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Rocky View County

Environmental Screening Report

Conrich Area Structure Plan (ASP) Amendment Boundary

Prepared for:
Rocky View County

Project number:
22043

December 2022

DISTRIBUTION:

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Submitted To:

Rocky View County

Jessica Anderson, Policy Supervisor, Planning
262075 Rocky View Point | Rocky View County | AB | T4A 0X2

Submitted By:

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December 15, 2022

Jessica Anderson, Policy Supervisor, Planning
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Rocky View County, Calgary, AB
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Dear Jessica Anderson:

Project No: 22043

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

At the request of Rocky View County, RC BioSolutions Ltd. has completed an Environmental Screening Report for the Conrich 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.



Krista Bird, Ph.D., P.Biol.
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Appendix A. Land Use Map

1 Project Description

1.1 Purpose and Scope

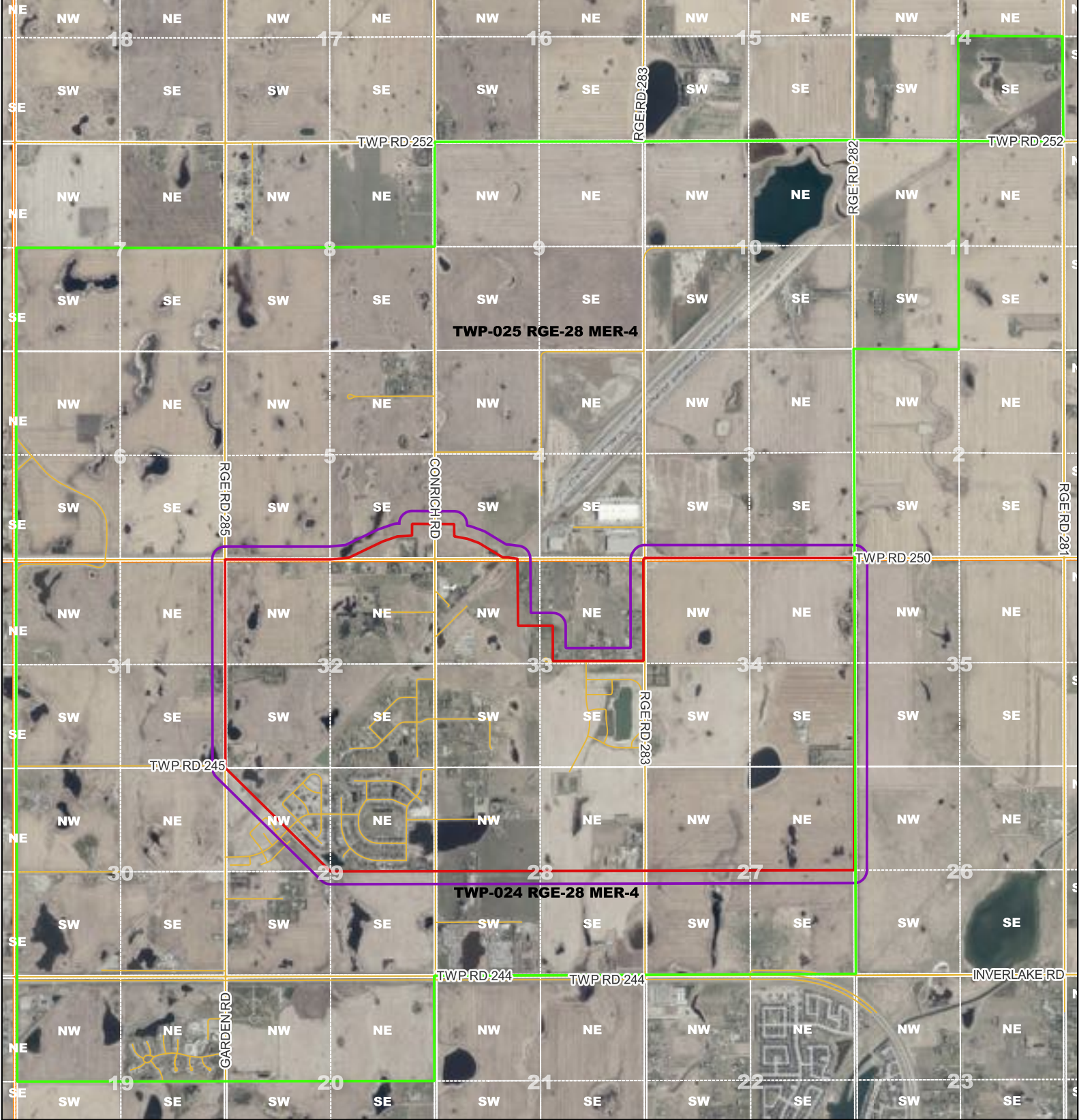
RC BioSolutions Ltd. (RC Bio) was contracted by Rocky View County to provide an Environmental Screening Report for the Conrich Area Structure Plan (ASP) amendment area (Figure 1). The purpose of this Environmental Screening is to complete desktop level investigations to determine the existing environmental 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 Conrich Area Structure Plan (Rocky View County 2015) was approved by Council in December 2015. 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 Future Policy Area (100 m buffer)
- ASP Future Policy Area

NAD83 / Alberta 3TM ref merid 114 W
Scale: 1:40,000
0 300 600 900 1,200 m



Rocky View County Conrich Environmental Screening Report

Figure 1
Conrich Area Structure Plan Boundary

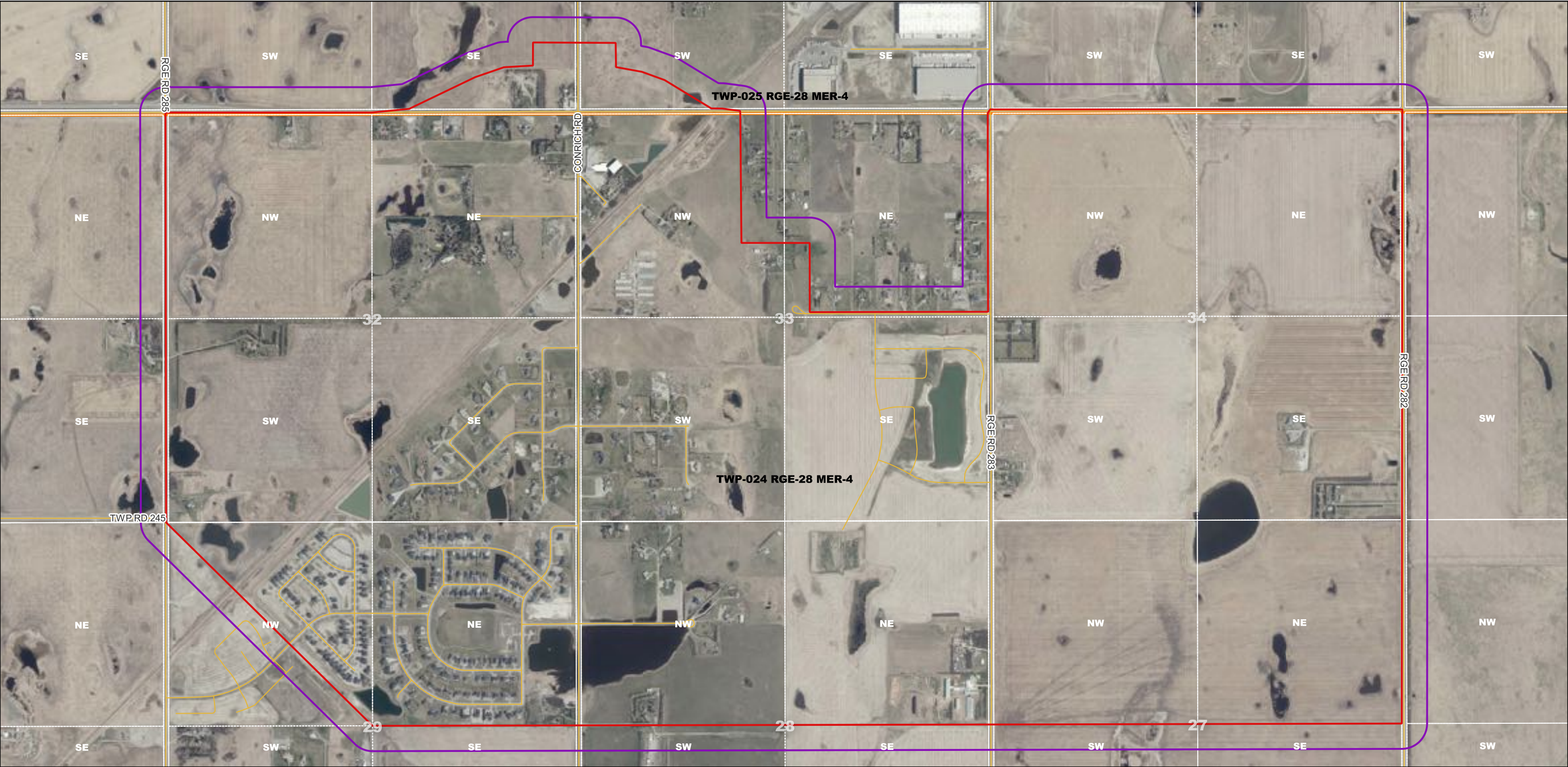
1.2 Location and Size

The project is located east of Calgary, north of Chestermere, and is centered on the hamlet of Conrich in Rocky View County, Alberta. The project area falls within the following 20 quarter sections fully or in part (Figure 2):

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

SE-5-25-28-W4M	NW-28-24-28-W4M	NW-32-24-28-W4M	NW-33-24-28-W4M	NW-34-24-28-W4M
SW-4-25-28-W4M	NE-28-24-28-W4M	NE-32-24-28-W4M	NE-33-24-28-W4M	NE-34-24-28-W4M
NW-27-24-28-W4M	NW-29-24-28-W4M	SE-32-24-28-W4M	SE-33-24-28-W4M	SE-34-24-28-W4M
NE-27-24-28-W4M	NE-29-24-28-W4M	SW-32-24-28-W4M	SW-33-24-28-W4M	SW-34-24-28-W4M

The Conrich ASP Amendment area is 1,099.9 ha. As per the CMRB Land Use & Servicing Committee (2022) Regional Evaluation Framework Interpretation Guide, a 100 m buffer has been added to the Conrich ASP Amendment area for all desktop searches. This makes the study area a total of 1,262.2 ha.



Legend

ASP Future Policy Area Boundary

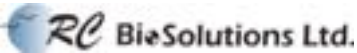
ASP Future Policy Area Boundary: 100m Buffer

NAD83 / Alberta 3TM ref merid 114 W

Scale: 1:15,000



0 100 200 300 400 m



Rocky View County
Conrich Environmental Screening Report

Figure 2

Conrich Area Structure Plan Amendment Boundary

2 Biophysical Inventory

2.1 Land Use

The current land use of the project footprint is agriculture, country, and small acreage hamlet residential, industrial, institutional, and commercial (Rocky View County 2022). As per the ASP, agriculture is characterized by large- and small-scale operations and is currently the dominant form of land use in the Conrich area. At the time of writing the ASP, there were 442 residential homes within the project area, with about half located in the vicinity of the original hamlet. Canadian National (CN) was given federal approval to relocate its railway facility to the Conrich area in 2012, resulting in building of a CN logistics park and an expected demand for a variety of warehouses and light industrial development. In addition to the CN logistics park, non-agricultural business includes the Conrich gas station, Mountain View campground, the Frankonia RV and boat storage yard, and a number of temporary developments on the west boundary of the project area. The Conrich area also contains several institutional land uses including a continuing care facility, churches, schools and a cemetery (Rocky View County 2022).

The proposed ASP amendment will result in the conversion of a portion of the project area lands from a combination of highway and business into residential (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 tilled soils and remnant prairie grassland, with limited industrial and recreational development. Wetlands are scattered throughout the region including a number of wetland complexes and permanent wetlands located in the southwest corner of the project area. The plant communities are generally cultivated consisting mostly of cereal crops, oil seeds and hay. 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) or hay, and wetland. Fifteen GVI categories occur within the project area (Table 2; 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.

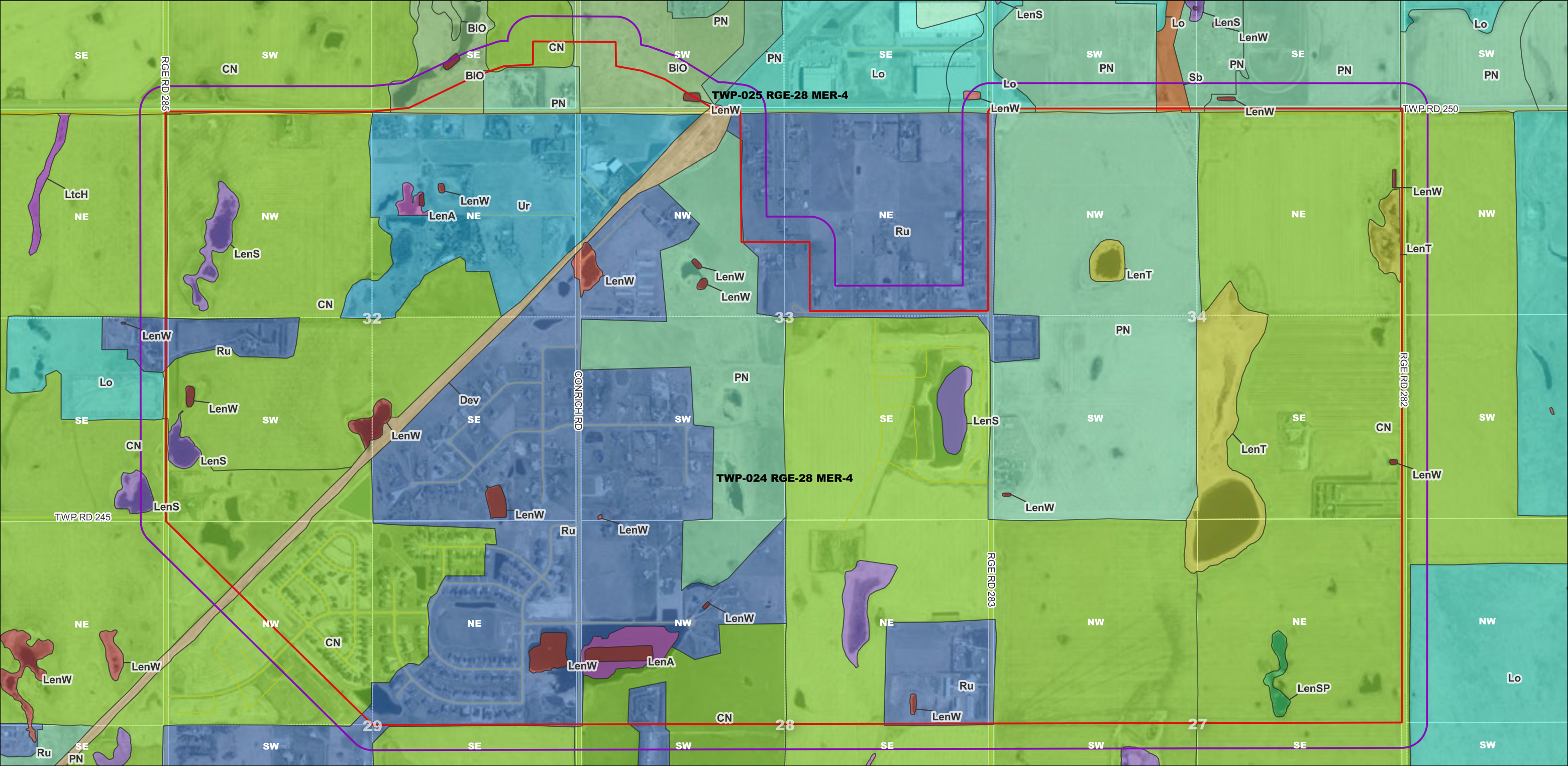
Table 2 – GVI Categories Present Within the Project Area

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.	9.77 ha (0.44%)
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.	489.08 ha (22.05%)
Developed – Dev	The Developed site type represents man-made developments that are very difficult to return to crop, pasture, hay, or native/natural conditions. Developed site types do not include Urban or Rural developments. This site type includes both active and inactive operations.	13.66 ha (0.62%)
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.	4.72 ha (0.21%)
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.	17.12 ha (0.77%)
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.	48.74 ha (2.20%)
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).	1.53 ha (0.07%)

Rocky View County
Conrich Area Structure Plan (ASP) Amendment Boundary
Environmental Screening Report

GVI Category	Description¹	Area/Percentage Occurring in Project Area
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.	74.64 ha (3.36%)
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.	0.84 ha (0.04%)
Overflow – Ov	Often occurs in valley bottoms in association with lotic site types and are typically below steeper valley slopes. Overflow sites are generally confined to fan-and-apron landscapes, but they can also occur in terraced settings near streams. Lotic sites commonly have more lush vegetation growth due to a high water table and regular flooding in the riparian zone, while Overflow sites are typically higher and drier.	0.28 ha (0.01%)
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.	207.26 ha (9.34%)
Saline Lowland – SL	Saline lowlands are areas with negligible vegetation due to high electrical conductivity (salts) and/or sodium-adsorption ration limitations. The Saline Lowland site type is not technically a wetland but occurs where the groundwater is at or very close to the surface, and is associated with saline groundwater discharge or overland flow. Vegetation cover in a Saline Lowland can be variable and patchy or can be dominated by sparse to negligible cover.	0.28 ha (0.01%)
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.	1.15 ha (0.05%)
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.	164.58 ha (7.42%)
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.	66.48 ha (3.00%)

¹ Descriptions are from Government of Alberta (2011)



Legend

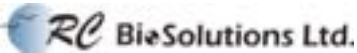
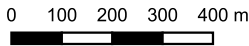
ASP Future Policy Area Boundary ASP Future Policy Area Boundary: 100m Buffer

Grassland Vegetation Inventory

- | | | | |
|---------------------------|--|---------------------------|--|
| Blowouts/Solonetzic - BIO | Lentic (Open Water) - LenW | Lentic (Temporary) - LenT | Subirrigated - Sb |
| Crop (Non-irrigated) - CN | Lentic (Seasonal) - LenS | Loamy - Lo | Tame Pasture or Hay (Non-irrigated) - PN |
| Developed - Dev | Lentic (Semi-Permanent to Permanent) - LenSP | Lotic (Herbaceous) - Ltch | Urban - Ur |
| Lentic (Alkali) - LenA | Rural - Ru | | |

NAD83 / Alberta 3TM ref merid 114 W

Scale: 1:15,000



**Rocky View County
Conrich Environmental Screening Report**

Figure 3
**Vegetation Types from
Grassland Vegetation Inventory (GVI)**

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. One rare plant (*Iris missouriensis*) listed as sensitive has been documented within a significant distance (10 kilometers [km]) of the project area (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). Twenty-nine species of non-sensitive tracked species were found within 20 km of the project footprint, with three 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> ¹	Western blue flag
NON-SENSITIVE SPECIES	
<i>Almutaster pauciflorus</i>	Few-flowered aster
<i>Caloplaca ahtii</i>	Firedot lichen
<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>	Fallacious screw moss
<i>Eleocharis engelmannii</i>	Engelmann's spike-rush
<i>Elodea bifoliata</i> ¹	Two-leaved waterweed
<i>Elodea Canadensis</i>	Canada waterweed
<i>Enallagma anna</i>	River bluet
<i>Fissidens grandifrons</i>	Narrow-leaved Chinese phoenix moss
<i>Flavopunctelia soledica</i>	Powder-edged speckled greenshield lichen
<i>Gratiola neglecta</i>	Clammy hedge-hyssop
<i>Hygroamblystegium tenax</i>	Moss
<i>Ischnura cervula</i>	Pacific forktail
<i>Lecanora crenulata</i>	Rim-lichen
<i>Lithospermum occidentale</i>	Western false gromwell
<i>Orthotrichum pumilum</i>	Moss
<i>Physconia enteroxantha</i>	Frost lichen
<i>Potentilla lasiodonta</i>	Sandhills cinquefoil
<i>Pterygoneurum ovatum</i>	Hairy-leaved beardless moss
<i>Rhodobryum ontariense</i>	Ontario Rhodobryum moss
<i>Riccia cavernosa</i>	Liverwort

Scientific Name	Common Name
<i>Rorippa curvipes</i> ¹	Blunt-leaved watercress
<i>Salicornia rubra emergent marsh</i>	Samphire emergent marsh
<i>Seligeria campylopoda</i>	Moss
<i>Verrucaria muralis</i>	Speck lichen
<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 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). 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

One wildlife species was documented in the project area that is considered sensitive (Sora; *Porzana carolina*) and 19 species within 5 km were provincially listed: one amphibian species, 16 bird species, one mammal species, and one reptile species (Table 4). Piping plover (*Charadrius melodus*) and Western grebe (*Aechmophorus occidentalis*) were within 5 km of the project area and 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’
- Chestnut-collared longspur (*Calcarius ornatus*) – Provincially ‘May be at Risk’, COSEWIC ‘Endangered’, and SARA ‘Threatened’
- Horned Grebe (*Podiceps auritus*) – Provincially ‘Sensitive’ and COSEWIC/SARA ‘Special Concern’
- Olive-sided flycatcher (*Contopus cooperi*) – Provincially ‘May be at Risk’, COSEWIC ‘Special Concern’, and SARA ‘Threatened’
- 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’
- Western Grebe (*Aechmophorus occidentalis*) – Provincially ‘At Risk’, COSEWIC/SARA ‘Special Concern’
- Badger (*Taxidea taxus*) – Provincially ‘Sensitive’ and COSEWIC/SARA ‘Special Concern’

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

- Sensitive Raptor Range – Bald Eagle, Golden Eagle, Prairie Falcon (covers entire ASP area). Ferruginous Hawk Range is approximately 9.3 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				
American bittern	<i>Botaurus lentiginosus</i>	Sensitive	N/A	N/A
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
Chestnut-collared longspur	<i>Calcarius ornatus</i>	May be at Risk	Endangered	Threatened
Common yellowthroat	<i>Geothlypis trichas</i>	Sensitive	N/A	N/A
Eared grebe	<i>Podiceps nigricollis</i>	Sensitive	N/A	N/A

Rocky View County
Conrich Area Structure Plan (ASP) Amendment Boundary
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Common Name	Species Name	Status		
		Alberta ¹	COSEWIC ²	SARA ³
Eastern kingbird	<i>Tyrannus tyrannus</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
Least flycatcher	<i>Empidonax minimus</i>	Secure	N/A	N/A
Olive-sided flycatcher	<i>Contopus cooperi</i>	May be at Risk	Special Concern	Threatened
Pied-billed grebe	<i>Podilymbus podiceps</i>	Sensitive	N/A	N/A
Piping plover	<i>Charadrius melodus</i>	At Risk	Endangered	Endangered
Short-eared owl	<i>Asio flammeus</i>	May be at Risk	Threatened	Special Concern
Sora*	<i>Porzana carolina</i>	Sensitive	N/A	N/A
Western grebe	<i>Aechmophorus occidentalis</i>	At Risk	Special Concern	Special Concern
MAMMALS				
Badger	<i>Taxidea taxus</i>	Sensitive	Special Concern	Special Concern
AMPHIBIANS & REPTILES				
Canadian toad	<i>Anaxyrus hemiophrys</i>	May be at Risk	Not at Risk	N/A
Plains garter snake	<i>Thamnophis radix</i>	Sensitive	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)

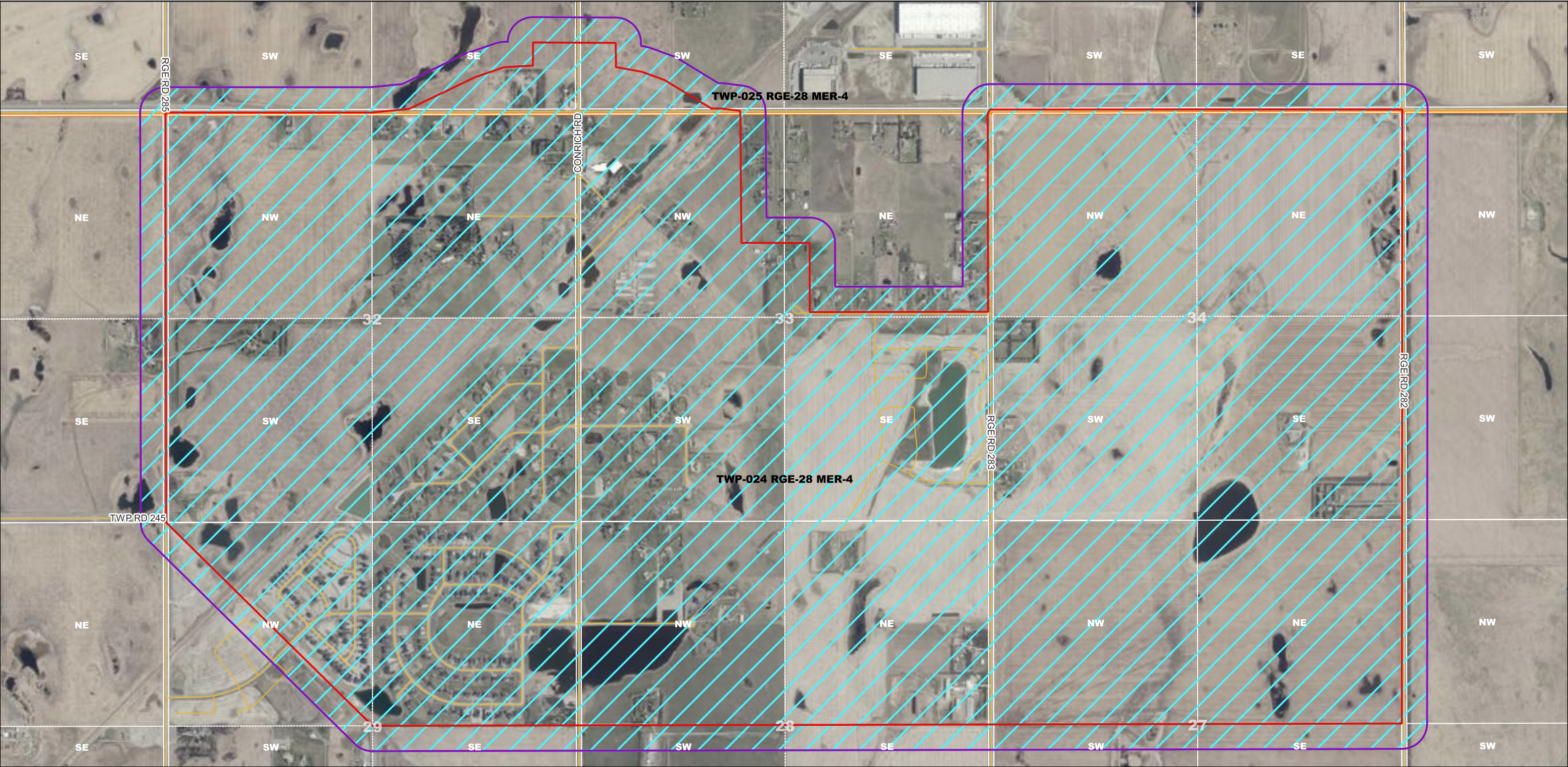
(3) Species at Risk Act (Government of Canada 2022b)

* Species found within the project area and 100 m buffer

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).



Legend

ASP Future Policy Area Boundary

ASP Future Policy Area Boundary: 100m Buffer

Wildlife within Project Area

Bald Eagle

Prairie Falcon

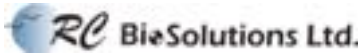
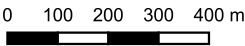
Golden Eagle

Sharp-tailed Grouse

Leopard Frog

NAD83 / Alberta 3TM ref merid 114 W

Scale: 1:15,000



Rocky View County

Conrich Environmental Screening Report

Figure 4

Sensitive Wildlife Areas

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

No fish species were found within the project area; however seven fish species were found within 5 km of the project area. One fish survey identified deceased fish from the sucker family in an unnamed tributary to the Bow-Chestermere Diversion Channel that flows from north to south through the project area; however, this observation occurred approximately 7.9 km downstream of the project boundary. No fish species found within a significant distance from the project area were provincially or federally listed. Additionally, no critical habitat, for any SARA listed aquatic species, is known to occur in the project area (DFO 2022).

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
Lake Whitefish	<i>Coregonus clupeaformis</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
Rainbow Trout	<i>Oncorhynchus mykiss</i>	Secure	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)

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

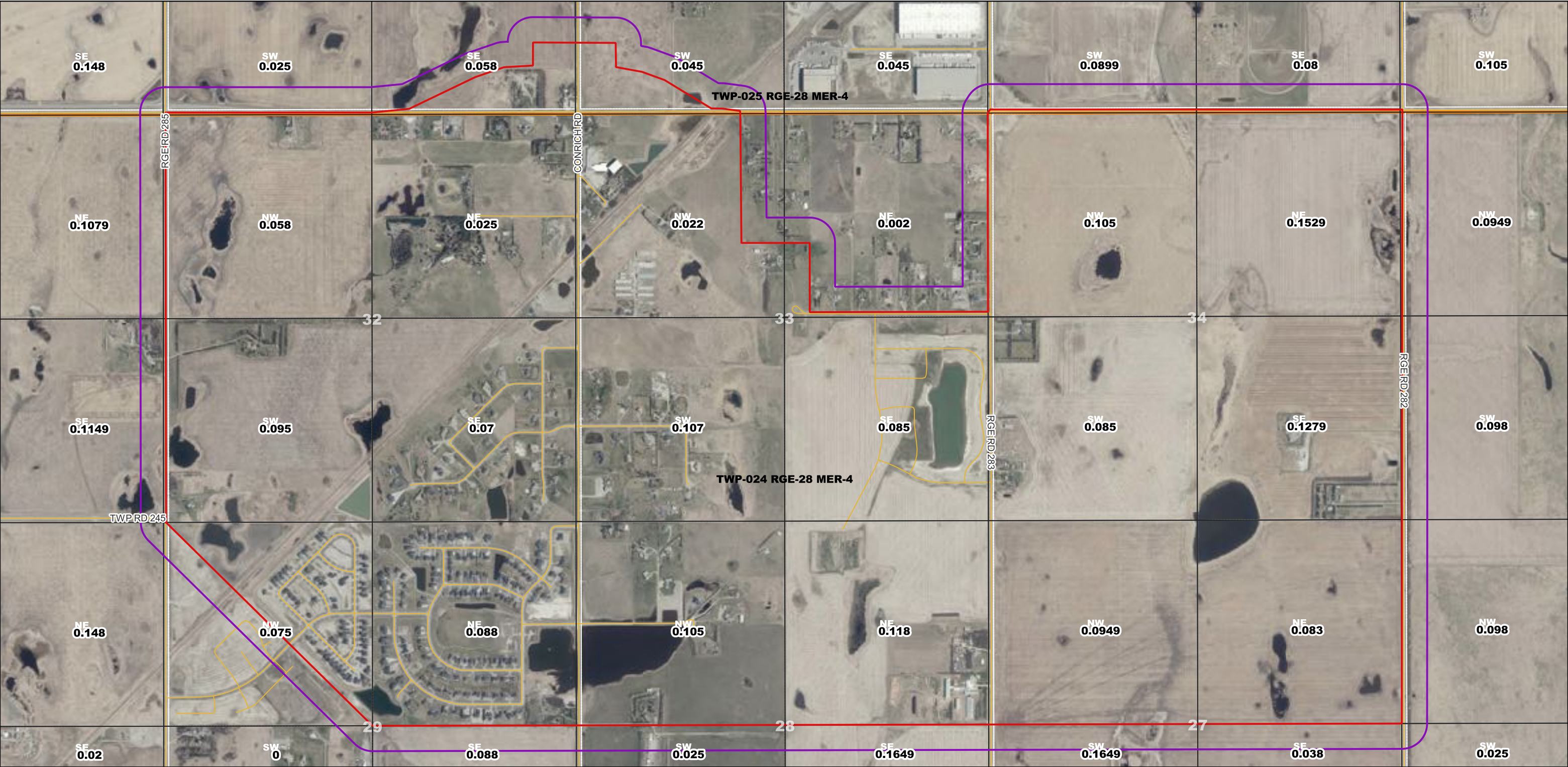
The most current version of the Environmentally Significant Areas (Fiera Biological Consulting 2014) shapefile was obtained from Alberta Environment and Parks (2019) and is presented on the map “as is”.

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

2.3.2 Results

There were no quarter sections classed as Environmentally Significant Areas within the project area or in the 100 m buffer (Fiera 2014; Figure 5). The nearest quarter sections classed as Environmentally Significant Areas were NE-26-24-28-W4M and SE-26-24-28-W4M, located one quarter section (~805 m) away from the southeast corner of the project area.

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



Legend

ASP Future Policy Area Boundary

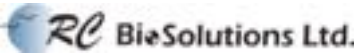
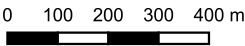
ASP Future Policy Area Boundary: 100m Buffer

Alberta ESA (ESA > 0.1890)

No

NAD83 / Alberta 3TM ref merid 114 W

Scale: 1:15,000



**Rocky View County
Conrich Environmental Screening Report**

Figure 5

Environmentally Significant Areas (Provincial)

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 (Only one polygon was found in the project area, but it was not accurate and not included in the figure; 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.

Significant land use changes, modifications, and or disturbances to waterbodies have occurred within and surrounding the project area. Due to the amount of difference and variability the waterbody datasets have, it was determined the waterbodies should be delineated for more accurate representation within the project area. Variable differences included over and or underrepresentation of waterbody size and missing and or removed waterbodies, including some private ponds and or dugouts.

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; 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, therefore 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. According to the FWMIS database, three unnamed watercourses are present in the project area, including: two unnamed tributaries to the Bow-Chestermere Diversion Canal (WB ID 65471 and 27265), and one unnamed watercourse/drainage (WB ID 65400) of approximately 1.27 km in total length. Based on

satellite and aerial imagery, all three FWMIS watercourses appear to lack a defined channel, however, future ground truthing would likely be required to confirm.

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).

One hundred and one potential waterbodies for a total area of 102.6 ha were identified within the Future Policy Area based on the analysis of shapefile databases and RVC aerial imagery. An additional 22 waterbodies were identified intersecting the 100 m buffer that did not intersect the Future Policy area boundary. Waterbodies identified include potential wetland, ephemeral waterbodies, dugouts, disturbed waterbodies, ponds, or any potential fish bearing waterbody present with the Future Policy area.

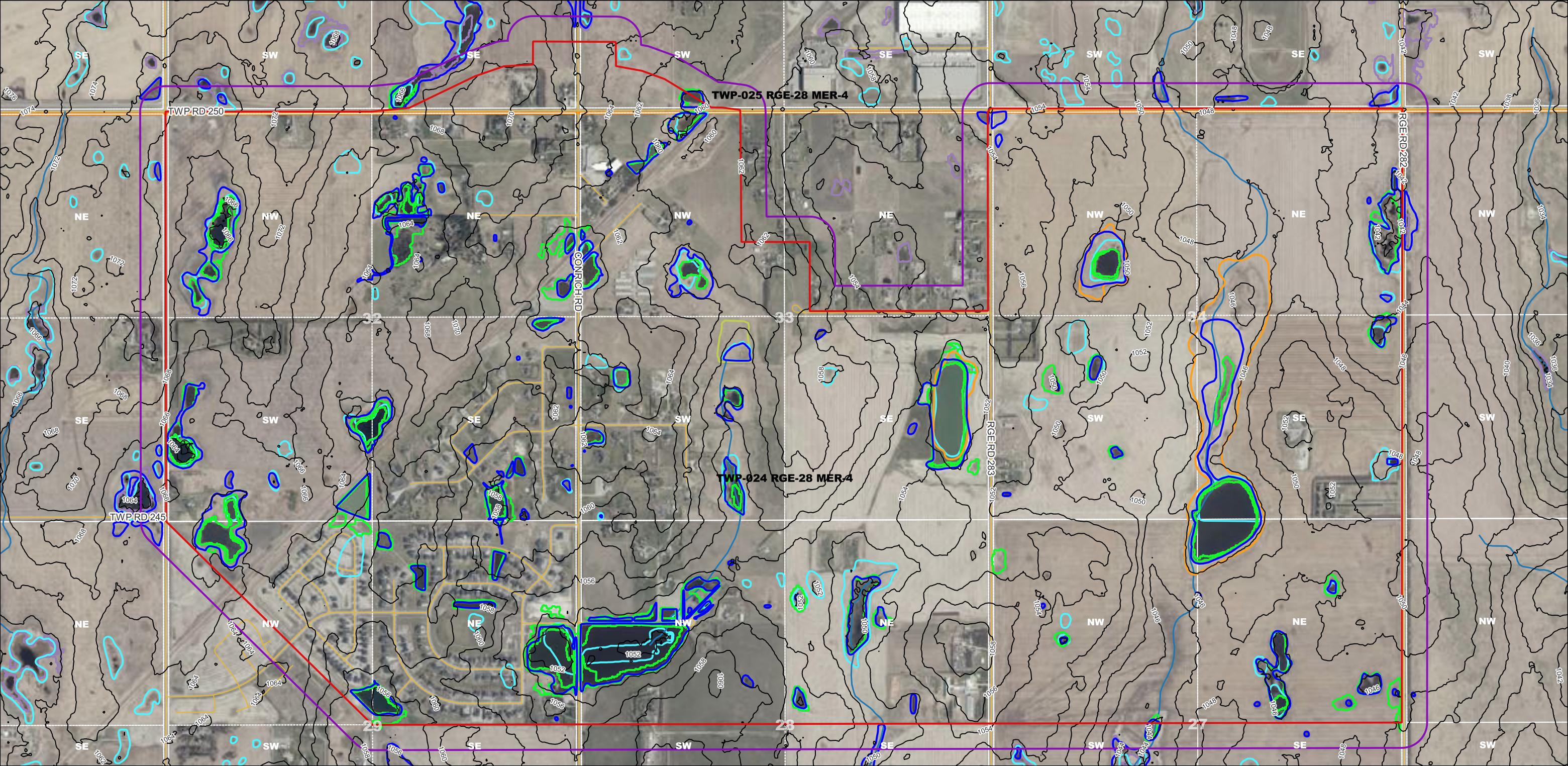
From amalgamating the present shapefile databases (ABMI and AMWI), there are possibly 84 waterbodies within the project area. However, there are a number of issues with these selected databases.

- Using aerial photography, not all waterbodies were not identified, however all potential waterbodies were delineated when able to be identified
- Some waterbodies identified from the database shapefiles are probably not actually wetlands or ephemeral wetlands, but are actually wet upland areas). Most of these locations are from the Alberta Merged Wetland Inventory (AMWI) database. The updated predecessor, the ABMI database, has removed the majority of these wet upland areas. Also the waterbodies wet upland areas would need to be soil tested and delineated in the field to determine a more accurate waterbody boundary delineation.
- The ABMI database is a more conservative estimate of waterbodies, but appears to be more accurate. Some waterbodies have been missed. Several small bodies of water appear to be agricultural dugouts, and therefore may have been omitted intentionally. ABMI waterbodies under 400 square meters were not identified and in some cases did not identify additional pieces of larger waterbodies.
- Three ABMI and three AMWI waterbodies appear in Cambridge Park and they no longer exist within the residential development of the area.
- 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 determined based on water levels and estimated boundaries from the 2020 aerial imagery provided from Rocky View County.
- Some waterbodies were added and some waterbodies removed where no sufficient water was found or if the waterbodies have been destroyed. No field ground-truthing was conducted, but some other imagery was used to determine if waterbodies were wet in different parts of the year to validate some of the ABMI database errors. One area within NE-32-24-28-W4 has two waterbodies that are classified as swamp, but one polygon is a group of trees and part of a road next to a wetland.

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, 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.



Legend

- | | |
|--|---|
| ASP Future Policy Area Boundary | Waterbodies |
| ASP Future Policy Area Boundary: 100m Buffer | Alberta Merged Wetland Inventory (ESRI) |
| FWMIS (Hydro - Streams) | ABMI Wetland Inventory |
| Contours 2 meters (from RVC) | Surface Water (from RVC) |

NAD83 / Alberta 3TM ref merid 114 W

Scale: 1:15,000

0 100 200 300 400 m



**Rocky View County
Conrich Environmental Screening Report**

Figure 6

Waterbodies, Wetlands, and Streams

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 to the west and east with no defined drainage courses, but generally surface drainage is to the south. (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 1,042 to 1,074 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 residential and country residential areas.

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.

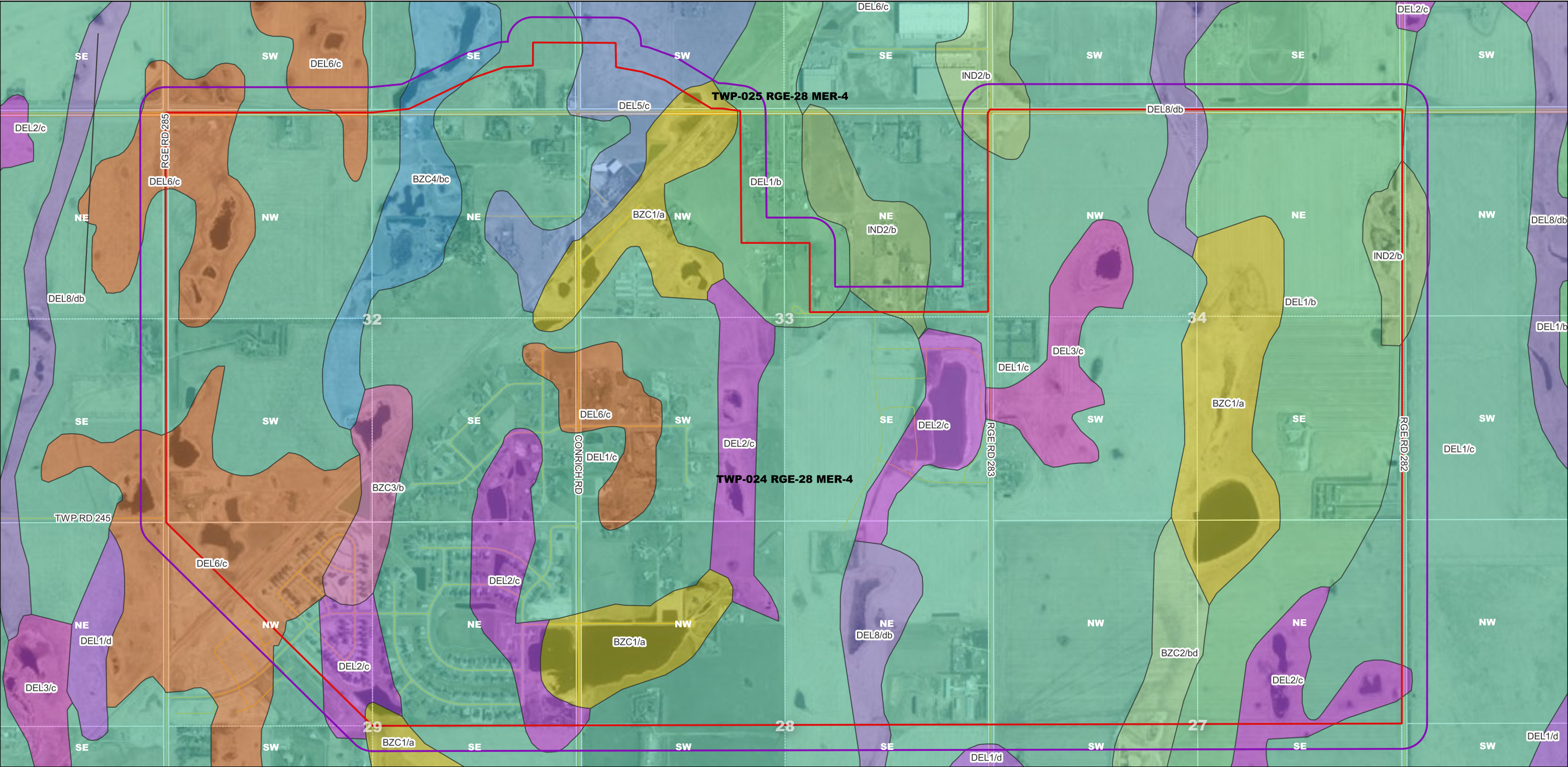
- BZC1 – Balzac (BZC) soils series is defined as a fine clayey lacustrine overlying till. The soils series occupies areas that are level to depressional landscape with a thin amount of lacustrine material overlying till. BZC1 contains nearly all Balzac soil, which has a black surface horizon of varying 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 undulating to subdued hummocky morainal landscapes. Consists of saline Balzac soil (30%), thin, hardpan Beddington soil (30%), and well-drained Delcour soil (60%).
- 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. Only IND2 occurs within the project boundary. The difference between IND1 and IND2 is the degree of soil wetness, where IND2 is more variable than IND1.



Legend

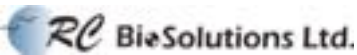
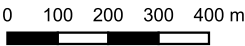
ASP Future Policy Area Boundary ASP Future Policy Area Boundary: 100m Buffer

Soils (Soil Series / Soil Phase)

BZC1/a	BZC4/bc	DEL2/c	DEL8/db
BZC2/bd	DEL1/b	DEL3/c	IND2/b
BZC3/b	DEL1/c	DEL5/c	
	DEL1/d	DEL6/c	

NAD83 / Alberta 3TM ref merid 114 W

Scale: 1:15,000



Rocky View County
Conrich Environmental Screening Report

Figure 7

Soils Data from Rockyview County

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

One quarter section within the project area (SW-4-25-28-W4M) and two within the 100 m buffer (NW-26-24-28-W4M and SW-26-24-28-W4M) are classed as HRV5a (Alberta Culture 2022; Figure 8). 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.

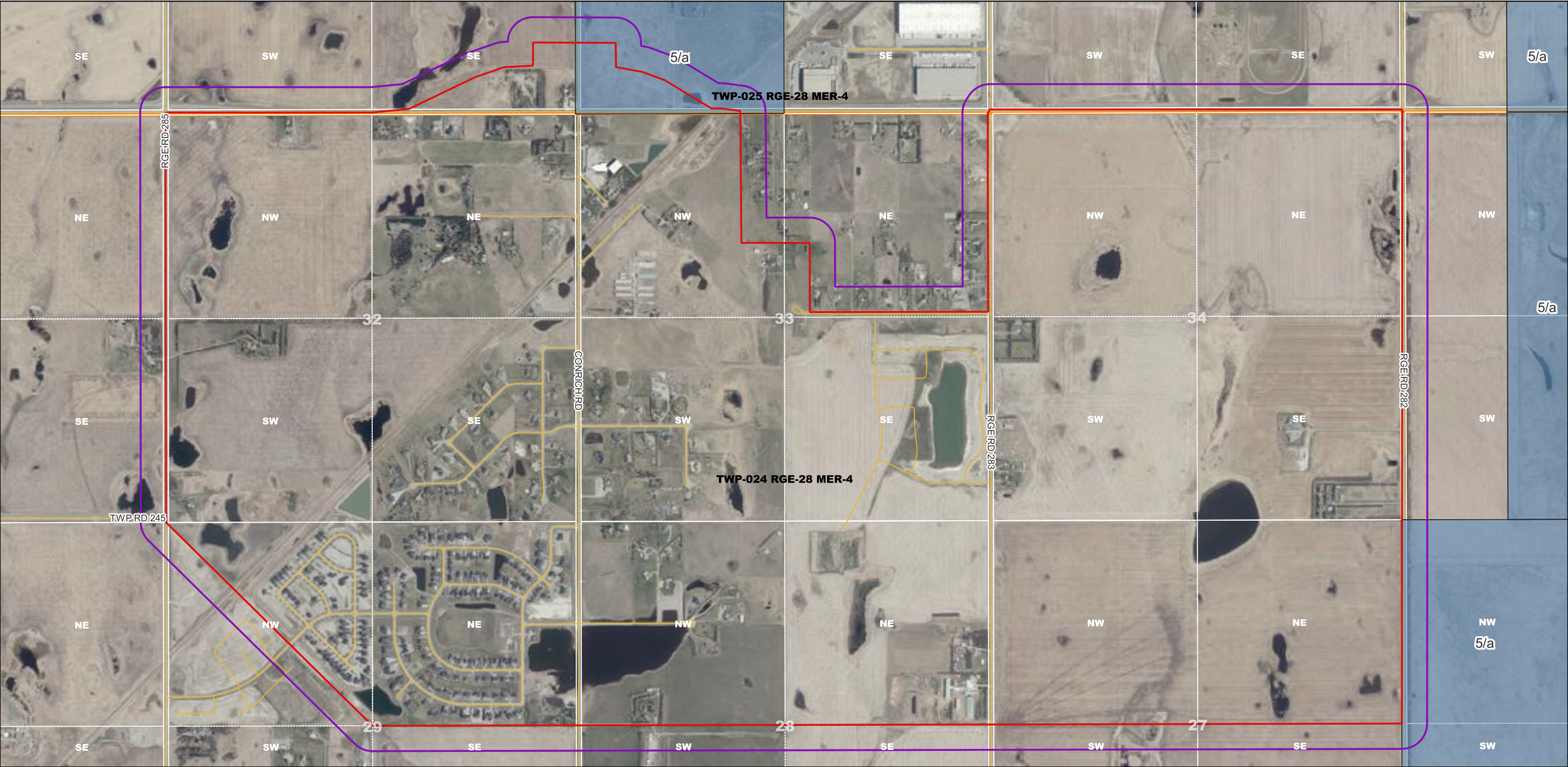
2.8 Other Features

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. A CN railway crosses through the project area from southwest to northeast.




- Legend**
- ASP Future Policy Area Boundary
 - ASP Future Policy Area Boundary: 100m Buffer
 - Historical Resources (HRV / Category)

NAD83 / Alberta 3TM ref merid 114 W

Scale: 1:15,000



0 100 200 300 400 m

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**Rocky View County
Conrich Environmental Screening Report**

Figure 8

Historical Resources

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 – There are a number of undisturbed wetlands throughout the project area that 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 – Sora, a wildlife species listed as sensitive in the project area 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, less disturbed wetlands in the east and west portions of the project area (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.

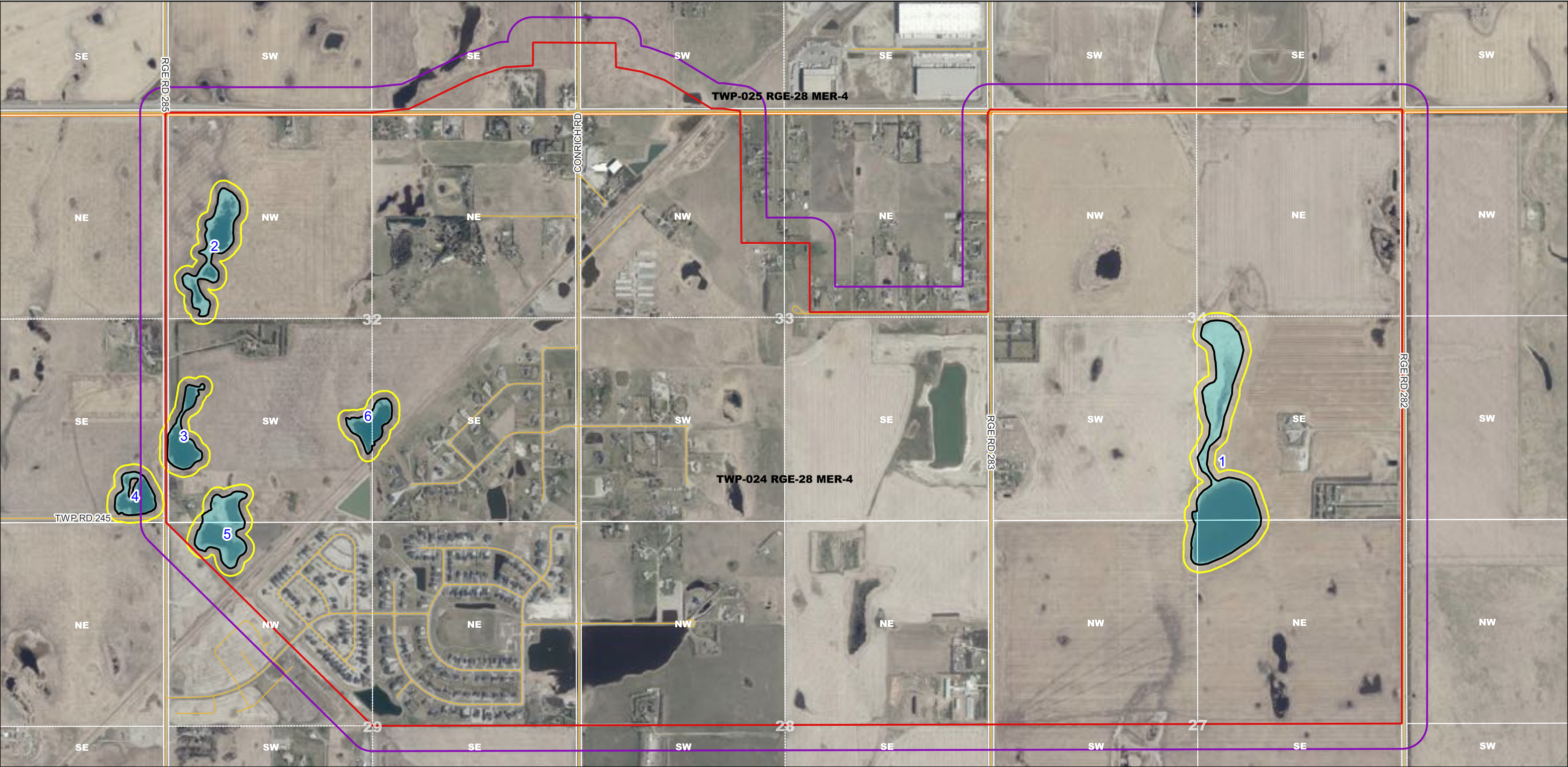
- Provide rare, unique, or biologically diverse ecosystems or unique landforms.
- Contribute to other important ecosystem functions or services at a regional or local scales.

However, all five wetlands (plus one in the buffer) have some disturbance and would require field work to make sure that they meet the criteria for Environmentally Sensitive Areas.

The large wetlands in the center of the project area appear heavily anthropogenically disturbed and would require field work to determine if they could be classed as Environmentally Sensitive Areas.

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.



Legend


- ASP Future Policy Area Boundary
- ASP Future Policy Area Boundary: 100m Buffer
- Conrich ESA Wetlands
- ESA

NAD83 / Alberta 3TM ref merid 114 W

Scale: 1:15,000



0 100 200 300 400 m

 Biosolutions Ltd.

**Rocky View County
Conrich Environmental Screening Report**

Figure 9

Environmentally Sensitive Areas (ESAs)

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

One rare and sensitive plant species, and several non-sensitive plants and plant communities have been identified within 10 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 residential and industrial developments. 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 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 potential wildlife corridors present within the project area are the north-south strings of wetlands and drainages in the eastern and western portions of Project Area. These wetlands and drainages likely provide habitat for wetland dwelling bird and mammal species and may provide a movement corridor for larger wetland loving animals that utilize riparian habitat.

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 is potential for watercourses within the project area to be fish bearing based on their connectivity with a fish bearing waterbody (i.e., Bow-Chestermere Diversion Canal). Watercourses within the project boundary appear to lack a defined channel (based on satellite and aerial imagery), but require ground truthing to confirm. Therefore, a fish and fish habitat survey should be completed by a Qualified Aquatic Environmental Specialist to confirm the presence or absence of fish habitat prior to any works with potential to disturb fish or fish habitat (including riparian areas).

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*

According to FWMIS, there are three watercourses within the project area, but all three appear to lack a defined channel. However, site visits are required to determine whether flowing water is present. Potential impacts to watercourses include increased sedimentation, changes to the bed and banks of the watercourse, and changes to stream course and volume. There may be other 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 Soils

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 not have a high potential to contain a historical resource. A *Historical Resources Act* approval is required for the quarter section with an HRV of 5a (SW-4-25-28-W4M). If any historical resources are encountered during development of this quarter section, construction will be halted immediately, and the appropriate authorities will be contacted.

3.2.8 Potential Impacts to Environmentally Sensitive Areas

The potential Environmentally Sensitive Areas within the Project Area are comprised of five larger, somewhat undisturbed wetlands with potential impacts summarized in Table 6.

Wetland 1 in the eastern part of the Project Area is the largest relatively undisturbed wetland. It is expected 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.

Wetland 1 has connectivity to other somewhat undisturbed wetlands and drainages to the south, which makes it likely wildlife habitat, as it offers some level of connectivity for wetland associated species. However, there is a small dugout in the ephemeral fringe of the wetland and it appears to have limited riparian vegetation in air photos. It should therefore have a field assessment completed on it prior to being classed as an Environmentally Sensitive Area by the County.

Wetland 2 is the next largest wetland and appears to be the least disturbed in the Project Area. It also appears to have connectivity to Wetlands 3, 5, and 4 (outside Project Area, but within the project buffer) in the western part of the Project Area, likely making it part of a connected wetland and riparian area that would facilitate wildlife movement. It is expected to provide:

- 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.

Due to potential impacts, it should have a field assessment completed on it prior to being classed as an Environmentally Sensitive Area by the County.

Wetland 3 is the middle wetland in the western wetland complex. It is smaller and more disturbed than Wetland 2. The northern part of Wetland 3 appears to have been converted to a dug out at some point, but was selected due to the potential to:

- 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.

As well as providing connectivity within the western wetland complex. Due to potential impacts, it should have a field assessment completed on it prior to being classed as an Environmentally Sensitive Area by the County.

Wetland 4 is outside of the Project Area, but within the Project Buffer. Based on air photos, it is relatively undisturbed, but likely has had historic impacts from Township Road 245 and Range Road 285. It was selected due to the potential to:

- 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.

As well as providing connectivity within the western wetland complex. Due to potential impacts, it should have a field assessment completed on it prior to being classed as an Environmentally Sensitive Area by the County.

Wetland 5 is the most impacted of the selected wetlands, but was selected due to its size, connectivity to the western wetland complex, and the riparian habitat. It appears to have been disturbed by a development to the south and has potential disturbance from a race track to the east. It was selected due to the potential to:

- 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.

As well as providing connectivity within the western wetland complex. Due to potential impacts, it should have a field assessment completed on it prior to being classed as an Environmentally Sensitive Area by the County.

Wetland 6 is a smaller wetland, but appears to have good riparian habitat associated with it, which would support a variety of wildlife. However, it is adjacent to the very busy CN tracks, which would likely preclude high wildlife biodiversity. It was selected due to the potential to:

- 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.

Due to potential impacts, it should have a field assessment completed on it prior to being classed as an Environmentally Sensitive Area by the County.

The one sensitive wildlife species found within the project area was not found in any of these wetlands. Due to the size these wetland ecosystems, it is expected that they may host a variety of wetland species and plants, with the potential for rare plants and species at risk, as many listed species are found in the surrounding area.

Due to the high potential for complex ecosystem function of these five wetlands (with the sixth in the buffer), 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 five (and one in the buffer) areas should be minimized to maintain ecosystem health and function within the project areas. Recommended mitigation measures include:

- As per the Conrich 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 Conrich 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 Conrich Area Structure Plan (Rocky View County 2022), *“Wetlands that form part of a stormwater drainage conveyance system (Map 11) shall be retained”*.
- As per the Conrich 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 Conrich 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 Conrich 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 Conrich Area Structure Plan (Rocky View County 2022), “*the riparian setback area uses may include parks, pathways, and trails*”.
- As per the Conrich 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 Conrich 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*”.
- As per the Conrich Area Structure Plan (Rocky View County 2022), a primary goal is to “*Protect wetlands through the integration of wetlands as part of a sustainable stormwater solution*”.

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	<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 pending further field investigation • 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	<ul style="list-style-type: none"> • Impact water quality & quantity 	<ul style="list-style-type: none"> • Retain wetland with at least a 50 m buffer 	<ul style="list-style-type: none"> • 50 m buffer as per the Government of Alberta

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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 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"> • Potential Environmental Reserve pending further field investigation • Retain current water flows into the wetland with a site-specific stormwater plan to maintain ecosystem function 	(2012) Stepping Back from the Water. A Beneficial Management Practices Guide for New Development Near Water Bodies in Alberta's Settled Region <ul style="list-style-type: none"> • <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	<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 pending further field investigation • 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 4 (in Project Buffer)	<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 	<ul style="list-style-type: none"> • Retain wetland with at least a 50 m buffer • Potential Environmental Reserve pending further field investigation • Retain current water flows into the wetland with a site-specific stormwater plan to maintain ecosystem 	<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</i>

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Name/Description of the Environmentally Sensitive Area	Potential Impacts of Proposed Development	Recommended Mitigation Measures	Identify Mitigation Measure
	<p>ecosystems</p> <ul style="list-style-type: none"> • Impact the contribution to important ecosystem functions or services at both the regional and local scale 	<p>function</p>	<p><i>area shall be protected by designation as environmental reserve, environmental reserve easement, municipal reserve, or by other means satisfactory to the County” (Rocky View County 2022)</i></p>
Wetland 5	<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 pending further field investigation • 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” (Rocky View County 2022)</i>
Wetland 6	<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 pending further field investigation • 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” (Rocky View</i>

Name/Description of the Environmentally Sensitive Area	Potential Impacts of Proposed Development	Recommended Mitigation Measures	Identify Mitigation Measure
			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 five largest wetland areas may 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, 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 five (six including the one wetland in the Project Buffer) 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).

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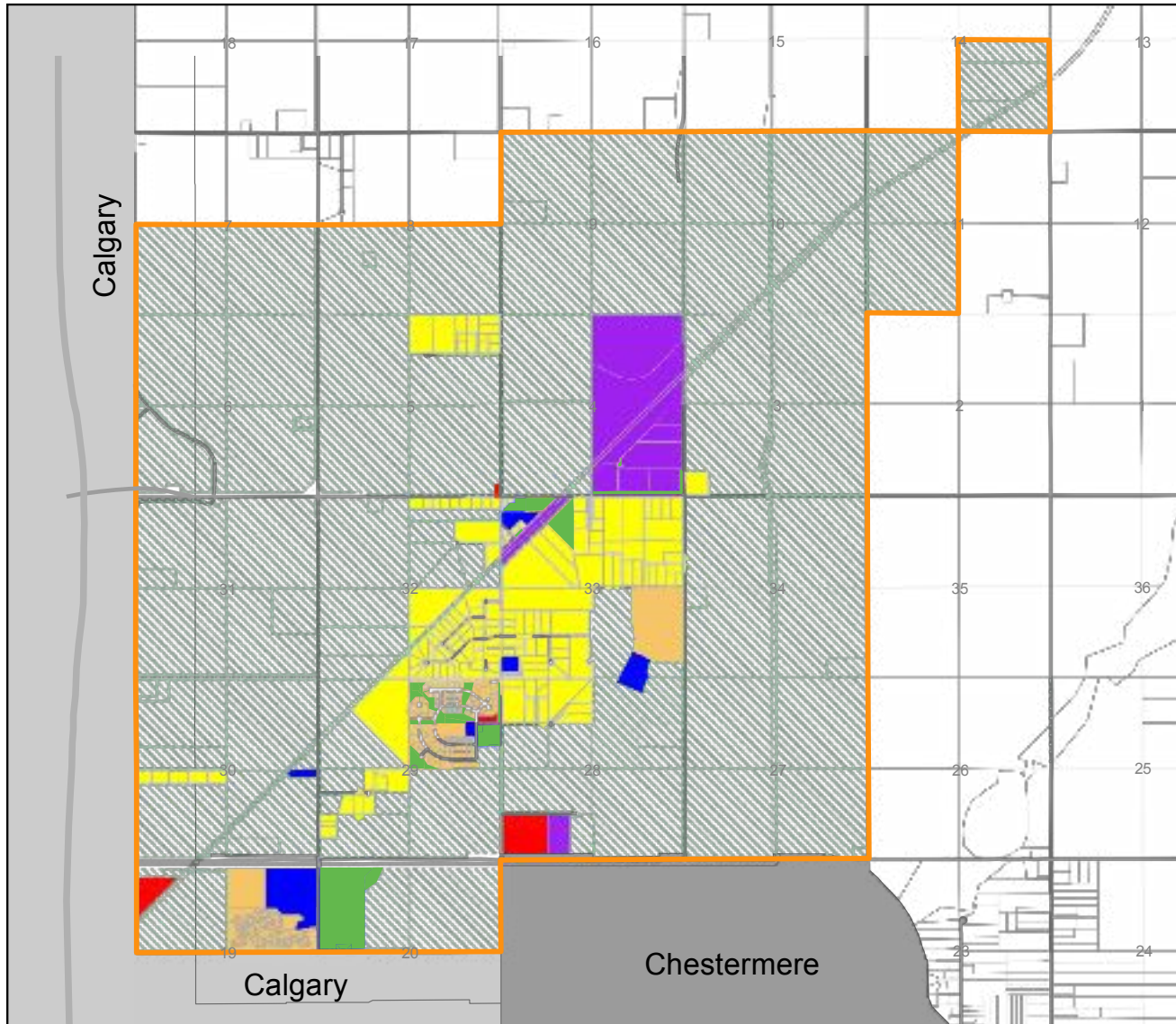
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Appendix A

Land Use Map



Map 3:
Existing
Land Use

- ASP Boundary
- Agriculture
- Country Residential
- Residential
- Institutional
- Industrial
- Commercial
- Reserve Land

0 0.25 0.5 1 1.5 2
Km



This map is conceptual in nature. No measurements or area calculations should be taken from this map.