Biophysical Screening Report

Castle Area Structure Plan

Claresholm, Alberta

NE 22-12-27-W4M &
SE, NE 27-12-27-W4M

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Submitted to: Castle and Land Development Inc.

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Our file: 2531-100794-00

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1. Introduction

McElhanney Ltd. (McElhanney) was retained by Castle and Land Development Inc. (the Client) to conduct a Biophysical Screening Report (BSR) for a recently annexed area and future development (the Project) with a legal location of Sections 22, 27 and 34, Township 12, Range 27, West of the 4th Meridian (22, 27, 34-012-27 W4M; the Site). The Site is located west of the Town of Claresholm municipal boundary, west of Highway 2 with Highway 520 running through the southern portion of the Site (***Figure 1***). The Site currently consists of privately owned agricultural land (***Figure 2***).

The primary objective of the BSR is to identify environmentally sensitive features, potential impacts, and mitigation measures to be considered during development planning. The following BSR is based on the findings of a high-level desktop assessment of Valued Ecosystem Components (VECs) that may interact with the Project, and a field assessment completed on May 13, 2025.

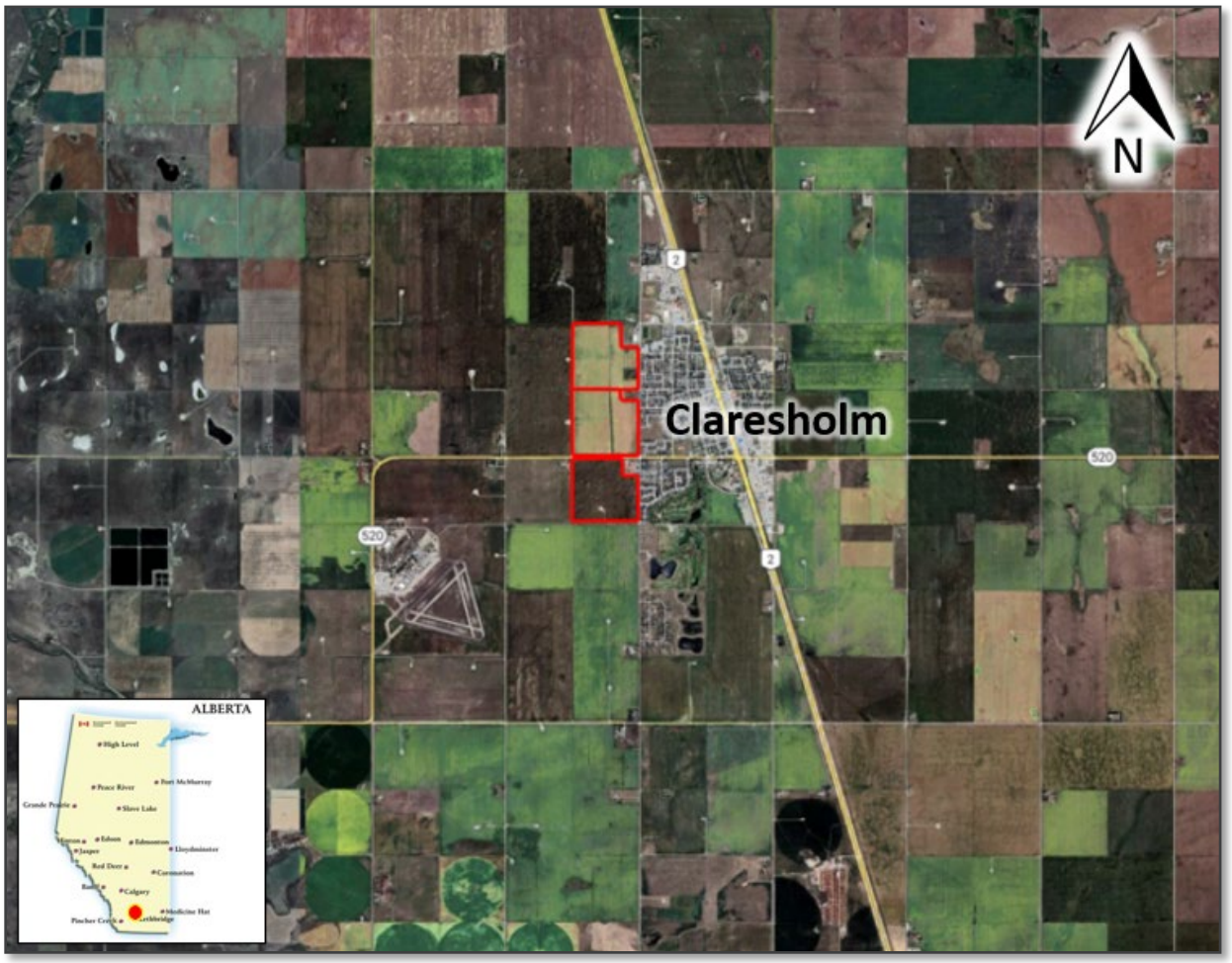

Figure 1: Project Footprint (outlined in red) and surrounding features in the Municipal District of Willow Creek, Alberta (Google Earth Pro, 2025).

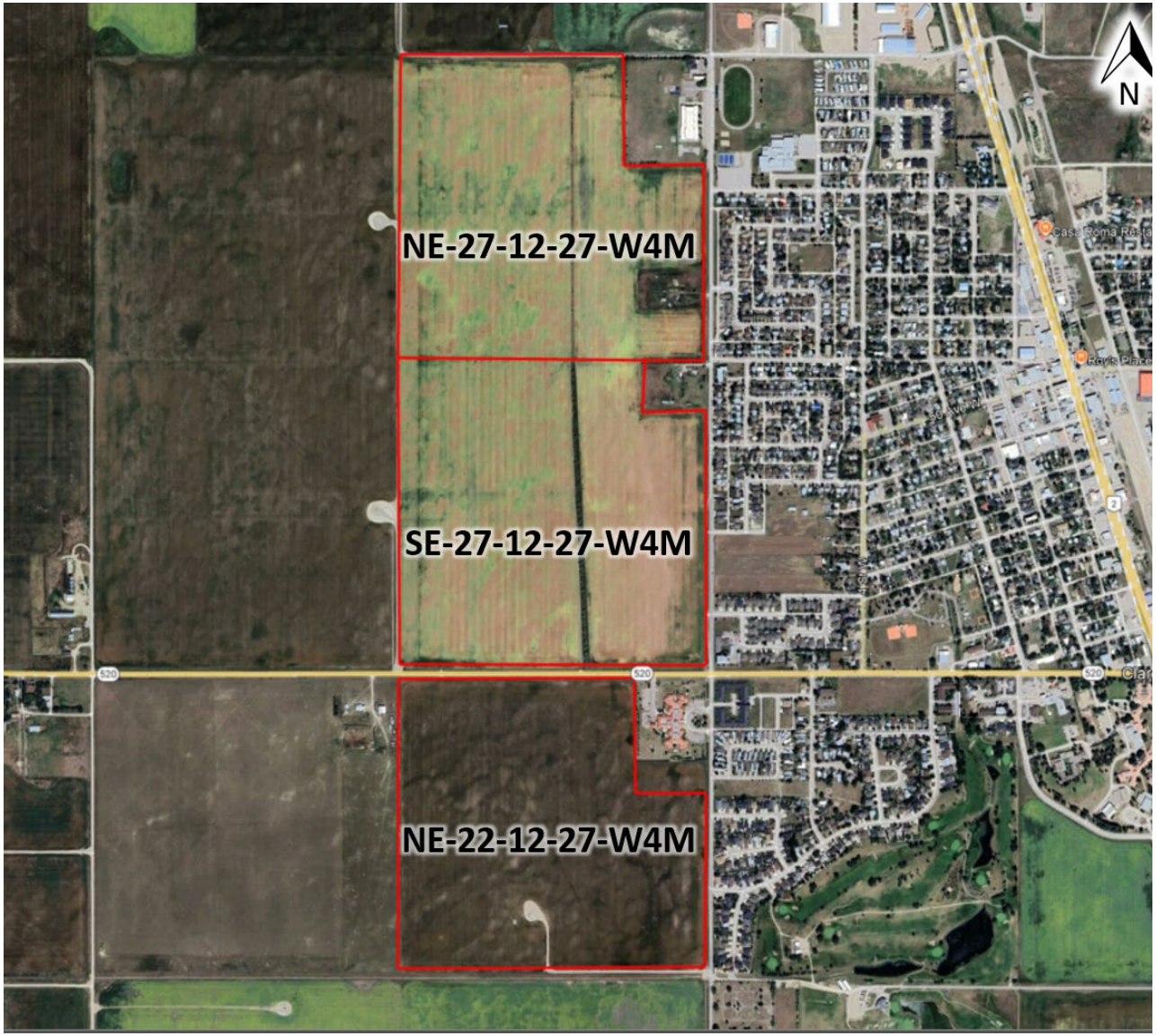

Figure 2: Proposed Annexation Area (outlined in red) with land uses in the surrounding areas of agricultural (south, west and north) and commercial / residential / public (east) (Google Earth Pro, 2025).

1.1. PROJECT DESCRIPTION

The Town of Claresholm Municipal Development Plan (MDP) provides guidance on future growth and development to ensure that a sustainable, orderly, and efficient approach is taken to enhance the quality of life for the citizens of Claresholm (Town of Claresholm, 2010). The Site is being considered to support future development for the municipality. This new development will include housing options, amenities and promote a way of life consistent with existing community development. The Project is in the Area Structure Plan (ASP) phase of the development process. An ASP provides more detailed guidance for the development of specific properties then the principals outlined in the MDP.

The Town of Claresholm MDP outlines a long-term vision for the municipality and guides future growth and development in the community. The MDP provides development principles, policy statements, and a future land use concept dictating growth expectations within the municipality. The MDP requires ASPs for areas larger than 40 acres for any purpose other than agriculture. The Site is approximately 183 hectares (451 acres) in size and is currently designated as agricultural land. Highway and Local Commercial designations are concentrated along the western boundary of Claresholm. Highway 520 (Starline Road) runs through the southern portion of the proposed development.

Construction and development for the Site is anticipated to require major earthworks including stripping topsoil, minor grading, intersection improvements, laying asphalt for new roads/pedestrian trails, stormwater management ponds, potable water lines, permanent structures and wastewater gravity mains and manholes. The following construction activity list is based on typical project components for construction of this nature:

- Vegetation removal,
- Stripping to remove topsoil,
- Grading as needed,
- Changes to surficial drainage patterns, which may include infilling of wetlands,
- Excavation/drilling for potable waterline and wastewater gravity main and manholes,
- Culvert installations as needed,
- Laying an asphalt surface over the stripped surface for roads and pedestrian trails,
- Gravel placement for unpaved roads,
- Erosion and sediment control, including reseeding, and stormwater pond management,
- Waste management and disposal during construction, and
- Site clean-up and final landscaping.

1.2. OBJECTIVE AND SCOPE

This BSR provided a screening level study of the biophysical conditions and natural landscape features of the Site, an assessment of potential impacts, and recommendations for general mitigation measures to protect the environment. This assessment was conducted to confirm the general environmental characteristics of the Site based on a desktop review of publicly available data including aerial photography, topographic maps, and municipal, regional, provincial, and federal web databases. A Site visit was completed on May 13, 2025, to supplement the desktop assessment.

The objective was to identify potential environmentally sensitive elements, referred to as VECs, within and around the Site that may be directly or indirectly impacted by development. The Study Area includes the Site and a radius of 300 m (Local Study Area (LSA)) and a radius of 5 km (Regional Study Area (RSA)) for the database searches. Exceptions to this search radius are noted in the methodology section. The overall objective was to identify VECs that trigger protection or permitting requirements that may influence the project design and/or schedule. The BSR allows the Client to examine the environmentally sensitive features in the Study Area and determine if there is a requirement to conduct a full Biophysical Impact Assessment (BIA) for the proposed project.

It is understood that the management of soil, vegetation, and surface water are inferred to be the key VECs that will require ongoing management during construction and operation. Thus, the mitigation measures herein, include details relating to the management of soil, vegetation, and water.

This BSR was conducted to meet the following objectives:

- Identify sensitive ecological features including at-risk species and ecosystems within the Study Area,
- Identify designated and/or critical wildlife habitat within or adjacent to the Site,
- Identify surface water resources and general boundaries, including wetlands, within the Study Area,
- Determine the potential negative impacts of the Project on environmental features,
- Make recommendations to avoid or minimize potential environmental impacts on VECs,
- Provide environmental information to aid Project design and facilitate the decision-making process, and
- Identify environmental regulatory requirements for Project construction.

2. Methodology

2.1. SPATIAL BOUNDARIES

The **Project footprint**: includes the limits of construction as defined by the preliminary design drawings.

The **Local Study Area** (LSA): includes areas within a 300 m radius of the Site for site-specific reviews of biogeographical databases.

The **Regional Study Area** (RSA): includes areas within a 5 km radius of the Site for broad-based reviews of biogeographical databases.

Note that database search areas were variable depending on the species or environmental resource.

2.2. BACKGROUND INFORMATION SEARCHES

McElhanney conducted desktop searches for background information pertaining to features that have the potential to be directly or indirectly impacted by the Project and associated activities. The following open data sources were reviewed:

- The *Agricultural Regions of Alberta Soil Inventory Database* (AGRASID) provides a map of soil classes and groups that have been mapped throughout the province. A soils database search was carried out to determine the types of soils that have been mapped in the RSA (AGI, 2024).
- *Alberta Conservation Information Management System* (ACIMS), online database searched for records of rare plant species or plant communities in the RSA (Government of Alberta, 2022).
- The *Environmental Significant Areas* report and associated mapping data was reviewed to identify areas within Alberta that are important to maintain biological diversity, landscape features and other natural processes over the long-term, on both local and regional scales (Fiera, 2014).
- The *Fish and Wildlife Management Information System* (FWMIS) was searched using the Fish and Wildlife Internet Mapping Tool (FWIMT) for any documented occurrences of special status wildlife species in the RSA (Government of Alberta, 2024).
- The *Landscape Analysis Tool* (LAT) for any documented occurrences of special status wildlife species ranges and sensitive features in the RSA (Government of Alberta, 2024).
- Historical Resources were reviewed through the *Listing of Historical Resources* web map to determine if any historical resource values occur within the RSA (Alberta Culture, 2024).
- The *Alberta Merged Wetland Inventory* for any previously identified potential wetland areas in the LSA (Government of Alberta, 2020).
- *Natural Regions and Subregions of Alberta* (Natural Regions Committee, 2006) presents the climatic, physiographic, vegetation, soil, wildlife, and land use attributes that characterize each Natural Region and Subregion.
- The *Town of Claresholm* (Town of Claresholm, 2025) Report a Bylaw Concern outlined the process of communicating unsightly grass and weeds on a property, however no information on specific noxious weeds was available.

3. Applicable Legislation and Guidelines

The following table (***Table 1***) pertains to federal and provincial legislation that often has the potential to result in the requirement for environmental and/or other approvals and may affect construction practices.

Table 1: Environmental Legislation Applicable to the Project.

Legislation	Agency	Area of Regulation	Permits/ Authorizations
Federal Legislation / Policy			
Fisheries Act	Fisheries and Oceans (DFO)	Protects fish and their habitat from harmful alteration, disruption, or destruction of their habitat (HADD)	Due to a lack of aquatic resources, no permitting is required for this Project.
Migratory Birds Convention Act (MBCA)	Environment & Climate Change Canada (ECCC)	Prohibits injury, molestation and destruction of migratory birds and their nests	No permitting required, operate under due diligence practices. The regional nesting period for zone B3 is Mid-April to Late August (Government of Canada, 2018). Vegetation clearing during the nesting period will require a qualified environmental professional (QEP) to complete pre-construction nest sweeps.

Legislation	Agency	Area of Regulation	Permits/ Authorizations
Species at Risk Act (*SARA*)	ECCC & DFO	Protects wildlife and wildlife habitat listed as threatened or endangered	Avoidance and mitigation strategies may be needed to avoid impacts on listed species. No permitting requirements anticipated.
Provincial Legislation / Policy			
Agricultural Pests Act	Alberta Environment & Protected Areas (AEPA)	Regulates control of designated soil pathogens.	The Act considers if a plant or disease is destroying or harming land, livestock or property. Soil borne pathogens such as clubroot affect canola, mustard, and other crops which were declared a pest to Alberta's Agricultural Pest Act (APA) in 2007. Agricultural Fieldmen are responsible for enforcing pest control measures in their municipality.
Environmental Protection and Enhancement Act	AEPA	Management of the release of deleterious substances, including hazardous materials, from spills, storage tanks, landfill management practices, hazardous waste management practices and enforcement.	No permits/approvals required; compliance only.
Historical Resources Act	Alberta Culture	Regulates the requirement for an Approval from Alberta Culture for projects with the potential to disturb historical, archaeological, and paleontological resources.	An approval or clearance is required for the Project area.
Soil Conservation Act	Alberta Agriculture and Irrigation (AGI)	Outlines the duty of landowners to take appropriate measures to prevent soil loss or deterioration from taking place, or, if soil loss or deterioration is taking place, to stop the loss or deterioration from continuing.	No permits / approvals required; compliance only.
Weed Control Act	AEPA	Regulates control of designated noxious plants	The Act imposes a duty on all landowners to control designated noxious plants. The Contractor must implement mitigation measures to reduce the spread and establishment of invasive species due to construction impacts.
Wildlife Act	AEPA	Regulates works that impact breeding birds and other wildlife in the area (i.e., amphibians and reptiles). The Act prohibits the willful molestation, disruption, or destruction of a wildlife nest or den. The protection of raptors and their nests/habitats falls under special provisions.	Protects birds and their nests during the bird breeding season as well as the nests, nest trees and eggs of certain species of birds all year. Bird nesting surveys may be needed prior to vegetation clearing.

Legislation	Agency	Area of Regulation	Permits/ Authorizations
Water Act	AEPA	The Act protects surface and ground water from the potential impacts of construction activities. Approval for the disturbance of water features is required under the *Water Act.* Permanent provincially owned wetlands require provincial approval for drainage or infilling under the *Alberta Public Lands Act* and the *Water Act*.	Neither wetlands nor ephemeral waterbodies were identified within the Site boundaries. A *Water Act* approval is not required.

4. Valued Ecosystem Components

4.1. REGIONAL SOILS

The Site is located within Soil Correlation Area (SCA) #3, a Dark Brown Soil Zone of southwest-central Alberta. SCA 3 is characterized by a dark brown A horizon, Chernozemic soils and extensive Solonetzic soil-landscapes can occur. Gleysolic soils may occur in depressional / wetland areas. Dark brown A horizon Chernozemic soils have between 15 cm of topsoil with a soil profile developed to 40 cm. Solenetzic soils are shallower with less topsoil and they may require special handling. Potential soil erosion by water is generally low in undulating (high relief) areas. The risk of erosion by wind increases from low in the north to moderate in the south, reflecting higher, average wind speeds. Sandy textured soils have a high potential for erosion by wind. Undulating moraine (till) and glaciolacustrine blankets and veneers over till are the dominant landscapes (Pedocan Land Evaluation Ltd., 1993).

Soils in the proposed development are of the Misc. Eroded series, consisting of well drained Rego Dark Brown Chernozem soils. Topsoil depth is typically 0-15 cm and subsoil depths haven't been measured. Parent material texture is defined as variable texture / not differentiated. ***Figure 3*** below shows the Map Unit Name of the correlating soil types within the Site and RSA. The majority of the Site contains landforms that are undulating-high relief (U1h), within the Whitney soil series (WNY), WNY4/U1h soil polygon (AGI, 2024). The landforms within the northeast corner of the Site are undulating-low relief (WNY4/U1I).

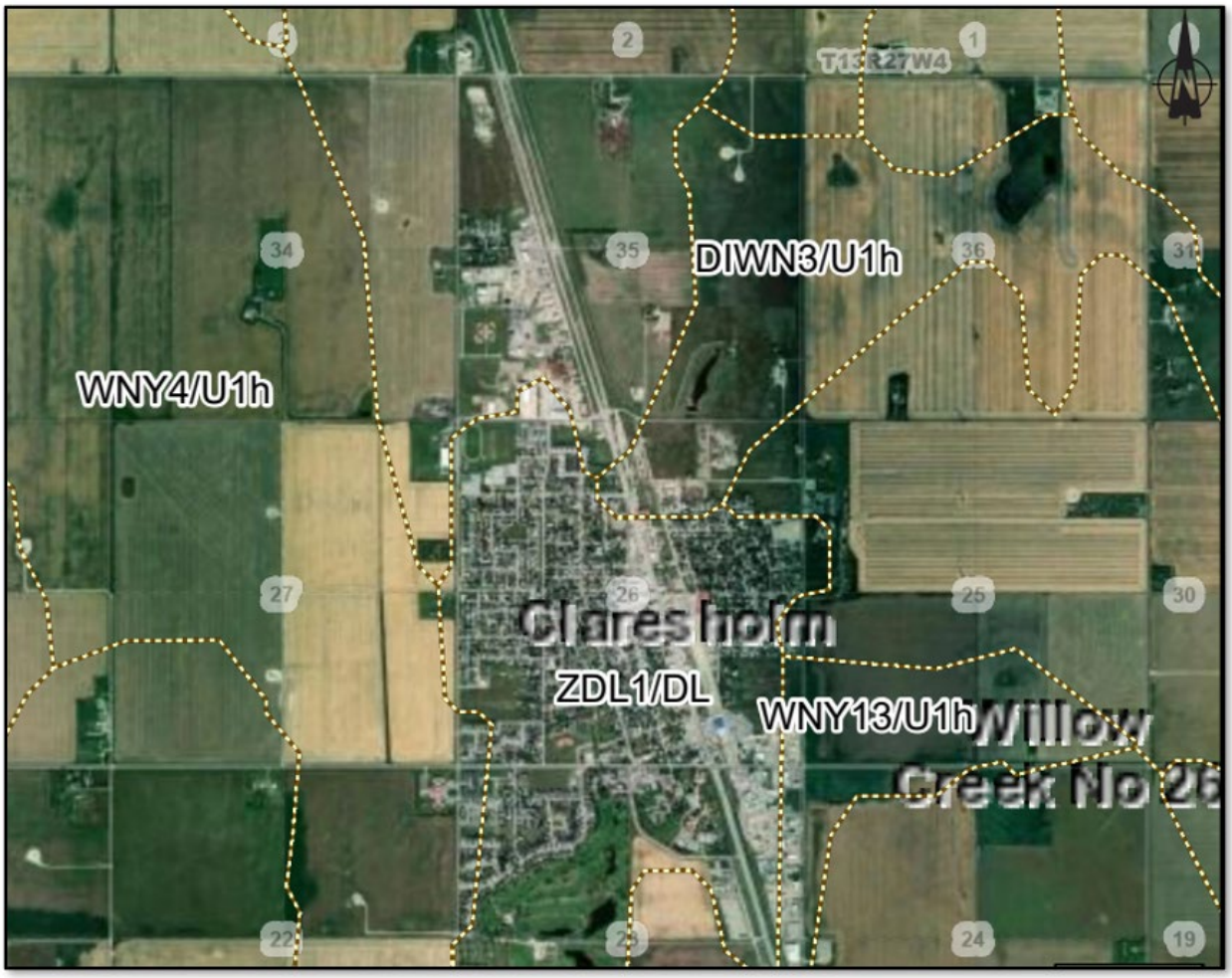

Figure 3. Soil Polygon of the Site and RSA.

4.2. VEGETATION

The Site is located within the Grassland Natural Region in the Mixedgrass Natural Subregion. The Mixedgrass Subregion has very warm summers and a long growing season ideal for annual crops. The Mixedgrass Natural Subregion is mostly cultivated with few areas of native vegetation remaining. Remaining grasslands in this subregion have a greater abundance of species that favour cooler, moister sites (i.e., Western porcupine grass (*Hesperostipa spartea*), and Northern wheatgrass (*Elymus lanceolatus*). Northern wheatgrass (*Agropyron dasystachyum*) and June grass (*Koeleria macrantha*) dominate fine-textured soils, and Blue gramma (*Bouteloua gracilis*) is more common on drier, exposed sites. Extensive Narrow-leaf cottonwood (*Populus angustifolia*) forests grow in river valleys of the area (Alberta Native Plant Council, 2022). Native vegetation is now scarce in the Mixedgrass Natural Subregion due to the high productivity of soils for agriculture (Sweetgrass Consultants Ltd., 1997). The Site is in seed zone MG1.1 (AAF, 2005). MG refers to the mixed grass Natural Subregion of Alberta with 1.1 referring to the average minimum temperature for a specific geographic area.

4.2.1. Provincial & Federal Listed Vegetation

The ACIMS database was searched to identify previously recorded observations of tracked elements (plant species at risk) within the LSA. The ACIMS database search did not identify any Element Occurrences. Given the history of agriculture use within the Site, it is inferred that there is a low potential for rare plant species within the Site. However, seasonally appropriate field assessments would be required to confirm the potential for rare plants. ***Appendix A*** provides the records of the ACIMS search.

4.2.2. Invasive Species

Control of designated prohibited noxious or noxious species is required by the Province under the *Weed Control Act* (Government of Alberta, 2022).

Outlined in ***Table 2,*** are the likely common weeds of concern and their status (category) in the Municipal District of Willow Creek No. 26. The Municipal District of Willow Creek No. 26 does not have region specific documentation available for invasive species in the area. Vulcan County, the neighbouring County to the northeast, has a similar ecology to that of the Municipal District of Willow Creek No. 26 and a list is provided of the invasive species that are increasing in prevalence in the area. The Site visit conducted on May 13, 2025, identified Canada/Creeping thistle (*Cirsium arvense*), designated as a noxious weed species.

Table 2: Common Invasive Plants within Vulcan County – adjacent to the Municipal District of Willow Creek No. 26 (Vulcan County, 2025).

Common Name	Scientific Name	Provincial Designation
Absinthe wormwood	*Artemisia absinthium*	Not Regulated
Baby's breath	*Gypsophila paniculata*	Noxious
Canada thistle	*Cirsium arvense*	Noxious
Kochia	*Bassia scoparia*	Not Regulated
Leafy spurge	*Euphorbia esula*	Noxious
Perennial sow-thistle	*Sonchus arvensis*	Noxious
Russian knapweed	*Centaurea repens*	Prohibited Noxious
Scentless chamomile	*Tripleurospermum perforatum*	Noxious
Yellow toadflax	*Linaria vulgaris*	Noxious

4.3. AGRICULTURAL PESTS AND DISEASES

Under the *Agricultural Pests Act* and Pest and Nuisance Control Regulation, landowners are required to control or destroy pests. The following are declared pests under Alberta's *Agricultural Pests Act* (Government of Alberta, 2020) and are found in agricultural fields throughout Alberta:

- Clubroot is a disease of cruciferous crops (canola and cabbage family) caused by the soil-borne fungus *Plasmodiophora brassicae* (Government of Alberta, 2022).

- Blackleg of Canola is a disease of the cabbage family (mustard and canola) caused by the soil-borne fungus *Leptosphaeria maculans* (Government of Alberta, 2022).
- Smut of cereals (flag) and of corn (head) are crop diseases caused by seed- and soil-borne fungi (Government of Alberta, 2022).
- Bacterial ring rot is a disease of potatoes caused by a plant-borne bacterium (Government of Alberta, 2022).
- Dutch elm disease is a disease of elm trees caused by the beetle-borne fungus *Ophiostoma ulmi* (Government of Alberta, 2022)

No information pertaining to agricultural pests were noted of special concern by the Town of Claresholm webpage. The proposed development does extend through cultivated fields, therefore agricultural pests and disease are potentially a concern for the Project. Monitoring for pests throughout the Project activities is considered a necessity to ensure all equipment used during development is properly cleaned before and after use.

4.4. WILDLIFE

The FWIMS search results for the RSA are included in ***Appendix A***. Under current conditions the Site provides low to moderate quality habitat that can be used by a variety of mammals, amphibians, reptiles, and birds. ***Table 3*** summarizes the listed wildlife species identified in within a 5 km search radius, their habitat, and the ongoing potential for these species to utilize the Site.

Table 3: Provincially and Federally listed species identified within a 5 km search radius.

Common Name	Scientific Name	Provincial Status[1]	Federal Status[2]	Habitat[3]	Probability of Presence on Site
American badger	*Taxidea taxus taxus*	Sensitive	Special Concern	Grassland and shrubland with coherent soils for burrowing	High. Verified on Site during Site visit.
Bald eagle	*Haliaeetus leucocephalus*	Sensitive	Not at Risk	Coasts, rivers, large lakes; in migration, also mountains, open country	Moderate
Ferruginous hawk	*Buteo regalis*	At Risk	Special Concern	Open mountains, foothills, plains, open country. Requires open terrain	Moderate
Golden eagle	*Aquila chrysaetos*	Sensitive	Not at Risk	Open mountains, foothills, plains, open country. Requires open terrain	Possible. Habitat available.
Grizzly bear	*Ursus arctos*	At Risk	Non-active	Breeding occurs in open landscapes with cliffs for nest sites	Low

[1] Alberta Environment and Parks. 2015. Wild Species Status Search. (AEP, 2015)
[2] Government of Canada. 2021. COSEWIC Species Status Search. (Government of Canada, 2021)
[3] Audubon. 2022. Guide to North American Birds. (Audubon, 2022)

Common Name	Scientific Name	Provincial Status[1]	Federal Status[2]	Habitat[3]	Probability of Presence on Site
Long-billed curlew	*Numenius americanus*	May Be at Risk	Threatened	Short or mixed-grass prairies, nesting on the ground	High. Verified on Site during Site visit.
Plains spadefoot	*Spea bomifrons*	May Be at Risk	Not at Risk	Limited to the southeastern portion of the province in natural undisturbed habitats with areas of sandy soil	Possible. Habitat available.
Prairie falcon	*Falco mexicanus*	Sensitive	Not at Risk	Open hills, plains, prairies, deserts. Typically found in dry open country, including grassland and desert.	Moderate
Sharp-tailed grouse	*Tympanuchus phasianellus*	Sensitive	N/A	Prairie, brushy groves, forest edges, open burns in coniferous forest. Prime habitat includes a mixture of open prairie with groves of deciduous trees or shrubs, such as aspen, birch, willow.	Moderate
Trumpeter swan	*Cygnus buccinator*	Sensitive	Not at Risk	Breeding trumpeter swans seek shallow (less than 6 ft), undisturbed bodies of fresh water with abundant aquatic plants	Low

Low=No suitable habitat identified; Moderate=Suitable habitat exists on Site; High=Previously noted or identified during Site visit.

4.4.1. Mammals

In the Grassland Natural Region, the main mammalian predators are Coyote (*Cani latrans*), Red fox (*Vulpes vulpes*), American badger (*Taxidea taxus*), and Long-tailed weasel (*Mustela frenata*) (Alberta Environmental Protection, 1997). Based on habitat suitability at the Site, the most likely terrestrial mammals include Meadow voles (*Microtus pennsylvanicus*), Franklin's ground squirrel (*Poliocitellus franklinii*), Richardson's ground squirrel (gopher), the Striped skunk (*Mephitis mephitis*), Mule deer (*Odocoileus hemionus*), Snowshoe hare (*Lepus americanus*), Moose (*Alces alces*), White-tailed deer (*Odocoileus virginianus*), White-tailed jackrabbit (*Lepus townsendii*).

The Franklin's ground squirrel (*Poliocitellus franklinii)* is a key species of the ecosystem and an important food source for carrion feeders and a variety of predators like the American badger (*Taxidea taxus*) and Ferruginous hawk (*Buteo regalis*) (Natural Regions Committee, 2006). Burrowing species such as gophers may utilize the habitat on Site and attract predatory birds and mammals as they are a major food source for such wildlife. Ungulate species would be expected to utilize the habitat for grazing purposes.

During the Site visit, evidence of mammalian species within the LSA were observed, Multiple American badger (*Taxidea taxus*) (***Photo 1)*** and Franklin's ground squirrel (*Poliocitellus franklinii*) dens were observed on and adjacent to the Site. Numerous Mule deer (*Odocoileus hemionus*) were also observed within the LSA.

Photo 1: View of an American badger (Taxidea taxus) den located within the LSA.

4.4.2. Birds

A large variety of birds occur in the Grassland Natural Region including overwintering and migratory species. There is grassland and shelter belt (nature strip to prevent erosion) provide habitat for bird species in the LSA which increases the probability for a wide variety of bird species including at-risk species. The proposed development is located within Sensitive Raptor Range and Sharp-tailed grouse Survey Area (Government of Alberta, 2021). Sensitive raptors in the LSA include Bald Eagle (*Haliaeetus leucocephalus*), Ferruginous hawk (*Buteo regalis*), Golden eagle (*Aquila chrusaetoes*), and Prairie falcon (*Falco mexicanus*), which are included in ***Table 3***.

While the Project is located within a Sharp-tailed Grouse (*Tympanuchus phasianellus)* survey area, agricultural activity has removed the majority of the available habitat except for the shelter belt on 27-12-27 W4M that offers habitat for this species at the Site. The Sharp-tailed grouse (*Tympanuchus phasianellus)* favour relatively dry, open grassland with a patchwork of tree and shrub cover. They are ground nesters that prefer dead, dry grasses remaining from the previous year's growth with nests often at the base of small shrubs (National Audubon Society, 2024).

Species verified to be within the LSA during the Site visit from auditory and visual cues include Killdeer (*Charadrius vociferus*), Black-billed magpie (*Pica hudsonia*), Long-billed curlew (*Numenius americanus*), Clay-coloured sparrow (*Spizella pallida*), Canada goose (*Branta canadensis*), Vesper sparrow (*Pooecetes gramineus*), America crow (*Corvus brachyrhynchos*), Common yellowthroat (*Geothlypis trichas*), and Ruby-crowned kinglet (*Corthylio calendula*).

4.4.3. Herptiles

The proposed development is not located within Sensitive Amphibian Range. A summary of species that are common in the Grassland Natural Region including their distribution and preferred habitat types are included in ***Table 4***. The Canadian Toad is listed as "May be at risk" in Alberta (Government of Alberta,

2020). There is potential habitat for herptiles within the LSA. Reptiles such as the Common Garter Snake (*Thamnophis sirtalis)* may potentially use habitat available on-Site.

Table 4: Amphibian and reptile species in the Grassland Natural Region (Alberta Environmental Protection, 1997).

Common Name	Scientific Name	Distribution and Habitat[4]
Boreal chorus frog	*Pseudacris maculata*	• Widest distribution of any amphibian in the province. • Historically, found virtually everywhere in Alberta except for alpine environments. • Inhabit sloughs, woodlands, and even open meadows if there is sufficient vegetation to provide cover and moisture.
Northern leopard frog	*Lithobates pipiens*	• Species-at-risk. Found in a variety of habitats and is relatively cold adapted. • Associated with a wide range of permanent waterbodies and can often be found along the edges of ponds, marshes, streams, rivers, and lakes. • Leopard frogs prefer clear, clean water in open or lightly wooded areas. They rarely occur in dense forested areas. • After rain or heavy dew, leopard frogs can be found long distances from water. • Hibernates under water at the bottom of ponds.
Great plains toad	*Anaxyrus cognatus*	• Restricted to the short-grass prairie of southeastern Alberta. • Found near ponds, ditches, and flooded fields within areas of loose soil that allow for easy burrowing
Plains spadefoot	*Spea bombifrons*	• Limited to the southeastern portion of the province in natural undisturbed habitats with areas of sandy soil

Tiger salamander	*Ambystoma tigrinum*	• Tiger salamanders are widely distributed in southern and central Alberta and Saskatchewan.
		• Tiger salamanders are found in a variety of habitats, including:
		  ○ short-grass prairie
		  ○ aspen parkland
		  ○ boreal forest
		  ○ subalpine areas up to elevations of roughly 2,800 meters (just under 9,200 feet)
		• Although more tolerant of dry conditions than many salamanders, tiger salamanders are usually found near lakes or small bodies of water.

Prairie rattlesnake	*Crotalus viridis*	• Found in drier areas of Alberta's grassland regions, usually in proximity to a river valley or coulee
Common garter snake	*Thamnophis sirtalis*	• Found throughout much of the province often close to wet or moist areas
Plains garter snake	*Thamnophis radix*	• Widely distributed in southern and eastern regions of Alberta
Wandering garter snake	*Thamnophis elegans vagrans*	• Widely distributed south of the Red Deer River, along the foothills and into the Peace River Valley
Bullsnake	*Pituophis catenifer sayi*	• Found in the drier areas of grassland, sagebrush, farmlands, and native pastures of southeastern Alberta

[4] Alberta Conservation Association. Alberta Volunteer Monitoring Program. (ACA, 2024)

Common Name	Scientific Name	Distribution and Habitat[4]
Plains hog-nosed snake	*Heterodon nasicus*	• Occurs in southern portions of Alberta, with soils suitable for burrowing • Usually, a solitary hibernator

4.4.4. Sensitive Ecosystems

A review of *Environmentally Significant Areas Map* (ESA) (Fiera, 2014) shows that the Project Footprint is not considered to be within an ESA, nor is the site located within a Key Wildlife and Biodiversity Zone. A Key Wildlife and Biodiversity Zone is typically situated along major river valleys throughout northern and western Alberta. Areas are designated to protect zones of increased biodiversity and important winter browse areas. The areal extent of ESAs is generally low (<20%) in the Grassland and Parkland Natural Regions because protected areas are smaller and human disturbance is greater. Refer to ***Table 6*** in ***Section 6.5.1*** that outlines the restricted activity dates for all construction activities with the associated setback distances when soil disturbance occurs.

4.5. WETLANDS, WATERBODIES, & WATERCOURSES

As outlined in the *Alberta Wetland Identification and Delineation Directive* (Government of Alberta, 2015), wetland identification and delineation should utilize the interpretation of the best available resources, including satellite imagery and publicly available databases. A review of publicly available historical satellite imagery (2006 - 2023) and the *Alberta Merged Wetland Inventory* (Government of Alberta, 2020) were used to identify potential wetland areas in the LSA.

Ephemeral water bodies are subject to the *Water Act* and to the Alberta Wetland Policy. An ephemeral water body is an upland area that can be saturated or hold water for a short period of time, typically contains a mixture of upland and water-tolerant plant species. When ephemeral waterbodies are completely dry, they are typically cultivated which can make them difficult to identify. ***Figure 4*** includes the outline of potential ephemeral waterbodies, identified using an aerial photograph review.

A review of historical aerial imagery indicated that approximately nine potential wetlands were located within the Site boundaries. ***Figure 4*** identifies suspected wetlands and wet areas within the LSA. In addition, to the suspected wetlands, there were four dugouts and several ephemeral draws. Some of which appeared to have been man made to connect drainage between dugouts. There is the potential that dugouts were in historic wetlands that have been modified, and that the drainage channels follow natural drainage patterns. However, a detailed aerial photograph review, going back to the earliest photographs on record would be required to confirm the history of dugouts and drainage modifications on the Site.

The field verification on May 13, 2025, determined the absence of ephemeral waterbodies and potential wetlands within the LSA. While a dugout located on the north boundary of the Site was observed, it appeared that there were no associated flows from the dugout to the Site. The potential wet areas, and potential wetland outlined on ***Figure 4*** were also investigated. No hydric soils or evidence of standing water was observed within these areas and persistent wetlands were absent from the Site.

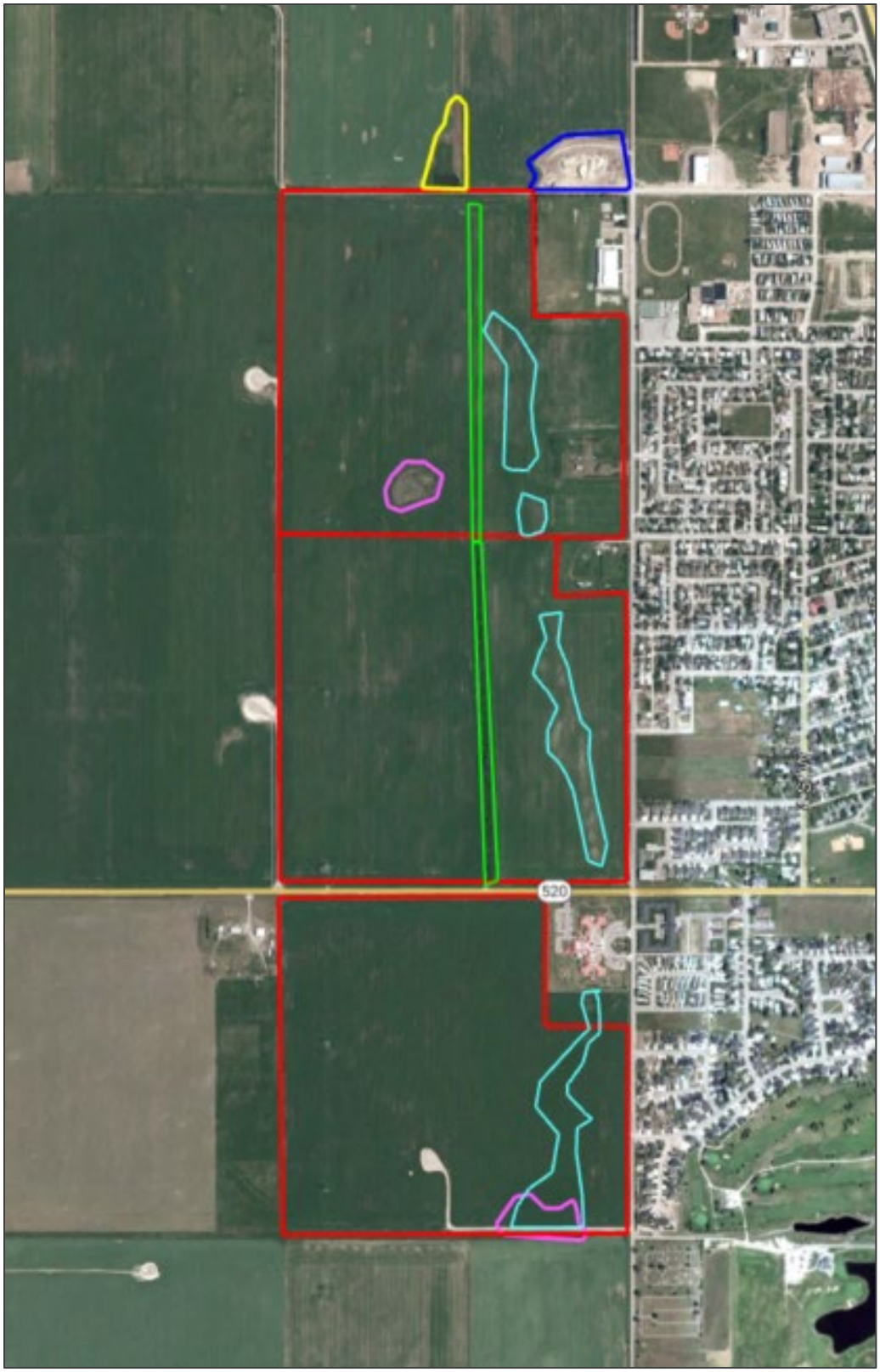

Figure 4: Potential wetland boundary (pink), dugouts (yellow), ephemeral draws/wet areas (light blue), stockpile area (dark blue), shelterbelt (green) and project boundary (red) (Google Earth Pro, 2025).

A review of FWIMS did not identify any watercourses within the LSA. No watercourses were identified on-Site during the field visit; however numerous manmade drainage ditches and ephemeral draws were present. No deleterious substances should enter the nearby channels / draws to protect potential fish and amphibian habitat, and downstream aquatic receiving environments.

4.6. HISTORICAL & CULTURAL RESOURCES

The provincial Landscape Analysis Tool (LAT) (Government of Alberta, 2024) and the Listing of Historic Resources (Alberta Culture, 2024) did not identify any sections that have a Historic Resource Value (HRV) in the Study Area. Three nearby locations were identified to have an HRV:

- 300 m north of the LSA (SW & SE-34-12-27-W4M) was identified as HRV 4a (contains a historic resource that may require avoidance, archaeological) and 5a (high potential to contain a historic resource, archaeological).
- 310 m east of the Study Area (SW-26-12-27-W4M was identified as HRV 5a (high potential to contain a historic resource, archaeological).
- 700 m east of the Study Area (NE & SE-26-12-27-W4M) was identified as HRV 1h (designated under the HRA as a Provincial Historic Resource, historic period).

5. Potential Project Effects

Several VECs were identified during this assessment. There are potentially Solonetzic soils, invasive species, and a variety of available wildlife habitat including large and small mammals, birds, amphibians, and reptiles that may use habitat within and immediately adjacent to the Site. Potential environmental impacts could occur on the existing environmental receptors if no avoidance or mitigation strategies are implemented. These impacts can be mitigated, reduced, or avoided through design and/or with the implementation of best management practices (BMPs).

Most of the Site is currently comprised of active agricultural land; however, developed lots around the margins of the Site have already experience impacts to natural features. The current proposed Site is surrounded by existing roadways and contains numerous residential, commercial, and light industrial properties. As the Project is currently at the conceptual design stage, a full assessment of Project impacts cannot be completed at this time. Impacts and mitigations discussed herein, are typical for that of similar construction projects.

Avoidance and mitigation strategies will be required during design and construction to reduce the impacts to VECs identified in this assessment. ***Table 5*** below summarizes the key VECs that were determined to have the potential to be impacted by the Project, and environmental impacts that have the potential to occur because of proposed Project activities. Many of these impacts can be mitigated, reduced, or avoided through design and/or with the implementation of best management practices (BMPs) that will be discussed further in *Section 6*. Impacts and mitigations discussed in this assessment are general, as no Site plans or conceptual design drawings have been developed and/or reviewed by the QEP at the time of writing. A comprehensive assessment of potential Project impacts may be required once final design is complete.

Table 5: Potential environmental impacts of the Project on VECs.

Biophysical Component	VEC	Potential Environmental Impact
Landforms & Soils	• Native topsoil	• Alteration or disturbance to soil profiles, • Altered drainage patterns, • Erosion and sedimentation, • Compaction, and • Spills of deleterious substances resulting in soil contamination.
Hydrology & Watercourses	• Wetlands and drainage	• Spills of deleterious substances resulting in degradation of water quality (surface and groundwater), • Alterations to hydrology or hydrogeology by installing hard surfaces and grading, and • Sediment loading or erosion during construction.
Terrestrial Vegetation Resources	• Forested areas vegetation providing moderate to high habitat value	• Damage to or loss of existing vegetation, • Introduction and/or spread of invasive species, • Potential root zone disturbance of trees/large shrubs, and • Decrease in biodiversity.
Terrestrial Wildlife Resources	• Riparian areas • Wildlife trees • Wildlife species	• Loss or disturbance of wildlife and active breeding sites (burrows, nests, dens, etc.), • Loss and/or further fragmentation of wildlife habitat, • Wildlife encounters and conflicts, and • Reduced habitat suitability.
Aquatic Resources (Fish & Fish Habitat)	• N/A	• N/A
Species at Risk/Rare Plants	• Potential wildlife and plant at-risk species in forested areas	• Loss or disturbance to at-risk wildlife or plant species.

6. Mitigation Measures

Avoidance strategies to protect key VECs have been stated above, however, the Project will likely result in habitat loss given the conversion of undeveloped vegetated land to impermeable surfaces with a variety of permanent structures. Recommended mitigation strategies are outlined below.

6.1. SOIL MANAGEMENT

Potential Project effects to soil include:

- Soil admixing, compaction, or rutting resulting in decreased soil productivity.
- Erosion of soil due to construction activities.
- Soil contamination from spot spills.

Soil and aggregate management will be an on-going aspect of the work. The Contractor shall be prepared to handle and temporarily store, if necessary, stockpiled materials in a way that minimizes the potential for the generation of dust and sediment. The Contractor shall be prepared to manage sediment-laden water,

generated during wet weather, which cannot be allowed to impact off-Site sensitive resources (i.e. waterbodies and agricultural crops).

Mitigative strategies are summarized below to protect soils on the Site during construction:

- Soil stripping will salvage all topsoil and stockpile the salvaged soils separately according to material type (topsoil and subsoil). Topsoil typically includes forest floor and/or A horizon,
- A professional Agrologist, or contractor experienced/trained in identifying soil horizons, will be present on-Site when stripping topsoil to ensure appropriate salvage depths are determined in areas where the transition to subsoil is unclear. The Environmental Construction Operations (ECO) Plan will identify the location of topsoil stockpiles and specify methods for topsoil salvage and replacement.
- Where topsoil is less than 15 cm, conservation shall include the topsoil plus part of the upper subsoil (B horizon) up to a total depth of 15 cm (unless the B horizon is considered unsuitable chemically or physically),
- To minimize soil mixing, topsoil and subsoil will be stripped and stockpiled separately for later use in Site reclamation, as applicable.
- Store reclamation materials separately (topsoil, subsoil, and coarse woody debris), such that it can be distributed evenly over the disturbed area for progressive (interim) and/or final reclamation,
- Stockpiled soils should be covered during inclement weather (such as heavy rain) to prevent erosion,
- Soil and surface erosion and sedimentation shall be prevented and controlled on all disturbed lands through the development of an Erosion and Sediment Control (ESC) Plan,
- Activity shall be suspended during adverse ground conditions such as heavy rainfall events,
- Disturbed areas will be stabilized and reseeded as soon as possible. The ECO Plan shall include a revegetation plan for disturbed areas.

6.2. EROSION AND SEDIMENT CONTROL

Erosion and Sediment Control (ESC) Plans are needed for any activities that could potentially result in sediment laden surface runoff into sensitive receiving environments. The key factors in ESC Plan are to intercept and manage on-Site and off-Site runoff. Erosion control is more effective and less expensive than sediment control and should be emphasized during construction, as exposed surfaces are susceptible to erosion.

The ESC Plan should, where applicable, include:

- When possible, minimize vegetation clearing and avoid clearing and grubbing areas with sensitive soils.
- Installation of effective ESC measures prior to onset of work, especially within 30 m of a waterbody.
- Utilize ESC products that correspond with the nature and duration of the project. When possible, consider the use of biodegradable products. Select products that are not potential wildlife attractants and do not contain invasive species.
- Minimal soil disturbance should be planned as well as limiting the duration of soil exposure.
- Measures for managing water flowing onto the Site, divert surface runoff away from exposed areas and manage water flowing onto the Site as appropriate.

- If required, sediment laden water is to be pumped/diverted from the Site such that sediment is filtered out prior to the water entering a watercourse. For example, pumping/diversion of water to a vegetated area, construction of a settling basin or other filtration system.
- Natural drainage patterns are to be retained wherever possible.
- Site isolation measures for containing suspended sediment where in-water work is required.
- Measures for containing and stabilizing waste material (e.g., construction waste and materials, uprooted or cut aquatic plants, accumulated debris) above the high-water mark of nearby waterbodies to prevent re-entry.
- Regular inspection and maintenance of ESC structures during all phases of the project and modify, as necessary.
- Halt construction during periods of heavy precipitation and runoff to minimize soil disturbance.
- Removal of non-biodegradable erosion and sediment control materials once the Site is stabilized.

6.3. VEGETATION MANAGEMENT

Vegetation on-Site is a mix of cropland, tame pasture, and wetland species. Loss of native / wetland vegetation should be minimized where possible. Additional indirect impacts related to vegetation removal during construction include erosion and sedimentation, and removal of wildlife habitat. These impacts and the associated mitigations are discussed in ***Section 6.2*** and ***6.5*** respectively.

Native vegetation to be retained should be clearly delineated by the Contractor with stakes or highly visible flagging prior to the commencement of construction activities. Additionally, all restrictions pertaining to vegetation clearing windows should be adhered to.

6.3.1. Invasive Species

Control of designated noxious and invasive species such as Clubroot is required by the Province under the *Weed Control Act*. Due care should be taken to protect the Site and surrounding area from the introduction of invasive plants during construction and operation.

Monitor weeds on-Site during construction and operation for noxious and prohibited noxious weed establishment and control/destroy weeds as required. Weed control (i.e., mowing, hand-pulling, spot-spraying) may be required in areas where weeds establish and should be discussed with a QEP to ensure the control method is sufficient for the type and density of weeds present. The use of herbicides within 100 m of watercourses or waterbodies will not be permitted.

6.3.2. Revegetation

It is anticipated that following construction, disturbances to vegetation and soil surfaces that have not been converted to hard surfaces will be revegetated. It is assumed that landscaping plans will be developed as part of project design and that appropriate seed/plant selection will be used to reclaim disturbed areas. Replanting objectives should provide long term prevention of weed establishment; help prevent erosion and be suited to match the climatic conditions of the area.

6.4. SURFACE WATER MANAGEMENT

As previously indicated waterbodies and wetlands were not identified within LSA, however soil disturbance and stockpiled material may mobilize sediment within drainage systems which can flow off-Site and deposit in downgradient surface water features in a way that is detrimental to their function.

The following general mitigation measures are recommended:

- Refueling or maintenance of construction equipment should not occur within 100 m of a waterbody.
- The use of herbicides within 100 m of watercourses or waterbodies will not be permitted.
- Equipment should be free of excess mud, debris, weeds, grease, and oil prior to entering the Site.
- Measures must be taken to ensure that no harmful material (e.g., fuel and other hydrocarbons, soil, or sediment), which could adversely impact groundwater and surface water quality, can enter the water because of the Project activities.
- Maintain all machinery on-Site in a clean condition and free of fluid leaks to prevent any deleterious substances from entering the water.
- Develop a response plan that is to be implemented immediately in the event of a sediment release or spill of a deleterious substance and keep an emergency spill kit on-Site.
- All personnel will be trained to respond to a spill in a prompt manner efficiently and effectively.
- Report any spills of oil, fuel, or other deleterious material whether near or directly into a waterbody.
- Clean up and appropriately dispose of deleterious substances.

6.5. WILDLIFE

There is a potential for wildlife encounters and conflicts to occur during any project works. Wildlife conflicts may consist of relatively minor nuisances or more serious health, safety, or conservation concerns. Minor issues are typically related to animals feeding on garbage and causing property damage.

Noise from construction activities may disturb breeding birds and their young during the bird breeding season. Nests may be ground based or found within the canopies of shrubs and trees. Disturbance of nesting birds is prohibited under the provincial *Wildlife Act*, the federal *Migratory Birds Convention Act*, and possibly the *SARA*. Where possible, schedule clearing and construction activities outside the breeding season.

The following surveys are required to be completed by a qualified wildlife biologist, in accordance with the Government of Alberta Sensitive Species Inventory Guidelines (Government of Alberta, 2020), in order to protect wildlife, including species at risk:

- Construction activities occurring within the avian breeding season will require nest surveys. These must within 10 days prior to the start of construction activities, and surveys should be conducted every 3-7 days during construction until all suitable habitats have been removed.
- An amphibian survey will be required prior to construction, between mid-April to mid-June for acoustic surveys or May to September for non-acoustic survey. The survey should be conducted for disturbance near wetlands, watercourses, and waterbodies and be completed at least three times during the window, following a precipitation event where possible.
- In the event additional burrows or dens are found, additional surveys and consultation with the appropriate regulatory body may be required to meet required species-specific setbacks.

6.5.1. Sensitive Ecosystem

Each Natural Region has an associated timing restriction for all construction activities (including tree clearing). Guidelines are designed to help land users minimize, or avoid, potential adverse effects on sensitive wildlife when conducting development activities. ***Table 6*** outlines the restricted activity dates with the associated setback distances when soil disturbance occurs.

Table 6: Recommended Restricted Activity Dates and Setback Distances (Government of Alberta, 2001).

Common Name	Wildlife Key Areas	Restricted Activity Dates	Setback Distances (m)
Bald eagle Golden eagle Prairie falcon	Nest Site	March 15 – July 15	1000
		July 16 – March 14	50
Peregrine falcon	Nest Site	Year Round	1000
Sharp-tailed grouse	Lek (courtship behavior)	Year Round	500

6.6. WETLANDS

The goal of the *Alberta Wetland Policy* is to conserve, restore, protect, and manage Alberta's wetlands to sustain the benefits they provide to the environment, society, and economy. To achieve this goal, the policy focuses on the following outcomes:

- Wetlands of the highest value are protected for the long-term benefit of Albertans,
- Wetlands and their benefits are conserved and restored in areas where losses have been high,
- Wetlands are managed by avoiding, minimizing and if necessary, replacing lost wetland value,
- Wetland management considers regional context.

Although no wetlands were identified within the Site boundaries, there is a potential for ephemeral waterbodies within the LSA. Proponents must demonstrate appropriate consideration for wetland avoidance and, where avoidance is not feasible, minimization of wetland impacts, in accordance with the Alberta Wetland Mitigation Directive. Where impacts cannot be avoided, permits will be required.

6.7. ADDITIONAL MITIGATION MEASURES

6.7.1. Material Storage and Handling

The Contractor must manage all non-hazardous construction-related debris (e.g. waste wood, organic material) appropriately. The following principles outline the storage, and handling of materials during Site preparation and construction activities. The following are BMPs used to control and mitigate the effects of construction materials:

- Use natural material and environmentally friendly products whenever possible.
- All construction materials must be removed from the Site on project completion (e.g., refuse material, waste petroleum, construction material).

- Contain waste and transport to an approved waste landfill Site.
- Food waste shall be disposed of off-Site.
- All equipment must be properly maintained and clean.

6.7.2. Refueling & Hazardous Materials

The Contractor shall implement measures to avoid or minimize potential contamination of the soil, groundwater, and surface water (overland flow) because of Project works and other operations including refueling of equipment. The Contractor will include an emergency spill response plan to ensure any spills that meet the criteria for the *Alberta Environmental Protection and Enhancement Act* (EPEA) regulatory reporting requirements are quickly and effectively cleaned up.

The following mitigation measures will be implemented:

- Equipment should be free of excess mud, debris, weeds, grease, and oil prior to entering the Site.
- Maintain all machinery on-Site in a clean condition and free of fluid leaks to prevent any deleterious substances from entering the environment.
- Develop a response plan that is to be implemented immediately in the event of a sediment release or spill of a deleterious substance and keep an emergency spill kit on-Site.
- All personnel will be trained to respond to a spill in a prompt manner efficiently and effectively.
- Clean up and appropriately dispose of deleterious substances.

6.7.3. Air Quality / Noise & Vibration

Mitigation measures to be considered include:

- Controlling dust generated during construction with the application of water,
- Road sweeping during construction and operations,
- Implementing anti-idling procedures for vehicles and equipment,
- Providing speed limits within the construction area, and
- Securing loads on haul trucks.

6.7.4. Potential Site Contamination

A Phase I Environmental Site Assessment (Phase I ESA) has been completed for this Site and is included under separate cover (McElhanney Ltd., 2025). If the Contractor suspects that contaminated material may be present in the area based on suspect soils with odours, visible staining, debris, or sheen, the Town of Claresholm and the Client must be notified, and materials will be segregated and handled as contaminated soil.

7. Recommendations

Following completion of detailed design, this report should be updated into a Biophysical Impact Assessment (BIA) to provide a more comprehensive assessment of the Project impacts. The BIA would include a detailed account of applicable legislation and associated project permitting requirements. The BIA will be used to support regulatory permitting requirements and can be used as a framework to develop an ECO Plan for this Project. This is a document developed by the Contractor to outline specific mitigation

measures to assist in achieving compliance with county, provincial, and federal regulations for the protection of the environment.

No watercourses were identified within in the LSA, however numerous ephemeral draws will need to be accounted for in Project design to support proper drainage at the Site.

Vegetation clearing and construction activities should be scheduled outside the breeding season when possible. Wildlife and nest surveys will be required prior to construction within the breeding season and should be completed by a qualified wildlife biologist. Required surveys include general prairie wildlife/nest sweeps, species-specific breeding bird surveys, and amphibian surveys.

Several infestations of noxious weed species were identified with the LSA. All equipment and vehicles should be cleaned prior to entering the Study Area and between fields to prevent tracking of weed seeds. Backfill soil, topsoil, and seed should be analyzed for weed seeds prior to being brought on-Site. Weed control measures shall be implemented where necessary, prior to and following the completion of construction; the use of herbicides within 100 m of watercourses or waterbodies will not be permitted.

An environmental monitor (EM) should be retained by the Contractor to monitor the use and effectiveness of mitigations installed during construction. The monitor should be a QEP or appropriately experienced working under the guidance of a QEP. The EM will be responsible for ensuring that construction adheres to the mitigation measures outlined in the ECO Plan and other relevant Project reports or permits. Monitoring may be periodic (weekly or biweekly) during routine construction. However, at key points of construction (clearing vegetation, soil handling, etc.), increased monitoring may be warranted and will be dependent upon the construction schedule. Often monitoring is timed with significant rainfall events (12 mm of precipitation in less than 24 hours) to check that water quality protections implemented through erosion and sediment control measures have not been compromised.

8. Conclusion

McElhanney was retained by the Castle and Land Development Inc. to conduct a desktop review and Site visit to identify environmentally sensitive features for the Castle ASP, located west of Claresholm, Alberta. A field investigation was conducted on May 13, 2025, which looked at potential wildlife habitat, vegetation communities, noxious weed infestations, and identification of potential wetlands and watercourses that may be impacted by the Site.

The Site is a combination of highly impacted areas and natural habitat. Historic impacts have occurred through agricultural land use practices, oil and gas development, existing road and pathways, and rural developments. The Site provides habitat anticipated to be used by a variety of mammals, amphibians, reptiles, and birds, including sensitive and species-at-risk. Development of the area will require protection of VECs. Where possible, siting of permanent structures and roadways, should avoid impacts to higher quality VECs which provide habitat for native plants as well as a variety of wildlife.

9. Professional Statement

This BSR for the proposed Castle ASP and its recommendations are based on limited data collected from a review of readily available web databases and a Site visit conducted in the early growing season. This review identified environmentally sensitive features to be protected during the project design and construction. Conclusions and recommendations presented here may change with additional information. Any changes to this BSR should be completed by McElhanney Ltd. and presented to Castle and Land Development Inc. for acceptance.

Should there be any questions regarding the information within, please do not hesitate to contact the undersigned.

Yours truly,

MCELHANNEY LTD.

Prepared by	**Reviewed by**
	
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11. Statement of Limitations

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Appendix A:

Additional Search Information

Date: 6/3/2025
Requestor: Environmental Organization
Reason for Request: Environmental Assessment
SEC: -- **TWP:** 012 **RGE:** 27 **MER:** 4

Non-sensitive EOs (updated: June 2022)

M_RR_TTT_SS	EO_ID	ECODE	S_RANK	SNAME	SCOMNAME	LAST_OBS_D

No Non-sensitive EOs Found: Next Steps - See FAQ (https://www.albertaparks.ca/albertaparksca/management-land-use/alberta-conservation-information-management-system-acims/faqs.aspx#2 - Process)

Sensitive EOs (updated: June 2022)

M-RR-TTT	EO_ID	ECODE	S_RANK	SNAME	SCOMNAME	LAST_OBS_D

No Sensitive EOs Found: Next Steps - See FAQ (https://www.albertaparks.ca/albertaparksca/management-land-use/alberta-conservation-information-management-system-acims/faqs.aspx#2 - Process)

Updated: Aug 31, 2022

Fish and Wildlife Internet Mapping Tool (FWIMT)

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

Species Summary Report

Report Date: 06-Mar-2025 15:38

Species present within the current extent

Fish Inventory	Wildlife Inventory	Stocked Inventory
BURBOT	AMERICAN BADGER	No Species Found in Search Extent
LAKE CHUB	FERRUGINOUS HAWK	
LONGNOSE DACE	GRIZZLY BEAR	
MOUNTAIN SUCKER	LONG-BILLED CURLEW	
PRUSSIAN CARP	PLAINS SPADEFOOT	
TROUT-PERCH	PRAIRIE FALCON	
WHITE SUCKER	TRUMPETER SWAN	

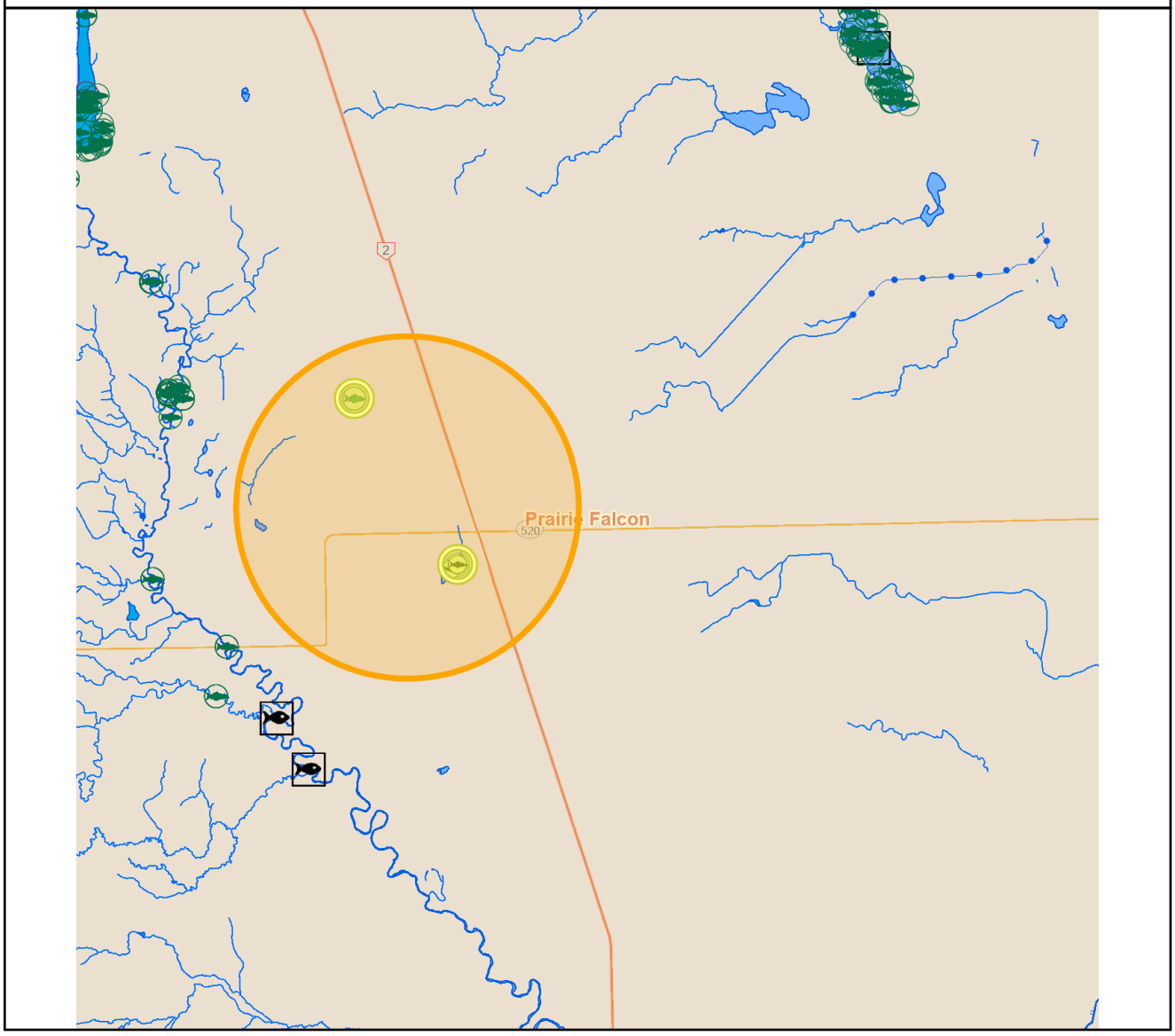
Buffer Extent

Centroid (X,Y)	Projection	Centroid (Qtr Sec Twp Rng Mer)	Radius or Dimensions
599731, 5540229	10-TM AEP Forest	SW 27 12 27 4	5 kilometers

Contact Information

For contact information, please visit:
https://www.alberta.ca/fisheries-and-wildlife-management-contacts.aspx

06-Mar-2025 15:38 **Map Results**



Appendix B:

Site Photographs

Photo 1: Viewing of the area located directly northeast of the Site across 59th Avenue West. Stockpiled soils were observed in this area.

Photo 2: View of the dugout located directly north of the Site across 59th Avenue West. The dugout did not appear to influence potential wetlands on the Site.

Photo 3: View the Site from 59th Street West, looking south.

Photo 4: View of the Site, looking west.

Photo 5: Soil conditions were investigated throughout the Site to determine potential wetlands. No hydric soils or mottling was observed.

Photo 6: View of the shelter belt located in the center of the Site. View looking south.

Photo 7: View of a den located directly north of the shelter belt. Dens in the area were inferred to be either American badger, or Franklin's ground squirrel.

Photo 8: View of the shelter belt in the center of the Site. View looking southeast.

Photo 9: View of a large platform nest within the shelter belt.

Photo 10: View of a cavity tree located within the shelter belt. A nest with eggs of an unknown species were observed.

Photo 11: View of the south portion of the Site along a gravel access road looking east.

Photo 12: View of a soil investigation within a potential wetland at the southern portion of the Site. No hydric soils or mottling was observed.

Photo 13: View the southern portion of the Site looking west. The southern portion of the Site was not conductive to flow.

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CANADA BEST MANAGED COMPANIES