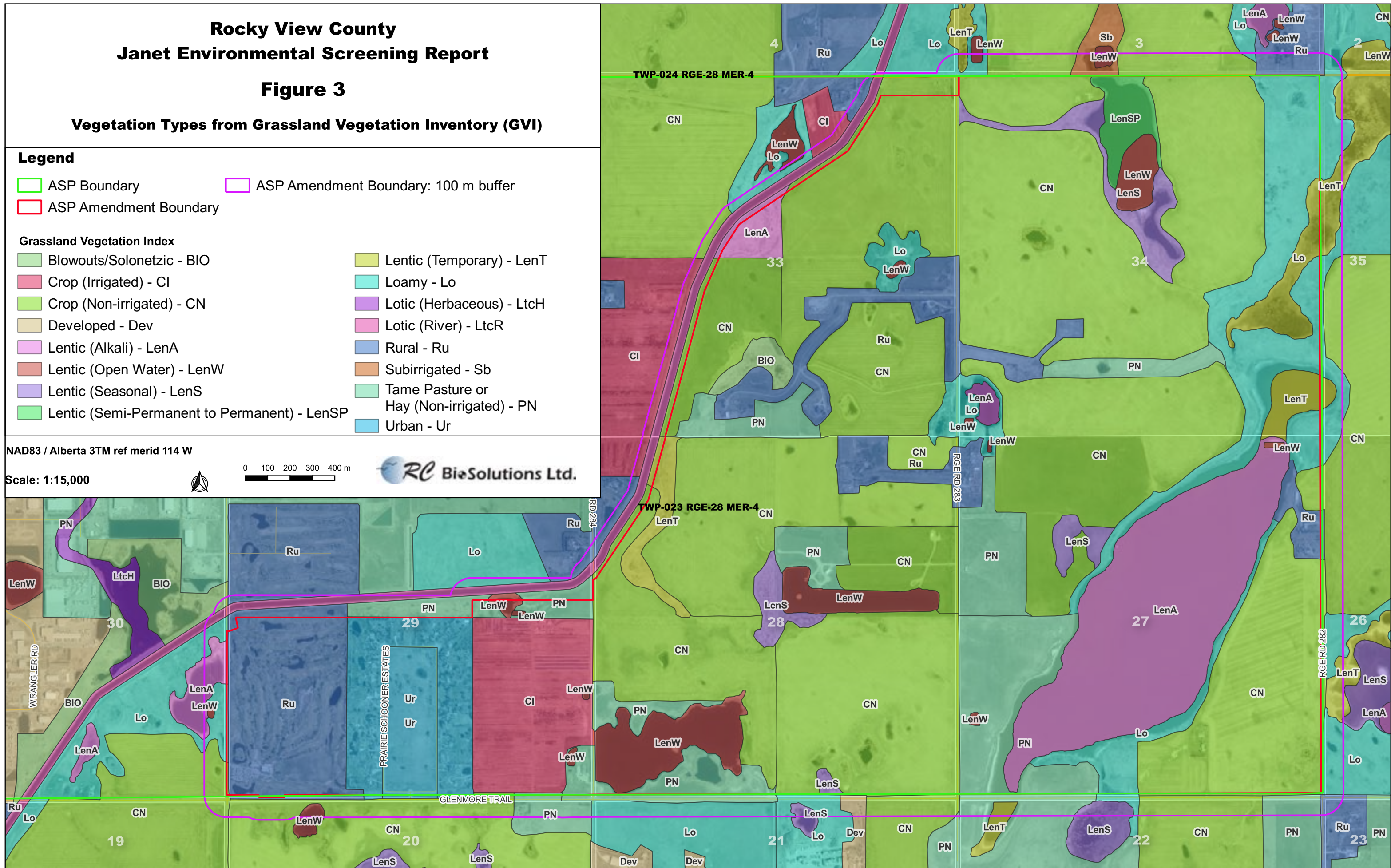


Table 2 – GVI Categories Present Within the Project Area

| GVI Category | Description ¹ | Area/Percentage Occurring in Project Area |
|--|---|---|
| Blowouts/Solonchic – BIO | Usually occur in swales or at slope inflections within plains. Can be in valley bottoms or on inclined surfaces. Occur in solonchic soils. Usually occur with loamy sites. Relies on soils surveys for proper identification. | 4.37 ha (0.42%) |
| Crop (Irrigated) – CI | Irrigation replaces or supplement rainfall in order to grow crops. Can include ditch/furrow, terracing, overhead/sprinkler, center pivot, lateral move and drip, or trickle. Crops include row crops (potatoes, sugar beets, corn, and vegetables), small grains (wheat, barley, oats, triticale, & mixed grains), oilseeds (canola & flax), sod, pulses (peas, lentils, fababeans, etc.), fallow (do not exhibit visible vegetation), & tree/shrub farms or nurseries. | 39.20 ha (3.75%) |
| Crop (Non-irrigated) – CN | Relies on direct rainfall for crop growth. Crops include row crops (potatoes, sugar beets, corn, and vegetables), small grains (wheat, barley, oats, triticale, & mixed grains), oilseeds (canola & flax), sod, pulses (peas, lentils, fababeans, etc.), fallow (do not exhibit visible vegetation), & tree/shrub farms or nurseries. | 548.64 ha (52.42) |
| Lentic (Alkali) – LenA | Wetlands that hold surface water for variable time periods ranging from a few weeks to several months. Vegetation is variable to none and there is a distinct salt crust. | 87.35 ha (8.34%) |
| Lentic (Open Water) – LenW | Permanent open water areas typically larger than 1 ha. Bordering zones may include peripheral “deep marsh”, “shallow marsh”, “wet meadow”, “low prairie”, and “fen”. Lentic wetlands that are larger than 1 ha, but have open water zones smaller than 1 ha will be mapped as Lentic (semi-permanent to permanent). Typically, can be lakes, reservoirs, dugouts, or beaver ponds. | 32.50 ha (3.10%) |
| Lentic (Seasonal) – LenS | Wetlands with surface water persisting more than 3 weeks. Water is normally gone by early July. Typically have lush vegetation due to a higher water table. Deepest parts are “shallow marsh” with peripheral areas potentially being “wet meadow” or “low prairie”. Typically have no salt crust. | 20.55 ha (1.96%) |
| Lentic (Semi-Permanent to Permanent) – LenSP | Marshes and lakes where water persists throughout the year in most years, except during extreme drought. Dominated by “deep marsh” and “shallow marsh” zones with emergent vegetation (cattails & bulrushes). “Wet meadow” & “low prairie” zones are usually present. Isolated pockets of “fen” zones can occur. Sites are often adjacent to Lentic (Open Water). | 8.24 ha (0.79%) |
| Lentic (Temporary) – LenT | Wetlands where surface water is usually retained for only a brief period in early spring and occasionally for several days after heavy rain in late spring, summer, & fall. Vegetation is classed as dead “dry wet meadow” or “low prairie”, with no salt crust. | 20.26 ha (1.94%) |

| GVI Category | Description ¹ | Area/Percentage Occurring in Project Area |
|--|---|---|
| Loamy – Lo | Often associated with morainal landforms (undulated to hummocky terrain). Includes loam, silt loam, silt, clay loam, sandy clay loam, & silty clay loam soils. Relies on soils surveys for proper identification. | 69.99 ha (6.69%) |
| Rural – Ru | Areas with people living in sparsely populated lands laying outside urban areas or areas being used by a relatively small number of people on a temporary basis where the native vegetation surface cover has been removed or severely altered by anthropogenic activity. | 82.68 ha (7.90%) |
| Subirrigated – Sb | Has water close to the surface, but is not a wetland or a creek. Water table is close to the surface during growing season, but rarely above. Often has patches or bands of lush vegetation. Does not have depressional edges. | 0.042 ha (0.00%) |
| Tame Pasture or Hay (Non-irrigated) – PN | Areas of grasses, legumes, or grass-legume mixtures planted for livestock grazing or hay crops. Relies directly on rainfall for crop growth. | 88.42 ha (8.45%) |
| Urban – Ur | Areas where much of the land is covered by structures and the population density is high. Includes cities, towns, summer villages, townsites, hamlets, cottage developments, strip developments, cemeteries, and shopping centers. | 44.47 ha (4.25%) |

¹ Descriptions are from Government of Alberta (2011)

2.2.3 Vegetation – Rare Plants

2.2.3.1 Methodology

A search was completed for plant species considered endangered or threatened according to the Alberta Conservation and Information Management Systems (ACIMS 2022) database and/or the SARA and COSEWIC (Government of Canada 2022a,b).

Native plant species are considered wildlife under the National Wildlife Policy for Canada and must be protected. In Alberta, protection of rare and endangered vascular plant species is an important part of environmental planning due to anthropogenic activities becoming more common. Depending on the location of future projects, vegetation assessments and rare plant surveys may be required. If needed, these surveys must be completed during appropriate survey times according to the Government of Alberta standards. The rare plant surveys will be conducted according to the procedures outlined by the Alberta Native Plant Council's "Guidelines for Rare Plant Surveys".

Rare plants are those listed on the provincial (Alberta Conservation Information Management System; ACIMS) or national (Committee on the Status of Endangered Wildlife in Canada; COSEWIC) lists. Within Alberta, a rare plant is defined as a plant with few recorded collection locations (five or fewer) or with one of the following distribution patterns: (1) widespread, but rare throughout its range, (2) widespread, but only small populations in Alberta due to being at the periphery of the range, (3) disjunct species that is widely scattered, but found as localized populations, and (4) endemic species that are rare because they are geographically restricted, but may occur in large numbers in those patches (Packer and Bradley 1984).

In Alberta rare plants are rated within the ACIMS database and follow the NatureServe ranking methodology (ACIMS 2022):

- S1: Known from five or fewer occurrences in the province or especially vulnerable to extirpation due to other factors.
- S2: Known from 20 or fewer occurrences or vulnerable to extirpation because of other factors.
- S3: Known from 100 or fewer occurrences or vulnerable to extirpation because of other factors.
- S4: Apparently secure, taxon is uncommon, but rare, and there is potentially some cause for long-term concern due to declines or other factors.
- S5: Secure, the taxon is common, widespread, and abundant.

S1, S2, and some S3 species are considered rare enough to be tracked by the Natural Heritage Information Centre.

Rare vascular plants within the Foothills Fescue Grassland Natural Subregion are found across all moisture conditions, but are most common in very dry and very wet sites. Moisture conditions, combined with soil type, sunlight, and exposure create specific habitats to find rare and endangered species, which include: (1) native grasslands, (2) wetlands, (3) groundwater seepage areas (springs, seeps), (4) steep eroding slopes, (5) disturbed ground, (6) stream banks, and (7) sandstone outcrops. Within the proposed development areas, there are no groundwater seepage areas, stream banks, steep eroding slopes, or sandstone outcrops. There are multiple wetlands on site.

2.2.3.2 Results

A literature review was completed using the Alberta Conservation Information Management Systems (ACIMS) Rare Plant Tracking List (ACIMS 2022) and Community Tracking list (ACIMS 2022). The purpose of this review is to identify potential rare plants and plant communities that can occur within the project area. No species or rare plants listed as sensitive have been documented within the project area or within a significant distance (10 kilometers [km]) of the project area. One species of rare plant listed as sensitive was found within 20 km of the project area, *Iris missouriensis* (Table 3). *Iris missouriensis* prefers moist meadows in the transitional area between drier upland slopes, wet meadows, or seepage springs. *Iris missouriensis* generally occurs on flat areas or gentle slopes with abundant subsurface moisture. It is often found around moist depressions with willow thickets (COSEWIC 2010). Thirty-one species of non-sensitive tracked species were found within 20 km of the project footprint, with 13 occurring within 10 km.

Table 3 – Sensitive and Non-Sensitive Species found within 20 km

| Scientific Name | Common Name |
|--|--|
| SENSITIVE SPECIES | |
| <i>Iris missouriensis</i> | Western blue flag |
| NON-SENSITIVE SPECIES | |
| <i>Carex crawei</i> ¹ | Crawe's sedge |
| <i>Chaenotheca chrysocephala</i> | Stubble lichen |
| <i>Corispermum pallasii</i> | Pallas' bugseed |
| <i>Corispermum villosum</i> | Hairy bugseed |
| <i>Didymodon fallax</i> ¹ | Fallacious screw moss |
| <i>Drepanocladus brevifolius</i> | Brown moss |
| <i>Elaeagnus commutata</i> ¹ | Silverberry riparian |
| <i>Eleocharis engelmannii</i> ¹ | Engelmann's spike-rush |
| <i>Elodea bifoliata</i> ¹ | Two-leaved waterweed |
| <i>Elodea canadensis</i> ¹ | Canada waterweed |
| <i>Enallagma anna</i> ¹ | River Bluet |
| <i>Fissidens grandifrons</i> | Narrow-leaved Chinese phoenix moss |
| <i>Flavopunctelia soledica</i> | Powder-edged speckled greenshield lichen |
| <i>Gratiola neglecta</i> ¹ | Clammy hedge-hyssop |
| <i>Hennediella heimii</i> | Long-stalked beardless moss |
| <i>Hygroamblystegium tenax</i> | Moss |
| <i>Ischnura cervula</i> | Pacific Forktail |
| <i>Lithospermum occidentale</i> ¹ | Western false gromwell |
| <i>Oenothera flava</i> | Low yellow evening-primrose |
| <i>Orthotrichum pumilum</i> | Moss |
| <i>Physconia enteroxantha</i> | Frost lichen |
| <i>Pterygoneurum ovatum</i> ¹ | Hairy-leaved beardless moss |
| <i>Rhodobryum ontariense</i> | Ontario Rhodobryum moss |
| <i>Riccia cavernosa</i> ¹ | Liverwort |
| <i>Rorippa curvipes</i> ¹ | Blunt-leaved watercress |
| <i>Ruppia cirrhosa</i> | Widgeon-grass |
| <i>Salicornia rubra</i> ¹ | Samphire emergent marsh |
| <i>Scapania glaucocephala</i> | Glaucous-headed liverwort |
| <i>Sciuro-hypnum reflexum</i> | Cedar moss |
| <i>Seligeria campylopoda</i> | Moss |
| <i>Xanthomendoza montana</i> | Sunburst lichen |

¹ Species found within 10 km of the Project Area, but not in the Project Area

Early and late season rare plant surveys will be required for Biophysical Impact Assessments (BIA) containing any of the seven types of areas listed above, particularly wetlands. Early season rare plant surveys should occur in June and late season rare plant surveys should occur in August.

2.2.4 Vegetation – Weeds

2.2.4.1 Methodology

There are no databases of weeds for project area.

2.2.4.2 Results

As there is no database for weeds, a list of restricted, noxious, and nuisance weeds as per Alberta Weed Act (Province of Alberta 2011) can be completed during a BIA vegetation field survey.

2.2.5 Wildlife

The wildlife habitat present in the Foothills Fescue Grassland Subregion contains undulating grassland and rolling to hummocky uplands. Grassland habitat with light grazing pressure may contain Sharp-tailed Grouse (*Tympanuchus phasianellus*), Baird's Sparrow (*Ammodramus bairdii*), and Sprague's Pipit (*Anthus spragueii*), and potentially Burrowing Owls (*Athene cunicularia*; Natural Regions Committee 2006). Heavily grazed areas can include Horned Lark (*Eremophila alpestris*), McCown's Longspur (*Rhynchophanes mccownii*), and Chestnut-collared Longspur (*Calcarius ornatus*; Natural Regions Committee 2006). Rivers, streams, wetlands, and lakes can contain marsh birds, shorebirds, dabbling ducks, and amphibians (Natural Regions Committee 2006).

2.2.5.1 Methodology

A desktop review of provincial databases was conducted to identify wildlife species present in the area listed as "endangered", "threatened", or of "special concern" by either federal or provincial governments (Government of Canada 2022a,b; Government of Alberta 2022). Databases reviewed include Alberta Environment and Parks's (AEP) General Status of Alberta Wild Species (Government of Alberta 2022), AEP Fisheries and Wildlife Management Information System (FWMIS) database (Alberta Environment and Parks 2022a), and the Database of Wildlife Species Assessed by SARA Wildlife Species Search (Government of Canada 2022b). FWIMS searches were completed for the project area + 100 m and a 5 km radius surrounding the buffered project area.

2.2.5.2 Results

A total of three wildlife species were documented in the project area that were considered sensitive: Eared Grebe (*Podiceps nigricollis*), Horned Grebe (*Podiceps auritus*), and Sora (*Porzana carolina*) and 18 species within 5 km were provincially listed: one amphibian species, 16 bird species, and one mammal species (Table 4). None of the species are listed under the Alberta *Wildlife Act*. Multiple species are listed under COSEWIC and SARA:

- Barn Swallow (*Hirundo rustica*) – Provincially 'May be at Risk', COSEWIC 'Special Concern', and SARA 'Threatened'
- Burrowing Owl (*Athene cunicularia*) – Provincially, COSEWIC, and SARA 'Endangered'
- Horned Grebe (*Podiceps auritus*) – Provincially 'Sensitive' and COSEWIC/SARA 'Special Concern'
- Piping Plover (*Charadrius melodus*) – Provincially, COSEWIC, and SARA 'Endangered'
- Short-eared Owl (*Asio flammeus*) – Provincially 'May be at Risk', COSEWIC 'Threatened', and SARA 'Special Concern'
- Badger (*Taxidea taxus*) – Provincially 'Sensitive' and COSEWIC/SARA 'Special Concern'
- Boreal Toad (*Anaxyrus boreas*) – Provincially 'Sensitive' and COSEWIC/SARA 'Special Concern'

Using the FWIMT, it was determined that the following Wildlife Sensitivity Layers are located within the ASP area boundary (Figure 4):

- Sensitive Raptor Range – Bald Eagle, Golden Eagle, Prairie Falcon (covers entire ASP area). Ferruginous Hawk Range is approximately 3 km to the southeast of the project area.
- Sharp-tailed Grouse Survey Area (covers entire ASP area)
- Leopard Frogs (covers entire ASP area)

Table 4 – Wildlife species found in the FWMIS database for the project area within a 5 km buffer

| Common Name | Species Name | Status | | |
|----------------------------------|---------------------------------|----------------------|----------------------|-------------------|
| | | Alberta ¹ | COSEWIC ² | SARA ³ |
| BIRDS | | | | |
| Barn Swallow | <i>Hirundo rustica</i> | May be at Risk | Special Concern | Threatened |
| Black Tern | <i>Chlidonias niger</i> | Sensitive | Not at Risk | N/A |
| Black-necked Stilt | <i>Himantopus mexicanus</i> | Sensitive | N/A | N/A |
| Brewer's Sparrow | <i>Spizella breweri</i> | Sensitive | N/A | N/A |
| Burrowing Owl | <i>Athene cunicularia</i> | At Risk - Endangered | Endangered | Endangered |
| Common Yellowthroat | <i>Geothlypis trichas</i> | Sensitive | N/A | N/A |
| Eared Grebe* | <i>Podiceps nigricollis</i> | Sensitive | N/A | N/A |
| Eastern Kingbird | <i>Tyrannus tyrannus</i> | Sensitive | N/A | N/A |
| Forster's Tern | <i>Sterna forsteri</i> | Sensitive | Non-active | N/A |
| Grasshopper Sparrow | <i>Ammodramus savannarum</i> | Sensitive | N/A | N/A |
| Great Blue Heron | <i>Ardea herodias</i> | Sensitive | N/A | N/A |
| Horned Grebe* | <i>Podiceps auritus</i> | Sensitive | Special Concern | Special Concern |
| Piping Plover | <i>Charadrius melodus</i> | At Risk - Endangered | Endangered | Endangered |
| Sharp-tailed Grouse | <i>Tympanuchus phasianellus</i> | Sensitive | N/A | N/A |
| Short-eared Owl | <i>Asio flammeus</i> | May be at Risk | Threatened | Special Concern |
| Sora* | <i>Porzana carolina</i> | Sensitive | N/A | N/A |
| MAMMALS | | | | |
| Badger | <i>Taxidea taxus</i> | Sensitive | Special Concern | Special Concern |
| AMPHIBIANS & REPTILES | | | | |
| Boreal Toad | <i>Anaxyrus boreas</i> | Sensitive | Special Concern | Special Concern |

(1) General Status of Alberta's Wild Plants and Animals (Government of Alberta 2022)

(2) Status listed by the Committee on the Status of Endangered Wildlife in Canada (Government of Canada 2022a)

(3) Species at Risk Act (Government of Canada 2022b)

* Species found within the project area and 100 m buffer

It is recommended that any future development require a Biophysical Impact Assessment (BIA). The following wildlife surveys would be required:

- Breeding Bird
- Sensitive Raptor
- Amphibian (when wetlands are present)
- Sharp-tailed Grouse (depending on the parcel)
- Water Bird (as all Sensitive species known in the project area are water birds)
- Species at Risk (vary depending on the parcel and the available habitat)
- Incidental Wildlife/Wildlife Habitat




These surveys should be completed between the beginning of March and the end of June, depending on the species and weather conditions (Government of Alberta 2013).

**Rocky View County
Janet Environmental Screening Report**

Figure 4

Sensitive Wildlife Layers

Legend

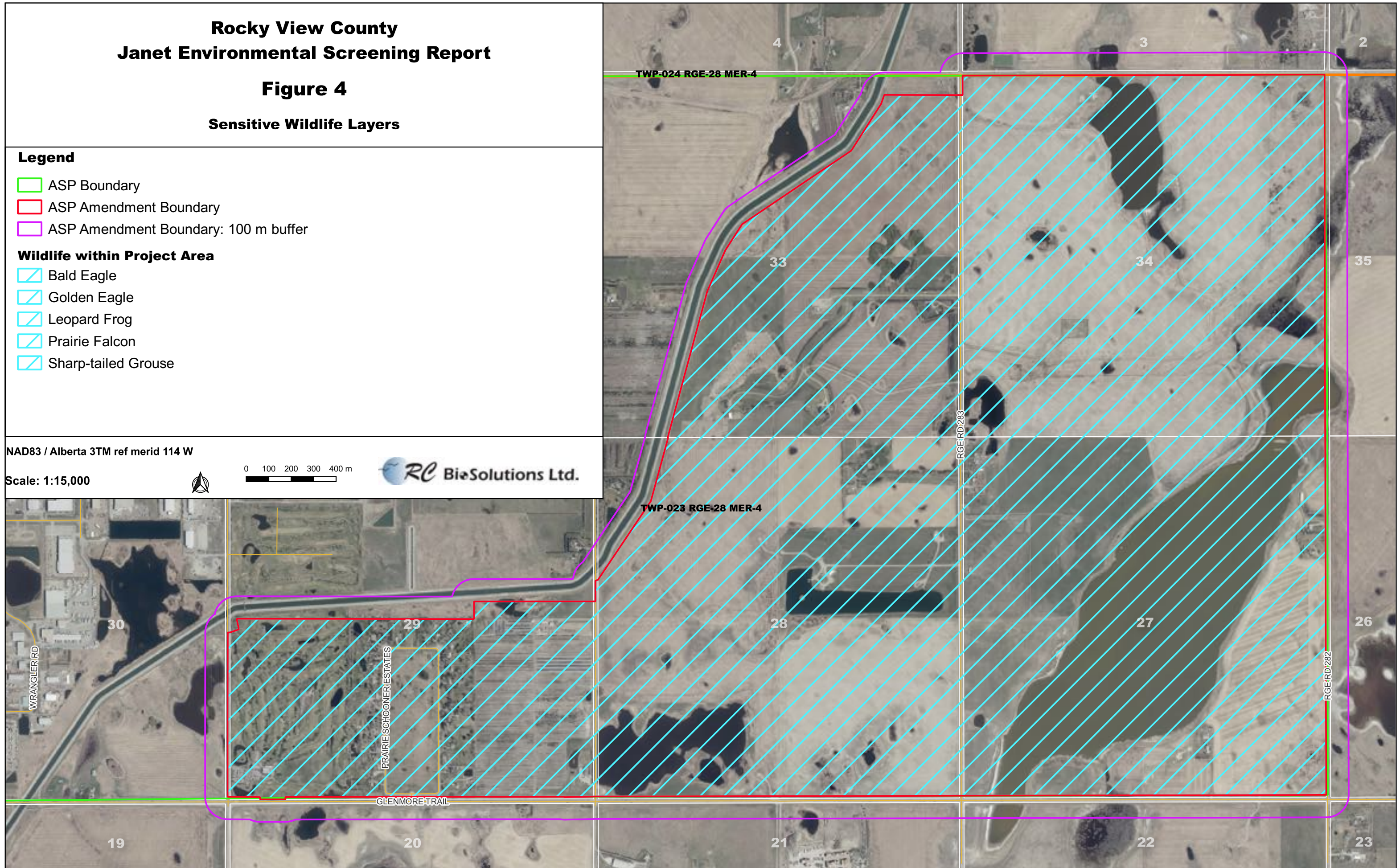
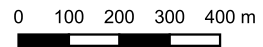
-  ASP Boundary
-  ASP Amendment Boundary
-  ASP Amendment Boundary: 100 m buffer

Wildlife within Project Area

-  Bald Eagle
-  Golden Eagle
-  Leopard Frog
-  Prairie Falcon
-  Sharp-tailed Grouse

NAD83 / Alberta 3TM ref merid 114 W

Scale: 1:15,000



2.2.6 Aquatics

Fish habitat within the Foothills Fescue Grassland Subregion is found in larger rivers and streams, with smaller waterbodies containing marginal fish habitat in the form of shallow open water wetlands or seasonal use canals that likely dry up for freeze to bottom in winter. Table 5 contains fish species known to occur in the subregion, most of which are low dissolved oxygen tolerant species.

2.2.6.1 Methodology

A desktop review of provincial databases was conducted to identify wildlife species present in the area listed as “endangered”, “threatened”, or of “special concern” by either federal or provincial governments (Government of Canada 2022a,b; Government of Alberta 2022). Databases reviewed include Alberta Environment and Park’s (AEP) General Status of Alberta Wild Species (Government of Alberta 2022), AEP Fisheries and Wildlife Management Information System (FWMIS) database (Alberta Environment and Parks 2022a), and the Database of Wildlife Species Assessed by SARA Wildlife Species Search (Government of Canada 2022b).

2.2.6.2 Results

A total of three fish species were found within the project area: Longnose sucker (*Catostomus catostomus*), mountain whitefish (*Prosopium williamsoni*), and rainbow trout (*Oncorhynchus mykiss*) (Table 5). All three species were found within the Bow-Chestermere Diversion/Western Headworks Canal. Seventeen fish species were found within 5 km of the project area with one species being listed as provincially ‘Sensitive’ (Lake Trout; *Salvelinus namaycush*) and one species being listed as provincially ‘May be at Risk’ (Spoonhead Sculpin; *Cottus ricei*).

Table 5 – Fish species found in the FWMIS database for the project area within a 5 km buffer

| Common Name | Species Name | Status | | |
|---------------------|-------------------------------|----------------------|----------------------|-------------------|
| | | Alberta ¹ | COSEWIC ² | SARA ³ |
| Brook Stickleback | <i>Culaea inconstans</i> | Secure | N/A | N/A |
| Brown Trout | <i>Salmo trutta</i> | Exotic/Alien | N/A | N/A |
| Burbot | <i>Lota lota</i> | Secure | N/A | N/A |
| Fathead Minnow | <i>Pimephales promelas</i> | Secure | N/A | N/A |
| Lake Chub | <i>Couesius plumbeus</i> | Secure | N/A | N/A |
| Lake Trout | <i>Salvelinus namaycush</i> | Sensitive | N/A | N/A |
| Lake Whitefish** | <i>Coregonus clupeaformis</i> | Secure | N/A | N/A |
| Longnose Sucker* | <i>Catostomus catostomus</i> | Secure | N/A | N/A |
| Mountain Whitefish* | <i>Prosopium williamsoni</i> | Secure | N/A | N/A |
| Northern Pike | <i>Esox lucius</i> | Secure | N/A | N/A |
| Pearl Dace | <i>Margariscus margarita</i> | Undetermined | N/A | N/A |
| Rainbow Trout* | <i>Oncorhynchus mykiss</i> | Secure | N/A | N/A |
| Spoonhead Sculpin | <i>Cottus ricei</i> | May be at Risk | Not at Risk | N/A |
| Spottail Shiner | <i>Notropis hudsonius</i> | Secure | N/A | N/A |
| Sucker Family | <i>Catostomus Spp.</i> | N/A | N/A | N/A |
| White Sucker | <i>Catostomus commersoni</i> | Secure | N/A | N/A |

| | | | | |
|--------------|-------------------------|--------|-----|-----|
| Yellow Perch | <i>Perca flavescens</i> | Secure | N/A | N/A |
|--------------|-------------------------|--------|-----|-----|

- (1) General Status of Alberta's Wild Plants and Animals (Government of Alberta 2022)
- (2) Status listed by the Committee on the Status of Endangered Wildlife in Canada (Government of Canada 2022a)
- (3) Species at Risk Act (Government of Canada 2022b)
 - * Species found within the project area and 100 m buffer
 - ** Stocked fish species

2.3 Environmentally Significant Areas (ESA) and Protected Areas Database Search

Environmentally Significant Areas (ESAs) are defined as: (1) areas that are important to the long-term maintenance of biological diversity, soil, water or other natural process at multiple scales and (2) areas that contain rare or unique elements or that include elements that may require special management consideration due to their conservation needs. The Alberta Parks Environmentally Significant Areas database includes maps, a final report, and GIS shapefile data.

2.3.1 Methodology

The most current version of the Environmentally Significant Areas (Fiera Biological Consulting 2014) shapefile was obtained from Alberta Environment and Parks (2019) and is presented on the map “as is”.

The Parks and Protected Areas of Alberta (Government of Alberta 2022b) database was also searched.

2.3.2 Results

There are five quarter sections classed as Environmentally Significant Areas within the project area (all on the east side associated with wetlands) and one Environmentally Significant Area quarter section in the 100 m buffer to the west of the project area (Fiera 2014; Figure 5). The quarter sections classed as Environmentally Significant Areas within the project area are NE 34-23-28-W4M, SE 34-23-28-W4M, NE 27-23-28-W4M, NW 27-23-28-W4M, and SW 27-23-28-W4M

There were no parks, protected areas, or natural heritage areas were located within or near the project area.

Rocky View County Janet Environmental Screening Report

Figure 5

Environmentally Significant Areas (Provincial)

Legend

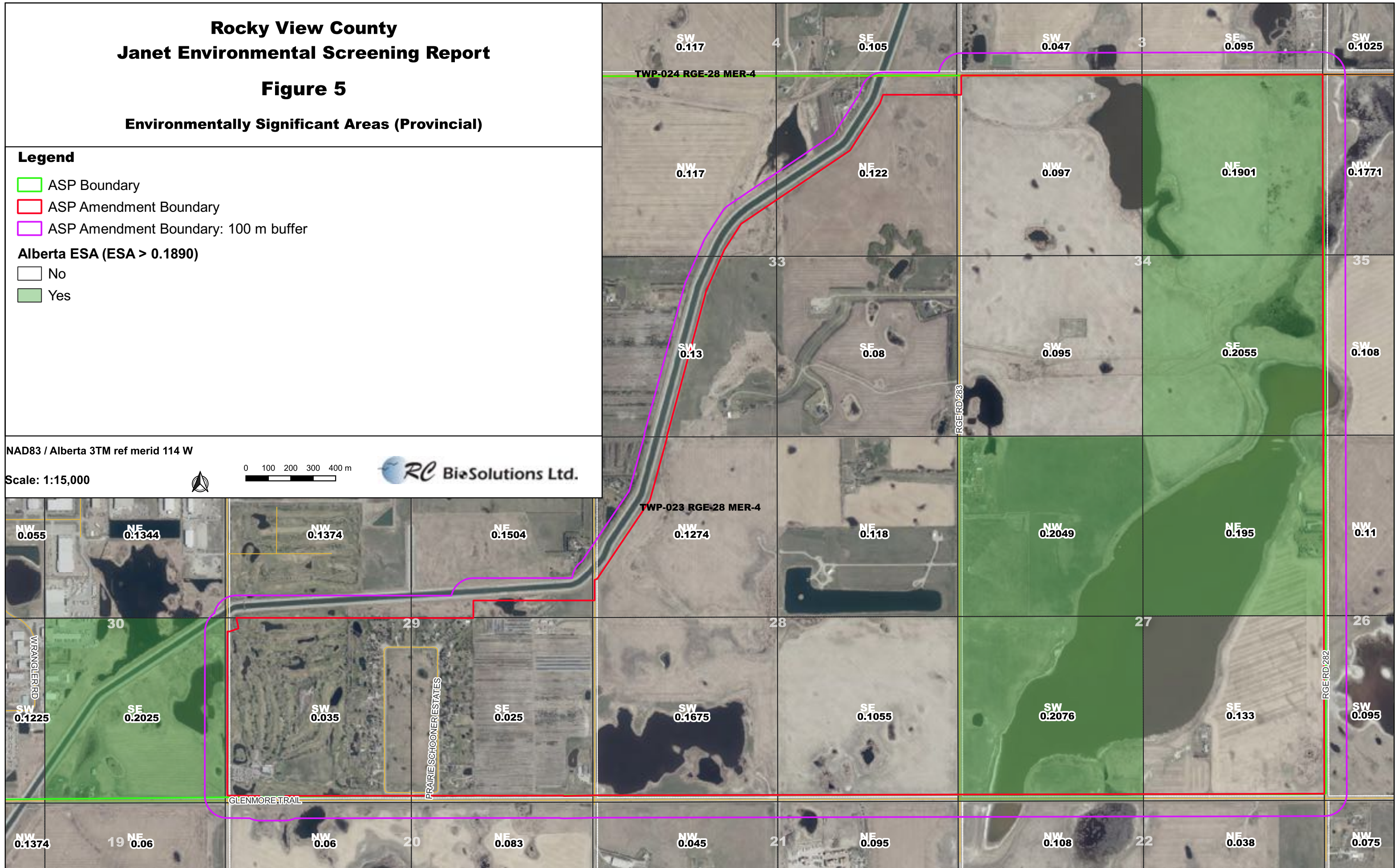
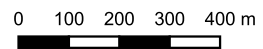
- ASP Boundary
- ASP Amendment Boundary
- ASP Amendment Boundary: 100 m buffer

Alberta ESA (ESA > 0.1890)

- No
- Yes

NAD83 / Alberta 3TM ref merid 114 W

Scale: 1:15,000



2.4 Hydrology, Waterbodies, and Wetlands

2.4.1 Methodology – Hydrology, Waterbodies, and Wetlands

The following base layers were used to delineate hydrology for the ASP area:

- The hydrology shapefile provided by Rocky View County, which provides a line file of watercourses.
- Two-meter contour shapefile provided by Rocky View County, displays the contours that show sloped areas and basins.
- Alberta Merged Wetland Inventory (AMWI; ESRI Canada 2022), has polygon files classified into either open water or marsh (no swamps). It does not generally include anthropogenic water bodies, except for backed up reservoirs forming open water areas along creeks.
- ABMI Wetland Inventory (ABMI 2022).
- Fish and Wildlife Management Information System (FWMIS) Hydrology Polygons (Government of Alberta 2022a).

Due to the fact that only existing databases were used for wetland delineation, wetland classifications are not given because they were not provided in the databases. If multiple delineations for a single wetland were provided by the different databases, all delineations are shown in different colours, as ground truthing has not been completed and the true wetland delineation is currently unknown.

2.4.2 Results – Hydrology

Within the project footprint, the entire drainage flows within the Shepard sub-basin, flowing south to the Bow River (Rocky View County 2022). Locally, surface water flows in several directions due to the low topographic relief, but most flows to the Shepard slough (Figure 6). Much of the existing development has adopted rural stormwater management practices, which include culverts, ditches, and natural conveyance systems (Rocky View County 2022). There are currently some stormwater flooding and conveyance issues so future development will require a comprehensive and regional solution for stormwater development (Rocky View County 2022).

No sources of natural spring water were discovered within the desktop assessment (Stewart 2009), however future ground truthing would likely be required. Confirming of alluvial aquifers and or any other shallow groundwater features would also be required.

2.4.3 Results – Watercourses

There are no named watercourses within the project area. The Bow-Chestermere Diversion/Western Headworks Canal forms the western boundary of the project area.

2.4.4 Results – Wetlands

The desktop assessment for wetlands was completed using the hydrology shapefile provided by Rocky View County, two-meter contour shapefile provided by Rocky View County, the Alberta Merged Wetland Inventory (AMWI; ESRI Canada 2022), FWMIS Hydrology (Government of Alberta 2022c), and the ABMI Wetland Inventory (ABMI 2022).

Based on merging the databases together, there are possibly 164 wetlands within the project area. However, there are a number of issues with the selected databases.

- Not all wetlands were identified in aerial photography.

- Some waterbodies identified from the database shapefiles are probably not actually wetlands or ephemeral wetlands (appear upland). Most of these locations are from the Alberta Merged Wetland Inventory (AMWI), which is being replaced by the ABMI database.
- The ABMI database is a more conservative estimate of waterbodies, but appear to be more accurate. Some waterbodies have been missed. Waterbodies in the golf course may have been omitted intentionally, but one golf course waterbody has two pieces identified.
- Two ABMI waterbodies are identified as swamp, but are driveways in the Prairie Schooner Estates, whereas the waterbodies in the backyards were missed.
- The canal was likely omitted due to being manmade.
- Many of the polygons within the ABMI and AMWI datasets were pieces of waterbodies. Nearly 60% of the polygons in the ABMI dataset are from four waterbodies. Some of this is likely due to the complexity and different water levels of the wetlands themselves throughout the month(s) and year(s).
- Waterbodies were split based on water levels and estimated boundaries from the 2020 aerial imagery provided from Rocky View County.
- No missing waterbodies were added, nor were any potential waterbodies removed if they were likely not present, as no field ground-truthing was conducted. Historical imagery was also not used to determine if waterbodies validity due to the scope of this assessment.

Ground truthing the wetlands in the field will be required to finalize the delineation and classification of the wetlands and a full permanency assessment will be required to determine the permanence of the wetlands, which was not part of the scope of this assessment.

It is recommended that since this was a coarse-scale desktop assessment using only available wetland and watercourse databases, that all parcels considering development require a Biophysical Impact Assessment (BIA) to be completed using the Rocky View County Servicing Standards (2013) and conduct field-based wetland assessments using the appropriate AEP Directives (Government of Alberta 2015a, 2015b, 2015c, 2016, 2017, 2018).

Removal of all wetlands will require *Water Act* approval, with seasonal and semi-permanent wetlands requiring a permanency assessment under the *Public Lands Act* for removal. Ephemeral wetlands may not be visible in imagery so the field-based wetland assessment needs to identify these water bodies, as they also require *Water Act* Approval for their removal. However, compensation is not required for the removal of ephemeral wetlands. Please note that the final boundaries of all wetlands in the project area may be modified once field ground truthing has been completed.

Rocky View County Janet Environmental Screening Report

Figure 6

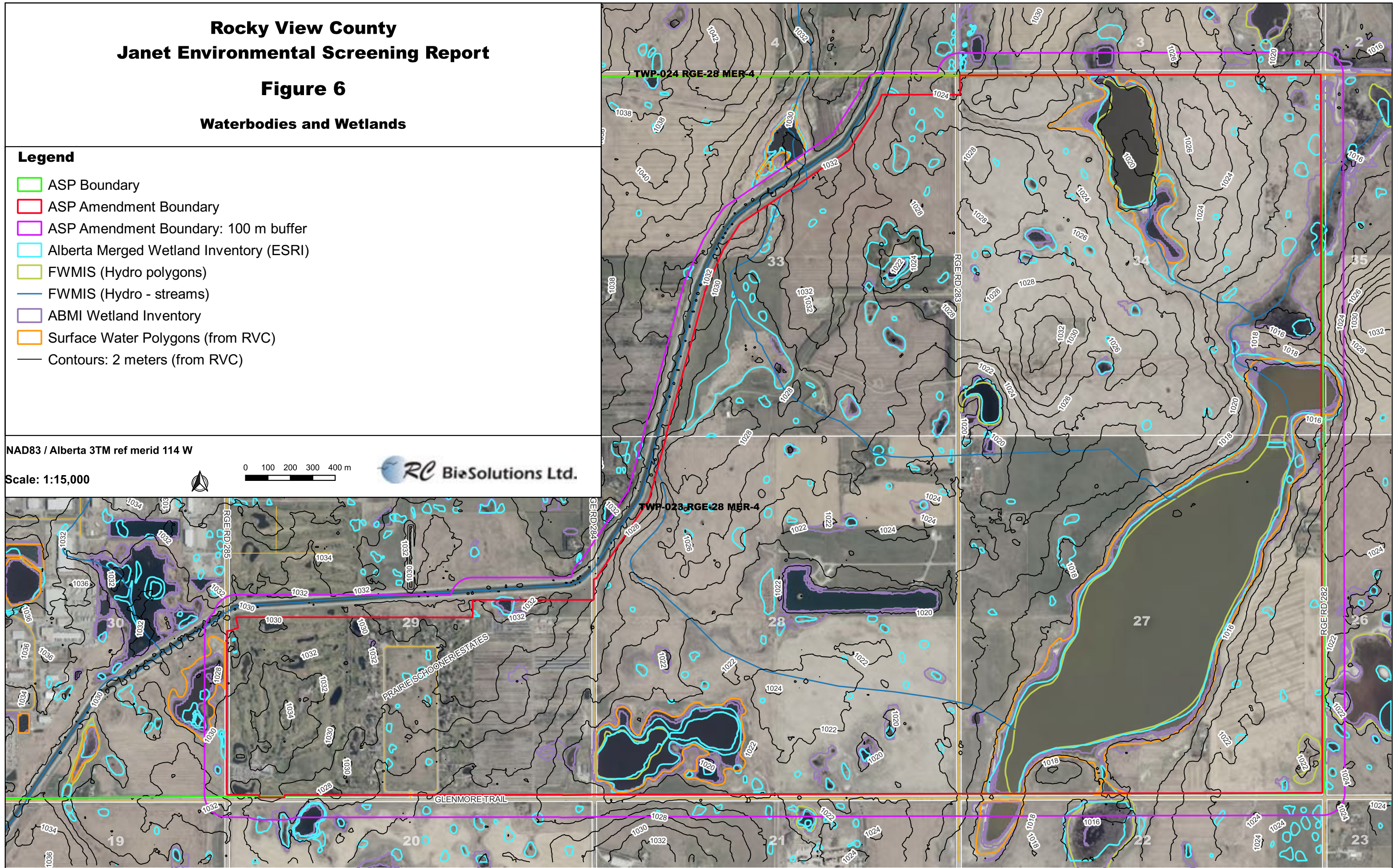
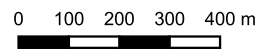
Waterbodies and Wetlands

Legend

- ASP Boundary
- ASP Amendment Boundary
- ASP Amendment Boundary: 100 m buffer
- Alberta Merged Wetland Inventory (ESRI)
- FWMIS (Hydro polygons)
- FWMIS (Hydro - streams)
- ABMI Wetland Inventory
- Surface Water Polygons (from RVC)
- Contours: 2 meters (from RVC)

NAD83 / Alberta 3TM ref merid 114 W

Scale: 1:15,000



2.5 Topography

2.5.1 Methodology

We examined the two-meter contour shapefile provided by Rocky View County, which displays the contours that show sloped areas and basins.

2.5.2 Results – Project Footprint

The local topography within the project area is slightly rolling with no defined drainage courses. (Figure 6). The project area, in general, slopes away from the top of the canal berm to the southeast. The western portion of the project area (golf course) slopes to the south. The elevation ranges from approximately 1,035 to 1,015 meters.

Geographic features such as escarpments, ravines, coulees, and other sharp changes in the topography are not present at site or in the regional area.

2.5.3 Results – Regional Context

Regionally, the topography is relatively flat to undulating with slopes ranging from 0% to 5% (Strong and Thompson 1995). The project area is similar to the regional topography of the surrounding area. The topography of the entire region is generally slightly rolling with small to large low-lying prairie pothole wetlands.

The general viewsapes of the project area are mostly agricultural and wetlands with some country residential.

2.6 Soils

2.6.1 Methodology

We examined the soils shapefile provided by Rocky View County, which provides a line file of soil classifications and correlated the data to MacMillan (1987).

2.6.2 Results

Three soil series (Balzac, Delacour, and Indus) are found within the Project Area (MacMillan 1987; Figure 7).

The Balzac (BZC) soils series is defined as a fine clayey lacustrine overlying till.

- BZC1 – Balzac (BZC) soils series is defined as a fine clayey lacustrine overlying till. The soils series occupies areas that are level to depressional landscape with a thin amount of lacustrine material overlying till. BZC1 contains nearly all Balzac soil, which has a black surface horizon of varying thickness and texture, and high organic matter content. Some Delcour soil is also included, but is not the majority in Balzac Soils (BZC1 to BZC4).
- BZC2 – similar to BZC1 but includes Beddington Soil Series on the mapped edges of BZC2. BZC2 soils occur in areas that have sinuous drainage channels with Solonetzic soils formed along the sides of those channels.
- BZC3 – similar to BZC1 but the Delcour soils within the soil series are better drained than BZC1. BZC3 soils occur on wet, nearly level to depressional areas within morainal landscape.
- BZC4 – roughly contains Balzac soil (40%), Delacour soil (30%), and Beddington soil (30%). BZC4 soils occur in areas that are poorly drained and a high water table near the surface. The landscape consists of knolls and depressions.

The Delacour soil series is well-drained black grassland soil formed on till that has a fine loamy texture. The soil occurs in the gently rolling and morainal landscapes with low relief.

- DEL1 – Occurs within a gently rolling to morainal landscape. Approximately consists of 85% of Delacour soil, with the remaining being other soils series.
- DEL2 – Occurs within a gently undulating to subdued hummocky and morainal landscape. Consists of Delacour soil (80%) and Balzac soil (20%).
- DEL3 – Occurs within a gently undulating morainal landscape. Consists of Delacour soil (60%) and Balzac soil (40%).
- DEL4 – Occurs within a gently rolling to morainal landscape, but with slopes that are smooth and uniform. Consists of Delacour soil (80%) and Beddington soil (20%).
- DEL6 – Occurs within a gently undulating to slightly hummocky and morainal landscape. Consists of Delacour soil (70%) and Indus soil (30%).
- DEL8 – The landscape occurs within minor stream channels and natural drainage that cut into till. Consist mainly of Delacour soil with some depressional soils (Balzac and Indus) and some alluvial soils (Tweedsmuir). Channel slopes range usually between three to nine percent.




The Indus soil series is a poorly drained, deeply leached, black soil within wet depressions on top of till. It consists mostly of Indus soil but may contain some Delacour soil. IND1 only occurs within the project boundary. The difference between IND1 and IND2 is the degree of soil wetness, where IND2 is more variably than IND1.

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










Figure 7

Soils Data from Rockyview County

Legend

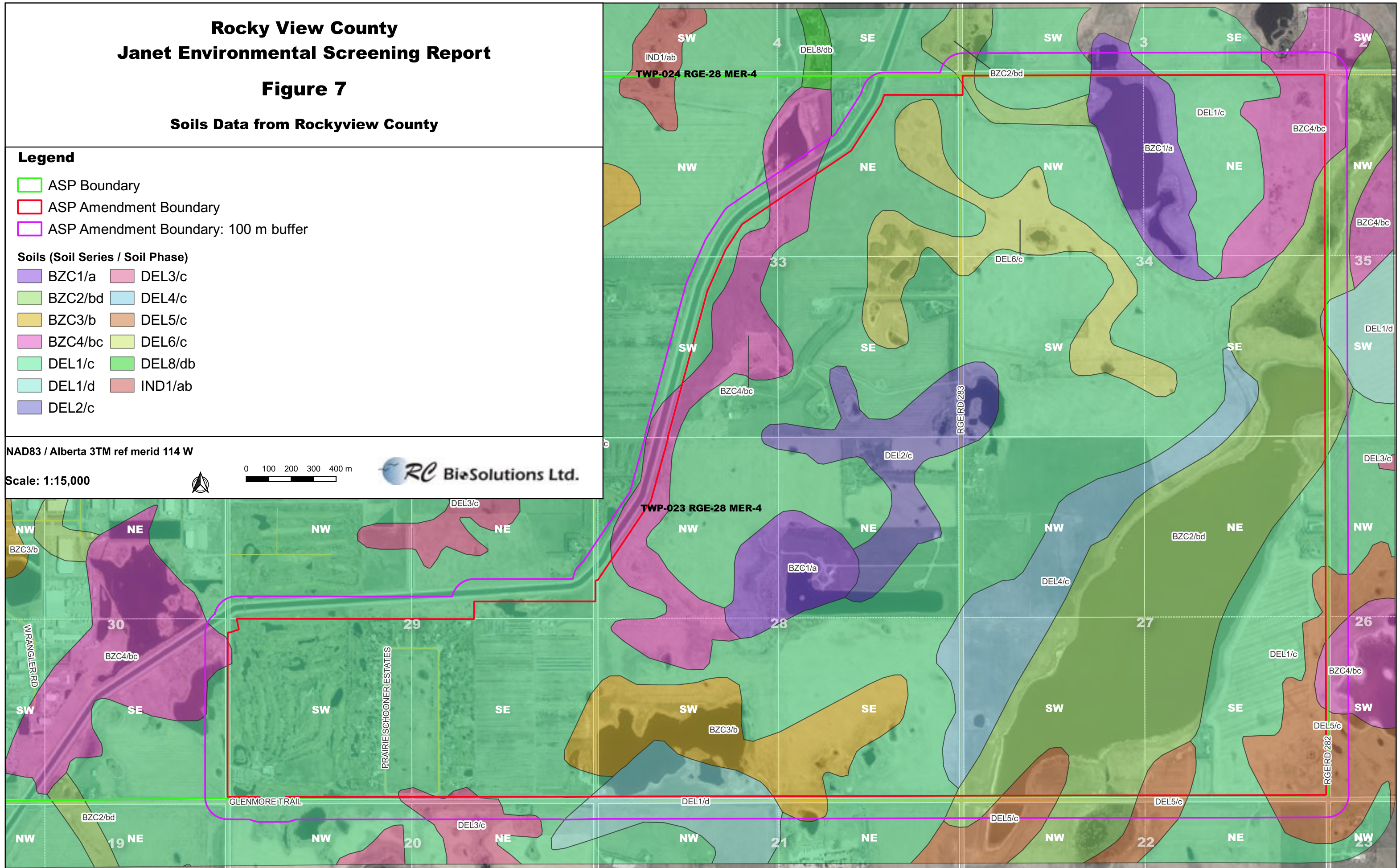
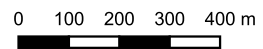
-  ASP Boundary
-  ASP Amendment Boundary
-  ASP Amendment Boundary: 100 m buffer

Soils (Soil Series / Soil Phase)

- | | |
|--|---|
|  BZC1/a |  DEL3/c |
|  BZC2/bd |  DEL4/c |
|  BZC3/b |  DEL5/c |
|  BZC4/bc |  DEL6/c |
|  DEL1/c |  DEL8/db |
|  DEL1/d |  IND1/ab |
|  DEL2/c | |

NAD83 / Alberta 3TM ref merid 114 W

Scale: 1:15,000



Rocky View County Janet Environmental Screening Report

Figure 8

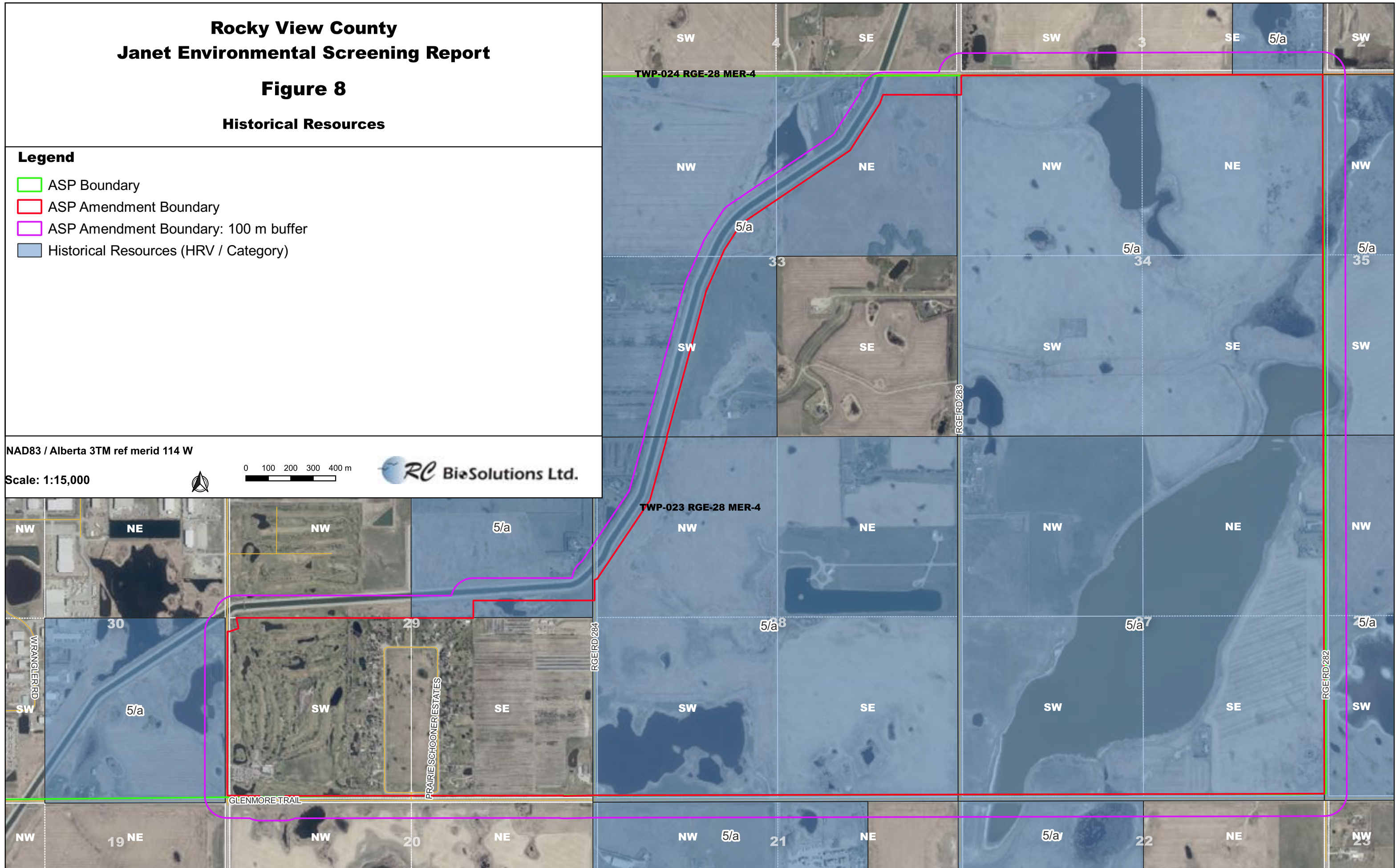
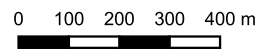
Historical Resources

Legend

- ASP Boundary
- ASP Amendment Boundary
- ASP Amendment Boundary: 100 m buffer
- Historical Resources (HRV / Category)

NAD83 / Alberta 3TM ref merid 114 W

Scale: 1:15,000



2.7 Archaeological

2.7.1 Methodology

Historical resources were assessed using the most recent listing of historical resources (Alberta Culture 2022).

2.7.2 Results

Most quarter sections within the project area are classed as HRV5a (Alberta Culture 2022; Figure 8). The only three quarter sections within the project area that are not classed as HRV5a are SE-33-23-28-W4M, SE-29-23-28-W4M, and SW-29-23-28-W4M. HRV 5 means that the quarter section has a high potential to contain a historical resource and the “a” means that the primary historical resource category of concern is archaeological. As such, a *Historical Resources Act* approval is required for all quarter sections with an HRV of 5a.

2.8 Other Features

2.8.1 Methodology

To determine other features on the landscape, we assessed the 2020 air photo provided by Rocky View County.

2.8.2 Results

Within the project area, there is a mixture of open fields used for agricultural activities and anthropogenic features within developed acreages. Some of the anthropogenic features include homes, barns, garages, corrals, various other buildings pertaining to homestead/farming activities, dugouts, and structures for livestock. A number of small roads lead to various homes and buildings throughout the site. Powerlines exist throughout the property, as well as low pressure gas lines to service residences within the acreages. The Bow-Chestermere Diversion/Western Headworks Canal forms the western boundary of the project area. The majority of the regional area relies on stand-alone utilities for septic and water.

2.9 Environmentally Sensitive Areas

2.9.1 Methodology

As per the CMRB Land Use & Servicing Committee (2022) Regional Evaluation Framework, Environmentally Sensitive areas are required to be determined to assist with Regional Evaluation Framework (REF) reviews. They are identified using the following questions:

- Areas maintaining the provision of water quality and quantity and providing protection against drought and flooding events
 - Yes No
 - Please briefly describe – Large wetlands maintain the provision of water quality and quantity and provide protection against drought and flooding events.
 - Does this finding require an Environmental Study be conducted?
 - Yes No
- Area providing habitat for identified local species of interest, designated species of conservation concerns (SCC), or identified local species group
 - Yes No
 - Please briefly describe – The three wildlife species listed as sensitive in the project area (Eared Grebe, Horned Grebe, and Sora) occur in wetlands. Similarly, the most likely habitat for rare plants to occur in are wetlands and the surrounding

riparian area. Since most of the upland habitat has been converted to agriculture, the most valuable habitat in the project area are the larger, relatively undisturbed wetlands.

- Does this finding require that an Environmental Study be conducted?
 - Yes No
- Area providing rare, unique, or biologically diverse ecosystems or unique landforms
 - Yes No
 - Please briefly describe – The only areas in the project area that provide rare, unique, or biologically diverse ecosystems are the large relatively undisturbed wetlands, since most of the upland has been converted to agriculture.
 - Does this finding require that an Environmental Study be conducted?
 - Yes No
- Areas contributing to other important ecosystem functions or services at a regional or local scales.
 - Yes No
 - Please briefly describe – The only areas in the project area at contribute to important ecosystem functions or services at the regional or local scales are the large relatively undisturbed wetlands, as they accept water from a large catchment area and provide habitat for numerous species.
- Does this finding require that an Environmental Study be conducted?
 - Yes No

2.9.2 Results

Based on this checklist, the Environmentally Sensitive Areas for the Project Area are the larger undisturbed wetlands (Figure 9), as they:

- Maintain the provision of water quality and quantity and provide protection against drought and flooding events.
- Provide habitat for identified local species of interest, designated species of conservation concerns (SCC), or identified local species group.
- Provide rare, unique, or biologically diverse ecosystems or unique landforms.
- Contribute to other important ecosystem functions or services at a regional or local scales.

2.10 Future Environmental Work

For future development projects, further surveys will be required for a full Biophysical Impact Assessment (BIA), and those include: wildlife surveys, species at risk surveys, wildlife habitat surveys, aquatic surveys (if fish and fish habitat may be present), vegetation assessments, rare plant habitat assessments, and wetland surveys that will be completed during appropriate survey times according to the Government of Alberta standards. The rare plant surveys will be conducted according to the procedures outlined by the Alberta Native Plant Council's (2000) Guidelines for Rare Plant Surveys, with early season surveys recommended in June and late season surveys recommended in August. Wetland surveys are required to be completed during the 'growing season', which is defined by AEP as between May 1 and September 30. Wildlife surveys need to be completed within the Government of Alberta standards for timing of wildlife, which is typically between March and late June, depending on the species of concern at each site.

Rocky View County Janet Environmental Screening Report

Figure 9

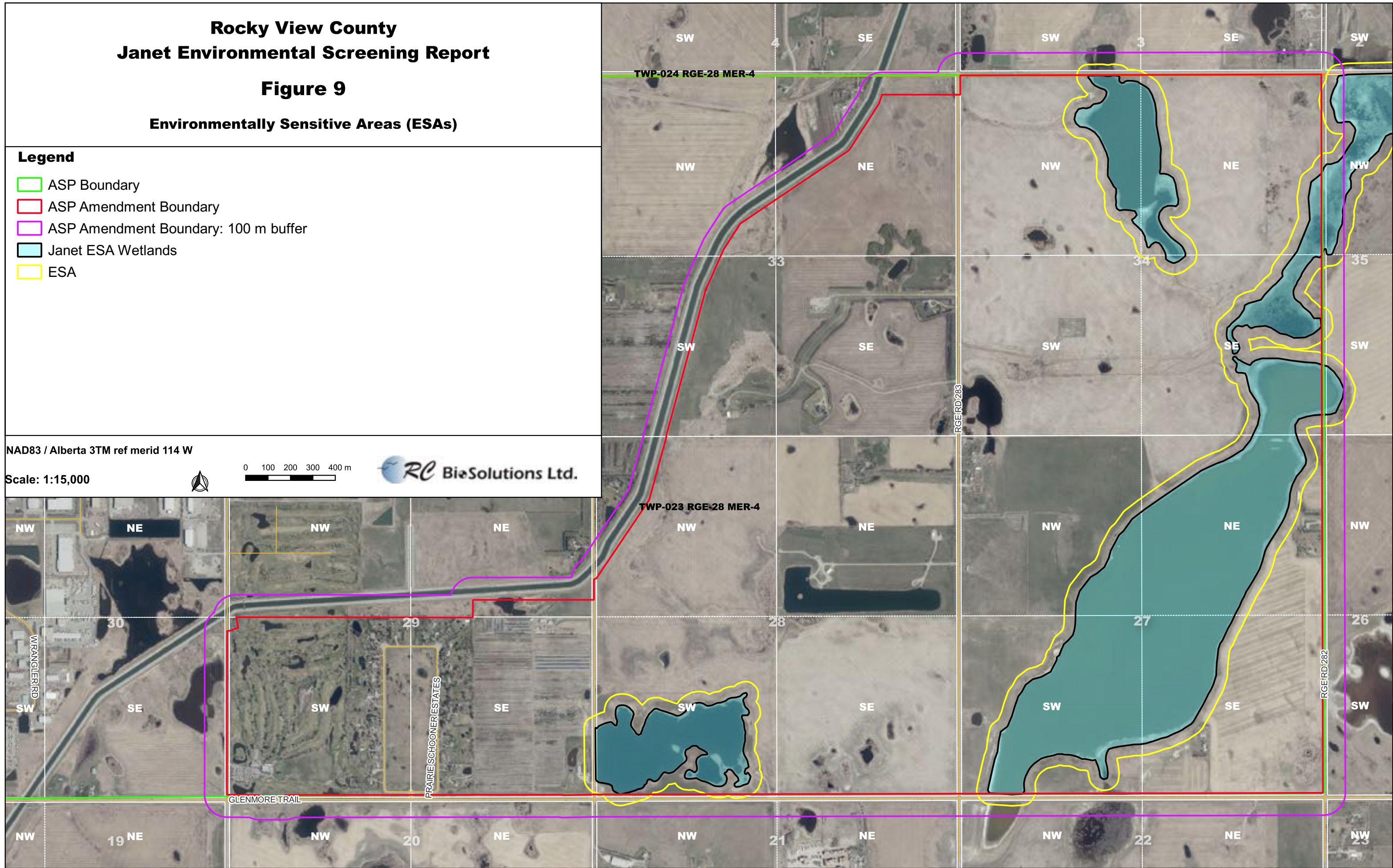
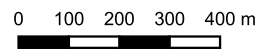
Environmentally Sensitive Areas (ESAs)

Legend

- ASP Boundary
- ASP Amendment Boundary
- ASP Amendment Boundary: 100 m buffer
- Janet ESA Wetlands
- ESA

NAD83 / Alberta 3TM ref merid 114 W

Scale: 1:15,000



3 Impacts, Mitigation, and Monitoring

3.1 Impact Assessment Methodology

For developing the ASP amendment area (project area), a general impact assessment methodology has been used to evaluate the impact of development on the following Valued Ecosystem Components (VECs): biological resources (vegetation and wildlife), hydrology, topography, soils, and archaeological resources.

3.2 Impact Assessment Results

A summary of potential environmental impacts for each VEC, as well as mitigation measures and residual impacts (post-mitigation), are described in detail below.

3.2.1 Potential Impacts to Vegetation

No rare plants have been documented within the project area, but one sensitive and several non-sensitive plants and plant communities have been identified within 20 km of the project area. Rare plants have the potential to be found within the project footprint associated with wetlands, as that is the only suitable habitat present. Since the project area is primarily cropland, development of these areas will have minimal impact to biodiversity, native species, or rare species. There is anticipated to be a greater impact to wetland communities, as many of the wetlands are larger and relatively undisturbed. Disturbance will likely cause invasive species to increase, as the soil disturbance can create ideal conditions for weeds to establish. Weeds must be controlled through weed control during construction activities during development and maintenance once the project is completed.

Due to number of wetlands present, rare plant surveys must need to be completed prior to development during the appropriate survey times (ideally June and August). County Servicing Standards (Rocky View County 2013) require on-site vegetation surveys to be completed between May and September. If rare plants are detected, specific mitigation measures will be determined based on the findings of the survey. If rare plants occur within impact zones, and the impact zones cannot be changed to avoid the plants, the rare plants can either be moved, collected for propagation, or have seeds collected, depending on the species of rare plant.

3.2.2 Potential Impacts to Wildlife

The site is already heavily impacted due to the presence of agriculture and acreages, and the Bow-Chestermere Diversion/Western Headworks Canal forming the western project boundary. As such, there currently is little, high quality wildlife habitat within the project footprint. Most of the land within the project footprint is agriculture, with few trees, which generally only provides habitat for more common species. Larger wetlands on site will have a higher potential for wildlife habitat.

The impacts to wildlife, outside of the wetland areas, will likely be minimal, depending on the time of year construction occurs. Any work between April 15th and August 28th that requires clearing (trees, shrubs, grassland, and wetlands) has the potential to disturb nesting birds and other wildlife and requires nest sweeps completed by qualified wildlife biologists (Government of Canada 2018). Mitigation measures can include changing the timing of construction, wildlife sweeps, and working within specific hours of operation will mitigate the impact to all wildlife in the region. The listed wildlife species found within the project area trigger the need for a wildlife surveys to be completed prior to construction and a wildlife sweep to occur prior to the initiation

of construction activities. If listed wildlife species are found on site during construction, site-specific mitigation measures will need to be developed by a qualified wildlife biologist, to reduce the impact to these species.

Wildlife movements and habitat availability are not expected to change substantially as a result of development, provided that the larger wetlands are retained. Most wildlife in the area is already exposed to regular human disturbance, and the plant community is likely invaded with non-native species, as much of the area is currently used for agriculture and residential use. During development, there may be a temporary increase in sensory disturbance to wildlife occupying the area when construction is occurring. Also, the removal of vegetation during construction may reduce nesting opportunities for grassland birds and habitat for small mammals.

It is recommended that prior to development, wildlife surveys be conducted due to the presence of wetlands and three wildlife species of concern being found within the project area during a FWMIS search. The recommended surveys include:

- Breeding Bird
- Sensitive Raptor
- Amphibian (when wetlands are present)
- Sharp-tailed Grouse (depending on the parcel)
- Water Bird (as all Sensitive species known in the project area are water birds)
- Species at Risk (vary depending on the parcel and the available habitat)
- Incidental Wildlife

3.2.2.1 Sensitive Raptor Recommendations

The entire ASP Area is located in a Sensitive Raptor Range for Bald Eagle, Golden Eagle, and Prairie Falcon. Before new development occurs in areas likely to contain suitable nesting habitat, a sensitive raptor survey should be conducted by a qualified wildlife biologist according to standards in the Sensitive Species Inventory Guidelines for prairie raptors (Government of Alberta 2013). Survey efforts should focus on areas that can act as potential nesting sites such as trees, cliffs, or holes in cliffs. If an active nest is identified, a setback distance of 50 – 1000 m should be applied around the nest where activity is restricted (Government of Alberta 2021). The distance of the setback depends on the time of year and level of disturbance. For more details refer to the *Master Schedule of Standards and Conditions* (Government of Alberta 2021).

3.2.2.2 Sharp-tailed Grouse Recommendations

The entire ASP Area is located in a Sharp-tailed Grouse Survey Area. If development is to occur in an area with suitable Sharp-tailed Grouse habitat, surveys for active leks should be conducted by a qualified wildlife biologist according to standards in the Sensitive Species Inventory Guidelines (Government of Alberta 2013). Leks are areas where male birds gather in the spring to perform mating displays. Suitable habitat in the project area is very limited, but could include: open prairie, margins of watercourses, margins of farmland, shrublands, shrubby sandhills, coulees, and open aspen groves. If an active lek is identified, a setback distance of 100 - 500 m should be applied around the lek where activity is restricted (Government of Alberta 2021). The distance of the setback depends on the time of year and level of disturbance. For more details refer to the *Master Schedule of Standards and Conditions* (Government of Alberta 2021).

3.2.2.3 Wildlife Corridors

The only wildlife corridor present within the project area is the eastern edge where all of the large wetlands occur. These wetlands likely provide contiguous habitat for wetland dwelling bird and

mammal species and may provide a movement corridor for large wetland loving animals, such as moose.

3.2.2.4 Migratory Birds

The ASP Area is located in Nesting Zone B4 within the Prairie Potholes (BCR 11) Bird Conservation Region within the Map of Nesting Zones in Canada (Government of Canada 2018). In this nesting zone, birds are presumed to be actively nesting between April 14th and August 28th (Government of Canada 2018), with some variation between different bird species and habitat types. Destroying habitat in areas attractive to migratory birds has a high risk of disturbing or destroying migratory bird nests or eggs during this timing window. Between April 14th and August 28th, it is recommended to avoid any habitat impacting disturbing activity (e.g. stripping and grading, tree clearing, wetland removal, vegetation removal, etc.) to comply with the Migratory Birds Convention Act (Government of Canada 1994). If it is necessary to disturb potential nesting habitat within the restricted activity period (RAP), a nest sweep should be conducted by a qualified wildlife biologist to ensure that nesting habitat is avoided and nesting birds or other wildlife species are not disturbed. If a nest is observed during the nest sweep, an appropriate species-dependent setback must be placed around the nest. These set backs should be determined in consultation with Environment and Climate Change Canada and AEP, and this setback must be maintained until the nest is no longer occupied.

Some wildlife protected under provincial and/or federal legislation may begin breeding prior to April 14th so a wildlife sweep may be required, depending on the habitat present. Appropriate setbacks remain in effect if an active nest, or other wildlife feature (e.g. den, hibernaculum, etc.), are identified, regardless of the time of year. Specifically, owls and some waterfowl may begin nesting before April 14th, especially in forested or wetland areas.

3.2.3 Potential Impacts to Aquatics

There are no anticipated impacts to fish and fish habitat, as the only fish bearing waterbody is the Bow-Chestermere Diversion/Western Headworks Canal and it is not anticipated to be impacted.

3.2.4 Potential Impacts to Hydrology, Waterbodies, and Wetlands

3.2.4.1 Hydrology Impacts

Depending of the finalized development plan for the project area, it is unknown the exact impact to the hydrology of the area. Natural surface water absorption would likely be very limited in unvegetated areas. Therefore, a stormwater management plan would be needed. It has been identified that localized stormwater flooding occurs during high rainfall events and has been an issue within the greater ASP boundary (Rocky View County 2022). Therefore, it is expected that future construction would favor current topography or favourable surface water drainage patterns. Impacts to overall hydrology greatly depend on whether or not the large wetlands within the project area are removed or impacted.

3.2.4.2 Watercourse Impacts

There are no anticipated impacts to watercourses, as the primary watercourse is the Bow-Chestermere Diversion/Western Headworks Canal and it is not anticipated to be impacted. There may be some ephemeral drainages within the project area, but those would require ground truthing to determine their location

3.2.4.3 Wetland Impacts

Wetlands provide many valuable ecosystem functions including:

- Improving water retention to prevent flooding.
- Improving water quality.
- Suitable habitat for a wide variety of plants and animals.
- Stopover areas for migratory waterfowl.

It is recommended that high value wetlands in the project area be retained in order to utilize their ecosystem benefits. The Government of Alberta has developed a process for assessing the value of wetlands in terms of their relative abundance on the landscape, supported biodiversity, ability to improve water quality, importance to flood reduction, and human uses (Government of Alberta 2015a,b,c, 2017, 2018). It is recommended that any developments intending to impact wetlands in the project area perform a detailed field-based assessment to determine the value of wetlands by using the Alberta Wetland Rapid Evaluation Tool – Actual (ABWRET-A) or Alberta Wetland Rapid Evaluation Tool – Desktop (ABWRET-D), depending on the level of disturbance.

The ABWRET assigns a value category (A, B, C, or D) to each wetland based on different functions including: hydrology, water quality, ecology (habitat), and human use. Each wetland is assigned a final value based on how the wetland's functions compare to other wetlands in the region, with Class A being the highest value and Class D being the lowest value. In locations where high valued (Class A) wetlands are identified, they should be protected wherever possible. Determining the ABWRET value of the wetlands in the project area was not possible from the desktop review of wetland databases that was completed for this report, but high value wetlands tend to be larger, more permanent waterbodies (semi-permanent or permanent) that provide a high water quality and hydrology value and/or provide high quality wildlife and rare plant habitat. The Alberta Wetland Policy should be followed, which includes minimization and avoidance of wetlands as the primary strategy for their protection, and wetland replacement is only used when wetland impacts cannot be avoided.

3.2.5 Potential Impacts to Topography

This project will have a negligible impact to the topography at the regional scale. There will be an impact at the local scale if grading occurs. No mitigation measures are required.

3.2.6 Potential Impacts to Pedology

Soils within the project area have been previously disturbed in most areas (agriculture) and are undisturbed (native profile) primarily in undisturbed wetland areas. Development of the area will result in additional soil disturbance. Development requires stripping of topsoil and subsoil material. It also has the potential for excavation, removal, and/or recontouring of lower subsoil material. This results in a significant risk for loss of soil volume and quality, destruction of soil structure, erosion, admixing, and compaction. Loss of soil structure and minor admixing is mostly unavoidable regardless of mitigation measures. Soil structure can gradually redevelop in disturbed soils, but the natural soil profile can never be re-established. Admixing is also irreversible since soil cannot be un-mixed. Other potential impacts to soil include: compaction, clodding, erosion, significant admixing, soil loss, and reduced soil quality, but these impacts can be mitigated by soil handling practices.

Development on a larger scale, such as the project area, can impact the subsurface and surface drainage by: compaction, recontouring, culvert/ditches, etc. If drainage is impeded or redirected,

ponding or flooding may occur at location locations onsite or may affect adjacent properties. To limit impacts to the soils and risks to adjacent properties, an ECO Plan should be created for projects that explicitly outline site-specific impacts and mitigations for soils.

3.2.7 Potential Impacts to Archaeology

Most of the project area was determined to have a high potential to contain a historical resource (archaeological). A *Historical Resources Act* approval is required for all quarter sections with an HRV of 5a. If any historical resources are encountered during development, construction will be halted immediately, and the appropriate authorities will be contacted.

3.2.8 Potential Impacts to Environmentally Sensitive Areas

The Environmentally Sensitive Areas are comprised of four larger, relatively undisturbed wetlands with potential impacts summarized in Table 6. Wetlands 1, 2, and 3 form the Shepard Slough complex and provide a host of valuable ecosystem functions such as:

- Maintaining the provision of water quality and quantity and provide protection against drought and flooding events.
- Providing habitat for identified local species of interest, designated species of conservation concerns (SCC), or identified local species group.
- Providing rare, unique, or biologically diverse ecosystems or unique landforms.
- Contributing to other important ecosystem functions or services at a regional or local scales.

All three sensitive wildlife species found within the project area were found in Wetland 1. Due to the size and complexity of this wetland ecosystem (Wetlands 1, 2, and 3), it is expected to host a variety of wetland species and plants, with the potential for rare plants and species at risk.

Wetland 4 is large enough to provide a host of valuable ecosystem functions as well:

- Maintaining the provision of water quality and quantity and provide protection against drought and flooding events.
- Providing habitat for identified local species of interest, designated species of conservation concerns (SCC), or identified local species group.
- Providing rare, unique, or biologically diverse ecosystems or unique landforms.
- Contributing to other important ecosystem functions or services at a regional or local scales.

Wetland 4 also has the potential to contain a variety of wetland species and plants, with the potential for rare plants and species at risk.

Due to the high potential for complex ecosystem function of these four wetlands, a field based Biophysical Impact Analysis (BIA) should be conducted to properly delineate and classify the wetlands, determine their connectivity, and catalogue the species utilizing each area. Wildlife surveys should be completed in spring (May/June), rare plant surveys should be completed in June and August, and wetland surveys should be completed during the growing season (May – September).

Impacts to these four areas should be minimized to maintain ecosystem health and function within the project areas. Recommended mitigation measures include:

- As per the Janet Area Structure Plan (Rocky View County 2022), “*wetlands, not claimed by the Crown, that have a high relative value should be dedicated as environmental reserve or environmental reserve easement*”.

- As per the Janet Area Structure Plan (Rocky View County 2022), each wetland should be retained with at least a 50 m buffer, as per the Government of Alberta. (2012) *Stepping Back from the Water. A Beneficial Management Practices Guide for New Development Near Water Bodies in Alberta's Settled Region*. 50 m is suggested to be an effective width for vegetated filter strips and is recommended for Class III – VII wetlands. However, a field study is needed to determine the appropriate buffer strip width based on the individual wetlands.
- As per the Janet Area Structure Plan (Rocky View County 2022), *“the riparian setback area shall be protected by designation as environmental reserve, environmental reserve easement, municipal reserve, or by other means satisfactory to the County”*.
- As per the Janet Area Structure Plan (Rocky View County 2022), *“Building and development in the riparian setback area shall be in accordance with the County’s Land Use Bylaw and Riparian Setback Policy”*.
- As per the Janet Area Structure Plan (Rocky View County 2022), *“the riparian setback area uses may include parks, pathways, and trails”*.
- As per the Janet Area Structure Plan (Rocky View County 2022), *“public roads and private access roads may be allowed in the riparian setback area but should be located, designed, and constructed so as to minimize disturbance to the riparian area”*.
- As per the Janet Area Structure Plan (Rocky View County 2022), *“the riparian protection area shall remain vegetated and development proponents are strongly encouraged to maintain the natural riparian function through the use of native plant species”*.

Consideration should be made for Policy C-419 *Riparian Land Conservation and Management* (Rocky View County 2010a) and Policy C-420 *Wetland Conservation and Management* (Rocky View County 2010b).

Table 6 - Potential Impacts to Environmentally Sensitive Areas

| Name/Description of the Environmentally Sensitive Area | Potential Impacts of Proposed Development | Recommended Mitigation Measures | Identify Mitigation Measure |
|---|--|---|--|
| Wetland 1 (Main Large Wetland in the Shepard Slough Complex) | <ul style="list-style-type: none"> • Impact water quality & quantity • Impact protection against drought & flood • Impact habitat for local species of interest & species of conservation concern • Impact rare, unique, or biologically diverse ecosystems • Impact the contribution to important ecosystem functions or services at both the regional and local scale | <ul style="list-style-type: none"> • Retain wetland with at least a 50 m buffer • Potential Environmental Reserve encompassing the Shepard Slough Complex to ensure retention of ecosystem function. • Retain current water flows into the wetland with a site-specific stormwater plan to maintain ecosystem function | <ul style="list-style-type: none"> • 50 m buffer as per the Government of Alberta (2012) Stepping Back from the Water. A Beneficial Management Practices Guide for New Development Near Water Bodies in Alberta's Settled Region • <i>"The riparian setback area shall be protected by designation as environmental reserve, environmental reserve easement, municipal reserve, or by other means satisfactory to the County"</i> (Rocky View County 2022) |
| Wetland 2 (Less Permanent Wetland in the Shepard Slough Complex 1 that appears to feed Wetland 1 with water from the northeast) | <ul style="list-style-type: none"> • Impact water quality & quantity • Impact protection against drought & flood • Impact habitat for local species of interest & species of conservation concern • Impact rare, unique, or biologically diverse ecosystems • Impact the contribution to important ecosystem functions or services at both the regional and local scale | <ul style="list-style-type: none"> • Retain wetland with at least a 50 m buffer • Potential Environmental Reserve encompassing the Shepard Slough Complex to ensure retention of ecosystem function. • Retain current water flows into the wetland with a site-specific stormwater plan to maintain ecosystem function | <ul style="list-style-type: none"> • 50 m buffer as per the Government of Alberta (2012) Stepping Back from the Water. A Beneficial Management Practices Guide for New Development Near Water Bodies in Alberta's Settled Region • <i>"The riparian setback area shall be protected by designation as environmental reserve, environmental reserve easement, municipal reserve, or by other means satisfactory to the County"</i> (Rocky View County 2022) |
| Wetland 3 (Second largest wetland in the Shepard Slough Complex that appears to feed Wetland 1 with water from the northwest) | <ul style="list-style-type: none"> • Impact water quality & quantity • Impact protection against drought & flood • Impact habitat for local species of interest & species of conservation concern • Impact rare, unique, or biologically diverse ecosystems | <ul style="list-style-type: none"> • Retain wetland with at least a 50 m buffer • Potential Environmental Reserve encompassing the Shepard Slough Complex to ensure retention of ecosystem function. • Retain current water flows into the wetland with a site-specific stormwater plan to | <ul style="list-style-type: none"> • 50 m buffer as per the Government of Alberta (2012) Stepping Back from the Water. A Beneficial Management Practices Guide for New Development Near Water Bodies in Alberta's Settled Region • <i>"The riparian setback area shall be protected by designation as</i> |

| Name/Description of the Environmentally Sensitive Area | Potential Impacts of Proposed Development | Recommended Mitigation Measures | Identify Mitigation Measure |
|---|--|---|--|
| | <ul style="list-style-type: none"> Impact the contribution to important ecosystem functions or services at both the regional and local scale | maintain ecosystem function | <i>environmental reserve, environmental reserve easement, municipal reserve, or by other means satisfactory to the County</i> (Rocky View County 2022) |
| Wetland 4 (Large wetland in the south part of the project area) | <ul style="list-style-type: none"> Impact water quality & quantity Impact protection against drought & flood Impact habitat for local species of interest & species of conservation concern Impact rare, unique, or biologically diverse ecosystems Impact the contribution to important ecosystem functions or services at both the regional and local scale | <ul style="list-style-type: none"> Retain wetland with at least a 50 m buffer Retain current water flows into the wetland with a site-specific stormwater plan to maintain ecosystem function | <ul style="list-style-type: none"> 50 m buffer as per the Government of Alberta (2012) Stepping Back from the Water. A Beneficial Management Practices Guide for New Development Near Water Bodies in Alberta's Settled Region <i>"The riparian setback area shall be protected by designation as environmental reserve, environmental reserve easement, municipal reserve, or by other means satisfactory to the County"</i> (Rocky View County 2022) |

3.3 Impact Assessment Conclusions

Wildlife movements and habitat availability are not expected to change substantially from developing the project area, provided that the large wetlands are retained. Most wildlife in the area is already exposed to regular human disturbance, and the plant community is already likely invaded with non-native species, due to agriculture being the primary land use. There may be a temporary increase in sensory disturbance to wildlife occupying the area during construction of the various projects. Removal of vegetation during construction may reduce breeding opportunities for birds, and habitat for small mammals, though much of the surrounding areas to the east and south are likely of similar quality habitat. Due to the presence of wildlife habitat and the potential for sensitive species, it is recommended that wildlife surveys be conducted before development can proceed during the recommended time periods according to the Government of Alberta (2013). Sensitive species are known to be in the project area, so it is necessary for a nest sweep to occur prior to the initiation of construction activities during the restricted activity period of April 15th and August 15th. If nests or listed species are found on site during construction, specific mitigation measures and setback buffers must be developed by a qualified wildlife biologist to reduce the impact to these species.

Due to the presence of wetlands and the potential for rare plants associated with the wetlands, wetland and rare plant surveys must be conducted before development can proceed. The four largest wetland areas have been determined to be Environmentally Sensitive Areas and should be retained as Environmental Reserves (or something similar) since they maintain the provision

of water quality and quantity and provide protection against drought and flooding events, provide habitat for identified local species of interest, designated species of conservation concerns (SCC), or identified local species group, provide rare, unique, or biologically diverse ecosystems or unique landforms, and contribute to other important ecosystem functions or services at a regional or local scales. If wetlands within the project area are removed, stormwater ponds and/or a stormwater system will be required to capture the surface runoff from the site. If wetlands are to be removed, multiple regulatory applications and approvals will be required including a permanency assessment, ABWRET-A submission, and a Water Act approval submission, which will include compensation for lost wetland area.

3.4 Recommendations

Due to the potential for impact on wetlands, wildlife, vegetation, environmentally sensitive areas, and historical resources, it is recommended that a Biophysical Impact Assessment (BIA) be completed for all projects proceeding within the project area following the Rocky View County (2013) Servicing Standards guidelines. The County should consider a study to delineate and classify the four Environmentally Sensitive Area wetlands to properly determine setbacks and future protection steps, such as environmental reserves. If any wetlands are to be impacted, a Wetland Assessment and Impact Report (WAIR) and *Water Act* Approval application will be required, which consists of:

- Wetland delineation and permanency assessments (with submission to the AEP Public Lands Water Boundaries Unit).
- Full wetland surveys using the AEP ABWRET-A system,
- Wetland Assessment and Impact Report (WAIR) and submission under the *Water Act* to pay compensation for all non-ephemeral wetlands removed (both planned and historic).
- All historically removed wetlands that were removed without proper approval will have to be reported to AEP once the full extent is known.
- A Biophysical Impact Assessment be completed prior to development proceeding with an emphasis on:
 - Wetlands surveys.
 - Vegetation surveys (rare plants, vegetation communities, and weeds).
 - Wildlife surveys (breeding birds, amphibians, raptors, water birds, incidental wildlife, and wildlife habitat).

4 References

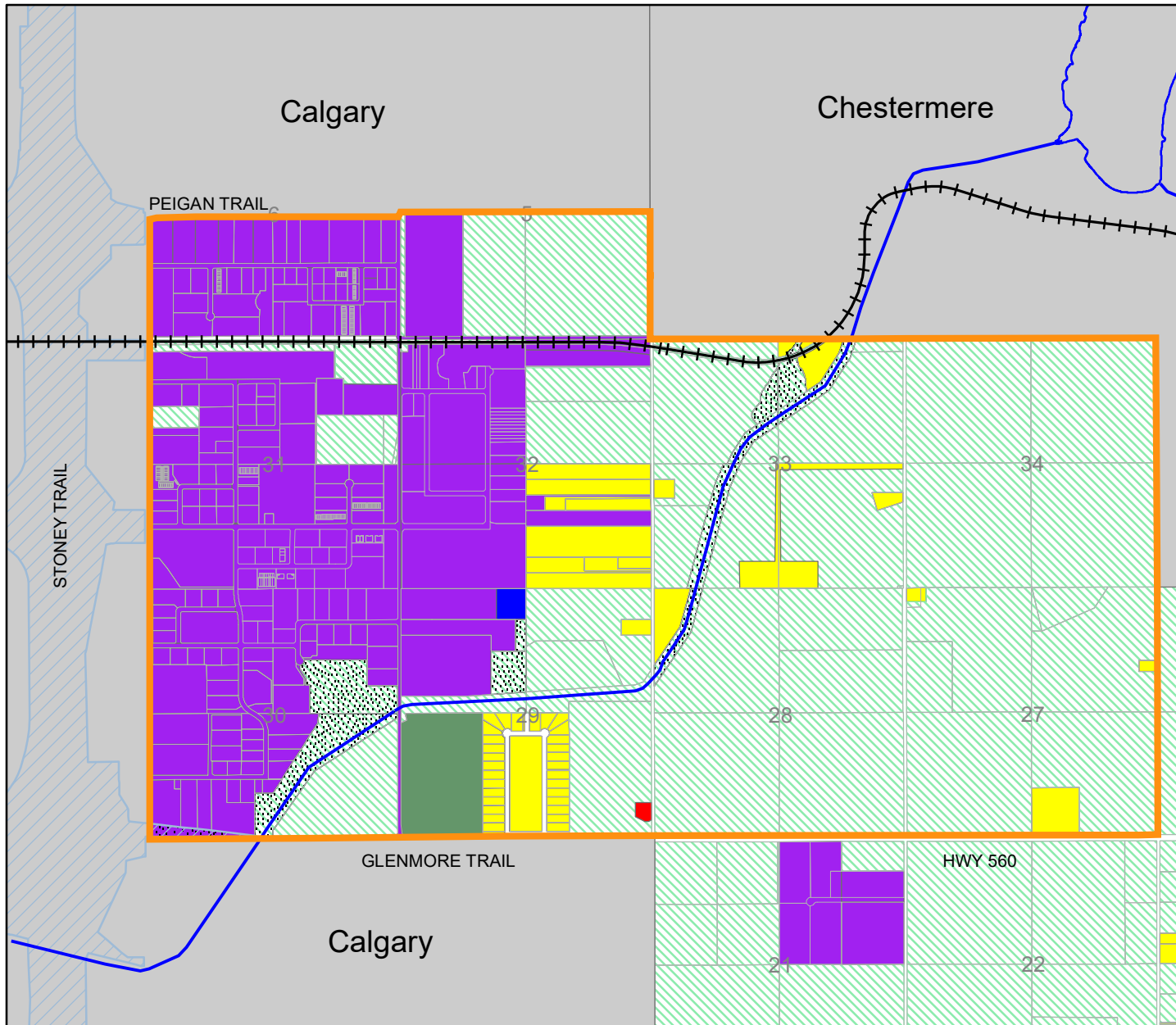
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Appendix A

Janet Area Structure Plan Land Use Map



Map 3: Existing Land Use

-  ASP Boundary
-  Agriculture
-  Recreational
-  Business
-  Industrial
-  Residential
-  Public Service
-  Crown Land
-  Transportation and Utility Corridor
-  Western Headworks Canal
-  CN Railway

