



Southwest

AREA STRUCTURE PLAN



[YOURVOICELODYD.CA/SWASP](https://www.yourvoicelloyd.ca/swasp)



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Land Acknowledgement

Lloydminster is located within Treaty 6 territory which spans across present-day Alberta and Saskatchewan. Seventeen First Nations are part of Treaty 6 which includes the Dene Suliné, Cree, Nakota Sioux and Saulteaux peoples.

North of Lloydminster lies Big Island Lake Cree Nation, Cold Lake First Nations, Frog Lake First Nation, Kehewin Cree Nation, Makwa Sahgaiehcan First Nation, Ministikwan Lake Cree Nation and Onion Lake Cree Nation. To the east are Little Pine First Nation, Moosomin First Nation, Poundmaker Cree First Nation, Saulteaux First Nation, Sweetgrass First Nation and Thunderchild First Nation.

In addition to the strong First Nations presence in the area, the prairies also form a portion of the traditional Métis Homeland. Lloydminster is a part of Region 2 of the Métis Nation of Alberta and the Western Region 1A of the Métis Nation of Saskatchewan.

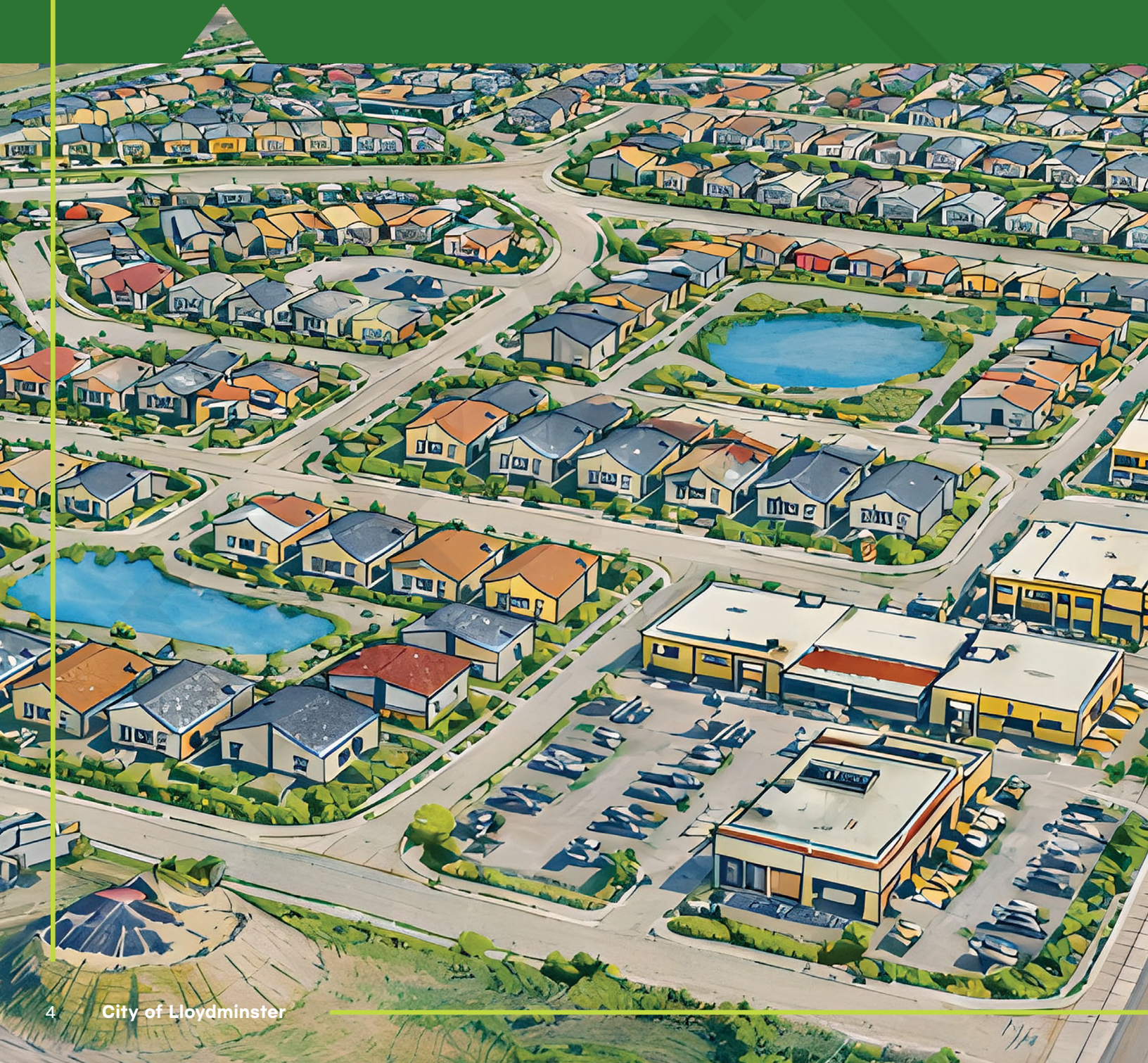
Executive Summary

The Southwest Area Structure Plan (SWASP) is a statutory document created by the City of Lloydminster (City). The SWASP guides the development of approximately 17 quarter sections of land recently annexed from the County of Vermilion River. An Area Structure Plan (ASP) is a planning document that provides a framework to ensure the orderly and complete development of currently undeveloped areas within the City. It executes the vision of the City's Municipal Development Plan (MDP) and provides guidance to Neighbourhood Structure Plans (NSP).

The plan is shaped by the 2023 Municipal Development Plan: Connection to Our Future (MDP) and establishes a Future Land Use Concept identifying the general location of residential and commercial areas, a potential Bud Miller All Seasons Park expansion area, and the general layout of open space connections. Section 6 of the ASP elaborates on how future development within the SWASP boundary (henceforth referred to as the 'study area') will implement the MDP's general objectives for urban design. Policies are included within Section 12.0 to outline how City administration and developers will comply with the intent of this plan as development proceeds within the study area.

The scope of this project included technical studies to determine existing site characteristics, analysis of City master plans to determine infrastructure considerations, and engagement with the Public and Catholic School Boards to determine how the future need for school sites should be addressed. The work also includes a comprehensive analysis of the MDP to determine how long-term growth can proceed in alignment with community values.

1.0 Introduction



1.1 Purpose

The purpose of the SWASP is to implement community values and priorities established within the MDP through guiding development on primarily undeveloped lands.

Prior to subdivision and development occurring within the study area, more detailed planning documents, known as Neighbourhood Structure Plans (NSPs), are required. NSPs provide a comprehensive analysis of the lands, detail exactly how development and servicing will proceed, and illustrate precise lot configurations and land use.

1.2 Background

In 2022, the City annexed lands from the County of Vermilion River to accommodate future urban growth, constituting most of the SWASP study area. Considering this, the MDP designated the lands as primarily low density residential with limited commercial development opportunities. The SWASP includes a detailed Future Land Use Concept along with policies governing the next phase of land use planning.

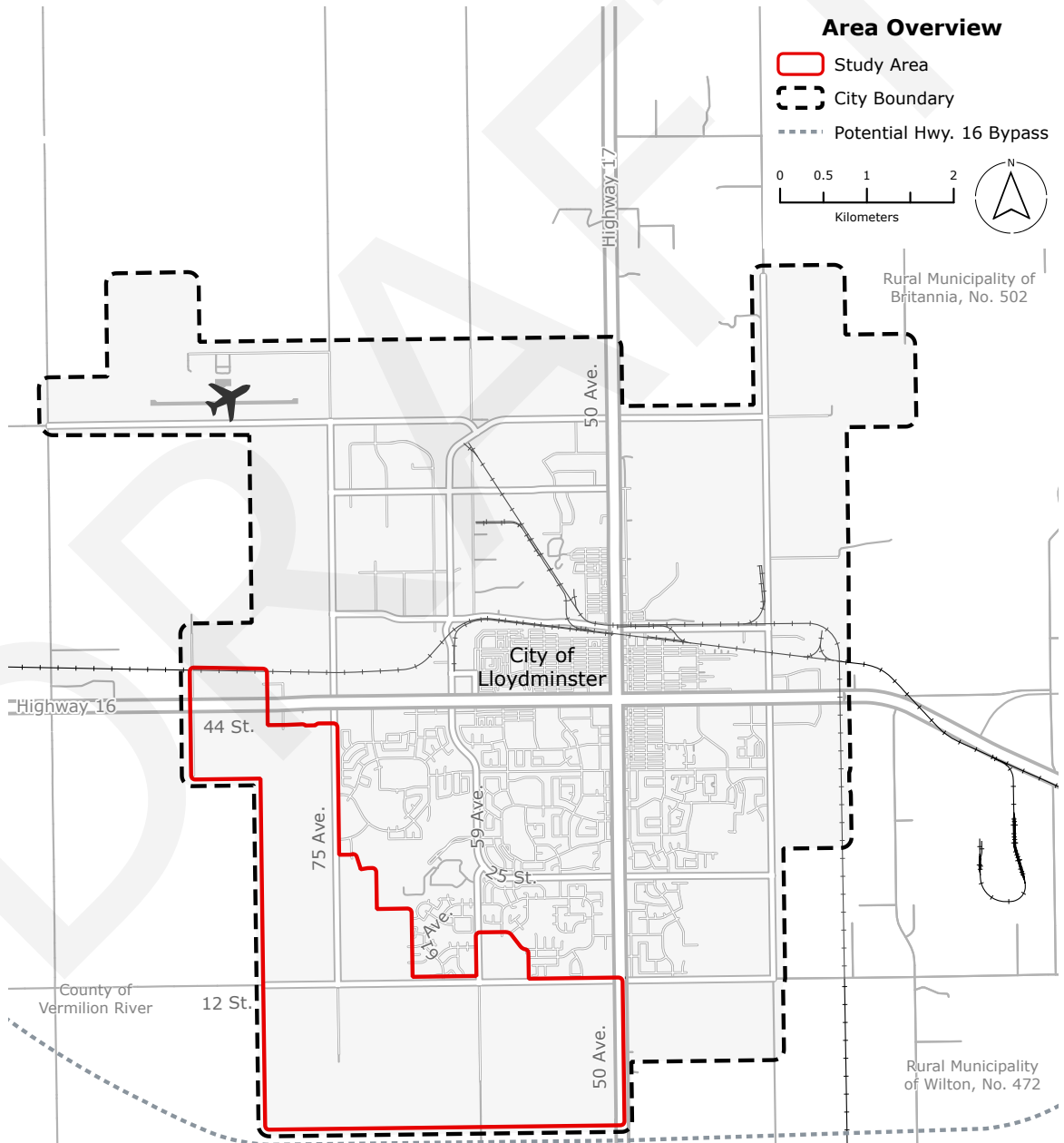
1.3 Timeframe

The 2019 Joint Regional Growth Study (JRGS), completed for the City and the County of Vermilion River in support of the recent annexation, identified that the Alberta portion of the city had only enough unabsorbed land to support approximately 10 years of residential and commercial growth. The annexation added an additional 35 years of residential and commercial land supply. This land supply horizon reflects the expected development timeframe of the study area.

1.4 Location

The SWASP study area comprises 15.5 quarter sections of land in the southwest portion of Lloydminster. It is bounded by 44 Street/Highway 16 to the north, 75 Avenue to the east, 12 Street to the south, and 50 Avenue/Highway 17 to the east. The western and southern edges of the area directly abut the County of Vermilion River.

Map 1: Area Overview

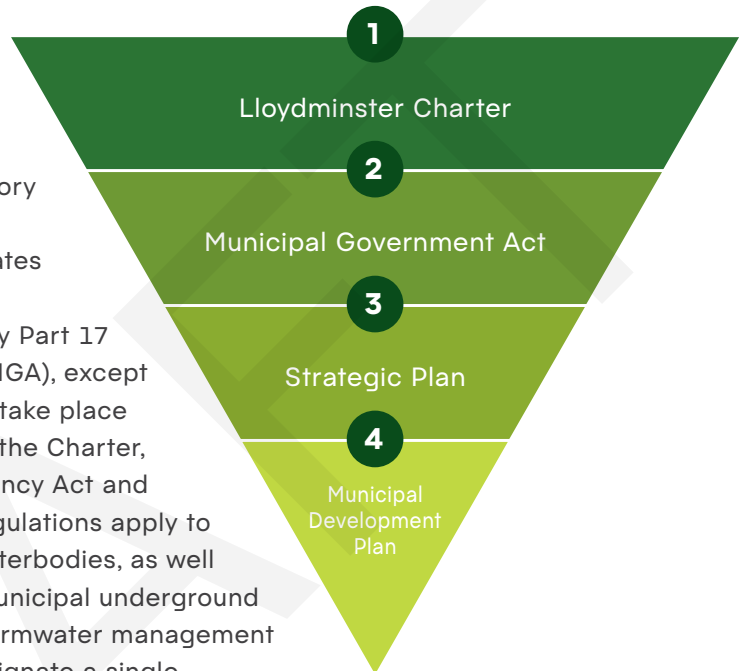


1.5 Statutory Framework



1.5.1 Lloydminster Charter

The Lloydminster Charter (the Charter) is a document created jointly by the Government of Alberta and Government of Saskatchewan and details a regulatory framework to govern the unique bi-provincial status of the city. It indicates that nearly all planning matters are governed by Alberta law, specifically Part 17 of the Municipal Government Act (MGA), except for subdivisions and replotting that take place within Saskatchewan. According to the Charter, Saskatchewan's Water Security Agency Act and Waterworks and Sewage Works Regulations apply to development near wetlands and waterbodies, as well as requirements for constructing municipal underground infrastructure (water, sewer, and stormwater management systems). The Charter does not designate a single environmental code, making lands within the SWASP subject to Alberta's environmental regulations for matters other than those related to water. These considerations were incorporated into the environmental assessment and associated recommendations.



▶ 1.5.2 Municipal Government Act

Part 17 of the Municipal Government Act (MGA) regulates planning matters for Alberta municipalities. It requires that an ASP must outline the sequence of development, land uses, population density, and the location of major transportation routes and public utilities. Compliance with the MGA ensures that the SWASP includes all essential elements to facilitate orderly development.

▶ 1.5.3 Strategic Plan

With each City Council cycle, a strategic plan is created and adopted by Lloydminster's City Council. This document sets a framework for how Lloydminster will achieve community goals. The 2025-2029 Strategic Plan focuses on practices that support Lloydminster's economy, environment, and quality of life. Table 2: Strategic Plan Alignment demonstrates how the SWASP aligns with the 2025-2029 Strategic Plan.

Table 2: Strategic Plan Alignment

2025-2029 STRATEGIC PLAN: AREAS OF FOCUS	SWASP
ORGANIZATIONAL EXCELLENCE	
<p>Ensure Infrastructure Reliability and Innovation</p> <ul style="list-style-type: none"> Apply long-term planning and smart technologies to build infrastructure that is dependable, flexible, and future-ready. 	<ul style="list-style-type: none"> ASPs apply long-term planning principles to support cohesive, sustainable growth. ASPs project population density, which is critical for determining whether future infrastructure design can accommodate the anticipated number of residents. ASPs include a Servicing Design Brief utilizing infrastructure master plans outlining how the area is expected to be serviced. Prior to construction, developers and engineers can easily reference the brief when designing more detailed plans for neighbourhoods and subdivisions.
<p>Demonstrate Environmental Awareness and Leadership</p> <ul style="list-style-type: none"> Embed environmental considerations into operations and decision-making to lead by example and protect our shared future. 	<ul style="list-style-type: none"> ASPs incorporate preliminary environmental assessments to identify significant natural habitats such as wetlands and migratory bird routes. Environmental assessments at the ASP stage identify how development should proceed around ecologically sensitive habitats, promoting environmental stewardship and responsible land use planning.

2025-2029 STRATEGIC PLAN: AREAS OF FOCUS	SWASP
GOVERNANCE EXCELLENCE	
<p>Communicate with Residents</p> <ul style="list-style-type: none"> Strengthen two-way communication that keeps residents informed and involved in decision-making. 	<ul style="list-style-type: none"> ASPs require public participation because they shape how a community grows. Public involvement is a core component of an ASP, and residents are invited to provide feedback on the plan.
<p>Navigate Bi-Provincial Identity</p> <ul style="list-style-type: none"> Address jurisdictional complexities to streamline policies. 	<ul style="list-style-type: none"> ASPs must consider the appropriate provincial regulations and integrate them into the plan.
<p>Advocate Community Priorities</p> <ul style="list-style-type: none"> Develop coordinated advocacy efforts that reflect local priorities and strengthen the city's influence at higher levels of government. 	<ul style="list-style-type: none"> ASPs provides a framework for how land will be used, serviced, and developed by assessing local needs and priorities. ASPs articulate a long-term vision supported by community input and growth needs and can be used as tools for future-focused advocacy with higher levels of government.
<p>Cultivate Regional Partnerships</p> <ul style="list-style-type: none"> Build strong regional relationships and agreements that support shared services, planning, and long-term prosperity. 	<ul style="list-style-type: none"> ASPs provide context to how development will proceed in a specific area. This transparency helps neighbouring municipalities anticipate and plan for development along their borders. ASPs encourage participation from adjacent jurisdictions, creating opportunities for collaboration and relationship building.
ECONOMIC STRENGTH	
<p>Leverage Airport Economic Potential</p> <ul style="list-style-type: none"> Develop airport infrastructure and surrounding lands to support economic diversification and regional connectivity. 	<ul style="list-style-type: none"> ASPs guide development towards livable, cohesive communities that attract investment and residents. Increased population and economic activity enhance the viability of airport services.

2025-2029 STRATEGIC PLAN: AREAS OF FOCUS		SWASP
COMMUNITY SAFETY AND WELL-BEING		
<p>Grow Connected Transportation Networks</p> <ul style="list-style-type: none"> Expand transportation options that improve connectivity and support local mobility. 	<ul style="list-style-type: none"> ASPs define the general location of major transportation routes, taking into consideration existing and planned infrastructure. The SWASP promotes pedestrian-friendly design and integrated transportation networks consistent with the MDP. 	
QUALITY OF LIFE AND AMENITIES		
<p>Enrich Parks and Outdoor Spaces</p> <ul style="list-style-type: none"> Create accessible, connected, and high-quality parks and trails that support wellness and community connection. 	<ul style="list-style-type: none"> The SWASP guides the distribution, design, and integration of parks and trail networks. 	
<p>Provide Direction for Housing Needs</p> <ul style="list-style-type: none"> Enable diverse and affordable housing development to support residents at all stages of life. 	<ul style="list-style-type: none"> The SWASP encourages a mix of housing types through density projections and land use policies. 	

1.5.4 Municipal Development Plan

All statutory planning documents, including the SWASP, must align with the MDP to ensure effective implementation of the City’s long-term goals and priorities. The SWASP is designed to implement the high-level objectives outlined in the MDP by translating city-wide objectives into policies tailored to the unique characteristics, opportunities, and constraints of the study area. By establishing this framework, the SWASP ensures that development is well-coordinated, sustainable, and aligned with the community’s long-term goals. This includes considerations for land use, infrastructure, community amenities, and environmental stewardship, all aimed at fostering a vibrant and resilient community.

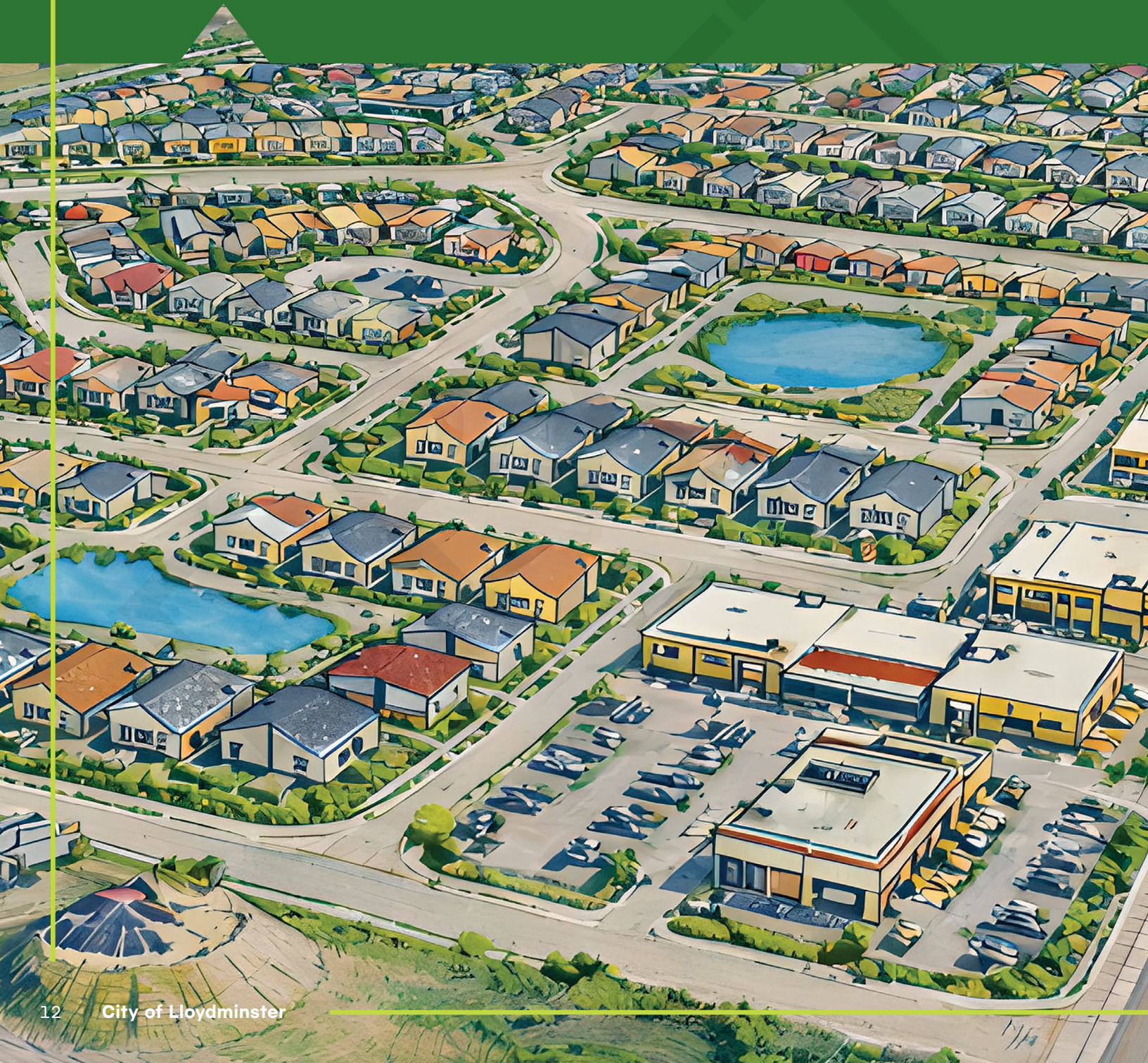
Table 3: Municipal Development Plan Alignment



CONNECTION TO OUR FUTURE: CORE THEMES	SWASP
<p>Enhancement of the Environment and Open Space</p>	<ul style="list-style-type: none"> Stormwater retention ponds and drainage channels are integrated into the natural ecology of the area. Greenfield development is expected to complement the site’s ecological character by protecting significant natural features.
<p>Diverse Housing Forms</p>	<ul style="list-style-type: none"> Residential areas will feature a mix of housing types to meet the density projections of the area and fulfill the needs of diverse demographic, age, and income groups.
<p>Neighbourhood Hubs</p>	<ul style="list-style-type: none"> The SWASP will contain numerous neighbourhood hubs, smaller-scale community destinations that provide amenities to nearby residents. Higher-density residential developments should be located near neighbourhood hubs to ensure convenient access to amenities, enhance business activity, and support future public transit.
<p>Pedestrian-Oriented</p>	<ul style="list-style-type: none"> Neighbourhoods should be mindful of how pedestrians, cyclists, and automobiles coexist within the study area.
<p>Multimodal Transportation</p>	<ul style="list-style-type: none"> Development along corridors will feature pedestrian and bicycle infrastructure to promote a variety of modes of transportation. Roadway designs should facilitate future public transit service, especially in commercial and higher-density residential areas.



2.0 Engagement



Engagement with landowners, interested parties, and the public took place at various stages of the SWASP. At the project's outset, landowners and interested parties were notified of the project's commencement through letters. To keep the broader public informed, project announcements and updates were posted continually on the City website.

Once the first draft Future Land Use Concept was developed, landowners and interested parties were offered individual meetings with the project team. Following their feedback, another draft concept was created and presented to the broader community. Key changes included additional commercial/mixed use areas, additional neighbourhood hubs, and a boundary adjustment to incorporate underdeveloped portions of Lakeside and the undeveloped lands within College Park.

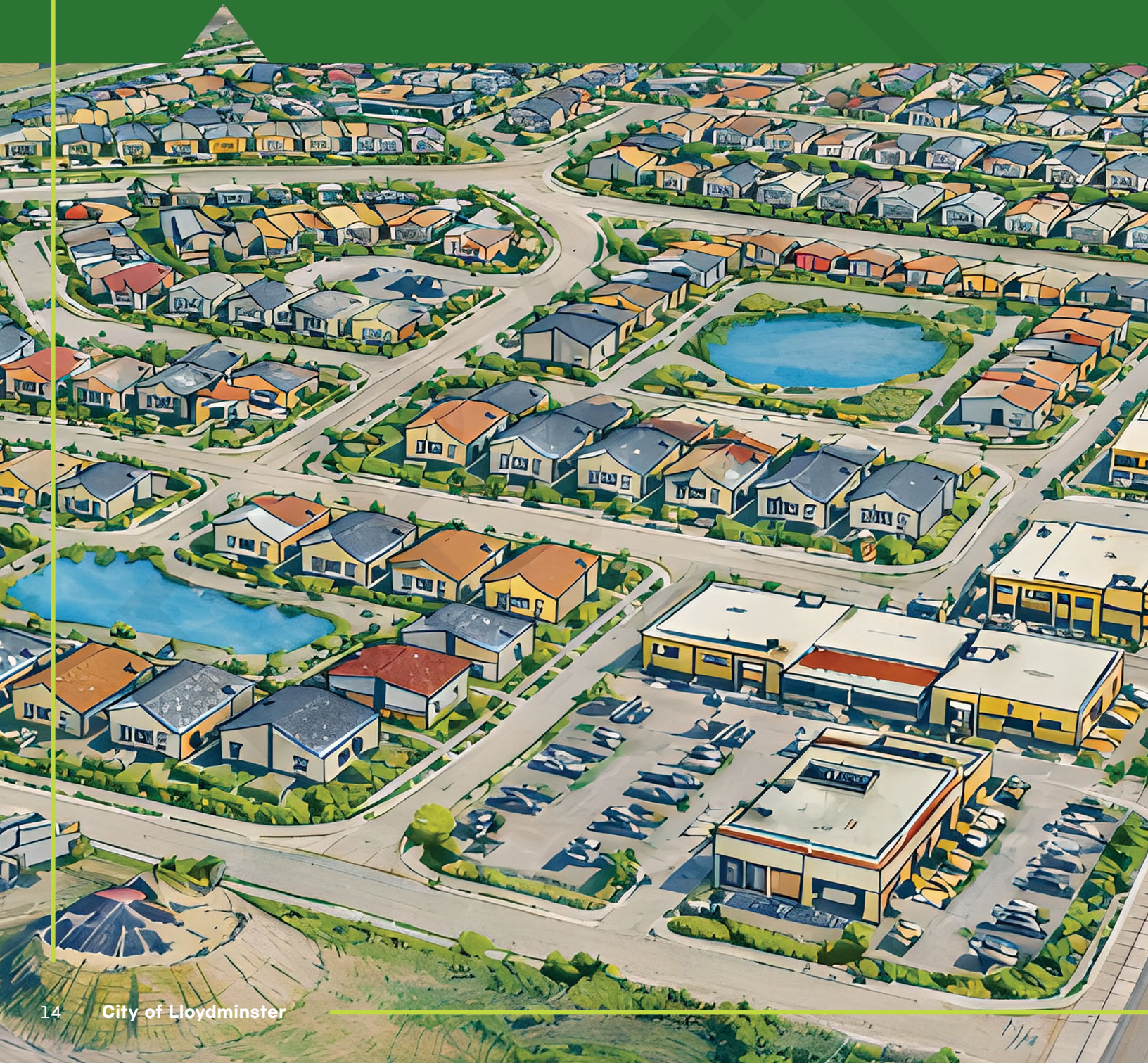
An open house took place on January 29, 2026, at Servus Sports Centre, where the public was invited to learn about the project and provide feedback on the draft Future Land Use Concept. Participants appreciated the potential Bud Miller expansion, the open space plan, the incorporation of mixed-use developments, and support for diverse housing types. Participants noted that future public transportation should be considered when planning roads and neighbourhood hubs. They also emphasized the importance of pedestrian connectivity. As a result, an additional open space connection was included west of Bud Miller Park.

On April 28, 2026 a second open house occurred at Servus Sports Centre where the entire document was circulated publicly. Numerous conversations were held to clarify the intent of the districts and future development plans.

Additionally, the document was available for review online allowing it to be more accessible to the general public.



3.0 Study Area



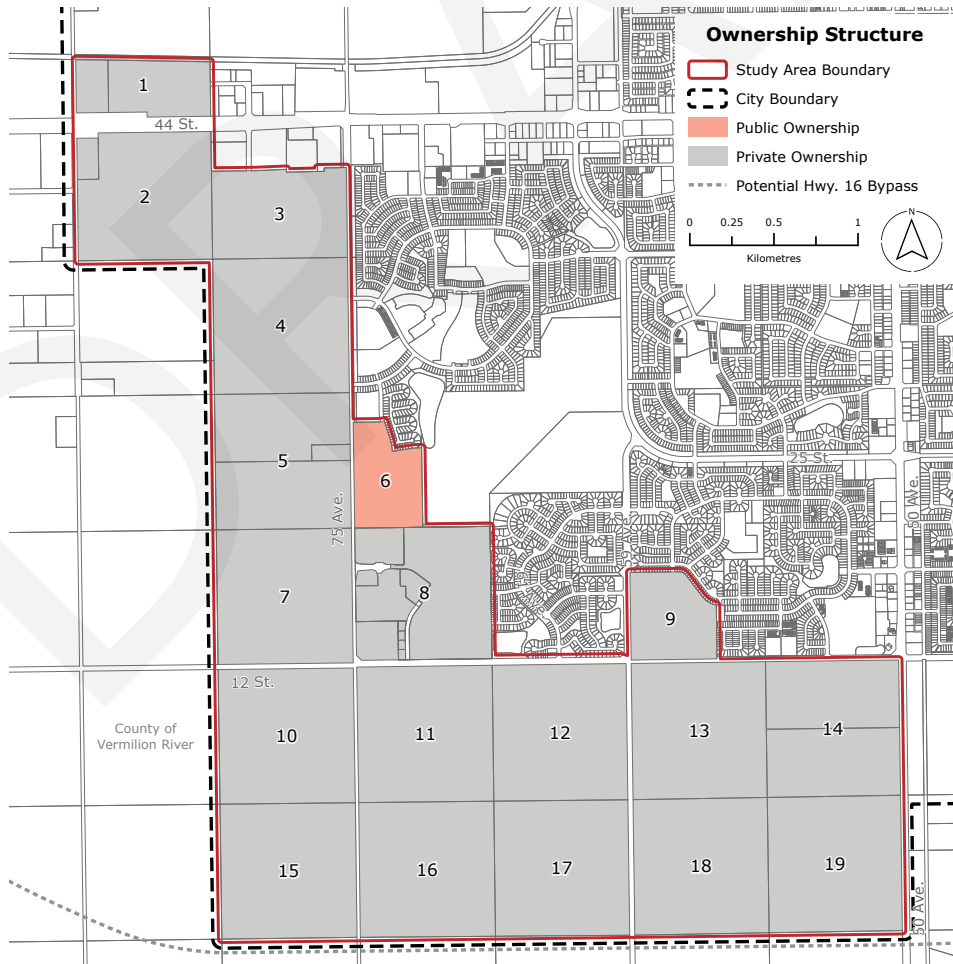
3.1 Land Ownership

The SWASP comprises approximately 1075 hectares of land, of which 22 hectares are owned by the City and 1,053 hectares are privately owned.

Table 1: Parcel Legal Descriptions

PARCEL	NUMBER ON MAP
Part of SW 03-50-01-W4	1
Part of NW, NE, SE 34-49-01-W4	2, 3, 4
Part of NE, SE 27-49-01-W4	5, 7
Part of NW, SW 26-49-01-W4	6, 8
Part of SW 25-49-01-W4	9
Part of NE, SE 22-49-01-W4	10, 15
All of 23-49-01-W4	11, 12, 16, 17
All of 24-49-01-W4	13, 14, 18, 19

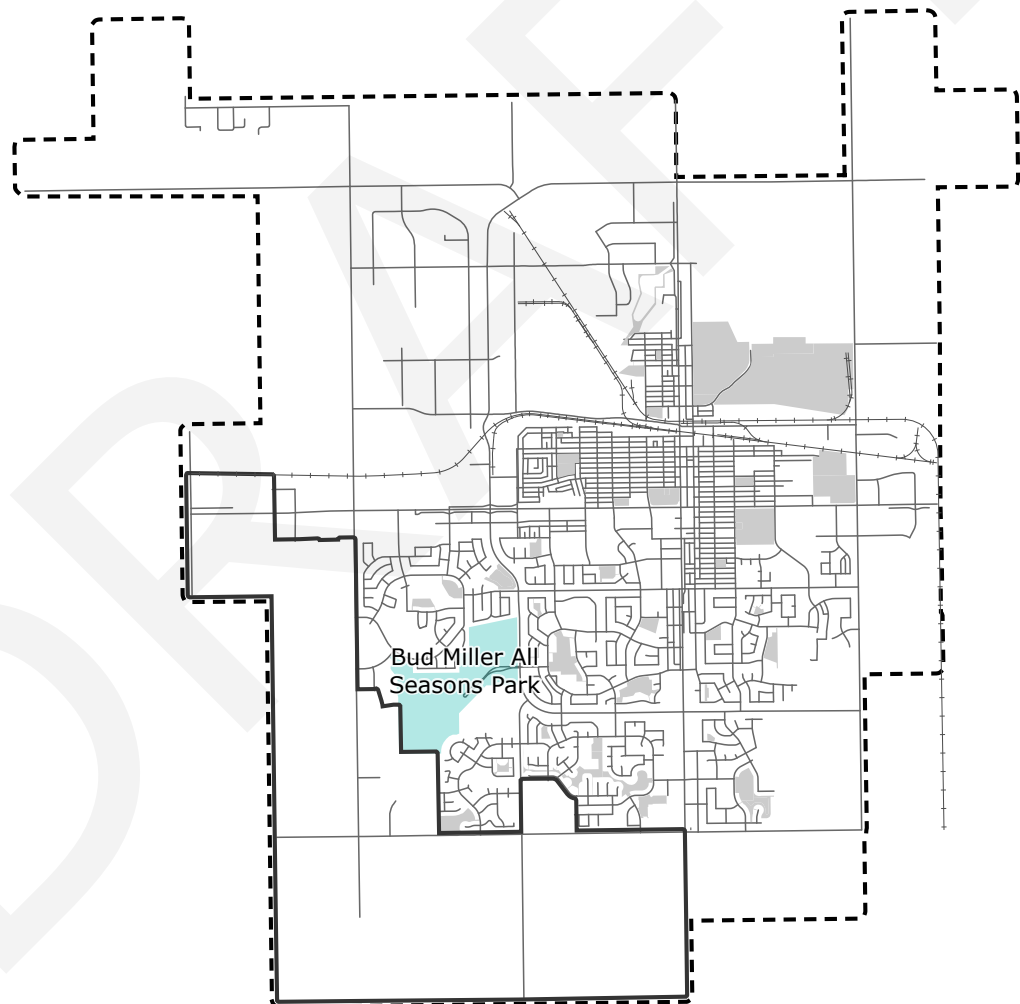
Map 2: Land Ownership



3.2 Adjacent Land Uses

ASPs ensure the orderly and logical development of both new and existing neighbourhoods, and consideration of adjacent land uses is a key part of that process. New neighbourhoods should complement surrounding areas and include thoughtful transition of land uses, incorporating gradual increases in density and development intensity. Compatible land uses should build on one another, and incompatible uses should be avoided. This section includes a summary of land uses adjacent to the SWASP and how they can be integrated into the plan.

Map 3: Bud Miller All Seasons Park

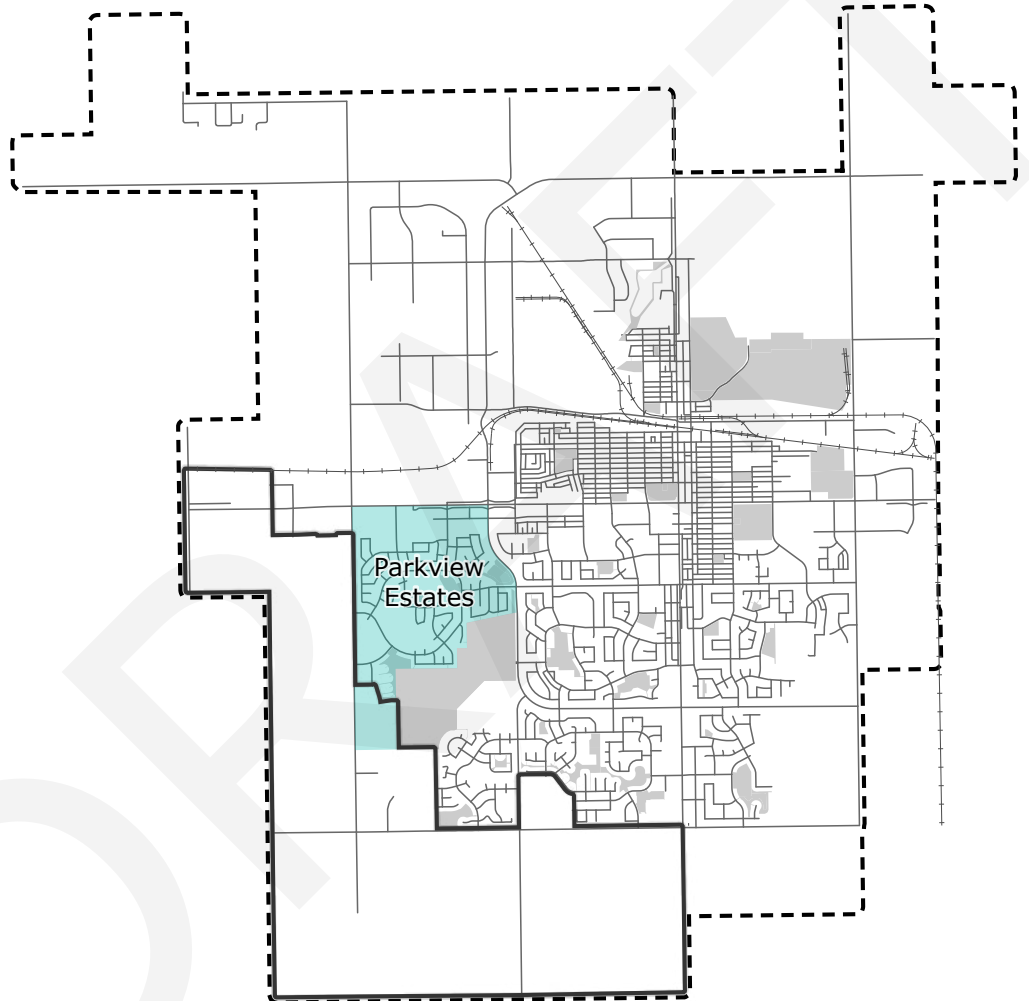


Bud Miller Park comprises approximately 80.9 hectares (200 acres) and is situated to the east of the central plan area. Recognized as a local gem, the park offers a range of passive and active recreational amenities, including courts for pickleball, basketball, tennis, and beach volleyball; baseball diamonds; disc golf and mini golf courses; a splash park; an indoor swimming pool; paved trails; cross country skiing paths; outdoor ponds for skating

and ice fishing; and tobogganing hills. Bud Miller Park is also home to diverse bird and wildlife populations, sustained by forest and waterbodies.

SWASP Integration: A portion of land within the SWASP is located at the park's westernmost edge, presenting opportunities for future park expansion. The SWASP aims to facilitate the expansion of Bud Miller and includes the conceptual design of open space connections, linking Bud Miller to the rest of the plan area.

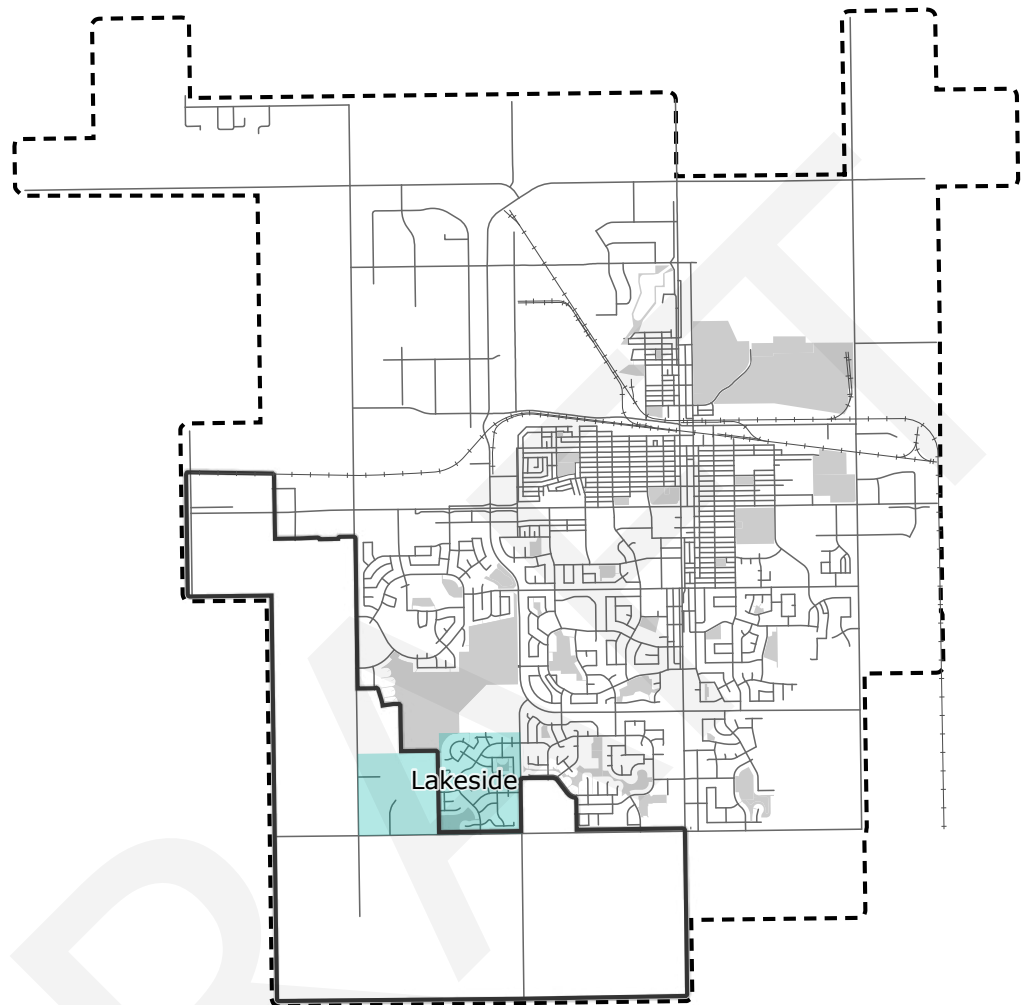
Map 4: Parkview Estates



Parkview Estates is located east of the study area, directly north of the entrance to Bud Miller Park. This area features residential developments with commercial uses along Highway 16.

SWASP Integration: Initially, the lands at the western access points of Bud Miller were designated as residential in the Parkview Estates ASP. These lands were reconsidered in the SWASP following the Bud Miller Park Master Plan (2023), which recommended a 300m expansion of the park to 75 Avenue. Now, the land is envisioned as future park space, requiring an amendment to the Parkview Estates ASP to reflect this change. As development progresses, Parkview Estates will be connected to the new neighbourhoods within the SWASP through a network of trails and sidewalks.

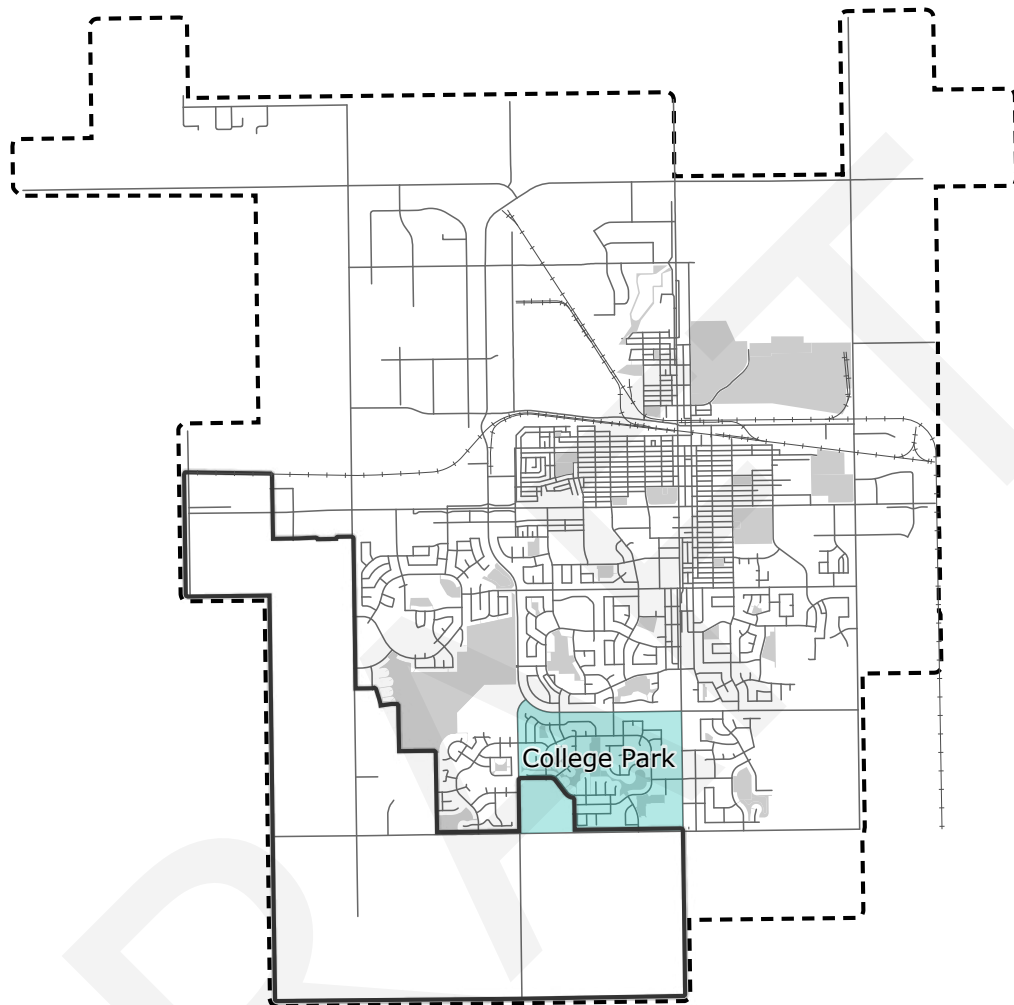
Map 5: Lakeside Neighbourhood



Lakeside is located north of the southernmost portion of the study area and east of 75 Avenue. It is primarily residential, and upon full build out will feature major commercial developments adjacent to 75 Avenue. Underdeveloped portions of Lakeside, originally governed by the Lakeside ASP (2019), were pulled into the SWASP to reduce red tape for the developer by aligning the area with the City's updated planning approach and providing greater certainty for future development.

SWASP Integration: Adjacent areas have the opportunity to build upon the existing commercial node in Lakeside, enhancing both community access to goods and services and business development opportunities. This should be achieved by incorporating complementary uses and effective multimodal connections in nearby neighbourhoods.

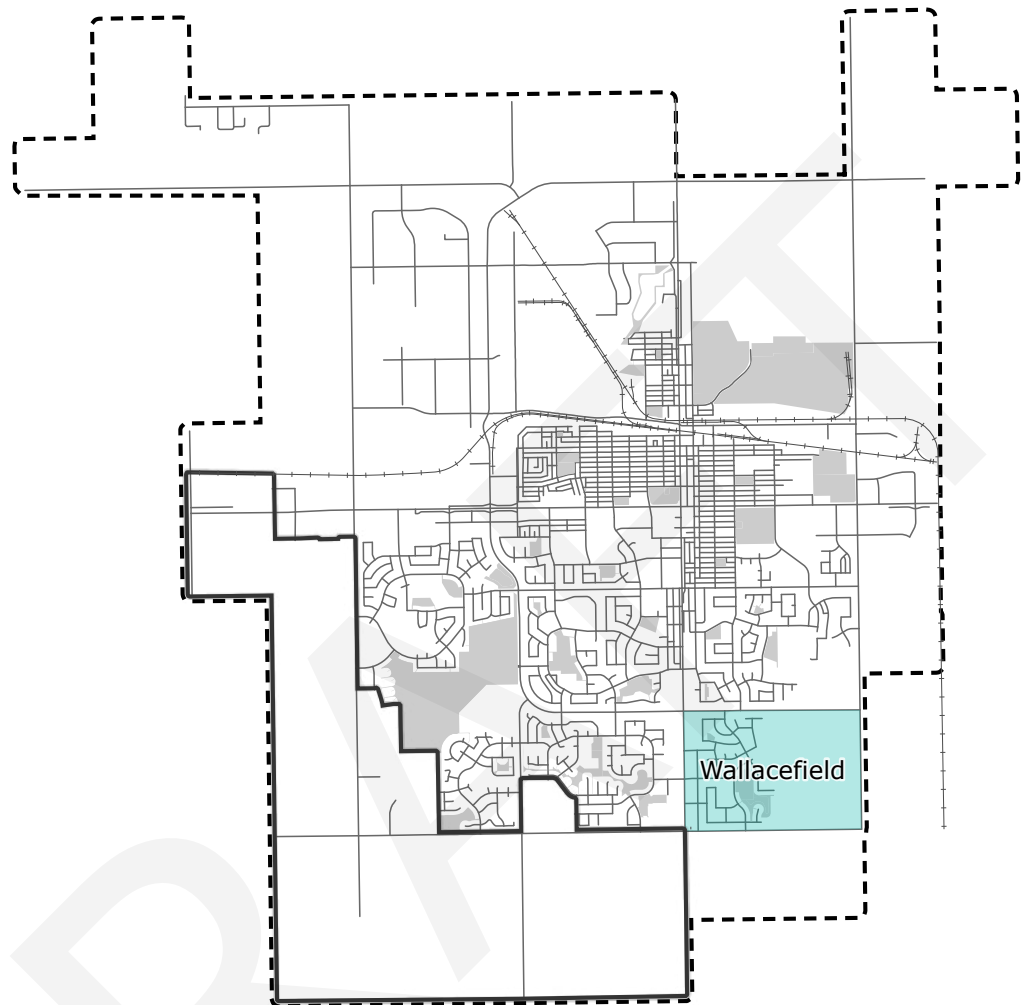
Map 6: College Park Neighbourhood



College Park is located to the east of Lakeside and features a diverse mix of housing types, a public elementary school, Servus Sports Centre, and various restaurants and businesses. Undeveloped portions of College Park were included within the study area to provide clarity around future development as there is currently no ASP or NSP in place for these lands.

SWASP Integration: College Park experiences a high level of daily activity, providing an opportunity for new developments to build upon the existing community features. New developments should be well-connected to College Park, allowing residents to conveniently access amenities.

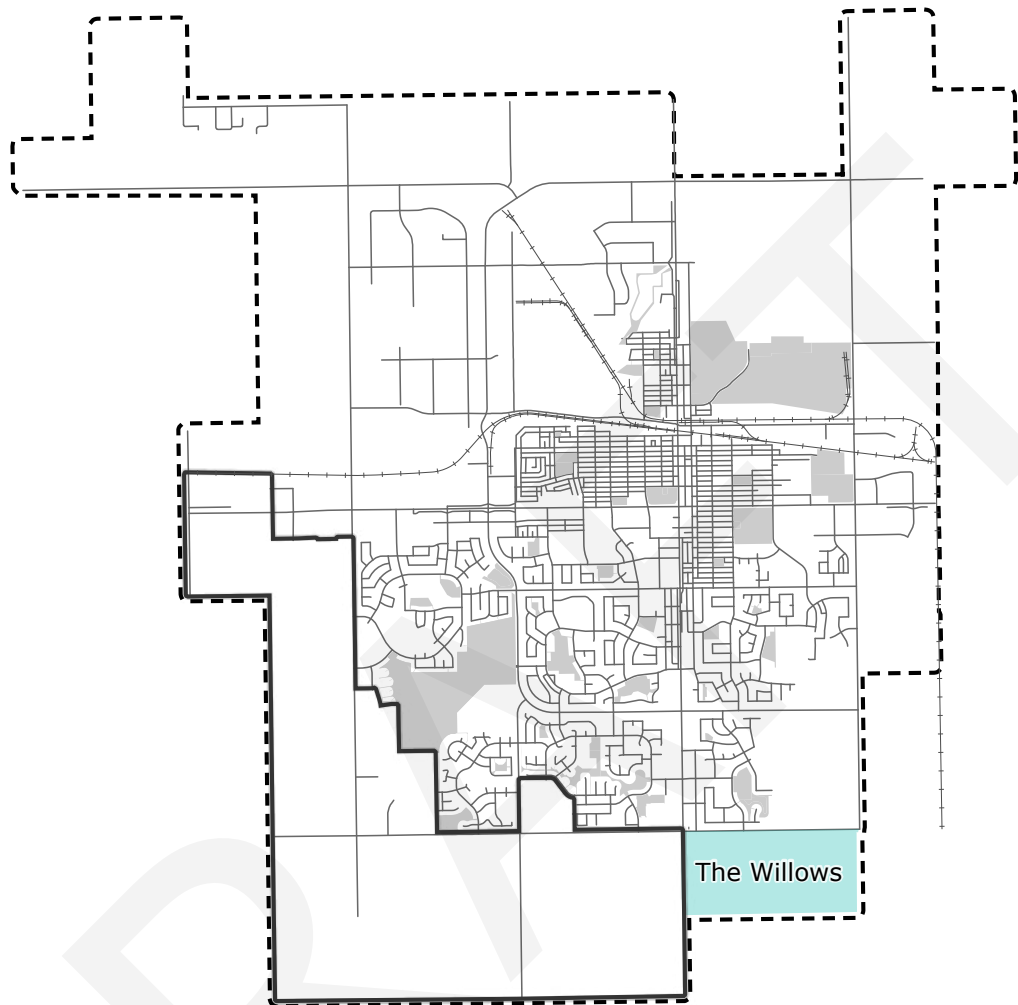
Map 7: Wallacefield Neighbourhood



Wallacefield is an established neighbourhood in the Saskatchewan side of Lloydminster. It is accessible via trails to Servus Sports Centre and features neighbourhood commercial developments, sports facilities, and diverse housing forms including single family homes, townhomes, and apartments.

SWASP Integration: Future adjacent neighbourhoods can build on the established family-oriented character of the neighbourhood and higher residential density by providing additional amenities and convenient connections.

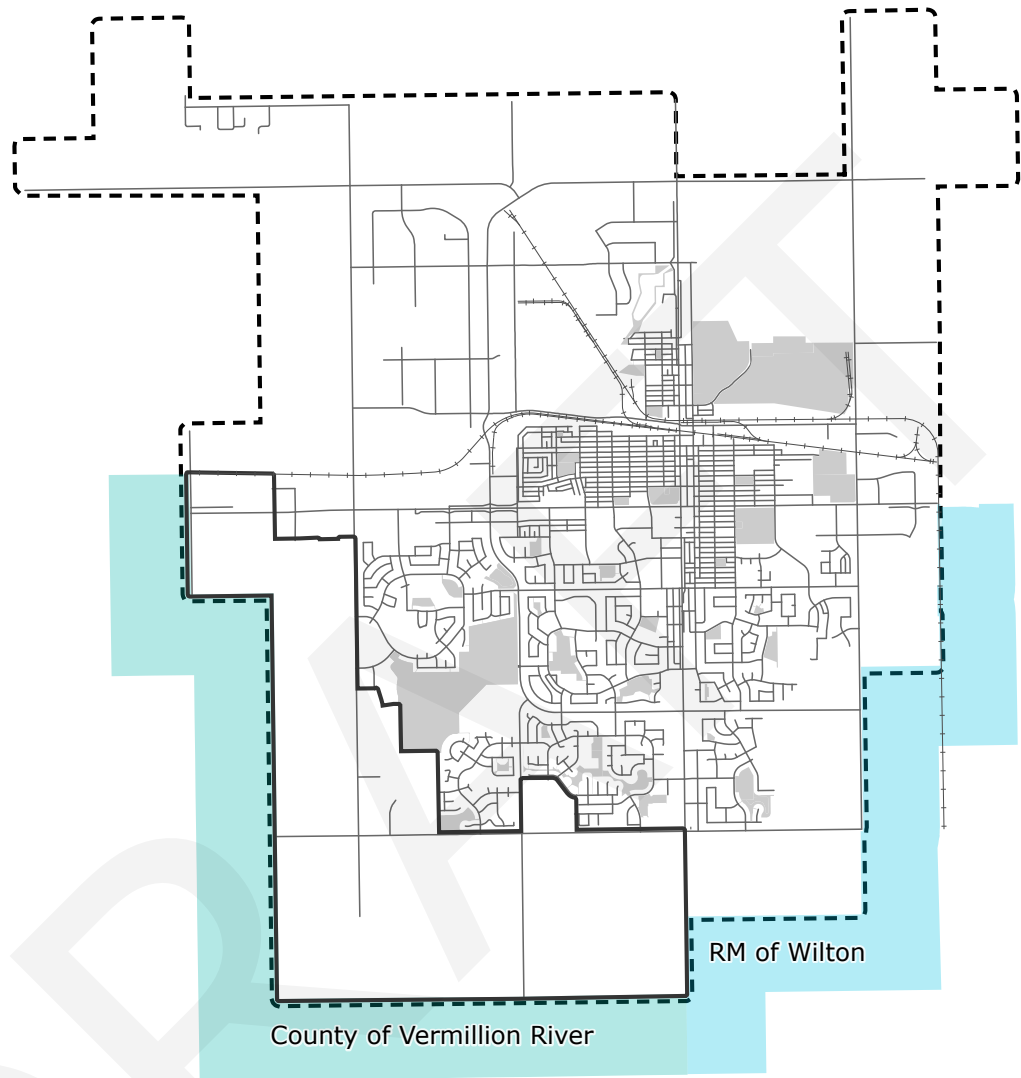
Map 8: The Willows Neighbourhood



The Willows is located east of College Park on the Saskatchewan side of the city. An ASP is in place, and the neighbourhood is in the early stages of development. The Willows is planned as a mixed-use community featuring diverse housing options, commercial nodes, parks and a school site.

SWASP Integration: The Willows ASP and the SWASP have similar land use concepts featuring mixed-use developments, commercial nodes, and well-connected greenspace. Future neighbourhoods can integrate cohesively with these shared elements. Additionally, the proposed East Sanitary Sewer Trunk would need to run through The Willows in order to service the southern portion of the SWASP lands.

Map 9: County of Vermilion River and Rural Municipality of Wilton



The County of Vermilion River and Rural Municipality of Wilton abut the west, south, and east of the study area with agricultural lands.

SWASP Integration: As future urban development approaches these rural interfaces, communication between jurisdictions should be maintained to ensure land use transitions are compatible.

3.3 Site Analysis

▶ 3.3.1 Existing Land Uses

The study area currently hosts rural residential and agricultural land uses. There is a significant amount of oil and gas infrastructure, though most of it is non-operational, consisting primarily of abandoned oil wells.

The lands are predominately districted as Urban Transition under the City's Land Use Bylaw 05-2025, accommodating future urban expansion. Redistricting and subdivision will occur once refined planning documents including NSP's have been reviewed and approved by Administration.

▶ 3.3.2 Technical Studies

3.3.2.1 Desktop Biophysical Assessment

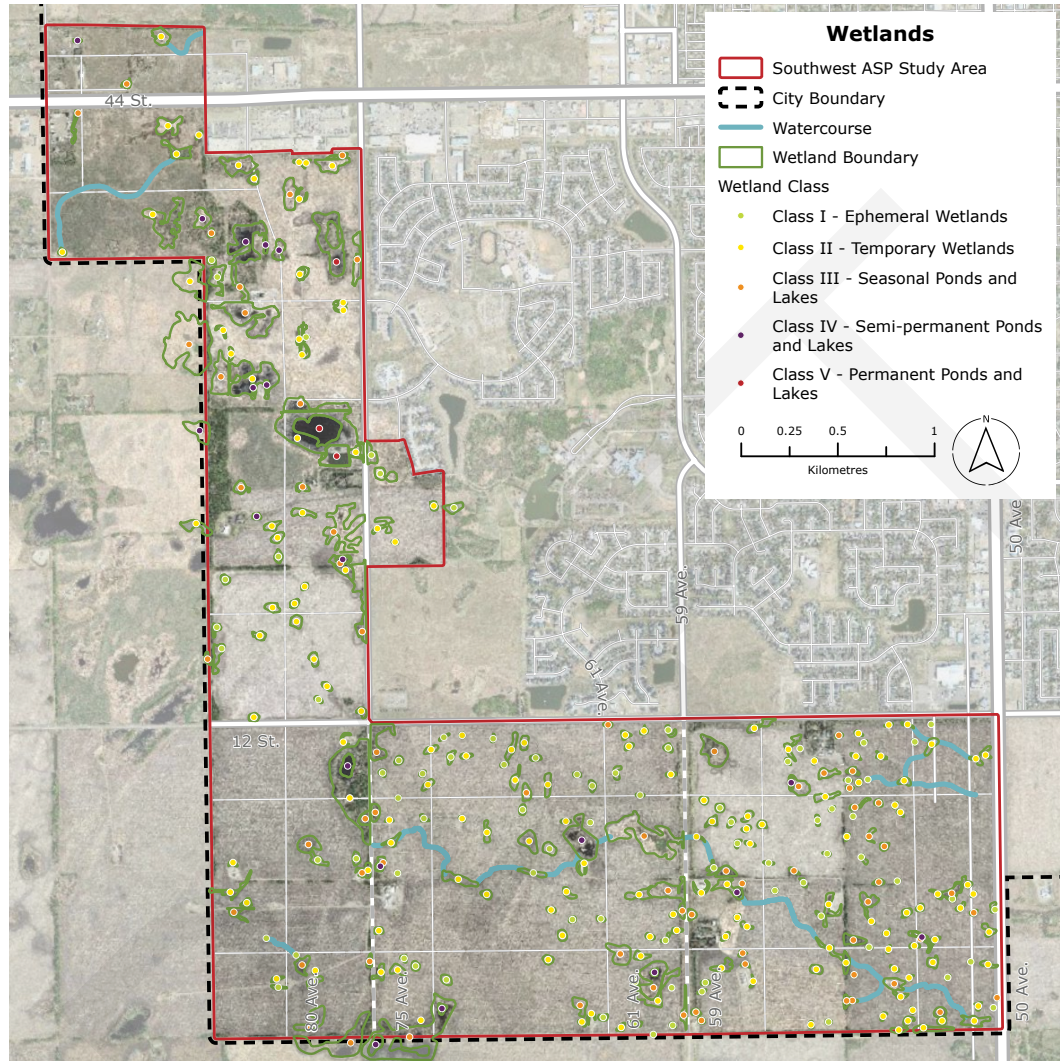
A Desktop Biophysical Assessment evaluated the ecological characteristics of the land, and provided recommendations for environmentally responsible development. The report considered Saskatchewan environmental regulations for wetlands and waterbodies and Alberta regulations for all other matters, as directed by the Charter. The full Desktop Biophysical Assessment is included as Appendix 1.

A summary of the key findings and recommendations are indicated in Table 4: Desktop Biophysical Summary.

Table 4: Desktop Biophysical Summary

DESKTOP BIOPHYSICAL SUMMARY OF FINDINGS	RECOMMENDATION
WETLANDS AND WATERCOURSES	
<ul style="list-style-type: none"> Wetlands were classified utilizing the Stewart and Kantrud (1971) Wetland Classification System. The assessment indicated whether the wetland appeared to be already disturbed (i.e. cultivated) or man-made, what dominant vegetation was present within the wetland, the primary surrounding habitat, and total wetland area. Class I, II, III, IV and V wetlands were observed throughout the study area. 70% of the wetlands and watercourses have been cultivated, reducing their ecological significance. 	<ul style="list-style-type: none"> Large, undisturbed Class V wetlands should be maintained and as undisturbed as possible. Efforts should be made to maintain undisturbed Class III and, where possible, Class IV wetlands. Detailed construction mitigations are provided when/for developing/development near wetlands.

Map 10: Wetlands Map



Wetland location and classification may change overtime.

Wetland Classification

Class I: Ephemeral Wetlands

Hold water briefly, typically after rainfall or snowmelt and dry out completely most of the year.

Class II: Temporary Wetlands

Usually hold water for a short period of time in the spring and dry out by early summer.

Class III: Temporary Wetlands

Hold water well into the growing season/summer and typically dry out by late summer or early fall.

Class IV: Semi-permanent Ponds and Lakes

Contain water through most or all of the growing season and rarely dry out completely.

Class V: Permanent Ponds and Lakes

Contain water year-round.



DESKTOP BIOPHYSICAL SUMMARY OF FINDINGS	RECOMMENDATION
SPECIES AT RISK (SAR)	
<ul style="list-style-type: none"> • A species and habitat review was conducted to determine whether rare and endangered species are likely to be present in the study area. This assessment for potential Species at Risk (SAR) concluded that development is expected to have a negligible to moderate impact on SAR, especially because the area is primarily cultivated farmland. • The highest risk is to migratory birds as the lands fall within the Sharp-Tailed Grouse survey range, meaning the bird species have been observed within the area, or in similar habitats. While the lands are primarily cultivated, some suitable lekking habitats remain. 	<ul style="list-style-type: none"> • Two to three Sharp-Tailed Grouse Surveys must be conducted between mid-March to mid-May one year prior to development, pursuant to the Alberta Sensitive Species Inventory Guidelines Protocol. • Mitigations include initial development site preparation (vegetation clearing and topsoil stripping) outside of peak breeding season, April 15 to September 1. • If site preparation is completed within this window, a wildlife sweep should be completed within suitable nesting habitats no more than 10 days prior to the start of site preparation activities. • If a nest is identified within the project area or within the species-specific setback, activities should be stopped and mitigations should be developed. • Wildlife sweeps will also be applicable for identifying potential other SAR. Should additional SAR be identified, the appropriate agencies will need to be contacted.
HABITAT AND VEGETATION	
<ul style="list-style-type: none"> • Although development would create some habitat disturbance and loss, the residual effects on vegetation communities and wildlife habitats are expected to be relatively low. The impact is due to the proximity of the study area to similar habitats. 	<ul style="list-style-type: none"> • Existing weed patches should be left undisturbed to the extent possible, and vehicles should be inspected for weeds prior to accessing sites within the study area.

3.3.2.2 Desktop Environmental Site Assessment

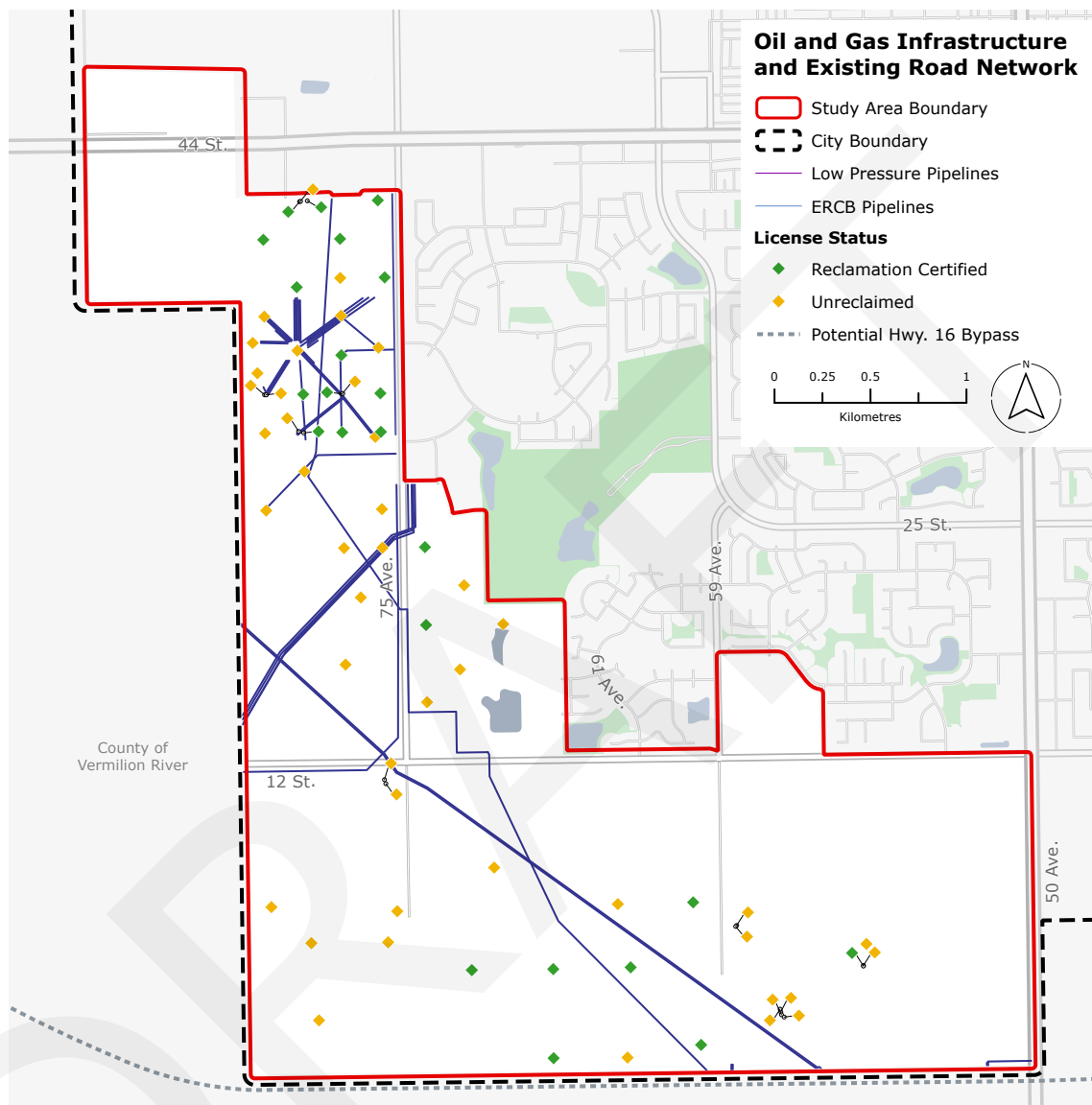
A Desktop Environmental Site Assessment (ESA) identified existing oil and gas infrastructure as the primary constraint on the lands and concluded that the environmental impact of development would be relatively low. The full Desktop Environmental Site Assessment is included as Appendix 2.

Table 5: Desktop Environmental Site Assessment Summary presents the key findings and recommendations.

Table 5: Desktop Environmental Site Assessment Summary

DESKTOP ESA SUMMARY OF FINDINGS	RECOMMENDATION
HISTORICAL RESOURCES	
<ul style="list-style-type: none"> The Government of Alberta's Historic Resources Database was reviewed for information related to archaeological sites, paleontological sites, Indigenous traditional use areas (such as burial grounds and ceremonial sites), and historic structures. No historic resources were found within the study area. 	<ul style="list-style-type: none"> No recommendations provided.
TOPOGRAPHY AND DRAINAGE	
<ul style="list-style-type: none"> The lands are generally flat with gentle undulations. This means that while the terrain is not perfectly level, there are no significant elevation changes. The land gradually slopes to the northwest, which channels stormwater flow in that direction. 	<ul style="list-style-type: none"> No recommendations provided.
OIL AND GAS INFRASTRUCTURE	
<ul style="list-style-type: none"> The ESA classified oil and gas infrastructure by facility type and status (i.e., active or abandoned). Oil and gas infrastructure does not pose an inherent risk to environmental site status, but leaks, ruptures and spills can potentially impact soil, water and groundwater quality. A total of 9 spills were identified between 1984 and 2017, with the most recent spills being lower in volume. Both larger and smaller spills are reported to have been mostly cleaned. 	<ul style="list-style-type: none"> Phase 2 ESAs should be completed for oil and gas installations that do not have reclamation certificates. If pipelines are to be abandoned or removed, it is recommended this be done in a manner that minimizes environmental risk, and environmental soil and groundwater testing may be required.

Map 11: Oil and Gas Infrastructure Map



► 3.3.3 Existing Transportation Network

a. Arterial and Collector Roads

As shown on Map 11: Oil and Gas Infrastructure and Existing Road Network, the current road network reflects the rural nature of the area, comprising mostly unpaved township and range roads. It is bounded by key arterial and collector roads, including 44 Street/Highway 16, serving as an east-west corridor for regional traffic and traffic crossing between Alberta and Saskatchewan. 44 Street/Highway 16 is located north of the plan area and serves as the city's primary transportation corridor. This road is utilized by a high volume of heavy-duty vehicles, including semi-trucks, and is designated as a dangerous goods route. The area directly across 44 Street/Highway 16 features highway

commercial developments and a rail line owned by Canadian National Railway (CN), with undeveloped lands north of the rail line.

Another major corridor and dangerous goods route is 75 Avenue, which forms most of the eastern boundary of the SWASP and provides access to adjacent established neighbourhoods.

The highly utilized and designated dangerous goods route, 12 Street, separates the southern portion of the plan area from existing developments including Lakeside and College Park.

b. Local Roads

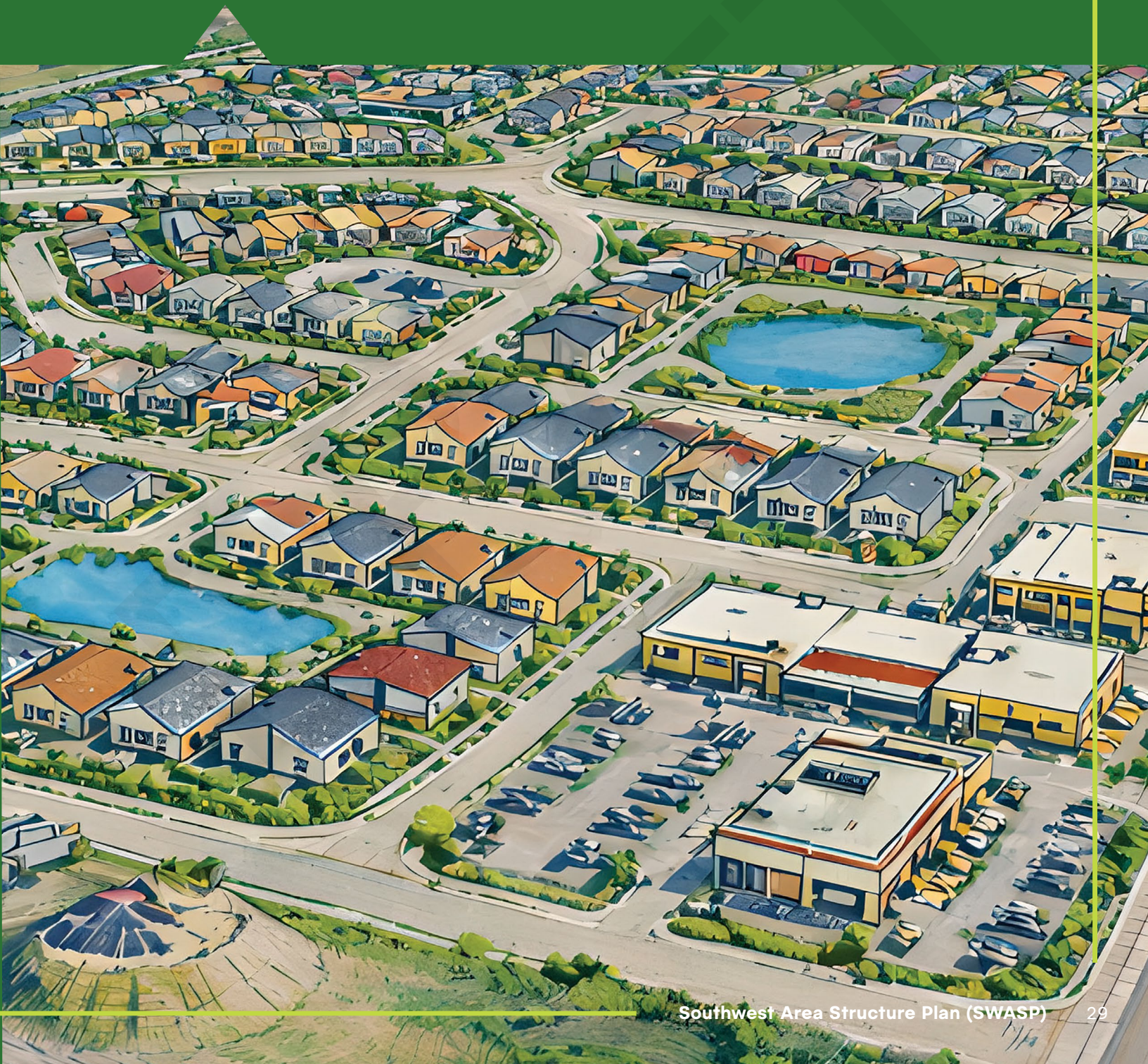
Within the plan area, internal roadways are minimal and primarily consist of rural cross-section roads with gravelled surfaces that support agricultural operations and residential access. These roads are not currently designed to accommodate urban traffic volumes or multimodal transportation options.

c. Pedestrian and Multimodal Connectivity

There are no sidewalks, bike lanes, or road shoulders along 12 Street and 75 Avenue. These corridors are not currently designed to support public transit, cycling, or walking.



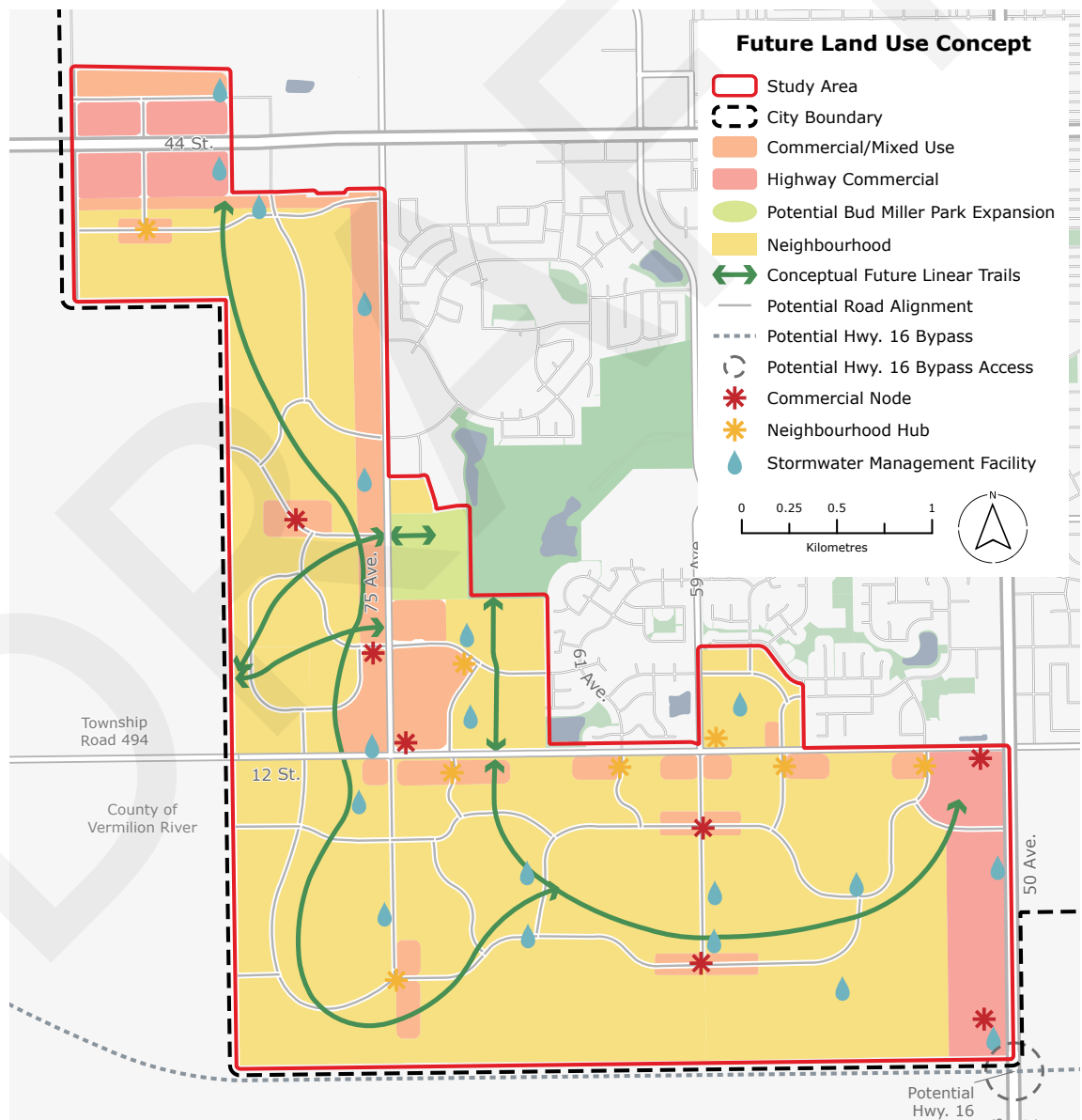
4.0 Future Land Use Concept



4.1 Vision

The Future Land Use Concept includes high-level land use designations intended to allow flexibility for developers while providing guidance to ensure the City’s vision for growth and development is upheld. The SWASP is envisioned as a collection of well-connected complete communities that foster a strong sense of place and prioritize pedestrian experience, high-quality design, and community vibrancy.

Map 12: Future Land Use Concept



4.2 Development Area

The approximate net developable land within the study area was determined using the methodology outlined within the JRGS, which provides a detailed breakdown of absorbed land within Lloydminster and analyzes the percentage allocated to each land use category. After accounting for essential land requirements such as parks and opens space, utilities, and roads, the report concluded that approximately 54.9%, rounded to 55% for this ASP, is left over for urban development.

For the purpose of preparing the Future Land Use Concept, and in the absence of detailed neighbourhood designs which will be contained in future NSPs, the land use designations are allocated using the 55% developable area figure from the JRGS as discussed above. The developable area is broken down as detailed in Table 6, assuming 75% of the net developable area will be Neighbourhood, 11% will be Highway Commercial and 15% will be Commercial/Mixed-Use.

Table 6: Developable Area

LAND USE	AREA (HA)	% OF GROSS DEVELOPABLE AREA	% OF NET DEVELOPABLE AREA
Gross Developable Area (GDA)	1108	100%	
PUL, Roads, Other	388	35%	
Parks/MR	111	10%	
Total PUL, Roads, MR	498	45%	
Net Developable Area	609	55%	100%
Neighbourhood	454	41%	75%
Highway Commercial	66	6%	11%
Commercial/Mixed-Use	89	8%	15%
GDA - Totals	1108	100%	

Numbers in this table are conceptual only.

4.3 Land Use Designations

▶ 4.3.1 Neighbourhood

Vision

Neighbourhoods should support a balanced mix of housing types such as townhomes, apartments, duplexes, single-detached homes, and secondary suites and meet a minimum net residential density range of 21 to 26 dwelling units per hectare. Net residential density includes land solely used for residential purposes, excluding land required for utilities,

roads, and greenspace. Neighbourhoods should be designed with pedestrian orientation in mind, featuring design elements such as rear lane access and aesthetic streetscapes, and incorporate complementary uses including schools, parks, and shops. Residents are best served when they can conveniently walk or bike to amenities such as neighbourhood hubs, which should be considered during neighbourhood planning.

Neighbourhood Hubs

Neighbourhood hubs are clusters of amenities integrated within residential areas. They offer convenient, walkable access to services, shops, and smaller-scale commercial developments and provide nearby employment opportunities for residents. These spaces become a focal point of daily activity, promoting social interaction and community vibrancy.



► 4.3.2 Commercial/Mixed Use

Vision

Areas designated as commercial/mixed use are strategically located along collector roads to facilitate efficient traffic flow and accessibility and support potential future public transportation. Higher density residential developments should be located within or close to commercial/mixed use areas, with an appealing and thoughtful mix of density throughout the neighbourhood. The combined designation of commercial and mixed-use provides flexibility for developers to determine the most appropriate approach for each neighbourhood.

Commercial Developments

Commercial areas could include standalone developments that are not mixed use in nature but provide services to surrounding residents, including employment opportunities.

Mixed Use Developments

Mixed use refers to developments that serve more than one function, for instance, a café with residential units above. These developments are envisioned as dynamic, multifunctional spaces that support a variety of activities such as shopping, dining, working, and socializing. By concentrating diverse uses within a walkable area, the street becomes livelier as continuous activity occurs throughout the day.

Commercial Nodes

Commercial nodes are larger-scale commercial areas that typically generate higher traffic volumes, such as grocery stores or strip malls, and should incorporate thoughtful roadway design to support efficient vehicle access and circulation. Pedestrian experience and safety must be prioritized when designing commercial nodes. Commercial nodes typically feature larger buildings and more expansive parking areas, indicating a lower concentration of employment per hectare compared to neighbourhood hubs or smaller scale retail shops.



▶ 4.3.3 Highway Commercial

Vision

Areas designated as highway commercial should accommodate larger-scale commercial developments, similar to what is currently along Highway 16. Uses could include large retail centres, restaurants, hotels, and vehicle-oriented services that benefit from high traffic, visibility, and highway access. While these uses are typically primarily designated for vehicular access, they must still incorporate pedestrian-friendly design elements such as safe walkways, landscaped connections, crosswalks, and enhanced streetscapes while being well-connected to adjacent neighbourhoods. Similar to commercial nodes, highway commercial developments will generate jobs; however the employment will be less concentrated due to businesses occupying a larger footprint.

▶ 4.3.4 Open Space Connections

Vision

Areas designated as open space connections illustrate how pedestrians will travel through the study area. Continuous pedestrian routes should be provided via linear trails integrated into each new neighbourhood ultimately leading to an area-wide pedestrian network upon full build out. The detailed alignment and design of these connections will be determined at the NSP stage to ensure a connection to the existing trail network.

📍 4.4 Population and Student Enrolment

▶ 4.4.1 Population Projection

The JRGS projected growth to 2051 and included an annual growth rate of 2.2%. In this scenario, Lloydminster's population is expected to more than double by 2051 and reach approximately 67,489 residents. The 2021 Census of Population showed Lloydminster's population at 31,582 residents, requiring new development to accommodate approximately 35,907 additional residents by 2051.



Based on long-term community trends identified in the JRGS, it is anticipated that approximately 70% of the population will reside on the Alberta side of the city and 30% on the Saskatchewan side. Thus, lands within Alberta will need to accommodate approximately 25,135 additional residents by 2051.

To further refine the population projection, it is necessary to consider the amount of land that would be absorbed by neighbourhood

commercial uses. The study area would accommodate approximately 17 neighbourhoods, containing at least one neighbourhood hub, each absorbing roughly 1.5 hectares of land based on similar developments within the city. Therefore, 25.5 hectares can be subtracted from the neighbourhood designation to further refine the amount of land available for residential units.

These numbers were utilized to estimate the SWASP population projection of 23,404 – 28,976 residents, as detailed in Table 7: Neighbourhood Land Use and Population.

Table 7: Neighbourhood Land Use and Population

NEIGHBOURHOOD AREA	NEIGHBOURHOOD HUB AREA	RESIDENTIAL NEIGHBOURHOOD AREA	# OF DWELLINGS (21-26 UNITS PER NET RESIDENTIAL HA)	POPULATION (2.6 RESIDENTS PER UNIT)
454 ha	25.5 ha	429 ha	9,001 – 11,145	23,404 – 28,976

► 4.4.2 Student Projection and School Sites

In newer neighbourhoods such as Parkview and Lakeside, approximately 23 to 25% of Lloydminster's population is school-aged (5 to 18 years old), compared to the citywide average of about 21%. For planning purposes, a rate of 23% was selected as a reasonable estimate of the portion of children expected to attend school within the study area. The 2051 population projection for the Alberta side of the City per the JRGS, 25,135 residents, was utilized as the baseline for the student projection calculation.

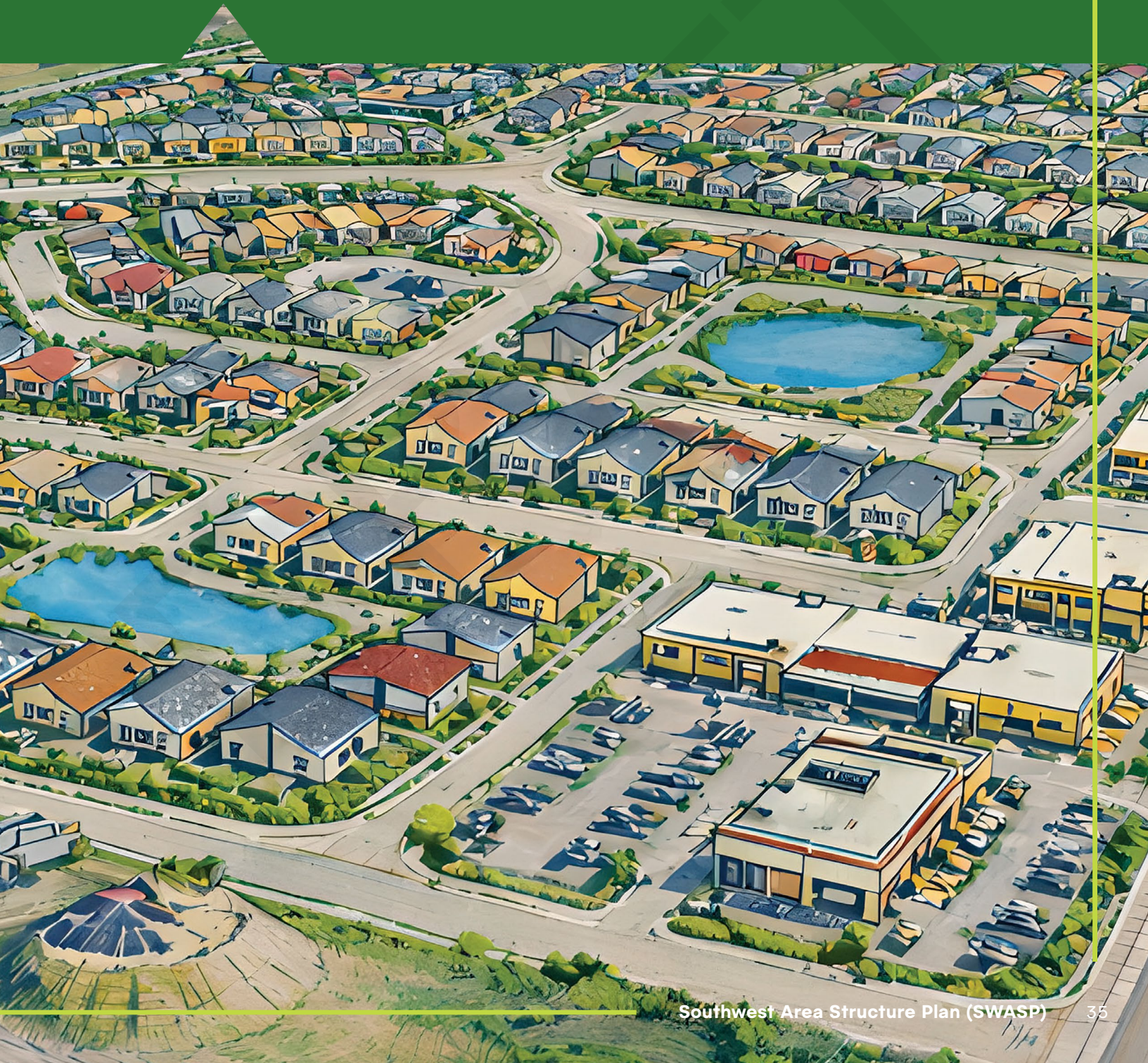
Average student enrolment capacity was calculated using current averages within the city. All figures in the Table 8: Student Projection and School Sites are estimates, and exact need for and placement of school sites will be determined at the NSP stage.

Table 8: Student Projection and School Sites

SCHOOL TYPE	AGE	% OF POPULATION	# OF PEOPLE	AVERAGE STUDENT ENROLMENT CAPACITY	# OF SCHOOLS
Elementary	5 – 10	10%	2,514	361	7
Middle	11 – 13	5%	1,257	385	4
High	14 – 18	8%	2,011	1187	2
Total		23%	5,575		13

(Statistics Canada, 2021)

5.0 Development Phasing



Due to sanitary sewer servicing constraints, current development potential within the study area is limited and dependent on the proposed East Trunk, as discussed further in Section 9.2: Sanitary.

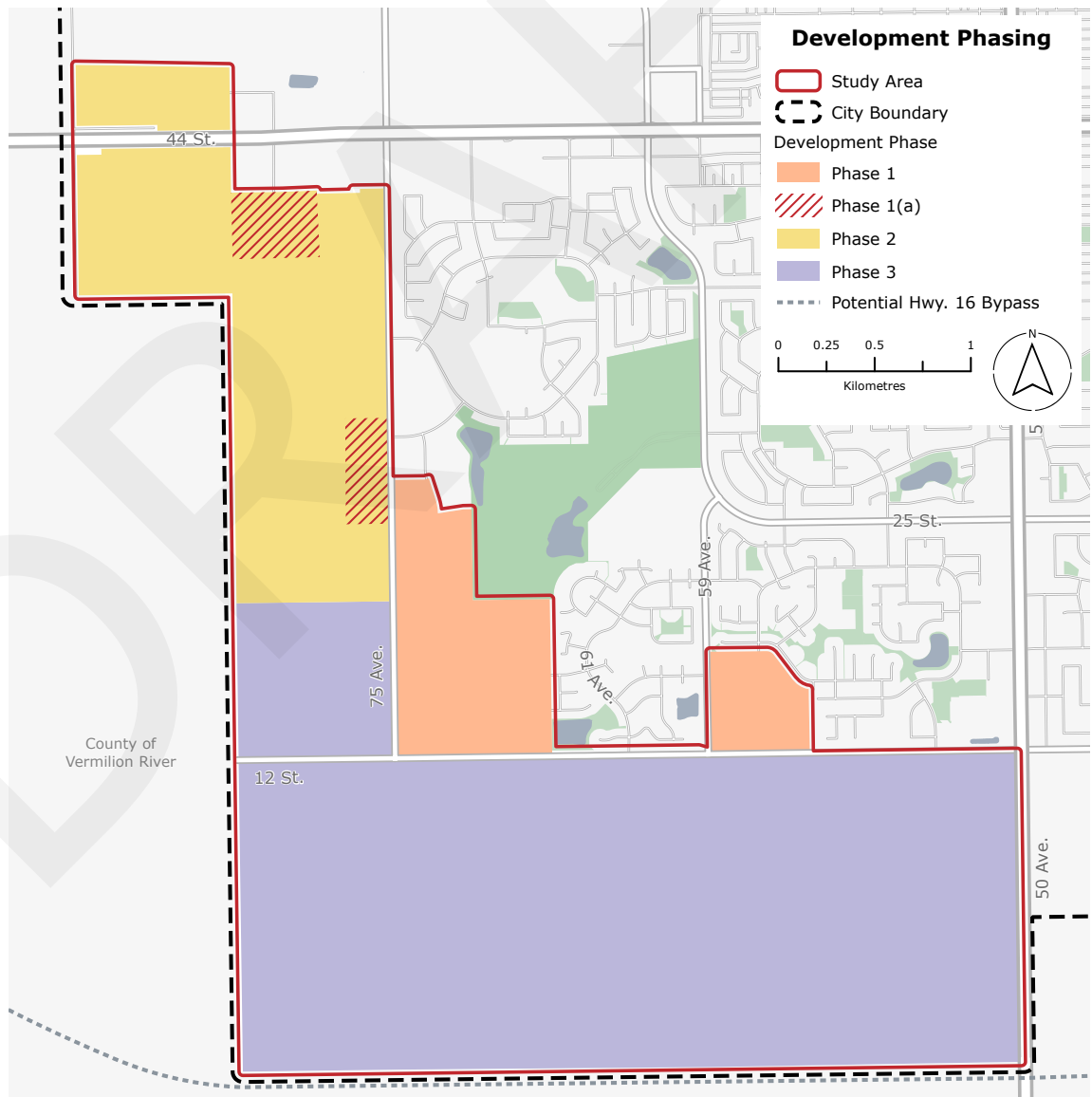
Phase 1: Lands can tie into existing infrastructure depending on available capacity at the time of development.

Phase 1(a): Areas that could be serviced through existing infrastructure but would require analysis.

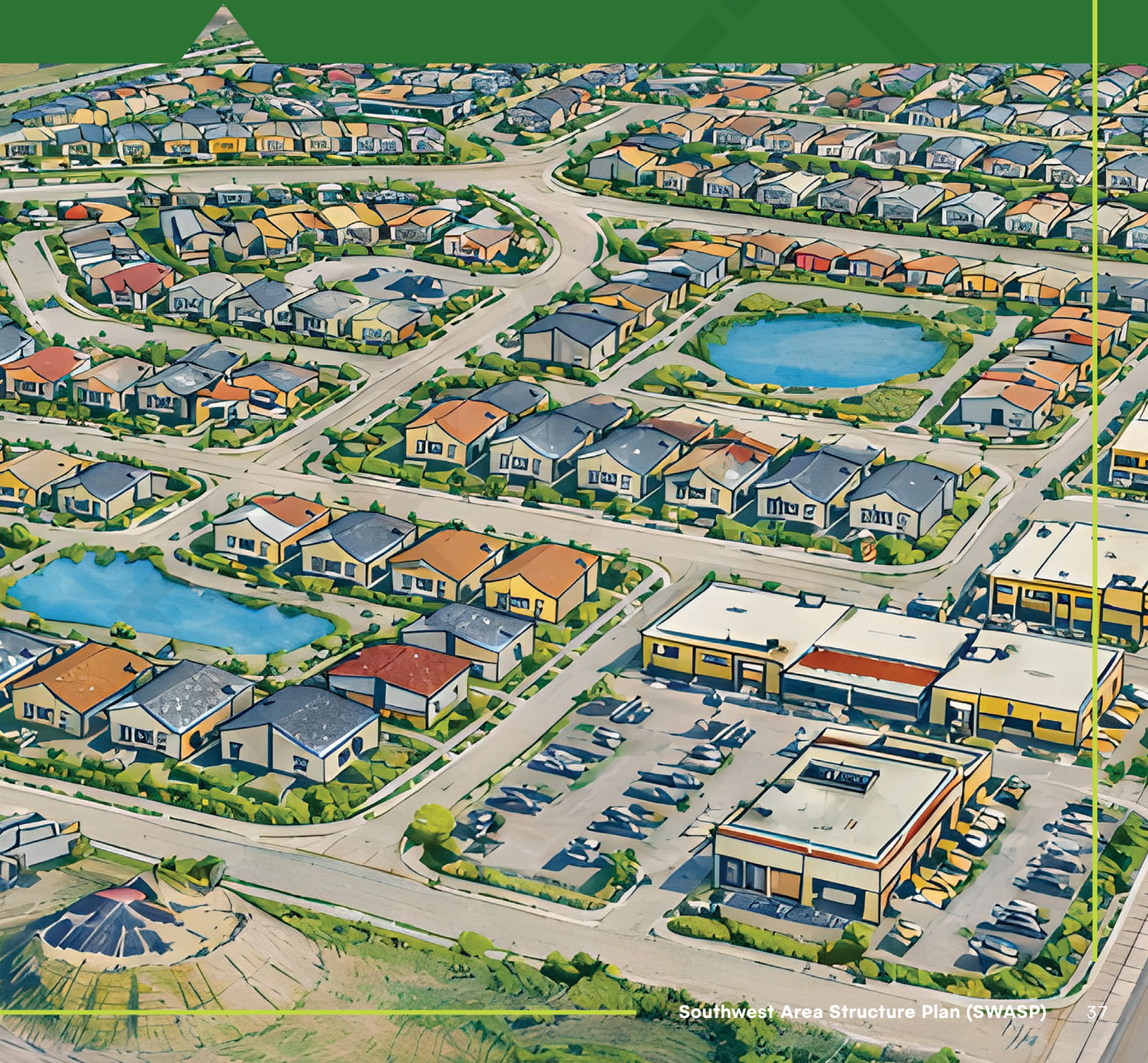
Phase 2: Lands can be serviced by existing infrastructure. Extensions would be required.

Phase 3: Land development is dependent on East Trunk improvement.

Map 13: Development Phasing



6.0 Urban Form



6.1 Winter City Design Principles

Located in the central prairies, Lloydminster experiences long, frigid winters and significant temperature fluctuations. Thoughtful urban design can promote year-round outdoor recreation, even in the coldest months. Table 9: Winter City Design indicates winter city design principles and features that support them.

Table 9: Winter City Design

PRINCIPLES	FEATURES
Maximizing Sunlight	<ul style="list-style-type: none"> • Orient taller buildings to allow sunlight into outdoor gathering and walking spaces to capture southern exposure. • Avoid tall structures that cast long shadows on pedestrian spaces. • Position windbreaks so they do not block sunlight. • Use deciduous trees that provide shade in the summer and allow sunlight through the winter.
Wayfinding and Safety	<ul style="list-style-type: none"> • Ensure signage remains vibrant and visible in snowy conditions. • Provide adequate lighting to create welcoming and visible winter outdoor environments.
Vibrant Colours	<ul style="list-style-type: none"> • Incorporate bright, vibrant colours into neighbourhood design. • Focus on outdoor parks and public spaces to create warmth and visual interest, making winter spaces feel inviting and lively.





PRINCIPLES	FEATURES
<p>Outdoor Spaces for Winter Events</p>	<ul style="list-style-type: none"> • Design outdoor spaces for winter events by incorporating outdoor heaters and firepits. • Use durable, textured surfaces to prevent slipping. • Heat surfaces such as benches. • Shelter seating areas and covered walkways.

6.2 Neighbourhood Design

Neighbourhoods should be thoughtfully designed and create a sense of place for residents and visitors alike. Development within the SWASP should incorporate design elements that enhance walkability, comfort, safety, and visual interest. Table 10: Neighbourhood Design outlines neighbourhood design principles and features that support them.

Table 10: Neighbourhood Design

PRINCIPLES	FEATURES
<p>Pedestrian Orientation</p>	<ul style="list-style-type: none"> • Rear lane access for homes to improve the streetscape and enhance pedestrian comfort. • Ensure building heights are proportionate and location sensitive, including smaller buildings near pedestrian-oriented areas and appropriate setbacks for larger buildings to minimize shadowing on walkways and gathering spaces. • Wide sidewalks and multi-use paths in highly used pedestrian areas.



PRINCIPLES	FEATURES
Accessible Design	<ul style="list-style-type: none"> • Universally accessible design features such as barrier-free sidewalks and pathways. • Benches and rest spots.
Neighbourhood Character	<ul style="list-style-type: none"> • Aesthetic streetlights to improve neighbourhood character. • A varied mix of facades for row houses to create visually appealing streetscapes. • Community gathering spaces such as plaza to enhance social interaction.
Wetland Integration	<ul style="list-style-type: none"> • Wetlands and surrounding natural areas should be incorporated into the parks and open space concept to enhance visual interest while preserving ecological value. • Special consideration should be given to Class III, IV, and V wetlands and adjacent habitats, recognizing their potential as valuable neighbourhood amenities and ecological assets.

6.3 Neighbourhood Hubs

Each quarter section within the SWASP should incorporate at least one neighbourhood hub, designed as walkable community focal points. Table 11: Neighbourhood Hub Design presents neighbourhood hub design principles and features that support them.



Table 11: Neighbourhood Hub Design

PRINCIPLES	FEATURES
Vibrant Spaces	<ul style="list-style-type: none"> • Mixed-use buildings with commercial or community-serving uses on the ground floor and residential units above. • Small-scale commercial buildings for uses such as cafes, bakeries, personal services, and neighbourhood pubs or restaurants. • Abundant trees and landscaping to create an inviting atmosphere.
Pedestrian Orientation	<ul style="list-style-type: none"> • Central gathering spaces with seating, shade structures, and attractive lighting, designed to accommodate events and markets. • Pedestrian transportation routes directly linking the hub to the broader community.
Safety	<ul style="list-style-type: none"> • Building entrances oriented toward the central hub area to increase visibility and natural surveillance.



6.4 Commercial Nodes

Commercial nodes will be located along arterial roads within the SWASP. These areas will accommodate primarily vehicle-oriented commercial developments, though they must be considerate of both motorists and pedestrians. Table 12: Commercial Node Design outlines commercial node design principles and how they can be achieved.

Table 12: Commercial Node Design

PRINCIPLES	FEATURES
Mobility	<ul style="list-style-type: none"> • Efficient site access off arterials. • Opportunities for future public transit routes and pick-up locations.
Pedestrian Orientation/Safety	<ul style="list-style-type: none"> • Continuous sidewalks throughout the site. • Direct pedestrian routes from sidewalks to building entrances. • Traffic calming elements.
High-Quality Streetscape	<ul style="list-style-type: none"> • Street trees and landscaping. • Visually interesting building facades.

6.5 Location and Design of School Sites

School sites should be located within close proximity to amenities, such as within or near neighbourhood hubs, and be accessible via active mobility networks. School sites should be placed along collector roads, provide frontage along at least two public roadways, and be designed with pedestrian comfort, safety, and traffic management in mind. Table 13: School Site Design outlines school site design principles and how they can be achieved.

Table 13: School Site Design

PRINCIPLES	FEATURES
Pedestrian Orientation	<ul style="list-style-type: none"> • Walkways from neighbourhoods directly to school entrances. • Landscaping to enhance streetscapes. • Weather-protected waiting areas.
Safety Features	<ul style="list-style-type: none"> • High-visibility crosswalks. • Pedestrian-activated lights. • Coloured pavement to indicate high-pedestrian areas.
Traffic Management	<ul style="list-style-type: none"> • Off-street pickup/drop off lanes. • No-idling zones.



6.6 Development Near Oil and Gas Infrastructure

As oil and gas infrastructure presents development limitations, consideration should be given to land uses that do not require ground disturbance or permanent built structures, such as parks and open spaces. This approach can improve neighbourhood livability while providing a natural buffer between oil and gas facilities and more intensive uses like residential or commercial development.

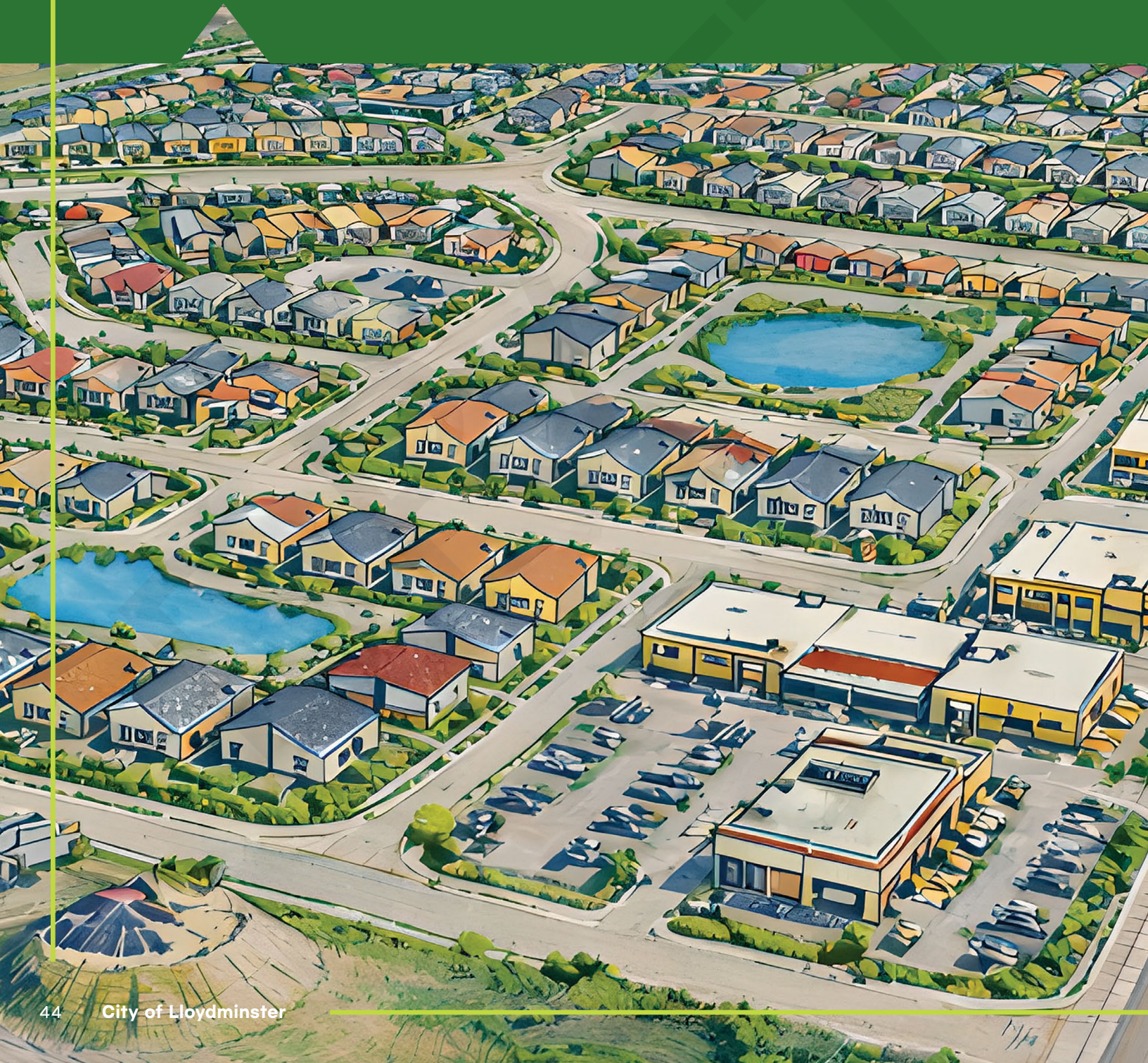
Oil and Gas Infrastructure Setback Requirements

Development near oil and gas infrastructure is subject to specific setback requirements governed by the Alberta Energy Regulator (AER). These setbacks are designed to protect public safety and allow for ongoing monitoring and maintenance of the wells. Key requirements from AER Directive 079, the Alberta Pipeline Rules and additional company-specific policies are summarized below:

SOURCE	REQUIREMENT	DESCRIPTION
AER Directive 079	<ul style="list-style-type: none"> Minimum 5 metres 	<ul style="list-style-type: none"> Setback from abandoned wells, including reclaimed and reclamation exempt wells.
AER Directive 079	<ul style="list-style-type: none"> Minimum 100 metres 	<ul style="list-style-type: none"> Setback from suspended and active oil wells to surface development.
Pipeline Rules, Alta Reg 125/2023	<ul style="list-style-type: none"> 30 metres 	<ul style="list-style-type: none"> Controlled area on either side of the centerline of pipeline; any ground disturbance requires written consent from the pipeline operator.
Cenovus Energy Inc.	<ul style="list-style-type: none"> 30 metres 	<ul style="list-style-type: none"> Easement on either side of the pipeline where written consent is needed prior to development approval.
Cenovus Energy Inc.	<ul style="list-style-type: none"> 200 metres 	<ul style="list-style-type: none"> Easement on either side of the pipeline where consultation is required prior to districting/redistricting, subdivisions, and development approvals.

Disclaimer: Setback requirements and development considerations are subject to change. This summary is for information purposes only. It is the responsibility of developers to conduct due diligence by consulting AER, facility owners, and any other relevant party to determine any development restrictions and obtain necessary approvals.

7.0 Reserve Land



This section discusses reserve land as contemplated in Divisions 8 and 9 of the MGA, and includes Environmental Reserve (ER) and Municipal Reserve (MR).

7.1 Environmental Reserve

Wetlands and their surrounding habitats may be dedicated as Environmental Reserve (ER), provided they do not form part of the approved stormwater management system. Where surrounding lands are suitable for passive or active recreation, they may instead be considered for Municipal Reserve (MR), provided they meet the City's criteria for functional public open space as outlined in Section 7.2: Municipal Reserve.

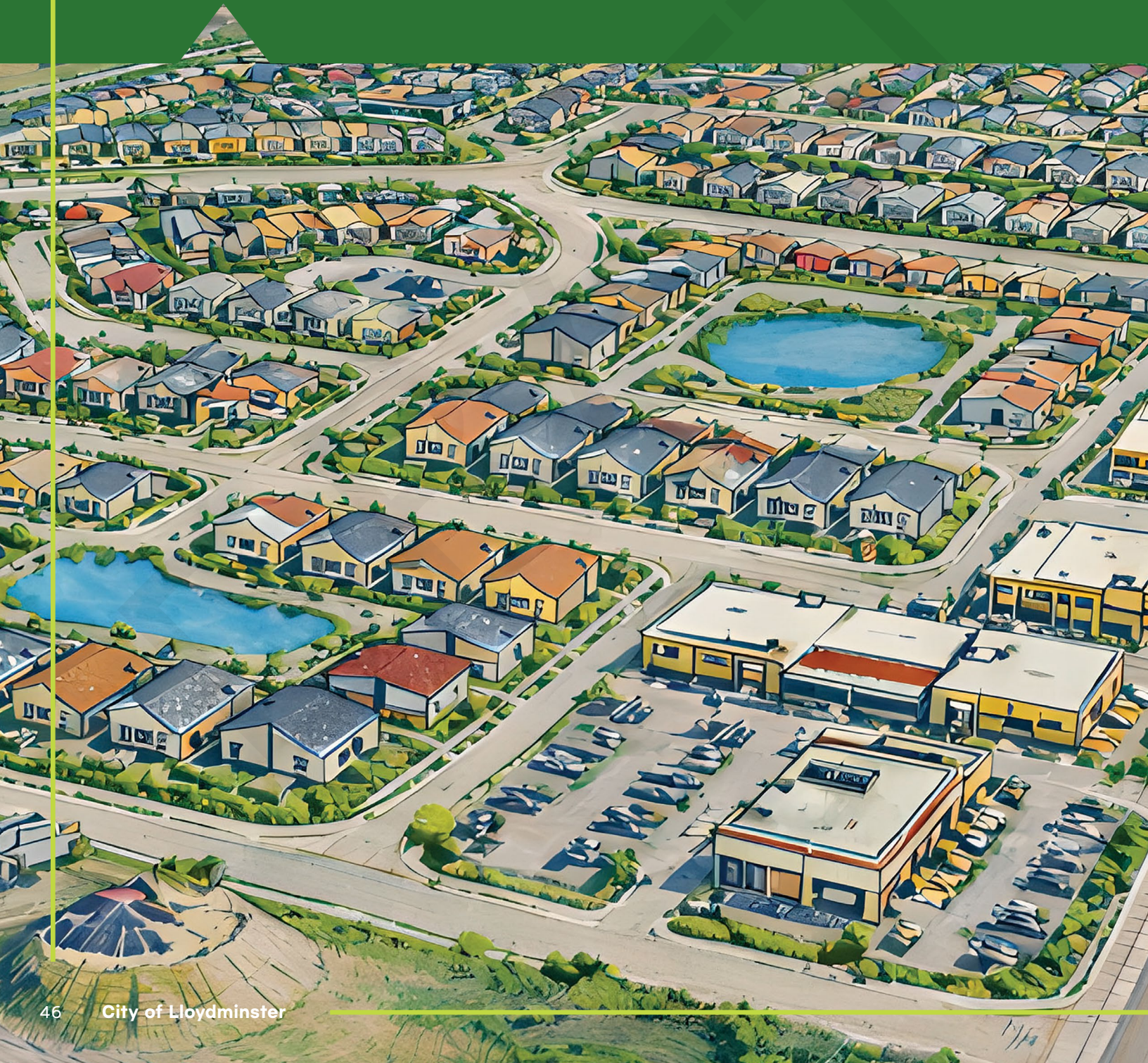
7.2 Municipal Reserve

Municipal Reserve (MR) plays a vital role in shaping livable, vibrant, and sustainable communities by supporting the development of parks, open spaces, and school sites. To ensure the recreation and school site needs within the SWASP are met, MR lands are required to meet one or more of the following criteria:

- Large, open parcels with considerable road frontage,
- Areas that are easily accessible to the broader community,
- Pathways and trails intended for passive and active recreation, and
- Open spaces that can accommodate future school sites.



8.0 Mobility





8.1 Pedestrian and Multimodal Connectivity

As development proceeds, arterial and collector roads will incorporate multimodal transportation design features to support a range of travel options. This will ensure new and existing developments are well connected through active transportation infrastructure, including sidewalks, trails, and cycling routes.

Upon full build out, pedestrian linkages will connect each neighbourhood and provide convenient, walkable access to amenities. Through their NSP, each developer will demonstrate how their neighbourhood design contributes to a cohesive trail system.

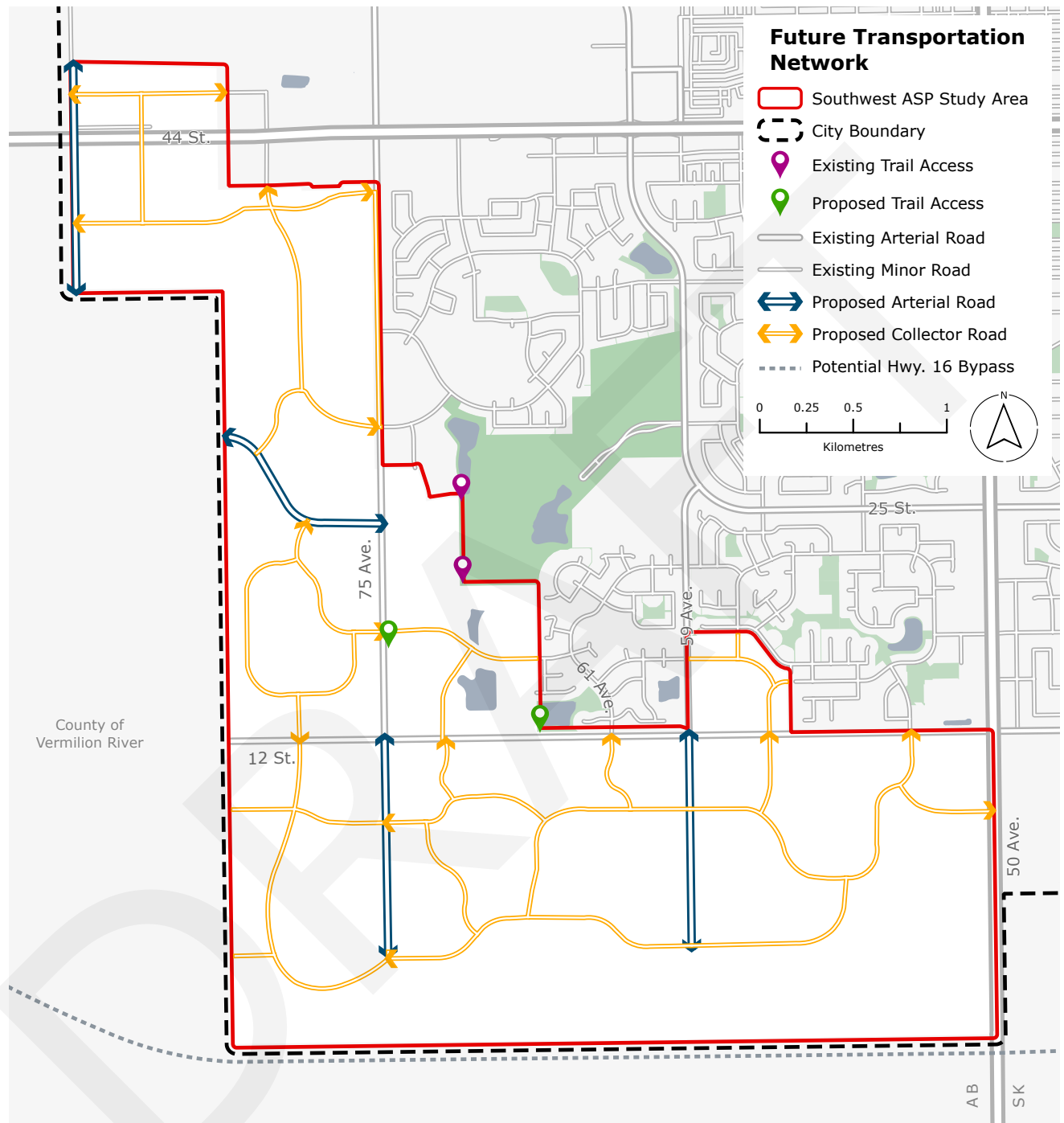


8.2 Transportation

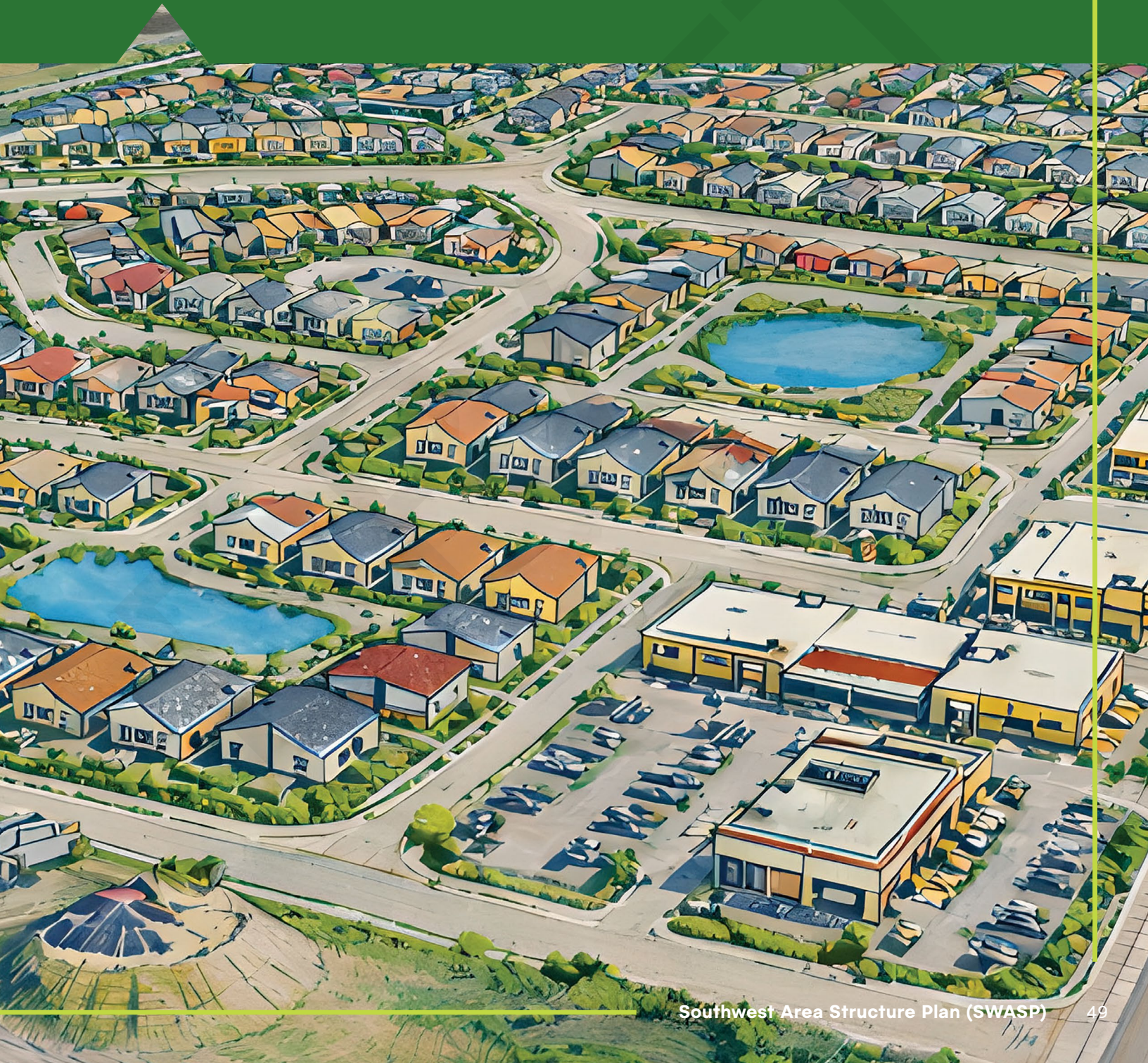
The conceptual layout of future arterial and collector roads is illustrated in Map 14: Future Transportation Network. These roads include extensions of existing routes and new additions, configured in a grid pattern with some curvilinear features. The precise alignment of arterial, collector, and local roads will be determined at the NSP stage. Roadway design must limit the possibility of short-cutting between key destinations, provide connection points to the existing transportation network, and connect to the future network beyond the ultimate scenario indicated in the Transportation Master Plan.

Appendix 3: Servicing Design Brief includes required road upgrades and respective time horizons from the Transportation Master Plan. Most of the upgrades in the 3- to 5-year time horizons run along 75 Avenue and 12 Street and a portion of conceptual road alignment in the northwest of the study area. The 5- and 10-year horizons are also identified, with the 10-year horizon incorporating additional conceptual road layout in the northwest of the study area. The 20-year horizon includes the remainder of the conceptual road layout. In addition to the Transportation Master Plan, the 12 Street Functional Plan and the 75 Avenue Function Plan must be followed to ensure access requirements, setbacks, and road right-of-way requirements are accounted for. NSPs and other planning documents covering lands south of 12th Street must also consider the potential Highway 16 Bypass to ensure access requirements, setbacks, and road right-of-way requirements are accounted for.

Map 14: Future Transportation Network



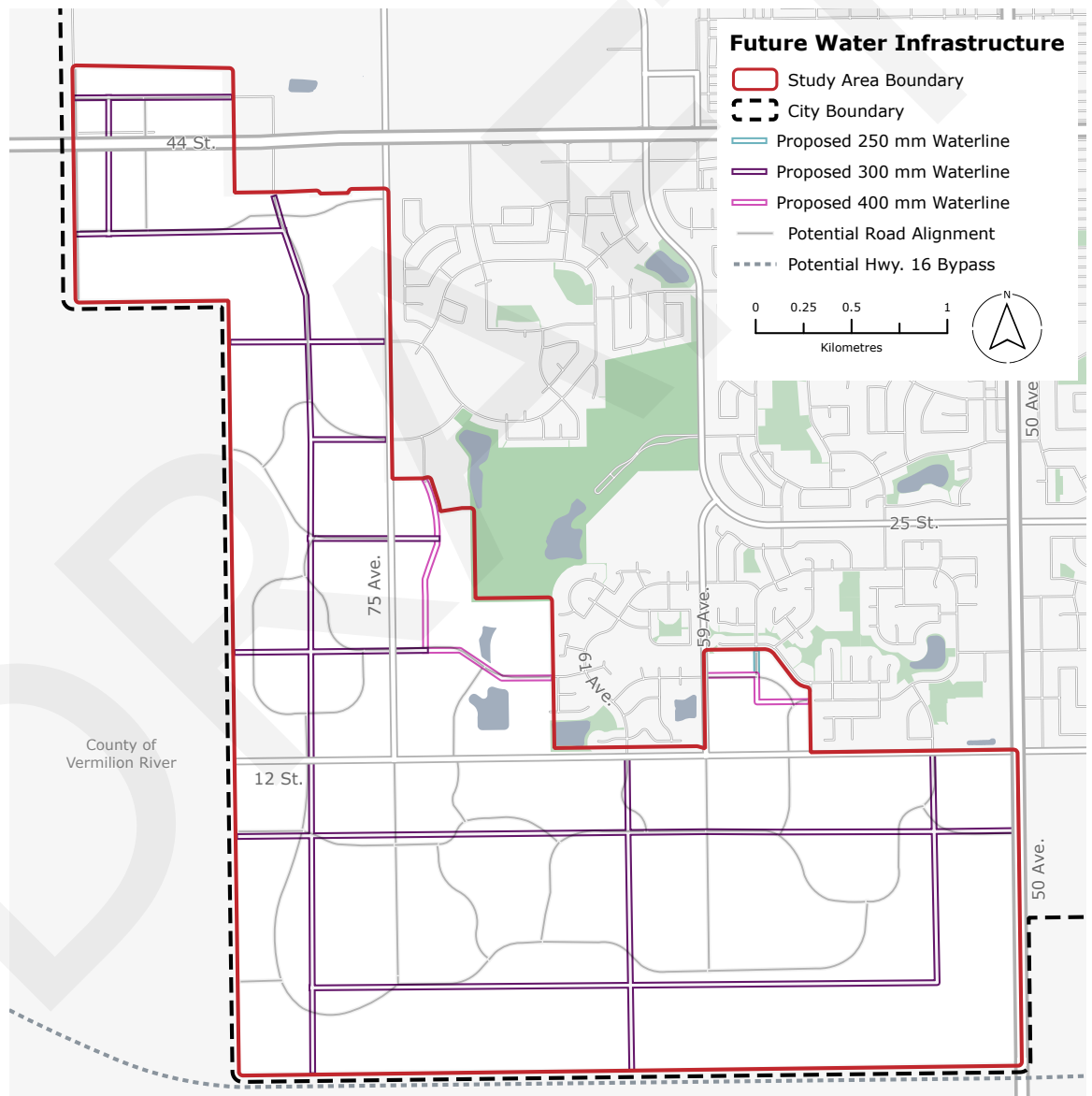
9.0 Utility Servicing



9.1 Water

The water servicing concept is informed by the Water Master Plan (2024) and is depicted in Map 15: Future Water Infrastructure, outlining how the study area will be supplied with potable water from the Water Treatment Plant. The servicing strategy proposes water mains to be installed beneath the arterial and collector road network.

Map 15: Future Water Infrastructure



According to Figure 7.1 of the Water Master Plan, most of the upgrades within the SWASP include a water distribution system consisting of 300 mm diameter mains with a section

of 400 mm diameter water main looping in the northwest of the SWASP, just crossing 44 Street (Highway 16) along 80 Avenue. The proposed 300 mm diameter water distribution system will serve as the backbone of the new water distribution network within the SWASP and provide adequate connection points for lands identified within the ultimate horizon.

Coupled with the 300 mm diameter water distribution system, a 400 mm diameter water main is proposed to connect Lakeside and Parkview Estates, as well as link College Park and Lakeside, to provide existing system looping.

The extension of the water distribution system must be coordinated with treatment, pumping, and storage improvements to ensure adequate capacity and flow are available within the development lands. Interim looping as part of development staging to maintain efficient system operation will be considered in future NSPs.

All points available from any existing water distribution system should be connected to ensure the water distribution system within the SWASP has adequate fire flows and pressures and is looped to provide system redundancy.

In addition to the 300 mm diameter future pipe network throughout the SWASP, connection points must be provided to existing development for watermain looping, as well as connection points for future development beyond the lands identified within the ultimate horizon. These connection points must be situated within collector or arterial roads where the water distribution system can be easily connected to and extended.



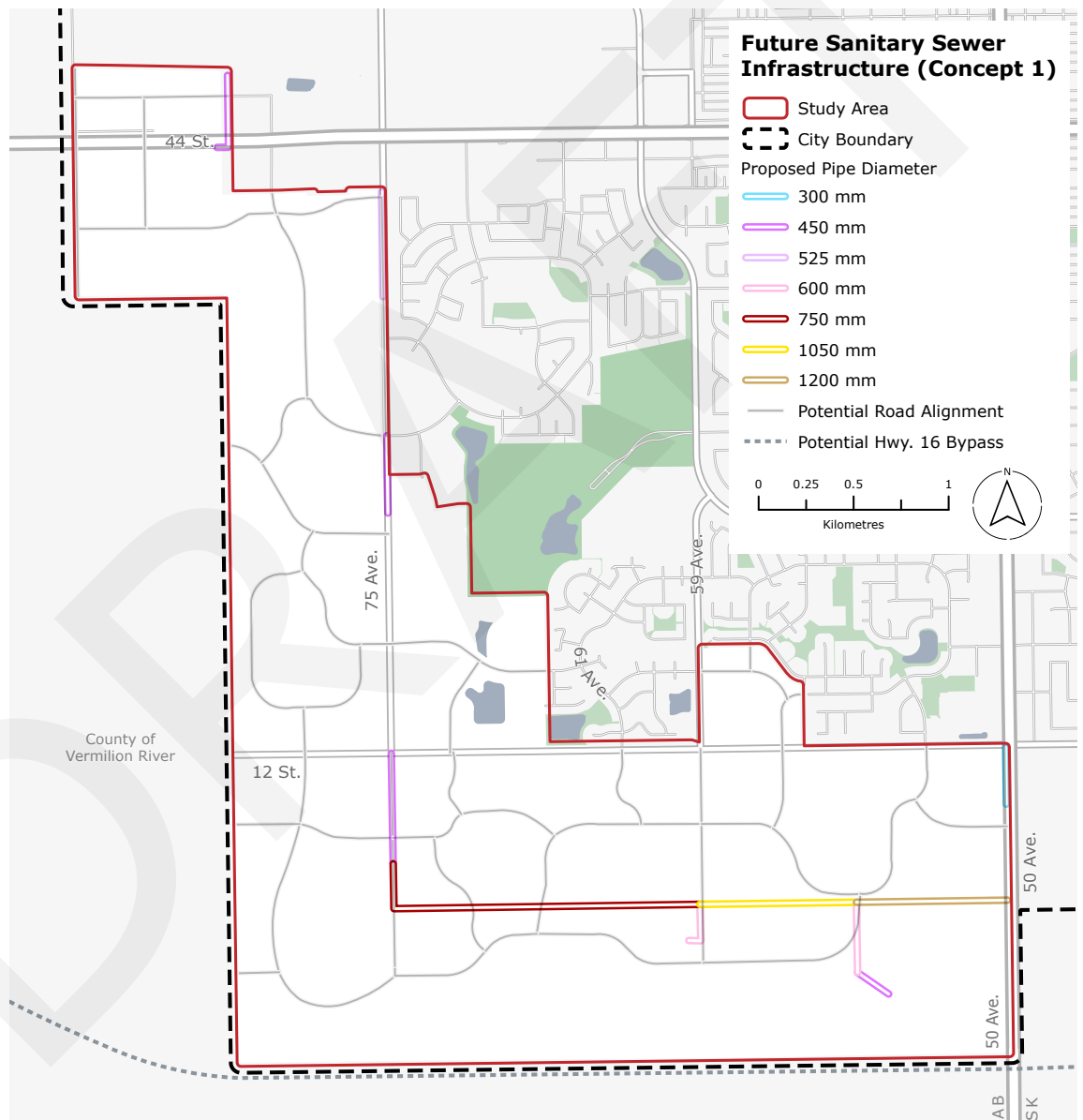
9.2 Sanitary

As identified within the Sanitary Sewer Master Plan, two concepts associated with servicing the SWASP were prepared. Map 16: Future Sanitary Sewer Infrastructure Concept 1 and Map 17: Future Sanitary Sewer Infrastructure Concept 2 illustrate their respective concepts. Concept 1 included servicing portions of the lands west of 75 Avenue through existing neighbourhoods, where Concept 2 assumed all lands south of 29 Street would be serviced through the development of the South Trunk, the twinning of the East Trunk, as well as the connection of the East Trunk to the South Trunk through the lands east of Wallacefield. The lands within the SWASP north of 29 Street and west of 75 Avenue are to be serviced from the north regardless of the concept chosen.

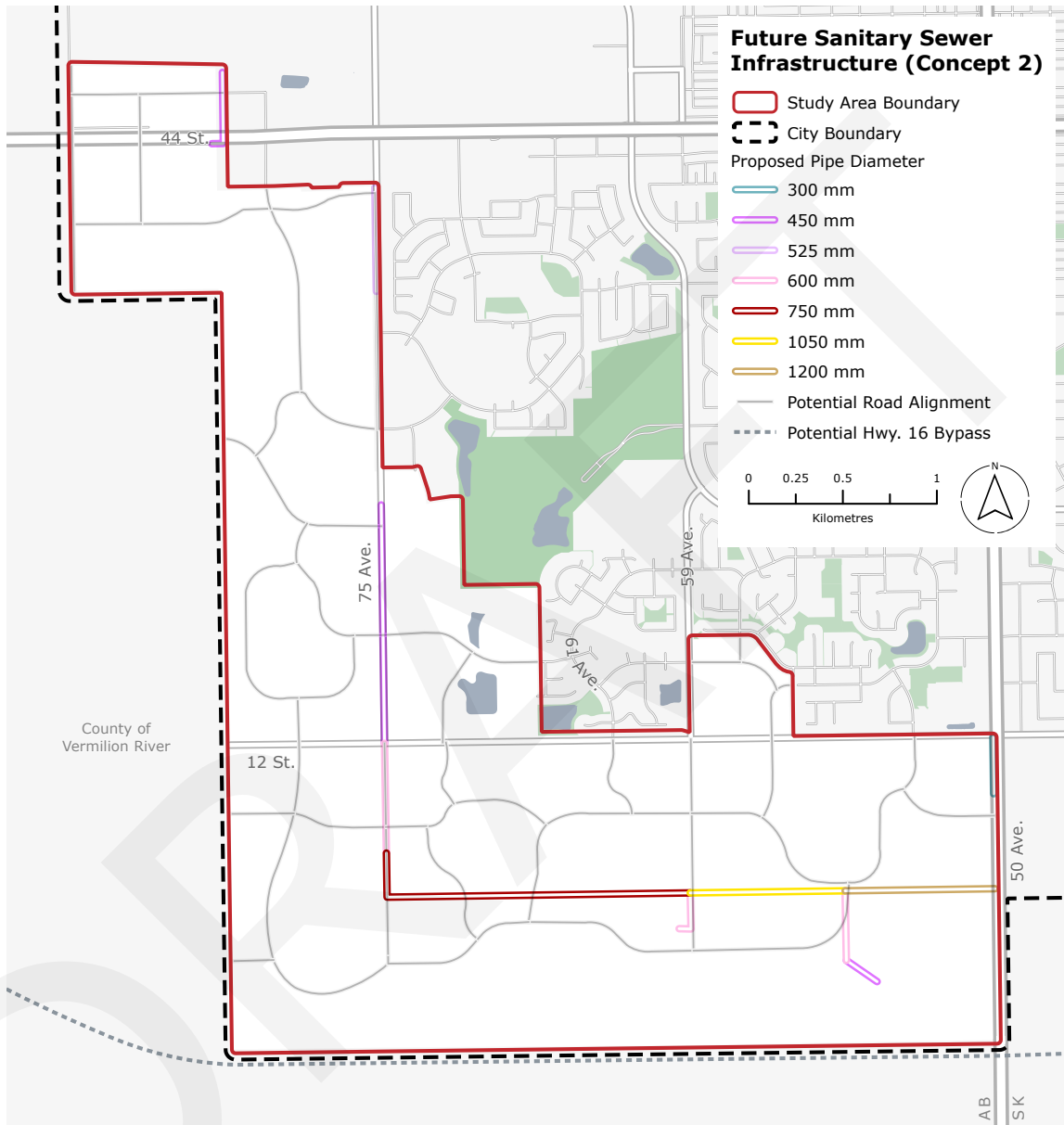
Concept 1 is preferred if development along 75 Avenue in the vicinity of 29 Street occurs before parcels south of 12 Street and the development of the South Trunk. Servicing lands west of 75 Avenue and south of 12 Street through existing neighbourhoods, other than those identified within Concept 1, is not permitted due to the lack of conveyance capacity remaining within these systems. Some lands within the SWASP may be serviced through the existing sanitary sewer collection system, particularly the land east of 75 Avenue and north of 12 Street, i.e., Parkview Estates, Lakeside, College Park, provided the analysis of the downstream systems does not indicate capacity issues.

The downstream sanitary sewer collection system will be included within NSPs to ensure the development does not negatively impact the existing sanitary sewer collection system. NSPs must also provide connection points to existing development, as well as connection points for future development beyond the lands identified within the ultimate horizon. These connection points will be situated within collector or arterial roads or other suitable alignments, where the sanitary sewer system can be easily connected to and extended.

Map 16: Future Sanitary Sewer Infrastructure Concept 1



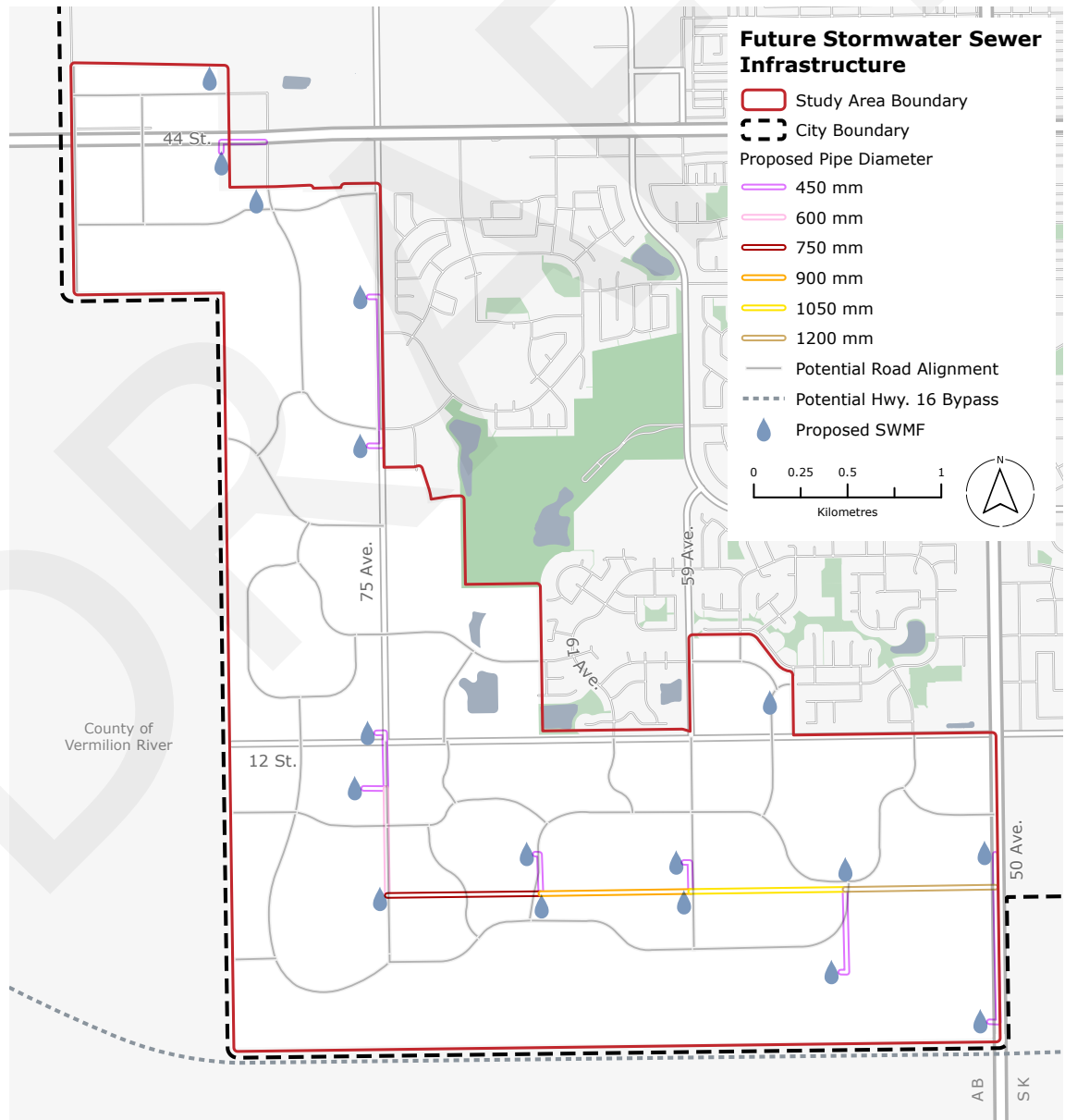
Map 17: Future Sanitary Sewer Infrastructure Concept 2



9.3 Stormwater and Drainage

The stormwater servicing concept is based on the Stormwater Master Plan and is illustrated in Map 18: Future Stormwater Sewer Infrastructure. The proposed layout includes a Stormwater Management Facility (SWMF) within each quarter section of the plan area. Future NSPs will provide detailed designs for on-site stormwater drainage systems, including the size and capacity of the SWMFs.

Map 18: Future Stormwater Sewer Infrastructure



As identified within Figure 7.2 of the Stormwater Master Plan, stormwater management within the SWASP is most reliant upon the development of the new storm sewer trunk system, consisting of pipe diameters ranging from 450 mm to 1200 mm, and new SWMF's. The lands adjacent to 75 Avenue in the vicinity of 29 Street up to 44 Street can be serviced through the city's existing storm water collection system with the rest of the SWASP reliant upon the development of a new storm sewer trunk system.

The development of lands within the SWASP study area shall consider natural drainage patterns and account for these flows within the development. All proposed developments shall be designed such that this pre-development flow is accommodated. Accommodating existing natural drainage and pre-development flows from lands outside the development shall be addressed through piped connections or through drainage channels. Existing natural drainage shall never be severed.

9.4 Shallow Utilities

Shallow utilities refer to services that are typically installed near the surface of the ground and are critical for supporting urban development. These include natural gas, electricity, and telecommunications infrastructure including telephone and internet services.

For the SWASP, these utility services will be extended from adjacent developed neighbourhoods by the respective utility providers. Coordination with utility companies will ensure that infrastructure is installed efficiently and aligns with the timing and phasing of development.

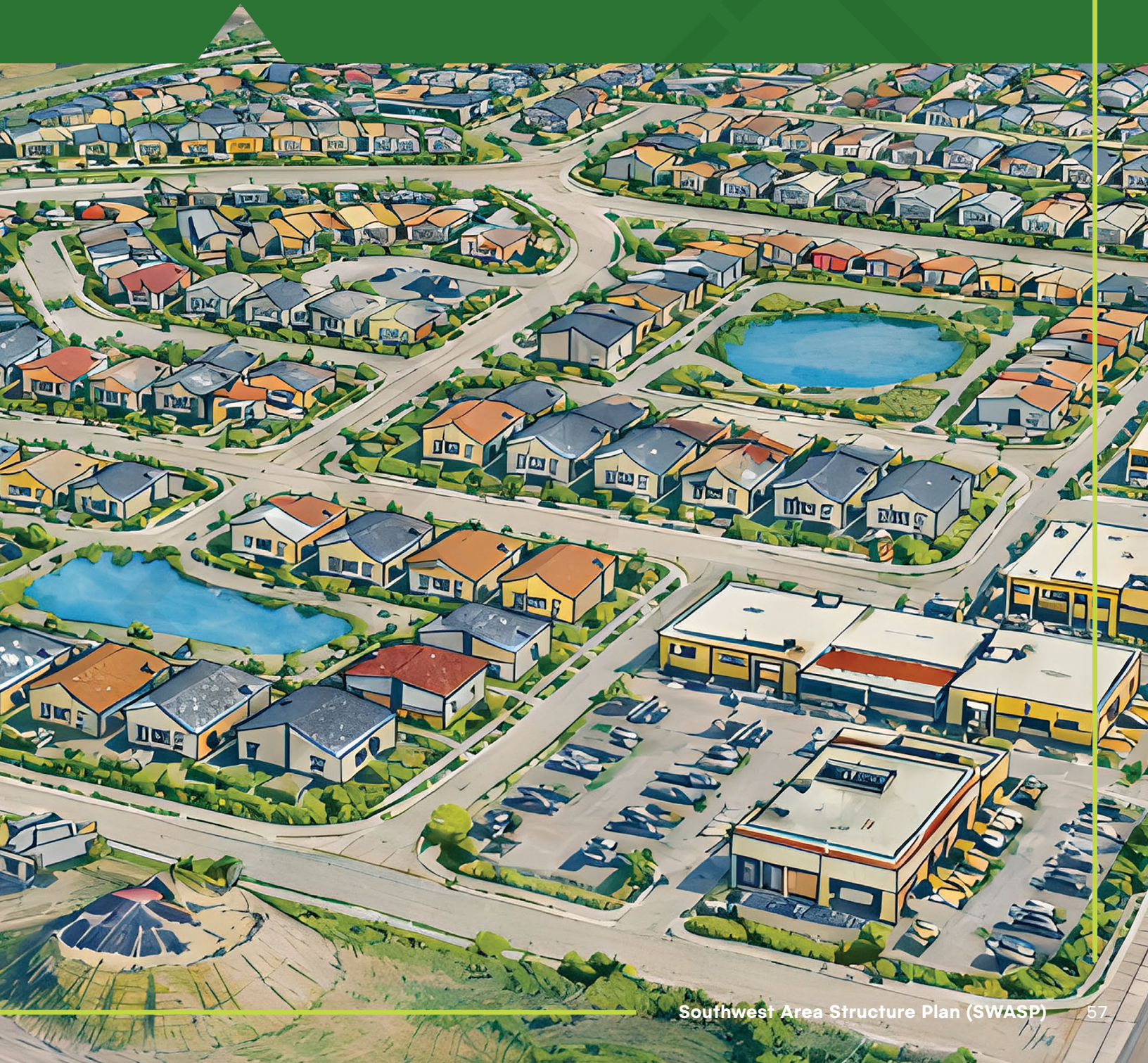
10.0 Implementation Amendments and Review

The SWASP will be implemented through the preparation and adoption of NSPs and subsequent redistricting, subdivision and development decision-making. Each NSP is expected to align with and build upon the overarching goals and policies established in this document. NSPs will provide detailed guidance on land use, transportation, servicing, and design elements to ensure coordinated development across the study area.

Implementation of the SWASP will be monitored through administrative review of NSPs and subsequent subdivision and development applications.

Any proposed amendments that alter the explicit intent of this bylaw must follow the process outlined within the City's ASP Policy. Amendments to this bylaw will need to be in alignment with the MDP, or an MDP amendment may also be required.

11.0 Policies



Policy interpretation shall be in accordance with Table 14: Policy Interpretation.

Table 14: Policy Interpretation

TYPE	FUNCTION	KEY WORD
Mandatory	Denotes compliance with or adherence to a preferred course of action.	shall
Directional	Denotes compliance is desired or advised but may be impractical or premature because of valid planning principles or unique/extenuating circumstances.	should
Permissive	Denotes discretionary compliance or a choice in applying policy.	may

11.1 General Policies

- 11.1.1** The City shall implement the policies of this Area Structure Plan through Neighbourhood Structure Plans and subsequent subdivision, redistricting, and development applications.
- 11.1.2** The City shall ensure that future development is generally consistent with Map 12: Future Land Use Concept.
- 11.1.3** The City shall ensure that the sequence of future development is generally consistent with Map 13: Development Phasing.

11.2 NSP Requirement Policies

- 11.2.1** The developer shall create a Neighbourhood Structure Plan prior to redistricting, subdivision, or development within the study area.
- 11.2.2** The developer shall adhere to the policies and intent of this Area Structure Plan, the Neighbourhood Structure Plan Policy, and the Municipal Development Plan.



11.3 Oil and Gas Policies

- 11.3.1** The developer shall include an Alberta Energy Regulator Report, or equivalent, identifying all oil and gas infrastructure within the subject lands.
- 11.3.2** The developer shall consult with well lease holders and the Alberta Energy Regulator, or its successor, to determine land use planning and development considerations, including but not limited to setbacks and operational and maintenance areas.
- 11.3.3** The developer should consider opportunities for open space near oil and gas infrastructure, where appropriate.



11.4 Environmental Policies

- 11.4.1** The developer should preserve undisturbed wetlands in their natural state, with special consideration given to classes III, IV and V.
- 11.4.2** The developer shall follow the suggested mitigations when constructing around wetlands provided within Appendix 1: Desktop Biophysical.
- 11.4.3** The developer shall follow the recommended development mitigations related to Sharp-Tailed Grouse identified within Appendix 1: Desktop Biophysical.
- 11.4.4** The developer shall contact the appropriate agencies if any Species at Risk are identified during wildlife sweeps.
- 11.4.5** The developer should ensure existing weed patches are left undisturbed and vehicles should be inspected for weeds prior to accessing sites within the study area.
- 11.4.6** The developer should consider opportunities to incorporate wetlands and the surrounding habitats into the neighbourhood open space concept.
- 11.4.7** The City may dedicate wetlands and the surrounding habitats as Environmental Reserve, provided they do not form part of the approved stormwater management system.
- 11.4.8** The City shall encourage the developer to incorporate naturalized wetlands into the stormwater management system in accordance with the Municipal Development Plan.

11.5 Parks and Open Space Policies

- 11.5.1** The developer shall demonstrate how neighbourhood parks, trails, and open space integrate with the overall open space concept of the SWASP and with the existing trail network.
- 11.5.2** The developer shall demonstrate how Municipal Reserve will be configured throughout the neighbourhood.
- 11.5.3** The developer shall propose Municipal Reserve in alignment with one or more of the criteria outlined within Section 7.2: Municipal Reserve.
- 11.5.4** The City may dedicate lands surrounding wetlands as Municipal Reserve, provided they are intended for passive or active recreation.

11.6 Residential Policies

- 11.6.1** The developer shall incorporate a mix of housing types within each neighbourhood.
- 11.6.2** The developer shall consider opportunities for higher density housing near future public transportation routes, within neighbourhood hubs, along collector roadways, and in close proximity to amenities.
- 11.6.3** The developer shall meet a net minimum residential density range of 21 to 25 units per net residential hectare.

11.7 Commercial Policies

- 11.7.1** The developer shall include at least one neighbourhood hub within each neighbourhood.
- 11.7.2** The developer shall ensure neighbourhood amenities can be accessed conveniently via vehicular and multimodal transportation.
- 11.7.3** The developer shall demonstrate how pedestrian comfort and safety features are incorporated into all commercial areas.



11.8 School Site Policies

- 11.8.1** The developer shall consult the School Boards, in collaboration with the City, to determine if a school site is needed during the Neighbourhood Structure Plan planning stage.
- 11.8.2** The developer shall locate school sites along collector roads and provide frontage along at least two public roadways.
- 11.8.3** The developer shall design school sites in alignment with Section 6.5: School Sites.



11.9 Transportation and Mobility Policies

- 11.9.1** The developer shall demonstrate how roadway design integrates with the future public transportation routes outlined in the City's Public Transportation Master Plan.
- 11.9.2** The developer shall demonstrate how effective multimodal transportation options will be provided throughout the neighbourhood.
- 11.9.3** The developer shall demonstrate how pedestrians travel safely and efficiently throughout the neighbourhood.
- 11.9.4** The developer shall limit the possibility of vehicles short-cutting between key destinations.



11.10 Utility Servicing Policies

- 11.10.1** The developer shall adhere to all City Infrastructure Master Plans.
- 11.10.2** The developer shall adhere to Appendix 3: Servicing Design Brief.

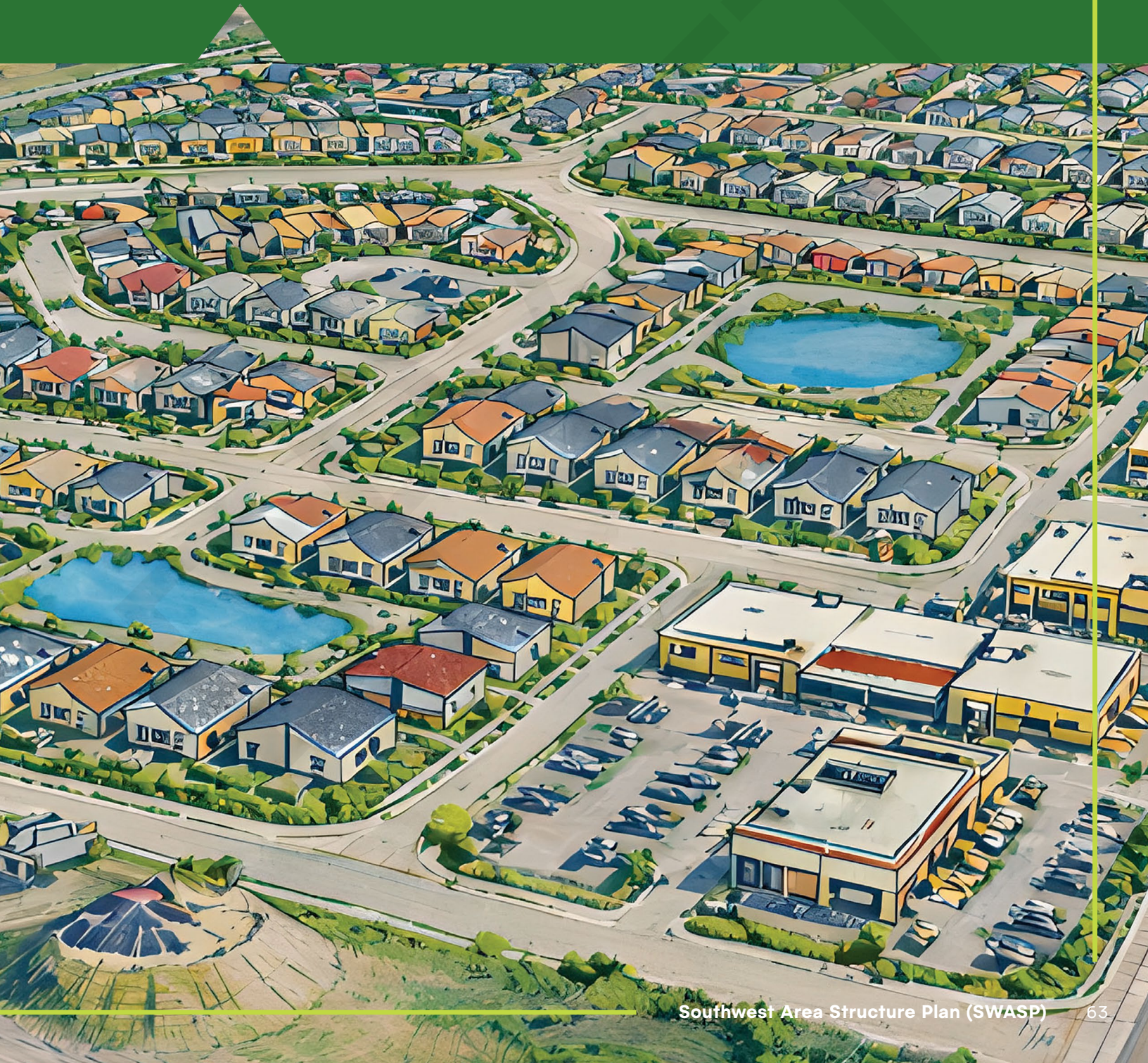


11.11 Technical Reports and Studies Policies

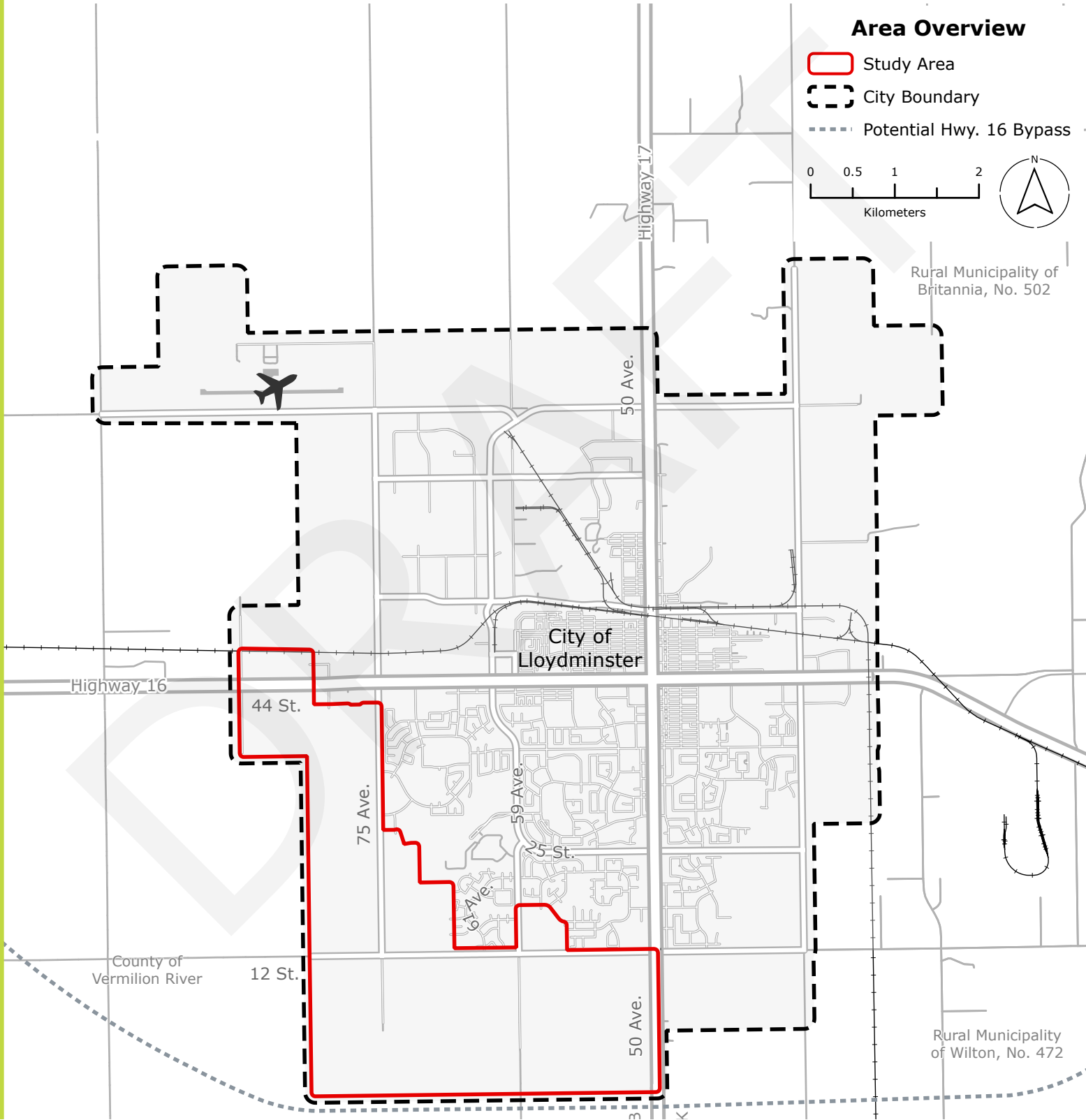
- 11.11.1** The developer shall complete a Phase 2 Environmental Site Assessment for oil and gas installations that do not have reclamation certificates.
- 11.11.2** The developer shall complete the technical studies deemed necessary by the City, as per the Neighbourhood Structure Plan Policy, as amended.

DRAFT

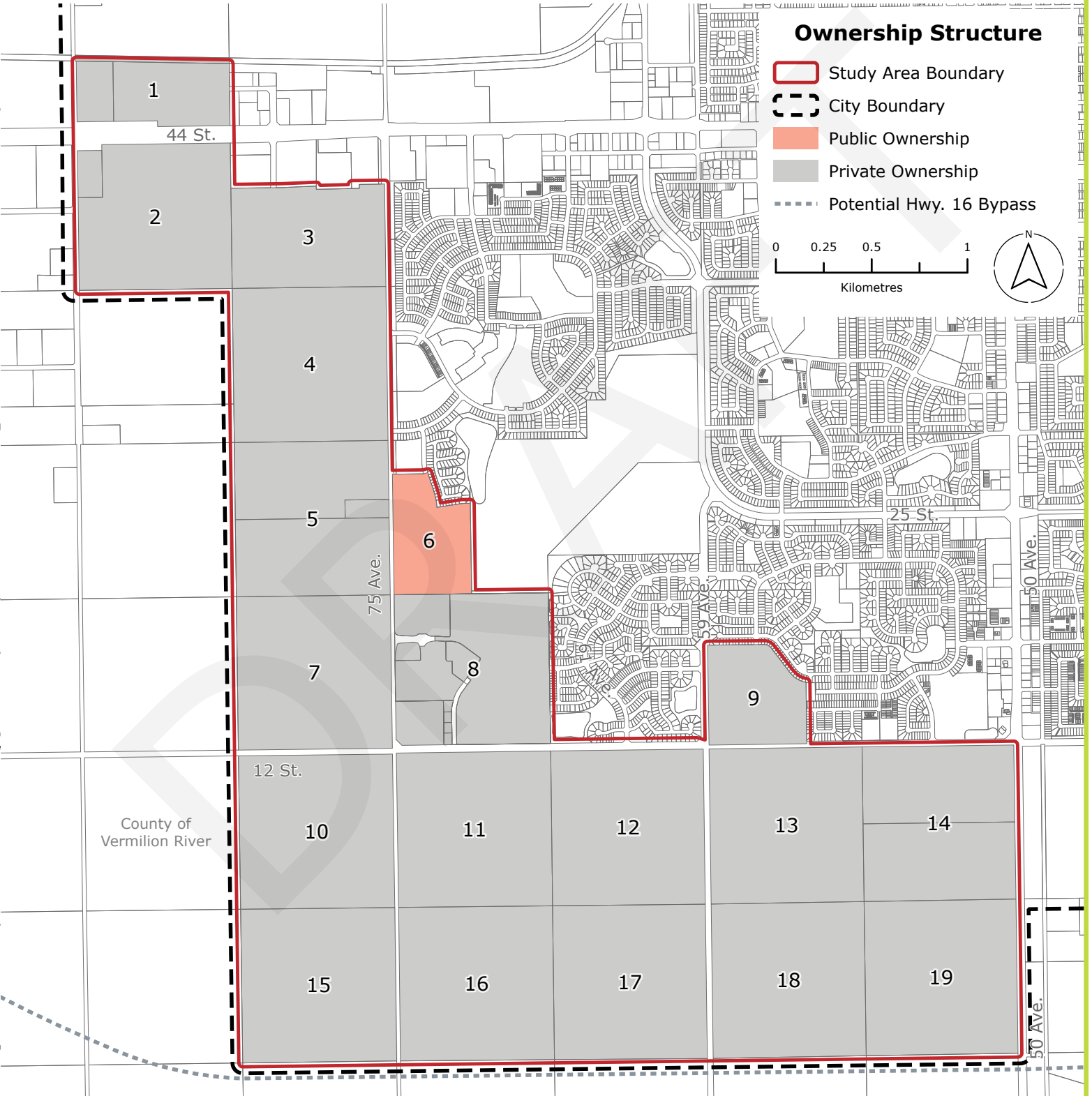
12.0 Maps



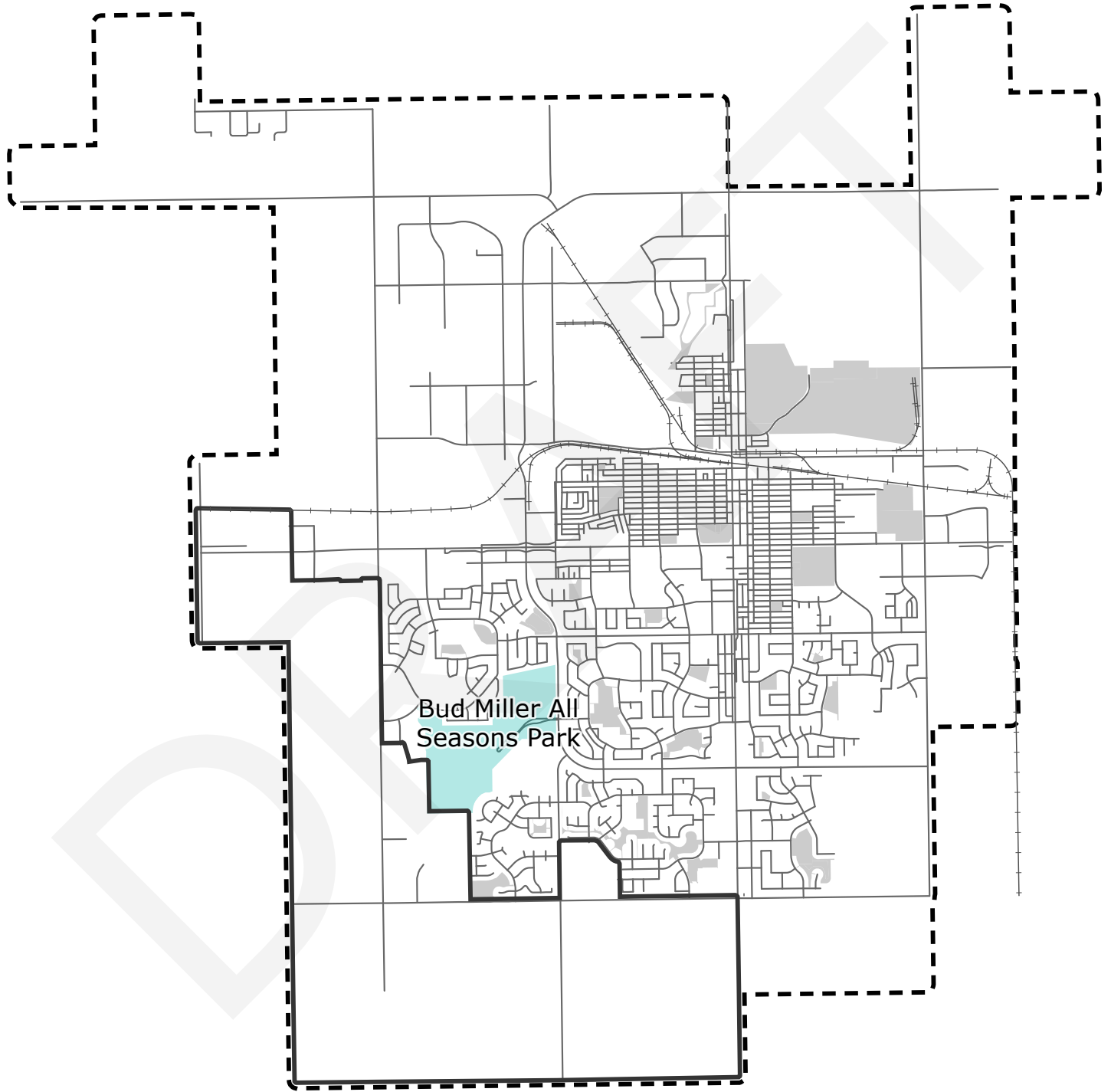
Map 1: Area Overview



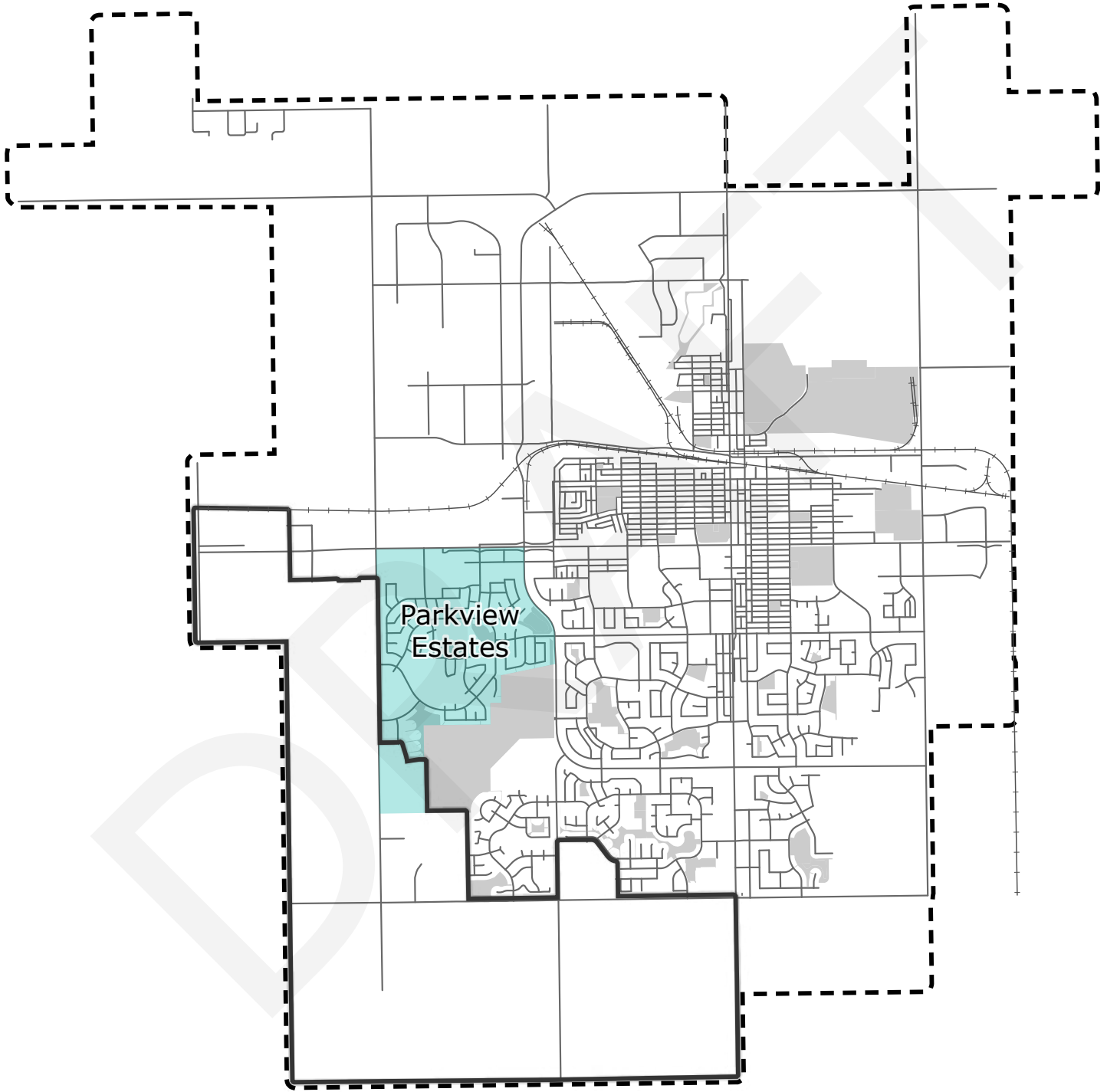
Map 2: Land Ownership



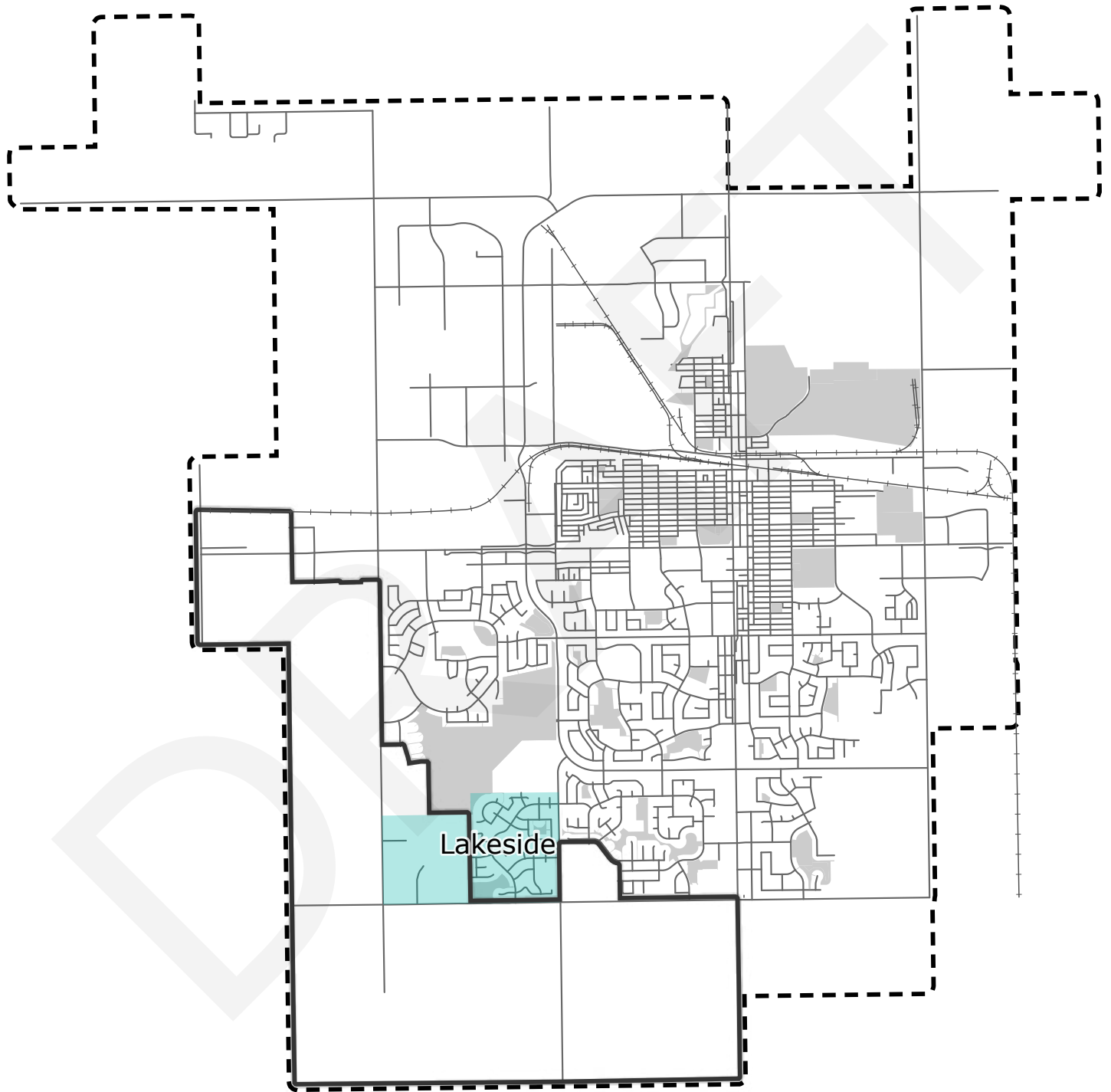
Map 3: Bud Miller All Seasons Park



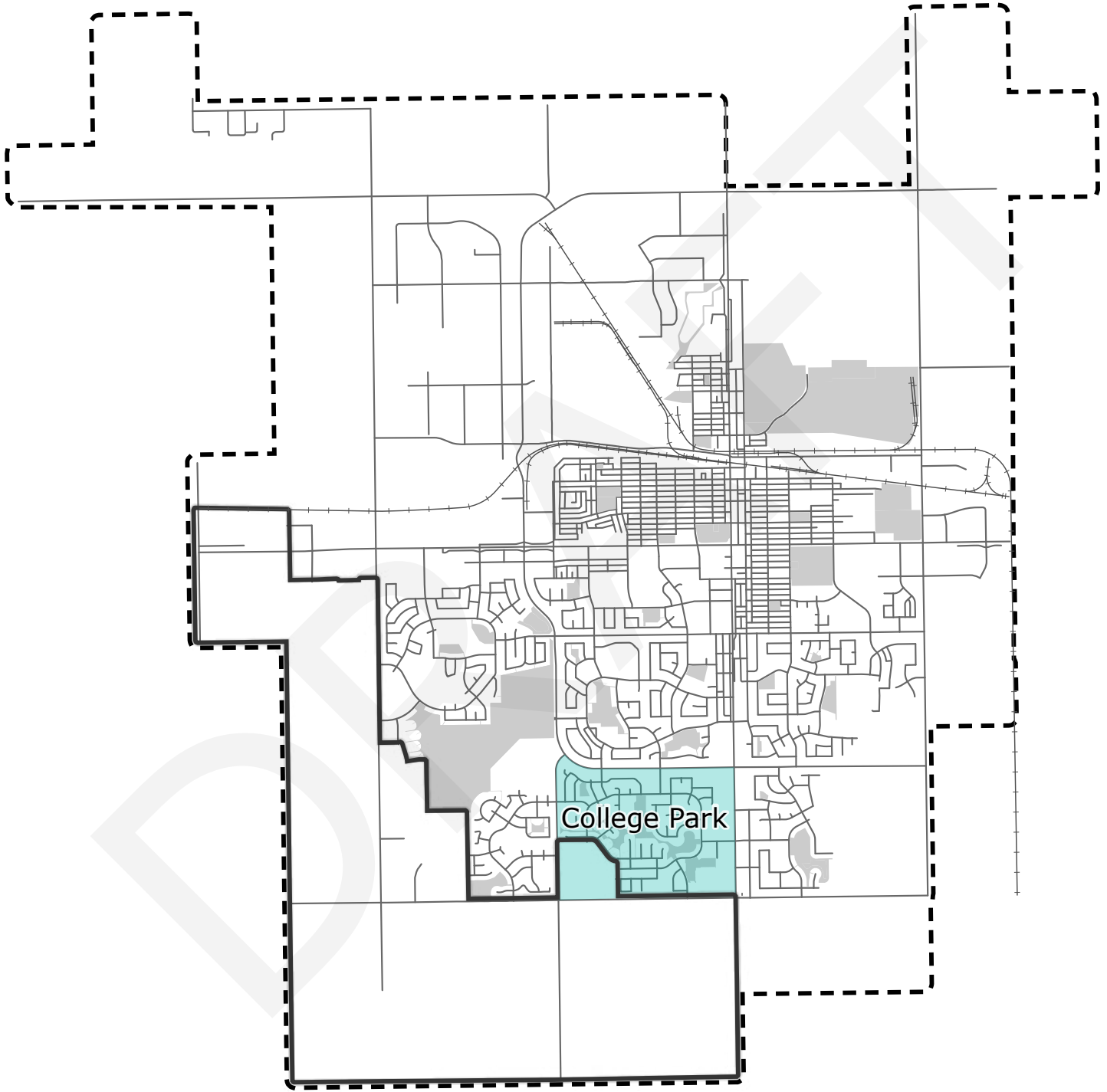
Map 4: Parkview Estates



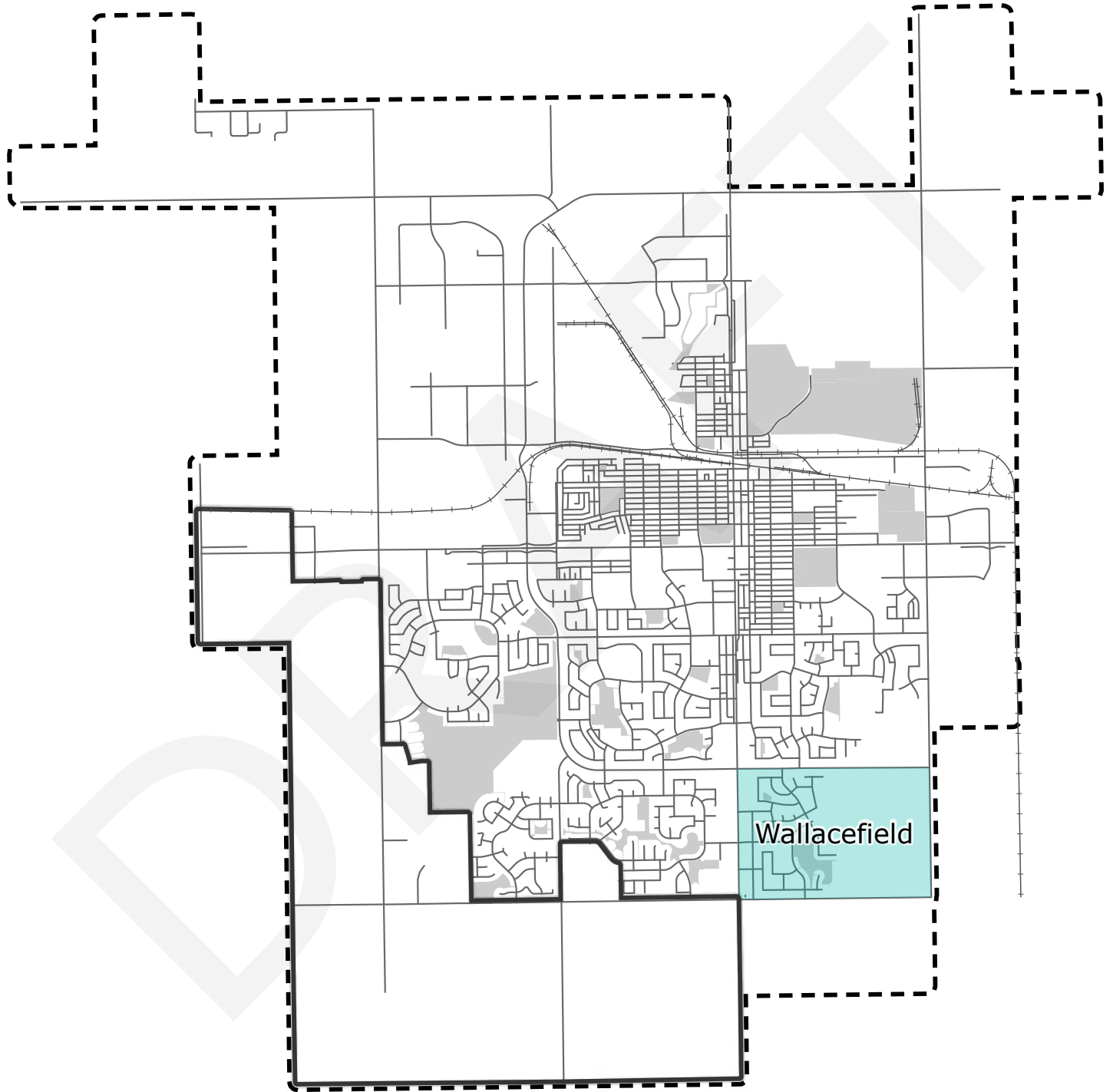
Map 5: Lakeside Neighbourhood



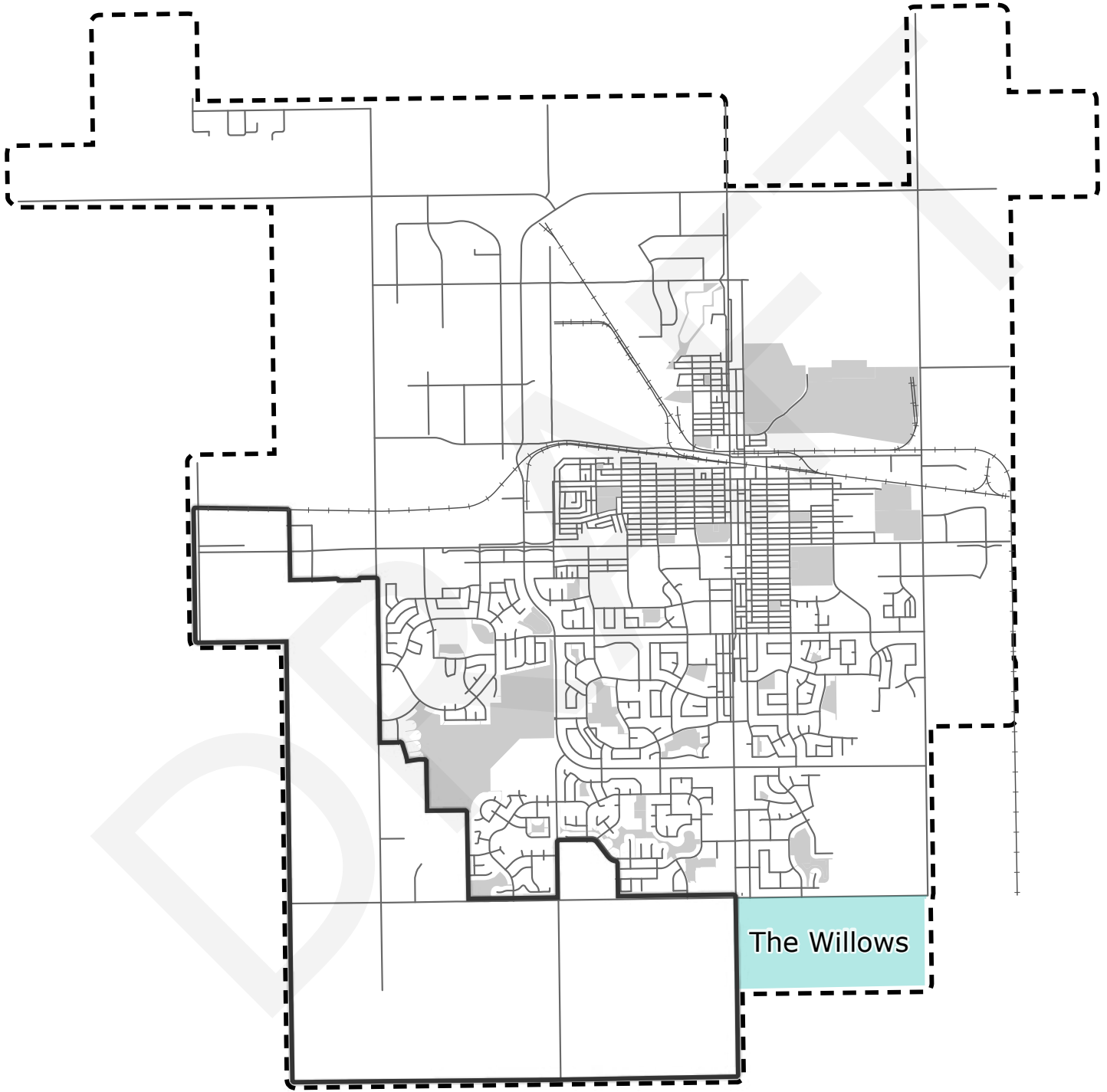
Map 6: College Park Neighbourhood



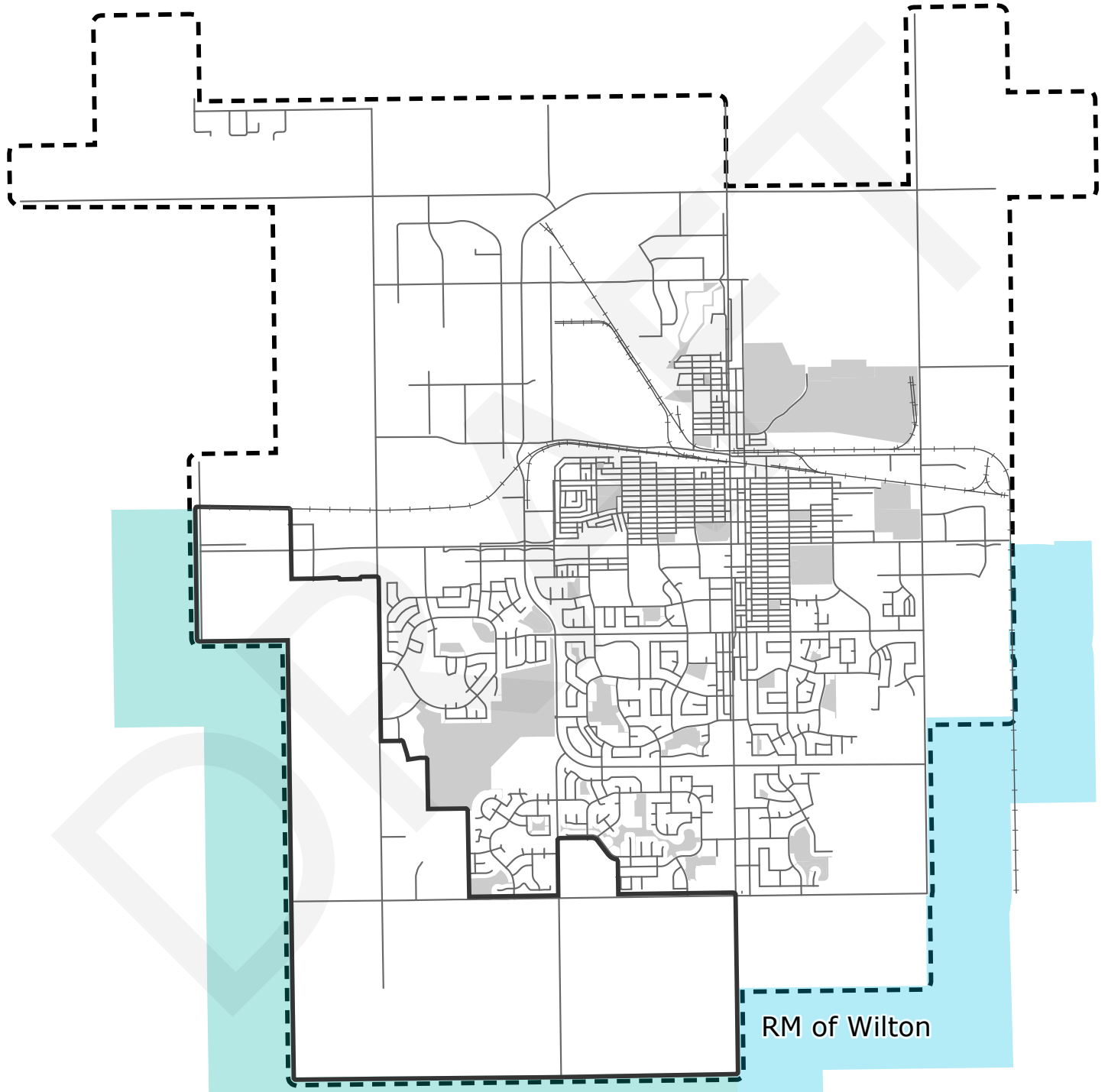
Map 7: Wallacefield Neighbourhood



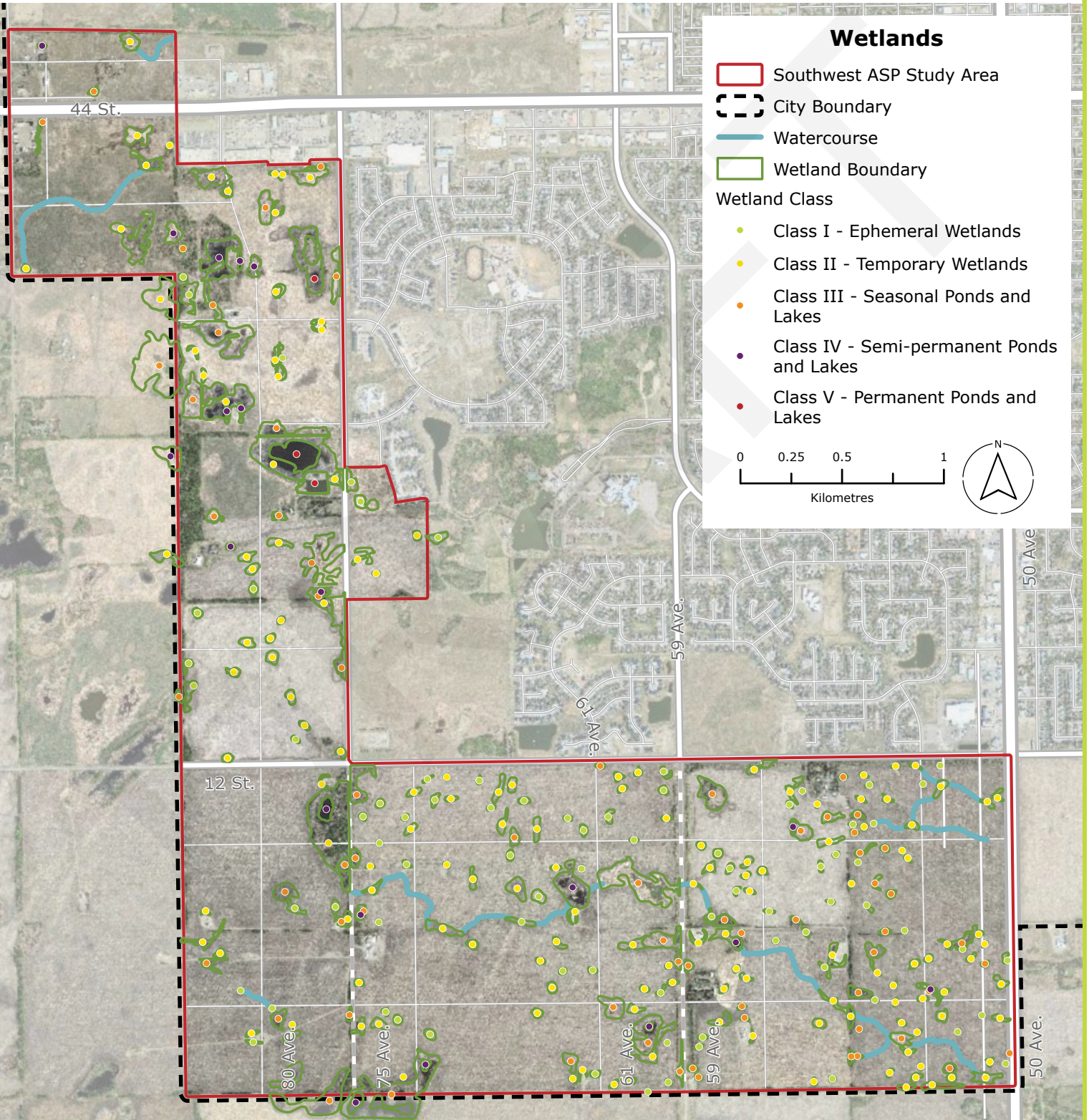
Map 8: The Willows Neighbourhood



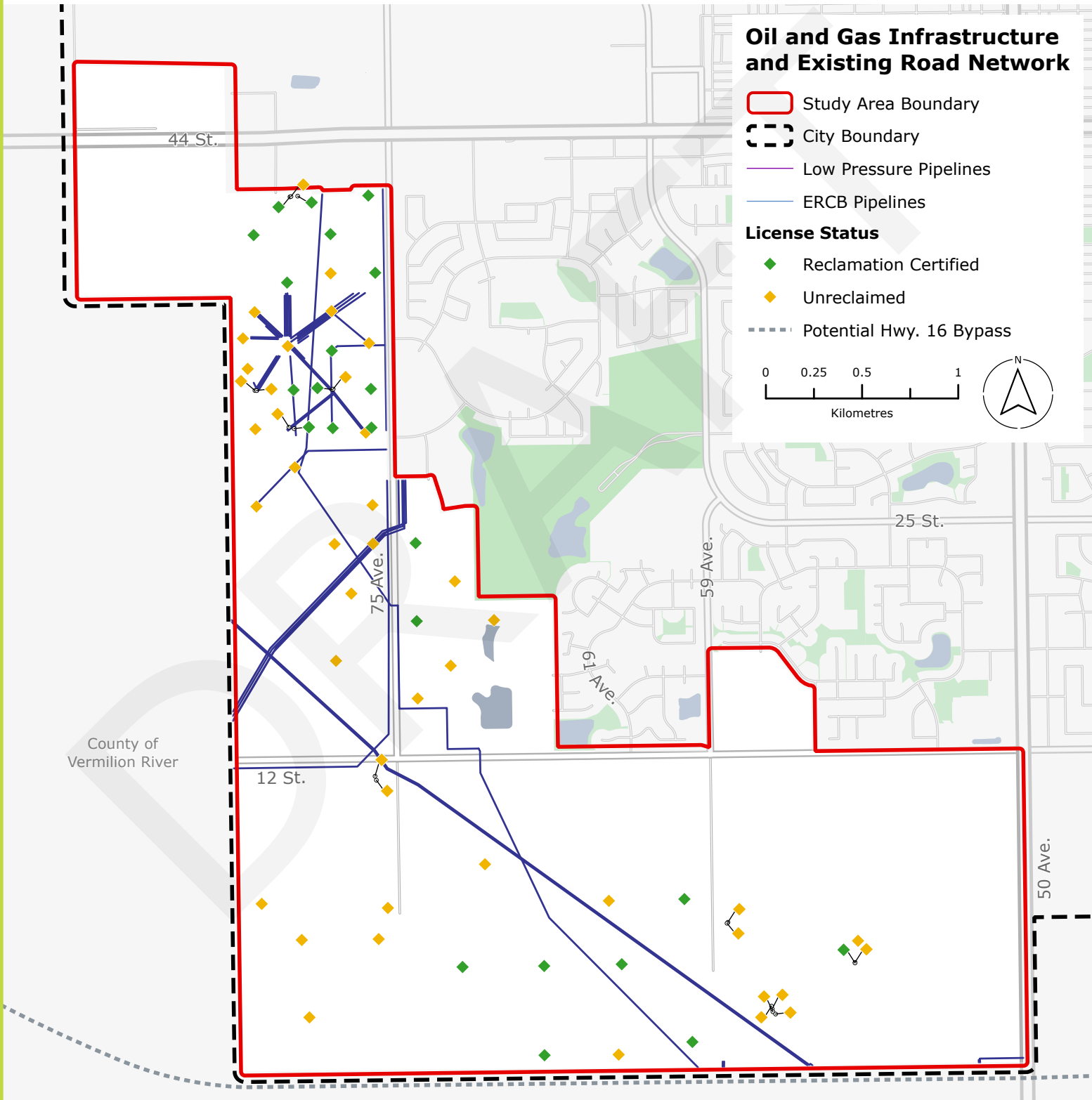
Map 9: County of Vermilion River and Rural Municipality of Wilton



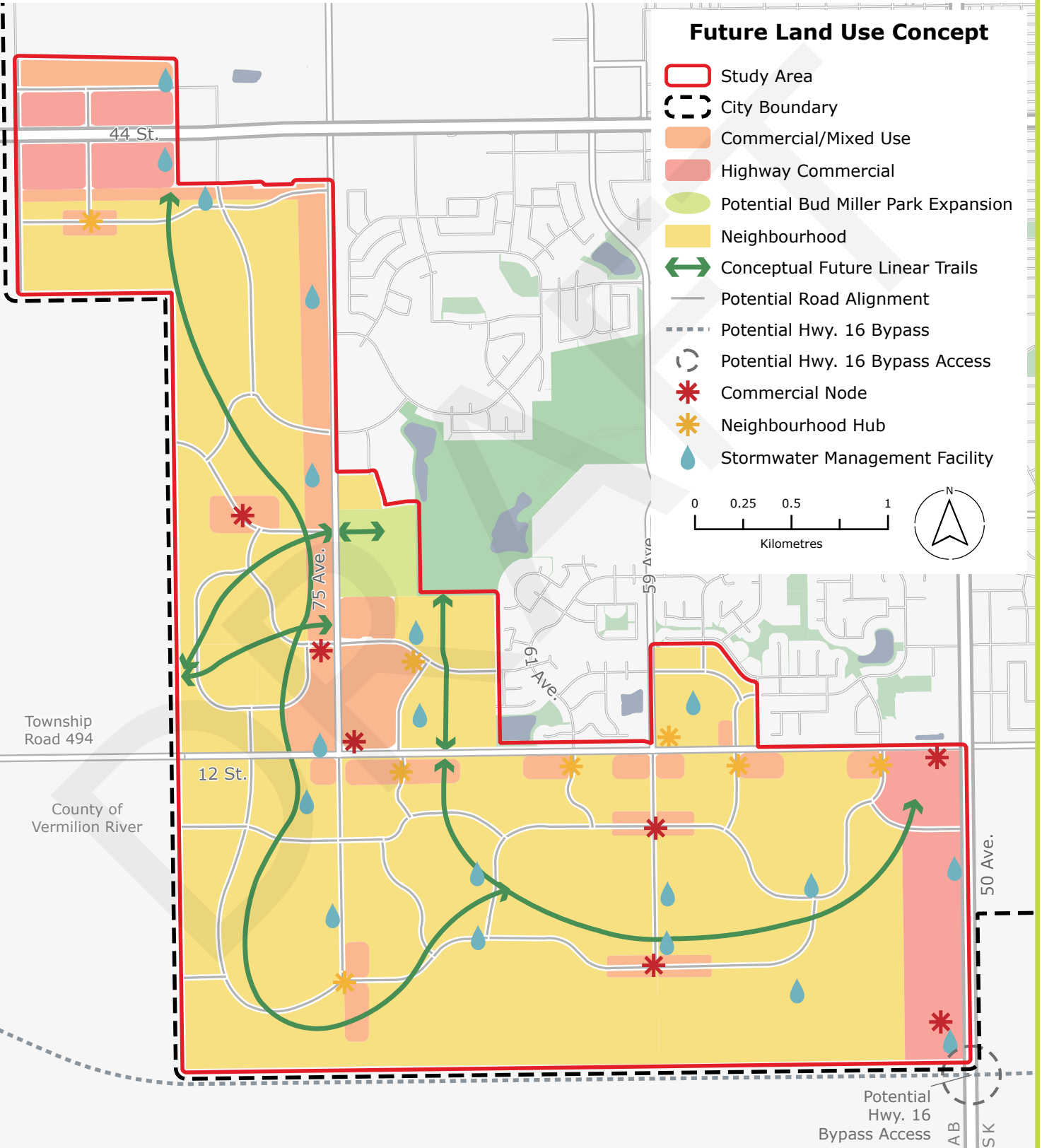
Map 10: Wetlands Map



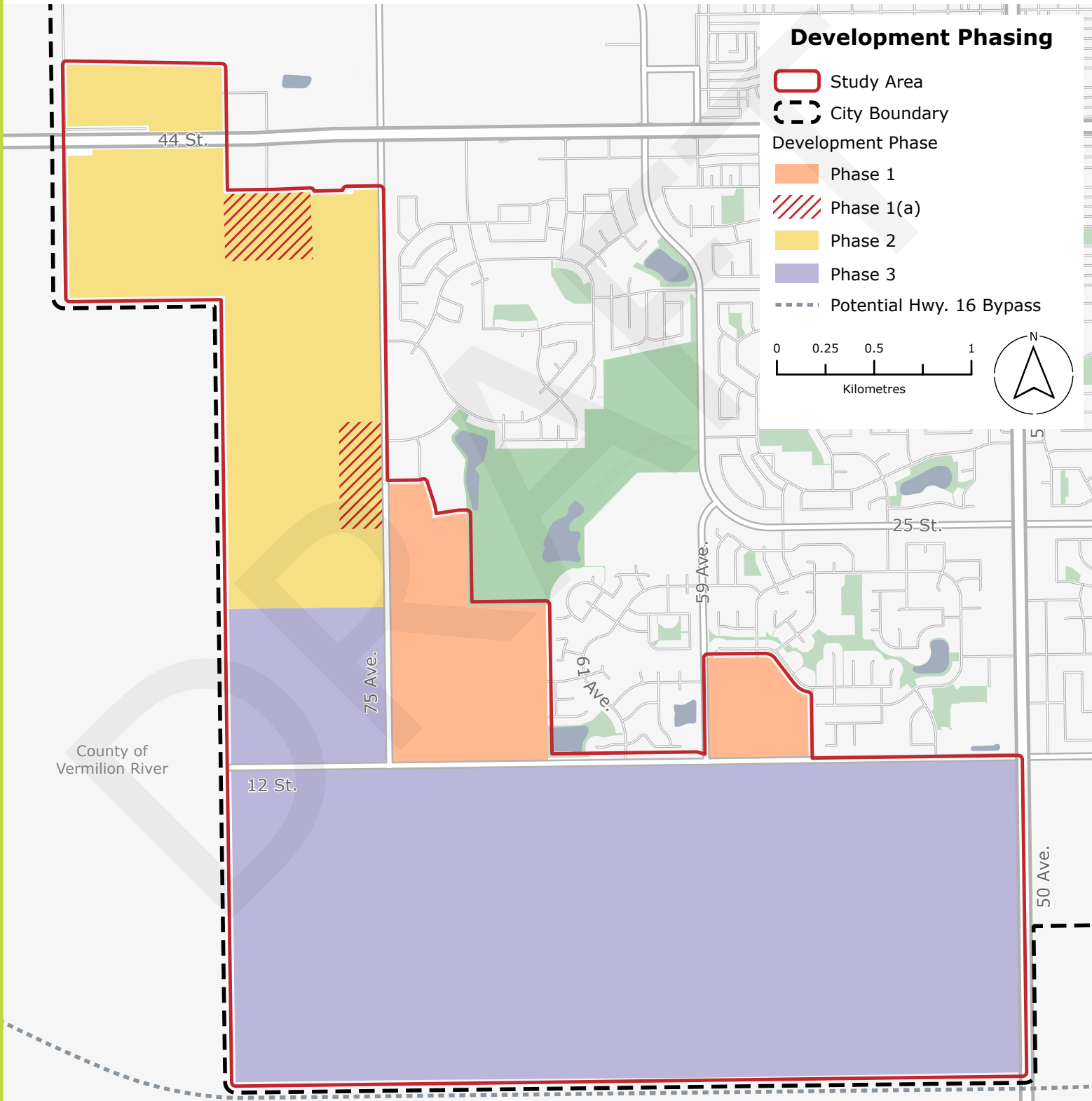
Map 11: Oil and Gas Infrastructure Map



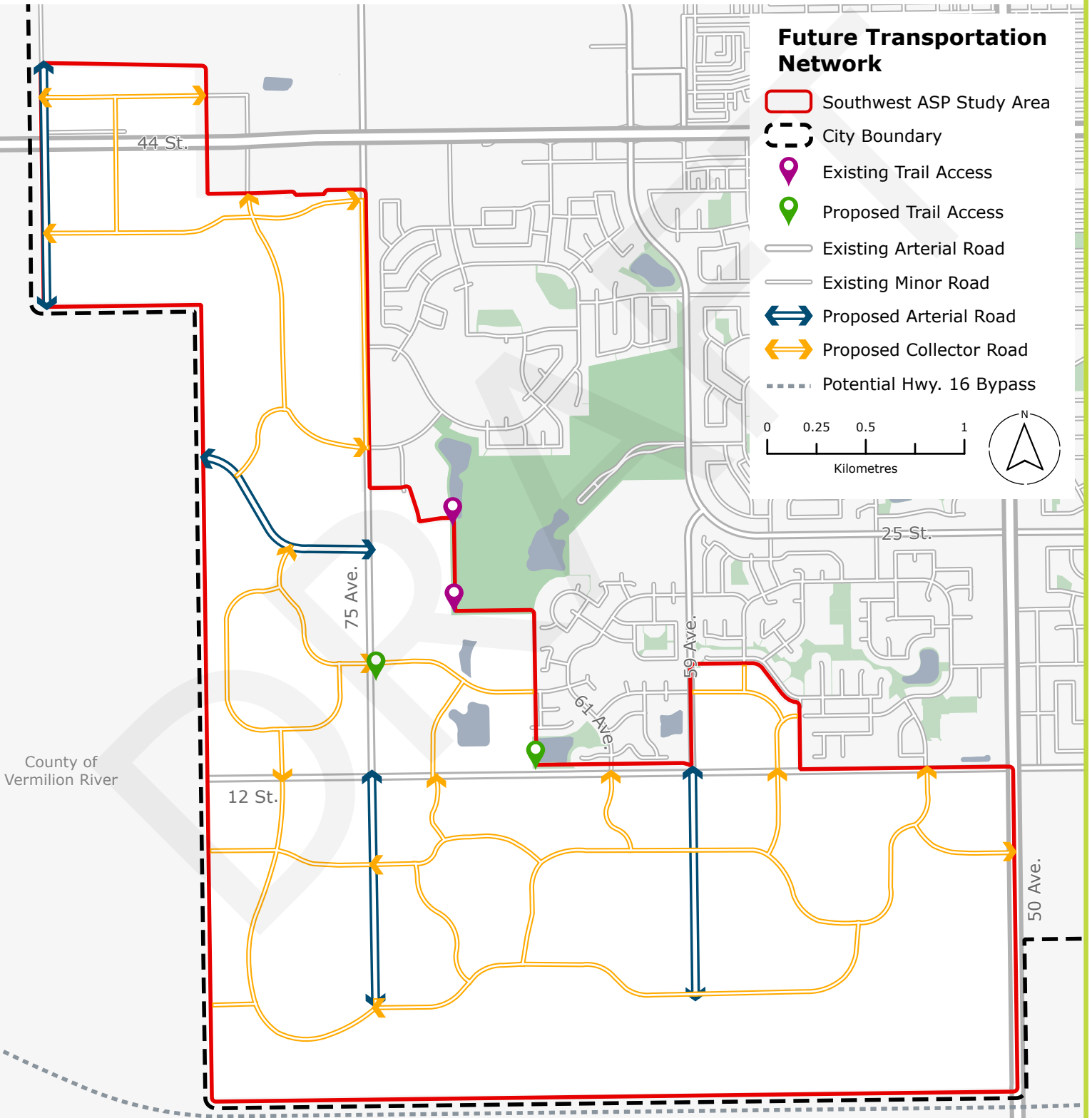
Map 12: Future Land Use Concept



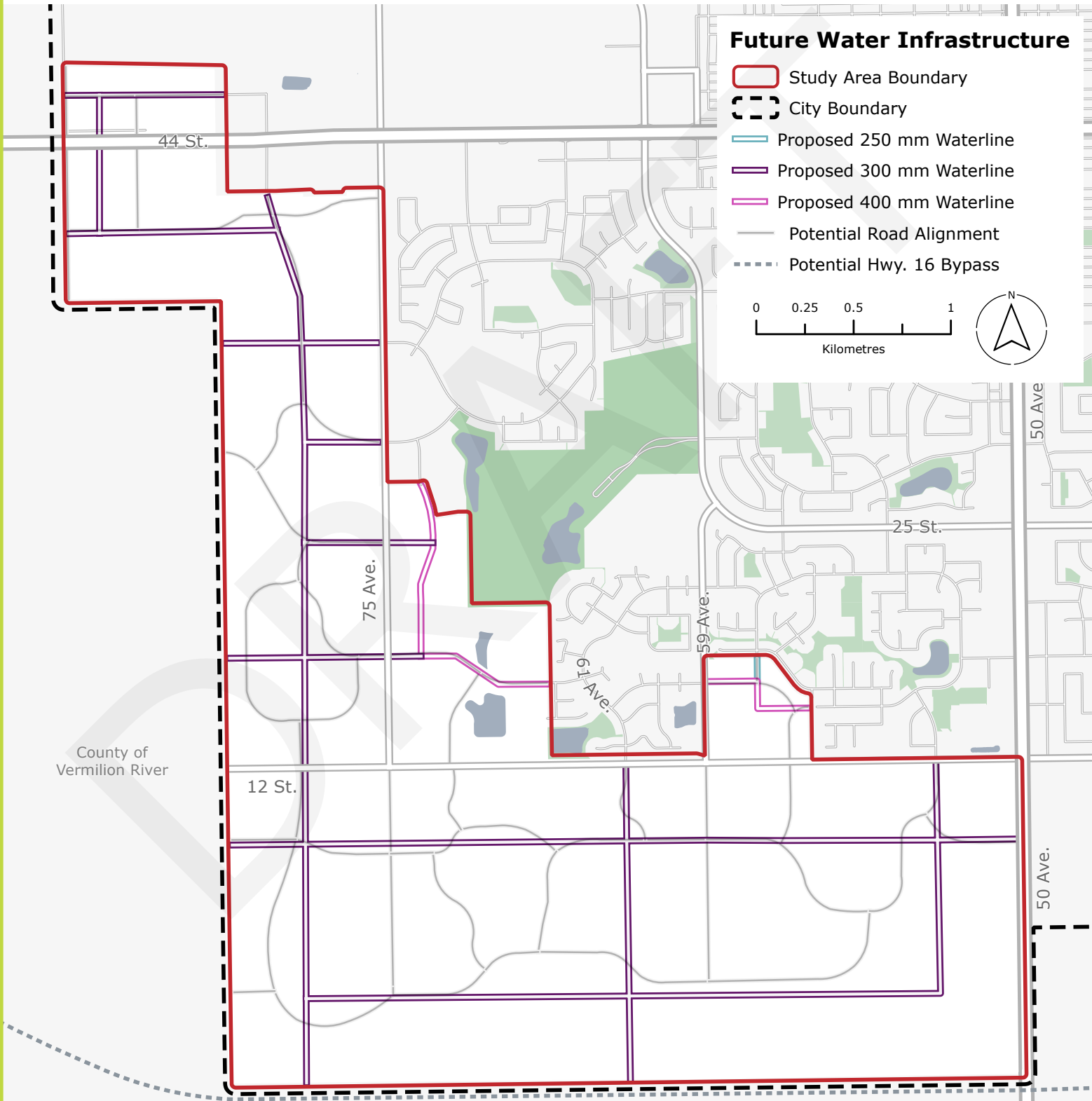
Map 13: Development Phasing



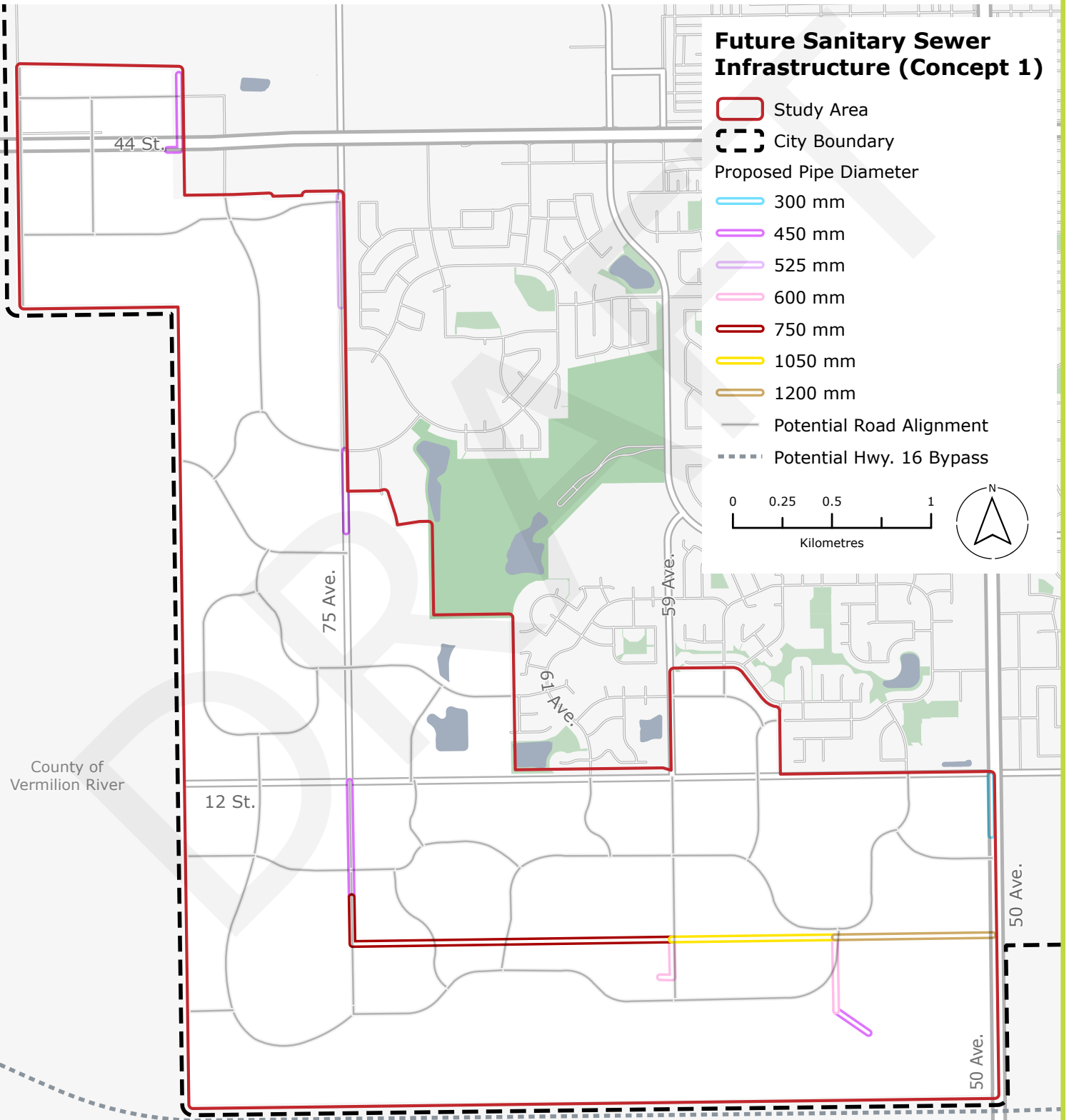
Map 14: Future Transportation Network



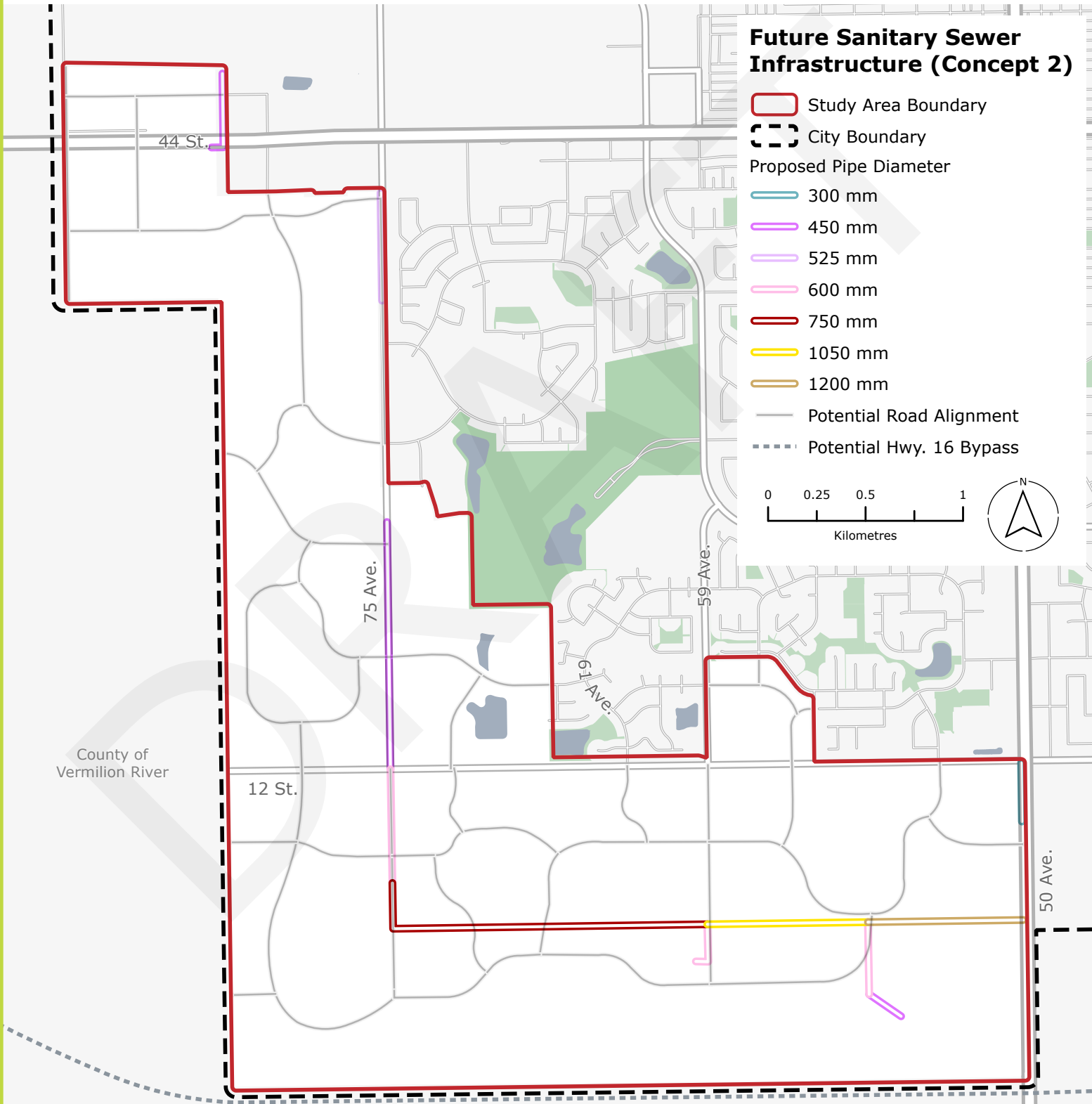
Map 15: Future Water Infrastructure



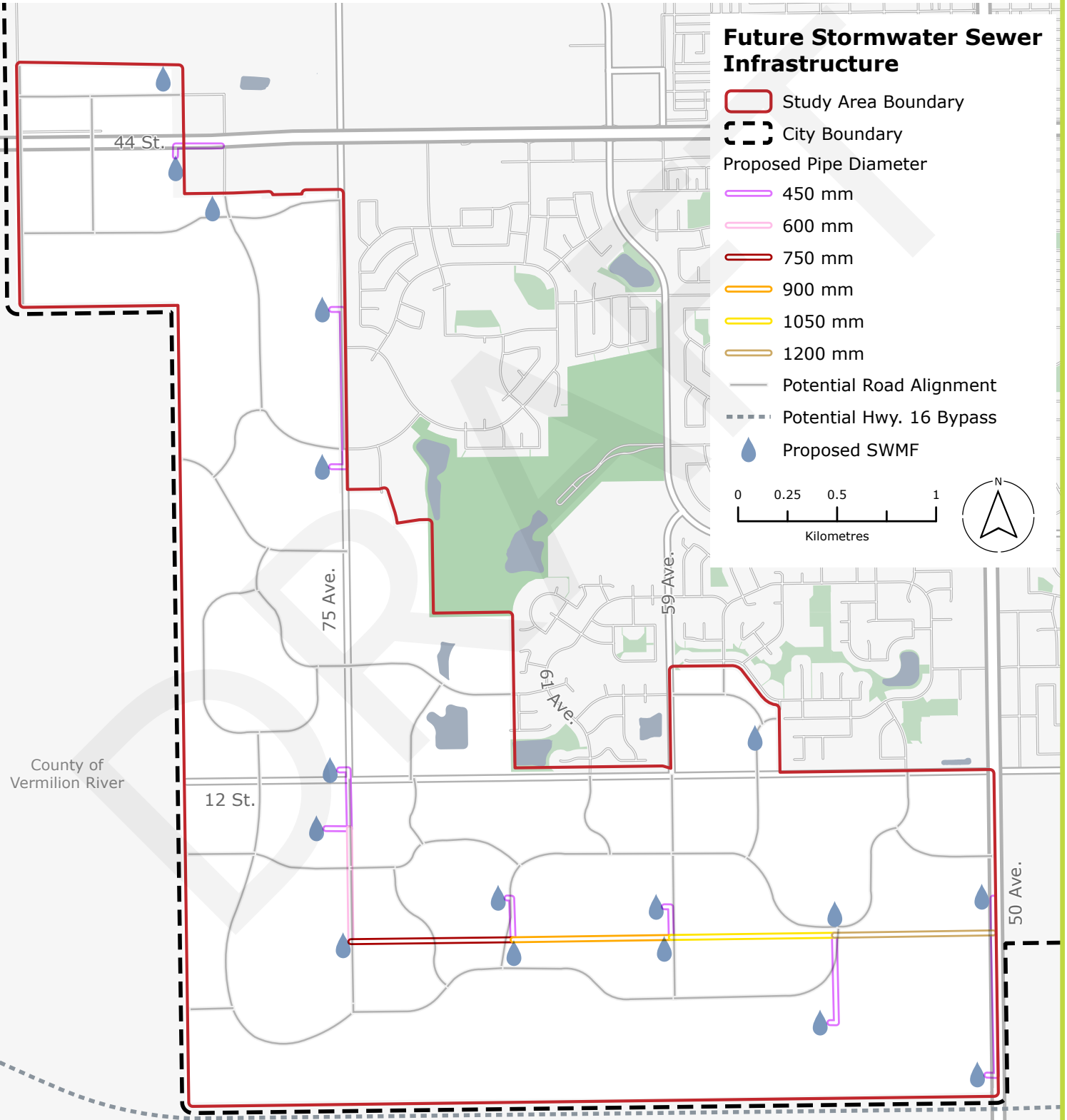
Map 16: Future Sanitary Sewer Infrastructure Concept 1



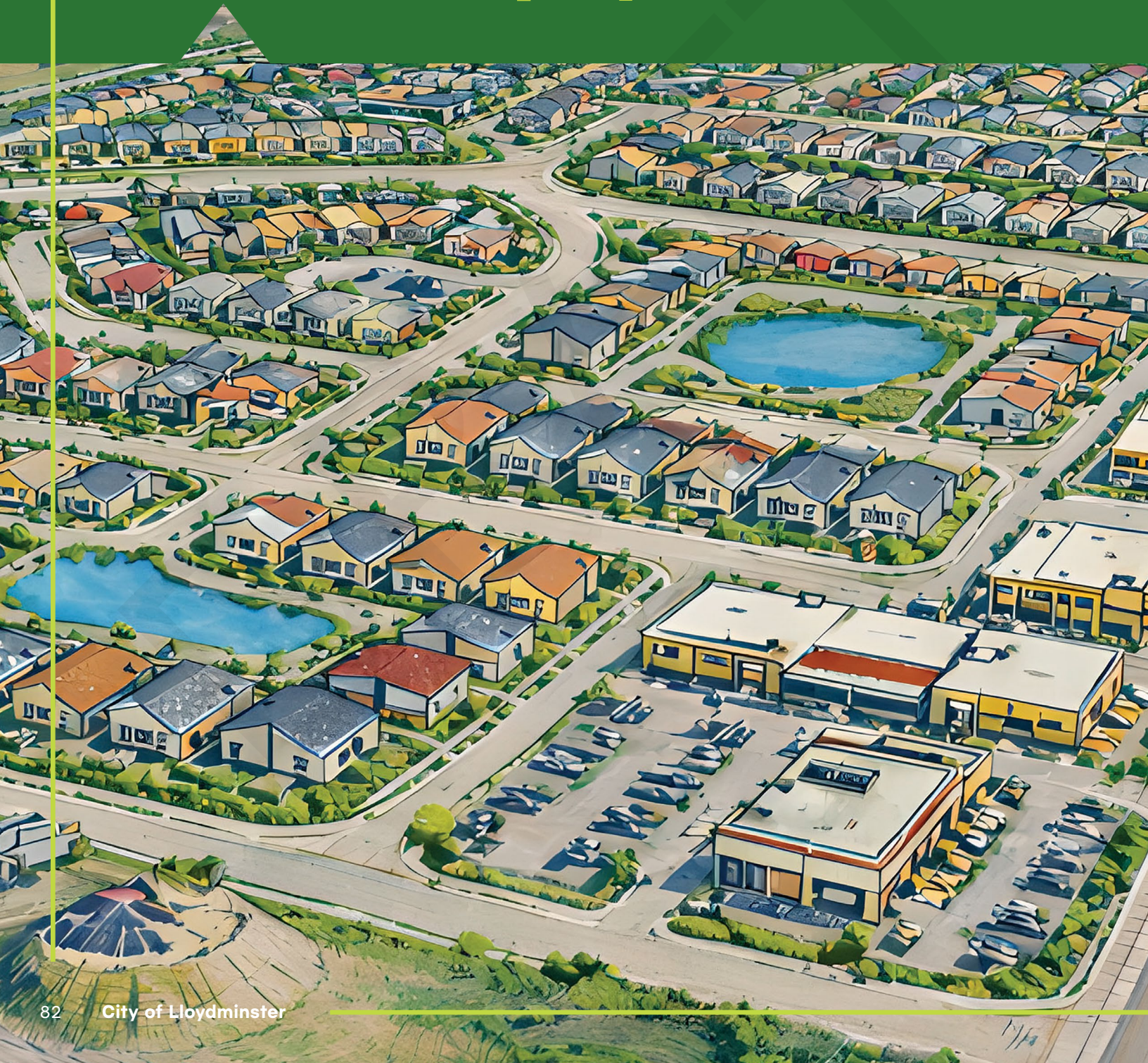
Map 17: Future Sanitary Sewer Infrastructure Concept 2



Map 18: Future Stormwater Sewer Infrastructure



13.1 Appendix 1: Desktop Biophysical





TECHNICAL MEMORANDUM

To: Olivia Lay
Planner, Policy & Development
City of Lloydminster
4420 50 Avenue
Lloydminster, AB T9V 0W2

From: Kirsten Allen
X-Terra Environmental Services Ltd.
100 – 303 Wheeler Place
Saskatoon, SK S7P 0A4

Date: December 11, 2025

Re: **Environmental Desktop Review in support of the Southwest Area Structure Plan**
(X-Terra File No. 25338)

The City of Lloydminster (the City) has contracted X-Terra Environmental Services Ltd. (X-Terra) to perform an Environmental Desktop Review to support their Southwest Area Structure Plan (ASP). The Environmental Assessment completed below consists of an environmental desktop review for the proposed development area in accordance with the Saskatchewan environmental regulations for wetlands and waterbodies, and Alberta regulations for all other environmental considerations. The desktop review and associated services include the following:

- ✓ Wetland and Waterbody Assessment
 - Wetland/watercourse classification using Saskatchewan wetland classification system Stewart & Kantrud, including digitization, provision of shapefiles for client files and map creation.
- ✓ Species and Habitat Review
 - ACIMS and FWMIS database searches for occurrence records of rare and endangered species in the area and similar habitat types in the region (completed once for the entire project area, not by quarter section).
 - Risk assessment for potential species at risk (SAR).
 - Identification of potentially sensitive habitats.
- ✓ Regulatory Planning and Support
 - Identification of potential assessment and regulatory submission requirements & suggested mitigations to reduce environmental impacts (such as timing of construction).
 - Liaising between the City of Lloydminster and various Alberta and Saskatchewan regulatory bodies to assist with outlining regulatory requirements for development within the City of Lloydminster.



1 PROJECT OVERVIEW

The project information for the desktop review was provided by the City of Lloydminster and included project maps and study area boundaries. The Southwest ASP assessment area includes approximately 15.5 quarter sections (1008ha) of land located within the City boundaries on the Alberta side of the border. The locations of the lands being assessed include:

- All of 24-49-01-W4
- All of 23-49-01-W4
- Part of (NE, SE) 22-49-01-W4
- Part of (NE, SE) 27-49-01-W4
- Part of 26-49-01-W4
- Part of (NW, NE, SE) 34-49-01-W4
- Part of 03-50-01-W4

The Southwest ASP study area is located on the southwest side of the City of Lloydminster and consists largely of agricultural cropland and scattered riparian / wetland areas in addition to residential and oil and gas development throughout (see Appendix A: Project Area Map).

2 SCREENING RESULTS

2.1 Wetlands and Watercourses

Desktop screening of the project area using satellite imagery was completed for wetland and watercourses in the study area. While the study area falls within the province of Alberta, the Saskatchewan Water Security Agency Act, 2005, is in full force and effect with the jurisdictional boundaries of the City of Lloydminster. Thus, wetlands within the study area were classified according to the Stewart and Kantrud (1971) Wetland Classification System.

Initial wetland boundaries were collected from the Alberta Merged Wetland Inventory, then compared against available satellite imagery to confirm current wetland extents and to assign classification. In addition to classification, it was noted if the wetland appeared to be recently disturbed (e.g. cultivated) or man-made, what type of dominant vegetation structure was present within the wetland (graminoid, shrub, or treed wetlands), the primary surrounding habitat, and total wetland area.

A map series showing wetland classification and boundaries, as well as a table summarizing the wetlands within the study area is provided in Appendix B: Wetland Map & Results. There were a total of 317 wetlands and 20 watercourses found within the study area. The total area of identified wetland habitat within the project area is approximately 124.6 ha. Note that the total wetland areas include both open water and riparian zones, and were calculated for all wetlands identified fully or partially within the project area, and thus also include some areas falling outside of the study area. No watercourses were included in the total area, as they were all ephemeral / seasonal drainages that show signs of current or previous disturbance (i.e., cultivation) and no clear riparian areas.

2.2 Species at Risk

The desktop assessment for potential Species at Risk (SAR) used queries and species distribution models of Fisheries and Wildlife Management Information System (FWMIS), as well as the Alberta Conservation Information Management System (ACIMS) to capture any sensitive habitats or species in Alberta that may



fall within the project area. In addition, species falling under Schedule 1 of the Species at Risk Act (SARA) as outlined in the Species at Risk Public Registry¹, as well as professional experience in similar habitats, was used to evaluate the potential for Species at Risk (SAR) to be present within the study area. Due to the location of the study area along the Alberta and Saskatchewan border, this Alberta information was supplemented with Saskatchewan data including the results of the Hunting, Angling, and Biodiversity Information of Saskatchewan (HABISask) which includes tracked species data from the Saskatchewan Conservation Data Centre (SCDC²). At the federal level, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC³) evaluates the status of wildlife species and provides advice to the federal government about which species should be protected under SARA. Provincially, the Alberta Wildlife act tracks species that may be at risk within the province of Alberta and the Ministry of Environment and Protected Areas provides guidelines for species conservation.

A search within a 1km buffer of the project area from FWMIS and ACMIS indicated no provincial species of conservation concern. However, a search within a 1km buffer of the project area done on HABISask indicted one Saskatchewan provincial vertebrate species of conservation concern. (see Appendix C: SAR Project Screening Reports). A search with a 5km buffer of the project area indicated three Vascular plant species of concern. These 4 species identified, as well as any additional species of conservation concern that are listed in Schedule 1 of SARA and are protected under the Alberta *Wildlife Act*, were reviewed for habitat and range within the province, and assigned a risk rank for the proposed project based on the location of the project and habitat requirements of the species (see Appendix C: Species At Risk Assessment).

Invertebrate species were excluded from the species-specific risk assessment due to data scarcity. The limited information on species identification, distribution, and habitat requirements for many invertebrate species makes a comprehensive species-by-species analysis infeasible. Instead, the focus on identifying habitats for vertebrate and vascular plant species is expected to provide incidental protection for various invertebrate species within the study area.

2.2.1 Plant SAR and Vegetative Communities

The risk of impacting plant species of conservation concern is anticipated to be negligible to low. The study area is located outside of the species ranges for all of the vascular and non-vascular plant species protected under Schedule 1 of SARA that were identified as potentially occurring within the province of Alberta, thus the risk of impacting these protected species is considered negligible. No tracked plant observations or protected vegetative communities were found within the study area during the desktop review; however, three plant species tracked by the Alberta Ministry of Environment and Protected Areas were previously observed within 5km of the project area. All three species (Nevada Rush (S1); Blunt-leaved watercress (S3); and Lance-leaved loosestrife (S3)) were observed in 2008 approximately 1.7 km to 3.3 km west of the study area, within remnant undisturbed wetlands or wet meadows in tame pasture. These species are typically found in wet areas near marshes or on lake shores and wet meadows. Although the majority of the study area is currently under cultivation, there is a relatively small area of suitable remnant wetland habitat within the study area.

Thus, while there is a chance that these plant species of conservation concern could be present in the study area, the risk is considered low as these are Non-Sensitive Element Occurrences, they were not previously identified within the study area, and they are not a protected species under the Alberta Wildlife Act or

¹ Government of Canada. 2022. Species at Risk Public Registry. Environment and Natural Resources: Wildlife, Plants and Species; Species at Risk. URL: <https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html>

² Saskatchewan Conservation Data Center. 2022. URL: <http://biodiversity.sk.ca/>

³ Committee on the Status of Endangered Wildlife in Canada. 2021. URL: <https://www.cosewic.ca/index.php/en-ca/>



Schedule 1 of SARA. Given the above, and that the study area is entirely within private land, no rare plant surveys are required for the study area.

The vegetative communities identified in the study area are limited to primarily agricultural species associated with cultivation, hay land, and tame pasture, with remnant patches of wetland habitat present throughout the study area. These remnant native patches are primarily associated with larger wetlands, their riparian areas, as well as adjacent native open deciduous or grassland habitats that have escaped cultivation. Potential impacts of the project on vegetative communities include direct and indirect habitat disturbance, habitat loss, and the introduction/spread of invasive or exotic species. The residual effects of the proposed project on the vegetative communities are anticipated to be relatively low, due to the primarily disturbed habitats within the study area, and the presence of similar remnant native habitats surrounding the project area.

2.2.2 Fish and Fish Habitat

The impact to fish species is anticipated to be negligible. Although there are larger wetlands located within the study area, the only known fish bearing waterbody is found outside the project boundary and is seasonally stocked. The fish observations noted on the FWMIS report are all associated with the Bud Miller Park Pond to the east of the study area in the NE-26-49-01-W4, which is a stocked pond with Rainbow Trout. Assessments on Bud Miller Park Pond also found River Shiner within the stocked pond and the connected canal. The desktop assessment identified no connectivity between the Bud Miller Park Pond and any wetlands or watercourses within the study area, or with any other known fish bearing waterbodies or watercourses. Thus, no impacts to fish or fish habitat are anticipated within the study area, and no Fisheries and Oceans (DFO) applications are required.

2.2.3 Wildlife SAR and Wildlife Habitat

The risk of impacting wildlife species of conservation concern is anticipated to be negligible to moderate. The project area consists primarily of agricultural cropland (cultivation), with small areas of open canopy deciduous woodlands, riparian zones and varying degrees of wetlands scattered throughout. Multiple open water wetlands with intact riparian zones were identified within the proposed project area which may provide habitat for breeding birds or wildlife species. Aerial imagery also indicates the potential presence of tame pasture and hay land in some quarters, which can serve as moderate to low quality habitat for some species. However, the majority of the provincially or federally protected species do not occur within the area of the province that the study area falls within and thus, were ranked as negligible risk.

Two amphibian species have the potential to be present within the study area; however, the study area is located outside the “Sensitive Amphibian Range” where surveys are required, and few intact wetlands suitable for breeding remain within the study area. Thus, the risk for these amphibian species is anticipated to be low.

The highest risk for impact to wildlife in the study area is to bird species, primarily consisting of migratory birds also protected under *The Migratory Bird Convention Act* with the risk associated with impacts to breeding and nesting disturbances, including several species protected both federally and provincially. The study area falls within a single species survey range “Sharp-Tailed Grouse Survey Area”, and while much of the study area has been cultivated, patches of suitable lekking habitat remains in the area. The risk of this species being present is moderate; however, following completion of the survey, and application of any required mitigations should a lek be identified, the risk is anticipated to be reduced. While the remainder of the bird species with overlapping ranges were not previously identified in the study area, there is likely to be suitable breeding / nesting habitat present in the remnant patches within the study area and thus the



risk to these species were identified as low to moderate (depending on the likelihood of nesting habitat being present).

Risks to mammal species are anticipated to be minimal, with the majority of the protected species occurring outside of the study area. However, four species have the potential to be present within the study area. American Badger prefer native grassland and other open habitats, but may be present in agricultural settings, particularly along meadow edges and in tame pasture, and thus have a moderate risk to occur in the study area. Three bat species also have ranges that overlap with the study area, one of which was previously observed within Lloydminster immediately north of the study area. While there is the potential for any of the three bat species to be present, the lack of suitable roosting and hibernacula sites in the study area reduces the risk to these species to low.

For migratory bird species, general mitigations include planning initial site preparation (vegetation clearing and topsoil stripping) within suitable breeding and nesting habitat outside the peak breeding season, between April 15 to September 1, if possible⁴. If site preparation activities are completed within the migratory bird breeding window, a wildlife sweep should be completed within suitable nesting habitat no more than 10 days prior to the start of these construction activities. If an active nest is identified within the project area or species-specific setbacks, project activities should be stopped, and site-specific mitigations developed. Mitigations to avoid contravening the Migratory Bird Convention Act will be dependent on the species and individuals observed but could include setting proscribed setbacks from the nest for all construction activities until nesting is complete or having an environmental monitor on site monitoring the nest and parental behaviors. Monitoring of the nest generally allows work to proceed as close as possible without negatively impacting nesting success, since it allows for adjusting setbacks based on individual nest requirements and immediate intervention should the nests or nesting individuals appear to be impacted.

The wildlife sweeps will also be applicable for identifying the other potentially occurring SAR, to identify the presence of SAR as well as locate active breeding ponds, dens, nests, or roosts. The Alberta Wildlife Sweep Protocols direct their completion prior to “activity resulting in land or vegetation disturbance where there is risk of wildlife features being disturbed or destroyed”. Should any SAR be identified, the appropriate agencies will need to be informed, and any restricted activity period (RAP) setbacks be applied or approvals to proceed within setbacks be obtained.

Overall, the risk of encountering Species at Risk in the project area is low, however, with the study area being primarily within low quality wildlife habitat, the completion of Sharp-tailed grouse surveys, and the completion of wildlife sweeps during migratory bird breeding windows, the risk of residual impacts is anticipated to be negligible.

The habitat types and vegetative communities identified in the project area are consistent with the habitats present outside of the project footprint and is suitable for wildlife species use. Potential impacts of the project on vegetative communities and wildlife habitat include direct and indirect habitat disturbance, habitat loss, and the introduction/spread of invasive or exotic species. The residual effects of the proposed project on the vegetative communities and wildlife habitat are anticipated to be relatively low, due to the location of the project immediately adjacent to existing development, and the presence of similar habitats surrounding the project area.

⁴ Environmental and Climate Change Canada (ECCC). 2018. Migratory Birds: General nesting periods of migratory birds in Canada. URL: <https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/general-nesting-periods/nesting-periods.html>



3 MITIGATIONS AND RECOMMENDATIONS

Based on the results of the desktop screening several recommendations can be made to mitigate potential impacts to the land, vegetation and wildlife in the project area. These recommendations are summarized below.

Note that should development not proceed within 12 months of the completion of this desktop assessment, it is considered good practice to complete an Environmental Desktop Review update to identify any new sensitive features, regulatory changes, or newly recorded species at risk within the study area. This update should be paired with a field assessment within the year prior to development to obtain current, site-specific information on environmental conditions and features. Based on the newest information, the recommendations below should be updated as required for the site-specific conditions.

Wetlands and Watercourses

- During development planning, engineering design should include surface water drainage modelling, and it is recommended that design should aim to prevent impacts to adjacent undisturbed wetlands or watercourses, and avoid changes to surface water drainage outside of the City limits.
 - Municipal and Provincial Jurisdiction:

The City of Lloydminster holds jurisdiction over lands within its municipal boundary, and the Water Security Agency (WSA) does not require drainage approvals for typical wetland disturbance during development or stormwater management activities within City limits, provided the water is not being diverted from the point at which it would naturally drain.

 - As defined in *The Environmental Management and Protection Act, 2010* (EMPA, s. 38(6)), the requirement for a WSA permit to alter a water body does not apply to features located wholly within the development boundary provided the feature has no surface outflow to land outside of the boundary.
 - Off-Site Flow Requirements - Any water leaving the boundary of the municipality must not exceed the natural flow rate that existed pre-development.
 - Off-Site Permitting - Activities that cause changes to water drainage or retention outside the municipal boundaries may require an approval or permit from the applicable provincial regulatory body (in Saskatchewan, the WSA under *The Water Security Agency Act, 2005*; in Alberta, under the *Water Act*).
 - During the design phase, the potential impacts of development should be reviewed to determine if there are required provincial permits for off-site (outside City limits) alterations to wetlands, watercourses, and water drainage. Should any impacts to surface water outside of the City limits be identified, it is recommended that a qualified environmental professional be retained to prepare and submit the required applications for disturbance off-site.
- During development planning, it is recommended that the design incorporates the large, undisturbed Class V wetlands to maintain them in as undisturbed state as possible. It is also recommended that efforts be made to incorporate the undisturbed Class IV wetlands, and undisturbed Class III wetlands where possible. The highest priority for retention and protection should be given to large Class V and IV wetlands due to their significant hydrological and ecological functions. This could include as part of stormwater management, green infrastructure, or urban parks.



- While development of wetlands within the City of Lloydminster falls under their own municipal jurisdiction under Saskatchewan legislation, Saskatchewan currently lacks a comprehensive singular wetland conservation policy. The importance of wetland conservation is well known both federally and provincially so in the absence of an applicable municipal or provincial wetland policy, it is recommended that development incorporate wetland conservation best practices where possible. The following provides background on prioritizing wetlands for conservation and incorporation into development planning:
 - Wetlands provide important ecological and socio-economic functions^{5,6}. Ecological functions include those such as natural purification for freshwater, natural flood control, and habitat for rare species and biodiversity; while socio-economic functions include tourism and recreation, fishing resources, and increased soil health for agricultural activities.
 - A common wetland conservation goal across Canada includes “No Net Loss”, where the aim is to retain wetland function in a landscape. Loss of wetland function can include both the removal of wetland areas as well as loss of function through wetland degradation.
 - Wetlands that remain undisturbed across a highly modified agricultural landscape such as the study area are often due to physical and topographic constraints where there would be high conversion costs without resulting agricultural yield increases, such as wetland permanence (deep and large, or interconnected with near surface water tables), the presence of poor or marginal soils, or impractical access such as steep slopes. Thus, many remaining undisturbed wetlands in agricultural landscapes are often large permanent wetlands, or systems of interconnected smaller wetlands, that maintain the majority of a regions wetland functions.
 - In the current study area, much of the wetlands and watercourses have been previously disturbed to such an extent that their wetland function is reduced to primarily that of temporary water retention and maintaining surface water flow (~51 ha of wetlands has been cultivated out of a total 138ha, or 70% of the identified wetlands and watercourses).
 - The prioritization of wetlands for conservation can be tied to their wetland functions. These functions are fundamentally linked to wetland permanence and vegetation structure, where the longer the water remains on the landscape the more complex and diverse the functions typically become.
 - Thus, prioritizing the conservation of permanent (Class V) wetlands that remain on the landscape, as well as larger semi-permanent (Class IV) wetlands, particularly those that remain relatively undisturbed, will assist towards a “No Net Loss” conservation strategy due to their relatively high contribution to the study areas wetland function. Additional to their primary wetland functions, preserved wetlands may also provide direct value to the municipality, such as via increased property values near wetland features (aesthetics / “green” appeal), reduced long-

⁵ Environmental and Climate Change Canada (ECCC). 1991. The Federal Policy on Wetland Conservation. URL: <https://www.canada.ca/en/environment-climate-change/services/wildlife-habitat/federal-policy-on-wetland-conservation.html>

⁶ Water Security Agency (WSA). 2016. Saskatchewan’s Agricultural Water Stewardship Policy. URL: <https://wsask.ca/ag-water-management/agriculture-water-stewardship-policy/>



term maintenance costs as compared to conventional stormwater ponds, and providing cost-effective passive flood control.

- The following are suggested mitigations that are recommended for implementation during construction to minimize the impacts of development on wetlands:
 - erosion prevention and control measures (seeding, environmental matting, hydro-mulch, silt fencing, geo-ridges) as required;
 - drip trays and containment under mechanical equipment when working near wetlands, and a spill prevention and containment plan;
 - all cleaning, fueling, and servicing of equipment should be done in an area where spill or wash water will not enter wetlands;
 - equipment operating near wetlands should be properly maintained and in sound mechanical condition;
 - work within wetland boundaries should be completed under frozen/stable ground conditions, which will reduce impacts to adjacent undisturbed wetland areas;
 - in the event that frozen or stable ground conditions do not exist, matting and/or snow fill, or other mitigations for standing water, should be applied as applicable;
 - natural vegetation recovery should be used in disturbed areas surrounding wetlands and watercourses, if they are not going to be developed.

Plant SAR and Vegetative Communities

- No rare plant surveys are required based on the current findings of the desktop review.
- During the Environmental Desktop Review update or in-field assessment, should any new Sensitive Element Occurrences be present within the study area, contact the area Biologist (see AEP Wildlife Management Unit Biologists) to determine if species surveys are required.
- Efforts to prevent the spread of noxious species are recommended, such as avoiding disturbance of existing weed patches if possible, and cleaning vehicles and inspecting for weeds prior to accessing the site. If prohibited or noxious weeds are found within the project area, immediate measures should be taken to eradicate or control (respectively) those species under the *Alberta Weed Control Act*.

Fish and Fish Habitat

- As no fish-bearing waterbodies or watercourses were identified within the study area during the desktop review, no mitigations are recommended at this time, beyond the required erosion and sediment control measures recommended for construction areas adjacent to water features.
- To meet the requirements of the *Fisheries Act*, during development planning, should any wetlands be determined to be fish bearing, the DFO Measures to Protect Fish and Fish Habitat must be reviewed in relation to the proposed development activities to determine if a DFO Request for Review (RFR) is required for the work, and the appropriate application (or notification) submitted, as required. It is recommended that a qualified environmental professional be retained to prepare and submit the required applications to DFO.

Wildlife SAR and Wildlife Habitat

- Due to the location of the study area within the “Sharp-Tailed Grouse Survey Area”, a Sharp-Tailed Grouse Survey following the Alberta Sensitive Species Inventory Guidelines protocol is required. The survey protocols require two to three survey visits between mid-March to mid-May in the year prior to development.



- The final survey area and current habitats present at the time of the assessment will be determined by the environmental professional who completes the survey. These habitats requiring surveys include remaining native habitats (treed, shrub, grassland), as well as tame pasture and hayland.
- A Wildlife Sweep should be conducted within 10 days of construction activities starting within areas with remnant native habitats and suitable nesting / breeding habitats, following the Alberta Wildlife Sweep Protocols. All remaining native habitats (treed, shrub, grassland), riparian areas (undisturbed wetlands), as well as tame pasture and hayland should be part of the sweep.
- If initial site preparation activities (vegetation clearing and topsoil stripping) are completed within the migratory bird breeding window (April 15 to September 1) within suitable nesting habitat, a wildlife sweep must be completed within suitable nesting habitat no more than 10 days prior to construction to meet the requirements of the *Migratory Birds Convention Act* (MBCA).
 - If an active migratory bird nest or a species at risk is identified within the project area or species-specific setbacks, project activities should be stopped, and site-specific mitigations developed.
 - Should construction crews identify active nests once initial site preparation activities are completed and construction is ongoing, project activities in the immediate area of the nest (recommended minimum 100m setback) should be stopped, and site-specific mitigations developed with the assistance of an environmental specialist / biologist.

4 SUMMARY

The Southwest Area Structure Plan study area contains several large, undisturbed wetlands and has the potential to support species at risk (SARA-listed) and migratory birds (*Migratory Birds Convention Act*). Consequently, the highest environmental risk associated with the project is the alteration and removal of these remaining wetlands from the landscape. While the study area is primarily disturbed agricultural land, the risk of negative impacts to wildlife habitats or sensitive species remains high without proper intervention. Therefore, the implementation of the mitigations outlined in this document—including required Sharp-Tailed Grouse Surveys, pre-construction wildlife sweeps, and species-specific setbacks—is anticipated to effectively manage and minimize environmental risk during future development planning and construction phases.

Regards,
X-Terra Environmental Services Ltd.

Kirsten Allen, M.Sc., P.Biol.
Biologist / Manager Environmental Assessment

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1 Electronic Copy – Olivia Lay, City of Lloydminster



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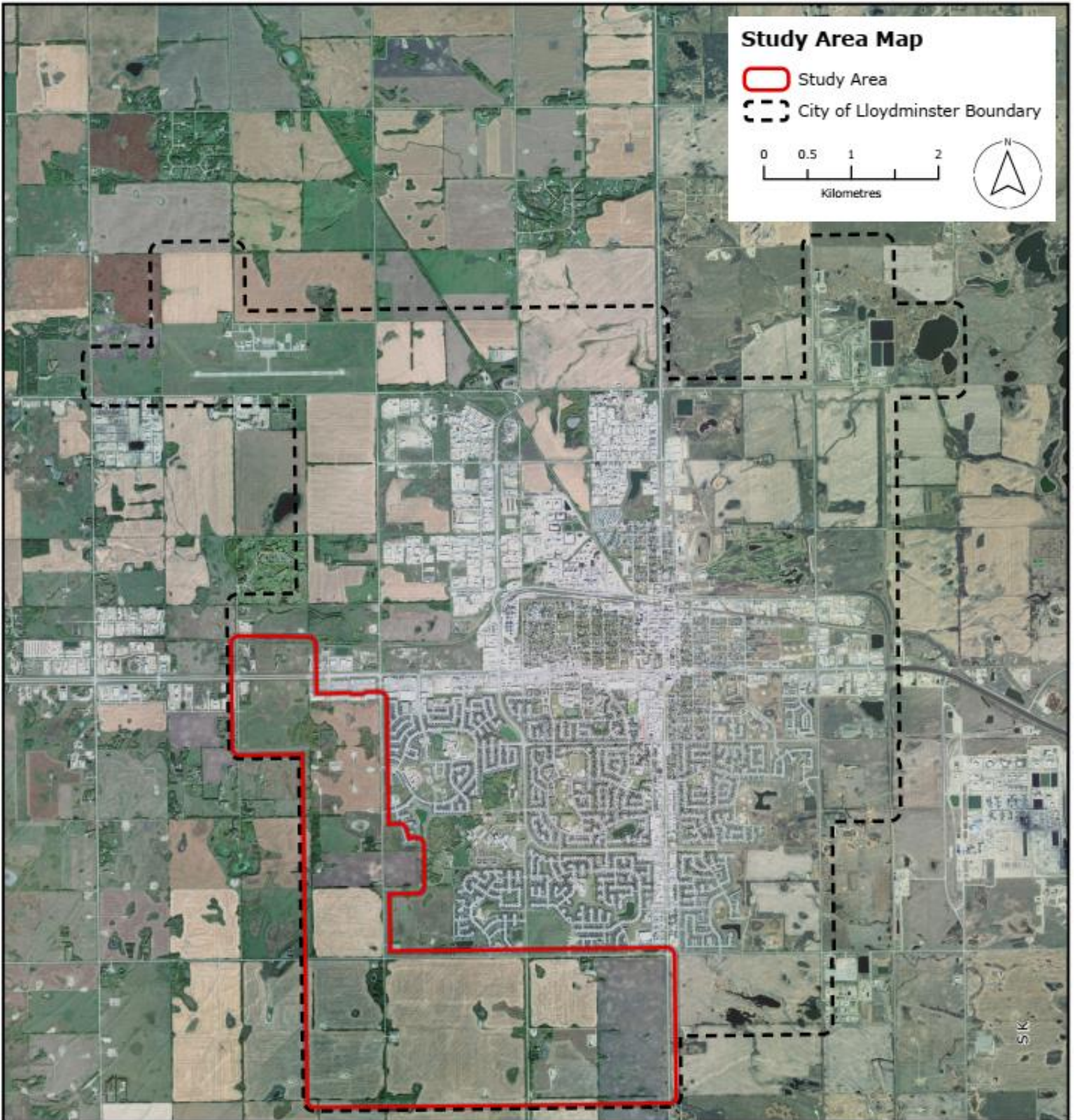
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APPENDIX A: PROJECT AREA MAP

SCHEDULE "C"

STUDY AREA MAP



Initial

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Consultant City

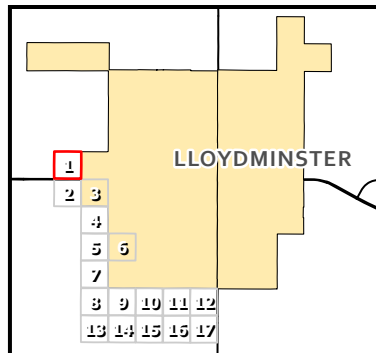


APPENDIX B: WETLAND MAP & RESULTS



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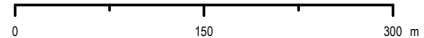
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- WATERCOURSE
- CLASS I
- CLASS II
- CLASS III
- CLASS IV
- CLASS V
- EPHEMERAL



PROJECT: SW ASP REVIEW

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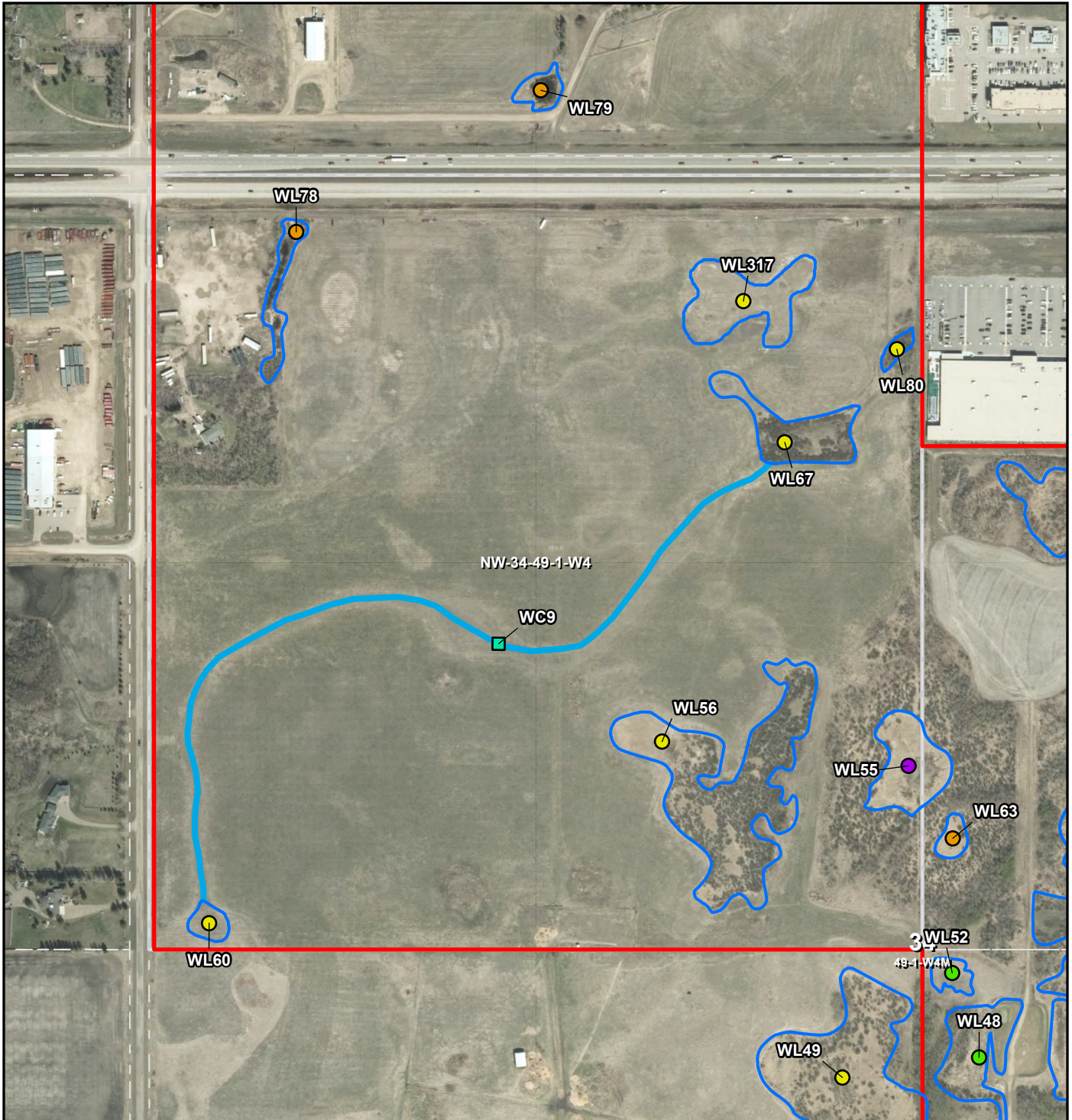
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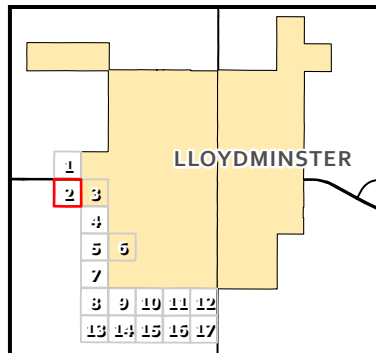
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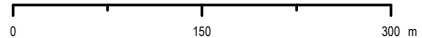
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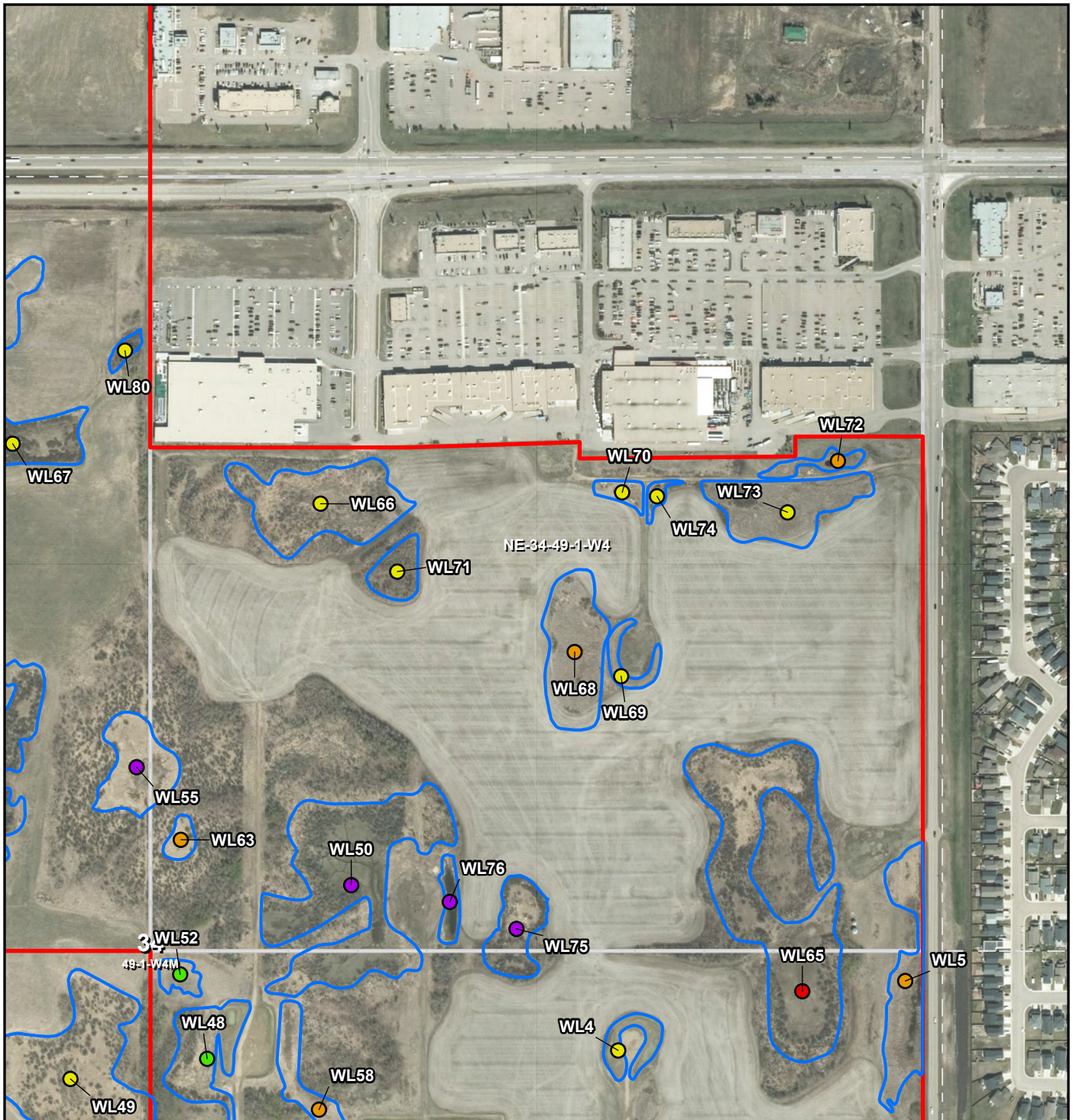
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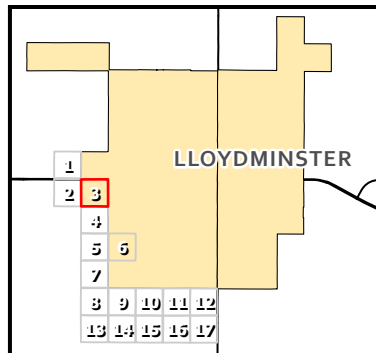
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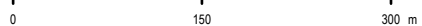
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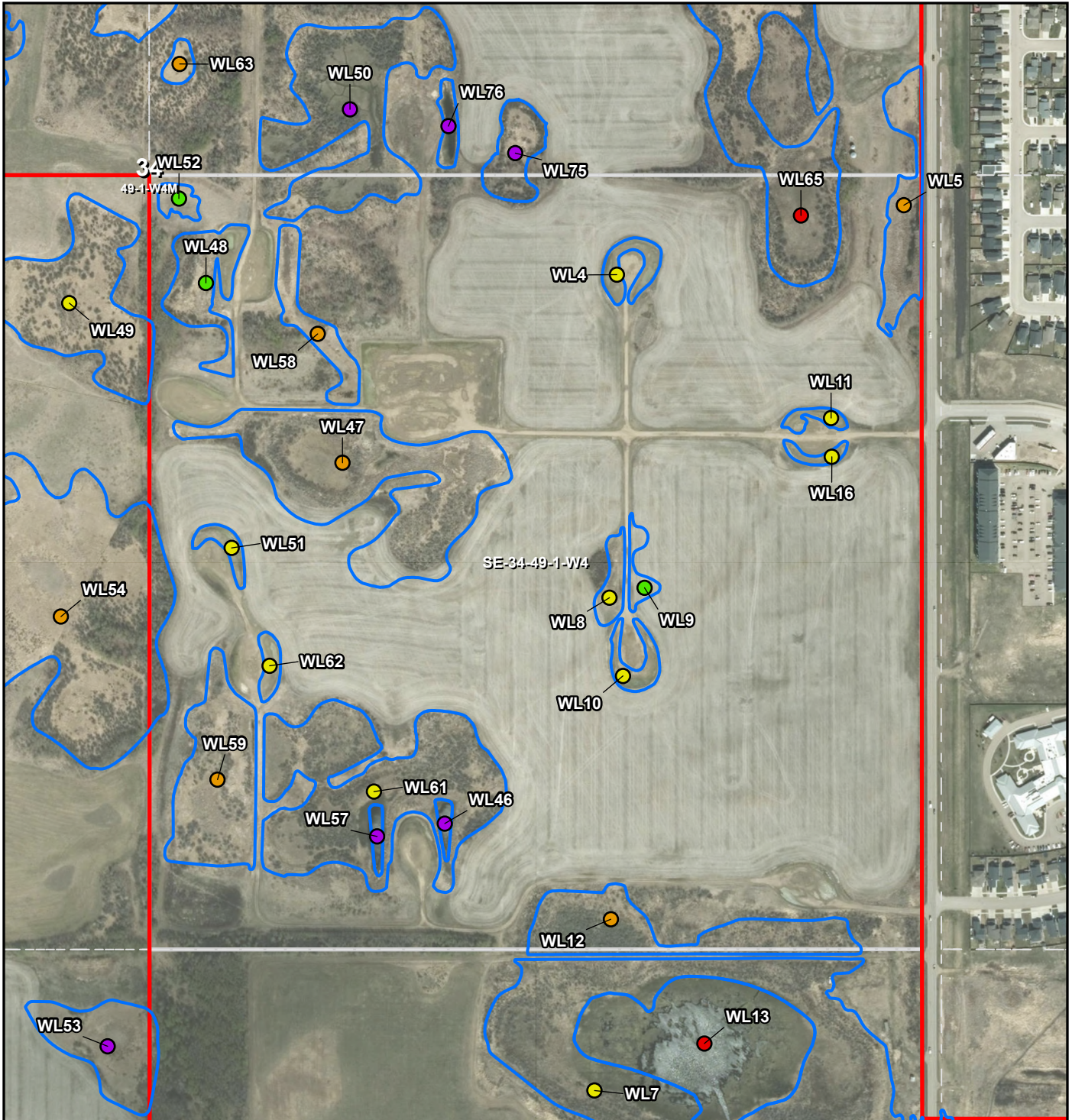
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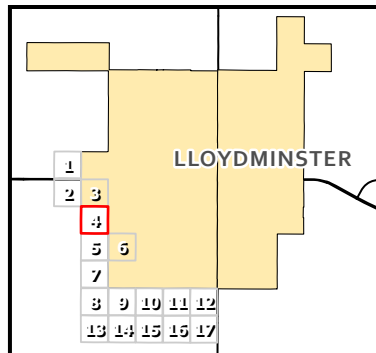
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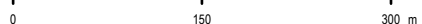
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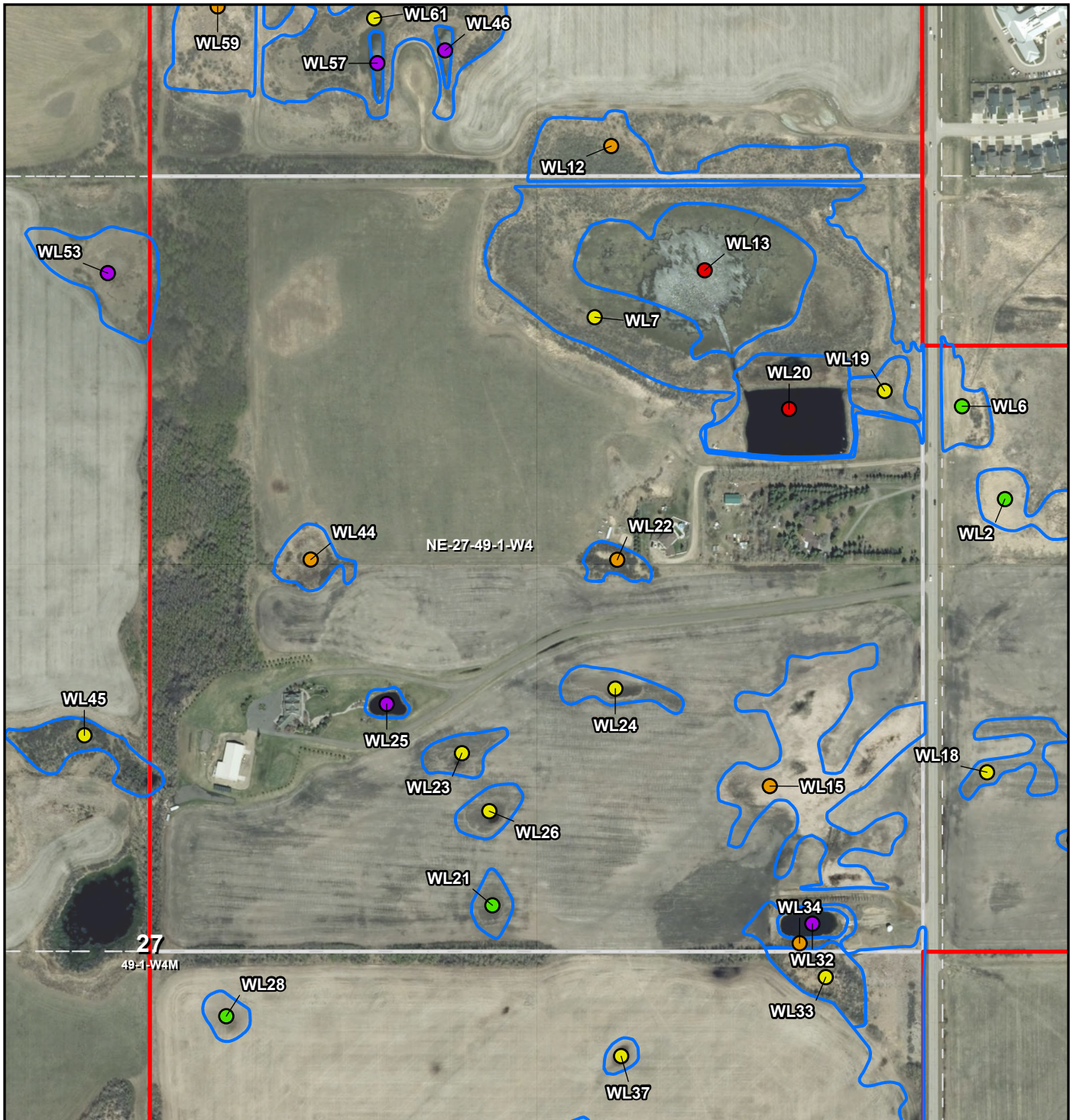
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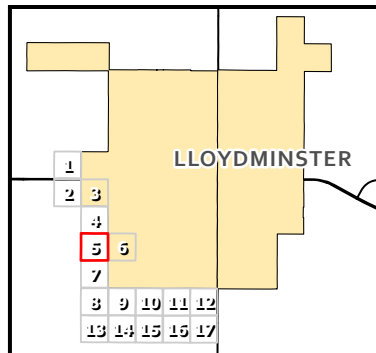
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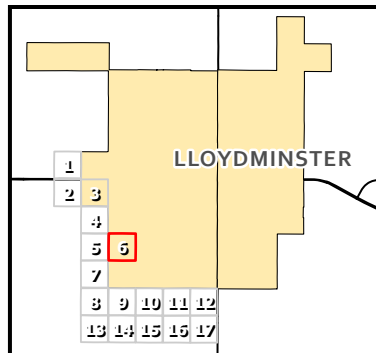
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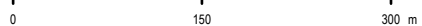
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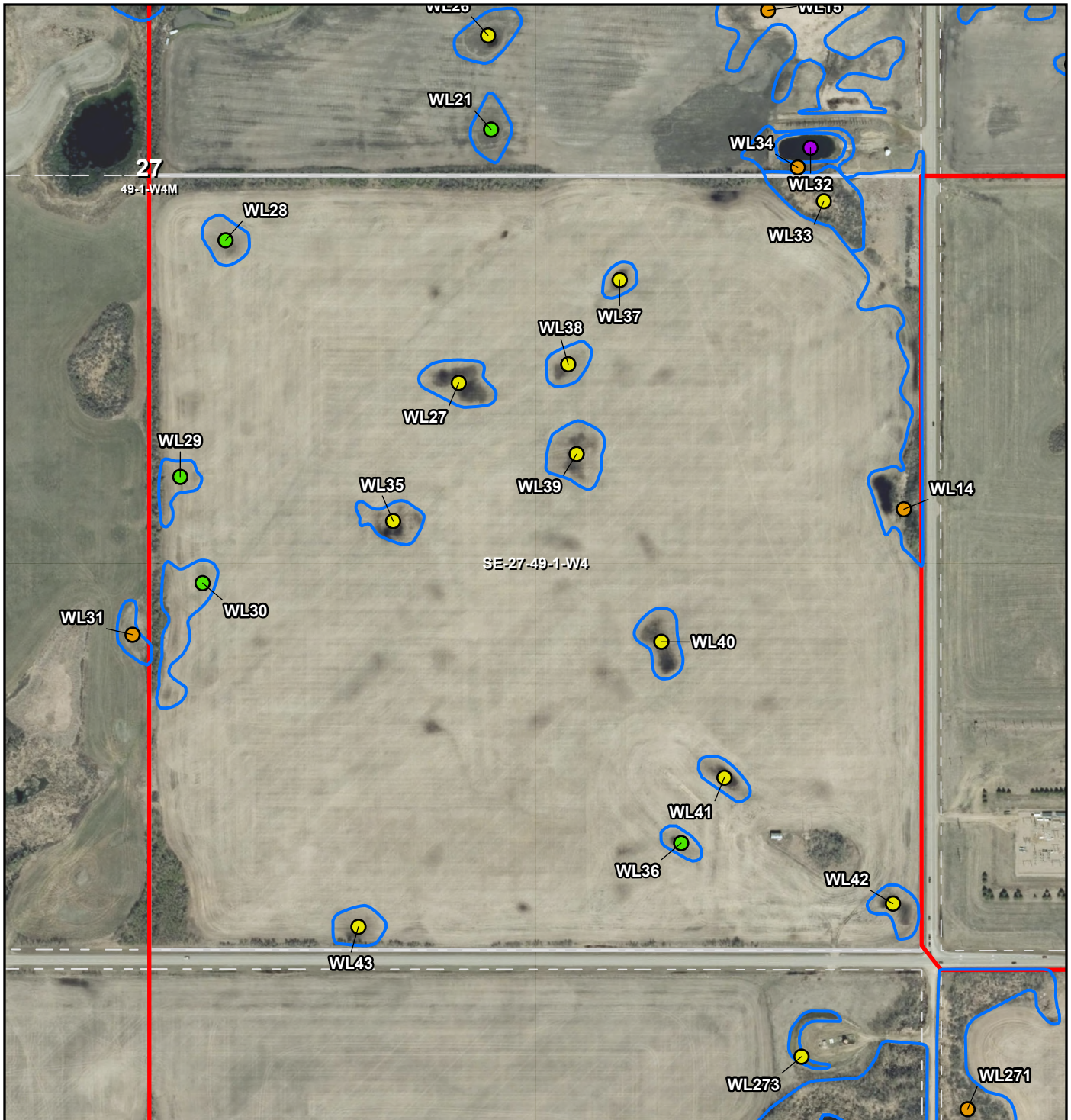
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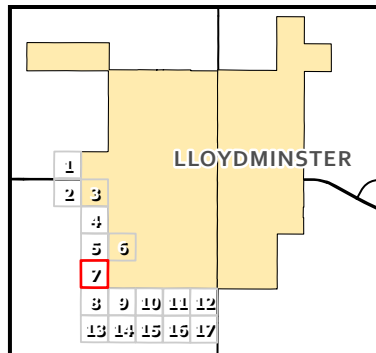
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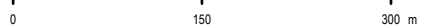
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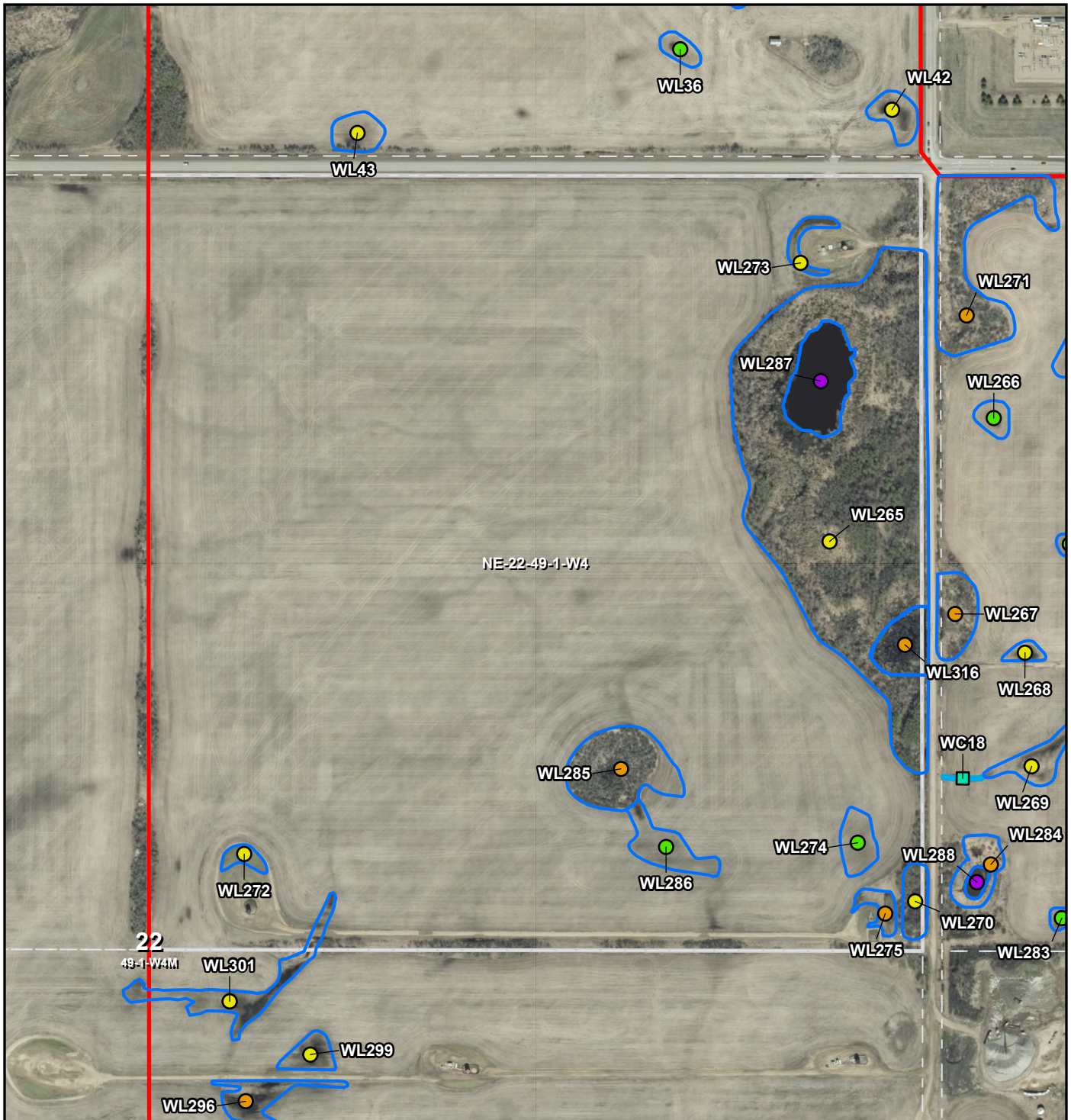
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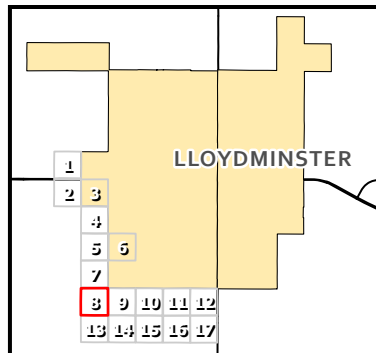
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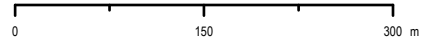
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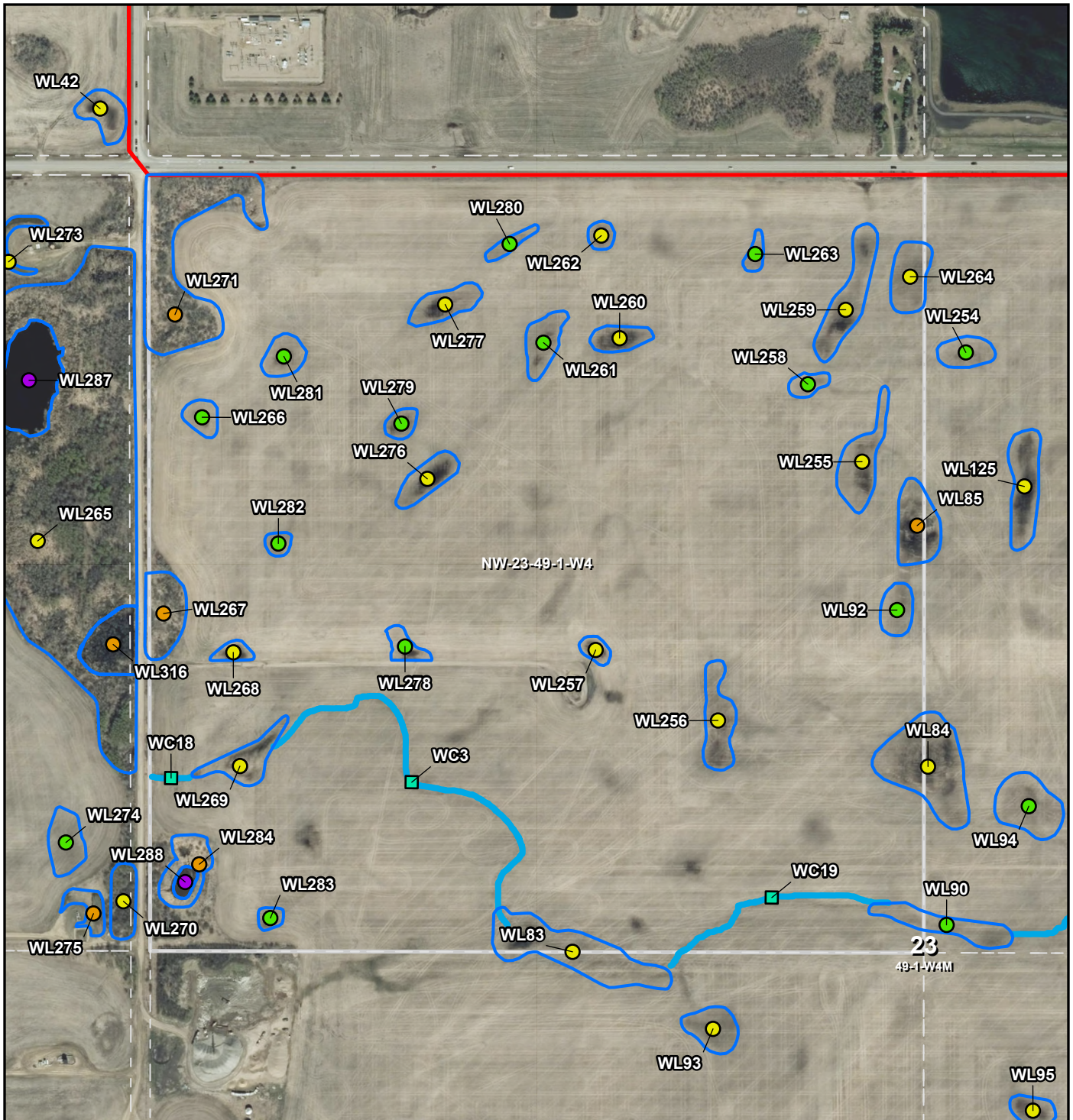
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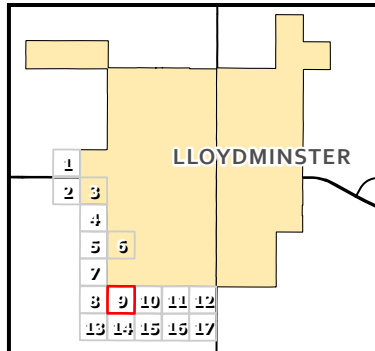
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8 of 17



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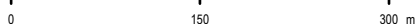
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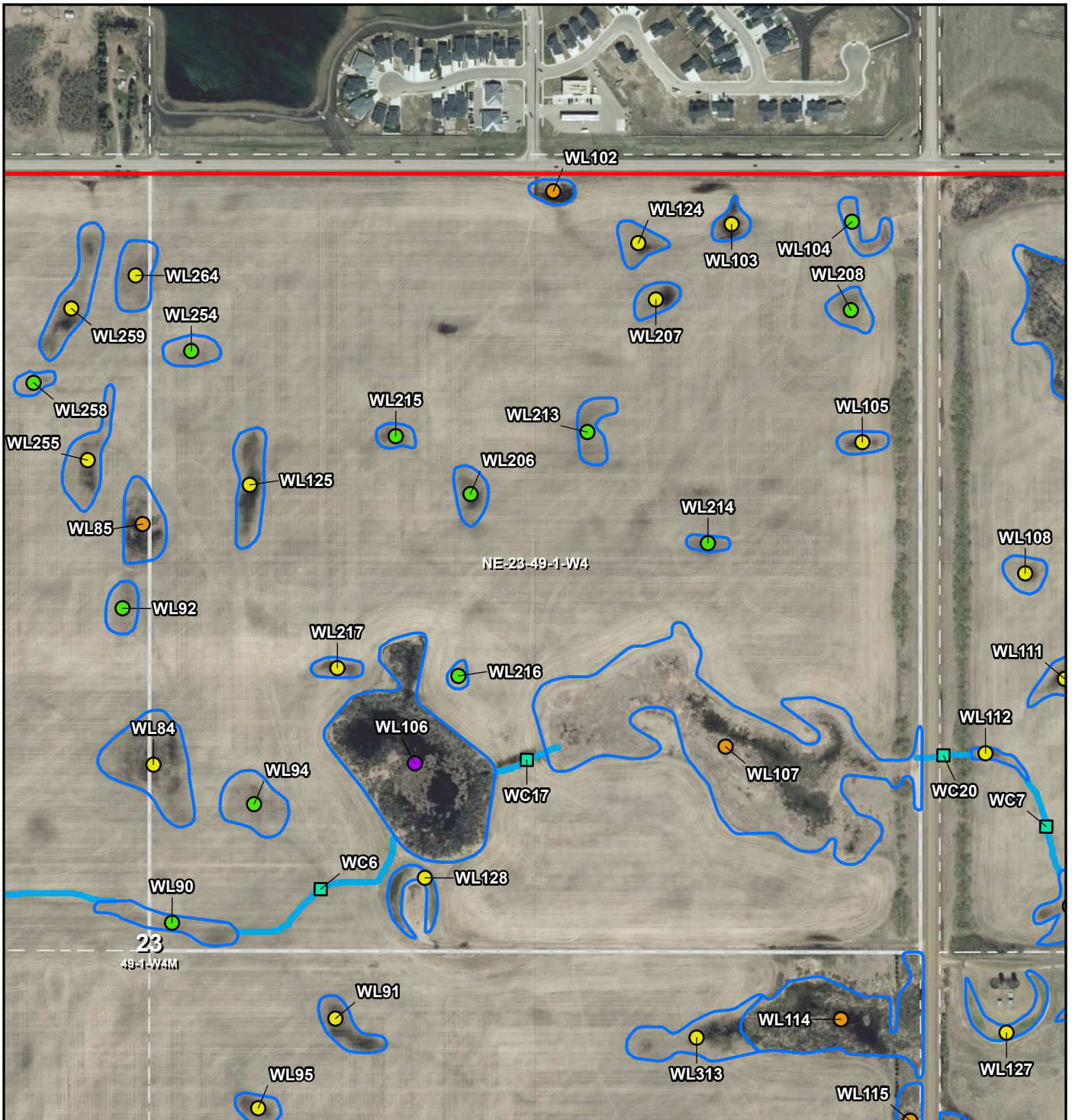
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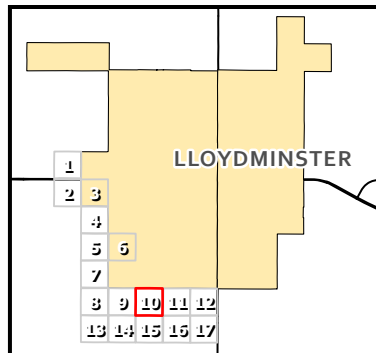
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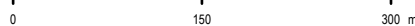
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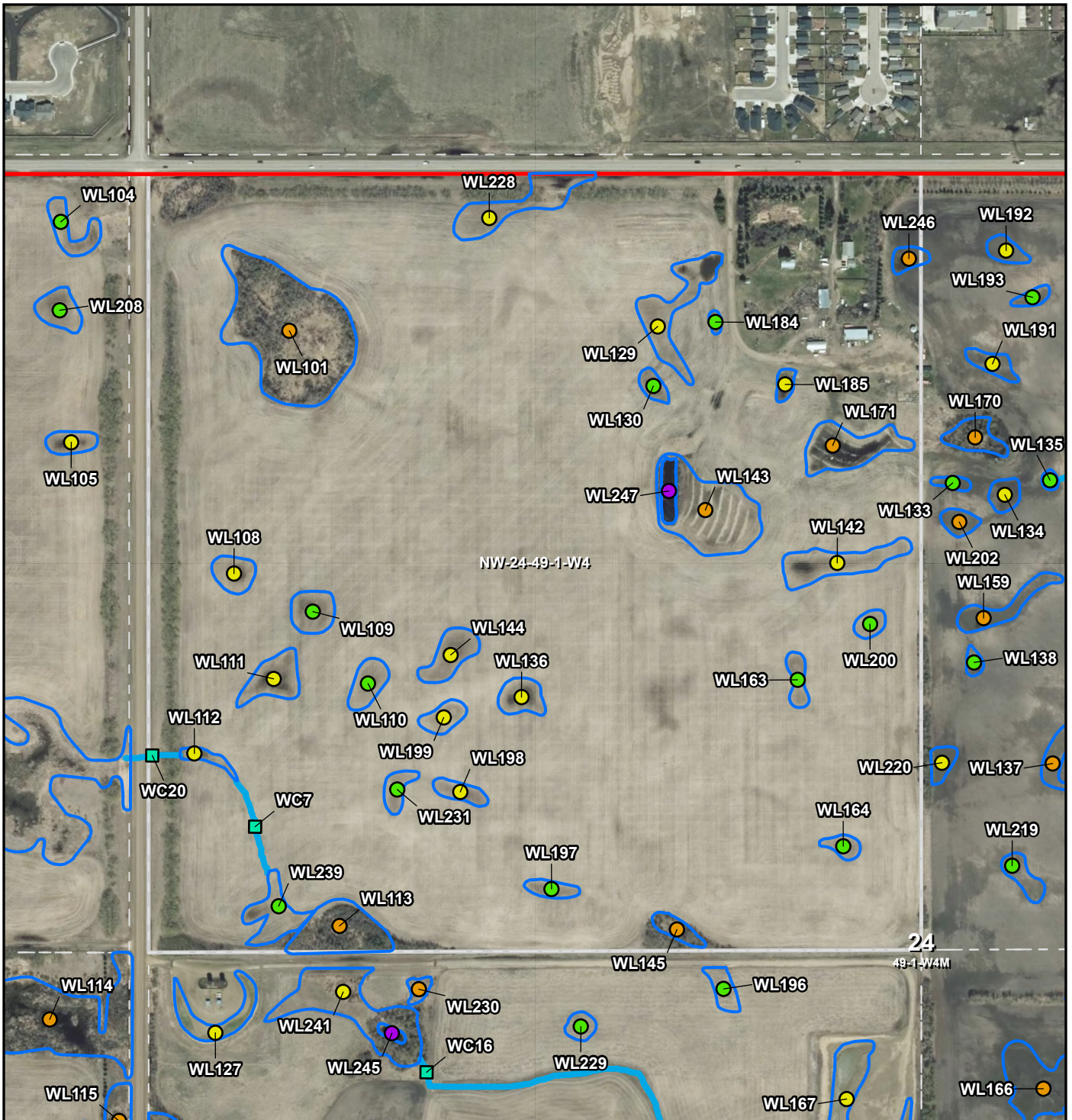
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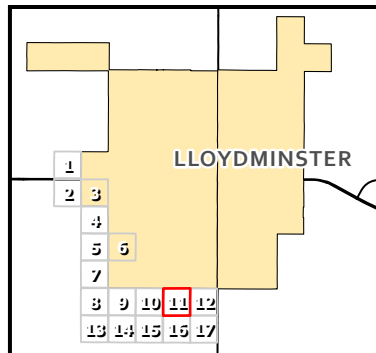
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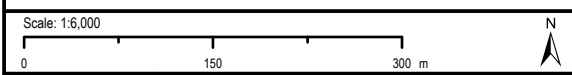
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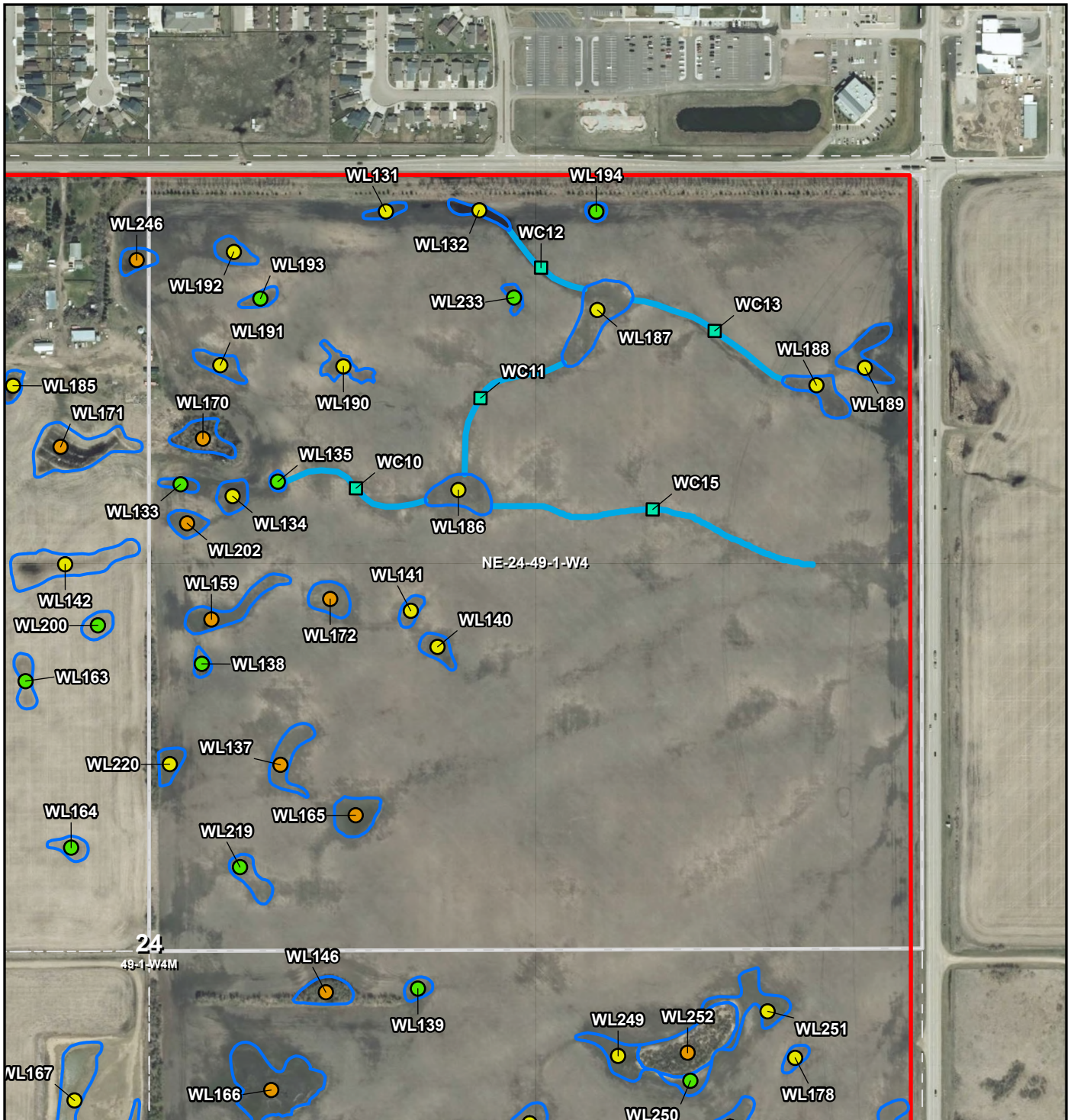
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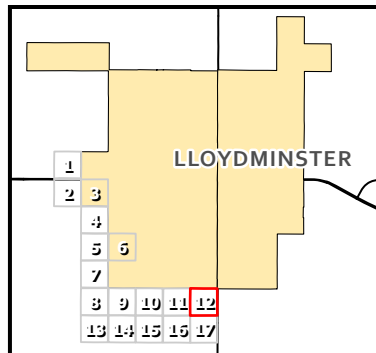
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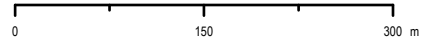
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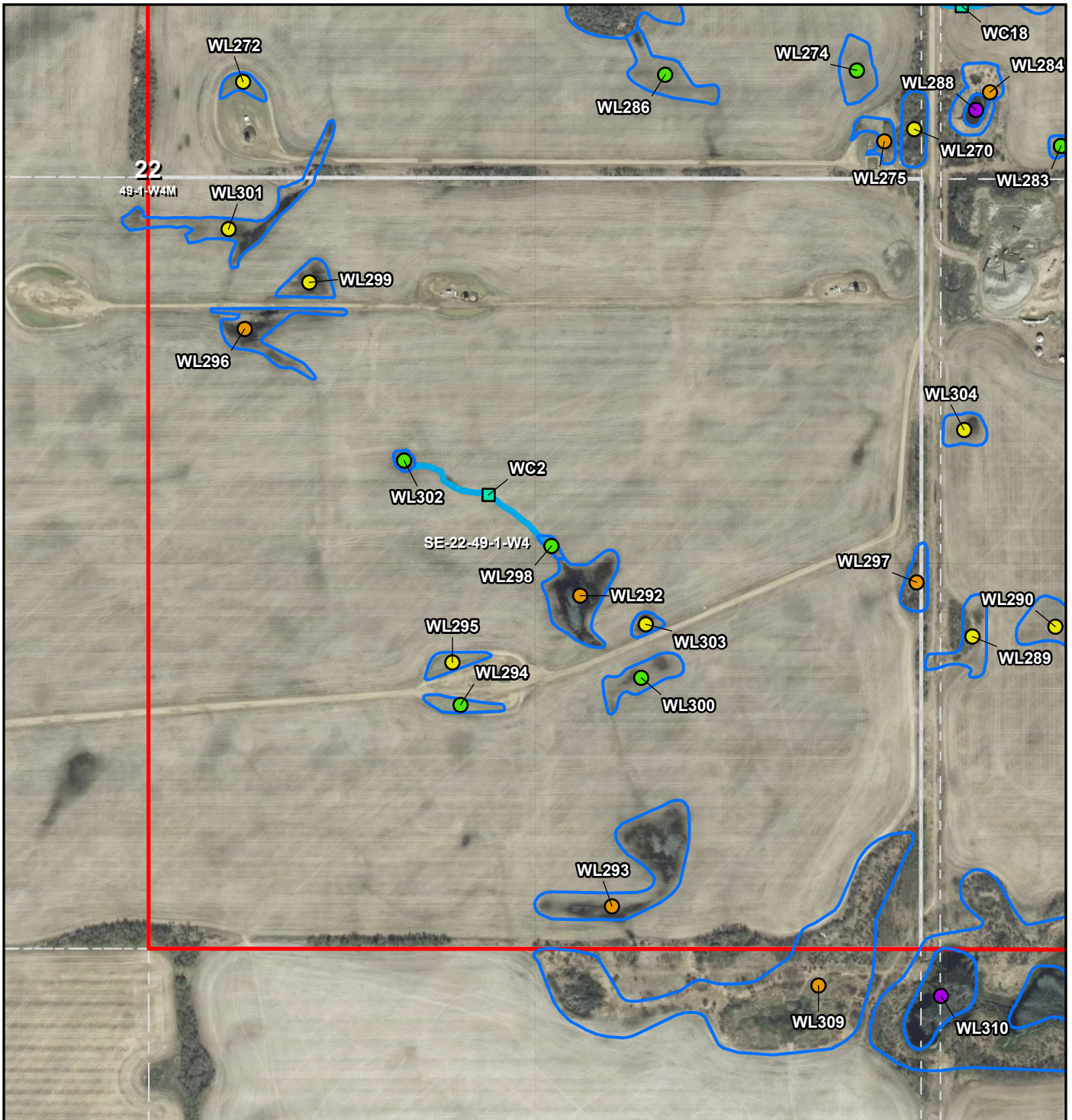
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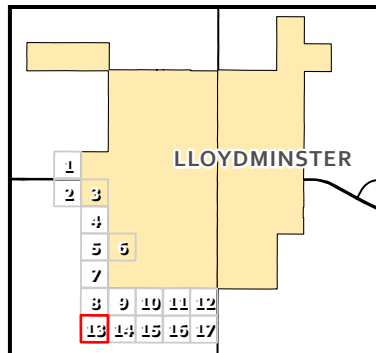
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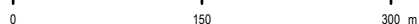
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PROJECT: SW ASP REVIEW

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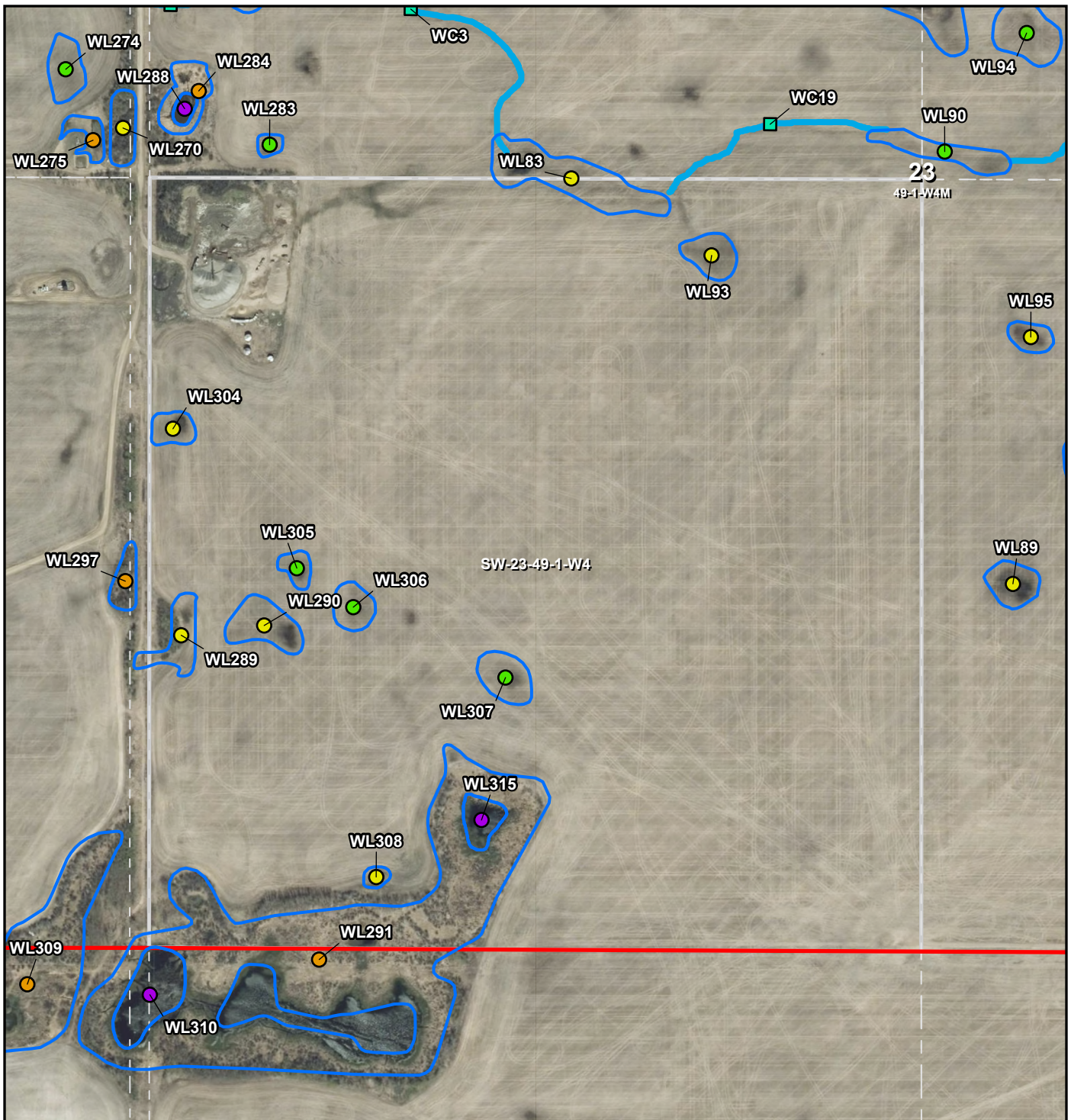
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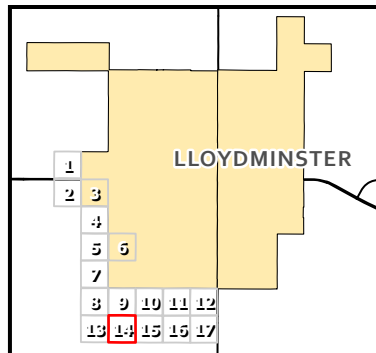
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FIGURE
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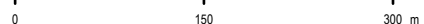
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PROJECT: SW ASP REVIEW

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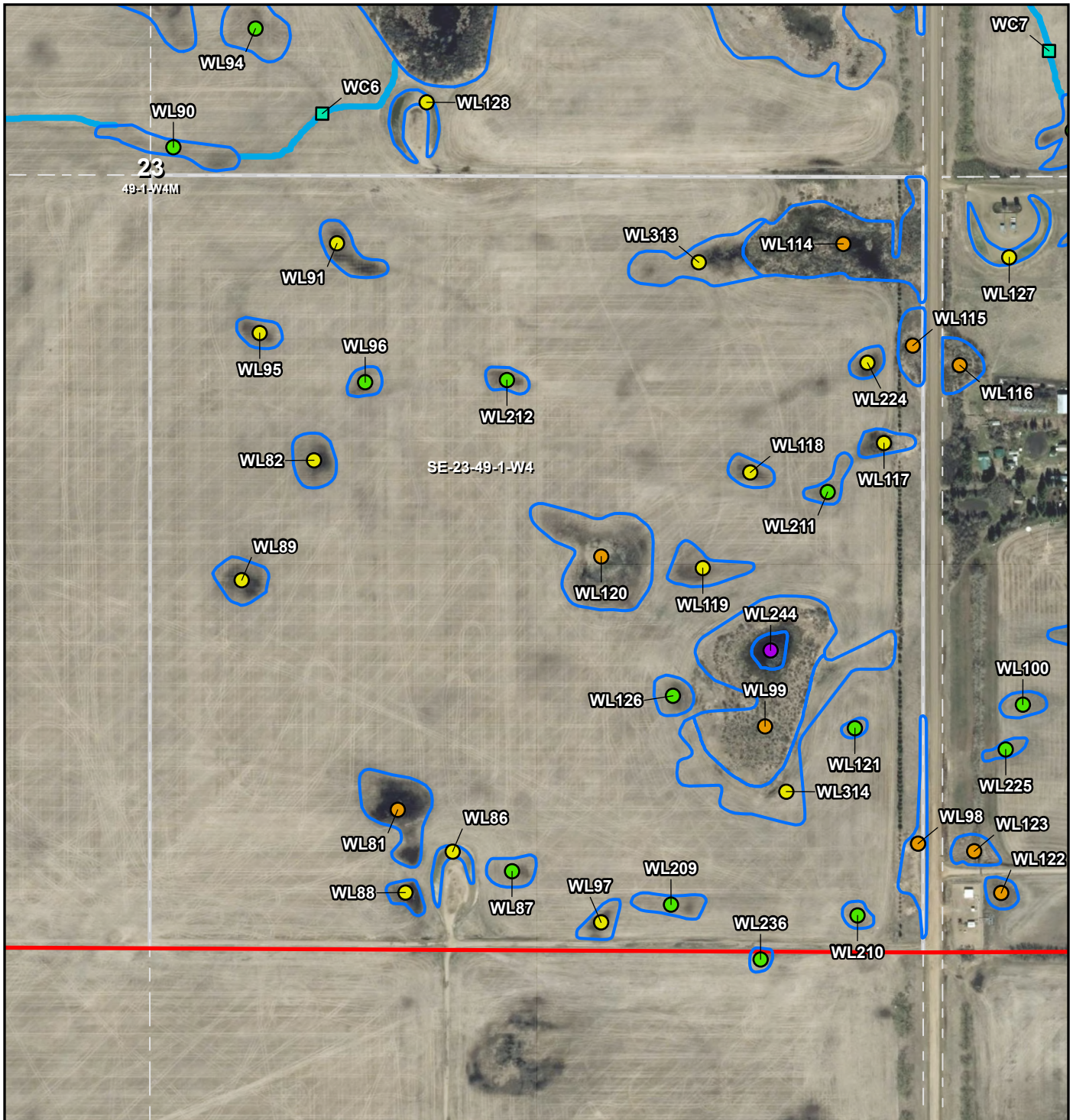
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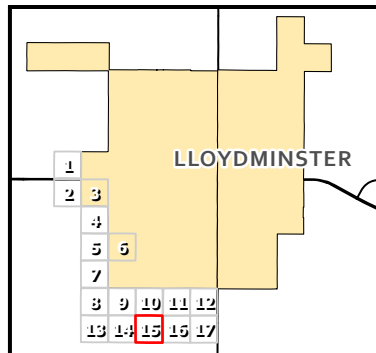
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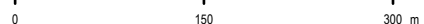
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PROJECT: SW ASP REVIEW

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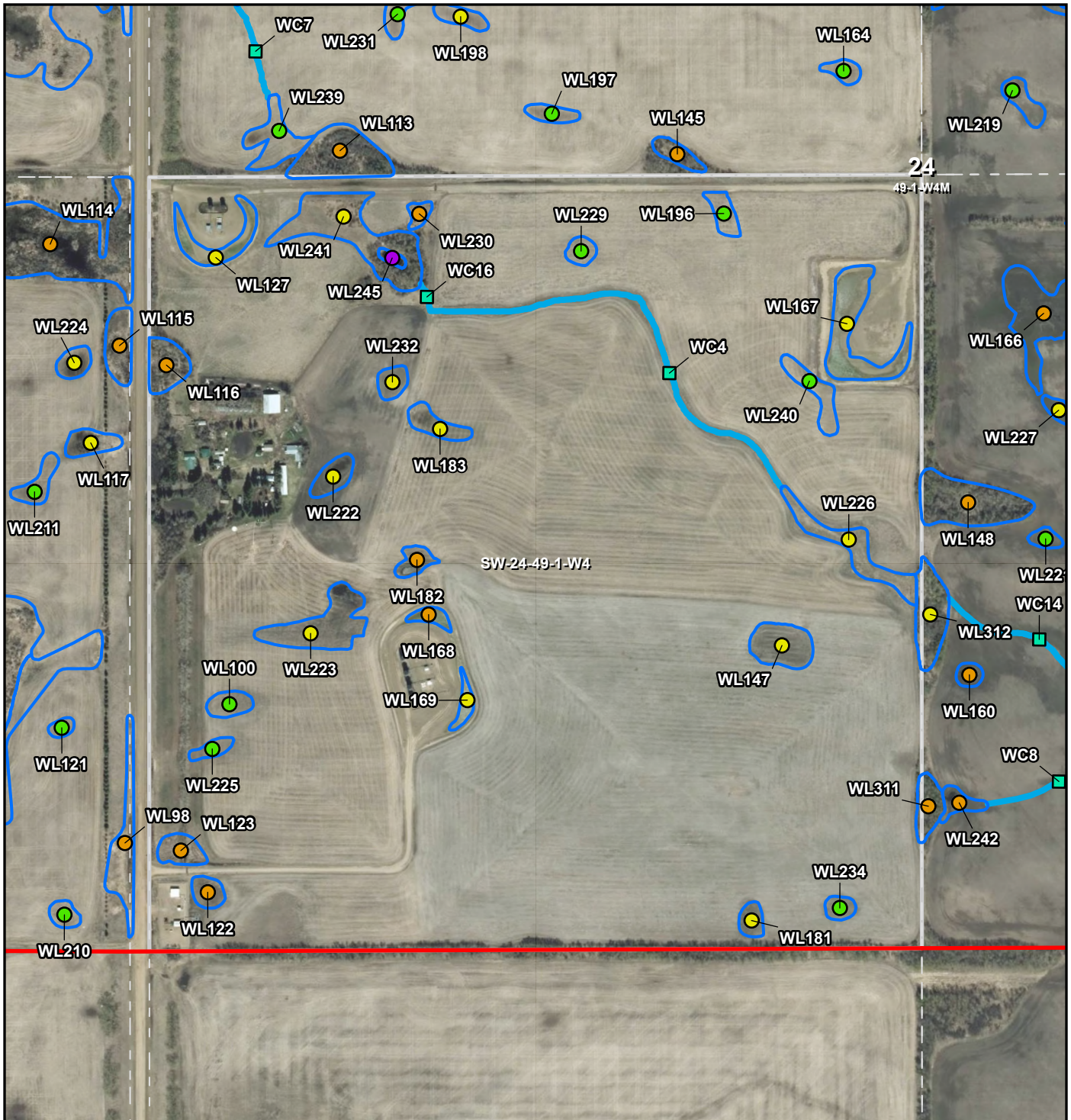
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FIGURE
15 of 17



LEGEND

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- CLASS V
- EPHEMERAL

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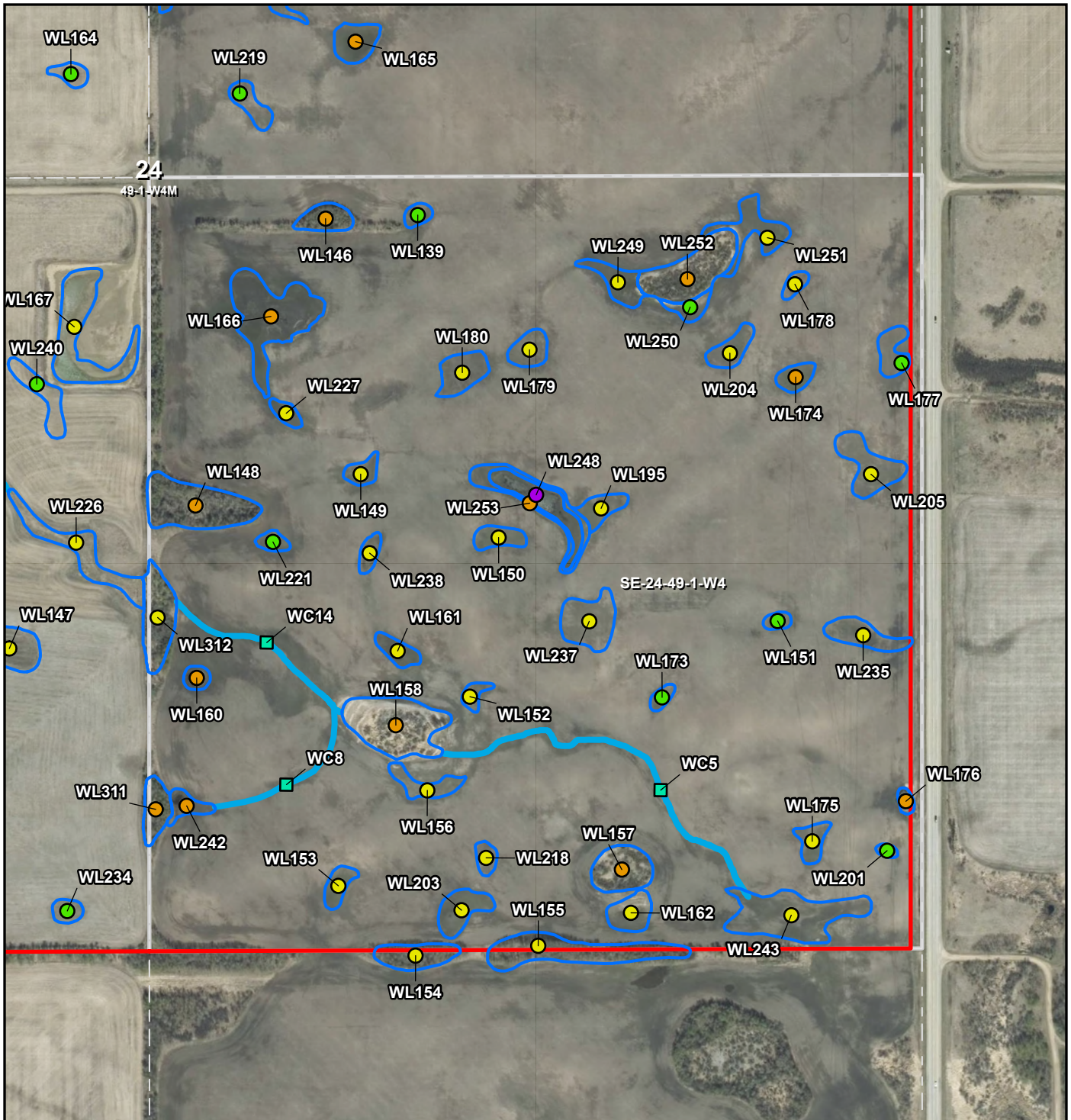
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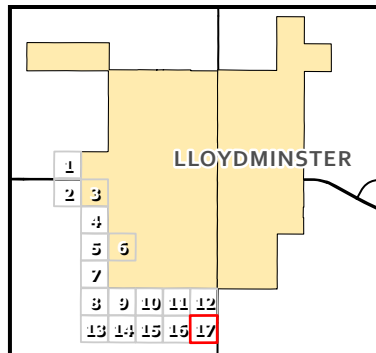
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 MINISTRY OF AGRICULTURE; OPEN GOVERNMENT LICENCE CANADA



LEGEND

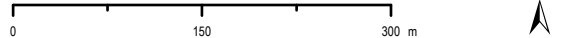
- SW ASP BOUNDARY
- WETLAND BOUNDARY
- WATERCOURSE
- CLASS I
- CLASS II
- CLASS III
- CLASS IV
- CLASS V
- EPHEMERAL



PROJECT: SW ASP REVIEW

TITLE: WETLAND CLASS - SE-24-49-1-W4

Scale: 1:6,000



DRAWN BY: RDB
 REVIEWED BY: KA
 DATE: 2025-10-09
 PROJECT # 25388

REV: 0
 FIGURE
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Wetland and Watercourse Information

WETLAND NAME	CLASS	TYPE	HABITAT	COMMENT	LEGAL QTR	AREA (ha)
WL1	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-26-49-1-W4	0.140
WL2	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-26-49-1-W4	0.516
WL3	Class I - Ephemeral Wetlands	Treed	Open Canopy Deciduous Woodland		NW-26-49-1-W4	0.360
WL4	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-34-49-1-W4	0.224
WL5	Class III - Seasonal Ponds and Lakes	Graminoid	Crop Land		NE-34-49-1-W4 & NW-35-49-1-W4 & SE-34-49-1-W4 & SW-35-49-1-W4	0.760
WL6	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-26-49-1-W4	0.390
WL7	Class II - Temporary Wetlands	Treed	Other (Describe in Comments)	Wetland Complex / Residential	NE-27-49-1-W4 & NW-26-49-1-W4	4.732
WL8	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-34-49-1-W4	0.194
WL9	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-34-49-1-W4	0.133
WL10	Class II - Temporary Wetlands	Cultivated	Other (Describe in Comments)	Developed Lease Berm	SE-34-49-1-W4	0.198
WL11	Class II - Temporary Wetlands	Cultivated	Crop Land	Ditch	SE-34-49-1-W4	0.101
WL12	Class III - Seasonal Ponds and Lakes	Treed	Open Canopy Deciduous Woodland		NE-27-49-1-W4 & SE-34-49-1-W4	1.356
WL13	Class V - Permanent Ponds and Lakes	Graminoid	Other (Describe in Comments)	Wetland Complex	NE-27-49-1-W4	2.479
WL14	Class III - Seasonal Ponds and Lakes	Graminoid	Crop Land		NE-27-49-1-W4 & NW-26-49-1-W4 & SE-27-49-1-W4 & SW-26-49-1-W4	1.602
WL15	Class III - Seasonal Ponds and Lakes	Graminoid	Crop Land		NE-27-49-1-W4 & NW-26-49-1-W4	2.396
WL16	Class II - Temporary Wetlands	Cultivated	Crop Land	Developed Lease Site	SE-34-49-1-W4	0.079
WL17	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-26-49-1-W4	0.070
WL18	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-26-49-1-W4	0.429
WL19	Class II - Temporary Wetlands	Graminoid	Tame Pasture (Seeded Grassland)		NE-27-49-1-W4	0.285
WL20	Class V - Permanent Ponds and Lakes	Graminoid	Short Shrub Grassland	Dugout	NE-27-49-1-W4	1.333
WL21	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-27-49-1-W4	0.204
WL22	Class III - Seasonal Ponds and Lakes	Treed	Open Canopy Deciduous Woodland		NE-27-49-1-W4	0.207
WL23	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-27-49-1-W4	0.277
WL24	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-27-49-1-W4	0.355
WL25	Class IV - Semi-permanent Ponds and Lakes	Graminoid	Other (Describe in Comments)	Man-made Pond	NE-27-49-1-W4	0.115
WL26	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-27-49-1-W4	0.264
WL27	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-27-49-1-W4	0.287
WL28	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-27-49-1-W4	0.182
WL29	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-27-49-1-W4	0.177
WL30	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-27-49-1-W4	0.476
WL31	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		SE-27-49-1-W4 & SW-27-49-1-W4	0.137
WL32	Class IV - Semi-permanent Ponds and Lakes	Graminoid	Tame Pasture (Seeded Grassland)	Dugout	NE-27-49-1-W4	0.193
WL33	Class II - Temporary Wetlands	Treed	Crop Land		NE-27-49-1-W4 & SE-27-49-1-W4	0.490
WL34	Class III - Seasonal Ponds and Lakes	Graminoid	Crop Land		NE-27-49-1-W4	0.238
WL35	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-27-49-1-W4	0.214
WL36	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-27-49-1-W4	0.097
WL37	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-27-49-1-W4	0.100
WL38	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-27-49-1-W4	0.159
WL39	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-27-49-1-W4	0.319
WL40	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-27-49-1-W4	0.245
WL41	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-27-49-1-W4	0.149
WL42	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-27-49-1-W4	0.183
WL43	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-27-49-1-W4	0.184
WL44	Class III - Seasonal Ponds and Lakes	Graminoid	Crop Land		NE-27-49-1-W4	0.347
WL45	Class II - Temporary Wetlands	Shrub	Short Shrub Grassland		NE-27-49-1-W4 & NW-27-49-1-W4	0.578
WL46	Class IV - Semi-permanent Ponds and Lakes	Graminoid	Tall Shrub Grassland	Lease in Wetland	SE-34-49-1-W4	0.070



Wetland and Watercourse Information

WETLAND NAME	CLASS	TYPE	HABITAT	COMMENT	LEGAL QTR	AREA (ha)
WL47	Class III - Seasonal Ponds and Lakes	Treed	Open Canopy Deciduous Woodland		SE-34-49-1-W4	2.942
WL48	Class I - Ephemeral Wetlands	Shrub	Open Canopy Deciduous Woodland		SE-34-49-1-W4	0.663
WL49	Class II - Temporary Wetlands	Shrub	Tame Pasture (Seeded Grassland)		SE-34-49-1-W4 & SW-34-49-1-W4	1.918
WL50	Class IV - Semi-permanent Ponds and Lakes	Treed	Open Canopy Deciduous Woodland		NE-34-49-1-W4 & SE-34-49-1-W4	2.295
WL51	Class II - Temporary Wetlands	Cultivated	Crop Land	Developed Lease Berm	SE-34-49-1-W4	0.134
WL52	Class I - Ephemeral Wetlands	Graminoid	Open Canopy Deciduous Woodland		SE-34-49-1-W4	0.127
WL53	Class IV - Semi-permanent Ponds and Lakes	Graminoid	Crop Land		NE-27-49-1-W4 & NW-27-49-1-W4	0.948
WL54	Class III - Seasonal Ponds and Lakes	Graminoid	Tame Pasture (Seeded Grassland)		SE-34-49-1-W4 & SW-34-49-1-W4	5.375
WL55	Class IV - Semi-permanent Ponds and Lakes	Treed	Open Canopy Deciduous Woodland		NE-34-49-1-W4 & NW-34-49-1-W4	0.603
WL56	Class II - Temporary Wetlands	Treed	Hay Crop (Forage)		NW-34-49-1-W4	2.188
WL57	Class IV - Semi-permanent Ponds and Lakes	Shrub	Tall Shrub Grassland	Lease in Wetland	SE-34-49-1-W4	0.078
WL58	Class III - Seasonal Ponds and Lakes	Graminoid	Open Canopy Deciduous Woodland		SE-34-49-1-W4	0.470
WL59	Class III - Seasonal Ponds and Lakes	Graminoid	Open Canopy Deciduous Woodland		SE-34-49-1-W4	1.447
WL60	Class II - Temporary Wetlands	Graminoid	Hay Crop (Forage)		NW-34-49-1-W4	0.123
WL61	Class II - Temporary Wetlands	Treed	Open Canopy Deciduous Woodland		SE-34-49-1-W4	3.034
WL62	Class II - Temporary Wetlands	Cultivated	Crop Land	Developed Lease Berm	SE-34-49-1-W4	0.122
WL63	Class III - Seasonal Ponds and Lakes	Treed	Open Canopy Deciduous Woodland		NE-34-49-1-W4	0.107
WL64	Class IV - Semi-permanent Ponds and Lakes	Graminoid	Other (Describe in Comments)	Farm yard - Dugout	SW-3-50-1-W4	0.065
WL65	Class V - Permanent Ponds and Lakes	Shrub	Open Canopy Deciduous Woodland		NE-34-49-1-W4 & SE-34-49-1-W4	2.626
WL66	Class II - Temporary Wetlands	Shrub	Open Canopy Deciduous Woodland		NE-34-49-1-W4	1.183
WL67	Class II - Temporary Wetlands	Shrub	Hay Crop (Forage)		NW-34-49-1-W4	0.599
WL68	Class III - Seasonal Ponds and Lakes	Graminoid	Other (Describe in Comments)	Riparian Graminoid	NE-34-49-1-W4	0.880
WL69	Class II - Temporary Wetlands	Graminoid	Other (Describe in Comments)	Developed	NE-34-49-1-W4	0.141
WL70	Class II - Temporary Wetlands	Graminoid	Short Shrub Grassland		NE-34-49-1-W4	0.111
WL71	Class II - Temporary Wetlands	Treed	Open Canopy Deciduous Woodland		NE-34-49-1-W4	0.246
WL72	Class III - Seasonal Ponds and Lakes	Graminoid	Other (Describe in Comments)	Riparian Graminoid	NE-34-49-1-W4	0.138
WL73	Class II - Temporary Wetlands	Graminoid	Other (Describe in Comments)	Riparian Graminoid	NE-34-49-1-W4	0.827
WL74	Class II - Temporary Wetlands	Shrub	Other (Describe in Comments)	Riparian Shrub	NE-34-49-1-W4	0.061
WL75	Class IV - Semi-permanent Ponds and Lakes	Treed	Crop Land		NE-34-49-1-W4 & SE-34-49-1-W4	0.449
WL76	Class IV - Semi-permanent Ponds and Lakes	Treed	Open Canopy Deciduous Woodland		NE-34-49-1-W4	0.148
WL77	Class II - Temporary Wetlands	Cultivated	Tame Pasture (Seeded Grassland)	Dugout	SW-3-50-1-W4	0.584
WL78	Class III - Seasonal Ponds and Lakes	Treed	Hay Crop (Forage)		NW-34-49-1-W4	0.247
WL79	Class III - Seasonal Ponds and Lakes	Shrub	Tame Pasture (Seeded Grassland)		SW-3-50-1-W4	0.150
WL80	Class II - Temporary Wetlands	Treed	Closed Canopy Deciduous Woodland		NW-34-49-1-W4	0.067
WL81	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		SE-23-49-1-W4	0.455
WL82	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.213
WL83	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-23-49-1-W4 & SW-23-49-1-W4	0.677
WL84	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-23-49-1-W4 & NW-23-49-1-W4	0.712



Wetland and Watercourse Information

WETLAND NAME	CLASS	TYPE	HABITAT	COMMENT	LEGAL QTR	AREA (ha)
WL85	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		NE-23-49-1-W4 & NW-23-49-1-W4	0.316
WL86	Class II - Temporary Wetlands	Cultivated	Other (Describe in Comments)	Developed Lease Berm	SE-23-49-1-W4	0.102
WL87	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.139
WL88	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.094
WL89	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.202
WL90	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-23-49-1-W4 & NW-23-49-1-W4	0.281
WL91	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.208
WL92	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.153
WL93	Class II - Temporary Wetlands	Cultivated	Crop Land		SW-23-49-1-W4	0.201
WL94	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-23-49-1-W4	0.346
WL95	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.117
WL96	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.090
WL97	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.118
WL98	Class III - Seasonal Ponds and Lakes	Graminoid	Tame Pasture (Seeded Grassland)	Ditch	SE-23-49-1-W4 & SW-24-49-1-W4	0.291
WL99	Class III - Seasonal Ponds and Lakes	Shrub	Crop Land		SE-23-49-1-W4	1.707
WL100	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SW-24-49-1-W4	0.103
WL101	Class III - Seasonal Ponds and Lakes	Shrub	Crop Land		NW-24-49-1-W4	1.459
WL102	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		NE-23-49-1-W4	0.099
WL103	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-23-49-1-W4	0.111
WL104	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-23-49-1-W4	0.151
WL105	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-23-49-1-W4	0.107
WL106	Class IV - Semi-permanent Ponds and Lakes	Shrub	Crop Land		NE-23-49-1-W4	2.252
WL107	Class III - Seasonal Ponds and Lakes	Graminoid	Crop Land		NE-23-49-1-W4 & NW-24-49-1-W4	4.023
WL108	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.136
WL109	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.173
WL110	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.147
WL111	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.220
WL112	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.062
WL113	Class III - Seasonal Ponds and Lakes	Treed	Crop Land		NW-24-49-1-W4 & SW-24-49-1-W4	0.422
WL114	Class III - Seasonal Ponds and Lakes	Treed	Open Canopy Deciduous Woodland		NE-23-49-1-W4 & SE-23-49-1-W4 & SW-24-49-1-W4	1.272
WL115	Class III - Seasonal Ponds and Lakes	Graminoid	Tame Pasture (Seeded Grassland)		SE-23-49-1-W4 & SW-24-49-1-W4	0.191
WL116	Class III - Seasonal Ponds and Lakes	Shrub	Tame Pasture (Seeded Grassland)		SW-24-49-1-W4	0.192
WL117	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.124
WL118	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.117
WL119	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.235
WL120	Class III - Seasonal Ponds and Lakes	Graminoid	Crop Land		SE-23-49-1-W4	0.939
WL121	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.040
WL122	Class III - Seasonal Ponds and Lakes	Graminoid	Crop Land		SW-24-49-1-W4	0.091
WL123	Class III - Seasonal Ponds and Lakes	Graminoid	Short Shrub Grassland		SW-24-49-1-W4	0.128
WL124	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-23-49-1-W4	0.156
WL125	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-23-49-1-W4	0.328
WL126	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.138
WL127	Class II - Temporary Wetlands	Cultivated	Other (Describe in Comments)	Developed Lease Berm	SW-24-49-1-W4	0.207
WL128	Class II - Temporary Wetlands	Cultivated	Other (Describe in Comments)	Developed Lease Berm	NE-23-49-1-W4	0.179
WL129	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.368
WL130	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.070
WL131	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.046
WL132	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.070
WL133	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.042
WL134	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.091
WL135	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.027
WL136	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.149
WL137	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		NE-24-49-1-W4	0.157
WL138	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.040



Wetland and Watercourse Information

WETLAND NAME	CLASS	TYPE	HABITAT	COMMENT	LEGAL QTR	AREA (ha)
WL139	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.054
WL140	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.082
WL141	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.055
WL142	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.326
WL143	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		NW-24-49-1-W4	0.667
WL144	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.197
WL145	Class III - Seasonal Ponds and Lakes	Treed	Crop Land		NW-24-49-1-W4	0.095
WL146	Class III - Seasonal Ponds and Lakes	Treed	Crop Land		SE-24-49-1-W4	0.133
WL147	Class II - Temporary Wetlands	Cultivated	Crop Land		SW-24-49-1-W4	0.251
WL148	Class III - Seasonal Ponds and Lakes	Treed	Crop Land		SE-24-49-1-W4 & SW-24-49-1-W4	0.471
WL149	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.076
WL150	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.104
WL151	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.042
WL152	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.053
WL153	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.089
WL154	Class II - Temporary Wetlands	Treed	Crop Land		NE-13-49-1-W4 & SE-24-49-1-W4	0.188
WL155	Class II - Temporary Wetlands	Treed	Crop Land		NE-13-49-1-W4 & SE-24-49-1-W4	0.455
WL156	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.125
WL157	Class III - Seasonal Ponds and Lakes	Shrub	Crop Land		SE-24-49-1-W4	0.250
WL158	Class III - Seasonal Ponds and Lakes	Shrub	Crop Land		SE-24-49-1-W4	0.511
WL159	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		NE-24-49-1-W4	0.188
WL160	Class III - Seasonal Ponds and Lakes	Graminoid	Crop Land		SE-24-49-1-W4	0.056
WL161	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.094
WL162	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.147
WL163	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.089
WL164	Class II - Ephemeral Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.070
WL165	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		NE-24-49-1-W4	0.156
WL166	Class III - Seasonal Ponds and Lakes	Graminoid	Crop Land		SE-24-49-1-W4	0.557
WL167	Class II - Temporary Wetlands	Cultivated	Other (Describe in Comments)	Developed Lease Berm	SW-24-49-1-W4	0.454
WL168	Class III - Seasonal Ponds and Lakes	Graminoid	Other (Describe in Comments)	Developed Lease Berm	SW-24-49-1-W4	0.061
WL169	Class II - Temporary Wetlands	Cultivated	Other (Describe in Comments)	Developed Lease Berm	SW-24-49-1-W4	0.061
WL170	Class III - Seasonal Ponds and Lakes	Treed	Open Canopy Deciduous Woodland		NE-24-49-1-W4	0.157
WL171	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		NW-24-49-1-W4	0.360
WL172	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		NE-24-49-1-W4	0.123
WL173	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.043
WL174	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		SE-24-49-1-W4	0.087
WL175	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.096
WL176	Class III - Seasonal Ponds and Lakes	Graminoid	Crop Land		SE-24-49-1-W4	0.035
WL177	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.125
WL178	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.049
WL179	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.121
WL180	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.173
WL181	Class II - Temporary Wetlands	Cultivated	Crop Land		SW-24-49-1-W4	0.076
WL182	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		SW-24-49-1-W4	0.088
WL183	Class II - Temporary Wetlands	Cultivated	Crop Land		SW-24-49-1-W4	0.129
WL184	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.024
WL185	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.052
WL186	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.194
WL187	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.305
WL188	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.148
WL189	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.169
WL190	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.103
WL191	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.097
WL192	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.086
WL193	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.053
WL194	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.034
WL195	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.112
WL196	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SW-24-49-1-W4	0.099
WL197	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.080



Wetland and Watercourse Information

WETLAND NAME	CLASS	TYPE	HABITAT	COMMENT	LEGAL QTR	AREA (ha)
WL198	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.094
WL199	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.111
WL200	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.072
WL201	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.024
WL202	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		NE-24-49-1-W4	0.083
WL203	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.172
WL204	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.122
WL205	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.246
WL206	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-23-49-1-W4	0.168
WL207	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-23-49-1-W4	0.131
WL208	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-23-49-1-W4	0.153
WL209	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.148
WL210	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.070
WL211	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.114
WL212	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.095
WL213	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-23-49-1-W4	0.190
WL214	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-23-49-1-W4	0.064
WL215	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-23-49-1-W4	0.087
WL216	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-23-49-1-W4	0.048
WL217	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-23-49-1-W4	0.095
WL218	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.061
WL219	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.111
WL220	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.077
WL221	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.054
WL222	Class II - Temporary Wetlands	Graminoid	Crop Land		SW-24-49-1-W4	0.122
WL223	Class II - Temporary Wetlands	Cultivated	Crop Land		SW-24-49-1-W4	0.397
WL224	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.092
WL225	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SW-24-49-1-W4	0.062
WL226	Class I - Temporary Wetlands	Graminoid	Crop Land		SW-24-49-1-W4	0.304
WL227	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.058
WL228	Class II - Temporary Wetlands	Graminoid	Crop Land	Ditch	NW-24-49-1-W4 & SW-25-49-1-W4	0.365
WL229	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SW-24-49-1-W4	0.072
WL230	Class III - Seasonal Ponds and Lakes	Graminoid	Tame Pasture (Seeded Grassland)		SW-24-49-1-W4	0.049
WL231	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.091
WL232	Class II - Temporary Wetlands	Cultivated	Crop Land		SW-24-49-1-W4	0.087
WL233	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.040
WL234	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SW-24-49-1-W4	0.065
WL235	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.176
WL236	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-14-49-1-W4 & SE-23-49-1-W4	0.049
WL237	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.265
WL238	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.065
WL239	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.230
WL240	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SW-24-49-1-W4	0.161
WL241	Class II - Temporary Wetlands	Treed	Tame Pasture (Seeded Grassland)	Open Canopy Deciduous	SW-24-49-1-W4	0.634
WL242	Class III - Seasonal Ponds and Lakes	Graminoid	Crop Land		SE-24-49-1-W4	0.088
WL243	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.523
WL244	Class IV - Semi-permanent Ponds and Lakes	Shrub	Crop Land		SE-23-49-1-W4	0.111
WL245	Class IV - Semi-permanent Ponds and Lakes	Treed	Open Canopy Deciduous Woodland	Dugout	SW-24-49-1-W4	0.031
WL246	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		NE-24-49-1-W4 & NW-24-49-1-W4	0.077
WL247	Class IV - Semi-permanent Ponds and Lakes	Cultivated	Crop Land	Dugout	NW-24-49-1-W4	0.098
WL248	Class IV - Semi-permanent Ponds and Lakes	Graminoid	Crop Land		SE-24-49-1-W4	0.240
WL249	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.151
WL250	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.078
WL251	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.223
WL252	Class III - Seasonal Ponds and Lakes	Treed	Crop Land		SE-24-49-1-W4	0.418
WL253	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		SE-24-49-1-W4	0.166
WL254	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-23-49-1-W4	0.154
WL255	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.307
WL256	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.275
WL257	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.066



Wetland and Watercourse Information

WETLAND NAME	CLASS	TYPE	HABITAT	COMMENT	LEGAL QTR	AREA (ha)
WL258	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.079
WL259	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.369
WL260	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.138
WL261	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.191
WL262	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.066
WL263	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.058
WL264	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-23-49-1-W4 & NW-23-49-1-W4	0.253
WL265	Class II - Temporary Wetlands	Treed	Open Canopy Deciduous Woodland		NE-22-49-1-W4 & NW-23-49-1-W4	6.483
WL266	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.107
WL267	Class III - Seasonal Ponds and Lakes	Treed	Open Canopy Deciduous Woodland		NW-23-49-1-W4	0.326
WL268	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.066
WL269	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.234
WL270	Class II - Temporary Wetlands	Treed	Other (Describe in Comments)	Riparian Treed	NE-22-49-1-W4 & NW-23-49-1-W4	0.192
WL271	Class III - Seasonal Ponds and Lakes	Treed	Crop Land		NW-23-49-1-W4 & SW-26-49-1-W4	1.176
WL272	Class II - Temporary Wetlands	Cultivated	Crop Land	Developed Lease Berm	NE-22-49-1-W4	0.083
WL273	Class II - Temporary Wetlands	Cultivated	Other (Describe in Comments)	Developed Lease Berm	NE-22-49-1-W4	0.106
WL274	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-22-49-1-W4	0.206
WL275	Class III - Seasonal Ponds and Lakes	Graminoid	Other (Describe in Comments)	Developed Lease Berm	NE-22-49-1-W4	0.118
WL276	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.191
WL277	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.195
WL278	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.095
WL279	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.081
WL280	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.069
WL281	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.149
WL282	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.055
WL283	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.051
WL284	Class III - Seasonal Ponds and Lakes	Graminoid	Short Shrub Grassland		NW-23-49-1-W4	0.232
WL285	Class III - Seasonal Ponds and Lakes	Shrub	Crop Land		NE-22-49-1-W4	0.753
WL286	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-22-49-1-W4	0.307
WL287	Class IV - Semi-permanent Ponds and Lakes	Shrub	Other (Describe in Comments)	Riparian Shrub	NE-22-49-1-W4	0.615
WL288	Class IV - Semi-permanent Ponds and Lakes	Graminoid	Short Shrub Grassland		NW-23-49-1-W4	0.059
WL289	Class II - Temporary Wetlands	Cultivated	Crop Land		SW-23-49-1-W4	0.249
WL290	Class II - Temporary Wetlands	Cultivated	Crop Land		SW-23-49-1-W4	0.304
WL291	Class III - Seasonal Ponds and Lakes	Shrub	Crop Land		NE-15-49-1-W4 & NW-14-49-1-W4 & SE-22-49-1-W4 & SW-23-49-1-W4	6.137
WL292	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		SE-22-49-1-W4	0.457
WL293	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		SE-22-49-1-W4	0.808
WL294	Class I - Ephemeral Wetlands	Cultivated	Other (Describe in Comments)	Developed Lease Berm	SE-22-49-1-W4	0.099
WL295	Class II - Temporary Wetlands	Cultivated	Other (Describe in Comments)	Developed Lease Berm	SE-22-49-1-W4	0.106
WL296	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		SE-22-49-1-W4	0.323
WL297	Class III - Seasonal Ponds and Lakes	Treed	Crop Land		SE-22-49-1-W4 & SW-23-49-1-W4	0.141
WL298	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-22-49-1-W4	0.030
WL299	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-22-49-1-W4	0.158
WL300	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-22-49-1-W4	0.229
WL301	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-22-49-1-W4 & SE-22-49-1-W4 & SW-22-49-1-W4	0.451
WL302	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-22-49-1-W4	0.037
WL303	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-22-49-1-W4	0.059
WL304	Class II - Temporary Wetlands	Cultivated	Crop Land		SW-23-49-1-W4	0.136
WL305	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SW-23-49-1-W4	0.095
WL306	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SW-23-49-1-W4	0.170
WL307	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SW-23-49-1-W4	0.233



Wetland and Watercourse Information

WETLAND NAME	CLASS	TYPE	HABITAT	COMMENT	LEGAL QTR	AREA (ha)
WL308	Class II - Temporary Wetlands	Cultivated	Crop Land		SW-23-49-1-W4	0.049
WL309	Class III - Seasonal Ponds and Lakes	Treed	Open Canopy Deciduous Woodland		NE-15-49-1-W4 & SE-22-49-1-W4	2.920
WL310	Class IV - Semi-permanent Ponds and Lakes	Shrub	Other (Describe in Comments)	Treed / Shrub Wetland Complex	NE-15-49-1-W4 & NW-14-49-1-W4 & SW-23-49-1-W4	0.473
WL311	Class III - Seasonal Ponds and Lakes	Treed	Crop Land		SE-24-49-1-W4 & SW-24-49-1-W4	0.148
WL312	Class II - Temporary Wetlands	Treed	Crop Land		SE-24-49-1-W4 & SW-24-49-1-W4	0.292
WL313	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.482
WL314	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.931
WL315	Class IV - Semi-permanent Ponds and Lakes	Shrub	Other (Describe in Comments)	Treed / Shrub Wetland Complex	SW-23-49-1-W4	0.173
WL316	Class III - Seasonal Ponds and Lakes	Treed	Open Canopy Deciduous Woodland		NE-22-49-1-W4 & NW-23-49-1-W4	0.325
WL317	Class II - Temporary Wetlands	Graminoid	Hay Crop (Forage)		NW-34-49-1-W4	0.764
WC1	Ephemeral Drainage	Cultivated	Tame Pasture (Seeded Grassland)		SW-3-50-1-W4	0.536
WC2	Ephemeral Drainage	Cultivated	Crop Land		SE-22-49-1-W4	0.117
WC3	Ephemeral Drainage	Cultivated	Crop Land		NW-23-49-1-W4	2.215
WC4	Ephemeral Drainage	Cultivated	Crop Land		SW-24-49-1-W4	1.946
WC5	Ephemeral Drainage	Cultivated	Crop Land		SE-24-49-1-W4	1.677
WC6	Ephemeral Drainage	Cultivated	Crop Land		NE-23-49-1-W4	0.281
WC7	Ephemeral Drainage	Cultivated	Crop Land		NW-24-49-1-W4	0.028
WC8	Ephemeral Drainage	Cultivated	Crop Land		SE-24-49-1-W4	0.361
WC9	Ephemeral Drainage	Cultivated	Hay Crop (Forage)		NW-34-49-1-W4	5.290
WC10	Ephemeral Drainage	Cultivated	Crop Land		NE-24-49-2-W4	0.034
WC11	Ephemeral Drainage	Cultivated	Crop Land		NE-24-49-2-W4	0.387
WC12	Ephemeral Drainage	Cultivated	Crop Land		NE-24-49-2-W4	0.070
WC13	Ephemeral Drainage	Cultivated	Crop Land		NE-24-49-2-W4	0.127
WC14	Ephemeral Drainage	Cultivated	Crop Land		SE-24-49-1-W4	0.112
WC15	Ephemeral Drainage	Cultivated	Crop Land		NE-24-49-2-W4	0.398
WC16	Ephemeral Drainage	Cultivated	Crop Land		SW-24-49-1-W4	0.003
WC17	Ephemeral Drainage	Cultivated	Crop Land		NE-23-49-1-W4	0.004
WC18	Ephemeral Drainage	Cultivated	Crop Land		NW-23-49-1-W4	0.004
WC19	Ephemeral Drainage	Cultivated	Crop Land		NW & SW-23-49-1- W4	0.562
WC20	Ephemeral Drainage	Cultivated	Other (Describe in Comments)	Culvert across road	NE-23-49-1-W4 & NW-24-49-2-W4	0.002





APPENDIX C: SAR PROJECT SCREENING REPORTS

Fish and Wildlife Internet Mapping Tool (FWIMT)

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

Species Summary Report

Report Date: 15-Sep-2025 13:57

Species present within the current extent

Fish Inventory

RIVER SHINER

Wildlife Inventory

PLAINS GARTER SNAKE
SANDHILL CRANE
SORA

Stocked Inventory

RAINBOW TROUT

Buffer Extent

Centroid (X,Y)

829926, 5909750

Projection

10-TM AEP Forest

Centroid (Qtr Sec Twp Rng Mer)

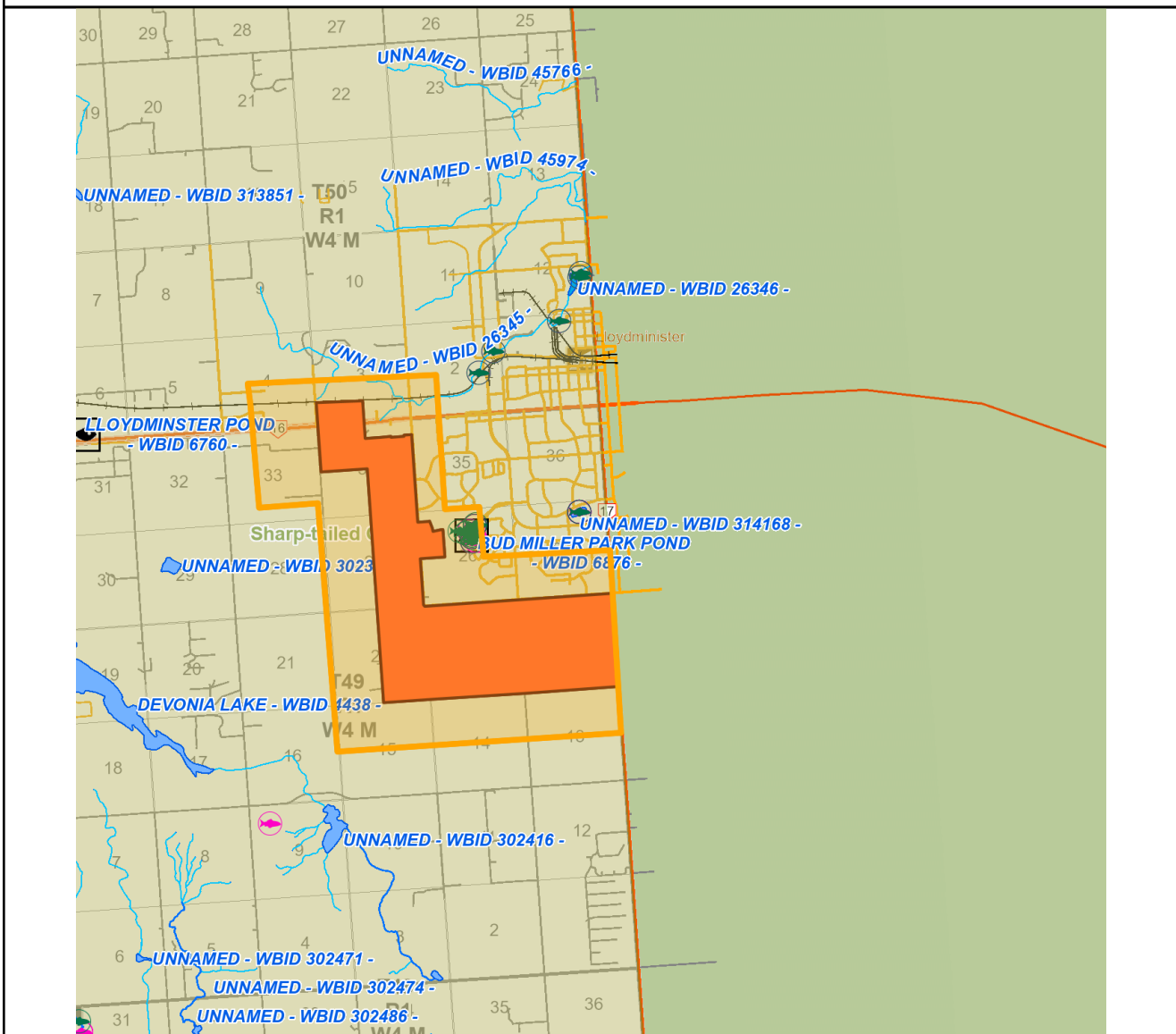
SW 26 49 1 4

Radius or Dimensions

6440, 6504 meters

Contact Information

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



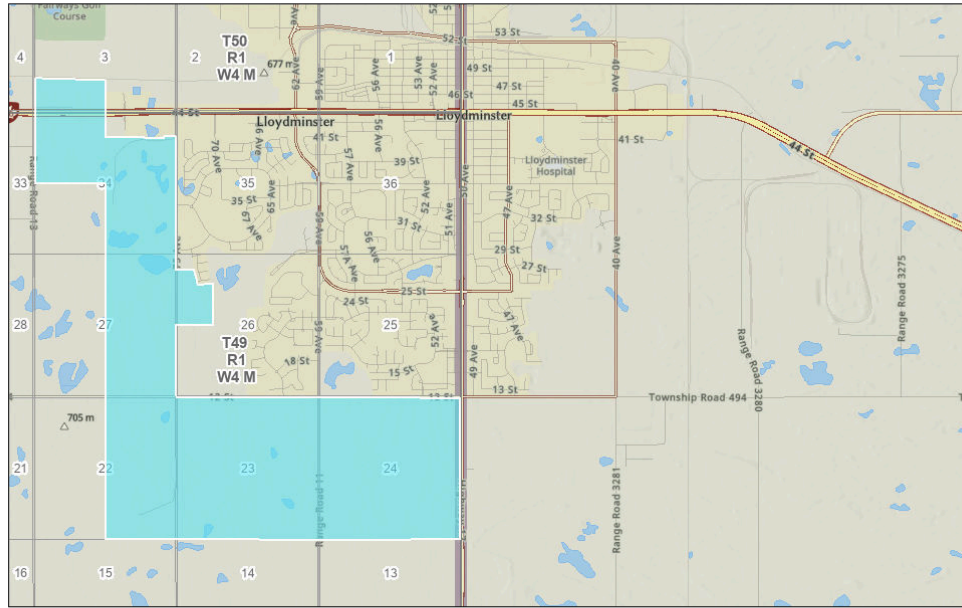
Display may contain: Base Map Data provided by the Government of Alberta under the Alberta Open Government Licence. Cadastral and Dispositions Data provided by Alberta Data Partnerships. (c)GeoEye, all rights reserved. Information as depicted is subject to change, therefore the Government of Alberta assumes no responsibility for discrepancies at time of use

Alberta Government ACIMS Data Screening Report

Area of Interest (AOI) Information

Area : 10,084,792.17 m²

Sep 15 2025 13:34:15 Mountain Daylight Time



ATS Section with Road Allowance Label Below Hydro
ATS Township Index Label Above Hydro



Summary

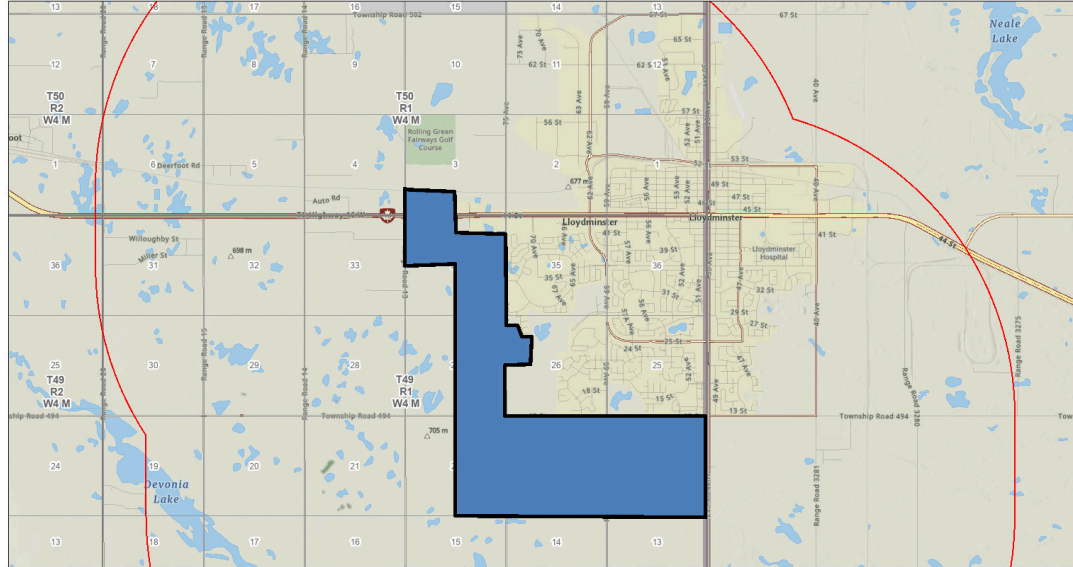
Name	Count	Area(m ²)	Length(m)
Sensitive EO	0	0	N/A
Non Sensitive EO	0	0	N/A

While every effort has been made to ensure that the information accessible from this dataset is complete, accurate, and current, the Government of Alberta, their agents and employees are not liable for any loss or damage arising directly or indirectly from the possession, publication, or use of, or reliance on, that information. This information is provided "as is" without expressed or implied warranty.

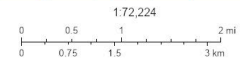
Area of Interest (AOI) Information

Area : 180,473,047.16 m²

Sep 24 2025 11:29:32 Mountain Daylight Time



- SWASP_Boundary
- ACIMS Non-Sensitive Element Occurrences - Public
- Vascular Plant
- ATS Section with Road Allowance Label Below Hydro
- ATS Township Index Label Above Hydro



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Summary

Name	Count	Area(m ²)	Length(m)
Sensitive EO	0	0	N/A
Non Sensitive EO	6	31,719.33	N/A


Non Sensitive EO

#	ELCODE	EO ID	Name Category Desc.	Species	Scientific Name	Last Obs. Date	S Rank	Perimeter (m)	Area(m ²)
1	PMJUN011Z0	18937	Vascular Plant	Nevada rush	Juncus nevadensis	2008-08-05	S1	62.75	312.25
2	PDBRA27130	18931	Vascular Plant	blunt-leaved watercress	Rorippa curvipes	2008-08-05	S3	148.11	843.28
3	PDPRI070A0	18816	Vascular Plant	lance-leaved loosestrife	Lysimachia hybrida	2008-08-25	S3	171.90	1,683.70
4	PDPRI070A0	18936	Vascular Plant	lance-leaved loosestrife	Lysimachia hybrida	2008-08-25	S3	213.69	1,785.11
5	PDPRI070A0	18977	Vascular Plant	lance-leaved loosestrife	Lysimachia hybrida	2008-08-25	S3	572.81	11,562.68
6	PDPRI070A0	18814	Vascular Plant	lance-leaved loosestrife	Lysimachia hybrida	2008-08-25	S3	1,050.28	15,532.32

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Notes:

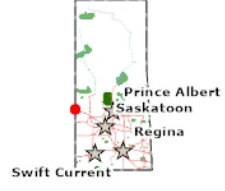
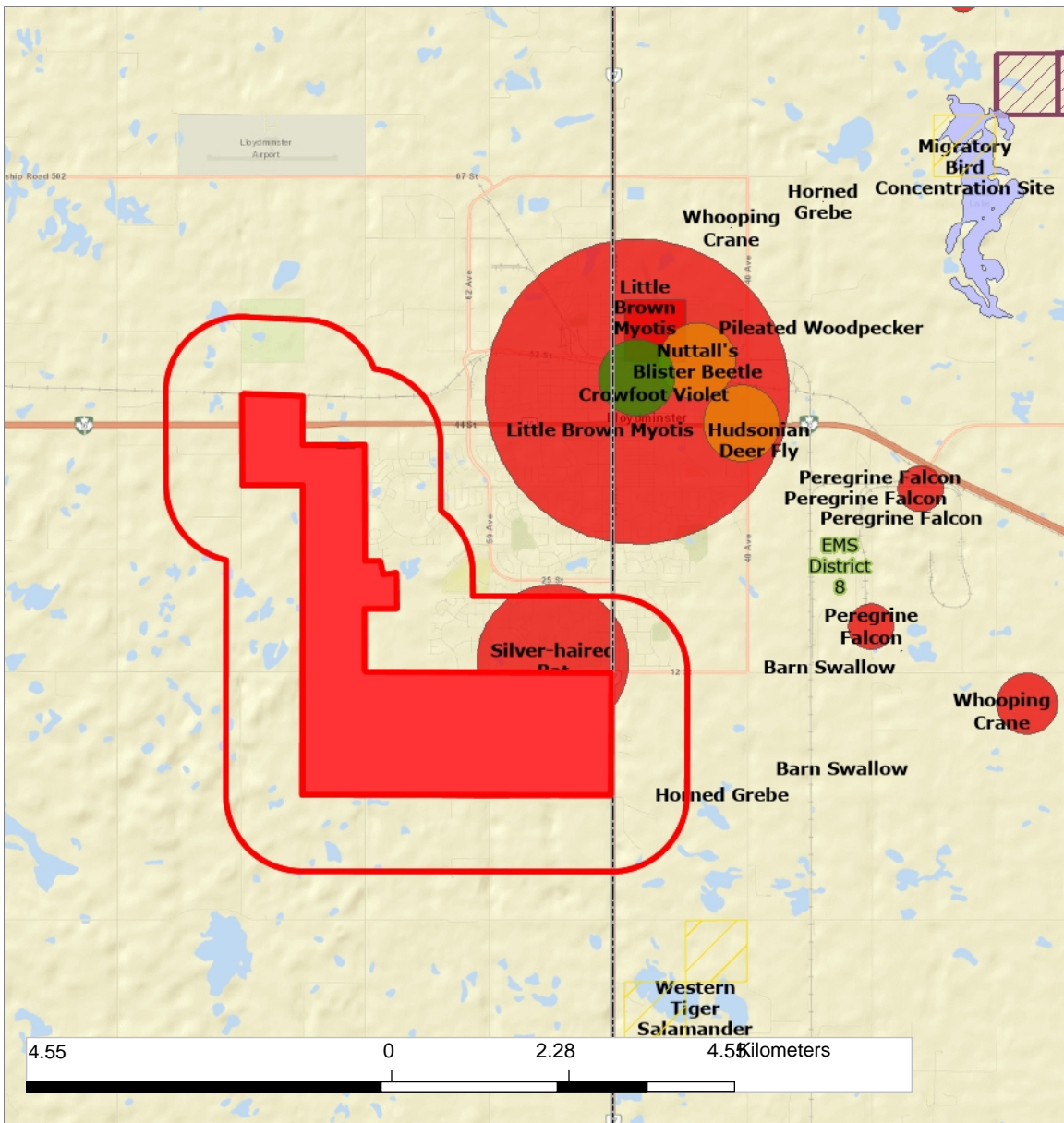
Report Generated
09/22/2025

Map Information 

Buffer Size:
1 Kilometers

Coordinates:
Lat: 53.25294° N
Lon: -110.04707° W

Area of Interest

- Screened Areas:**
- Ecological Management
 - Specialists (EMS) District
 - Compliance & Field Service (CFS) Area
 - Compliance & Field Service (CFS) Region
 - Area Fisheries Ecologists Area(s)
 - Area Wildlife Ecologist(s)
 - Rural Municipality
 - First Nation Reserve
 - AG Crown Land Management
 - Specialist Districts
 - Rare and Endangered Species
 - Fish Species
 - Woodland Caribou Range
 - Species Predictive Models
 - Whooping Crane Corridor
 - Barren-ground Caribou
 - Federal Critical Habitat
 - Proposed Critical Habitat
 - Wind Energy Avoidance Zones
 - Important Natural Areas
 - Provincial Parks
 - Recreation Sites
 - Game Preserves
 - RC Game Preserve
 - National Wildlife Areas
 - Federal Pastures
 - Wildlife Habitat Protection Act Lands
 - Wildlife Habitat Protection Act Lands within Project Area
 - Fish & Wildlife Development
 - Fund Lands
 - Migratory Bird Sanctuary
 - Wildlife Refuge
 - Conservation Easements
 - Crown Conservation Easements
 - Ecological Reserves
 - Ramsar Wetlands
 - Reservoir Development Areas
 - Representative Areas
 - Special Management Areas

Species Likely to be Present

Known Species

“Known” species are species that have known occurrences in the area from the Saskatchewan Conservation Data Centre’s Rare and Endangered Species map layer. However, absence of species observation records does not preclude the existence of species in the area of interest. Observations may simply not have been recorded for the given area or may not have yet been entered into the ministry data holdings – new observation records are continuously being discovered. Information accessible through HABISask is not intended to be a definitive statement on the presence, absence or status of a species within a given area, nor as a substitute for onsite surveys.

Rare and Endangered Species

Category: Vertebrate Animal

Common Name	Scientific Name:	G Rank	N Rank	S Rank	COSEWIC	SARA Status	Wild Species at Risk Regulations
Silver-haired Bat	<i>Lasionycteris noctivagans</i>	G4	N5B,NUN, NUM	S5B	Endangered		

Expected Species

“Expected” is based on a modelled prediction if a species might occur in areas based upon developed statistical relationships between local and landscape characteristics and species presence. Models utilized by this report have only been created in the prairie ecozone for a selection of species. The boreal plain, boreal shield and taiga shield will not return any expected species results. Models are not a substitute for on the ground surveys to determine species presence.

Species Predictive Models

Category: Invertebrate Animal

Common Name	Scientific Name:	G Rank	N Rank	S Rank	COSEWIC	SARA Status	Wild Species at Risk Regulations
Monarch	<i>Danaus plexippus plexippus</i>	G4T3	N3B,NUM	S2B,SNRM	Endangered	Endangered	

Category: Vertebrate Animal

Common Name	Scientific Name:	G Rank	N Rank	S Rank	COSEWIC	SARA Status	Wild Species at Risk Regulations
American Badger	<i>Taxidea taxus taxus</i>	G5T5	N4	S3	Special Concern	Special Concern	
Common Nighthawk	<i>Chordeiles minor</i>	G5	N4N5B, N5M	S4B	Special Concern	Special Concern	
Horned Grebe	<i>Podiceps auritus</i>	G5	N5B, N4N5N	S4B	Special Concern	Special Concern	
Piping Plover	<i>Charadrius melodus circumcinctus</i>	G3T3	N3B	S3B	Endangered	Endangered	Endangered

Fish Species by Watershed

All fish species expected to be in any watershed that intersects the area searched are provided and their presence in the direct project area will depend on habitat.

Watershed: North Saskatchewan River

Common Name	Scientific Name:	G Rank	N Rank	S Rank	COSEWIC	SARA Status	Wild Species at Risk Regulations
Blacknose Dace	<i>Rhinichthys obtusus</i>	G5	N5	S3			
Blacknose Shiner	<i>Notropis heterolepis</i>	G5	N5	S4			
Blackside Darter	<i>Percina maculata</i>	G5	N5	S3			
Brassy Minnow	<i>Hybognathus hankinsoni</i>	G5	N5	S3	Special Concern		
Brook Stickleback	<i>Culaea inconstans</i>	G5	N5	S5			
Brook Trout	<i>Salvelinus fontinalis</i>	G5	N5B,N5N	SNA			
Brown Trout	<i>Salmo trutta</i>	G5	NNA	SNA			
Burbot	<i>Lota lota</i>	G5	N5	S5			
Cisco	<i>Coregonus artedii</i>	G5	N5B,N5N, NUM	S5			
Common Carp	<i>Cyprinus carpio</i>	G5	NNA	SNA			
Emerald Shiner	<i>Notropis atherinoides</i>	G5	N5	S5			
Fathead Minnow	<i>Pimephales promelas</i>	G5	N5	S5			
Finescale Dace	<i>Chrosomus neogaeus</i>	G5	N5	S4			

Watershed: North Saskatchewan River

Common Name	Scientific Name:	G Rank	N Rank	S Rank	COSEWIC	SARA Status	Wild Species at Risk Regulations
Flathead Chub	<i>Platygobio gracilis</i>	G5	N5	S3			
Goldeye	<i>Hiodon alosoides</i>	G5	N5	S4			
Iowa Darter	<i>Etheostoma exile</i>	G5	N5	S5			
Johnny Darter	<i>Etheostoma nigrum</i>	G5	N5	S5			
Lake Chub	<i>Couesius plumbeus</i>	G5	N5	S5			
Lake Sturgeon	<i>Acipenser fulvescens</i>	G3G4	N3N4	S2	Endangered		
Lake Whitefish	<i>Coregonus clupeaformis</i>	G5	N5B,N5N	S5	Not at Risk		
Longnose Dace	<i>Rhinichthys cataractae</i>	G5	N5	S5			
Longnose Sucker	<i>Catostomus catostomus</i>	G5	N5	S5			
Mooneye	<i>Hiodon tergisus</i>	G5	N5	S3			
Ninespine Stickleback	<i>Pungitius pungitius</i>	G5	N5B,N5N	S5			
Northern Pike	<i>Esox lucius</i>	G5	N5	S5			
Northern Redbelly Dace	<i>Chrosomus eos</i>	G5	N5	S3			
Pearl Dace	<i>Margariscus nachtriebi</i>	G5	N5	S5			
Quillback	<i>Carpodes cyprinus</i>	G5	N5	S4			
Rainbow Trout	<i>Oncorhynchus mykiss</i>	G5	N5B,N5N	SNA			
River Shiner	<i>Notropis blennioides</i>	G5	N5	S3			
Sauger	<i>Sander canadensis</i>	G5	N5	S5			
Shorthead Redhorse	<i>Moxostoma macrolepidotum</i>	G5	N5	S4			
Silver Redhorse	<i>Moxostoma anisurum</i>	G5	N5	S4			
Slimy Sculpin	<i>Cottus cognatus</i>	G5	N5	S4			
Splake	<i>Salvelinus fontinalis</i> x <i>S. namaycush</i>	GNA	NNA	SNA			
Spoonhead Sculpin	<i>Cottus ricei</i>	G5	N5	S5	Not at Risk		
Spottail Shiner	<i>Notropis hudsonius</i>	G5	N5	S5			
Tadpole Madtom	<i>Noturus gyrinus</i>	G5	N5	S3			
Tiger Trout	<i>Salmo trutta</i> x <i>Salvelinus fontinalis</i>	GNA	NNA	SNA			
Trout-perch	<i>Percopsis omiscomaycus</i>	G5	N5	S5			
Walleye	<i>Sander vitreus</i>	G5	N5	S5			
White Sucker	<i>Catostomus commersonii</i>	G5	N5	S4			
Yellow Perch	<i>Perca flavescens</i>	G5	N5	S5			

Whooping Crane Corridor 95% Core Area

Species with Critical Habitat Present

This dataset displays the geographic areas within which federal Critical Habitat for species at risk listed on Schedule 1 of the federal Species at Risk Act (SARA) occurs in Saskatchewan. Please be aware that not all of the area within these boundaries is necessarily Critical Habitat. To determine if a specific area is Critical Habitat and if your activity might be considered “destruction” of Critical Habitat, other information available in each individual species’ Recovery documents (<http://www.sararegistry.gc.ca>) need to be considered, including biophysical attributes and activities likely to result in destruction of Critical Habitat.

Note that recovery documents (and therefore Critical Habitat) may be amended from time to time. Species are added as the data becomes ready, which may occur after the recovery document has been posted on the SAR Public Registry. Although HABISask will try to provide the latest data, the SAR Public Registry should always be considered as the official source for Critical Habitat information.

Common Name	Scientific Name:	G Rank	N Rank	S Rank	COSEWIC	SARA Status	Wild Species at Risk Regulations
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No Critical Habitat found

Proposed Critical Habitat Present

This section identifies federally proposed critical habitat that is up for consultation as per the information contained within the federal recovery strategies developed under the federal Species at Risk Act (SARA). This information on location of critical habitat is intended for reference by landowners and/or lease holders. Shapefiles or additional maps of critical habitat can be obtained by contacting Environment and Climate Change Canada at ec.leprpn-sarapnr.ec@canada.ca.

Shapefiles or additional maps of critical habitat for aquatic species at risk can be found on the Government of Canada Open Government Portal at:

[Critical Habitat for Aquatic Species at Risk - Canada](#)

To obtain shapefiles or maps for all other species at risk contact Environment and Climate Change Canada at ec.leprpn-sarapnr.ec@canada.ca.

Common Name	Scientific Name:	G Rank	N Rank	S Rank	COSEWIC	SARA Status	Wild Species at Risk Regulations
No Critical Habitat found							

Managed Areas

Managed areas are a diverse collection of lands and waters on which the conservation of biodiversity and ecosystem function are among the goals of the land management programs. Each of the unique or sensitive landscapes, within the network of managed areas, have some level of protection or activity restrictions placed on them by legislation, agreement or policy. These lands include provincial and national parks, ecological reserves, wildlife lands, game preserves, conservation easements and other privately held stewardship lands.

Managed areas are listed below if they are found within the complete project area including the buffer, unless otherwise specified.

Provincial Park

Nothing Found

Representative Area Ecological Reserve

Nothing Found

Recreation Site

Nothing Found

Special Management Area

Nothing Found

Game Preserve

Nothing Found

Road Corridor Game Preserve

Nothing Found

National Wildlife Area

Nothing Found

Pasture Boundary

Nothing Found

Wildlife Habitat Protection Act (WHPA)

Nothing Found

Wildlife Habitat Protection Act (WHPA) within Project Area

Nothing Found

Fish & Wildlife Development Fund (FWDF)

Nothing Found

Migratory Bird Sanctuary

Nothing Found

Wildlife Refuge

Nothing Found

Conservation Easement

Nothing Found

Crown Conservation Easement

Nothing Found

Ecological Reserve

Nothing Found

Ramsar Wetland

Nothing Found

Reservoir Development Area

Nothing Found

Rare and Endangered Species Occurrences

The absence of information provided by the Saskatchewan Conservation Data Centre (SKCDC) does not categorically mean the absence of sensitive species or features. The quantity and quality for data collected by the SKCDC are dependent on the research and observations of many individuals and organizations. SKCDC reports summarize the existing natural heritage information, known to the SKCDC, at the time of the request.

SKCDC data should never be regarded as final statements on the elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments. The user therefore acknowledges that the absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources.

Occurrence ID: 9999149653

First Observation: 2019-07-22

Occurrence Class: Vertebrate Animal

Last Observation: 2019-07-22

Scientific Name: Lasionycteris noctivagans

Common Name: Silver-haired Bat

Occurrence Rank:

General Description: 1 Adult Female(s); (2019)

Occurrence Data:

Directions:

Wild Species Research Permitting

A Research Permit is required to detect or observe plants or wildlife for commercial purposes, such as pre-screening surveys to collect baseline data or other activities, or to conduct academic research. Research Permits are not required if you are doing surveys for personal, recreational, educational or other non-commercial purposes. Revisions were made to Section 21 of The Wildlife Act in 2015 and to Section 6.2 of The Wildlife Regulations in 2016.

See the Government of Saskatchewan [Wild Species Research Permitting](#) page for more information.

All forms and related information pertaining to Research Permits can be found in the Publications Centre. Be sure to check out the Conservation Standards Terms and Conditions for Research Permits for general, wildlife and research-specific and information submission conditions that pertain to all research permits.

Subscribe to our Mail-out List Subscriptions for updates regarding Species Detection Permits, SKCDC Lists and Ranks, Legislation and Policy and HABISask.

Species Detection Survey Protocols

The [Species Detection Survey Protocols](#) are used to detect rare and sensitive species so Activity Restriction Guidelines can be applied. Their use is required by industry/environmental consultants for proposed or existing commercial activities.

Activity Restriction Guidelines for Sensitive Species

The [Activity Restriction Guidelines for Sensitive Species](#) outline restricted activity periods and distance setbacks for rare and sensitive species to assist proponents in minimizing impacts to rare and sensitive species and habitats.

Administrative Areas

District 8	Ecological Management Specialist (EMS) District(s)
Lloydminster	Compliance and Field Services Area(s)
Meadow Lake	Compliance and Field Services Region(s)
South West	Area Fisheries Ecologist Area(s)
WEST BOREAL REGION	Area Wildlife Ecologist(s)
472 - WILTON	Rural Municipality
Nothing Found	First Nation Reserve
District 16	AG Crown Land Management Specialist District

Contact Us

For more information, please contact our Client Service Office:

Email: centre.inquiry@gov.sk.ca

Tel (toll free in North America): 1-800-567-4224

Tel (Regina): 306-787-2584



APPENDIX D: SPECIES AT RISK ASSESSMENT



Plant Species At Risk Assessment

Common Name	Species Scientific Name	SARA Status	COSEWIC Status	Provincial Status - AB	Habitat	AB Range	Potential for Occurrence and Recommended Mitigation Measures	Level of Risk
Vascular Plants								
Blunt-leaved watercress	<i>Rorippa curvipes</i>	No Status	No Status	S3	Moist grounds; wetlands, shores, streambanks	Southern and Central Alberta	Moderate Non-Sensitive EO outside of study area, within 5km.	Low
Bolanders Quilwort	<i>Isoetes bolanderi</i>	Threatened	Threatened	S1	Grows in chalky clay soils in vernal pools in large forest openings dominated by Scoulers Popcornflower and Close-flowered Knotweed. Also grows at ephemeral pond edges in spring. Restricted to a single location in southwestern Alberta.	Southwestern Alberta	Low Project area is north of this species range.	Negligible
Dwarf Woolly-heads (Prairie population)	<i>Psilocarphus brevissimus</i>	Special Concern	Special Concern	S2	In chalky clay soils in vernal pools/temporary ponds	Southeastern Alberta	Low Project area is north of this species range.	Negligible
Floccose Tansy	<i>Tanacetum huronense var. floccosum</i>	Special Concern	Special Concern	S2	On open active sand dunes and beaches	Northeast corner Alberta	Low Project area is south of this species range.	Negligible
Hair-footed Locoweed	<i>Oxytropis lagopus</i>	Threatened	Threatened	Special Concern S1	Grows withing the foothills fescue and mixedgrass subregions south of Lethbridge. Plants grow on thin gravelly soils in open grassland.	Southern Alberta - Uplands of Milk River and Del Bonita Plateau	Low Project area is north of this species range.	Negligible
Lance-leaved loosestrife	<i>Lysimachia hybrida</i>	No Status	No Status	S3	wet areas such as wet meadows, ponds, stremas	Wide range- little information provided	Moderate Non-Sensitive EO outside of study area, within 5km.	Low
Nevada Rush	<i>Juncus nevadensis</i>	No Status	No Status	S1	wet areas such as margins of lakes, marshes, bogs and stream banks	Wide range- little information provided	Moderate Non-Sensitive EO outside of study area, within 5km.	Low
Slender Mouse-ear-cress	<i>Crucihimalaya virgata</i>	Threatened	Threatened	Endangered S2	In sandy alkaline soil within open, short to mid-grass prairie	Southeastern Alberta	Low Project area is north of this species range.	Negligible
Small-flowered Sand-verbena	<i>Tripterocalyx micranthus</i>	Endangered	Special Concern	Threatened S2	In dry unstable sand-hill areas, within mixed-grass prairie	Southwestern Alberta	Low Project area is north of this species range.	Negligible
Smooth Goosefoot	<i>Chenopodium subglabrum</i>	Threatened	Threatened	S2	In unstable sand areas, such as stabilizing edges of active dunes	In Alberta, Species occurs in six different sand hill areas: Grassy lake, Middle Sand Hills, Rolling Hills Lake, Dominion, Medicine Lodge Coulee and Pakowki Lake	Low Project area is north of this species range.	Negligible
Soapweed	<i>Yucca glauca</i>	Threatened	Threatened	Endangered S1	In shallow alkaline soils on coulee slopes	Southern Alberta	Low Project area is north of this species range.	Negligible
Tiny Cryptantha	<i>Cryptantha minima</i>	Threatened	Threatened	Endangered S2	In dry, open, disturbed, sandy, south-facing slopes	Eastern Half of Alberta- Also occurs near the lower Red Deer, lower Bow, Oldman and Lost rivers	Low Project area is north of this species range.	Negligible
Western Blueflag	<i>Iris missouriensis</i>	Special Concern	Special Concern	Special Concern S2	Lakeshores, sand bars, exposed sandy or gravelly beaches, shallow saline lakes with sandy shores, or larger lakes	Foothills Fescue and Foothills Parkland natural subregions in Alberta	Low Project area is north of this species range.	Negligible
Western Spiderwort	<i>Tradescantia occidentalis</i>	Threatened	Threatened	Endangered S1	On partially stabilized sand dune ridges.	Southern Alberta	Low Project area is north of this species range.	Negligible
Whitebark Pine	<i>Pinus albicaulis</i>	Threatened	Endangered	Endangered S2	Occurs at or close to treeline, forming both open and closed forests.	Western Alberta, mountain regions	Low Project area is east of this species range.	Negligible
Non-Vascular Plants								
Haller's Apple Moss	<i>Bartramia halleriana</i>	Threatened	Threatened	S1	Low elevation, moist, non-calcarious cliffs or debris under dense forest cover.	Jasper National Park	Low Project area is east of this species range.	Negligible
Porsild's Brym	<i>Haplodontium macrocarpum</i>	Threatened	Threatened	Endangered S2S3	Shaded microhabitats on cliffs or rock outcrops, continually moistened by seepage or splashes from nearby water	Western Alberta, mountain regions	Low Project area is east of this species range.	Negligible



Wildlife Species At Risk Assessment

Common Name	Species Scientific Name	SARA Status	COSEWIC Status	Provincial Status (SK)	Habitat	AB Range	Potential for Occurrence and Recommended Mitigation Measures	Level of Risk
Amphibians & Reptiles								
Bullsnake	<i>Pituophis catenifer sayi</i>	Special Concern	Special Concern	S3	Short or mixed grass prairie in brushy or sandy areas or along major river valleys	In Alberta, Occurs from north and west of Drumheller along the Red Deer River coulee system, distributed mainly in lower Red Deer, South Saskatchewan and Milk river Valleys.	Low Project area is north of this species range.	Negligible
Eastern Yellow-bellied Racer	<i>Coluber constrictor flaviventris</i>	Threatened	Threatened	S1	Mixed grass prairie - rock dens on south facing slopes in steep river valleys, forage in riparian and valley bottom habitats	Southeastern Alberta	Low Project area is north of this species range.	Negligible
Great Plains Toad	<i>Anaxyrus cognatus</i>	Special Concern	Special Concern	Special Concern S2S3	Large, shallow, seasonal wetlands	Southeastern Alberta	Low Project area is north of this species range.	Negligible
Greater Short-horned Lizard	<i>Phrynosoma hernandesi</i>	Special Concern	Special Concern	Endangered S2	Sparsely vegetated, south facing slopes with friable soils and patchy vegetation cover	Four distinct habitat areas in Alberta. Including the south saskatchewan river, Manyberries Hills, along the Chin Coulee and along the milk river.	Low Project area is outside of this species range.	Negligible
Northern Leopard Frog	<i>Lithobates pipiens</i>	Special Concern	Special Concern	Threatened S2S3	Deep aerobic waterbodies that do not freeze (winter) Moist upland meadows / prairies; riparian areas; within <30cm veg (summer)	Range information lacking - southern Alberta and along eastern border	Low The project area is north of the "Sensitive Amphibian Range" where amphibian surveys are required, and few intact wetlands suitable for breeding are found within the project area. Mitigations include: -Responsible operation of equipment and spill prevention planning to reduce impacts to adjacent wetland areas. -Report any occurrences to the appropriate agencies -Implement RAP setbacks (100m year-round) or apply for approval to proceed within setbacks should breeding ponds be identified.	Low
Plains Hog-nosed Snake	<i>Heterodon nasicus</i>	Special Concern	Special Concern	S2	Sandy grasslands in open-canopy vegetation, often in close proximity to water.	Southern Alberta	Low Project area is north of this species range.	Negligible
Prairie Rattlesnake	<i>Crotalus viridis</i>	Special Concern	Special Concern	Special Concern S3	Strongly associated with major river valleys, coulee bottoms, and upland grassland or badlands. Hibernacula - south or east facing slopes	Southeastern Alberta, Badlands and rivervalleys	Low Project area is north of this species range.	Negligible
Western Tiger Salamander	<i>Ambystoma mavortium</i>	Special Concern	Special Concern	S3	variety of open habitats, including grasslands, parkland, subalpine meadows, and semi-deserts. Sparse vegetation with south-facing, fine loose soils surrounding semi-permanent to permanent water bodies.	Prairie ecozone. East to the Red River in Manitoba and eastern slopes of Rocky Mountains in Alberta	Moderate The project area is north of the "Sensitive Amphibian Range" where amphibian surveys are required, and few intact wetlands suitable for breeding are found within the project area. Mitigations include: -Responsible operation of equipment and spill prevention planning to reduce impacts to adjacent wetland areas. -Report any occurrences to the appropriate agencies.	Low
Western Toad	<i>Anaxyrus boreas</i>	Special Concern	Special Concern	S3S4	Found near lakes and small bodies of water	Boreal forests, foothills, sub-alpine and alpine regions	Low Project area is east of this species range.	Negligible
Fish								
Bull Trout	<i>Salvelinus confluentus</i>	Threatened	Threatened	Threatened S2	Cold, pristine waters - small streams and rivers (stream resident); rivers and major tributaries and headwaters (fluvial migratory); and headwater streams and lakes (adfluvial migratory).	Broadly distributed east of the Rockies	Low Project area does not intersect with any suitable river or lake habitat	Negligible



Wildlife Species At Risk Assessment

Common Name	Species Scientific Name	SARA Status	COSEWIC Status	Provincial Status (SK)	Habitat	AB Range	Potential for Occurrence and Recommended Mitigation Measures	Level of Risk
Mountain Sucker	<i>Catostomus platyrhynchus</i>	Threatened	Non-active	S5	Cool water, primarily within small streams with moderate flows, but occasionally in lakes / reservoirs / large rivers.	Milk River basin of southern Alberta and Saskatchewan	Low Project area is north of this species range.	Negligible
Rainbow Trout - Athabasca River populations	<i>Oncorhynchus mykiss</i>	Endangered	Endangered	Threatened S2	Cold headwater streams and main rivers in Athabasca drainage.	Upper Athabasca River Watershed	Low Project area is outside of this species range.	Negligible
Rocky Mountain Sculpin - Eastslope or St Mary populations	<i>Cottus sp.</i>	Threatened	Non-active	Threatened S2	Cool, clear streams with shallow runs and riffles with rock / gravel / cobble substrates.	Milk and St. Mary River Watersheds	Low Project area is outside of this species range.	Negligible
Western Silvery Minnow	<i>Hybognathus argyritis</i>	Threatened	Threatened	Threatened S1S2	Plains species found in quiet water with flow velocities, including backwaters and pools of larger streams.	Milk River - Endemic in southern Alberta	Low Project area is outside of this species range.	Negligible
Westslope Cutthroat Trout	<i>Oncorhynchus clarkii lewisi</i>	Threatened	Threatened	Threatened S2	Cold, clean water with a variety of cover types, including headwaters and upper reaches of streams, and larger rivers and lakes.	Southwestern Alberta (primarily South Saskatchewan drainage)	Low Project area is outside of this species range.	Negligible
Birds								
Baird's Sparrow	<i>Ammodramus bairdii</i>	Special Concern	Special Concern	S3B	Mixed grass and fescue prairie with sparse shrubs, moderate grass heights, and some litter - may be present in tame pasture with similar features	Southcentral Alberta - west of Edmonton / Red Deer / Calgary and south of the North Saskatchewan River	Moderate Project area contains suitable habitat (open grassland/pasture) and is at the northern edge of their range. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences or nests to the appropriate agencies.	Moderate
Bank Swallow	<i>Riparia riparia</i>	Threatened	Threatened	S4B	Vertical banks (river banks, pits, stock piles, road cuts)	Alberta	Low Project is within the species range, but the project area is not anticipated to contain suitable nesting habitat. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences or nests to the appropriate agencies.	Low
Barn Swallow	<i>Hirundo rustica</i>	Threatened	Special Concern	S4B	Buildings, houses, bridges, culvert; may be found in caves, holes, crevices and cliff faces	Alberta	Moderate Project is within the species range, and the project area is anticipated to contain suitable nesting structures / habitat. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences or nests to the appropriate agencies.	Moderate
Black Swift	<i>Cypseloides niger</i>	Endangered	Endangered	S2B	Nest near or behind waterfalls and in caves, located in canyons or along sea cliffs	From Northwestern British Columbia and Southwestern Alberta through to Montana	Low Project area is east of this species range.	Negligible
Bobolink	<i>Dolichonyx oryzivorus</i>	Threatened	Special Concern	S3B	Forage crops (clover, Timothy, Kentucky Bluegrass, and broadleaved plants); grassland (wet prairie, graminoid peatlands, tall grasses, no-till cropland, small-grain fields, restored surface sites	Southcentral AB	Moderate Project area contains suitable habitat (open grassland/pasture) and is at the northern edge of their range. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences or nests to the appropriate agencies.	Moderate



Wildlife Species At Risk Assessment

Common Name	Species Scientific Name	SARA Status	COSEWIC Status	Provincial Status (SK)	Habitat	AB Range	Potential for Occurrence and Recommended Mitigation Measures	Level of Risk
Buff-breasted Sandpiper	<i>Tryngites subruficollis</i>	Special Concern	Special Concern	SUM	Stopovers in crop field, golf courses, airport runways, farm land, grazed pasture land	Migrant through Alberta	Low Project area contains potential migration stopover habitat. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences to the appropriate agencies.	Low
Burrowing Owl	<i>Athene cunicularia</i>	Endangered	Endangered	Endangered S2B	Sparsely vegetated grasslands, nesting in abandoned burrows and active prairie dog towns	Southcentral AB	Low Project area is north of this species range.	Negligible
Canada Warbler	<i>Cardellina canadensis</i>	Threatened	Special Concern	Special Concern S3S4B	Wet, mixed deciduous-coniferous with dense shrub	Throughout AB	Low Project area contains small remnant patches of potentially suitable habitat (deciduous treed) and is within the species range. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences or nests to the appropriate agencies.	Low
Chestnut-collared Longspur	<i>Calcarius ornatus</i>	Threatened	Endangered	S2B	Mixed-grass prairies	Southern Alberta- Mixed grass prairie region	Low Project area is north of this species range.	Negligible
Common Nighthawk	<i>Chordeiles minor</i>	Special Concern	Special Concern	S3S4B	Generalist; open prairies, veg-free, dunes, beaches, harvested plots, grasslands, pastures, bogs, marshes, lakeshores, river banks also mixed and deciduous forests	Throughout AB	Moderate Project area contains suitable habitat (pastchwork of open grassland / treed habitat) and is within the species range. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences or nests to the appropriate agencies.	Moderate
Eskimo Curlew	<i>Numenius borealis</i>	Endangered	Endangered	-	Spring migration - tallgrass and mixed grass prairies, assumed heavier reliance on freshly planted corn and wheatfields	Migrant through Alberta	Low Project area contains potential migration stopover habitat. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences to the appropriate agencies.	Low
Evening Grosbeak	<i>Coccothraustes vespertinus</i>	Special Concern	Special Concern	S4	Open mature mixed wood habitats during breeding, and seed producing trees outside the breeding season, including ornamental fruit trees and bird feeders	Stop-over habitat during migration	Moderate Project area contains potentially suitable habitat (treed habitats) within the species range. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences or nests to the appropriate agencies.	Moderate
Ferruginous Hawk	<i>Buteo regalis</i>	Threatened	Special Concern	Endangered S3B,S2M	Native grassland	Southern AB	Low Project area is north of this species range.	Negligible
Greater Prairie-Chicken	<i>Tympanuchus cupido</i>	Extirpated	Extirpated	-	Tall-grass prairie, mixed-grass prairie	Extirpated	Low The species is extirpated from Canada.	Negligible
Greater Sage-Grouse	<i>Centrocercus urophasianus</i>	Endangered	Endangered	Endangered S1	Mixed-grass prairie, warm, dry regions with silver sagebrush	Southwestern AB	Low Project area is north of this species range.	Negligible



Wildlife Species At Risk Assessment

Common Name	Species Scientific Name	SARA Status	COSEWIC Status	Provincial Status (SK)	Habitat	AB Range	Potential for Occurrence and Recommended Mitigation Measures	Level of Risk
Harris Sparrow	<i>Zonotrichia querula</i>	Special Concern	Special Concern	SUM	Upland and tundra habitats along the treeline	Northern AB- north treeline	Low Project area is south of this species range.	Negligible
Horned Grebe	<i>Podiceps auritus</i>	Special Concern	Non-active	S4B	Fresh or brackish small permanent or semi-permanent wetlands	Alberta	Low Project area not near suitable habitat	Negligible
Lark Bunting	<i>Calamospiza melanocorys</i>	Threatened	Threatened	S2B	Grassland habitats, weedy fields, pastures, and croplands	Southern AB	Low Project area is north of this species range.	Negligible
Lewis's Woodpecker	<i>Melanerpes lewis</i>	Threatened	Threatened	S3B	Require open habitat with scattered or edge trees. Large open areas necessary for foraging. Trees are used as hawking perches and for nesting. Large diameter trees for nesting.	Vagrant in Alberta, foothills and lower mountain slopes of western Alberta	Low Project area is outside of this species range.	Negligible
Loggerhead Shrike	<i>Lanius ludovicianus</i>	Threatened	Threatened	Special Concern S3B	Open areas with grass, forbes, bare ground and sparsity of shrubs	Southern AB	Low Project area is north of this species range.	Negligible
Long-billed Curlew	<i>Numenius americanus</i>	Special Concern	Threatened	Special Concern S3B	Short to mid grass prairies; sporadic bunch grass (nesting); dense grass (post-hatching)	Breeds in AB	Low Project area is north of this species range.	Negligible
McCown's Longspur	<i>Rhynchophanes mccownii</i>	Threatened	Threatened	S3B	Dry, short grassland with bare ground, shrubs and forbs (Mixed grass prairie, short-grass prairie, grazed pasture)	Southern AB	Low Project area is north of this species range.	Negligible
Mountain Plover	<i>Charadrius montanus</i>	Endangered	Endangered	S1B	Flat terrain; short vegetation; bare ground; heavily grazed grassland; Black-tailed prairie dog presence	Southeastern Alberta	Low Project area is north of this species range.	Negligible
Olive-sided Flycatcher	<i>Contopus cooperi</i>	Special Concern	Special Concern	S4B	Edges of coniferous or mixed wood forests near open areas with snags and tall trees	Forest edges	Low Project area not near suitable habitat.	Negligible
Piping Plover	<i>Charadrius melodus</i>	Endangered	Endangered	Endangered S2B	Shallow saline lake with sand or gravel beaches	Southern AB	Low Project area not near suitable habitat	Negligible
Red Knot rufa	<i>Calidris canutus rufa</i>	Endangered	Endangered	SUM	Limited information on stopover sites - bare areas; ridges; slopes; plateaus; south facing; near wetlands	Migrant through Alberta	Low Project area is within the species migratory range, but unlikely to have suitable stop over habitats. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences or nests to the appropriate agencies.	Low
Red-necked Phalarope	<i>Phalaropus lobatus</i>	Special Concern	Special Concern	SUB	Lakes and ponds	Breeding far north, migrant through Alberta	Low Project area is within the species migratory range, but unlikely to have suitable stop over habitats. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences or nests to the appropriate agencies.	Low
Rusty Blackbird	<i>Euphagus carolinus</i>	Special Concern	Special Concern	S3S4B,SUN	Boreal forest - coniferous forests near wetlands	AB-boreal forest region	Low Project area is south of this species range.	Negligible
Sage Thrasher	<i>Oreoscoptes montanus</i>	Endangered	Endangered	SUB	Shrub steeps with sagebrush	Southeastern AB	Low Project area is north of this species range.	Negligible



Wildlife Species At Risk Assessment

Common Name	Species Scientific Name	SARA Status	COSEWIC Status	Provincial Status (SK)	Habitat	AB Range	Potential for Occurrence and Recommended Mitigation Measures	Level of Risk
Sharp-Tailed Grouse	<i>Tympanuchus phasianellus</i>	No Status	No Status	S4	Wide range of habitats, including prairies / grasslands, bogs, and open woodland habitats	Non-forested region of Alberta	Moderate The project area falls within the "Sharp-Tailed Grouse Survey Area" where species surveys are required, and suitable habitat (patchwork of open grassland / treed habitat) is found within the project area. Mitigations include: - Complete Sharp-tailed Grouse surveys as per Alberta Sensitive Species Inventory Guidelines. Implement RAP setbacks (100 to 500m year round) or apply for approval to proceed within setbacks should an active lek be identified. - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences or nests to the appropriate agencies.	Moderate
Short-eared Owl	<i>Asio flammeus</i>	Special Concern	Threatened	S3B,SUN	Large open landscapes, including grassland, tundra, bogs, marshes, and occasionally agriculture lands	Alberta	Moderate Project area contains suitable habitat (pastchwork of open grassland / treed habitat) and is within the species range. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences or nests to the appropriate agencies. - Implement RAP setbacks (100m April 1 to July 15) or apply for approval to proceed within setbacks should an active nest be identified.	Moderate
Sprague's Pipit	<i>Anthus spragueii</i>	Threatened	Threatened	Special Concern S3S4B	Native grassland; medium height and density	Southern and central Alberta	Moderate Project area contains suitable habitat (pastchwork of open grassland / treed habitat) and is within the species range. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences or nests to the appropriate agencies. - Implement RAP setbacks (100m April 1 to July 15) or apply for approval to proceed within setbacks should an active nest be identified.	Moderate
Western Grebe	<i>Aechmophorus occidentalis</i>	Special Concern	Special Concern	Threatened S3B	Stable waterbodies with emergent vegetation, medium to large lakes and marshes	Southern and central Alberta	Low Project area not near suitable habitat	Negligible
Whooping Crane	<i>Grus americana</i>	Endangered	Endangered	Endangered S1B	Marshes, bogs, lakes near Black spruce, White Spruce, Dwarf birch, Bearberry, Laborador tea, Cattails, Sedges, Bullrush	Migrant through Alberta	Low Project area is within the species migratory range, but unlikely to have suitable stop over habitats. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences or nests to the appropriate agencies.	Low



Wildlife Species At Risk Assessment

Common Name	Species Scientific Name	SARA Status	COSEWIC Status	Provincial Status (SK)	Habitat	AB Range	Potential for Occurrence and Recommended Mitigation Measures	Level of Risk
Yellow Rail	<i>Coturnicops noveboracensis</i>	Special Concern	Special Concern	SUB	Marshes, meadows, flood zone adjacent to sedges, poaceae and rushes	Alberta	Low Project area is within the species range, and it contains potentially suitable habitat (marshy graminoid wetland) but it is unlikely to be extensive enough to be suitable for breeding. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences or nests to the appropriate agencies.	Low
Mammals								
American Badger	<i>Taxidea taxus taxus</i>	Special Concern	Special Concern	S3	Grassland with sandy-silty soils	Boreal transition to Southern province	Moderate Project area contains suitable habitat (open grassland / pasture) within the species range. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences to the appropriate agencies.	Moderate
Black-footed Ferret	<i>Mustela nigripes</i>	Extirpated	Extirpated	-	Short grass prairies requiring prairie dogs as main prey	Western prairies, to the south of Calgary Alberta,	Low Project area is north of this species range.	Negligible
Caribou - Boreal population	<i>Rangifer tarandus</i>	Threatened	Threatened	S1S2	Mature coniferous forests (Black spruce, White spruce, Tamarack)	4 local populations in Alberta	Low Project area is south of this species range.	Negligible
Grizzly Bear	<i>Ursus arctos</i>	Special Concern	Special Concern	Threatened S3	Generalist; go to where to food is and far from human disturbance	Rocky mountains and Foothills of Alberta as well as North-central and Northwestern boreal regions	Low Project area is east of this species range.	Negligible
Little Brown Myotis	<i>Myotis lucifugus</i>	Endangered	Endangered	EndangeredS3S4B, SNRN, SNRM	Roosts - man-made structures (like attics), tree cavities, under the bark of trees, in rock crevices and caves. Winter hibernation sites (hibernacula) are usually in caves or mines	South-central AB	Low Project area is dominated by cultivation, with small remnant patches of trees with some roosting habitat potential in the immediate project area. However, the small size of the trees and lack of caves in the area limit the potential for roosts and hibernation sites. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences to the appropriate agencies.	Low
Northern Myotis	<i>Myotis septentrionalis</i>	Endangered	Endangered	EndangeredS2S3	Roosts - tree cavities, under the bark of trees, in rock crevices and caves. Winter hibernation sites (hibernacula) are usually in caves or mines	South-central AB	Low Project area is dominated by cultivation, with small remnant patches of trees with some roosting habitat potential in the immediate project area. However, the small size of the trees and lack of caves in the area limit the potential for roosts and hibernation sites. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences to the appropriate agencies.	Low
Ord's Kangaroo Rat	<i>Dipodomys ordii</i>	Endangered	Endangered	EndangeredS1	Loose sandy soil; eroded sand dunes; sparse veg	12 active sandhill complexes in southeastern Alberta and Southwestern Saskatchewan.	Low Project area is north of this species range.	Negligible



Wildlife Species At Risk Assessment

Common Name	Species Scientific Name	SARA Status	COSEWIC Status	Provincial Status (SK)	Habitat	AB Range	Potential for Occurrence and Recommended Mitigation Measures	Level of Risk
Silver-haired Bat	<i>Lasionycteris noctivagans</i>	Not Listed	Endangered	S3S4B, SNRM	Roosts - tree cavities, under the bark of trees, in large decaying trees are available. Winter hibernation sites (hibernacula) are usually in caves or mines (limited to BC, ON and the USA)	Widely distributed throughout Alberta and Saskatchewan	Low Project area is dominated by cultivation, with small remnant patches of trees with some roosting habitat potential in the immediate project area. However, the small size of the trees limit the potential for roost sites. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences to the appropriate agencies.	Low
Swift Fox	<i>Vulpes velox</i>	Threatened	Threatened	Endangered S1S2	Open, sparse veg (short-grass & mixed-grass prairies)	From central Alberta south. Across southern Saskatchewan and west into foothills of Rocky Mountains	Low Project area is north of this species range.	Negligible
Western Haverst Mouse dychei subspecies	<i>Reithrodontomys megalotis dychei</i>	Endangered	Endangered	S1	Vast, undisturbed treed and treeless areas with abundant ungulates	Southern Alberta	Low Project area is north of this species range.	Negligible
Wolverine	<i>Gulo gulo</i>	Special Concern	Special Concern	S3	Variety of forest and tundra habitats - must have adequate food sources year round and snow coverage persisting to April for reproduction.	Northern AB	Low Project area is south of this species range.	Negligible
Wood Bison	<i>Bison bison athabascae</i>	Threatened	Special Concern	Threatened S2	habitats producing winter forage, consisting primarily of grasses, sedges and rushes.	Wood buffalo national park. Transition of parkland and Boreal forest marks southern border.	Low Project area is south of this species range.	Negligible
Woodland Caribou	<i>Rangifer tarandus caribou</i>	Threatened	Non-active	Threatened S1S2	Mature forests with lichen, marshes/muskeg, dominated by black spruce, larch, jack pine & lodgepole pine	Widely distributed throughout Alberta and Saskatchewan	Low Project area is south of this species range.	Negligible

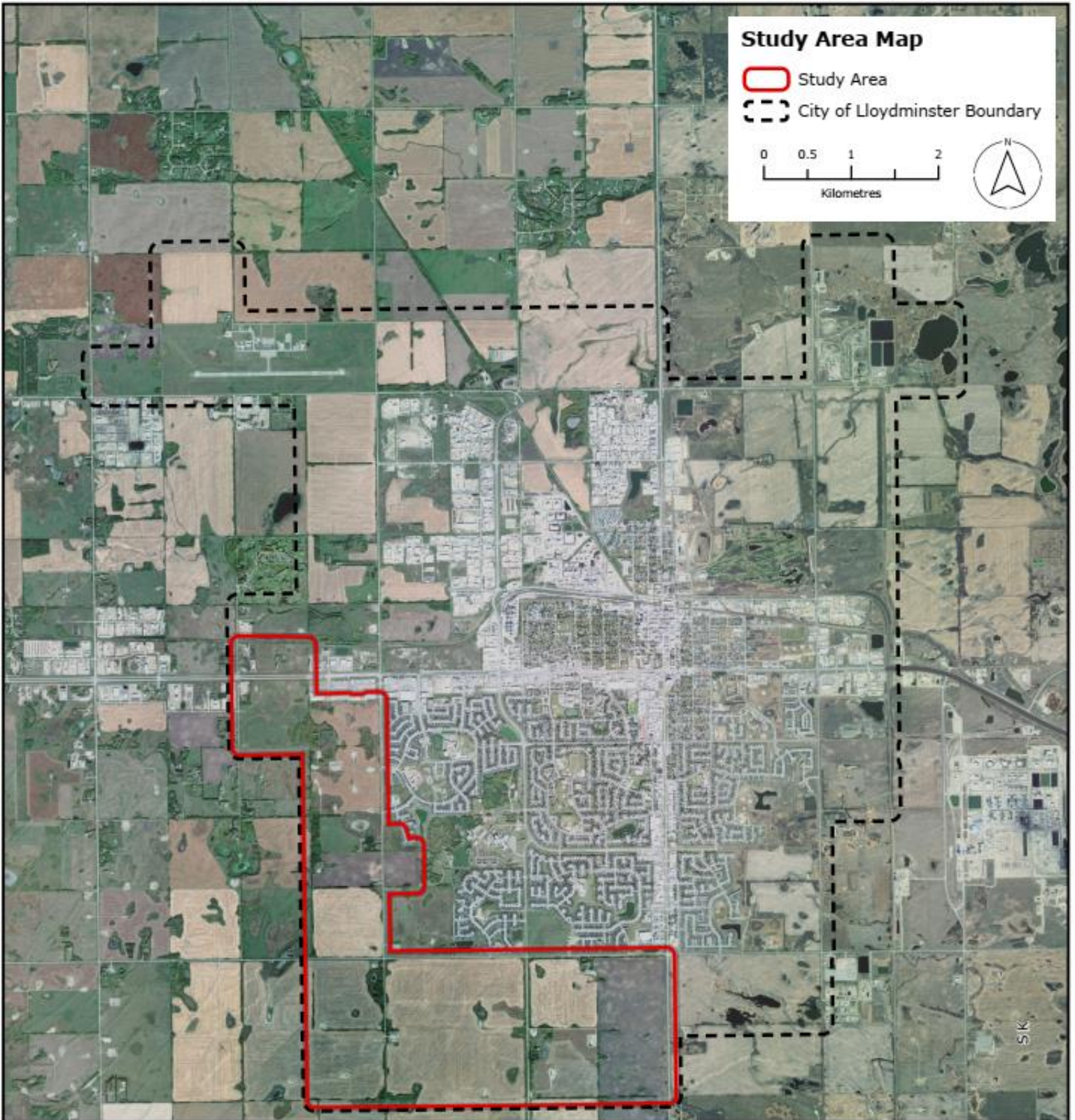
- Species included in the table are based on species distributions listed in COSEWIC/SARA/Provincial status reports.
- Risk Category/Status based on highest Federal (COSEWIC/SARA) or Provincial (Wildlife Act) designation or Provincial S Rank.
- Habitat determined by review of COSEWIC and/or Provincial status reports for individual species. Species observed or previously recorded in the project or surrounding area have been **bolded**.
- Development Restrictions (if available) based on, "Recommended Land Use Guidelines for Protection of Selected Wildlife Species and Habitat within the Grassland and Parkland Natural Regions of Alberta" (Government of Alberta, 2011), the "Petroleum Industry Activity Guidelines for Wildlife Species at Risk in the Prairie and Northern Region" (Environment Canada, 2009), and the "Saskatchewan Activity Restriction Guidelines for Sensitive Species" (Government of Saskatchewan, 2017) for the proposed development (high level of disturbance). (RAP = Restricted Activity Period)
- Level of Risk determined by outline provided in IOGC's IL 2011: "Moderate to high level of risk for SARA species is assumed if the local project area is within the species range, potential for the species to be in the area, and likely to be impacted from proposed project activities. High level of risk for SARA species is assumed if it has been observed in the local project area and likely to be impacted from the proposed project activities."
- SARA / COSEWIC / Wildlife Act Categories: Special Concern: A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events; Threatened: A species likely to become endangered if limiting factors are not reversed; Endangered: A species facing imminent extirpation or extinction.
- S Rank: S1: Critically Imperiled/Extremely Rare; S2: Imperiled/Very Rare; S3: Vulnerable/Rare-Uncommon; S4: Apparently Secure; S5: Secure/Common; (Modifiers: A:accidental or causal in the province; B: for a migratory species, rank applies to the breeding population; N: for a migratory species, rank applies to the non-breeding population; M: for a migratory species, rank applies to the transient population; H: Historical occurrence without recent verification; U: Status uncertain due to limited or conflicting information; X: Believed to be extinct or extirpated; NR: rank not yet assigned; NA: conservation status not applicable).



APPENDIX A: PROJECT AREA MAP

SCHEDULE "C"

STUDY AREA MAP



Initial

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Consultant City

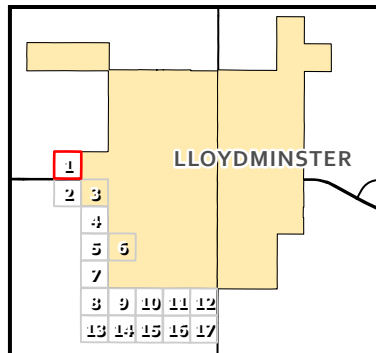


APPENDIX B: WETLAND MAP & RESULTS



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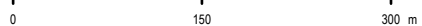
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- CLASS V
- EPHEMERAL



PROJECT: SW ASP REVIEW

TITLE: WETLAND CLASS - SW-3-50-1-W4

Scale: 1:6,000



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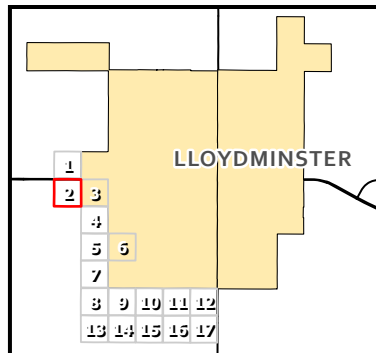
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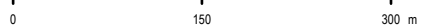
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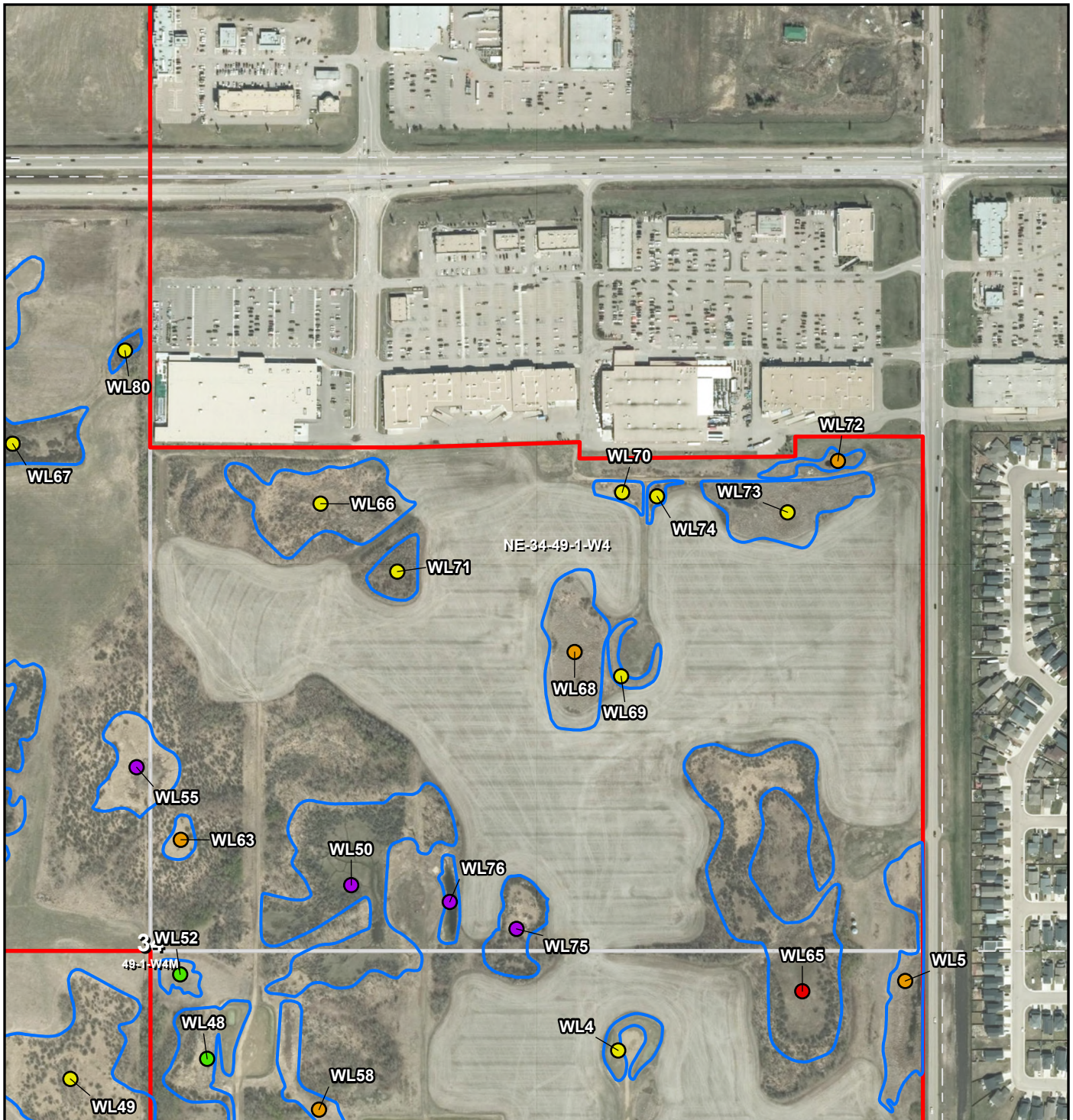
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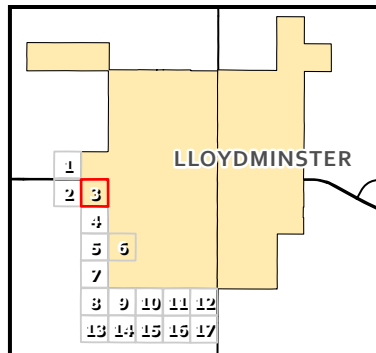
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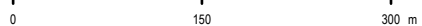
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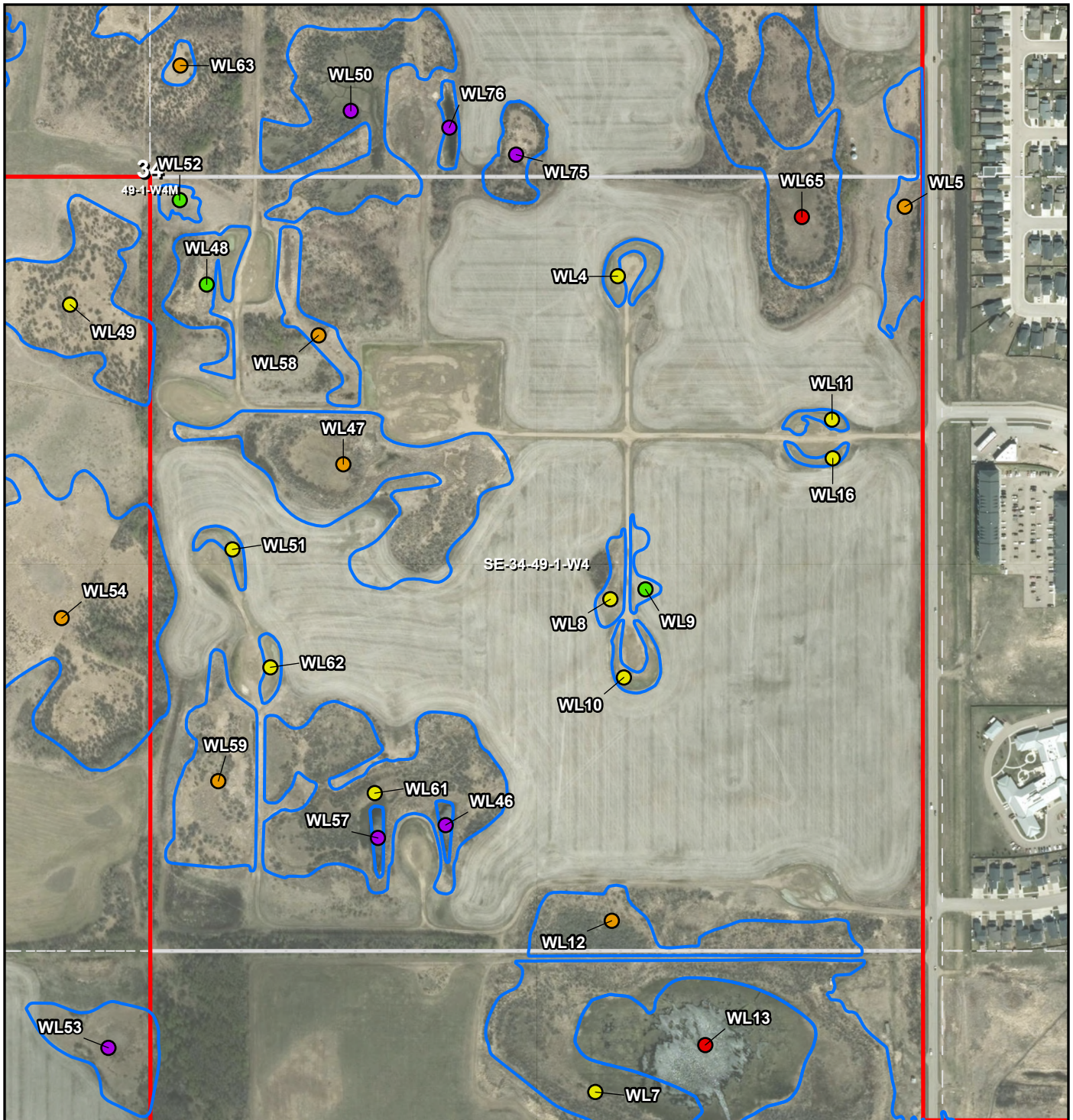
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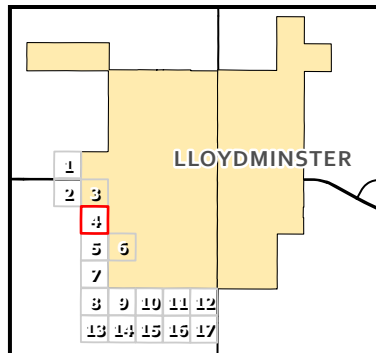
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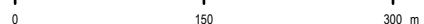
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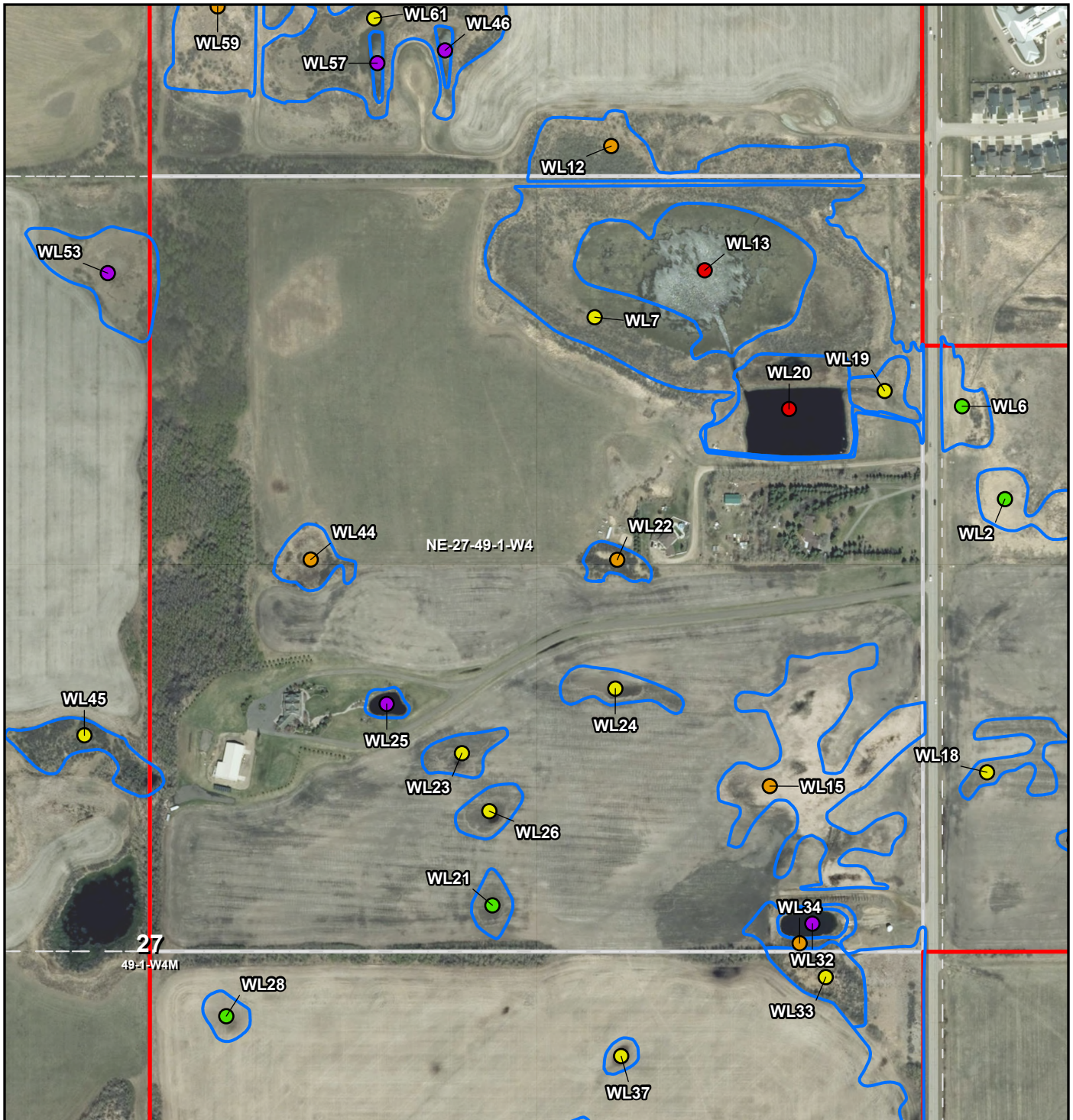
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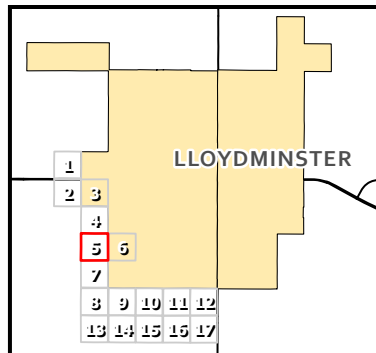
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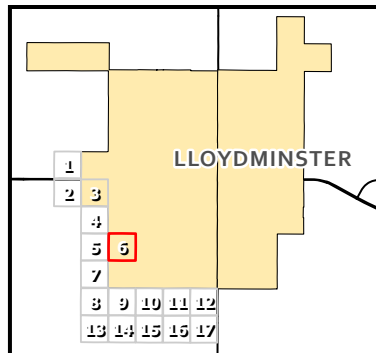
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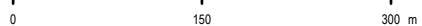
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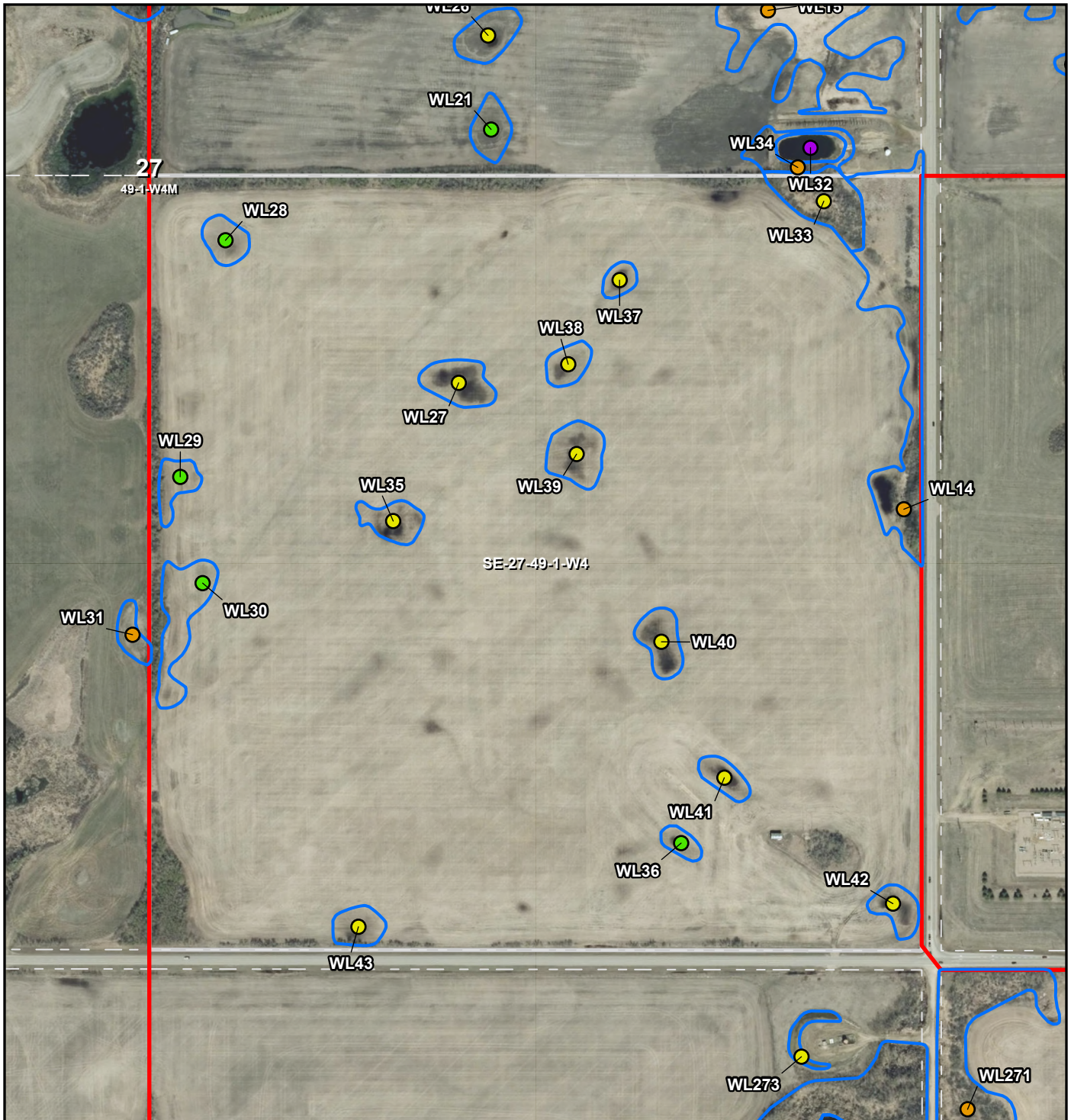
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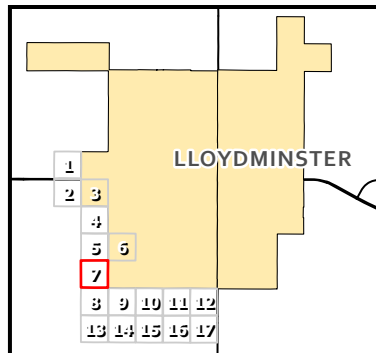
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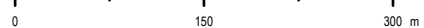
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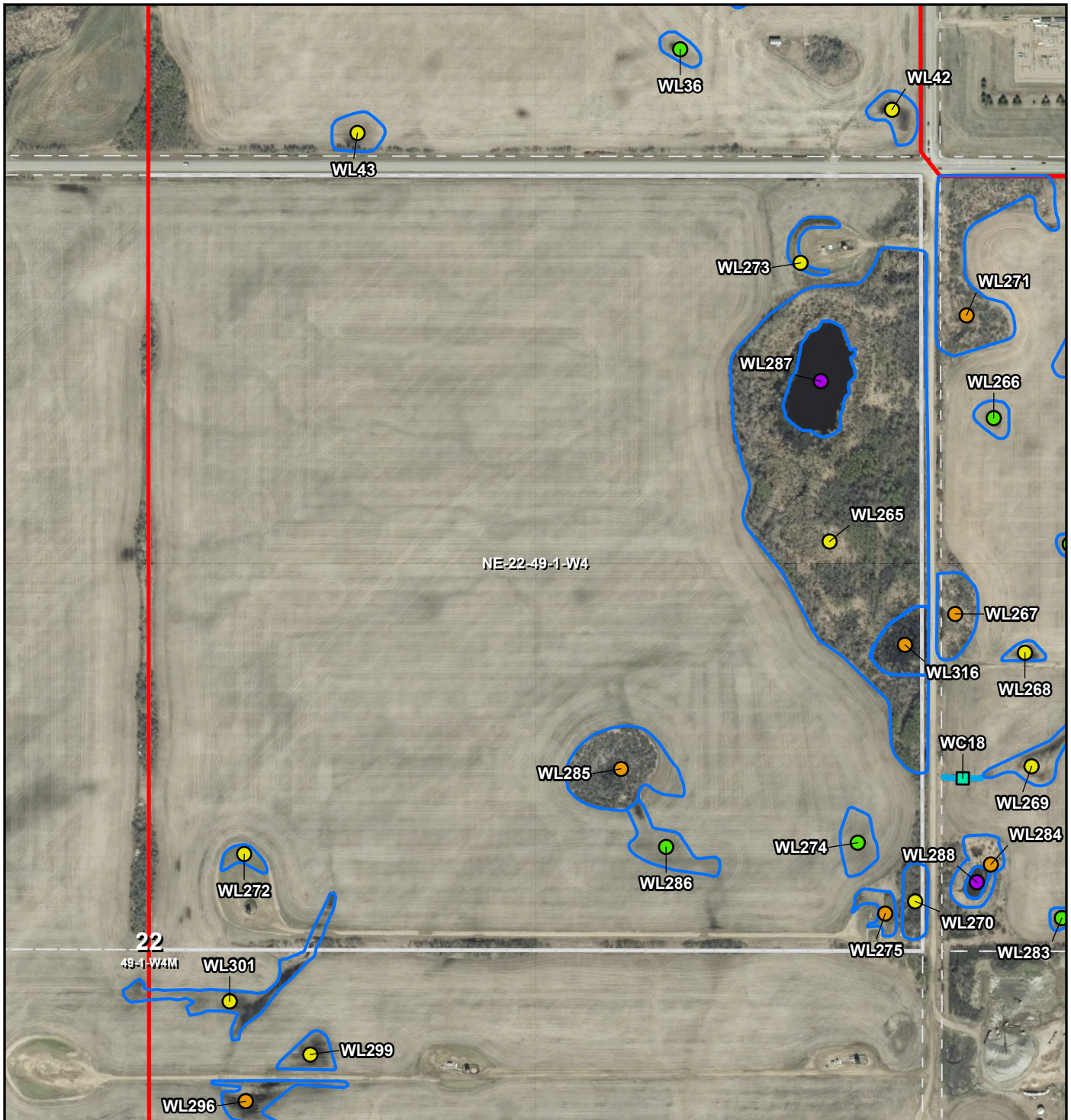
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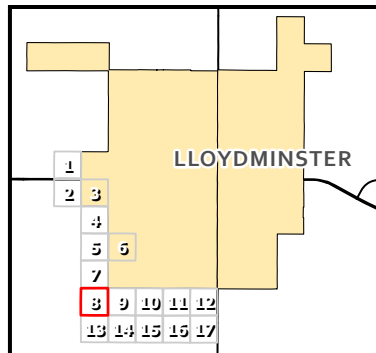
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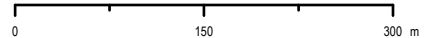
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PROJECT: SW ASP REVIEW

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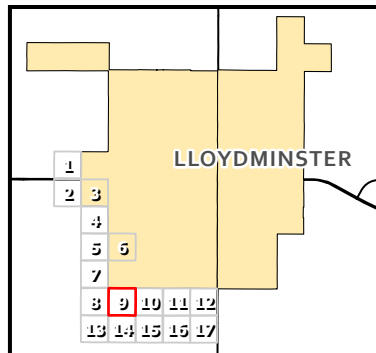
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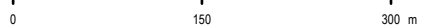
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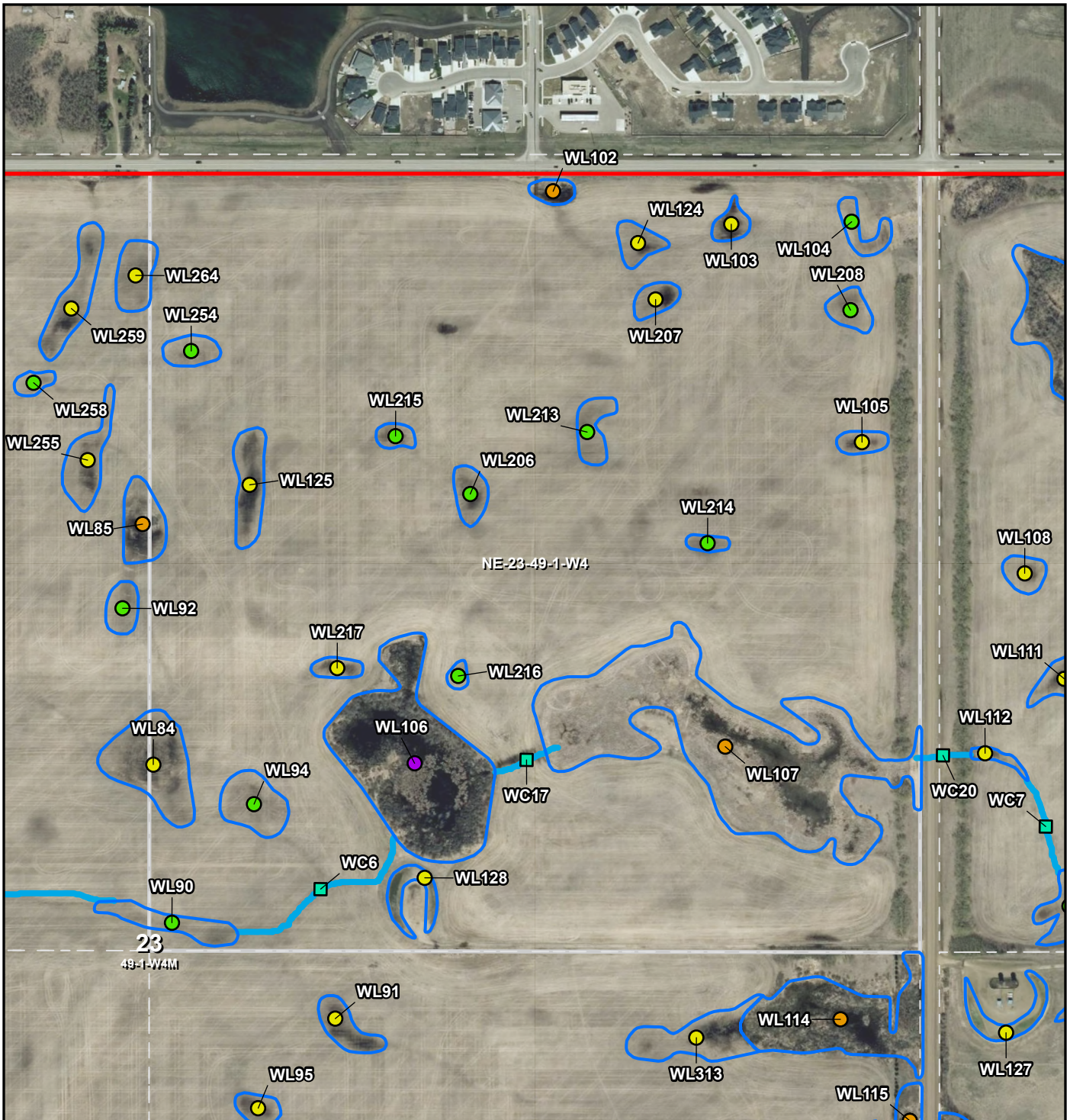
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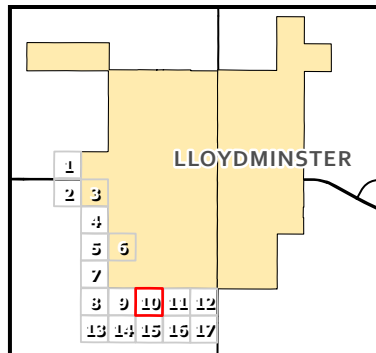
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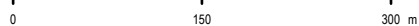
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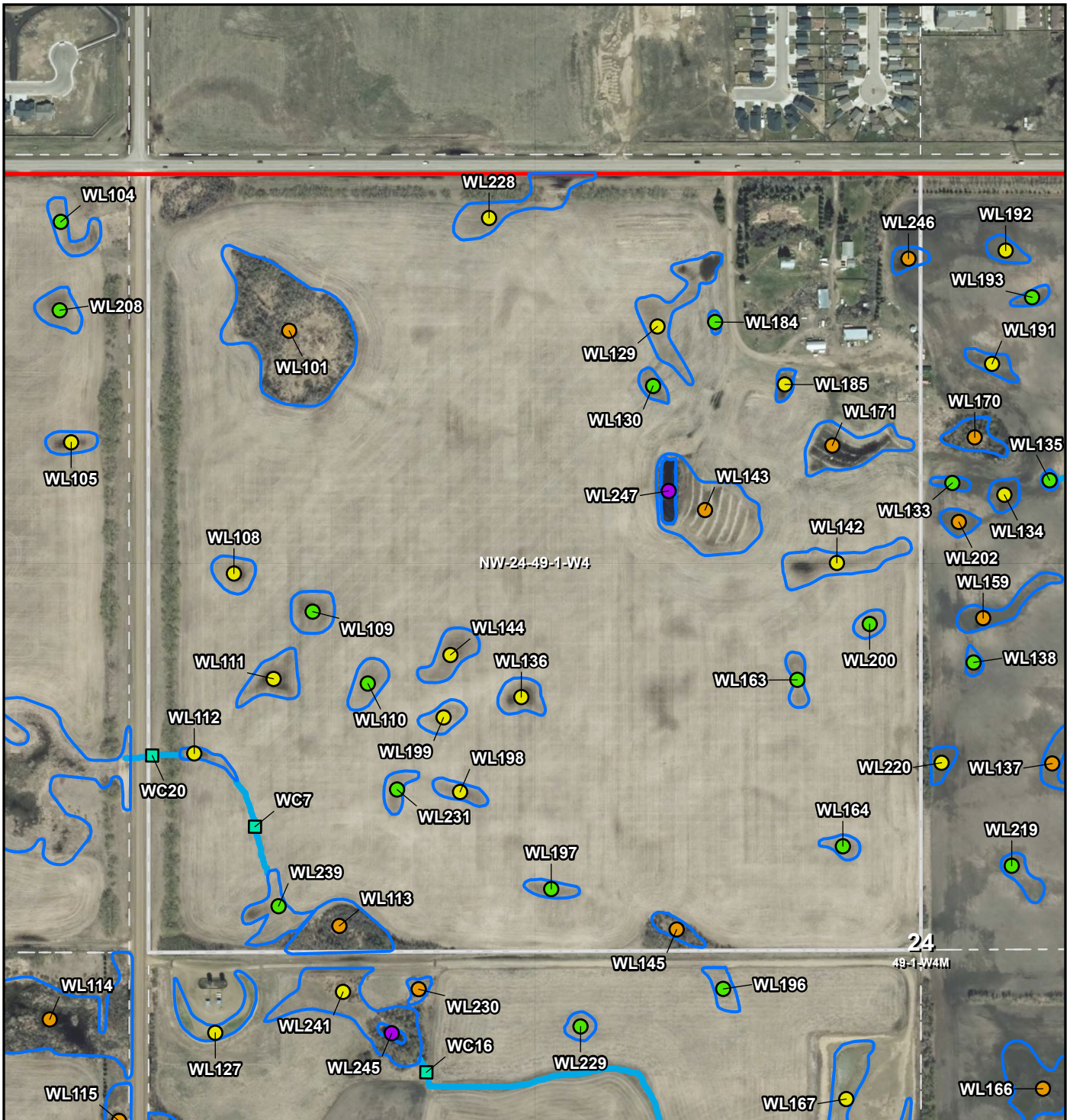
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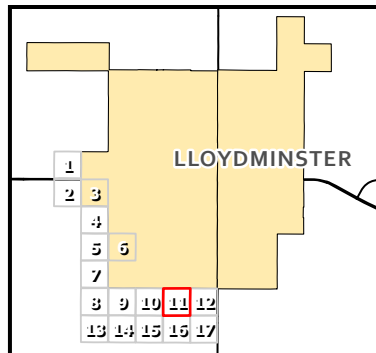
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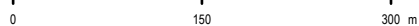
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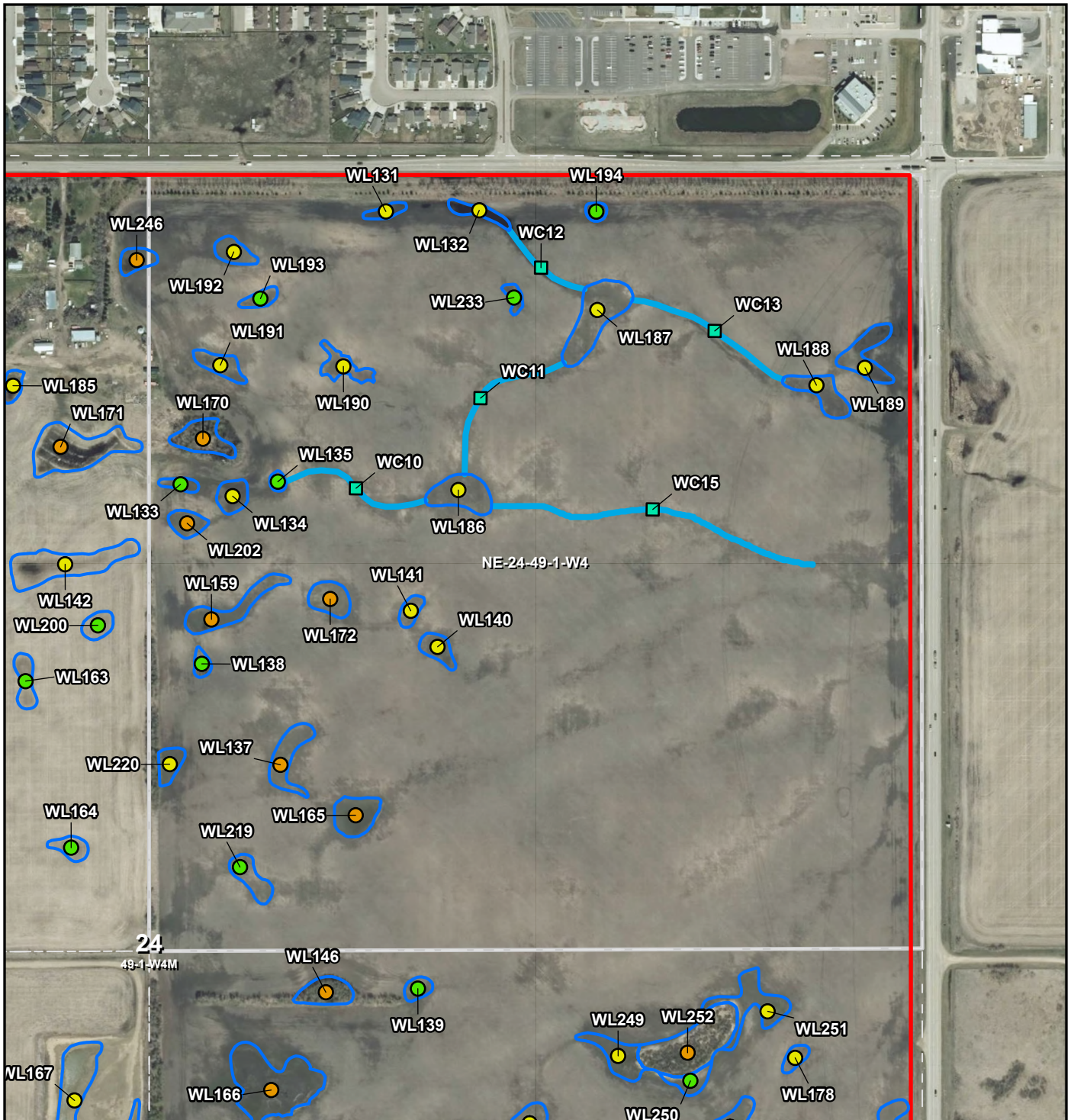
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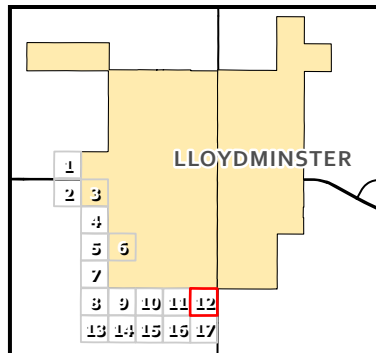
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FIGURE
 11 of 17



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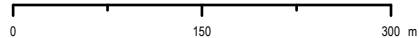
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- WETLAND BOUNDARY
- WATERCOURSE
- CLASS I
- CLASS II
- CLASS III
- CLASS IV
- CLASS V
- EPHEMERAL



PROJECT: SW ASP REVIEW

TITLE: WETLAND CLASS - NE-24-49-1-W4

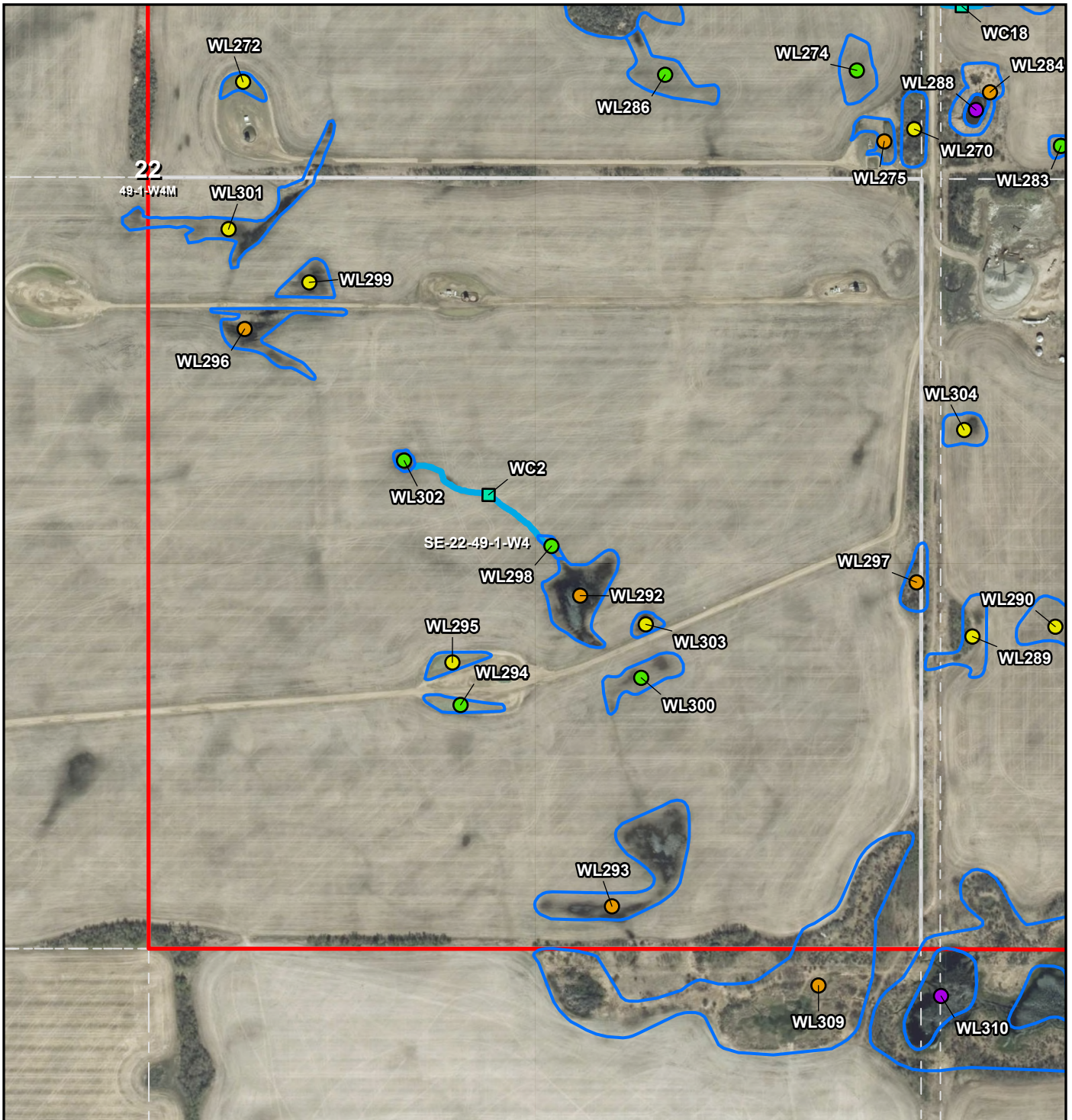
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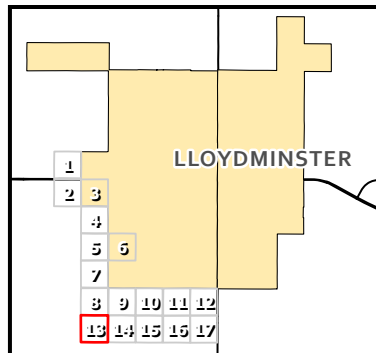
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FIGURE
12 of 17



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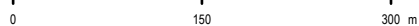
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- WETLAND BOUNDARY
- WATERCOURSE
- CLASS I
- CLASS II
- CLASS III
- CLASS IV
- CLASS V
- EPHEMERAL



PROJECT: SW ASP REVIEW

TITLE: WETLAND CLASS - SE-22-49-1-W4

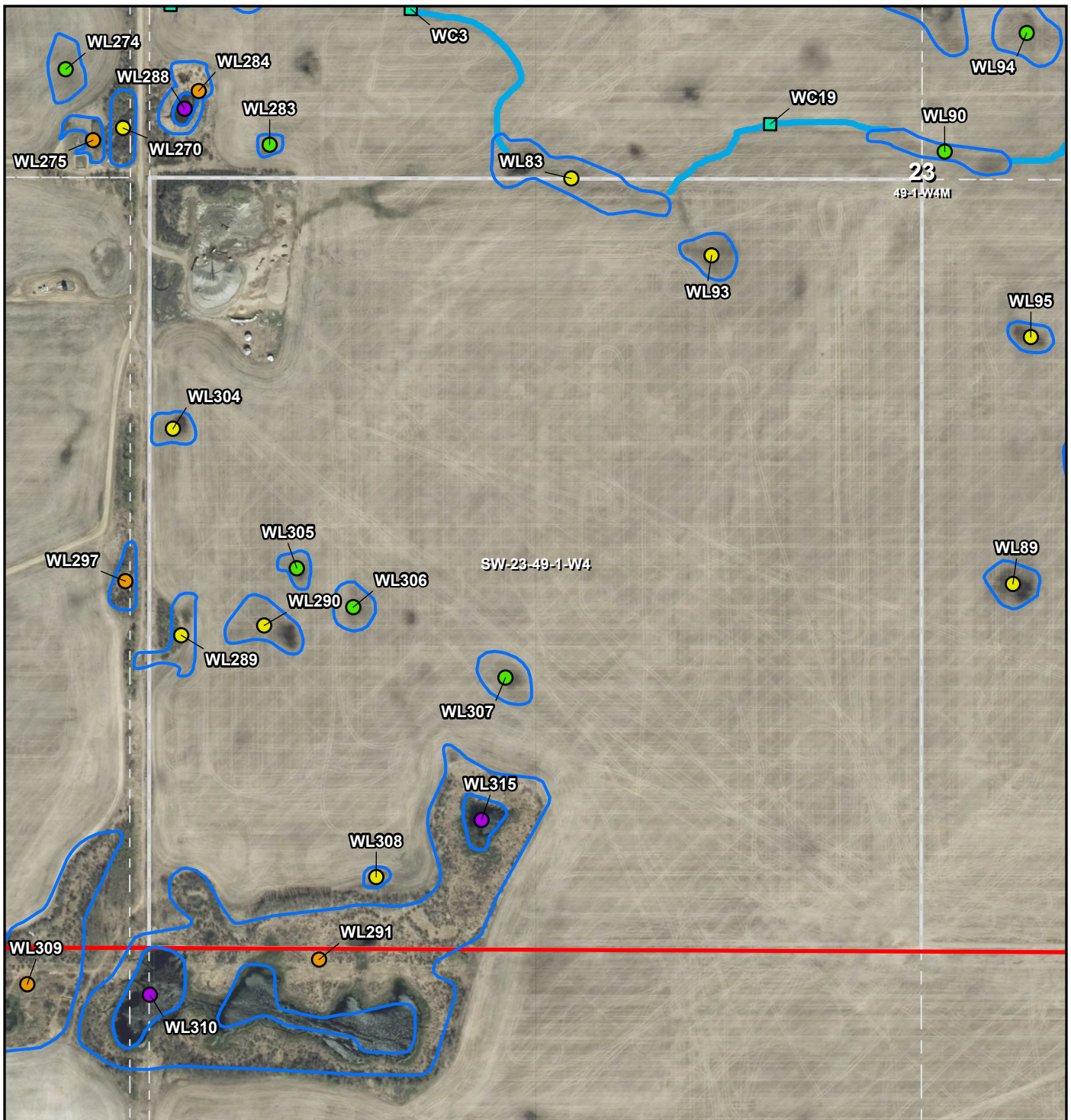
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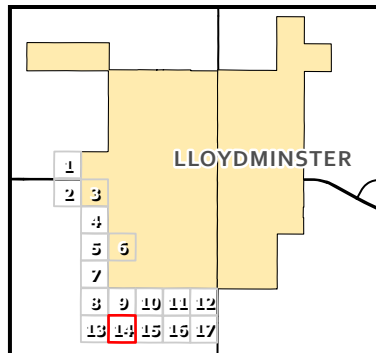
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FIGURE 13 of 17



LEGEND

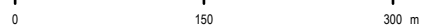
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- WETLAND BOUNDARY
- WATERCOURSE
- CLASS I
- CLASS II
- CLASS III
- CLASS IV
- CLASS V
- EPHEMERAL



PROJECT: SW ASP REVIEW

TITLE: WETLAND CLASS - SW-23-49-1-W4

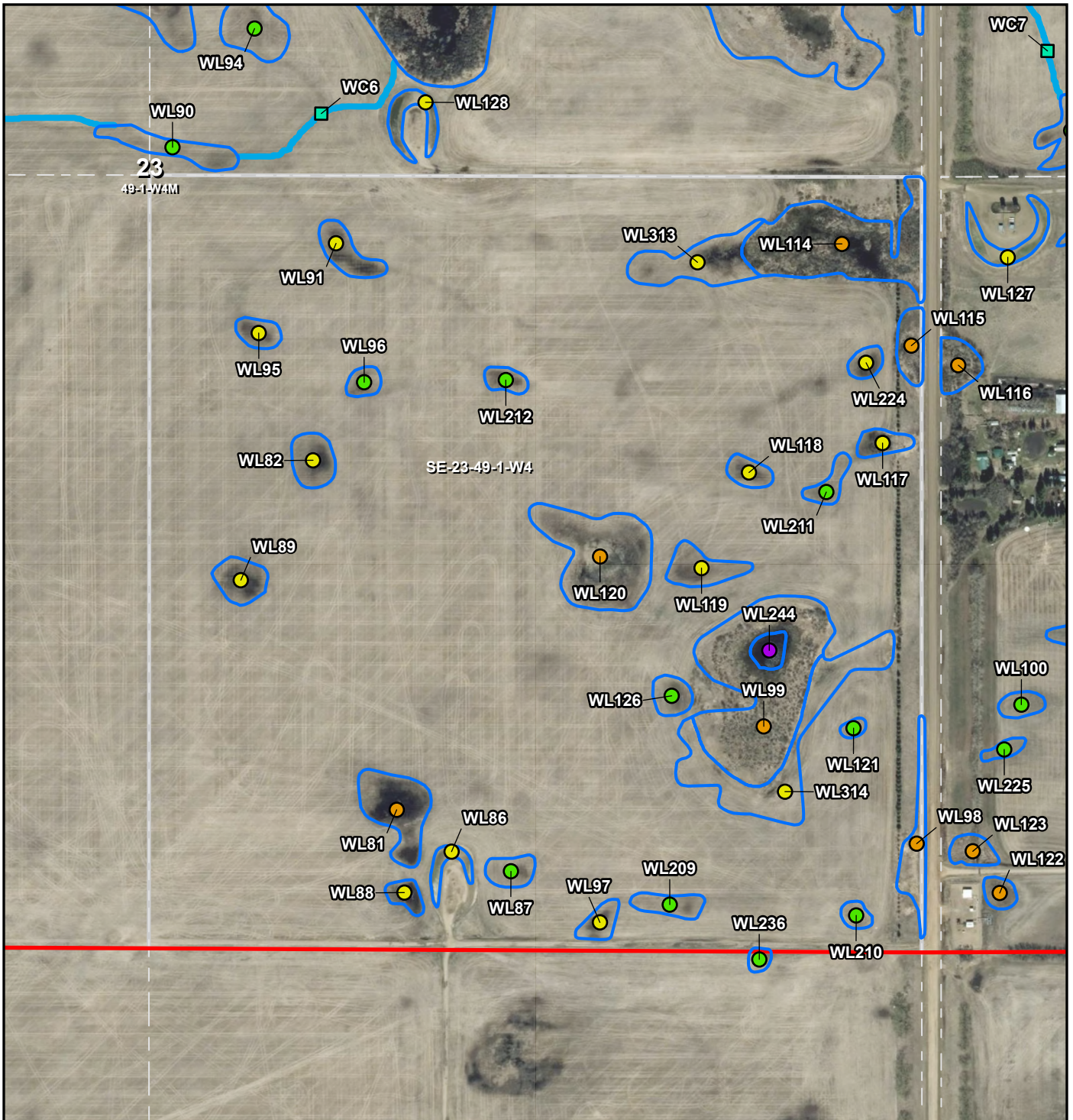
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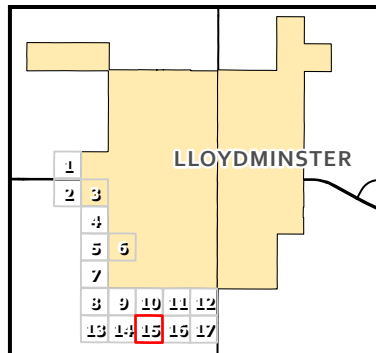
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FIGURE
14 of 17



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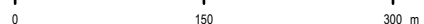
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- WETLAND BOUNDARY
- WATERCOURSE
- CLASS I
- CLASS II
- CLASS III
- CLASS IV
- CLASS V
- EPHEMERAL



PROJECT: SW ASP REVIEW

TITLE: WETLAND CLASS - SE-23-49-1-W4

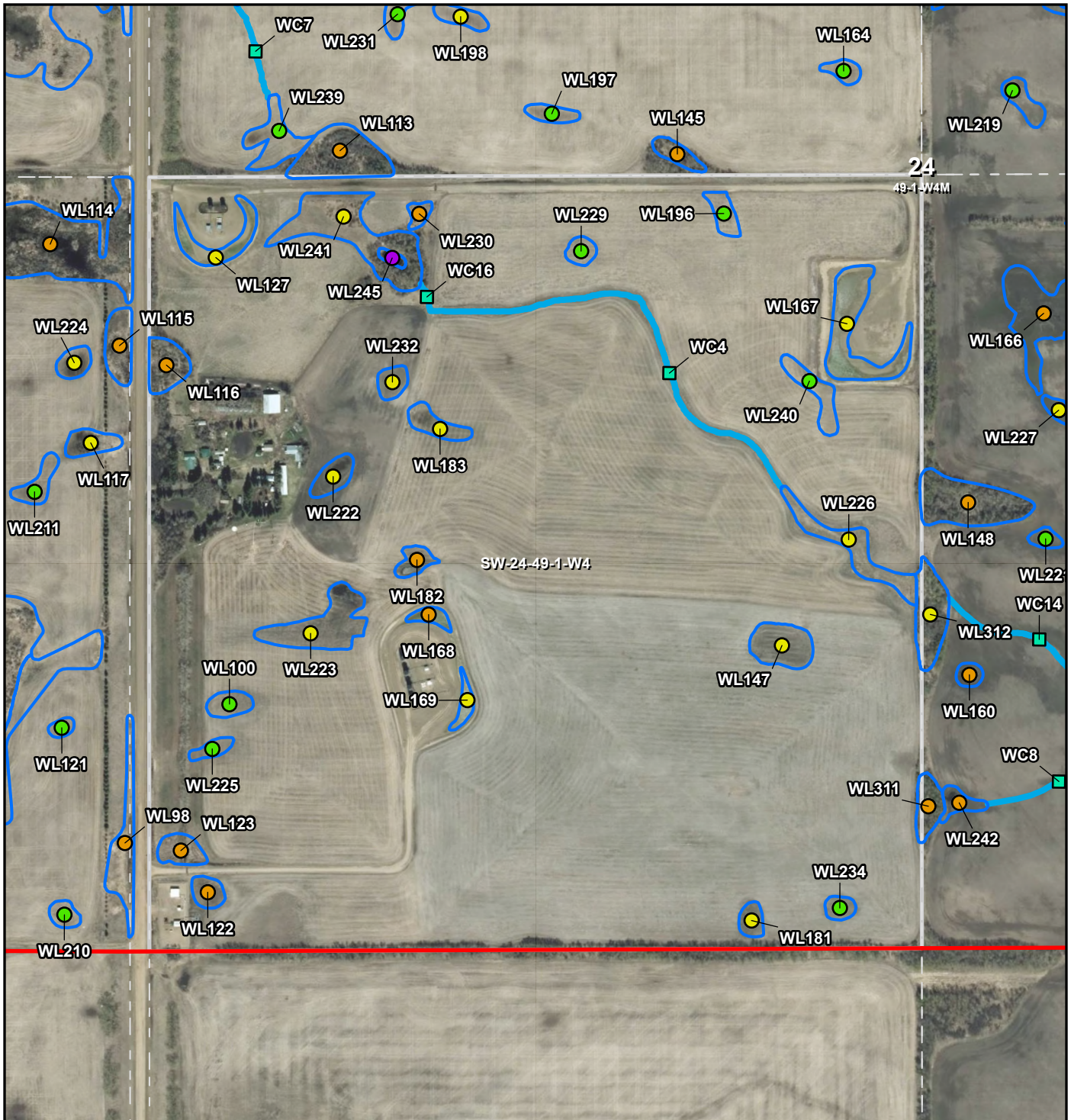
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FIGURE
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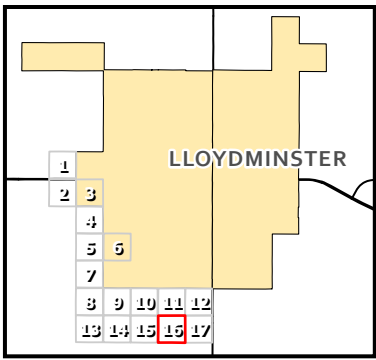


24
49-1-W4M

SW-24-49-1-W4

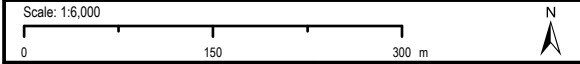
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- SW ASP BOUNDARY
- WETLAND BOUNDARY
- WATERCOURSE
- CLASS I
- CLASS II
- CLASS III
- CLASS IV
- CLASS V
- EPHEMERAL



PROJECT: SW ASP REVIEW

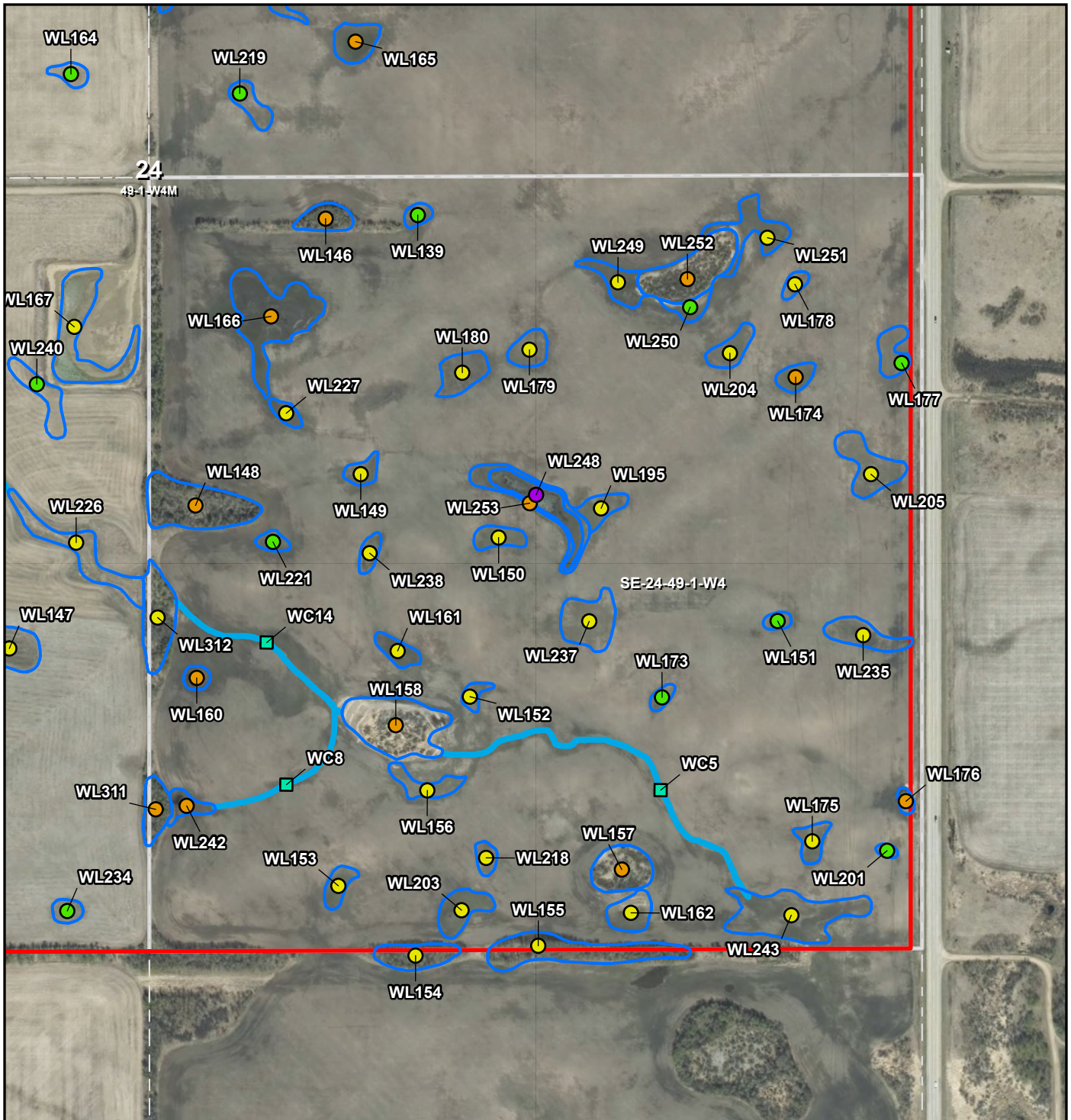
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PROJECT # 25388

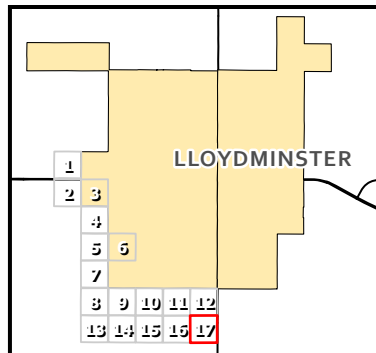
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FIGURE
16 of 17

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MINISTRY OF AGRICULTURE; OPEN GOVERNMENT LICENCE CANADA



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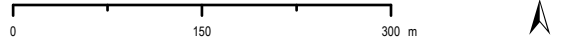
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- WETLAND BOUNDARY
- WATERCOURSE
- CLASS I
- CLASS II
- CLASS III
- CLASS IV
- CLASS V
- EPHEMERAL



PROJECT: SW ASP REVIEW

TITLE: WETLAND CLASS - SE-24-49-1-W4

Scale: 1:6,000



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 DATE: 2025-10-09
 PROJECT # 25388

REV: 0
 FIGURE
 17 of 17

Wetland and Watercourse Information

WETLAND NAME	CLASS	TYPE	HABITAT	COMMENT	LEGAL QTR	AREA (ha)
WL1	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-26-49-1-W4	0.140
WL2	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-26-49-1-W4	0.516
WL3	Class I - Ephemeral Wetlands	Treed	Open Canopy Deciduous Woodland		NW-26-49-1-W4	0.360
WL4	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-34-49-1-W4	0.224
WL5	Class III - Seasonal Ponds and Lakes	Graminoid	Crop Land		NE-34-49-1-W4 & NW-35-49-1-W4 & SE-34-49-1-W4 & SW-35-49-1-W4	0.760
WL6	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-26-49-1-W4	0.390
WL7	Class II - Temporary Wetlands	Treed	Other (Describe in Comments)	Wetland Complex / Residential	NE-27-49-1-W4 & NW-26-49-1-W4	4.732
WL8	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-34-49-1-W4	0.194
WL9	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-34-49-1-W4	0.133
WL10	Class II - Temporary Wetlands	Cultivated	Other (Describe in Comments)	Developed Lease Berm	SE-34-49-1-W4	0.198
WL11	Class II - Temporary Wetlands	Cultivated	Crop Land	Ditch	SE-34-49-1-W4	0.101
WL12	Class III - Seasonal Ponds and Lakes	Treed	Open Canopy Deciduous Woodland		NE-27-49-1-W4 & SE-34-49-1-W4	1.356
WL13	Class V - Permanent Ponds and Lakes	Graminoid	Other (Describe in Comments)	Wetland Complex	NE-27-49-1-W4	2.479
WL14	Class III - Seasonal Ponds and Lakes	Graminoid	Crop Land		NE-27-49-1-W4 & NW-26-49-1-W4 & SE-27-49-1-W4 & SW-26-49-1-W4	1.602
WL15	Class III - Seasonal Ponds and Lakes	Graminoid	Crop Land		NE-27-49-1-W4 & NW-26-49-1-W4	2.396
WL16	Class II - Temporary Wetlands	Cultivated	Crop Land	Developed Lease Site	SE-34-49-1-W4	0.079
WL17	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-26-49-1-W4	0.070
WL18	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-26-49-1-W4	0.429
WL19	Class II - Temporary Wetlands	Graminoid	Tame Pasture (Seeded Grassland)		NE-27-49-1-W4	0.285
WL20	Class V - Permanent Ponds and Lakes	Graminoid	Short Shrub Grassland	Dugout	NE-27-49-1-W4	1.333
WL21	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-27-49-1-W4	0.204
WL22	Class III - Seasonal Ponds and Lakes	Treed	Open Canopy Deciduous Woodland		NE-27-49-1-W4	0.207
WL23	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-27-49-1-W4	0.277
WL24	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-27-49-1-W4	0.355
WL25	Class IV - Semi-permanent Ponds and Lakes	Graminoid	Other (Describe in Comments)	Man-made Pond	NE-27-49-1-W4	0.115
WL26	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-27-49-1-W4	0.264
WL27	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-27-49-1-W4	0.287
WL28	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-27-49-1-W4	0.182
WL29	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-27-49-1-W4	0.177
WL30	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-27-49-1-W4	0.476
WL31	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		SE-27-49-1-W4 & SW-27-49-1-W4	0.137
WL32	Class IV - Semi-permanent Ponds and Lakes	Graminoid	Tame Pasture (Seeded Grassland)	Dugout	NE-27-49-1-W4	0.193
WL33	Class II - Temporary Wetlands	Treed	Crop Land		NE-27-49-1-W4 & SE-27-49-1-W4	0.490
WL34	Class III - Seasonal Ponds and Lakes	Graminoid	Crop Land		NE-27-49-1-W4	0.238
WL35	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-27-49-1-W4	0.214
WL36	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-27-49-1-W4	0.097
WL37	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-27-49-1-W4	0.100
WL38	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-27-49-1-W4	0.159
WL39	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-27-49-1-W4	0.319
WL40	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-27-49-1-W4	0.245
WL41	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-27-49-1-W4	0.149
WL42	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-27-49-1-W4	0.183
WL43	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-27-49-1-W4	0.184
WL44	Class III - Seasonal Ponds and Lakes	Graminoid	Crop Land		NE-27-49-1-W4	0.347
WL45	Class II - Temporary Wetlands	Shrub	Short Shrub Grassland		NE-27-49-1-W4 & NW-27-49-1-W4	0.578
WL46	Class IV - Semi-permanent Ponds and Lakes	Graminoid	Tall Shrub Grassland	Lease in Wetland	SE-34-49-1-W4	0.070



Wetland and Watercourse Information

WETLAND NAME	CLASS	TYPE	HABITAT	COMMENT	LEGAL QTR	AREA (ha)
WL47	Class III - Seasonal Ponds and Lakes	Treed	Open Canopy Deciduous Woodland		SE-34-49-1-W4	2.942
WL48	Class I - Ephemeral Wetlands	Shrub	Open Canopy Deciduous Woodland		SE-34-49-1-W4	0.663
WL49	Class II - Temporary Wetlands	Shrub	Tame Pasture (Seeded Grassland)		SE-34-49-1-W4 & SW-34-49-1-W4	1.918
WL50	Class IV - Semi-permanent Ponds and Lakes	Treed	Open Canopy Deciduous Woodland		NE-34-49-1-W4 & SE-34-49-1-W4	2.295
WL51	Class II - Temporary Wetlands	Cultivated	Crop Land	Developed Lease Berm	SE-34-49-1-W4	0.134
WL52	Class I - Ephemeral Wetlands	Graminoid	Open Canopy Deciduous Woodland		SE-34-49-1-W4	0.127
WL53	Class IV - Semi-permanent Ponds and Lakes	Graminoid	Crop Land		NE-27-49-1-W4 & NW-27-49-1-W4	0.948
WL54	Class III - Seasonal Ponds and Lakes	Graminoid	Tame Pasture (Seeded Grassland)		SE-34-49-1-W4 & SW-34-49-1-W4	5.375
WL55	Class IV - Semi-permanent Ponds and Lakes	Treed	Open Canopy Deciduous Woodland		NE-34-49-1-W4 & NW-34-49-1-W4	0.603
WL56	Class II - Temporary Wetlands	Treed	Hay Crop (Forage)		NW-34-49-1-W4	2.188
WL57	Class IV - Semi-permanent Ponds and Lakes	Shrub	Tall Shrub Grassland	Lease in Wetland	SE-34-49-1-W4	0.078
WL58	Class III - Seasonal Ponds and Lakes	Graminoid	Open Canopy Deciduous Woodland		SE-34-49-1-W4	0.470
WL59	Class III - Seasonal Ponds and Lakes	Graminoid	Open Canopy Deciduous Woodland		SE-34-49-1-W4	1.447
WL60	Class II - Temporary Wetlands	Graminoid	Hay Crop (Forage)		NW-34-49-1-W4	0.123
WL61	Class II - Temporary Wetlands	Treed	Open Canopy Deciduous Woodland		SE-34-49-1-W4	3.034
WL62	Class II - Temporary Wetlands	Cultivated	Crop Land	Developed Lease Berm	SE-34-49-1-W4	0.122
WL63	Class III - Seasonal Ponds and Lakes	Treed	Open Canopy Deciduous Woodland		NE-34-49-1-W4	0.107
WL64	Class IV - Semi-permanent Ponds and Lakes	Graminoid	Other (Describe in Comments)	Farm yard - Dugout	SW-3-50-1-W4	0.065
WL65	Class V - Permanent Ponds and Lakes	Shrub	Open Canopy Deciduous Woodland		NE-34-49-1-W4 & SE-34-49-1-W4	2.626
WL66	Class II - Temporary Wetlands	Shrub	Open Canopy Deciduous Woodland		NE-34-49-1-W4	1.183
WL67	Class II - Temporary Wetlands	Shrub	Hay Crop (Forage)		NW-34-49-1-W4	0.599
WL68	Class III - Seasonal Ponds and Lakes	Graminoid	Other (Describe in Comments)	Riparian Graminoid	NE-34-49-1-W4	0.880
WL69	Class II - Temporary Wetlands	Graminoid	Other (Describe in Comments)	Developed	NE-34-49-1-W4	0.141
WL70	Class II - Temporary Wetlands	Graminoid	Short Shrub Grassland		NE-34-49-1-W4	0.111
WL71	Class II - Temporary Wetlands	Treed	Open Canopy Deciduous Woodland		NE-34-49-1-W4	0.246
WL72	Class III - Seasonal Ponds and Lakes	Graminoid	Other (Describe in Comments)	Riparian Graminoid	NE-34-49-1-W4	0.138
WL73	Class II - Temporary Wetlands	Graminoid	Other (Describe in Comments)	Riparian Graminoid	NE-34-49-1-W4	0.827
WL74	Class II - Temporary Wetlands	Shrub	Other (Describe in Comments)	Riparian Shrub	NE-34-49-1-W4	0.061
WL75	Class IV - Semi-permanent Ponds and Lakes	Treed	Crop Land		NE-34-49-1-W4 & SE-34-49-1-W4	0.449
WL76	Class IV - Semi-permanent Ponds and Lakes	Treed	Open Canopy Deciduous Woodland		NE-34-49-1-W4	0.148
WL77	Class II - Temporary Wetlands	Cultivated	Tame Pasture (Seeded Grassland)	Dugout	SW-3-50-1-W4	0.584
WL78	Class III - Seasonal Ponds and Lakes	Treed	Hay Crop (Forage)		NW-34-49-1-W4	0.247
WL79	Class III - Seasonal Ponds and Lakes	Shrub	Tame Pasture (Seeded Grassland)		SW-3-50-1-W4	0.150
WL80	Class II - Temporary Wetlands	Treed	Closed Canopy Deciduous Woodland		NW-34-49-1-W4	0.067
WL81	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		SE-23-49-1-W4	0.455
WL82	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.213
WL83	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-23-49-1-W4 & SW-23-49-1-W4	0.677
WL84	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-23-49-1-W4 & NW-23-49-1-W4	0.712



Wetland and Watercourse Information

WETLAND NAME	CLASS	TYPE	HABITAT	COMMENT	LEGAL QTR	AREA (ha)
WL85	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		NE-23-49-1-W4 & NW-23-49-1-W4	0.316
WL86	Class II - Temporary Wetlands	Cultivated	Other (Describe in Comments)	Developed Lease Berm	SE-23-49-1-W4	0.102
WL87	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.139
WL88	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.094
WL89	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.202
WL90	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-23-49-1-W4 & NW-23-49-1-W4	0.281
WL91	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.208
WL92	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.153
WL93	Class II - Temporary Wetlands	Cultivated	Crop Land		SW-23-49-1-W4	0.201
WL94	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-23-49-1-W4	0.346
WL95	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.117
WL96	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.090
WL97	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.118
WL98	Class III - Seasonal Ponds and Lakes	Graminoid	Tame Pasture (Seeded Grassland)	Ditch	SE-23-49-1-W4 & SW-24-49-1-W4	0.291
WL99	Class III - Seasonal Ponds and Lakes	Shrub	Crop Land		SE-23-49-1-W4	1.707
WL100	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SW-24-49-1-W4	0.103
WL101	Class III - Seasonal Ponds and Lakes	Shrub	Crop Land		NW-24-49-1-W4	1.459
WL102	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		NE-23-49-1-W4	0.099
WL103	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-23-49-1-W4	0.111
WL104	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-23-49-1-W4	0.151
WL105	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-23-49-1-W4	0.107
WL106	Class IV - Semi-permanent Ponds and Lakes	Shrub	Crop Land		NE-23-49-1-W4	2.252
WL107	Class III - Seasonal Ponds and Lakes	Graminoid	Crop Land		NE-23-49-1-W4 & NW-24-49-1-W4	4.023
WL108	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.136
WL109	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.173
WL110	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.147
WL111	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.220
WL112	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.062
WL113	Class III - Seasonal Ponds and Lakes	Treed	Crop Land		NW-24-49-1-W4 & SW-24-49-1-W4	0.422
WL114	Class III - Seasonal Ponds and Lakes	Treed	Open Canopy Deciduous Woodland		NE-23-49-1-W4 & SE-23-49-1-W4 & SW-24-49-1-W4	1.272
WL115	Class III - Seasonal Ponds and Lakes	Graminoid	Tame Pasture (Seeded Grassland)		SE-23-49-1-W4 & SW-24-49-1-W4	0.191
WL116	Class III - Seasonal Ponds and Lakes	Shrub	Tame Pasture (Seeded Grassland)		SW-24-49-1-W4	0.192
WL117	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.124
WL118	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.117
WL119	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.235
WL120	Class III - Seasonal Ponds and Lakes	Graminoid	Crop Land		SE-23-49-1-W4	0.939
WL121	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.040
WL122	Class III - Seasonal Ponds and Lakes	Graminoid	Crop Land		SW-24-49-1-W4	0.091
WL123	Class III - Seasonal Ponds and Lakes	Graminoid	Short Shrub Grassland		SW-24-49-1-W4	0.128
WL124	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-23-49-1-W4	0.156
WL125	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-23-49-1-W4	0.328
WL126	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.138
WL127	Class II - Temporary Wetlands	Cultivated	Other (Describe in Comments)	Developed Lease Berm	SW-24-49-1-W4	0.207
WL128	Class II - Temporary Wetlands	Cultivated	Other (Describe in Comments)	Developed Lease Berm	NE-23-49-1-W4	0.179
WL129	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.368
WL130	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.070
WL131	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.046
WL132	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.070
WL133	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.042
WL134	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.091
WL135	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.027
WL136	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.149
WL137	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		NE-24-49-1-W4	0.157
WL138	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.040



Wetland and Watercourse Information

WETLAND NAME	CLASS	TYPE	HABITAT	COMMENT	LEGAL QTR	AREA (ha)
WL139	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.054
WL140	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.082
WL141	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.055
WL142	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.326
WL143	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		NW-24-49-1-W4	0.667
WL144	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.197
WL145	Class III - Seasonal Ponds and Lakes	Treed	Crop Land		NW-24-49-1-W4	0.095
WL146	Class III - Seasonal Ponds and Lakes	Treed	Crop Land		SE-24-49-1-W4	0.133
WL147	Class II - Temporary Wetlands	Cultivated	Crop Land		SW-24-49-1-W4	0.251
WL148	Class III - Seasonal Ponds and Lakes	Treed	Crop Land		SE-24-49-1-W4 & SW-24-49-1-W4	0.471
WL149	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.076
WL150	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.104
WL151	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.042
WL152	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.053
WL153	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.089
WL154	Class II - Temporary Wetlands	Treed	Crop Land		NE-13-49-1-W4 & SE-24-49-1-W4	0.188
WL155	Class II - Temporary Wetlands	Treed	Crop Land		NE-13-49-1-W4 & SE-24-49-1-W4	0.455
WL156	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.125
WL157	Class III - Seasonal Ponds and Lakes	Shrub	Crop Land		SE-24-49-1-W4	0.250
WL158	Class III - Seasonal Ponds and Lakes	Shrub	Crop Land		SE-24-49-1-W4	0.511
WL159	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		NE-24-49-1-W4	0.188
WL160	Class III - Seasonal Ponds and Lakes	Graminoid	Crop Land		SE-24-49-1-W4	0.056
WL161	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.094
WL162	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.147
WL163	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.089
WL164	Class II - Ephemeral Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.070
WL165	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		NE-24-49-1-W4	0.156
WL166	Class III - Seasonal Ponds and Lakes	Graminoid	Crop Land		SE-24-49-1-W4	0.557
WL167	Class II - Temporary Wetlands	Cultivated	Other (Describe in Comments)	Developed Lease Berm	SW-24-49-1-W4	0.454
WL168	Class III - Seasonal Ponds and Lakes	Graminoid	Other (Describe in Comments)	Developed Lease Berm	SW-24-49-1-W4	0.061
WL169	Class II - Temporary Wetlands	Cultivated	Other (Describe in Comments)	Developed Lease Berm	SW-24-49-1-W4	0.061
WL170	Class III - Seasonal Ponds and Lakes	Treed	Open Canopy Deciduous Woodland		NE-24-49-1-W4	0.157
WL171	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		NW-24-49-1-W4	0.360
WL172	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		NE-24-49-1-W4	0.123
WL173	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.043
WL174	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		SE-24-49-1-W4	0.087
WL175	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.096
WL176	Class III - Seasonal Ponds and Lakes	Graminoid	Crop Land		SE-24-49-1-W4	0.035
WL177	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.125
WL178	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.049
WL179	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.121
WL180	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.173
WL181	Class II - Temporary Wetlands	Cultivated	Crop Land		SW-24-49-1-W4	0.076
WL182	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		SW-24-49-1-W4	0.088
WL183	Class II - Temporary Wetlands	Cultivated	Crop Land		SW-24-49-1-W4	0.129
WL184	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.024
WL185	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.052
WL186	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.194
WL187	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.305
WL188	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.148
WL189	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.169
WL190	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.103
WL191	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.097
WL192	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.086
WL193	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.053
WL194	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.034
WL195	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.112
WL196	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SW-24-49-1-W4	0.099
WL197	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.080



Wetland and Watercourse Information

WETLAND NAME	CLASS	TYPE	HABITAT	COMMENT	LEGAL QTR	AREA (ha)
WL198	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.094
WL199	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.111
WL200	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.072
WL201	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.024
WL202	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		NE-24-49-1-W4	0.083
WL203	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.172
WL204	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.122
WL205	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.246
WL206	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-23-49-1-W4	0.168
WL207	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-23-49-1-W4	0.131
WL208	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-23-49-1-W4	0.153
WL209	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.148
WL210	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.070
WL211	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.114
WL212	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.095
WL213	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-23-49-1-W4	0.190
WL214	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-23-49-1-W4	0.064
WL215	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-23-49-1-W4	0.087
WL216	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-23-49-1-W4	0.048
WL217	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-23-49-1-W4	0.095
WL218	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.061
WL219	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.111
WL220	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.077
WL221	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.054
WL222	Class II - Temporary Wetlands	Graminoid	Crop Land		SW-24-49-1-W4	0.122
WL223	Class II - Temporary Wetlands	Cultivated	Crop Land		SW-24-49-1-W4	0.397
WL224	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.092
WL225	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SW-24-49-1-W4	0.062
WL226	Class I - Temporary Wetlands	Graminoid	Crop Land		SW-24-49-1-W4	0.304
WL227	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.058
WL228	Class II - Temporary Wetlands	Graminoid	Crop Land	Ditch	NW-24-49-1-W4 & SW-25-49-1-W4	0.365
WL229	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SW-24-49-1-W4	0.072
WL230	Class III - Seasonal Ponds and Lakes	Graminoid	Tame Pasture (Seeded Grassland)		SW-24-49-1-W4	0.049
WL231	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.091
WL232	Class II - Temporary Wetlands	Cultivated	Crop Land		SW-24-49-1-W4	0.087
WL233	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-24-49-1-W4	0.040
WL234	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SW-24-49-1-W4	0.065
WL235	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.176
WL236	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-14-49-1-W4 & SE-23-49-1-W4	0.049
WL237	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.265
WL238	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.065
WL239	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-24-49-1-W4	0.230
WL240	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SW-24-49-1-W4	0.161
WL241	Class II - Temporary Wetlands	Treed	Tame Pasture (Seeded Grassland)	Open Canopy Deciduous	SW-24-49-1-W4	0.634
WL242	Class III - Seasonal Ponds and Lakes	Graminoid	Crop Land		SE-24-49-1-W4	0.088
WL243	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.523
WL244	Class IV - Semi-permanent Ponds and Lakes	Shrub	Crop Land		SE-23-49-1-W4	0.111
WL245	Class IV - Semi-permanent Ponds and Lakes	Treed	Open Canopy Deciduous Woodland	Dugout	SW-24-49-1-W4	0.031
WL246	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		NE-24-49-1-W4 & NW-24-49-1-W4	0.077
WL247	Class IV - Semi-permanent Ponds and Lakes	Cultivated	Crop Land	Dugout	NW-24-49-1-W4	0.098
WL248	Class IV - Semi-permanent Ponds and Lakes	Graminoid	Crop Land		SE-24-49-1-W4	0.240
WL249	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.151
WL250	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.078
WL251	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-24-49-1-W4	0.223
WL252	Class III - Seasonal Ponds and Lakes	Treed	Crop Land		SE-24-49-1-W4	0.418
WL253	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		SE-24-49-1-W4	0.166
WL254	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-23-49-1-W4	0.154
WL255	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.307
WL256	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.275
WL257	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.066



Wetland and Watercourse Information

WETLAND NAME	CLASS	TYPE	HABITAT	COMMENT	LEGAL QTR	AREA (ha)
WL258	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.079
WL259	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.369
WL260	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.138
WL261	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.191
WL262	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.066
WL263	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.058
WL264	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-23-49-1-W4 & NW-23-49-1-W4	0.253
WL265	Class II - Temporary Wetlands	Treed	Open Canopy Deciduous Woodland		NE-22-49-1-W4 & NW-23-49-1-W4	6.483
WL266	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.107
WL267	Class III - Seasonal Ponds and Lakes	Treed	Open Canopy Deciduous Woodland		NW-23-49-1-W4	0.326
WL268	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.066
WL269	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.234
WL270	Class II - Temporary Wetlands	Treed	Other (Describe in Comments)	Riparian Treed	NE-22-49-1-W4 & NW-23-49-1-W4	0.192
WL271	Class III - Seasonal Ponds and Lakes	Treed	Crop Land		NW-23-49-1-W4 & SW-26-49-1-W4	1.176
WL272	Class II - Temporary Wetlands	Cultivated	Crop Land	Developed Lease Berm	NE-22-49-1-W4	0.083
WL273	Class II - Temporary Wetlands	Cultivated	Other (Describe in Comments)	Developed Lease Berm	NE-22-49-1-W4	0.106
WL274	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-22-49-1-W4	0.206
WL275	Class III - Seasonal Ponds and Lakes	Graminoid	Other (Describe in Comments)	Developed Lease Berm	NE-22-49-1-W4	0.118
WL276	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.191
WL277	Class II - Temporary Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.195
WL278	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.095
WL279	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.081
WL280	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.069
WL281	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.149
WL282	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.055
WL283	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NW-23-49-1-W4	0.051
WL284	Class III - Seasonal Ponds and Lakes	Graminoid	Short Shrub Grassland		NW-23-49-1-W4	0.232
WL285	Class III - Seasonal Ponds and Lakes	Shrub	Crop Land		NE-22-49-1-W4	0.753
WL286	Class I - Ephemeral Wetlands	Cultivated	Crop Land		NE-22-49-1-W4	0.307
WL287	Class IV - Semi-permanent Ponds and Lakes	Shrub	Other (Describe in Comments)	Riparian Shrub	NE-22-49-1-W4	0.615
WL288	Class IV - Semi-permanent Ponds and Lakes	Graminoid	Short Shrub Grassland		NW-23-49-1-W4	0.059
WL289	Class II - Temporary Wetlands	Cultivated	Crop Land		SW-23-49-1-W4	0.249
WL290	Class II - Temporary Wetlands	Cultivated	Crop Land		SW-23-49-1-W4	0.304
WL291	Class III - Seasonal Ponds and Lakes	Shrub	Crop Land		NE-15-49-1-W4 & NW-14-49-1-W4 & SE-22-49-1-W4 & SW-23-49-1-W4	6.137
WL292	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		SE-22-49-1-W4	0.457
WL293	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		SE-22-49-1-W4	0.808
WL294	Class I - Ephemeral Wetlands	Cultivated	Other (Describe in Comments)	Developed Lease Berm	SE-22-49-1-W4	0.099
WL295	Class II - Temporary Wetlands	Cultivated	Other (Describe in Comments)	Developed Lease Berm	SE-22-49-1-W4	0.106
WL296	Class III - Seasonal Ponds and Lakes	Cultivated	Crop Land		SE-22-49-1-W4	0.323
WL297	Class III - Seasonal Ponds and Lakes	Treed	Crop Land		SE-22-49-1-W4 & SW-23-49-1-W4	0.141
WL298	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-22-49-1-W4	0.030
WL299	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-22-49-1-W4	0.158
WL300	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-22-49-1-W4	0.229
WL301	Class II - Temporary Wetlands	Cultivated	Crop Land		NE-22-49-1-W4 & SE-22-49-1-W4 & SW-22-49-1-W4	0.451
WL302	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SE-22-49-1-W4	0.037
WL303	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-22-49-1-W4	0.059
WL304	Class II - Temporary Wetlands	Cultivated	Crop Land		SW-23-49-1-W4	0.136
WL305	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SW-23-49-1-W4	0.095
WL306	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SW-23-49-1-W4	0.170
WL307	Class I - Ephemeral Wetlands	Cultivated	Crop Land		SW-23-49-1-W4	0.233



Wetland and Watercourse Information

WETLAND NAME	CLASS	TYPE	HABITAT	COMMENT	LEGAL QTR	AREA (ha)
WL308	Class II - Temporary Wetlands	Cultivated	Crop Land		SW-23-49-1-W4	0.049
WL309	Class III - Seasonal Ponds and Lakes	Treed	Open Canopy Deciduous Woodland		NE-15-49-1-W4 & SE-22-49-1-W4	2.920
WL310	Class IV - Semi-permanent Ponds and Lakes	Shrub	Other (Describe in Comments)	Treed / Shrub Wetland Complex	NE-15-49-1-W4 & NW-14-49-1-W4 & SW-23-49-1-W4	0.473
WL311	Class III - Seasonal Ponds and Lakes	Treed	Crop Land		SE-24-49-1-W4 & SW-24-49-1-W4	0.148
WL312	Class II - Temporary Wetlands	Treed	Crop Land		SE-24-49-1-W4 & SW-24-49-1-W4	0.292
WL313	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.482
WL314	Class II - Temporary Wetlands	Cultivated	Crop Land		SE-23-49-1-W4	0.931
WL315	Class IV - Semi-permanent Ponds and Lakes	Shrub	Other (Describe in Comments)	Treed / Shrub Wetland Complex	SW-23-49-1-W4	0.173
WL316	Class III - Seasonal Ponds and Lakes	Treed	Open Canopy Deciduous Woodland		NE-22-49-1-W4 & NW-23-49-1-W4	0.325
WL317	Class II - Temporary Wetlands	Graminoid	Hay Crop (Forage)		NW-34-49-1-W4	0.764
WC1	Ephemeral Drainage	Cultivated	Tame Pasture (Seeded Grassland)		SW-3-50-1-W4	0.536
WC2	Ephemeral Drainage	Cultivated	Crop Land		SE-22-49-1-W4	0.117
WC3	Ephemeral Drainage	Cultivated	Crop Land		NW-23-49-1-W4	2.215
WC4	Ephemeral Drainage	Cultivated	Crop Land		SW-24-49-1-W4	1.946
WC5	Ephemeral Drainage	Cultivated	Crop Land		SE-24-49-1-W4	1.677
WC6	Ephemeral Drainage	Cultivated	Crop Land		NE-23-49-1-W4	0.281
WC7	Ephemeral Drainage	Cultivated	Crop Land		NW-24-49-1-W4	0.028
WC8	Ephemeral Drainage	Cultivated	Crop Land		SE-24-49-1-W4	0.361
WC9	Ephemeral Drainage	Cultivated	Hay Crop (Forage)		NW-34-49-1-W4	5.290
WC10	Ephemeral Drainage	Cultivated	Crop Land		NE-24-49-2-W4	0.034
WC11	Ephemeral Drainage	Cultivated	Crop Land		NE-24-49-2-W4	0.387
WC12	Ephemeral Drainage	Cultivated	Crop Land		NE-24-49-2-W4	0.070
WC13	Ephemeral Drainage	Cultivated	Crop Land		NE-24-49-2-W4	0.127
WC14	Ephemeral Drainage	Cultivated	Crop Land		SE-24-49-1-W4	0.112
WC15	Ephemeral Drainage	Cultivated	Crop Land		NE-24-49-2-W4	0.398
WC16	Ephemeral Drainage	Cultivated	Crop Land		SW-24-49-1-W4	0.003
WC17	Ephemeral Drainage	Cultivated	Crop Land		NE-23-49-1-W4	0.004
WC18	Ephemeral Drainage	Cultivated	Crop Land		NW-23-49-1-W4	0.004
WC19	Ephemeral Drainage	Cultivated	Crop Land		NW & SW-23-49-1- W4	0.562
WC20	Ephemeral Drainage	Cultivated	Other (Describe in Comments)	Culvert across road	NE-23-49-1-W4 & NW-24-49-2-W4	0.002





APPENDIX C: SAR PROJECT SCREENING REPORTS

Fish and Wildlife Internet Mapping Tool (FWIMT)

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

Species Summary Report

Report Date: 15-Sep-2025 13:57

Species present within the current extent

Fish Inventory

RIVER SHINER

Wildlife Inventory

PLAINS GARTER SNAKE
SANDHILL CRANE
SORA

Stocked Inventory

RAINBOW TROUT

Buffer Extent

Centroid (X,Y)

829926, 5909750

Projection

10-TM AEP Forest

Centroid (Qtr Sec Twp Rng Mer)

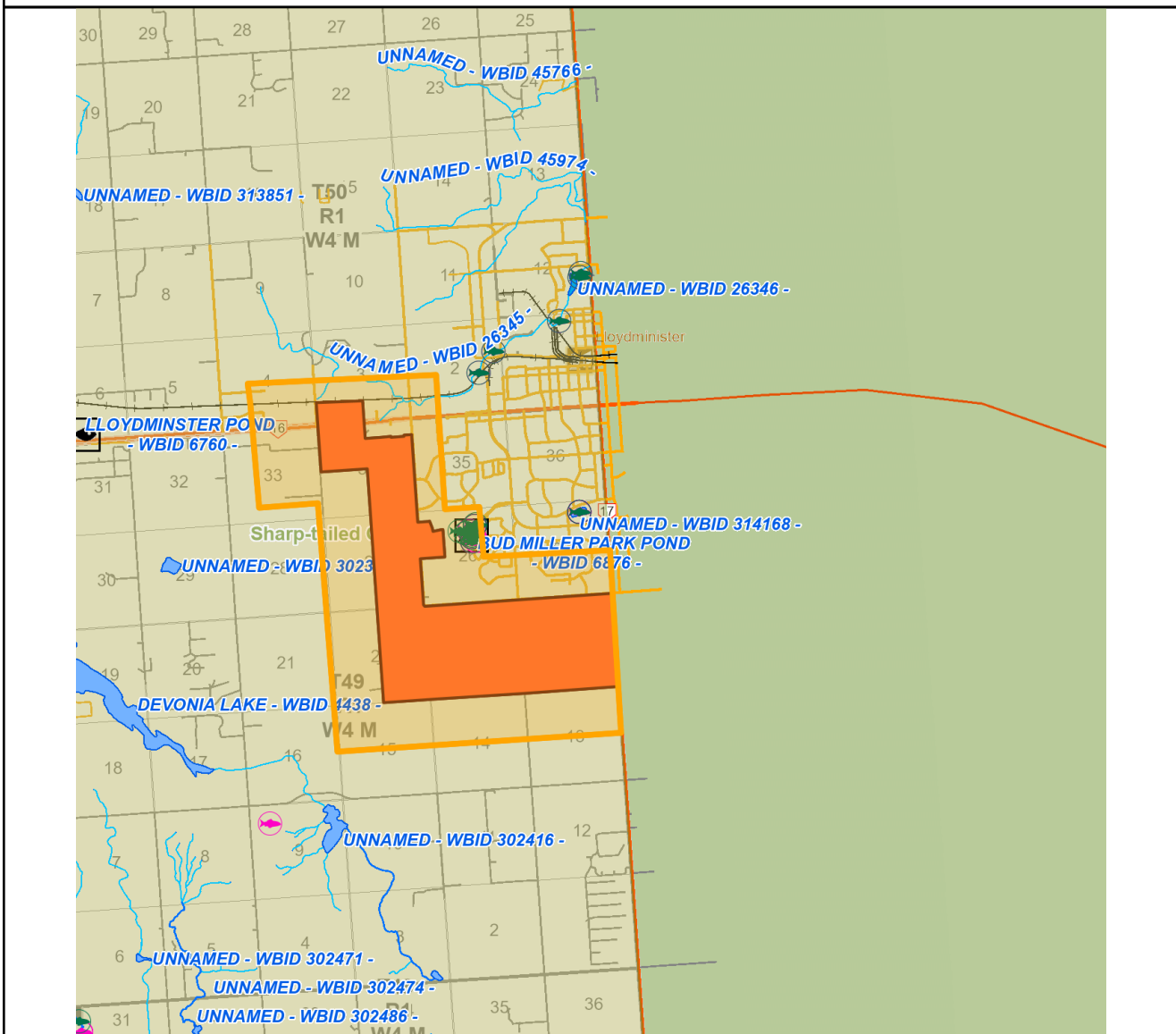
SW 26 49 1 4

Radius or Dimensions

6440, 6504 meters

Contact Information

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



Display may contain: Base Map Data provided by the Government of Alberta under the Alberta Open Government Licence. Cadastral and Dispositions Data provided by Alberta Data Partnerships. (c)GeoEye, all rights reserved. Information as depicted is subject to change, therefore the Government of Alberta assumes no responsibility for discrepancies at time of use

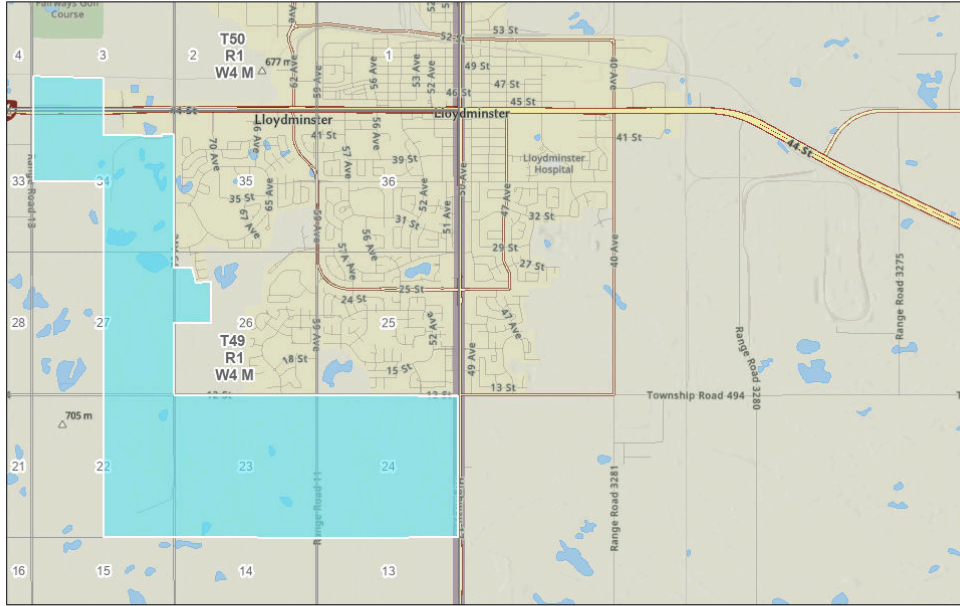
Alberta ACIMS Data Screening Report

Government

Area of Interest (AOI) Information

Area : 10,084,792.17 m²

Sep 15 2025 13:34:15 Mountain Daylight Time



ATS Section with Road Allowance Label Below Hydro
ATS Township Index Label Above Hydro

Summary

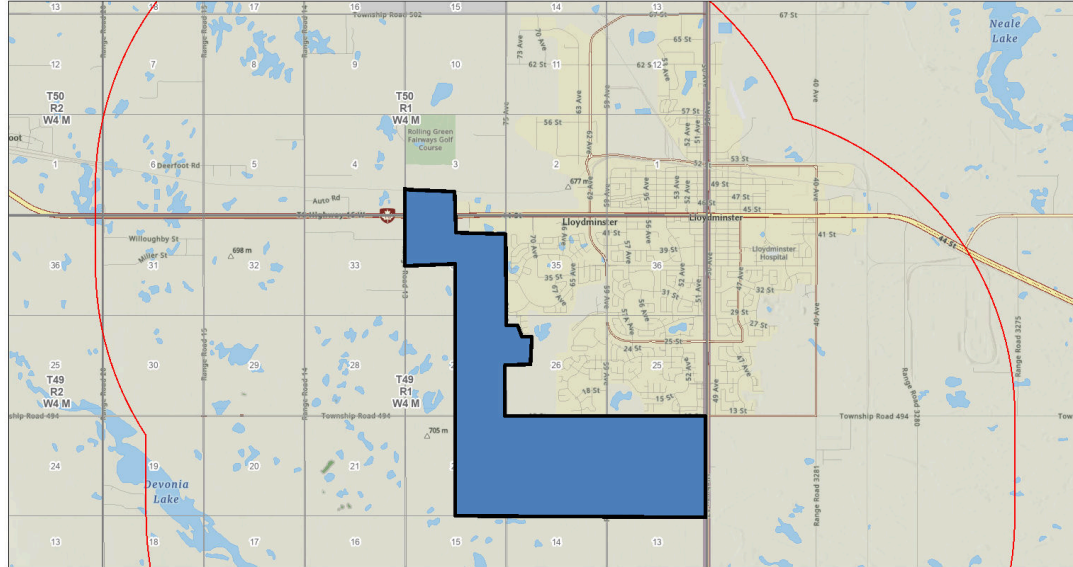
Name	Count	Area(m ²)	Length(m)
Sensitive EO	0	0	N/A
Non Sensitive EO	0	0	N/A

While every effort has been made to ensure that the information accessible from this dataset is complete, accurate, and current, the Government of Alberta, their agents and employees are not liable for any loss or damage arising directly or indirectly from the possession, publication, or use of, or reliance on, that information. This information is provided "as is" without expressed or implied warranty.

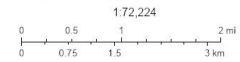
Area of Interest (AOI) Information

Area : 180,473,047.16 m²

Sep 24 2025 11:29:32 Mountain Daylight Time



- SWASP_Boundary
- ACIMS Non-Sensitive Element Occurrences - Public
- Vascular Plant
- ATS Section with Road Allowance Label Below Hydro
- ATS Township Index Label Above Hydro



Erii, Canada, Erii, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, USDA, INRCan, Parks Canada, Erii, NASA, NGA, USGS, FEMA, Copyright Government of Alberta

Summary

Name	Count	Area(m ²)	Length(m)
Sensitive EO	0	0	N/A
Non Sensitive EO	6	31,719.33	N/A

Non Sensitive EO


#	ELCODE	EO ID	Name Category Desc.	Species	Scientific Name	Last Obs. Date	S Rank	Perimeter (m)	Area(m ²)
1	PMJUN011Z0	18937	Vascular Plant	Nevada rush	Juncus nevadensis	2008-08-05	S1	62.75	312.25
2	PDBRA27130	18931	Vascular Plant	blunt-leaved watercress	Rorippa curvipes	2008-08-05	S3	148.11	843.28
3	PDPRI070A0	18816	Vascular Plant	lance-leaved loosestrife	Lysimachia hybrida	2008-08-25	S3	171.90	1,683.70
4	PDPRI070A0	18936	Vascular Plant	lance-leaved loosestrife	Lysimachia hybrida	2008-08-25	S3	213.69	1,785.11
5	PDPRI070A0	18977	Vascular Plant	lance-leaved loosestrife	Lysimachia hybrida	2008-08-25	S3	572.81	11,562.68
6	PDPRI070A0	18814	Vascular Plant	lance-leaved loosestrife	Lysimachia hybrida	2008-08-25	S3	1,050.28	15,532.32

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Notes:

Report Generated
09/22/2025

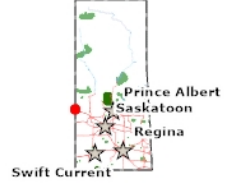
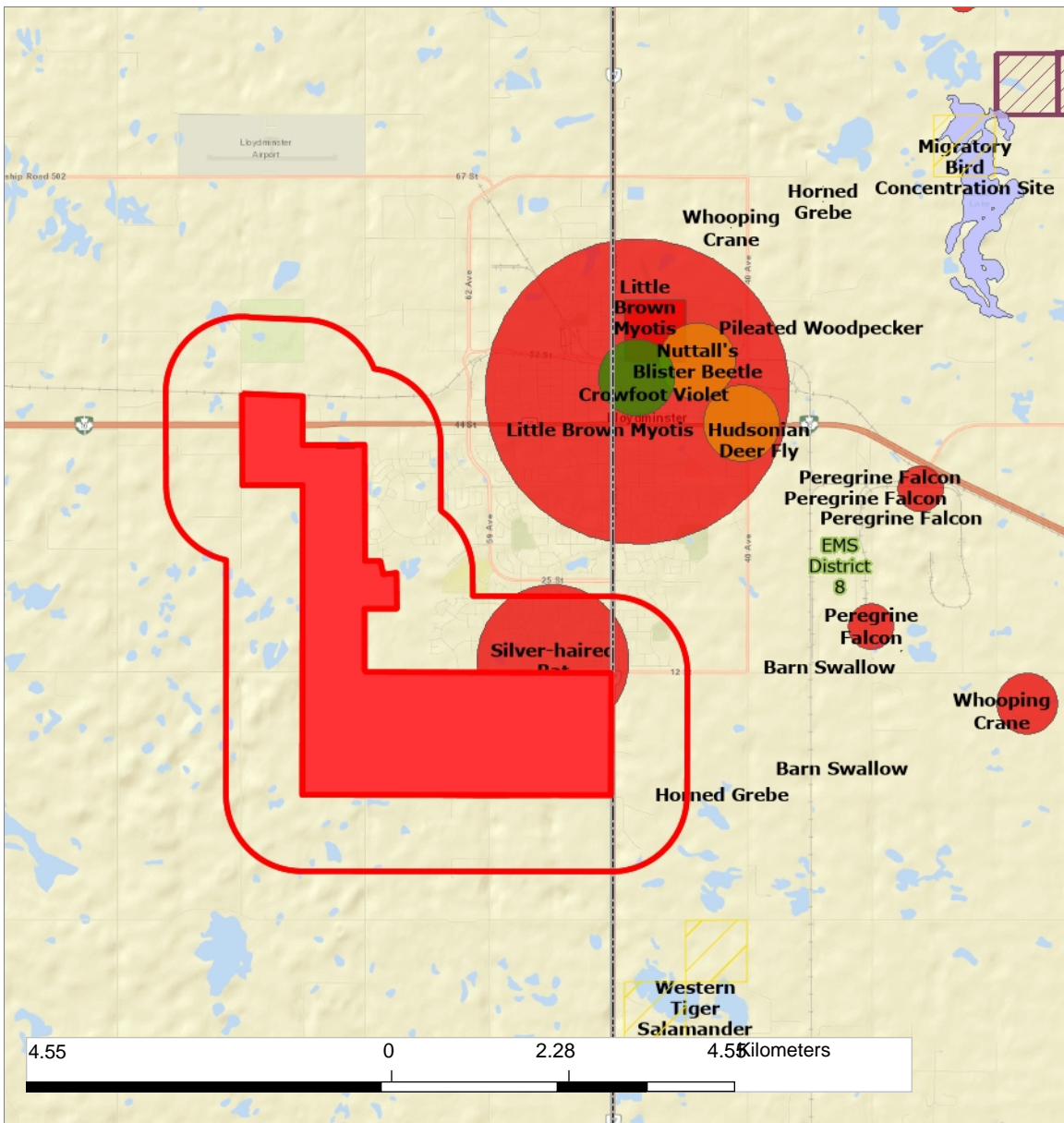
Map Information



Buffer Size:
1 Kilometers

Coordinates:
Lat: 53.25294° N
Lon: -110.04707° W

Area of Interest

- Screened Areas:**
- Ecological Management
 - Specialists (EMS) District
 - Compliance & Field Service (CFS) Area
 - Compliance & Field Service (CFS) Region
 - Area Fisheries Ecologists Area(s)
 - Area Wildlife Ecologist(s)
 - Rural Municipality
 - First Nation Reserve
 - AG Crown Land Management
 - Specialist Districts
 - Rare and Endangered Species
 - Fish Species
 - Woodland Caribou Range
 - Species Predictive Models
 - Whooping Crane Corridor
 - Barren-ground Caribou
 - Federal Critical Habitat
 - Proposed Critical Habitat
 - Wind Energy Avoidance Zones
 - Important Natural Areas
 - Provincial Parks
 - Recreation Sites
 - Game Preserves
 - RC Game Preserve
 - National Wildlife Areas
 - Federal Pastures
 - Wildlife Habitat Protection Act Lands
 - Wildlife Habitat Protection Act Lands within Project Area
 - Fish & Wildlife Development
 - Fund Lands
 - Migratory Bird Sanctuary
 - Wildlife Refuge
 - Conservation Easements
 - Crown Conservation Easements
 - Ecological Reserves
 - Ramsar Wetlands
 - Reservoir Development Areas
 - Representative Areas
 - Special Management Areas

Species Likely to be Present

Known Species

“Known” species are species that have known occurrences in the area from the Saskatchewan Conservation Data Centre’s Rare and Endangered Species map layer. However, absence of species observation records does not preclude the existence of species in the area of interest. Observations may simply not have been recorded for the given area or may not have yet been entered into the ministry data holdings – new observation records are continuously being discovered. Information accessible through HABISask is not intended to be a definitive statement on the presence, absence or status of a species within a given area, nor as a substitute for onsite surveys.

Rare and Endangered Species

Category: Vertebrate Animal

Common Name	Scientific Name:	G Rank	N Rank	S Rank	COSEWIC	SARA Status	Wild Species at Risk Regulations
Silver-haired Bat	<i>Lasionycteris noctivagans</i>	G4	N5B,NUN, NUM	S5B	Endangered		

Expected Species

“Expected” is based on a modelled prediction if a species might occur in areas based upon developed statistical relationships between local and landscape characteristics and species presence. Models utilized by this report have only been created in the prairie ecozone for a selection of species. The boreal plain, boreal shield and taiga shield will not return any expected species results. Models are not a substitute for on the ground surveys to determine species presence.

Species Predictive Models

Category: Invertebrate Animal

Common Name	Scientific Name:	G Rank	N Rank	S Rank	COSEWIC	SARA Status	Wild Species at Risk Regulations
Monarch	<i>Danaus plexippus plexippus</i>	G4T3	N3B,NUM	S2B,SNRM	Endangered	Endangered	

Category: Vertebrate Animal

Common Name	Scientific Name:	G Rank	N Rank	S Rank	COSEWIC	SARA Status	Wild Species at Risk Regulations
American Badger	<i>Taxidea taxus taxus</i>	G5T5	N4	S3	Special Concern	Special Concern	
Common Nighthawk	<i>Chordeiles minor</i>	G5	N4N5B, N5M	S4B	Special Concern	Special Concern	
Horned Grebe	<i>Podiceps auritus</i>	G5	N5B, N4N5N	S4B	Special Concern	Special Concern	
Piping Plover	<i>Charadrius melodus circumcinctus</i>	G3T3	N3B	S3B	Endangered	Endangered	Endangered

Fish Species by Watershed

All fish species expected to be in any watershed that intersects the area searched are provided and their presence in the direct project area will depend on habitat.

Watershed: North Saskatchewan River

Common Name	Scientific Name:	G Rank	N Rank	S Rank	COSEWIC	SARA Status	Wild Species at Risk Regulations
Blacknose Dace	<i>Rhinichthys obtusus</i>	G5	N5	S3			
Blacknose Shiner	<i>Notropis heterolepis</i>	G5	N5	S4			
Blackside Darter	<i>Percina maculata</i>	G5	N5	S3			
Brassy Minnow	<i>Hybognathus hankinsoni</i>	G5	N5	S3	Special Concern		
Brook Stickleback	<i>Culaea inconstans</i>	G5	N5	S5			
Brook Trout	<i>Salvelinus fontinalis</i>	G5	N5B,N5N	SNA			
Brown Trout	<i>Salmo trutta</i>	G5	NNA	SNA			
Burbot	<i>Lota lota</i>	G5	N5	S5			
Cisco	<i>Coregonus artedii</i>	G5	N5B,N5N, NUM	S5			
Common Carp	<i>Cyprinus carpio</i>	G5	NNA	SNA			
Emerald Shiner	<i>Notropis atherinoides</i>	G5	N5	S5			
Fathead Minnow	<i>Pimephales promelas</i>	G5	N5	S5			
Finescale Dace	<i>Chrosomus neogaeus</i>	G5	N5	S4			

Watershed: North Saskatchewan River

Common Name	Scientific Name:	G Rank	N Rank	S Rank	COSEWIC	SARA Status	Wild Species at Risk Regulations
Flathead Chub	<i>Platygobio gracilis</i>	G5	N5	S3			
Goldeye	<i>Hiodon alosoides</i>	G5	N5	S4			
Iowa Darter	<i>Etheostoma exile</i>	G5	N5	S5			
Johnny Darter	<i>Etheostoma nigrum</i>	G5	N5	S5			
Lake Chub	<i>Couesius plumbeus</i>	G5	N5	S5			
Lake Sturgeon	<i>Acipenser fulvescens</i>	G3G4	N3N4	S2	Endangered		
Lake Whitefish	<i>Coregonus clupeaformis</i>	G5	N5B,N5N	S5	Not at Risk		
Longnose Dace	<i>Rhinichthys cataractae</i>	G5	N5	S5			
Longnose Sucker	<i>Catostomus catostomus</i>	G5	N5	S5			
Mooneye	<i>Hiodon tergisus</i>	G5	N5	S3			
Ninespine Stickleback	<i>Pungitius pungitius</i>	G5	N5B,N5N	S5			
Northern Pike	<i>Esox lucius</i>	G5	N5	S5			
Northern Redbelly Dace	<i>Chrosomus eos</i>	G5	N5	S3			
Pearl Dace	<i>Margariscus nachtriebi</i>	G5	N5	S5			
Quillback	<i>Carpodes cyprinus</i>	G5	N5	S4			
Rainbow Trout	<i>Oncorhynchus mykiss</i>	G5	N5B,N5N	SNA			
River Shiner	<i>Notropis blennioides</i>	G5	N5	S3			
Sauger	<i>Sander canadensis</i>	G5	N5	S5			
Shorthead Redhorse	<i>Moxostoma macrolepidotum</i>	G5	N5	S4			
Silver Redhorse	<i>Moxostoma anisurum</i>	G5	N5	S4			
Slimy Sculpin	<i>Cottus cognatus</i>	G5	N5	S4			
Splake	<i>Salvelinus fontinalis</i> x <i>S. namaycush</i>	GNA	NNA	SNA			
Spoonhead Sculpin	<i>Cottus ricei</i>	G5	N5	S5	Not at Risk		
Spottail Shiner	<i>Notropis hudsonius</i>	G5	N5	S5			
Tadpole Madtom	<i>Noturus gyrinus</i>	G5	N5	S3			
Tiger Trout	<i>Salmo trutta</i> x <i>Salvelinus fontinalis</i>	GNA	NNA	SNA			
Trout-perch	<i>Percopsis omiscomaycus</i>	G5	N5	S5			
Walleye	<i>Sander vitreus</i>	G5	N5	S5			
White Sucker	<i>Catostomus commersonii</i>	G5	N5	S4			
Yellow Perch	<i>Perca flavescens</i>	G5	N5	S5			

Whooping Crane Corridor 95% Core Area

Species with Critical Habitat Present

This dataset displays the geographic areas within which federal Critical Habitat for species at risk listed on Schedule 1 of the federal Species at Risk Act (SARA) occurs in Saskatchewan. Please be aware that not all of the area within these boundaries is necessarily Critical Habitat. To determine if a specific area is Critical Habitat and if your activity might be considered “destruction” of Critical Habitat, other information available in each individual species’ Recovery documents (<http://www.sararegistry.gc.ca>) need to be considered, including biophysical attributes and activities likely to result in destruction of Critical Habitat.

Note that recovery documents (and therefore Critical Habitat) may be amended from time to time. Species are added as the data becomes ready, which may occur after the recovery document has been posted on the SAR Public Registry. Although HABISask will try to provide the latest data, the SAR Public Registry should always be considered as the official source for Critical Habitat information.

Common Name	Scientific Name:	G Rank	N Rank	S Rank	COSEWIC	SARA Status	Wild Species at Risk Regulations
-------------	------------------	--------	--------	--------	---------	-------------	----------------------------------

No Critical Habitat found

Proposed Critical Habitat Present

This section identifies federally proposed critical habitat that is up for consultation as per the information contained within the federal recovery strategies developed under the federal Species at Risk Act (SARA). This information on location of critical habitat is intended for reference by landowners and/or lease holders. Shapefiles or additional maps of critical habitat can be obtained by contacting Environment and Climate Change Canada at ec.leprpn-sarapnr.ec@canada.ca.

Shapefiles or additional maps of critical habitat for aquatic species at risk can be found on the Government of Canada Open Government Portal at:

[Critical Habitat for Aquatic Species at Risk - Canada](#)

To obtain shapefiles or maps for all other species at risk contact Environment and Climate Change Canada at ec.leprpn-sarapnr.ec@canada.ca.

Common Name	Scientific Name:	G Rank	N Rank	S Rank	COSEWIC	SARA Status	Wild Species at Risk Regulations
No Critical Habitat found							

Managed Areas

Managed areas are a diverse collection of lands and waters on which the conservation of biodiversity and ecosystem function are among the goals of the land management programs. Each of the unique or sensitive landscapes, within the network of managed areas, have some level of protection or activity restrictions placed on them by legislation, agreement or policy. These lands include provincial and national parks, ecological reserves, wildlife lands, game preserves, conservation easements and other privately held stewardship lands.

Managed areas are listed below if they are found within the complete project area including the buffer, unless otherwise specified.

Provincial Park

Nothing Found

Representative Area Ecological Reserve

Nothing Found

Recreation Site

Nothing Found

Special Management Area

Nothing Found

Game Preserve

Nothing Found

Road Corridor Game Preserve

Nothing Found

National Wildlife Area

Nothing Found

Pasture Boundary

Nothing Found

Wildlife Habitat Protection Act (WHPA)

Nothing Found

Wildlife Habitat Protection Act (WHPA) within Project Area

Nothing Found

Fish & Wildlife Development Fund (FWDF)

Nothing Found

Migratory Bird Sanctuary

Nothing Found

Wildlife Refuge

Nothing Found

Conservation Easement

Nothing Found

Crown Conservation Easement

Nothing Found

Ecological Reserve

Nothing Found

Ramsar Wetland

Nothing Found

Reservoir Development Area

Nothing Found

Rare and Endangered Species Occurrences

The absence of information provided by the Saskatchewan Conservation Data Centre (SKCDC) does not categorically mean the absence of sensitive species or features. The quantity and quality for data collected by the SKCDC are dependent on the research and observations of many individuals and organizations. SKCDC reports summarize the existing natural heritage information, known to the SKCDC, at the time of the request.

SKCDC data should never be regarded as final statements on the elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments. The user therefore acknowledges that the absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources.

Occurrence ID: 9999149653

First Observation: 2019-07-22

Occurrence Class: Vertebrate Animal

Last Observation: 2019-07-22

Scientific Name: Lasionycteris noctivagans

Common Name: Silver-haired Bat

Occurrence Rank:

General Description: 1 Adult Female(s); (2019)

Occurrence Data:

Directions:

Wild Species Research Permitting

A Research Permit is required to detect or observe plants or wildlife for commercial purposes, such as pre-screening surveys to collect baseline data or other activities, or to conduct academic research. Research Permits are not required if you are doing surveys for personal, recreational, educational or other non-commercial purposes. Revisions were made to Section 21 of The Wildlife Act in 2015 and to Section 6.2 of The Wildlife Regulations in 2016.

See the Government of Saskatchewan [Wild Species Research Permitting](#) page for more information.

All forms and related information pertaining to Research Permits can be found in the Publications Centre. Be sure to check out the Conservation Standards Terms and Conditions for Research Permits for general, wildlife and research-specific and information submission conditions that pertain to all research permits.

Subscribe to our Mail-out List Subscriptions for updates regarding Species Detection Permits, SKCDC Lists and Ranks, Legislation and Policy and HABISask.

Species Detection Survey Protocols

The [Species Detection Survey Protocols](#) are used to detect rare and sensitive species so Activity Restriction Guidelines can be applied. Their use is required by industry/environmental consultants for proposed or existing commercial activities.

Activity Restriction Guidelines for Sensitive Species

The [Activity Restriction Guidelines for Sensitive Species](#) outline restricted activity periods and distance setbacks for rare and sensitive species to assist proponents in minimizing impacts to rare and sensitive species and habitats.

Administrative Areas

District 8	Ecological Management Specialist (EMS) District(s)
Lloydminster	Compliance and Field Services Area(s)
Meadow Lake	Compliance and Field Services Region(s)
South West	Area Fisheries Ecologist Area(s)
WEST BOREAL REGION	Area Wildlife Ecologist(s)
472 - WILTON	Rural Municipality
Nothing Found	First Nation Reserve
District 16	AG Crown Land Management Specialist District

Contact Us

For more information, please contact our Client Service Office:

Email: centre.inquiry@gov.sk.ca

Tel (toll free in North America): 1-800-567-4224

Tel (Regina): 306-787-2584



APPENDIX D: SPECIES AT RISK ASSESSMENT

Common Name	Species Scientific Name	SARA Status	COSEWIC Status	Provincial Status - AB	Habitat	AB Range	Potential for Occurrence and Recommended Mitigation Measures	Level of Risk
Vascular Plants								
Blunt-leaved watercress	<i>Rorippa curvipes</i>	No Status	No Status	S3	Moist grounds; wetlands, shores, streambanks	Southern and Central Alberta	Moderate Non-Sensitive EO outside of study area, within 5km.	Low
Bolanders Quilwort	<i>Isoetes bolanderi</i>	Threatened	Threatened	S1	Grows in chalky clay soils in vernal pools in large forest openings dominated by Scoulers Popcornflower and Close-flowered Knotweed. Also grows at ephemeral pond edges in spring. Restricted to a single location in southwestern Alberta.	Southwestern Alberta	Low Project area is north of this species range.	Negligible
Dwarf Woolly-heads (Prairie population)	<i>Psilocarphus brevissimus</i>	Special Concern	Special Concern	S2	In chalky clay soils in vernal pools/temporary ponds	Southeastern Alberta	Low Project area is north of this species range.	Negligible
Floccose Tansy	<i>Tanacetum huronense var. floccosum</i>	Special Concern	Special Concern	S2	On open active sand dunes and beaches	Northeast corner Alberta	Low Project area is south of this species range.	Negligible
Hair-footed Locoweed	<i>Oxytropis lagopus</i>	Threatened	Threatened	Special Concern S1	Grows withing the foothills fescue and mixedgrass subregions south of Lethbridge. Plants grow on thin gravelly soils in open grassland.	Southern Alberta - Uplands of Milk River and Del Bonita Plateau	Low Project area is north of this species range.	Negligible
Lance-leaved loosestrife	<i>Lysimachia hybrida</i>	No Status	No Status	S3	wet areas such as wet meadows, ponds, stremas	Wide range- little information provided	Moderate Non-Sensitive EO outside of study area, within 5km.	Low
Nevada Rush	<i>Juncus nevadensis</i>	No Status	No Status	S1	wet areas such as margins of lakes, marshes, bogs and stream banks	Wide range- little information provided	Moderate Non-Sensitive EO outside of study area, within 5km.	Low
Slender Mouse-ear-cress	<i>Crucihimalaya virgata</i>	Threatened	Threatened	Endangered S2	In sandy alkaline soil within open, short to mid-grass prairie	Southeastern Alberta	Low Project area is north of this species range.	Negligible
Small-flowered Sand-verbena	<i>Tripterocalyx micranthus</i>	Endangered	Special Concern	Threatened S2	In dry unstable sand-hill areas, within mixed-grass prairie	Southwestern Alberta	Low Project area is north of this species range.	Negligible
Smooth Goosefoot	<i>Chenopodium subglabrum</i>	Threatened	Threatened	S2	In unstable sand areas, such as stabilizing edges of active dunes	In Alberta, Species occurs in six different sand hill areas: Grassy lake, Middle Sand Hills, Rolling Hills Lake, Dominion, Medicine Lodge Coulee and Pakowki Lake	Low Project area is north of this species range.	Negligible
Soapweed	<i>Yucca glauca</i>	Threatened	Threatened	Endangered S1	In shallow alkaline soils on coulee slopes	Southern Alberta	Low Project area is north of this species range.	Negligible
Tiny Cryptantha	<i>Cryptantha minima</i>	Threatened	Threatened	Endangered S2	In dry, open, disturbed, sandy, south-facing slopes	Eastern Half of Alberta- Also occurs near the lower Red Deer, lower Bow, Oldman and Lost rivers	Low Project area is north of this species range.	Negligible
Western Blueflag	<i>Iris missouriensis</i>	Special Concern	Special Concern	Special Concern S2	Lakeshores, sand bars, exposed sandy or gravelly beaches, shallow saline lakes with sandy shores, or larger lakes	Foothills Fescue and Foothills Parkland natural subregions in Alberta	Low Project area is north of this species range.	Negligible
Western Spiderwort	<i>Tradescantia occidentalis</i>	Threatened	Threatened	Endangered S1	On partially stabilized sand dune ridges.	Southern Alberta	Low Project area is north of this species range.	Negligible
Whitebark Pine	<i>Pinus albicaulis</i>	Threatened	Endangered	Endangered S2	Occurs at or close to treeline, forming both open and closed forests.	Western Alberta, mountain regions	Low Project area is east of this species range.	Negligible
Non-Vascular Plants								
Haller's Apple Moss	<i>Bartramia halleriana</i>	Threatened	Threatened	S1	Low elevation, moist, non-calcarious cliffs or debris under dense forest cover.	Jasper National Park	Low Project area is east of this species range.	Negligible
Porsild's Brym	<i>Haplodontium macrocarpum</i>	Threatened	Threatened	Endangered S2S3	Shaded microhabitats on cliffs or rock outcrops, continually moistened by seepage or splashes from nearby water	Western Alberta, mountain regions	Low Project area is east of this species range.	Negligible



Wildlife Species At Risk Assessment

Common Name	Species Scientific Name	SARA Status	COSEWIC Status	Provincial Status (SK)	Habitat	AB Range	Potential for Occurrence and Recommended Mitigation Measures	Level of Risk
Amphibians & Reptiles								
Bullsnake	<i>Pituophis catenifer sayi</i>	Special Concern	Special Concern	S3	Short or mixed grass prairie in brushy or sandy areas or along major river valleys	In Alberta, Occurs from north and west of Drumheller along the Red Deer River coulee system, distributed mainly in lower Red Deer, South Saskatchewan and Milk river Valleys.	Low Project area is north of this species range.	Negligible
Eastern Yellow-bellied Racer	<i>Coluber constrictor flaviventris</i>	Threatened	Threatened	S1	Mixed grass prairie - rock dens on south facing slopes in steep river valleys, forage in riparian and valley bottom habitats	Southeastern Alberta	Low Project area is north of this species range.	Negligible
Great Plains Toad	<i>Anaxyrus cognatus</i>	Special Concern	Special Concern	Special Concern S2S3	Large, shallow, seasonal wetlands	Southeastern Alberta	Low Project area is north of this species range.	Negligible
Greater Short-horned Lizard	<i>Phrynosoma hernandesi</i>	Special Concern	Special Concern	Endangered S2	Sparsely vegetated, south facing slopes with friable soils and patchy vegetation cover	Four distinct habitat areas in Alberta. Including the south saskatchewan river, Manyberries Hills, along the Chin Coulee and along the milk river.	Low Project area is outside of this species range.	Negligible
Northern Leopard Frog	<i>Lithobates pipiens</i>	Special Concern	Special Concern	Threatened S2S3	Deep aerobic waterbodies that do not freeze (winter) Moist upland meadows / prairies; riparian areas; within <30cm veg (summer)	Range information lacking - southern Alberta and along eastern border	Low The project area is north of the "Sensitive Amphibian Range" where amphibian surveys are required, and few intact wetlands suitable for breeding are found within the project area. Mitigations include: -Responsible operation of equipment and spill prevention planning to reduce impacts to adjacent wetland areas. -Report any occurrences to the appropriate agencies -Implement RAP setbacks (100m year-round) or apply for approval to proceed within setbacks should breeding ponds be identified.	Low
Plains Hog-nosed Snake	<i>Heterodon nasicus</i>	Special Concern	Special Concern	S2	Sandy grasslands in open-canopy vegetation, often in close proximity to water.	Southern Alberta	Low Project area is north of this species range.	Negligible
Prairie Rattlesnake	<i>Crotalus viridis</i>	Special Concern	Special Concern	Special Concern S3	Strongly associated with major river valleys, coulee bottoms, and upland grassland or badlands. Hibernacula - south or east facing slopes	Southeastern Alberta, Badlands and rivervalleys	Low Project area is north of this species range.	Negligible
Western Tiger Salamander	<i>Ambystoma mavortium</i>	Special Concern	Special Concern	S3	variety of open habitats, including grasslands, parkland, subalpine meadows, and semi-deserts. Sparse vegetation with south-facing, fine loose soils surrounding semi-permanent to permanent water bodies.	Prairie ecozone. East to the Red River in Manitoba and eastern slopes of Rocky Mountains in Alberta	Moderate The project area is north of the "Sensitive Amphibian Range" where amphibian surveys are required, and few intact wetlands suitable for breeding are found within the project area. Mitigations include: -Responsible operation of equipment and spill prevention planning to reduce impacts to adjacent wetland areas. -Report any occurrences to the appropriate agencies.	Low
Western Toad	<i>Anaxyrus boreas</i>	Special Concern	Special Concern	S3S4	Found near lakes and small bodies of water	Boreal forests, foothills, sub-alpine and alpine regions	Low Project area is east of this species range.	Negligible
Fish								
Bull Trout	<i>Salvelinus confluentus</i>	Threatened	Threatened	Threatened S2	Cold, pristine waters - small streams and rivers (stream resident); rivers and major tributaries and headwaters (fluvial migratory); and headwater streams and lakes (adfluvial migratory).	Broadly distributed east of the Rockies	Low Project area does not intersect with any suitable river or lake habitat	Negligible



Wildlife Species At Risk Assessment

Common Name	Species Scientific Name	SARA Status	COSEWIC Status	Provincial Status (SK)	Habitat	AB Range	Potential for Occurrence and Recommended Mitigation Measures	Level of Risk
Mountain Sucker	<i>Catostomus platyrhynchus</i>	Threatened	Non-active	S5	Cool water, primarily within small streams with moderate flows, but occasionally in lakes / reservoirs / large rivers.	Milk River basin of southern Alberta and Saskatchewan	Low Project area is north of this species range.	Negligible
Rainbow Trout - Athabasca River populations	<i>Oncorhynchus mykiss</i>	Endangered	Endangered	Threatened S2	Cold headwater streams and main rivers in Athabasca drainage.	Upper Athabasca River Watershed	Low Project area is outside of this species range.	Negligible
Rocky Mountain Sculpin - Eastslope or St Mary populations	<i>Cottus sp.</i>	Threatened	Non-active	Threatened S2	Cool, clear streams with shallow runs and riffles with rock / gravel / cobble substrates.	Milk and St. Mary River Watersheds	Low Project area is outside of this species range.	Negligible
Western Silvery Minnow	<i>Hybognathus argyritis</i>	Threatened	Threatened	Threatened S1S2	Plains species found in quiet water with flow velocities, including backwaters and pools of larger streams.	Milk River - Endemic in southern Alberta	Low Project area is outside of this species range.	Negligible
Westslope Cutthroat Trout	<i>Oncorhynchus clarkii lewisi</i>	Threatened	Threatened	Threatened S2	Cold, clean water with a variety of cover types, including headwaters and upper reaches of streams, and larger rivers and lakes.	Southwestern Alberta (primarily South Saskatchewan drainage)	Low Project area is outside of this species range.	Negligible
Birds								
Baird's Sparrow	<i>Ammodramus bairdii</i>	Special Concern	Special Concern	S3B	Mixed grass and fescue prairie with sparse shrubs, moderate grass heights, and some litter - may be present in tame pasture with similar features	Southcentral Alberta - west of Edmonton / Red Deer / Calgary and south of the North Saskatchewan River	Moderate Project area contains suitable habitat (open grassland/pasture) and is at the northern edge of their range. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences or nests to the appropriate agencies.	Moderate
Bank Swallow	<i>Riparia riparia</i>	Threatened	Threatened	S4B	Vertical banks (river banks, pits, stock piles, road cuts)	Alberta	Low Project is within the species range, but the project area is not anticipated to contain suitable nesting habitat. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences or nests to the appropriate agencies.	Low
Barn Swallow	<i>Hirundo rustica</i>	Threatened	Special Concern	S4B	Buildings, houses, bridges, culvert; may be found in caves, holes, crevices and cliff faces	Alberta	Moderate Project is within the species range, and the project area is anticipated to contain suitable nesting structures / habitat. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences or nests to the appropriate agencies.	Moderate
Black Swift	<i>Cypseloides niger</i>	Endangered	Endangered	S2B	Nest near or behind waterfalls and in caves, located in canyons or along sea cliffs	From Northwestern British Columbia and Southwestern Alberta through to Montana	Low Project area is east of this species range.	Negligible
Bobolink	<i>Dolichonyx oryzivorus</i>	Threatened	Special Concern	S3B	Forage crops (clover, Timothy, Kentucky Bluegrass, and broadleaved plants); grassland (wet prairie, graminoid peatlands, tall grasses, no-till cropland, small-grain fields, restored surface sites	Southcentral AB	Moderate Project area contains suitable habitat (open grassland/pasture) and is at the northern edge of their range. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences or nests to the appropriate agencies.	Moderate



Wildlife Species At Risk Assessment

Common Name	Species Scientific Name	SARA Status	COSEWIC Status	Provincial Status (SK)	Habitat	AB Range	Potential for Occurrence and Recommended Mitigation Measures	Level of Risk
Buff-breasted Sandpiper	<i>Tryngites subruficollis</i>	Special Concern	Special Concern	SUM	Stopovers in crop field, golf courses, airport runways, farm land, grazed pasture land	Migrant through Alberta	Low Project area contains potential migration stopover habitat. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences to the appropriate agencies.	Low
Burrowing Owl	<i>Athene cunicularia</i>	Endangered	Endangered	Endangered S2B	Sparsely vegetated grasslands, nesting in abandoned burrows and active prairie dog towns	Southcentral AB	Low Project area is north of this species range.	Negligible
Canada Warbler	<i>Cardellina canadensis</i>	Threatened	Special Concern	Special Concern S3S4B	Wet, mixed deciduous-coniferous with dense shrub	Throughout AB	Low Project area contains small remnant patches of potentially suitable habitat (deciduous treed) and is within the species range. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences or nests to the appropriate agencies.	Low
Chestnut-collared Longspur	<i>Calcarius ornatus</i>	Threatened	Endangered	S2B	Mixed-grass prairies	Southern Alberta- Mixed grass prairie region	Low Project area is north of this species range.	Negligible
Common Nighthawk	<i>Chordeiles minor</i>	Special Concern	Special Concern	S3S4B	Generalist; open prairies, veg-free, dunes, beaches, harvested plots, grasslands, pastures, bogs, marshes, lakeshores, river banks also mixed and deciduous forests	Throughout AB	Moderate Project area contains suitable habitat (pastchwork of open grassland / treed habitat) and is within the species range. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences or nests to the appropriate agencies.	Moderate
Eskimo Curlew	<i>Numenius borealis</i>	Endangered	Endangered	-	Spring migration - tallgrass and mixed grass prairies, assumed heavier reliance on freshly planted corn and wheatfields	Migrant through Alberta	Low Project area contains potential migration stopover habitat. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences to the appropriate agencies.	Low
Evening Grosbeak	<i>Coccothraustes vespertinus</i>	Special Concern	Special Concern	S4	Open mature mixed wood habitats during breeding, and seed producing trees outside the breeding season, including ornamental fruit trees and bird feeders	Stop-over habitat during migration	Moderate Project area contains potentially suitable habitat (treed habitats) within the species range. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences or nests to the appropriate agencies.	Moderate
Ferruginous Hawk	<i>Buteo regalis</i>	Threatened	Special Concern	Endangered S3B,S2M	Native grassland	Southern AB	Low Project area is north of this species range.	Negligible
Greater Prairie-Chicken	<i>Tympanuchus cupido</i>	Extirpated	Extirpated	-	Tall-grass prairie, mixed-grass prairie	Extirpated	Low The species is extirpated from Canada.	Negligible
Greater Sage-Grouse	<i>Centrocercus urophasianus</i>	Endangered	Endangered	Endangered S1	Mixed-grass prairie, warm, dry regions with silver sagebrush	Southwestern AB	Low Project area is north of this species range.	Negligible



Wildlife Species At Risk Assessment

Common Name	Species Scientific Name	SARA Status	COSEWIC Status	Provincial Status (SK)	Habitat	AB Range	Potential for Occurrence and Recommended Mitigation Measures	Level of Risk
Harris Sparrow	<i>Zonotrichia querula</i>	Special Concern	Special Concern	SUM	Upland and tundra habitats along the treeline	Northern AB- north treeline	Low Project area is south of this species range.	Negligible
Horned Grebe	<i>Podiceps auritus</i>	Special Concern	Non-active	S4B	Fresh or brackish small permanent or semi-permanent wetlands	Alberta	Low Project area not near suitable habitat	Negligible
Lark Bunting	<i>Calamospiza melanocorys</i>	Threatened	Threatened	S2B	Grassland habitats, weedy fields, pastures, and croplands	Southern AB	Low Project area is north of this species range.	Negligible
Lewis's Woodpecker	<i>Melanerpes lewis</i>	Threatened	Threatened	S3B	Require open habitat with scattered or edge trees. Large open areas necessary for foraging. Trees are used as hawking perches and for nesting. Large diameter trees for nesting.	Vagrant in Alberta, foothills and lower mountain slopes of western Alberta	Low Project area is outside of this species range.	Negligible
Loggerhead Shrike	<i>Lanius ludovicianus</i>	Threatened	Threatened	Special Concern S3B	Open areas with grass, forbes, bare ground and sparsity of shrubs	Southern AB	Low Project area is north of this species range.	Negligible
Long-billed Curlew	<i>Numenius americanus</i>	Special Concern	Threatened	Special Concern S3B	Short to mid grass prairies; sporadic bunch grass (nesting); dense grass (post-hatching)	Breeds in AB	Low Project area is north of this species range.	Negligible
McCown's Longspur	<i>Rhynchophanes mccownii</i>	Threatened	Threatened	S3B	Dry, short grassland with bare ground, shrubs and forbs (Mixed grass prairie, short-grass prairie, grazed pasture)	Southern AB	Low Project area is north of this species range.	Negligible
Mountain Plover	<i>Charadrius montanus</i>	Endangered	Endangered	S1B	Flat terrain; short vegetation; bare ground; heavily grazed grassland; Black-tailed prairie dog presence	Southeastern Alberta	Low Project area is north of this species range.	Negligible
Olive-sided Flycatcher	<i>Contopus cooperi</i>	Special Concern	Special Concern	S4B	Edges of coniferous or mixed wood forests near open areas with snags and tall trees	Forest edges	Low Project area not near suitable habitat.	Negligible
Piping Plover	<i>Charadrius melodus</i>	Endangered	Endangered	Endangered S2B	Shallow saline lake with sand or gravel beaches	Southern AB	Low Project area not near suitable habitat	Negligible
Red Knot rufa	<i>Calidris canutus rufa</i>	Endangered	Endangered	SUM	Limited information on stopover sites - bare areas; ridges; slopes; plateaus; south facing; near wetlands	Migrant through Alberta	Low Project area is within the species migratory range, but unlikely to have suitable stop over habitats. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences or nests to the appropriate agencies.	Low
Red-necked Phalarope	<i>Phalaropus lobatus</i>	Special Concern	Special Concern	SUB	Lakes and ponds	Breeding far north, migrant through Alberta	Low Project area is within the species migratory range, but unlikely to have suitable stop over habitats. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences or nests to the appropriate agencies.	Low
Rusty Blackbird	<i>Euphagus carolinus</i>	Special Concern	Special Concern	S3S4B,SUN	Boreal forest - coniferous forests near wetlands	AB-boreal forest region	Low Project area is south of this species range.	Negligible
Sage Thrasher	<i>Oreoscoptes montanus</i>	Endangered	Endangered	SUB	Shrub steeps with sagebrush	Southeastern AB	Low Project area is north of this species range.	Negligible



Wildlife Species At Risk Assessment

Common Name	Species Scientific Name	SARA Status	COSEWIC Status	Provincial Status (SK)	Habitat	AB Range	Potential for Occurrence and Recommended Mitigation Measures	Level of Risk
Sharp-Tailed Grouse	<i>Tympanuchus phasianellus</i>	No Status	No Status	S4	Wide range of habitats, including prairies / grasslands, bogs, and open woodland habitats	Non-forested region of Alberta	Moderate The project area falls within the "Sharp-Tailed Grouse Survey Area" where species surveys are required, and suitable habitat (patchwork of open grassland / treed habitat) is found within the project area. Mitigations include: - Complete Sharp-tailed Grouse surveys as per Alberta Sensitive Species Inventory Guidelines. Implement RAP setbacks (100 to 500m year round) or apply for approval to proceed within setbacks should an active lek be identified. - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences or nests to the appropriate agencies.	Moderate
Short-eared Owl	<i>Asio flammeus</i>	Special Concern	Threatened	S3B,SUN	Large open landscapes, including grassland, tundra, bogs, marshes, and occasionally agriculture lands	Alberta	Moderate Project area contains suitable habitat (pastchwork of open grassland / treed habitat) and is within the species range. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences or nests to the appropriate agencies. - Implement RAP setbacks (100m April 1 to July 15) or apply for approval to proceed within setbacks should an active nest be identified.	Moderate
Sprague's Pipit	<i>Anthus spragueii</i>	Threatened	Threatened	Special Concern S3S4B	Native grassland; medium height and density	Southern and central Alberta	Moderate Project area contains suitable habitat (pastchwork of open grassland / treed habitat) and is within the species range. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences or nests to the appropriate agencies. - Implement RAP setbacks (100m April 1 to July 15) or apply for approval to proceed within setbacks should an active nest be identified.	Moderate
Western Grebe	<i>Aechmophorus occidentalis</i>	Special Concern	Special Concern	Threatened S3B	Stable waterbodies with emergent vegetation, medium to large lakes and marshes	Southern and central Alberta	Low Project area not near suitable habitat	Negligible
Whooping Crane	<i>Grus americana</i>	Endangered	Endangered	Endangered S1B	Marshes, bogs, lakes near Black spruce, White Spruce, Dwarf birch, Bearberry, Laborador tea, Cattails, Sedges, Bullrush	Migrant through Alberta	Low Project area is within the species migratory range, but unlikely to have suitable stop over habitats. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences or nests to the appropriate agencies.	Low



Wildlife Species At Risk Assessment

Common Name	Species Scientific Name	SARA Status	COSEWIC Status	Provincial Status (SK)	Habitat	AB Range	Potential for Occurrence and Recommended Mitigation Measures	Level of Risk
Yellow Rail	<i>Coturnicops noveboracensis</i>	Special Concern	Special Concern	SUB	Marshes, meadows, flood zone adjacent to sedges, poaceae and rushes	Alberta	Low Project area is within the species range, and it contains potentially suitable habitat (marshy graminoid wetland) but it is unlikely to be extensive enough to be suitable for breeding. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences or nests to the appropriate agencies.	Low
Mammals								
American Badger	<i>Taxidea taxus taxus</i>	Special Concern	Special Concern	S3	Grassland with sandy-silty soils	Boreal transition to Southern province	Moderate Project area contains suitable habitat (open grassland / pasture) within the species range. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences to the appropriate agencies.	Moderate
Black-footed Ferret	<i>Mustela nigripes</i>	Extirpated	Extirpated	-	Short grass prairies requiring prairie dogs as main prey	Western prairies, to the south of Calgary Alberta,	Low Project area is north of this species range.	Negligible
Caribou - Boreal population	<i>Rangifer tarandus</i>	Threatened	Threatened	S1S2	Mature coniferous forests (Black spruce, White spruce, Tamarack)	4 local populations in Alberta	Low Project area is south of this species range.	Negligible
Grizzly Bear	<i>Ursus arctos</i>	Special Concern	Special Concern	Threatened S3	Generalist; go to where to food is and far from human disturbance	Rocky mountains and Foothills of Alberta as well as North-central and Northwestern boreal regions	Low Project area is east of this species range.	Negligible
Little Brown Myotis	<i>Myotis lucifugus</i>	Endangered	Endangered	EndangeredS3S4B, SNRN, SNRM	Roosts - man-made structures (like attics), tree cavities, under the bark of trees, in rock crevices and caves. Winter hibernation sites (hibernacula) are usually in caves or mines	South-central AB	Low Project area is dominated by cultivation, with small remnant patches of trees with some roosting habitat potential in the immediate project area. However, the small size of the trees and lack of caves in the area limit the potential for roosts and hibernation sites. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences to the appropriate agencies.	Low
Northern Myotis	<i>Myotis septentrionalis</i>	Endangered	Endangered	EndangeredS2S3	Roosts - tree cavities, under the bark of trees, in rock crevices and caves. Winter hibernation sites (hibernacula) are usually in caves or mines	South-central AB	Low Project area is dominated by cultivation, with small remnant patches of trees with some roosting habitat potential in the immediate project area. However, the small size of the trees and lack of caves in the area limit the potential for roosts and hibernation sites. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences to the appropriate agencies.	Low
Ord's Kangaroo Rat	<i>Dipodomys ordii</i>	Endangered	Endangered	EndangeredS1	Loose sandy soil; eroded sand dunes; sparse veg	12 active sandhill complexes in southeastern Alberta and Southwestern Saskatchewan.	Low Project area is north of this species range.	Negligible

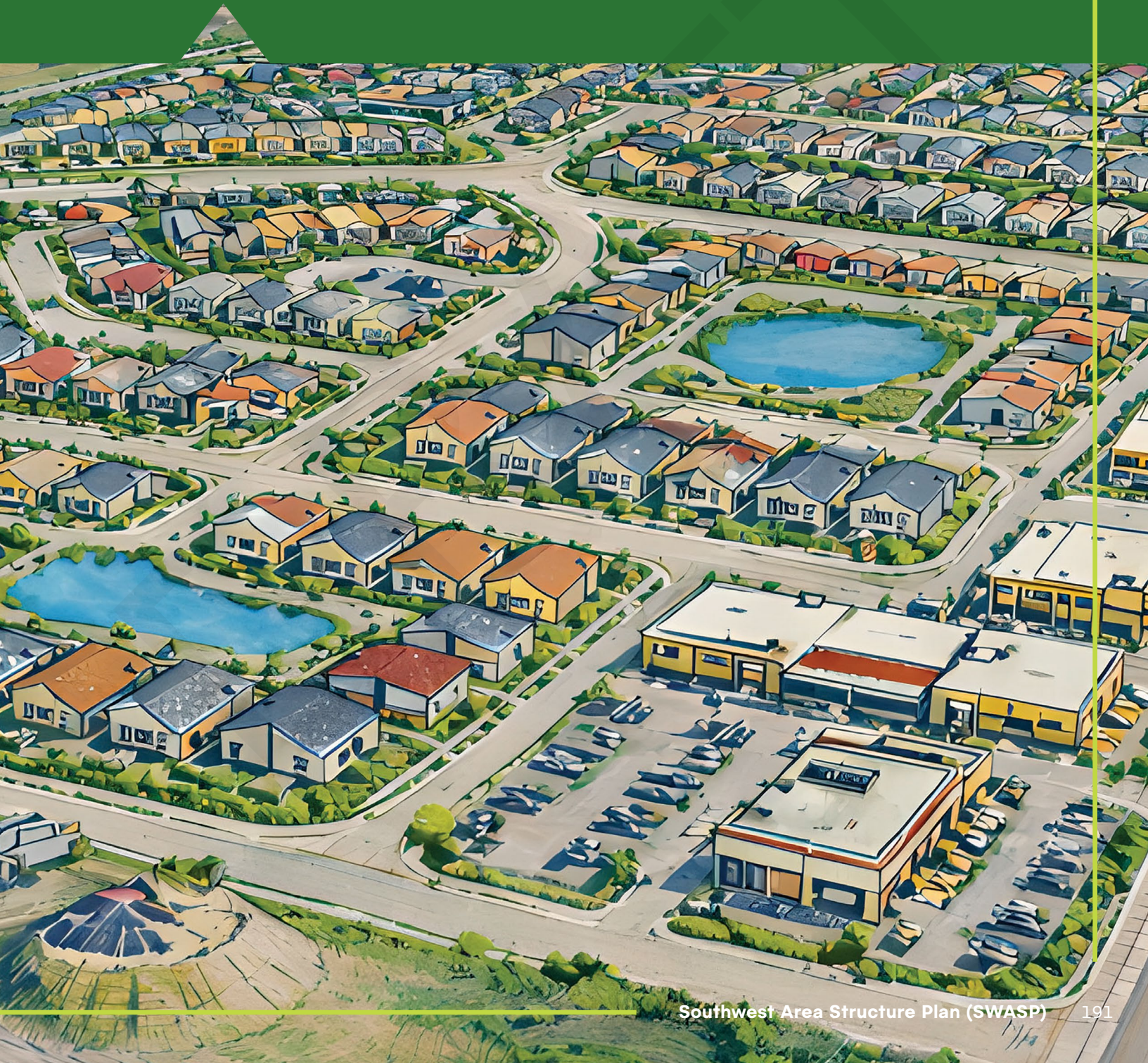


Wildlife Species At Risk Assessment

Common Name	Species Scientific Name	SARA Status	COSEWIC Status	Provincial Status (SK)	Habitat	AB Range	Potential for Occurrence and Recommended Mitigation Measures	Level of Risk
Silver-haired Bat	<i>Lasiorycteris noctivagans</i>	Not Listed	Endangered	S3S4B, SNRM	Roosts - tree cavities, under the bark of trees, in large decaying trees are available. Winter hibernation sites (hibernacula) are usually in caves or mines (limited to BC, ON and the USA)	Widely distributed throughout Alberta and Saskatchewan	Low Project area is dominated by cultivation, with small remnant patches of trees with some roosting habitat potential in the immediate project area. However, the small size of the trees limit the potential for roost sites. Mitigations include: - Responsible operation of equipment - Pre-construction wildlife sweep - Report any occurrences to the appropriate agencies.	Low
Swift Fox	<i>Vulpes velox</i>	Threatened	Threatened	Endangered S1S2	Open, sparse veg (short-grass & mixed-grass prairies)	From central Alberta south. Across southern Saskatchewan and west into foothills of Rocky Mountains	Low Project area is north of this species range.	Negligible
Western Haverst Mouse dychei subspecies	<i>Reithrodontomys megalotis dychei</i>	Endangered	Endangered	S1	Vast, undisturbed treed and treeless areas with abundant ungulates	Southern Alberta	Low Project area is north of this species range.	Negligible
Wolverine	<i>Gulo gulo</i>	Special Concern	Special Concern	S3	Variety of forest and tundra habitats - must have adequate food sources year round and snow coverage persisting to April for reproduction.	Northern AB	Low Project area is south of this species range.	Negligible
Wood Bison	<i>Bison bison athabasca</i>	Threatened	Special Concern	Threatened S2	habitats producing winter forage, consisting primarily of grasses, sedges and rushes.	Wood buffalo national park. Transition of parkland and Boreal forest marks southern border.	Low Project area is south of this species range.	Negligible
Woodland Caribou	<i>Rangifer tarandus caribou</i>	Threatened	Non-active	Threatened S1S2	Mature forests with lichen, marshes/muskeg, dominated by black spruce, larch, jack pine & lodgepole pine	Widely distributed throughout Alberta and Saskatchewan	Low Project area is south of this species range.	Negligible

- Species included in the table are based on species distributions listed in COSEWIC/SARA/Provincial status reports.
- Risk Category/Status based on highest Federal (COSEWIC/SARA) or Provincial (Wildlife Act) designation or Provincial S Rank.
- Habitat determined by review of COSEWIC and/or Provincial status reports for individual species. Species observed or previously recorded in the project or surrounding area have been **bolded**.
- Development Restrictions (if available) based on, "Recommended Land Use Guidelines for Protection of Selected Wildlife Species and Habitat within the Grassland and Parkland Natural Regions of Alberta" (Government of Alberta, 2011), the "Petroleum Industry Activity Guidelines for Wildlife Species at Risk in the Prairie and Northern Region" (Environment Canada, 2009), and the "Saskatchewan Activity Restriction Guidelines for Sensitive Species" (Government of Saskatchewan, 2017) for the proposed development (high level of disturbance). (RAP = Restricted Activity Period)
- Level of Risk determined by outline provided in IOGC's IL 2011: "Moderate to high level of risk for SARA species is assumed if the local project area is within the species range, potential for the species to be in the area, and likely to be impacted from proposed project activities. High level of risk for SARA species is assumed if it has been observed in the local project area and likely to be impacted from the proposed project activities."
- SARA / COSEWIC / Wildlife Act Categories: Special Concern: A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events; Threatened: A species likely to become endangered if limiting factors are not reversed; Endangered: A species facing imminent extirpation or extinction.
- S Rank: S1: Critically Imperiled/Extremely Rare; S2: Imperiled/Very Rare; S3: Vulnerable/Rare-Uncommon; S4: Apparently Secure; S5: Secure/Common; (Modifiers: A:accidental or causal in the province; B: for a migratory species, rank applies to the breeding population; N: for a migratory species, rank applies to the non-breeding population; M: for a migratory species, rank applies to the transient population; H: Historical occurrence without recent verification; U: Status uncertain due to limited or conflicting information; X: Believed to be extinct or extirpated; NR: rank not yet assigned; NA: conservation status not applicable).

13.2 Appendix 2: Desktop Environmental Site Assessment



DESKTOP ENVIRONMENTAL SITE ASSESSMENT

**17 Quarter Sections of Land for the Southwest Area Structure Plan
Lloydminster, Alberta**

Prepared for:

City of Lloydminster

Date:

17 December 2024

Project File #: PE24-5236

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EXECUTIVE SUMMARY

This report presents the findings of a Desktop Environmental Site Assessment (Desktop ESA) conducted on 17 quarter sections located in Alberta and identified as follows:

- Portion of SW $\frac{1}{4}$ 3-50-1 W4M
- NW $\frac{1}{4}$ 34-49-1 W4M
- Portion of NE $\frac{1}{4}$ 34-49-1 W4M
- SE $\frac{1}{4}$ 34-49-1 W4M
- SE and NE $\frac{1}{4}$ 27-49-1 W4M
- Portion of NW $\frac{1}{4}$ 26-49-1 W4M
- SE and NE $\frac{1}{4}$ 22-49-1 W4
- Section 23-49-1 W4
- Section 24-49-1 W4

The Desktop ESA was completed by SolidEarth Geotechnical Inc. (SolidEarth) at the request of Matthew Gauthier with the City of Lloydminster (COL). Authorization to proceed with the work was received on 18 October 2024.

The properties evaluated in this Desktop ESA (collectively, the Site) consisted largely of agricultural cropland, with some residential and oil and gas development noted throughout.

The methodology used by SolidEarth in conducting the Desktop ESA was generally based on the requirements of the Canadian Standards Association and the Alberta Environmental Site Assessment Standard for Phase I ESA, and included the following:

- Review of publicly available historical records for the subject property and surrounding properties.
- Visual inspection of the subject property and perimeter viewing of neighbouring properties.
- Interview of personnel knowledgeable of the current and/or historical use of the subject property and surrounding properties.
- Preparation of this report summarizing the methodology and findings.

Findings and Recommendations

Based on a review of the information described in this report, the potential for environmental impact to the Site from the historical operations of the site and surrounding lands was expected

to be low. An exception to this would be the historical presence of oil and gas installations that do not have reclamation certificates.

As such, it is recommended that a Phase II ESA be completed for oil and gas installations that do not have reclamation certificates. A current list of these installations is shown on Table A4.

It is also recommended that abandonment and removal of underground pipelines should be done in a manner to minimize the risk to the environment. Environmental soil (and maybe groundwater) testing may be required during the completion of the work to confirm clean soil conditions

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Figure 19:	Historic Resources

Appendix A:

- A1- Historical Oil and Gas Wells
- A2- Spill Data
- A3- Wetlands and Water Bodies
- A4- Summary of Reclamation Certificates

Appendix B:

- Historical Land Titles
- Findings of Database Searches
- Correspondence with Governmental Agencies

Appendix C:

- Drone Images Taken During the Site Visit

1.0 INTRODUCTION

This report presents the findings of a Desktop Environmental Site Assessment (Desktop ESA) conducted on 17 quarter sections located within the southwest portion of the City of Lloydminster, Alberta and identified as follows:

- Portion of SW $\frac{1}{4}$ 3-50-1 W4M
- NW $\frac{1}{4}$ 34-49-1 W4M
- Portion of NE $\frac{1}{4}$ 34-49-1 W4M
- SE $\frac{1}{4}$ 34-49-1 W4M
- SE and NE $\frac{1}{4}$ 27-49-1 W4M
- Portion of NW $\frac{1}{4}$ 26-49-1 W4M
- SE and NE $\frac{1}{4}$ 22-49-1 W4
- Section 23-49-1 W4
- Section 24-49-1 W4

The Desktop ESA was completed by SolidEarth Geotechnical Inc. (SolidEarth) at the request of Matthew Gauthier with the City of Lloydminster (COL). Authorization to proceed with the work was received on 18 October 2024.

2.0 PROJECT BACKGROUND AND ASSESSMENT OBJECTIVE

Based on information provided by the COL, it was understood that the subject properties consisted of recently annexed lands from the County of Vermilion River. The Desktop ESA was requested for project due diligence purposes.

3.0 ASSESSMENT METHODOLOGY

The methodology used by SolidEarth in conducting the Desktop ESA was generally based on the requirements of the Canadian Standards Association¹ and the Alberta Environmental Site Assessment Standard² for Phase I ESA, and included the following:

- Review of publicly available historical records for the subject property and surrounding properties.
- Visual inspection of the subject property and perimeter viewing of neighbouring properties.

¹ Canadian Standards Association (CSA), *Phase 1 Environmental Site Assessment (CSA Z768-01 - reaffirmed 2022)*, Ottawa, Canada.

² Alberta Environment and Parks (AEP), 2016). *Alberta Environmental Site Assessment Standard*.

- Interview of personnel knowledgeable of the current and/or historical use of the subject property and surrounding properties.
- Preparation of this report summarizing the methodology and findings.

4.0 OVERVIEW OF SITE AND SURROUNDING LANDS

4.1 SITE LOCATION AND DESCRIPTION

The properties evaluated in this Desktop ESA (collectively, the Site) consisted largely of agricultural cropland, with some residential and oil and gas development noted throughout. Figures 1 and 2 show the approximate Site location and boundary.

4.2 SITE TOPOGRAPHY AND DRAINAGE

The topography within the Site (Figure 16) consisted of generally flat undulating land, that gently slopes down to the northwest. According to the Alberta Merged Wetland Inventory (Figure 15), numerous low areas and wetlands are present within the Site.

4.3 ADJACENT LAND USE

The adjacent land use was noted based on observations made during the Site visit as well as a review of aerial photographs.

- The land use onsite appeared to consist predominantly of agricultural cropland, with some residential usage (in the form of acreages). Oil and gas leases were also present throughout the Site. Minor industrial usage was noted in the northwest corner (on the north and south sides of Highway 16).
- Lands to the north of Sections 23 and 24, and east of Sections 27 and 34, consisted of the existing City of Lloydminster.
 - Commercial properties were situated in the northeast corner of Section 34 (north of the northern portion of the Site). Commercial lands were also observed north of the northeast corner of Section 24.
 - Industrial lands were situated north and west of the northernmost portion of the Site (NW $\frac{1}{4}$ 34-49-1 W4M and a portion of SW $\frac{1}{4}$ 3-50-1 W4M).
 - Residential lands were situated east of Section 34, and north of Sections 23 and 24.
- Agricultural lands largely bordered the Site to the west and south.

5.0 REGIONAL GEOLOGY

Regional geological information published by the Alberta Energy Regulator and Alberta Geological Survey was reviewed to assess the surficial and bedrock geology of the study area. The surface geology is presented on Figure 16.

The reviewed information revealed that the surficial geology of the entire study area was predominantly Glacial deposits. The Glacial deposits (mainly till) were classified as Fluted Moraine (MF)³ and consisted of unsorted mixtures of boulders, gravel, sand, silt, and clay deposited from glacial ice during periods of advance, retreat, and stagnation. The landscape consists of ridged and furrowed terrain that resulted from the streamlining of sediments by glacial ice, which formed glacial lineations, flutings, and drumlins oriented parallel to the direction of ice flow.

The bedrock geology consists of the Lea Park Formation (K_{LP})⁴, which consists of mudstone with minor layers of fine grained siltstone and sandstone, bentonite seams, concretionary sideritic layers, and calcite veins. Intertongues with shallow to marginal-marine sandstone of the lower Belly River Group (K_{BR-I}). The elevation of the bedrock is expected to be in the order of 610 m above sea level. The bedrock surface is expected to be located between 45 and 60 m below the existing ground surface.

6.0 GEOTECHNICAL REPORTS NEAR THE STUDY AREA

Soil investigation reports carried out by SolidEarth near the Site were reviewed for high-level information only to assess the general soil conditions in the vicinity of the Site.

The reviewed reports included data and borehole logs from site investigations carried out in the southwest portion of the City of Lloydminster (to the east of the study area). The review indicated that the surficial soils consisted mainly of medium plastic clay till with some interbedded sand layers. The thickness and depth of the sand layers varied from one location to another.

The clay till was anticipated to be generally stiff to very stiff in consistency and moist to very moist. The interbedded sand layers were generally fine grained and wet, with seepage and sloughing noted at a few locations during drilling.

The reviewed boreholes were drilled up to approximately 8 m below the existing ground surface, and bedrock was not encountered.

³ M.M. Fenton, E.J. Waters, S.M. Pawley, N. Atkinson, D.J. Utting and K. McKay (2013): Surficial Geology of Alberta (Map 601); Alberta Energy Regulator / Alberta Geological Survey, AER/AGS Map 601, scale 1:100 000.

⁴ G.J. Prior, B. Hathway, P.M. Glombick, D.I. Pana, C.J. Banks, D.C. Hay, C.L. Schneider, M. Grobe, R. Elgr and J.A. Weiss (2013): Bedrock Geology of Alberta (Map 600); Alberta Energy Regulator / Alberta Geological Survey, AER/AGS Map 601, scale 1:100 000.

7.0 RECORDS SEARCH AND REVIEW

Several sources of records were searched and reviewed. The sources and findings are discussed in the following subsections.

7.1 AERIAL PHOTOGRAPHS

Aerial photographs of the Site and surrounding area were obtained to determine the historic land use and development. Aerial photographs were obtained through Google Earth Pro® and the Alberta Air Photo Library.

As aerial photographs do not provide a continuous record of Site development, it is possible that features of interest may have been present on Site but removed between the dates of coverage. In addition, photographic quality and scale are variable and may make features difficult to identify or their purpose difficult to establish.

Aerial photographs that were reviewed included the years 2024, 2015, 2005, 1995, 1985, 1978, 1971, 1965, and 1949. Reproduction of these specific photographs is provided in Figures 2 to 10. A summary of the aerial photographic review is provided in Table 2.

Table A1, Appendix A, provides a summary of Oil and Gas wells noted and the timeline in which the leases were visible on the aerial photograph reviewed. The wells ID and location are shown on Figure 11. The data source is from the Abacus Datagraphics Limited (Abacus) database. Refer to Section 7.3 “Pipelines, Oil and Gas Installation, and Spills” for additional information.

Table 2: Historical Aerial Photograph Review

Year	Description
1949	<p><u>Site</u></p> <ul style="list-style-type: none"> <li>• The Site was predominantly agricultural cropland with some interspersed treed areas throughout. <li>• What appeared to be a well lease was observed in SE34 (northern portion of the Site). <li>• What appeared to be residences/small farms were observed in SW23, SW and NW24, as well as a portion of SW3. <li>• No other items of note were observed on the Site. <p><u>Surrounding Lands</u></p> <ul style="list-style-type: none"> <li>• The surrounding properties also consisted predominantly of agricultural cropland. <li>• A few scattered structures (likely residences or farm-related buildings) were observed to the east and west of the Site. <li>• Roadways appeared faintly in the area. <li>• No significant industrial, commercial, or other developed features were visible nearby. <li>• No other items of note were observed on the surrounding properties.

Year	Description
1965	<p><u>Site</u></p> <ul style="list-style-type: none"> No significant changes were noted to the Site from what was observed in the 1949 aerial photograph. <p><u>Surrounding Lands</u></p> <ul style="list-style-type: none"> New developments (likely residential) were observed to the northeast of Section 24. No other significant changes were noted to the surrounding lands from what was observed in the 1949 aerial photograph.
1971	<p><u>Site</u></p> <ul style="list-style-type: none"> What appeared to be a track was observed in a portion of SW3. Multiple circular objects were observed in SW23 (likely grain silos). What appeared to be a well lease was observed in NW23. No other significant changes were noted to the Site from what was observed in the 1965 aerial photograph. A portion of the northwest corner of NW34 appeared to have undergone earthworks activities. A soils stockpile was observed. A portion of the Site (south portions of sections 22, 23, and 24) were not visible in the air photo. <p><u>Surrounding Lands</u></p> <ul style="list-style-type: none"> A portion of the lands to the south of the Site were not visible in the air photo. No other significant changes were noted to the surrounding lands from what was observed in the 1965 aerial photograph.
1978	<p><u>Site</u></p> <ul style="list-style-type: none"> A new structure was observed in the northwest corner of the Site (within a portion of SW3). No other significant changes were noted to the Site from what was observed in the 1971 aerial photograph. <p><u>Surrounding Lands</u></p> <ul style="list-style-type: none"> No significant changes were noted to the surrounding lands from what was observed in the 1971 aerial photograph.
1985	<p><u>Site</u></p> <ul style="list-style-type: none"> A new structure (likely a residence) was observed in NE27 (south of the pond). What appeared to be well leases were observed in SW and SE23, and NE22. A portion of the Site (east portion of Section 24) was not visible in the air photo. No significant changes were noted to the Site from what was observed in the 1978 aerial photograph. <p><u>Surrounding Lands</u></p> <ul style="list-style-type: none"> A portion of the surrounding lands (north and south of section 24) was not visible in the air photo. What appeared to be well leases were observed in NE14 (south of Section 23) and SW26 (east of Section 27/north of Section 23). The surface water body observed directly east of a portion of NW26 was replaced by a manmade lake and new developments (likely associated with present-day Lakeland College). No significant changes were noted to the surrounding lands from what was observed in the 1978 aerial photograph.

Year	Description
1995	<p><u>Site</u></p> <ul style="list-style-type: none"> • New well leases were observed in NE/SE34 and SW24. • No other significant changes were noted to the Site from what was observed in the 1985 aerial photograph. <p><u>Surrounding Lands</u></p> <ul style="list-style-type: none"> • Continued development was observed in the surrounding areas, particularly to the west, with additional structures visible. • No evidence of industrial or large-scale urban development in the immediate vicinity of the Site was observed. • No significant changes were noted to the surrounding lands from what was observed in the 1985 aerial photograph.
2005	<p><u>Site</u></p> <ul style="list-style-type: none"> • New residential developments were observed in NE27 along with a manmade pond. • New well leases were observed in NE and SE 34 as well as in SE22. • No other significant changes were noted to the Site from what was observed in the 1995 aerial photograph. <p><u>Surrounding Lands</u></p> <ul style="list-style-type: none"> • Significant urban expansion was observed to the north/northeast/east of the Site. <ul style="list-style-type: none"> ○ A commercial strip was observed northeast of NE34, along Highway 16. ○ An electrical substation was observed east of SE27. ○ A new commercial development was observed north of NE24. • No significant changes were noted to the surrounding lands from what was observed in the 1995 aerial photograph.
2015	<p><u>Site</u></p> <ul style="list-style-type: none"> • New well leases were observed in multiple areas across the Site. • No other significant changes were noted to the Site from what was observed in the 2005 aerial photograph. <p><u>Surrounding Lands</u></p> <ul style="list-style-type: none"> • Continued urban expansion was observed to the north, east, and northeast and included both residential and commercial areas. • No significant changes were noted to the surrounding lands from what was observed in the 2005 aerial photograph.
2024	<p><u>Site</u></p> <ul style="list-style-type: none"> • The well leases previously observed in NE and SE34 appeared to have been decommissioned. • No other significant changes were noted to the Site from what was observed in the 2015 aerial photograph. <p><u>Surrounding Lands</u></p> <ul style="list-style-type: none"> • No significant changes were noted to the surrounding lands from what was observed in the 20201505 aerial photograph

No items of concern were identified in the historical aerial photograph review. The potential impact from the presence of oil and gas installations are discussed in the subsequent sections.

7.2 LAND TITLES

A review of current and historical land titles was conducted to determine ownership history. Land titles were obtained through the Alberta Spin 2 Spatial Information System. A summary of the current Site ownership history is provided in Tables 2 below. A copy of the land titles, and the ownership history, is provided in Appendix B.

Table 2 – Current Site Ownership

Title #	Owner	Legal	Date Registered
162 203 262	1642869 ALBERTA LTD.	4; 1; 50; 3; SW	28/07/2016
192 092 810	FROG LAKE ECONOMIC DEVELOPMENT CORPORATION.	4; 1; 49; 34; NW	25/04/2019
152 052 874 001	AMMTIL ENTERPRISES LTD.	4; 1; 49; 34; NE	13/02/2015
902 327 358	AMMTIL ENTERPRISES LTD.	4; 1; 49; 34; SE	09/11/1990
152 358 542 005	HERITAGE ROYALTY RESOURCE CORP.	4; 1; 49; 27; NE	18/11/2015
152 358 542 003	HERITAGE ROYALTY RESOURCE CORP.	4; 1; 49; 27; NW 4; 1; 49; 27; SW 4; 1; 49; 27; SE	18/11/2015
242 161 904 008	CANPAR HOLDINGS LTD. AND CANADIAN NATURAL RESOURCES LIMITED.	4; 1; 49; 26; NW	02/07/2024
902 098 347	RUDOLF CZERWIONKA AND HILDEGARD CZERWIONKA	4; 1; 49; 22; NW 4; 1; 49; 22; NE 4; 1; 49; 22; SW 4; 1; 49; 22; SE	09/04/1990
902 098 554	GERHARD CZERWIONKA	4; 1; 49; 23; NW 4; 1; 49; 23; NE	09/04/1990
902 098 488	GERHARD CZERWIONKA	4;1;49;23;SE	09/04/1990
902 098 346	GERHARD CZERWIONKA	4;1;49;23; SW	09/04/1990
902 098 489 001	RUDOLF CZERWIONKA AND HILDEGARD CZERWIONKA	4; 1; 49; 24; NE	09/04/1990
902 098 248	GERHARD CZERWIONKA	4; 1; 49; 24; NW	06/04/1990
142 382 982	SHIRLEY ANN PARKIN	4; 1; 49; 24; SW	12/11/2014

7.3 PIPELINES, OIL AND GAS INSTALLATIONS, AND SPILLS

The *Abacus Datagraphics Limited* (Abacus) database was reviewed for information available to the Alberta Energy Regulator (AER) on oil and gas wells, facilities, batteries, and environmental spills related to the Site. The following records were identified:

- A total of 62 well leases were found on the Site. Forty-five (45) of the leases were listed as abandoned, while the others fell under other status', including 'Unknown', 'Miscellaneous', 'Pumping Oil', 'Water Injection', and 'Suspended Oil'.

- A total of 43 facilities were identified in the dataset. Thirty-seven (37) of the facilities were listed as suspended, while the others were classified as active.
- A total of nine (9) spill incidents were identified:
 - The spills originated from crude oil pipelines, group batteries, and multiphase pipelines.
 - Environmental impacts included land, air, and flowing water, with some spills affecting areas over 100 square meters.
 - Substances spilled included crude oil and produced water, with a total of 169.6 m³ spilled and 145.6 m³ recovered.
 - Spill volumes ranged from 0.1 m³ to 64.0 m³, with recovery volumes ranging from 0.0 m³ to 60.0 m³.
 - None of the incidents resulted in evacuations, and public and wildlife impacts were minimal or not recorded.

The findings of the AER search are graphically shown on Figure 11. Tables A1 and A2, Appendix A, provide a summary of oil and gas wells and spills, respectively.

The potential for environmental impact to the Site from the records identified above is discussed in Section 10 “Summary of Findings and Discussion”.

7.4 WATER WELLS

The Alberta Water Well Information Database (AWWID) was reviewed to obtain information regarding water wells that may be present on the Site.

A total of 20 water wells were found within the specified search parameters. A copy of the search results is provided in Figure 12.

7.5 NATIONAL POLLUTANT RELEASE INVENTORY

The National Pollutant Release Inventory (NPRI) database was searched for information relating to substance releases at and near the site. The NPRI is Canada’s legislated, publicly accessible inventory of pollutant releases (to air, water, and land), disposals, and transfers for recycling.

The search did not reveal the presence of any facilities on site. A copy of the NPRI search is provided in Figure 13.

7.6 ENDANGERED SPECIES SEARCH

The *Abacus Datagraphics Limited* (Abacus) database was reviewed for information available to the Government of Alberta on endangered species and biodiversity zones (including Burrowing Owl, Caribou, Colonial Nesting Bird, Grizzly Bear, Horned Lizard, Kangaroo Rat, Mountain Goat/Sheep, Piping Plover, Sage Grouse, Sensitive Amphibians, Sensitive Raptors, Sensitive Snakes, Sharp Tailed Grouse, Special Access Zones, Swift Fox, Threatened Plant Species, Trumpeter Swan, and Wildlife Biodiversity Zones) on and around the Site.

The search results indicated that the Site and surrounding lands were home to the Sharp Tailed Grouse. A copy of the search is provided in Figure 14.

7.7 HISTORIC RESOURCES

The Government of Alberta list of historic resources database was searched for information about archaeological sites; palaeontological sites; Indigenous traditional use sites of a historic resource nature (burials, ceremonial sites, etc.); and historic structures. The Listing of Historic Resources identifies lands in Alberta that contain or have a high potential to contain historic resources.

The search did not reveal any records within the specified search parameters. The search results are presented on Figure 19.

7.8 WETLANDS

The Government of Alberta Merged Wetland Inventory (2023) database was reviewed to obtain information regarding wetlands and water bodies that may be present on the Site.

A total of 403 wetlands (marsh, open water, and swamp) as well as four (4) water bodies (Lake – Recurring) were identified on the Site. The search results are provided on Figure 15 and summarized in Table A3, Appendix A.

7.9 ALBERTA BIODIVERSITY MONITORING INSTITUTE

The Alberta Biodiversity Monitoring Institute (ABMI) database was completed to identify historical enforcement records of human disturbance and activity on the Site. The database identified several types of human disturbances and activities historically present on the site. These disturbances include:

- Clearing (unknown purpose)
- Seismic lines
- Cropland
- Dugouts

- Oil and gas facilities
- Pipelines
- Roads and trails
- Pasture land
- Rural residences
- Transmission lines
- Urban or industrial development
- Vegetation edges
- Oil and gas wells

The search results are provided in Figure 17. The potential for environmental impact to the Site from the records of oil and gas wells identified above is discussed in Section 10 “Summary of Findings and Discussion”.

7.10 ASSESSED AND RECLAIMED SITES

An online search of the *AEP-Environmental Site Assessment Repository* (ESAR) database was completed to identify technical information about assessed and/or reclaimed sites and remediation/reclamation certificates.

A total of 24 records of reclaimed well leases were identified, out of a total of 63 well leases identified on the Site. Records are summarized in Table A4, Appendix A. A copy of the ESAR search results is provided in Appendix B.

The potential for environmental impact to the Site from the records identified above is discussed in Section 10 “Summary of Findings and Discussion”.

7.11 LANDFILLS AND DUMPS

The *AEP-Help End Landfill Pollution* database (HELP⁵ database) was reviewed to identify historical industrial landfills at the Site or surrounding area.

No industrial landfill sites were recorded for the Site or adjacent properties according to the HELP database.

⁵ Alberta Environment and Parks, *Data Tracking and Management Control System H.E.L.P. (Help End Landfill Pollution) Program*, Industrial Waste Landfill program, (Edmonton, 1988).

7.12 ALBERTA ENERGY REGULATOR COAL MINE RECORDS

The AER – *Coal Mine Map Viewer* was reviewed to obtain information regarding coal mines that may be present on the Site and surrounding lands within approximately 300 m of the Site boundary.

The search did not reveal any records within the specified search parameters. The search results are presented on Figure 18.

8.0 CORRESPONDENCE WITH GOVERNMENT AGENCIES

SolidEarth initiated correspondence with government agencies/officials to gather information about the history and operation of the site. A summary of this task is provided below. A copy of the correspondence received is presented in Appendix B.

8.1 ALBERTA SAFETY CODES AUTHORITY

The Alberta Safety Codes Authority (ASCA) was contacted to identify the presence of active or abandoned USTs and ASTs in connection with current or previous Site occupancy. The search was completed for:

- SW-27-49-1 W4M
- SW-3-50-1 W4M
- NW-34-49-1 W4M
- 22-49-1 W4M
- SE-27-49-1 W4M
- NE-34-49-1 W4M
- NE-27-49-1 W4M
- NE-NW-W-24-49-1 W4M
- SE-34-49-1 W4M
- NW-26-49-1 W4M
- NW-23-49-1 W4M (NE, SW, SE)
- NW-27-49-1 W4M

The search records identified tank records that were listed under “NW ¼ 23-49-1 W4M” in the results letter; however, a review of the tank documentation (diagrams and tank records) indicated that these tanks were situated in NW ¼ 33-49-1 W4M, which was well over 300 m from the Site. Accordingly, these tank records were not considered relevant to the Site.

8.2 COUNTY OF VERMILION RIVER PLANNING AND DEVELOPMENT

The County of Vermilion River Planning and Development, and Fire Department were contacted for information on available records regarding development permits, bylaw infractions, environmental-related incidents, bulk storage tanks, or fire department records in connection to the Site.

Correspondence received indicated the following:

- SW-3-50-1W4M: Development Permit issued in 2014 for a Water Retention Pond. No bylaw infractions reported.
- NE/NW/SE-34-49-1W4M: Development Permit issued in 2016 for a 512 ft² sign. No bylaw infractions reported.
- Section 27-49-1W4M
 - NE-27-49-1W4M: Development Permit issued in 2016 for a Microbrewery in an existing shop.
 - NW-27-49-1W4M: Development Permit issued in 2006 for a Telus Tower.
 - No bylaw infractions reported.
- NW-26-49-1W4M: No permits or bylaw infractions reported.
- Section 22-49-1W4M: No permits or bylaw infractions reported.
- Section 23-49-1W4M
 - NW-23-49-1W4M: Development Permit issued in 1986 (no specific details available).
 - No bylaw infractions reported.
- NE/NW/W-24-49-1W4M
 - W-24-49-1W4M: Development Permit issued in 1994 (no specific details available).
 - No bylaw infractions reported.

9.0 SITE VISIT

A SolidEarth Environmental Technologist conducted a visual review of the site by flying a drone on 28 and 29 October 2024. Observations made are summarized below. Photographs taken during the Site visit are presented in Appendix C.

It is to be noted that the observations were made from interpretations of drone imagery only. No foot inspections were conducted on any of the wetlands/low areas, building, facilities, or other structures within the Site.

9.1 SITE STRUCTURES

At the time of the visit, numerous structures were observed on the Site. They generally appeared to fall under the following three categories:

- Residential: These consisted of residences situated throughout the Site, in NW and SW24 as well as NE27 of Township 49, in addition to SW3 of Township 50. Typical residences consisted of a main home and multiple storage structures (i.e., garages, sheds, and silos).
- Industrial: These were observed in a portion of SW3 of Township 50 and NW34 of Township 49. Structures in the former consisted of a large industrial building belonging to DK Energy Services. An industrial storage yard was observed in the latter.
- Oil and gas: Well leases and associated facilities throughout the Site. Structures observed here generally consisted of large tanks and smaller secondary tanks, containment barriers, small, single-storey structures, and piping.

9.2 SITE APPEARANCE

The following observations were made with regard to the Site exterior:

- The surface of the Site consisted of undulating terrain.
- The Site consisted largely of agricultural cropland. The crops appeared to have been harvested at the time of the Site visit. Minor surficial disturbance in the form of vehicle traffic was observed throughout, likely farm equipment.
- Vegetation was generally sparse on the Site and consisted largely of trees and shrubs. A relatively large portion of treed land was observed in Section 34, in the northern portion of the Site. No major surface stains, discolorations, colours, or odours were observed.
- Seasonal water bodies were observed in several areas, namely the eastern half of Section 23, NE22 of Township 49, and NE27 of Township 49.
- The land around the oil and gas facilities and leases were graded and cleared of vegetation.

The potential for environmental impact to the Site from the well leases observed is discussed in Section 10 “Summary of Findings and Discussion”.

9.3 APPEARANCE OF SURROUNDING PROPERTIES

The lands adjacent to the Site were visually inspected from the perimeter of the Site to identify evidence of environmental contamination in the form of soil disturbance, waste storage/spillage, staining or discoloration of soils and hazardous or chemical materials. The following observations were made with regard to the surrounding lands:

South

- Surrounding lands to the south largely consisted of agricultural cropland.

West

- Lands to the west (western half of Sections 22, 27, and the southwest quarter of Section 34) largely consisted of agricultural cropland.
- Lands to the west of SW $\frac{1}{4}$ of Section 3 appeared to be residential.
- Lands to the west of NW $\frac{1}{4}$ of Section 34 appeared to be industrial in nature.
 - Apex Oilfield Services was observed directly past Range Road 13. A large rectangular facility with seven (7) large garage bay doors and what appeared to be an office portion, surrounded by a gravel yard containing red tanks, shipping containers, and vehicles. The tanks did not appear to be in use. No stains or discolorations were observed in the gravel yard.
 - Properties further west were also industrial in nature.
 - No signs of concern were observed.

East

- Lands east of Section 24 appeared to be agricultural in nature. No signs of concern were noted.
- Lands east of NW $\frac{1}{4}$ of Section 34 consisted of commercial properties operated by businesses such as Canadian Tire, Mark's, The Home Depot, Best Buy, Tim Horton's, and Walmart as well as numerous other businesses. These businesses were situated in commercial buildings surrounded by asphalt paved parking lots. No signs of concern were observed.
- Lands east of Sections 27 and 34 consisted largely of residential properties. However, a 7-Eleven fuel station was observed east of SW $\frac{1}{4}$ of Section 34, directly past 75 Avenue and south of 34 Street.

North

- The lands north of SW $\frac{1}{4}$ of Section 3 generally consisted of industrial property (Lynco Energy Services; north of the western portion of the quarter section) and undeveloped grass and treed land. Lynco consisted of a large rectangular industrial shop building

surrounded by a gravel storage yard with various pieces of equipment. No staining or discolorations were observed in the yard. No signs of concern were noted.

- The lands north of NE ¼ of Section 34 consisted of the commercial highway strip mentioned earlier.
- Lands north of Sections 23 and 24 consisted mostly of residential properties. However, a Circle K fuel station was observed north of the NE ¼ of Section 23, past Township Road 494.
- The lands north of NE ¼ of Section 24 consisted of commercial properties occupied by the Servus Sports Centre, WH Wilson Registries, Best Western Hotel, and numerous other businesses. No signs of concern were noted.

10.0 INTERVIEWS

SolidEarth typically conducts interviews with individuals familiar with the history and operation of the Site to seek information of any environmental concern associated with the Site of which they are aware. SolidEarth contacted numerous individuals/landowners in relation to the Site. Several declined to participate in an interview. A summary of the findings from the individuals that did participate in the interview is provided below.

A questionnaire-based interview was conducted with Shirley Parkin, landowner of SW ¼ 24-49-1 W4M. The interview revealed the following:

- Ms. Parkin had been owner of the parcel for a “long time”.
- The parcel had historically been used as her residence and for agricultural purposes.
- Round-up herbicide had historically been used.
- An old sump existed on the eastern side of the quarter section. It was understood that the sump had been cleaned up.
- No chemical storage areas existed.
- No waste was generated on the property other than municipal waste.
- Grain bins, sheds, and a house existed on the parcel.
- No other ESAs were ever completed on the parcel.
- No other relevant information about the property was provided.

A questionnaire-based interview was conducted with Russell Leer, a farmer leasing the north half of Section 23, northwest quarter of Section 24, northeast quarter of Section 24, and southeast quarter of Section 24. The interview revealed the following:

- Mr. Leer had been a tenant for 11 years.

- He had used the parcels for agricultural purposes.
- The parcels were used as pastureland before him.
- Mr. Leer applied Round-up and Liberty herbicides.
- Mr. Leer was not aware of any spills or incidents on the parcels.
- On one of the quarter sections (he was not aware which one), an abandoned well existed.
- No chemical storage areas (other than the oil and gas infrastructure) existed on the parcels.
- He was not aware of any remediation or cleanup efforts on the parcel.
- No waste was generated on the property other than municipal waste.
- Two (2) old oil tanks were situated in the southwest quarter of Section 23 along with three (3) old bins.
- No other ESAs were ever completed on the parcel.
- Mr. Leer noted that occasional illegal dumping of miscellaneous items such as furniture and appliances occurred on the gravel road in between Sections 23 and 24.
- No other relevant information about the property was provided.

A questionnaire-based interview was conducted with Ryan Pynten, Area Manager with DK Energy, which was situated in SW $\frac{1}{4}$ 3-50-1 W4M. The interview revealed the following:

- Mr. Pynten had been a manager at DK Energy for four (4) years.
- The parcel was being used for commercial purposes.
- No answer was given regarding past activities on the parcel.
- No herbicides or pesticides were used on the parcel.
- He was not aware of any spills or environmental issues on the parcel.
- He was not aware of any remediation or cleanup efforts on the parcel.
- Aboveground chemical storage existed north of the shop.
- According to Mr. Pynten, no waste was produced on the parcel.
- A shop and office building existed on the parcel.
- Mr. Pynten was not aware of any building renovations or demolitions.
- Mr. Pynten was not aware of any prior ESAs.
- No other relevant information about the property was provided.

11.0 SUMMARY OF FINDINGS AND DISCUSSIONS

Findings associated with the current/historical operation of the Site and surrounding properties are noted below:

11.1 FUEL STATIONS IDENTIFIED NORTH AND EAST OF THE SITE

Two fuel stations were identified on the surrounding properties:

- Circle K fuel station north of Section 23, located directly northeast of the intersection of Township Road 494 and 61 Avenue. Based on a review of historical aerial photographs, this fuel station was constructed sometime after 2015.
- The 7-Eleven fuel station located east of Section 27, situated directly southeast of the intersection of 75 Avenue and 34 Street. Based on a review of historical aerial photographs, this fuel station was constructed sometime after 2015.

Fuel stations pose a risk of environmental impact when underground fuel storage tanks leak petroleum hydrocarbon fuels into the nearby soils and groundwater. However, these incidents are uncommon in newer stations where underground storage tanks have more antileak features in place, such as doubled walls and leak detection.

Accordingly, based on the relatively young age of these fuel stations (both under 10 years old), the risk of environmental impact to the Site was expected to be low.

11.2 CHEMICAL STORAGE AT DK ENERGY

During the questionnaire-based interview with Ryan Pynten, Area Manager with DK Energy, it was revealed that aboveground chemical storage exists north of the shop on the parcel situated in SW $\frac{1}{4}$ 3-50-1 W4M. Mr. Pynten was not aware of any spills, environmental issues, or remediation efforts associated with the parcel, nor was additional information about the nature, volume, or management of the stored chemicals provided.

The presence of chemical storage introduces a potential environmental risk; however, without further information regarding the types of chemicals stored, their containment measures, and any historical usage or incidents, the environmental impact to the Site from the chemical storage could not be determined. Havin said that, the chemical storage is taking place on a private property and likely have low risk of impact to the remainder of the Site.

11.3 USAGE OF ROUND-UP

During the questionnaire-based interviews conducted as part of this assessment, it was revealed that Roundup and Liberty herbicides had been historically used on the subject property. Shirley Parkin, landowner of SW $\frac{1}{4}$ 24-49-1 W4M, indicated the use of Roundup on her parcel, while

Russell Leer, a farmer leasing the north half of Section 23 and portions of Section 24, confirmed the application of both Roundup and Liberty herbicides during his 11-year tenure. These herbicides are commonly used in agricultural settings for weed control.

Roundup, a glyphosate-based herbicide, is known for its rapid degradation in soil and water under typical environmental conditions, provided it is applied according to manufacturer guidelines. Liberty, containing glufosinate-ammonium, also has low persistence in the environment and is widely used in sustainable agricultural practices. Neither Ms. Parkin nor Mr. Leer reported any spills, incidents, or improper storage practices related to these herbicides.

While the historical use of these herbicides introduces a potential for localized environmental impact, the absence of reported incidents, coupled with the assumption that applications were conducted as per prescribed guidelines, suggests that the risk of significant environmental impact is low.

11.4 OIL AND GAS INFRASTRUCTURE

A review of aerial photographs revealed the historical presence of several oil and gas installations within the site. Some of these installations were removed and their land restored, some were removed but the lease appeared to continue to be present, and some were still present.

A review of the Abacus Datagraphics database identified the following records for oil and gas infrastructure onsite:

- A total of 63 well leases were found on the Site, forty-five (45) of which were abandoned.
- A total of 43 facilities were identified in the dataset, 37 of which were listed as suspended.
- A total of nine (9) spill incidents were identified. Substances spilled included crude oil and produced water, with a total of 169.6 m³ spilled and 145.6 m³ recovered. Spill volumes ranged from 0.1 m³ to 64.0 m³, with recovery volumes ranging from 0.0 m³ to 60.0 m³.
- A total of 24 reclamation certificates were found in connection to well leases. Accordingly, a total of 39 well leases did not have reclamation certificates, either due to still being in operation or having been abandoned without being reclaimed.

The questionnaire-based interview identified the following:

- Mr. Russell Leer noted that two (2) old oil tanks were located in the southwest quarter of Section 23. Mr. Leer was not aware of any spills, environmental issues, or remediation efforts associated with the oil tanks.
- Ms. Parkin revealed that an old sump was located on the eastern side of Section 24. Ms. Parkin indicated that the sump had been cleaned up, although no specific details about the cleanup process or its extent were provided.

Oil and gas infrastructure in and of itself is not a risk to environmental site status. However, during leaks, ruptures, or spills, material such as crude oil can make its way into the surrounding environment, impacting soil, surface water, and groundwater.

Reported Spills

Spill reports reviewed indicated that the incidents occurred between 1984 and 2017. Spills that occurred relatively recently (i.e., June 2017, May 2016, and August 2010) involved low volumes that were cleaned up. Older spills that involved larger volumes (i.e., 25 m³ and 64 m³) were also reported to have been mostly cleaned up/recovered. Accordingly, the potential for environmental impact to the Site from the reported spills was considered low.

Historical Presence of Sumps at Oil and Gas Leases

Drilling of older wells may have involved excavating a sump onsite for fluid retention and circulation. If not properly constructed, contained, and/or remediated, liquids from these sumps may impact the soil and groundwater in its general area.

Ms. Parkin revealed in an interview that an old sump existed in the area. As such, this practice may have been used at several of the older well leases.

Reclamation Certificated for Some Leases

Where a reclamation certificate is issued for a specific lease, it would be reasonable to assume that the site was cleaned and restored to an acceptable level of environmental standards applicable at the time of the certificate date. Having said that, the environmental standards have changed over the years and generally become more stringent.

12.0 RECOMMENDATIONS

Based on a review of the information described in this report, the potential for environmental impact to the Site from the historical operations of the site and surrounding lands was expected to be low. An exception to this would be the historical presence of oil and gas installations that do not have reclamation certificates.

As such, it is recommended that a Phase II ESA be completed for oil and gas installations that do not have reclamation certificates. A current list of these installations is shown on Table A4.

It is also recommended that abandonment and removal of underground pipelines should be done in a manner to minimize the risk to the environment. Environmental soil (and maybe groundwater) testing may be required during the completion of the work to confirm clean soil conditions

13.0 CLOSURE

This report was prepared for the exclusive use of the City of Lloydminster for the specific application described in this report. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of the third party. This report is subject to the scope, time and budget limitations, and contract terms and conditions outlined in the proposal and established between SolidEarth and the City of Lloydminster for this project. This report has been completed within the generally accepted assessment practices. No other warranty expressed or implied is provided.

Should additional parties require reliance on this report, written authorization from SolidEarth will be required, and all third parties will be bound by the contractual agreement established between SolidEarth and the City of Lloydminster for this project. Provided that the report is less than one year old, SolidEarth will issue reliance letters to third parties upon payment of applicable fees and agreement by third parties to accept the contractual terms and conditions established with the City of Lloydminster. SolidEarth has no liability or responsibility for losses of any kind whatsoever, including direct or consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

This report was based on the conditions of the Site encountered at the time of the Site visit on 28 and 29 October 2024, a review of historical information and data obtained by SolidEarth as described in this report, and discussions with owner/occupant(s), as outlined in the report. Our findings cannot and should not be extended to other portions of the Site or structures which were not reasonably available, in SolidEarth's opinion for observation. SolidEarth will not have any obligation to update this report should additional information become available to SolidEarth after the date the report was issued, unless specifically agreed to in writing.

The report is based on data and information collected by SolidEarth as described in the report. In evaluating the property, SolidEarth has relied in good faith and to a large degree on information provided by other individuals noted in this report including the current owner/occupant. SolidEarth has assumed that the information provided is factual and accurate. No attempt has been made to verify the accuracy of any information provided. SolidEarth accepts no responsibility for any deficiency, misstatement or inaccuracy contained in this report as a result of omissions, misinterpretations or fraudulent acts of persons interviewed or contacted.

The Desktop ESA may assist in reducing, but not eliminating, uncertainty about potential environmental liabilities associated with the Site. Due to the limitations stated above, different environmental conditions may exist from what was observed during the completion of this assessment. Should such a situation arise, SolidEarth should be given the opportunity to review such information and determine if modification to the findings, conclusions, and recommendations is warranted.

SolidEarth makes no other representations whatsoever, including those concerning the legal significance of its findings, or as to other legal matters touched on in this report. With respect to

regulatory compliance issues, regulatory statutes are subject to interpretation and change. Such interpretations and regulatory changes should be reviewed with legal counsel.

Thank you for giving us the opportunity to be of service. If you have any questions or require additional information, please feel free to contact our office.

Respectfully submitted,
SolidEarth Geotechnical Inc.



Alex Khamis, B.Sc., EP
Environmental Professional



Jay Jaber, M.Sc., P.Eng.
Principal Geo-environmental Engineer
President

14.0 STATEMENT OF QUALIFICATIONS

Jay Jaber, M.Sc., P.Eng., Principal Geo-Environmental Engineer

Mr. Jay Jaber, M.Sc., P.Eng., is a geo-environmental engineer with over 29 years of engineering consulting experience. He holds a Master's degree in geotechnical engineering from the University of Texas in Austin and is a registered professional engineer in the provinces of Alberta and Saskatchewan.

Mr. Jaber's experience includes: (i) Environmental engineering including environmental site assessment, groundwater monitoring, and remediation and re-development programs; (ii) Geo-environmental engineering including the design of landfill liners and caps, lagoons, and containment systems; (iii) Geotechnical engineering for infrastructure projects including pipeline alignment, roadways, and utilities upgrade projects; (iv) Foundation engineering for bridges, heavy industrial plants, commercial developments, and high rise buildings; (v) Slope stability engineering for deep excavation, embankments over weak soils, and natural slopes; and (vi) Materials engineering and testing for infrastructure, heavy foundations, and roadway projects.

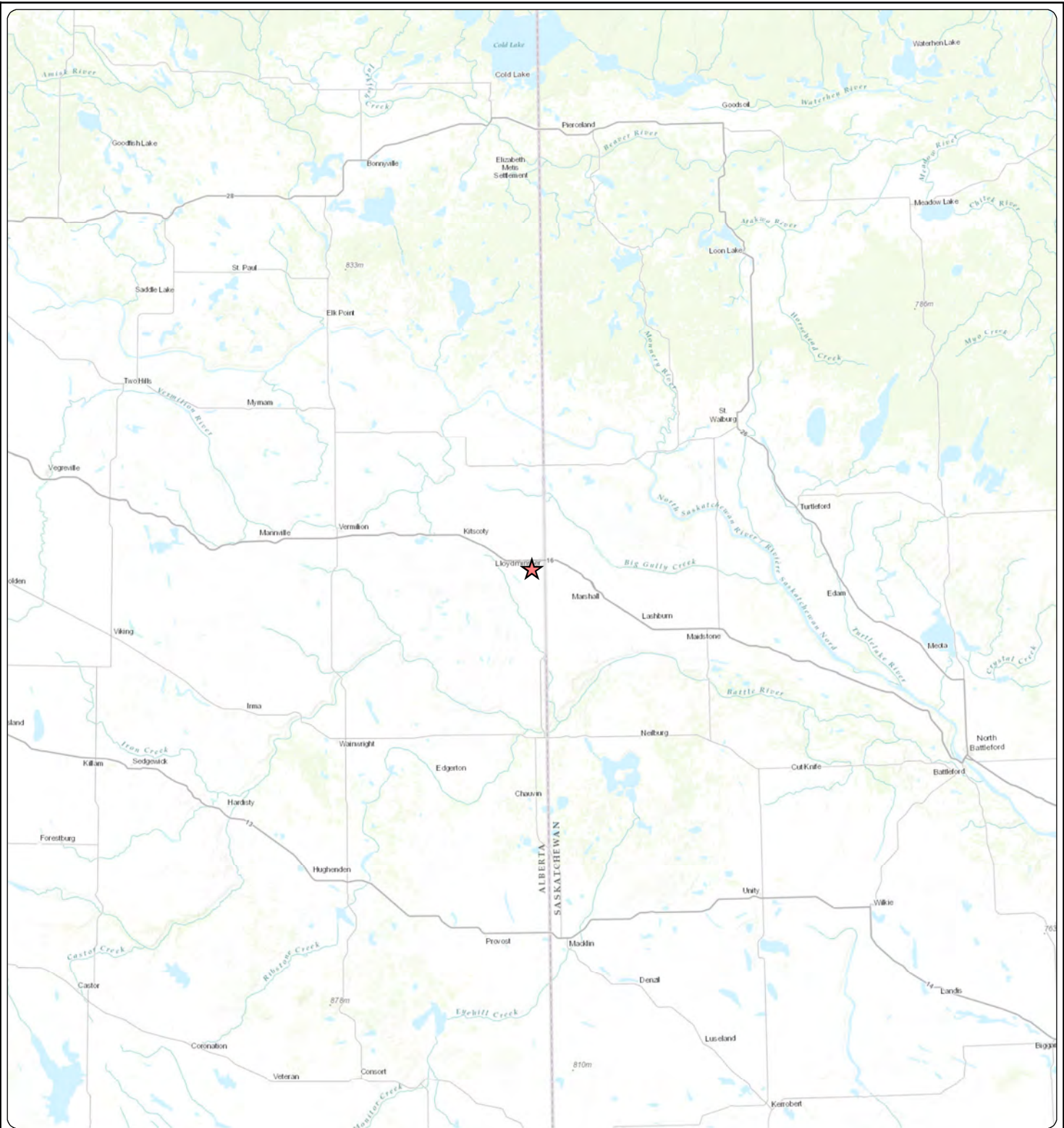
Mr. Alex Khamis, B.Sc., EP, Environmental Professional

Mr. Alex Khamis, B.Sc., EP, is an environmental professional with over 11 years of environmental consulting experience. He holds a Bachelor's degree in General Sciences from the University of Alberta in Edmonton and is a registered environmental professional with ECO Canada.

Mr. Khamis's experience includes environmental site assessments (Phase I, II, and III ESAs), remediation programs, groundwater monitoring for landfills, and environmental monitoring activities in support of civil construction projects.

Figures

Figure 1:	Site Location
Figures 2 to 10:	Historical Aerial Photographs
Figure 11:	Oil and Gas Activities
Figure 12:	Water Wells
Figure 13:	National Pollutant Release Inventory (NPRI)
Figure 14:	Endangered Species
Figure 15:	Hydrography
Figure 16:	Surficial Geology and Surface Elevations
Figure 17:	Alberta Biodiversity Monitoring Institute (ABMI) Human Disturbance
Figure 18:	Coal Mines
Figure 19:	Historic Resources



LEGEND

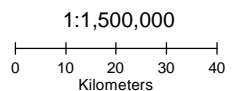
★ Site Location



**DESKTOP ESA FOR THE SW ASP LANDS
CITY OF LLOYDMINSTER, AB**

SITE LOCATION

Data Sources
 Abadata, 2024
 AltaLIS ATS Grid, 2021
 ESRI (Imagery Date: 2023)



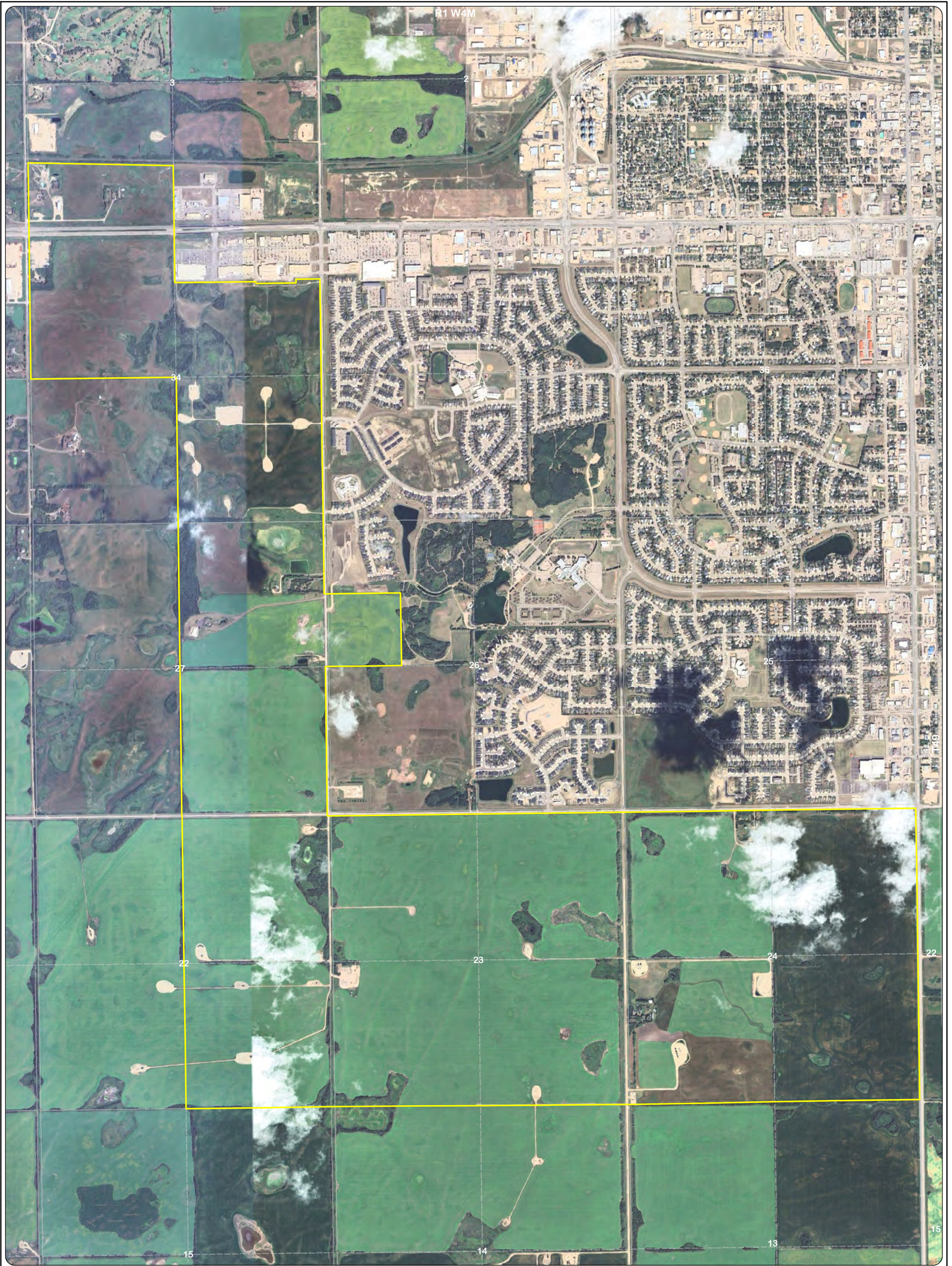
NAD 1983 UTM Zone 12N




Date:
2024-11-16
 Approved By:
J. Jaber

Province:
AB
 Drawn By:
J. Lamberts

**FIGURE
1**



LEGEND

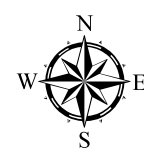
 Annexed Lands



**DESKTOP ESA FOR THE SW ASP LANDS
CITY OF LLOYDMINSTER, AB**

AERIAL PHOTOGRAPH - 2023

Data Sources
 Abadata, 2024
 AltaLIS ATS Grid, 2021
 Google (Imagery Date: 2024)



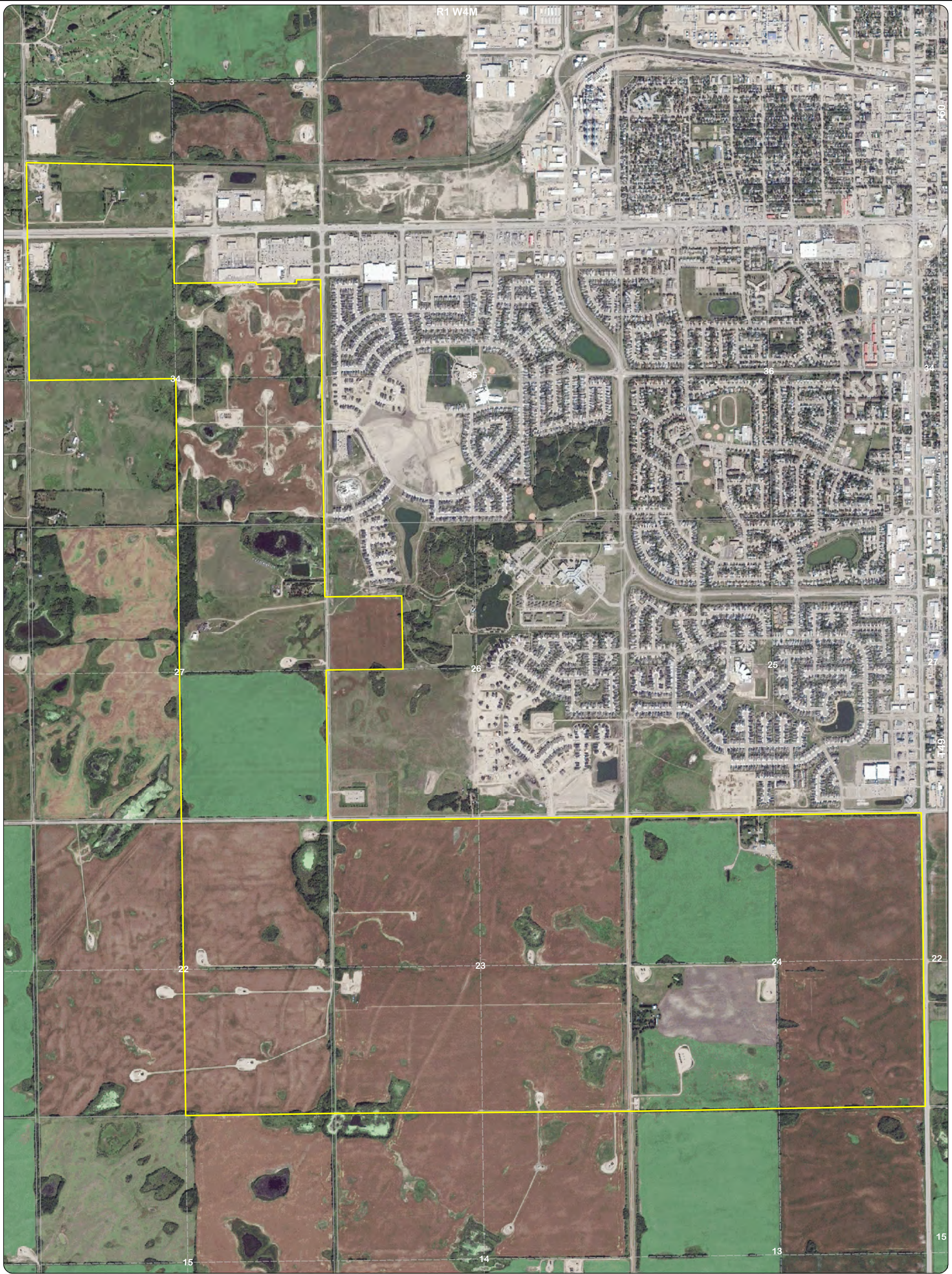
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 Metres
 NAD 1983 UTM Zone 12N




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**FIGURE
2**



LEGEND

 Annexed Lands



**DESKTOP ESA FOR THE SW ASP LANDS
CITY OF LLOYDMINSTER, AB**

AERIAL PHOTOGRAPH - 2015

Data Sources

Abadata, 2024
Abadata (Imagery Date: 2015)
AltaLIS ATS Grid, 2021



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Metres
NAD 1983 UTM Zone 12N



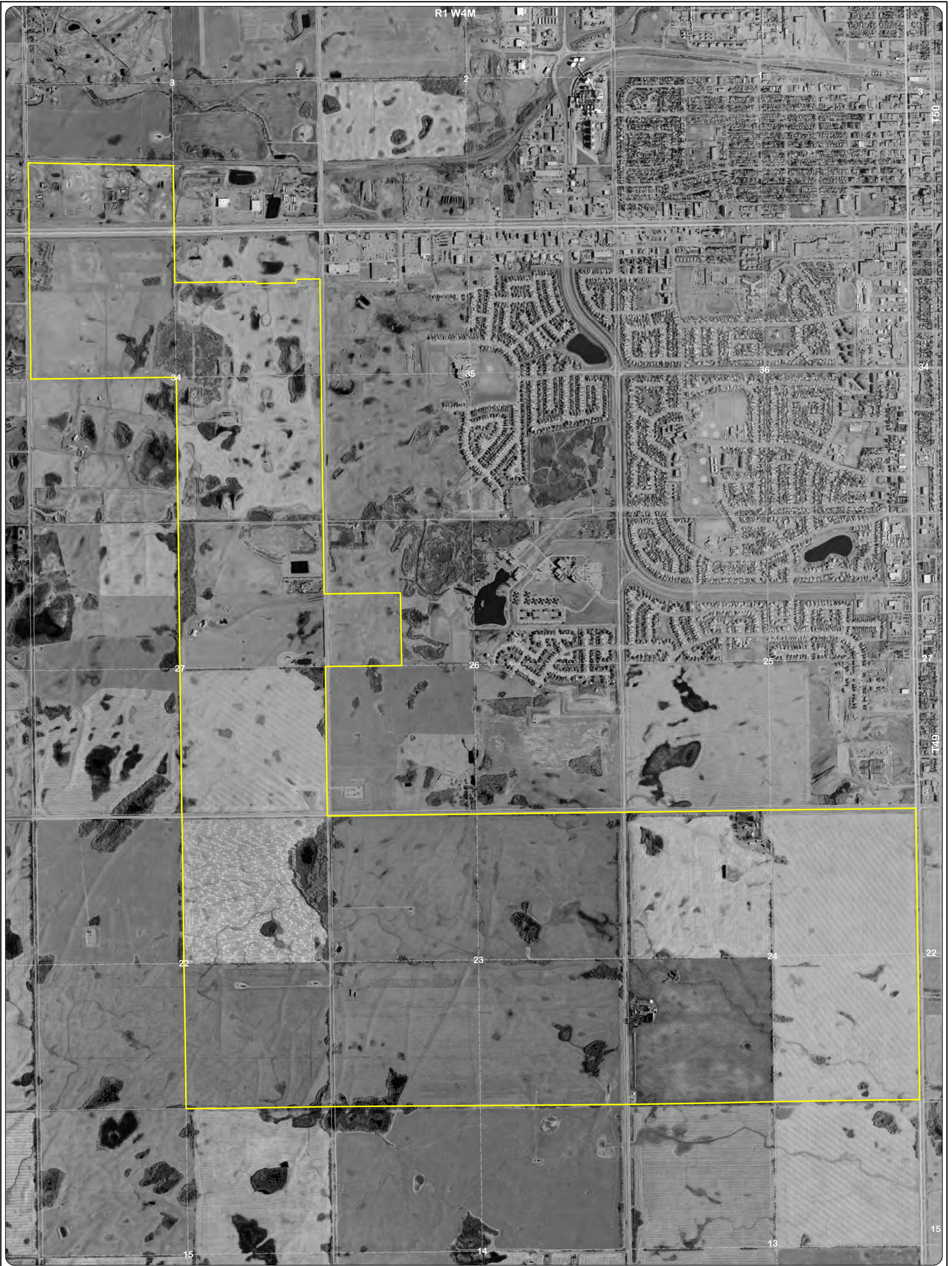
Date: 2024-11-16
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Province: AB
Drawn By: J. Lamberts


**FIGURE
3**

D:\Data\Projects\Solid Earth Geotechnical\Lloydminster\Phase 1\Fig 3 Aerial Photograph 2015.mxd

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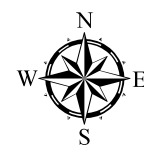
 Annexed Lands



**DESKTOP ESA FOR THE SW ASP LANDS
CITY OF LLOYDMINSTER, AB**

AERIAL PHOTOGRAPH - 2005

Data Sources
 Abadata, 2024
 AltaLIS ATS Grid, 2021
 Google (Imagery Date: 2005)



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 Metres
 NAD 1983 UTM Zone 12N



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**FIGURE
4**

D:\Data\Projects\Solid Earth Geotechnical\Lloydminster\Maps\Phase 1 Hybrid\Lloydminster Phase 1 Fig 4 Aerial Photograph 2005.mxd

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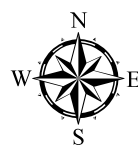


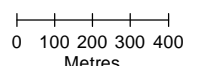
LEGEND
 Annexed Lands

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AERIAL PHOTOGRAPH - 1995

Data Sources
 Abadata, 2024
 Alberta Air Photos, 1995 (4676-227ep, 4676-254)
 AltaLIS ATS Grid, 2021



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 0 100 200 300 400
 Metres
 NAD 1983 UTM Zone 12N

 **SolidEarth**
 GEOTECHNICAL


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**FIGURE
 5**

D:\Data\Projects\Solid Earth Geotechnical\Lloydminster\Maps\Phase 1 Hybrid\Lloydminster Phase 1 Fig 5 Aerial Photograph 1995.mxd



LEGEND
 Annexed Lands



DESKTOP ESA FOR THE SW ASP LANDS
 CITY OF LLOYDMINSTER, AB

AERIAL PHOTOGRAPH - 1985

Data Sources
 Abadata, 2024
 Alberta Air Photos, 1985 (3024-037ep, 3024-039ep)
 AltaLIS ATS Grid, 2021



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 Metres
 NAD 1983 UTM Zone 12N



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Approved By:	J. Jaber	Drawn By:	J. Lamberts


FIGURE
6

D:\Data\Projects\Solid Earth Geotechnical\Lloydminster\Maps\Phase 1 Hybrid\Lloydminster Phase 1 Fig 6 Aerial Photograph 1985.mxd

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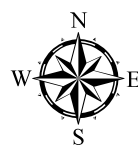
 Annexed Lands



**DESKTOP ESA FOR THE SW ASP LANDS
CITY OF LLOYDMINSTER, AB**

AERIAL PHOTOGRAPH - 1978

Data Sources
 Abadata, 2024
 Alberta Air Photos, 1978 (1978_1, 2953-098ep,
 2953-100ep)
 AltaLIS ATS Grid, 2021



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 Metres
 NAD 1983 UTM Zone 12N



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**FIGURE
7**



D:\Data\Projects\Solid Earth Geotechnical\Lloydminster\Maps\Phase 1 Hybrid\Lloydminster Phase 1 Fig 8 Aerial Photograph 1971.mxd

LEGEND
 Annexed Lands

**DESKTOP ESA FOR THE SW ASP LANDS
CITY OF LLOYDMINSTER, AB**

AERIAL PHOTOGRAPH - 1971

Data Sources
 Abadata, 2024
 Alberta Air Photos, 1971 (1308-058ep, 1308-039ep)
 AltaLIS ATS Grid, 2021



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 Metres
 NAD 1983 UTM Zone 12N


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**FIGURE
8**



LEGEND

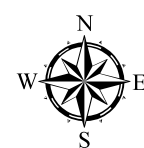
 Annexed Lands



DESKTOP ESA FOR THE SW ASP LANDS
CITY OF LLOYDMINSTER, AB

AERIAL PHOTOGRAPH - 1965

Data Sources
 Abadata, 2024
 Alberta Air Photo, 1965 (0919-107ps)
 AltaLIS ATS Grid, 2021



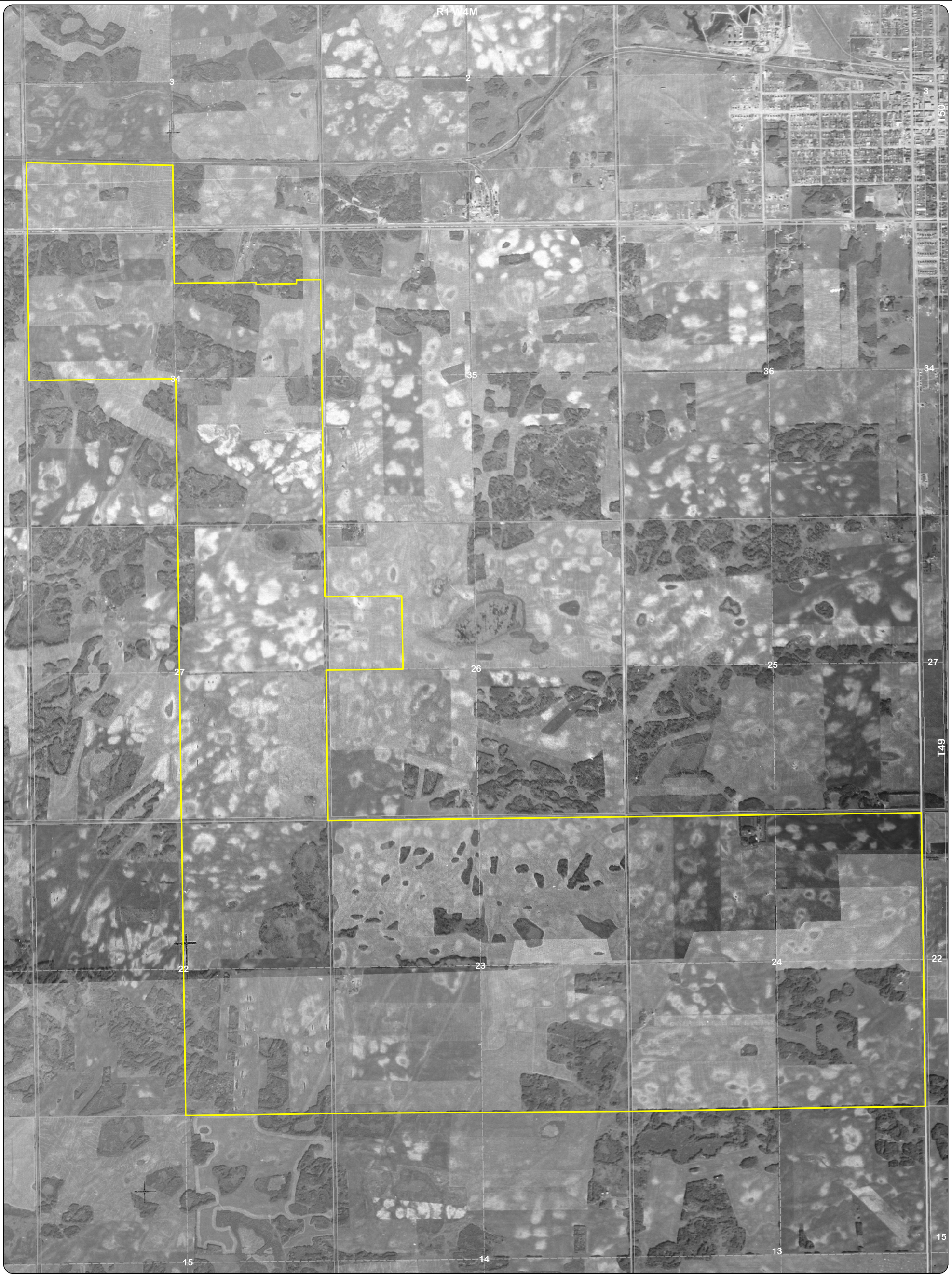
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 NAD 1983 UTM Zone 12N



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**FIGURE
9**



LEGEND

 Annexed Lands



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CITY OF LLOYDMINSTER, AB

AERIAL PHOTOGRAPH - 1949

Data Sources

Abadata, 2024
Alberta Air Photos, 1949 (0139-186ps, 0140-208ps)
AltaLIS ATS Grid, 2021



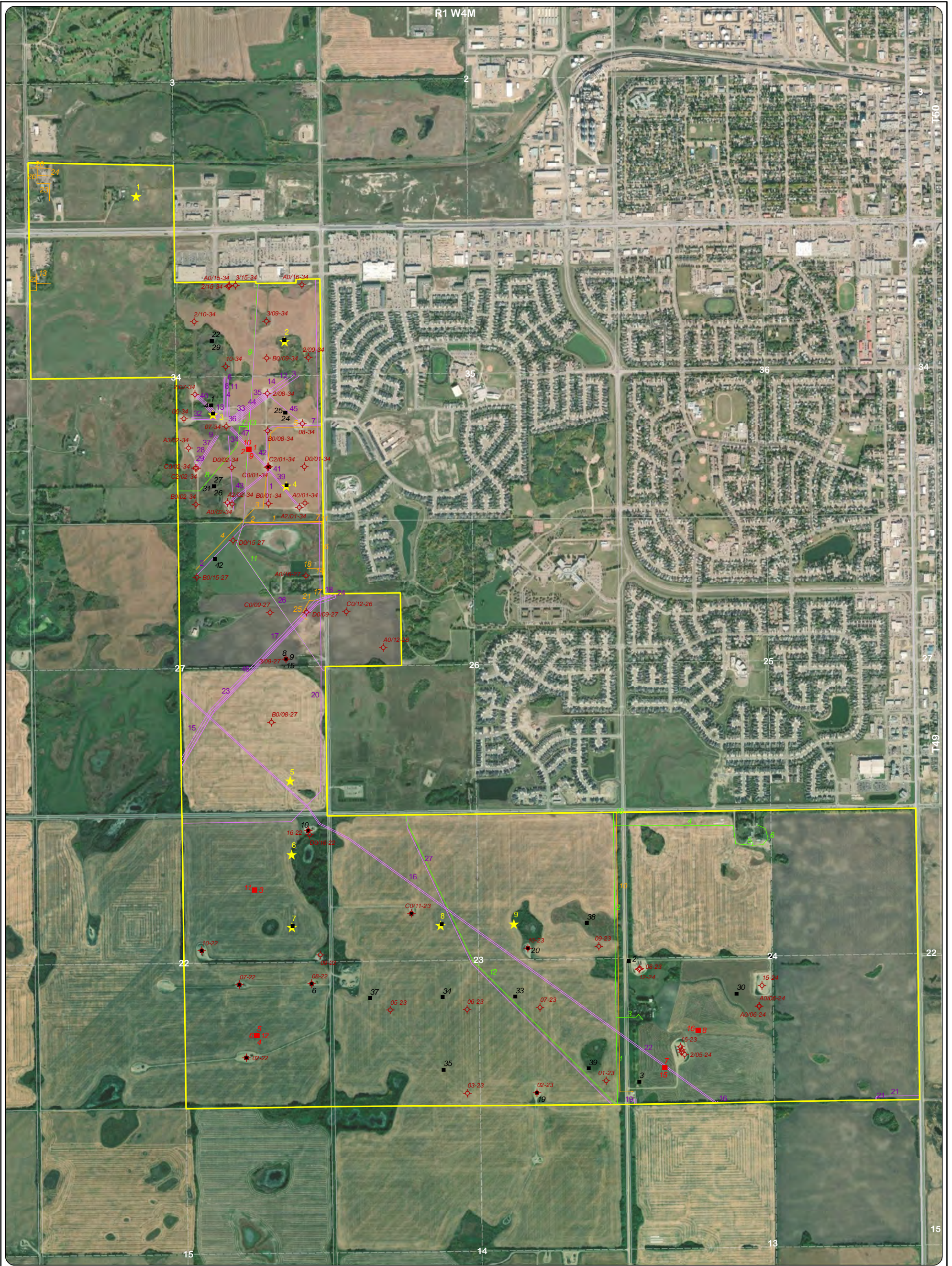
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Metres
NAD 1983 UTM Zone 12N



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Province: AB
Drawn By: J. Lamberts

**FIGURE
10**



LEGEND

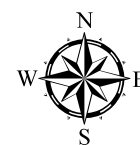
- ◆ Oil and Gas Surface Well Location
- Abadata Facility Location
- ERCB Facility Location
- ★ Spill Location
- High Pressure Pipeline
- Low Pressure Pipeline - County of Vermilion River
- Low Pressure Pipeline - ATCO Gas
- Annexed Lands



DESKTOP ESA FOR THE SW ASP LANDS
CITY OF LLOYDMINSTER, AB

OIL AND GAS ACTIVITIES

Data Sources
Abadata, 2024
AltaLIS ATS Grid, 2021
ESRI (Imagery Date: 2023)



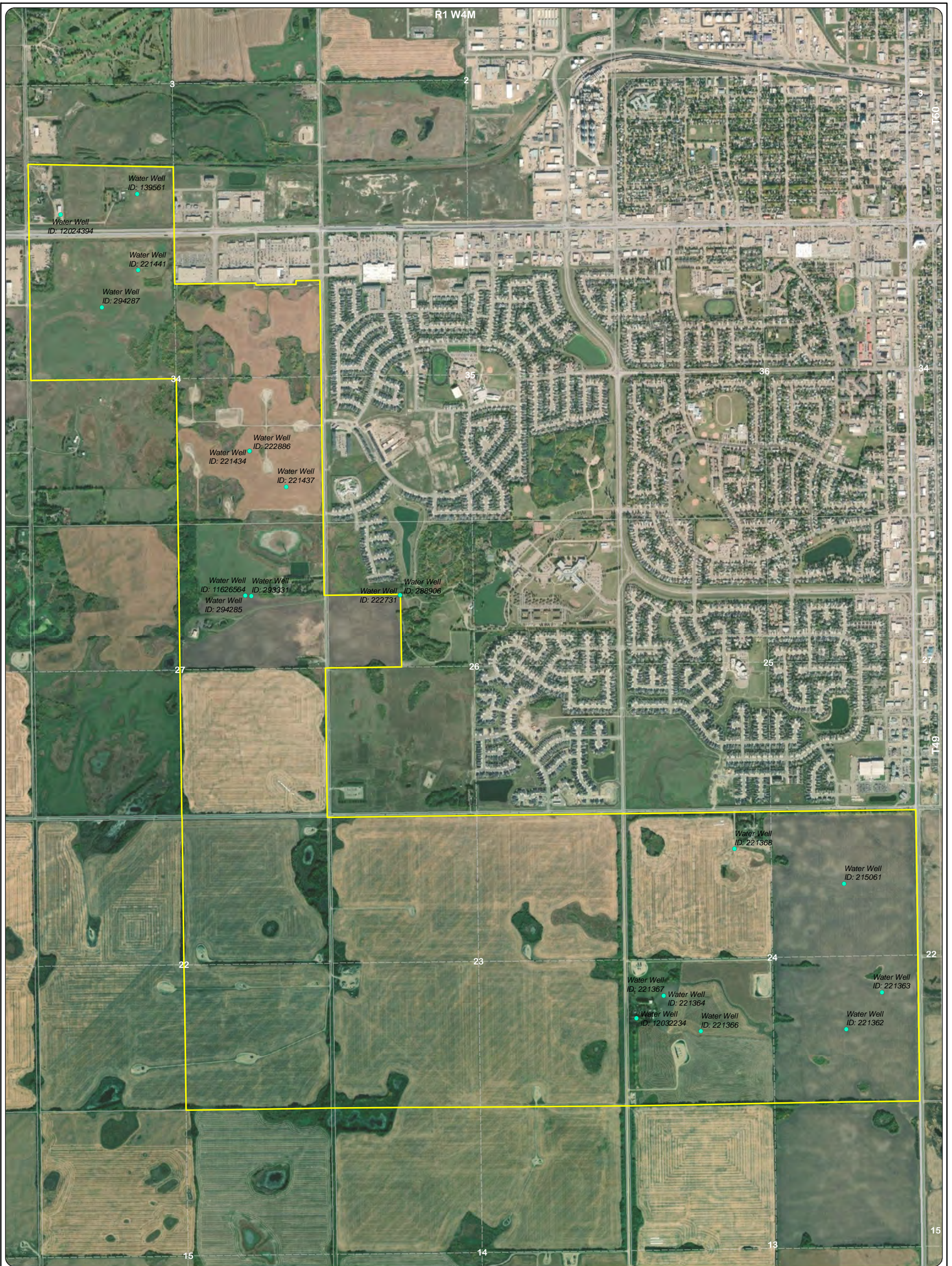
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Metres
NAD 1983 UTM Zone 12N



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Province: AB
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**FIGURE
11**



LEGEND

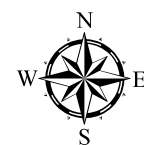
- Water Well Location
- Annexed Lands



**DESKTOP ESA FOR THE SW ASP LANDS
CITY OF LLOYDMINSTER, AB**

WATER WELLS

Data Sources
 Abadata, 2024
 Alberta Water Well Index, 2024
 AltaLIS ATS Grid, 2021
 ESRI (Imagery Date: 2023)



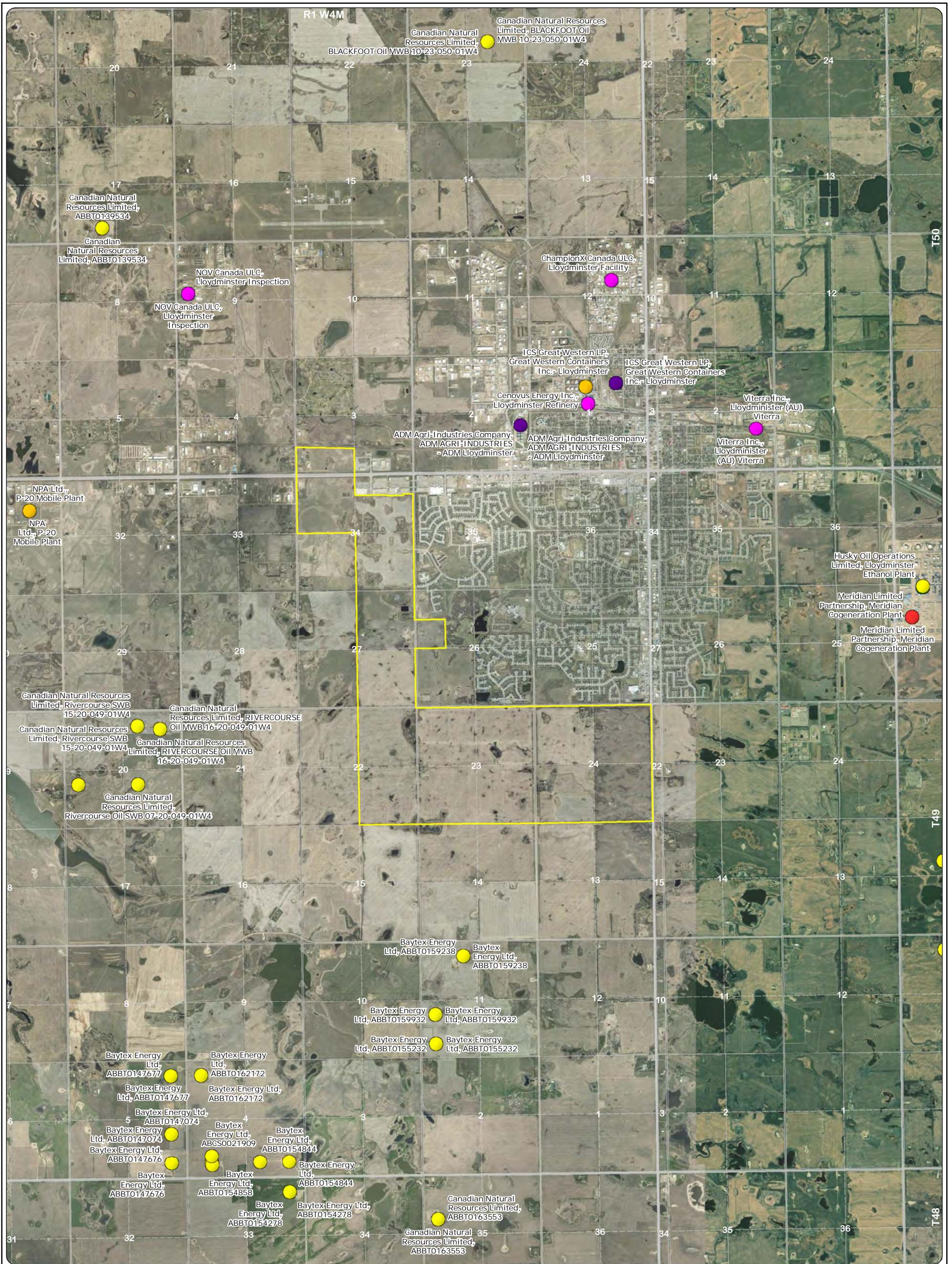
1:20,000
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 Metres
 NAD 1983 UTM Zone 12N



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 Approved By: J. Jaber

Province: AB
 Drawn By: J. Lamberts

**FIGURE
12**



LEGEND

Annexed Lands

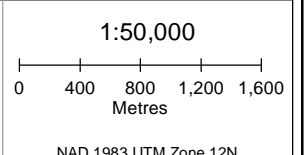
NPRI Code

- 2
- 3
- 4
- 10
- 11
- 12

**DESKTOP ESA FOR THE SW ASP LANDS
CITY OF LLOYDMINSTER, AB**

NATIONAL POLLUTANT RELEASE INVENTORY (NPRI)

Data Sources
 Abadata, 2024
 AER Coal Mines, 2024
 Atlas/ATS Grid, 2021
 ESRI (Imagery Date: 2023)
 National Pollutant Release Inventory (NPRI), 2022



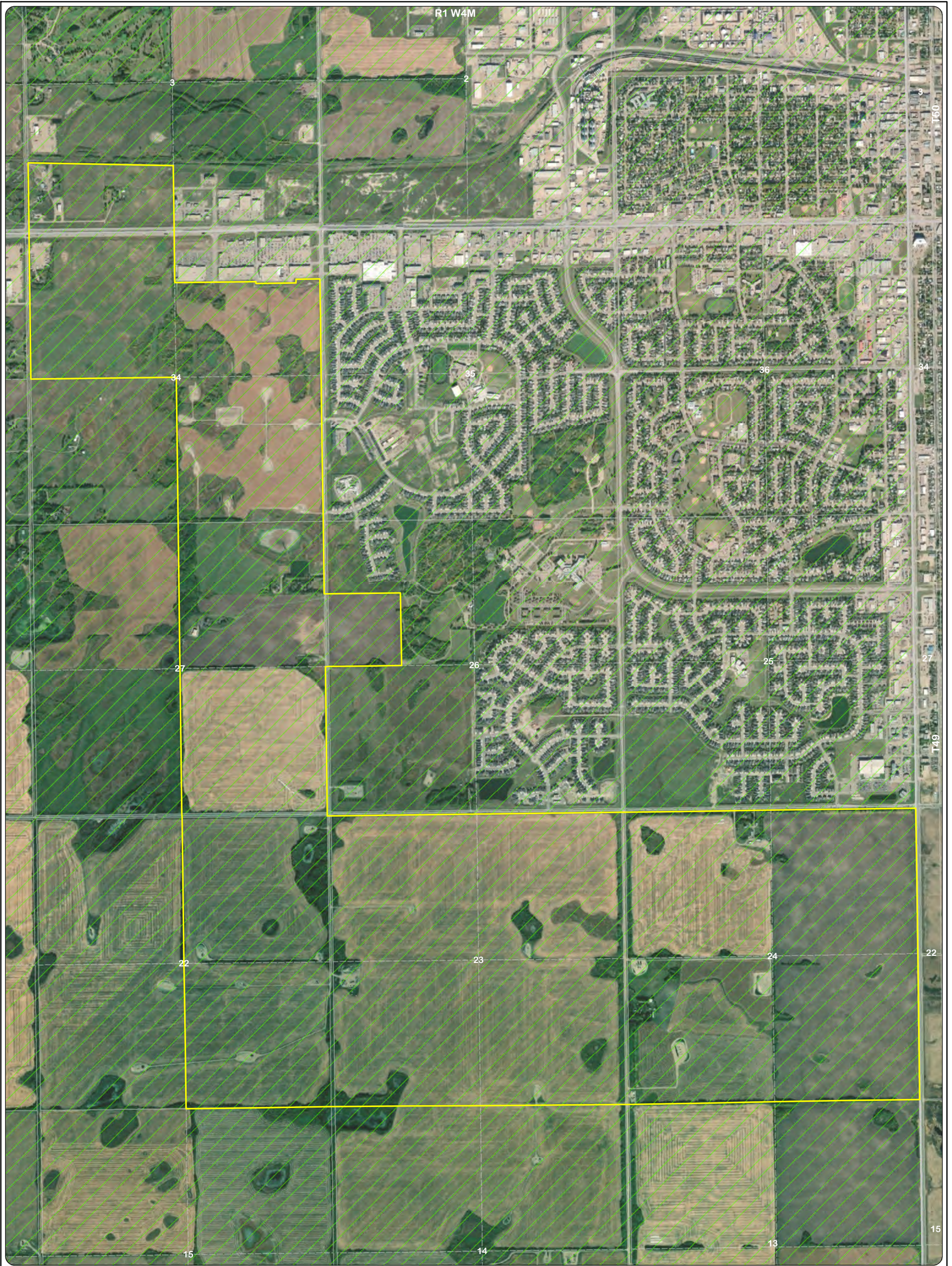
Date: 2024-11-24
 Approved By: J. Jaber

Province: AB
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**FIGURE
13**

D:\Data\Projects\Solid Earth Geotechnical\Lloydminster\Phase 1\Map\Map\Phase 1\Fig 13 NPRI.mxd

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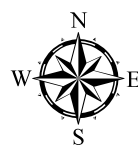
- Annexed Lands
- Sharp Tailed Grouse Survey



DESKTOP ESA FOR THE SW ASP LANDS
CITY OF LLOYDMINSTER, AB

ENDANGERED SPECIES

Data Sources
 Abadata, 2024
 Alberta Wildlife Sensitivity, 2024
 AltaLIS ATS Grid, 2021
 ESRI (Imagery Date: 2023)



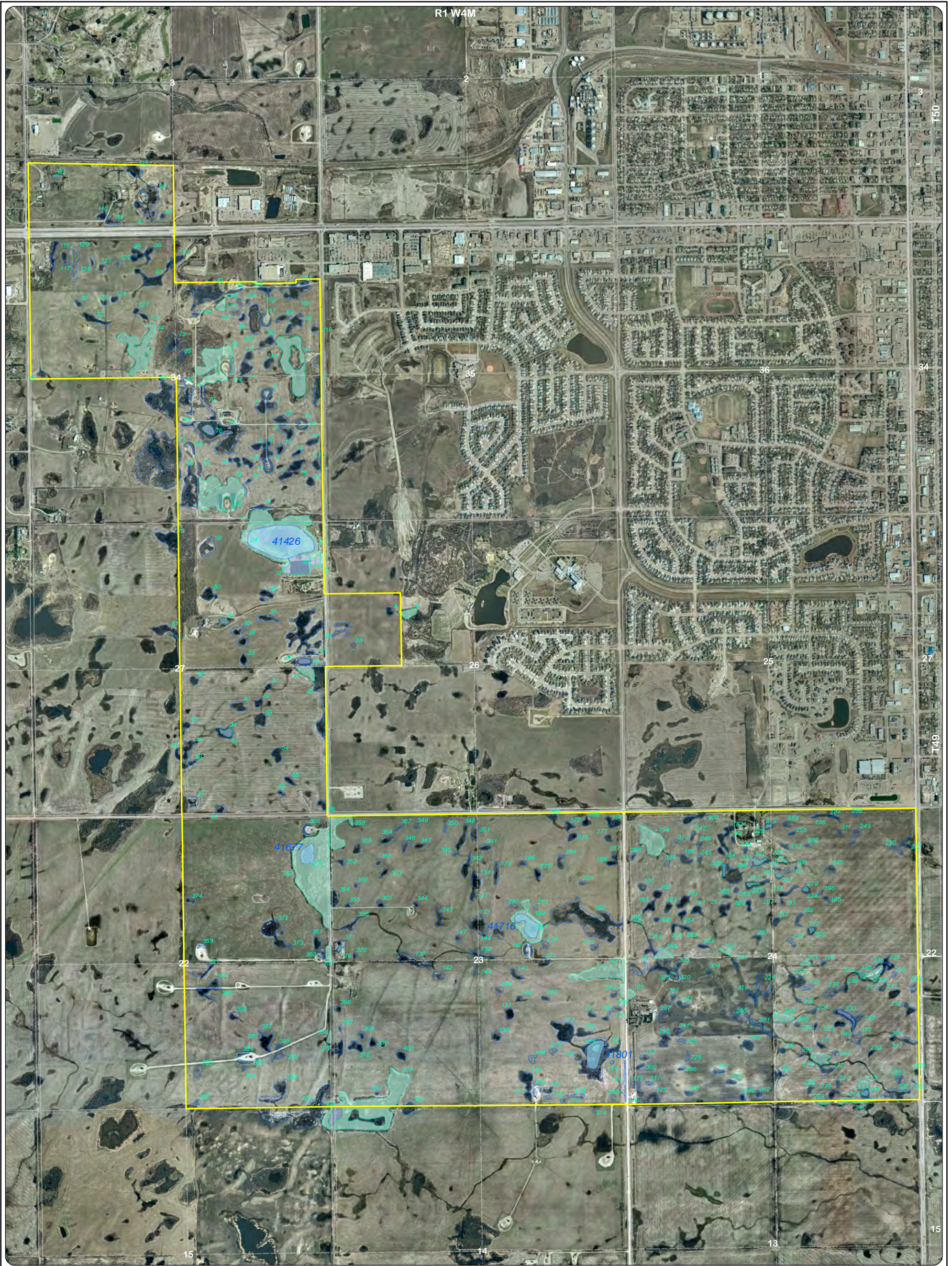
1:20,000
 0 100 200 300 400
 Metres
 NAD 1983 UTM Zone 12N



Date: 2024-11-16
 Approved By: J. Jaber

Province: AB
 Drawn By: J. Lamberts

**FIGURE
14**



LEGEND

- Annexed Lands
- Lake/Major River
- Alberta Merged Wetland Inventory**
- Marsh
- Open Water
- Swamp

- 10 Lake/Major River BF_ID
- 10 Wetland ObjectID

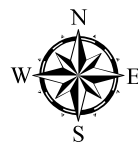


DESKTOP ESA FOR THE SW ASP LANDS
CITY OF LLOYDMINSTER, AB

HYDROGRAPHY

Data Sources

Abadata, 2024
AtlaGIS ATIS Grid, 2021
Google (Imagery Date: 2008)
Government of Alberta, Merged Wetland Inventory, 2023



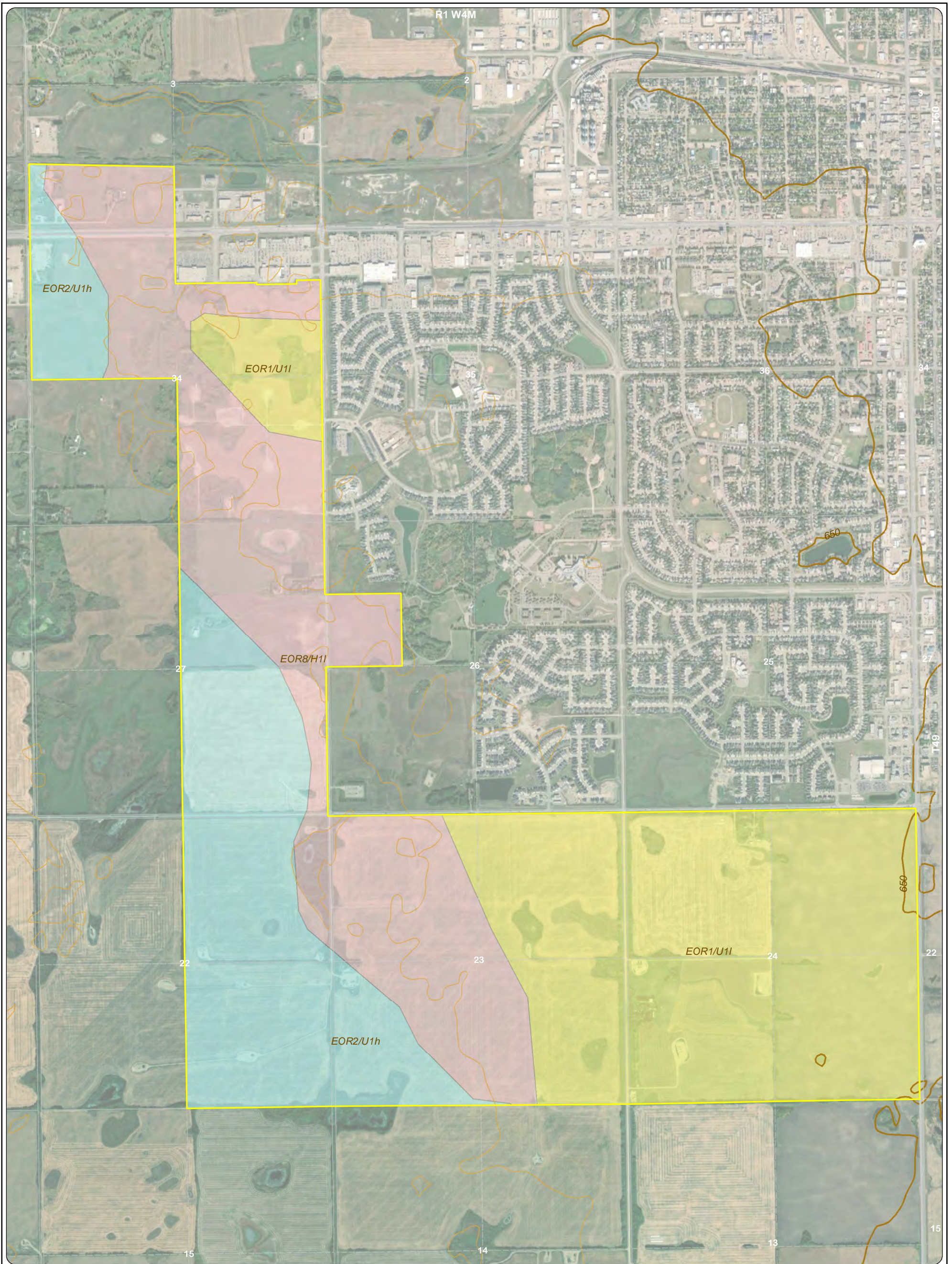
1:20,000
0 100 200 300 400
Metres
NAD 1983 UTM Zone 12N



Date: 2024-11-16
Approved By: J. Jaber

Province: AB
Drawn By: J. Lamberts

**FIGURE
15**



D:\Data\Projects\Solid Earth Geotechnical\Lloydminster\Maps\Phase 1 Hybrid\Lloydminster Phase 1 Fig 16 Geology, Soils and Surface Elevations.mxd

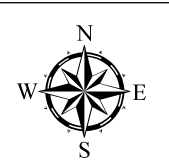
LEGEND

- Annexed Lands
- Index Surface Elevation Contour
- Intermediate Surface Elevation Contour
- H1l - hummocky - low relief
- U1h - undulating - high relief
- U1l - undulating - low relief
- Mudstone with significant sandstone tongues
- Stagnant Ice Moraine

**DESKTOP ESA FOR THE SW ASP LANDS
CITY OF LLOYDMINSTER, AB**

GEOLOGY, SOILS AND SURFACE ELEVATIONS

Data Sources
 Abadata, 2024
 AgriSID, 2021
 Alberta Geological Survey, 2024
 AltaLIS ATS Grid, 2021
 ESRI (Imagery Date: 2023)



1:20,000
 0 100 200 300 400
 Metres
 NAD 1983 UTM Zone 12N

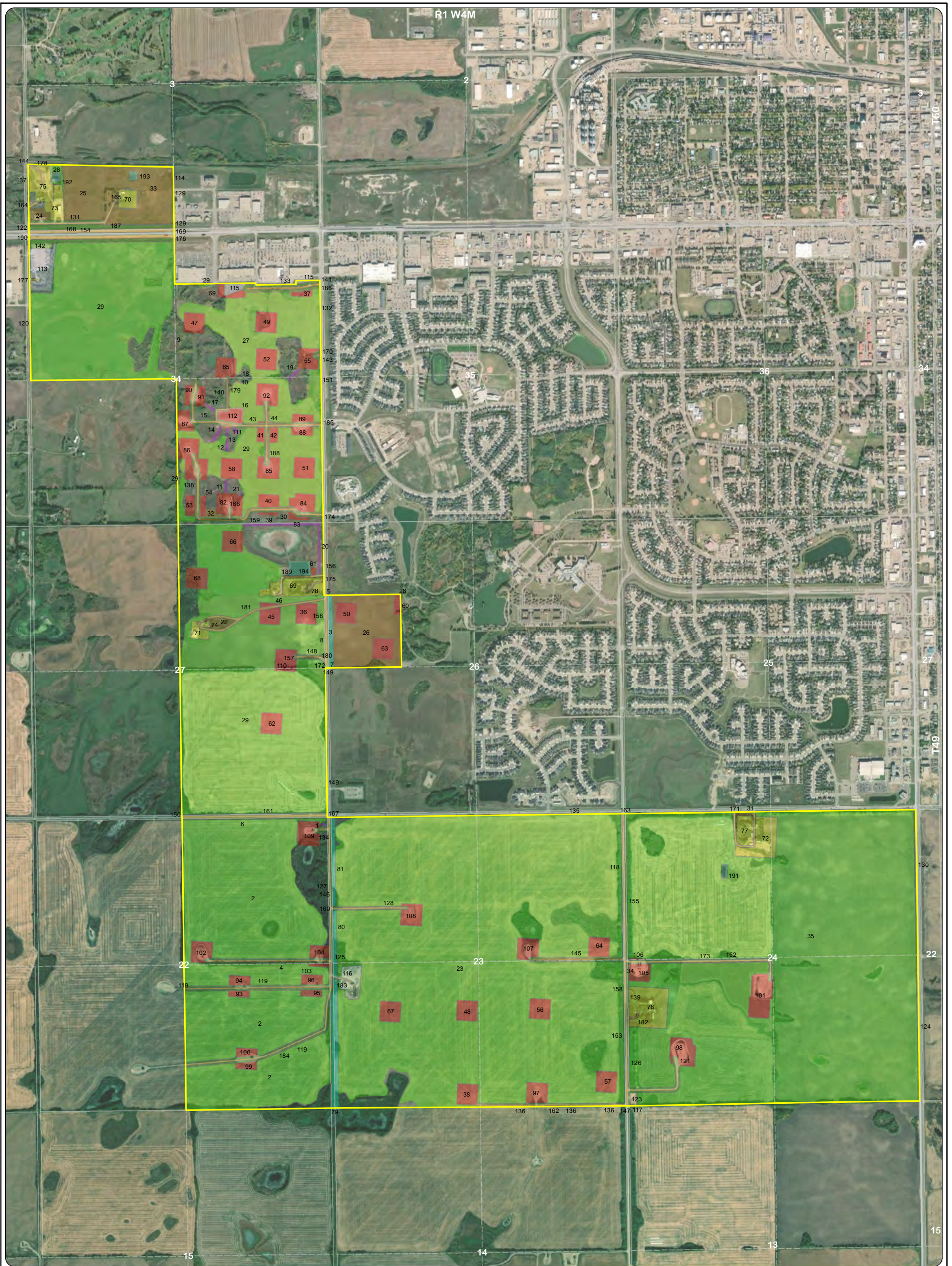
SolidEarth
 GEOTECHNICAL

Date: 2024-11-16
 Approved By: J. Jaber

Province: AB
 Drawn By: J. Lamberts

**FIGURE
16**

This figure was created using multiple data sources. No representation or warranty is offered and we assume no liability for any errors or omissions.



LEGEND

- Annexed Lands
- Urban/Industrial
- ABMI - Human Disturbance Type
- Clearing - Unknown
- Seismic Line
- Cropland
- Dugout
- Oil and Gas Facility
- Pipeline
- Road/Trail
- Pasture Land
- Rural Residence
- Transmission Line
- Vegetation Edge
- Oil and Gas Well



**DESKTOP ESA FOR THE SW ASP LANDS
CITY OF LLOYDMINSTER, AB**

ABMI - HUMAN DISTURBANCES

Data Sources
 Abadata, 2024
 ABMI, 2023
 Aerial/IS-ATS Grid, 2021
 ESRI (Imagery Date: 2023)



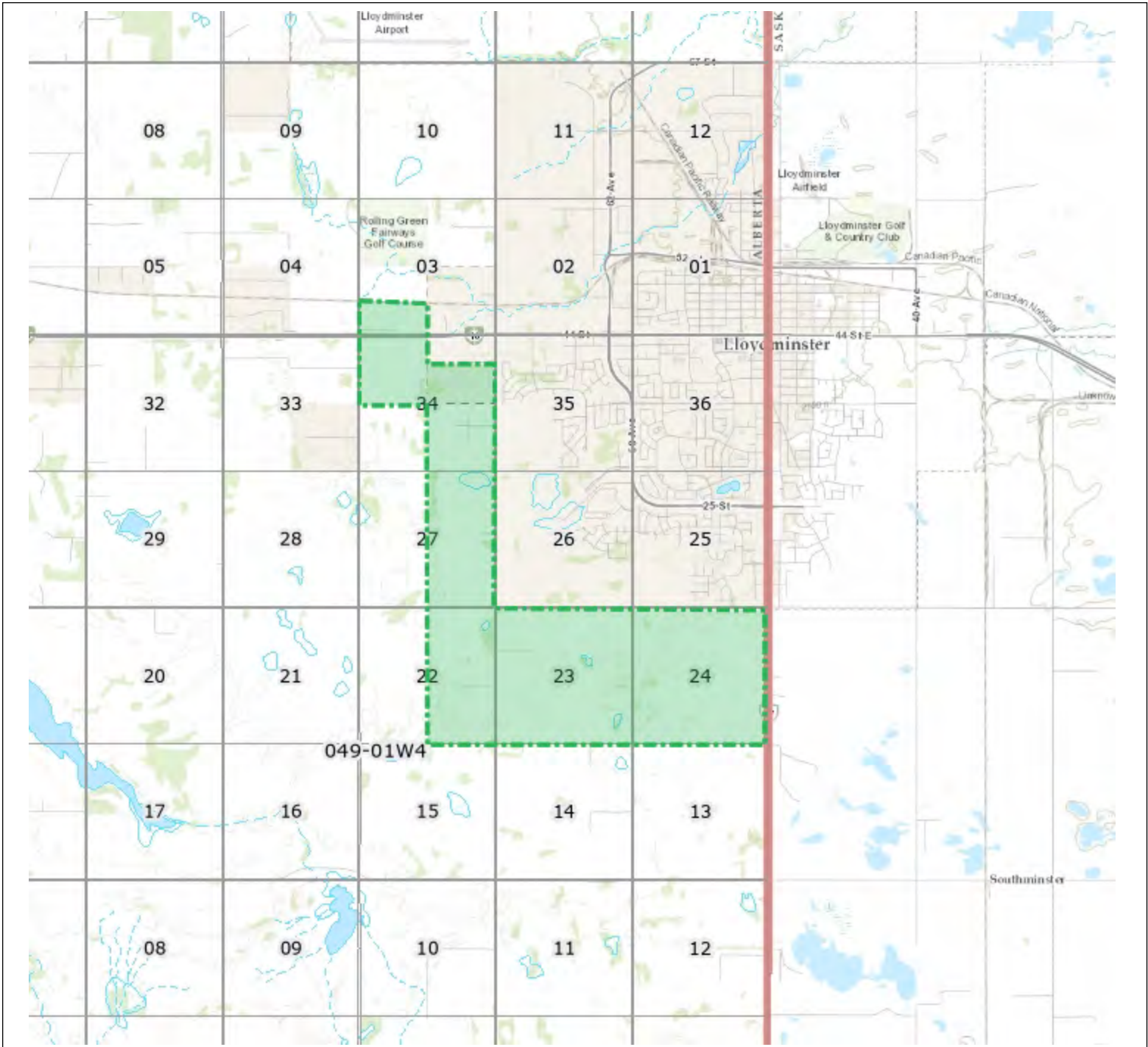
1:20,000
 0 100 200 300 400
 Metres
 NAD 1983 UTM Zone 12N



Date: 2024-11-16
 Approved By: J. Jaber

Province: AB
 Drawn By: J. Lamberts

**FIGURE
17**



**Desktop ESA
Project No. PE24-5236**

Base Data provided by: Government of Alberta

Author

SEG

Printing Date:

11/24/2024

Legend

- ATS Section label (medium scale)
- ATS Section with Road Allowance
- ATS Township (large scale)
- Provincial Boundary
- Coal Mine Permit
- Coal Mine Polygon
 - Surface
 - Underground
- Paved Road (20K)
 - Primary Divided
 - Primary Undivided 4L

Date Date (if applicable)

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Scale:

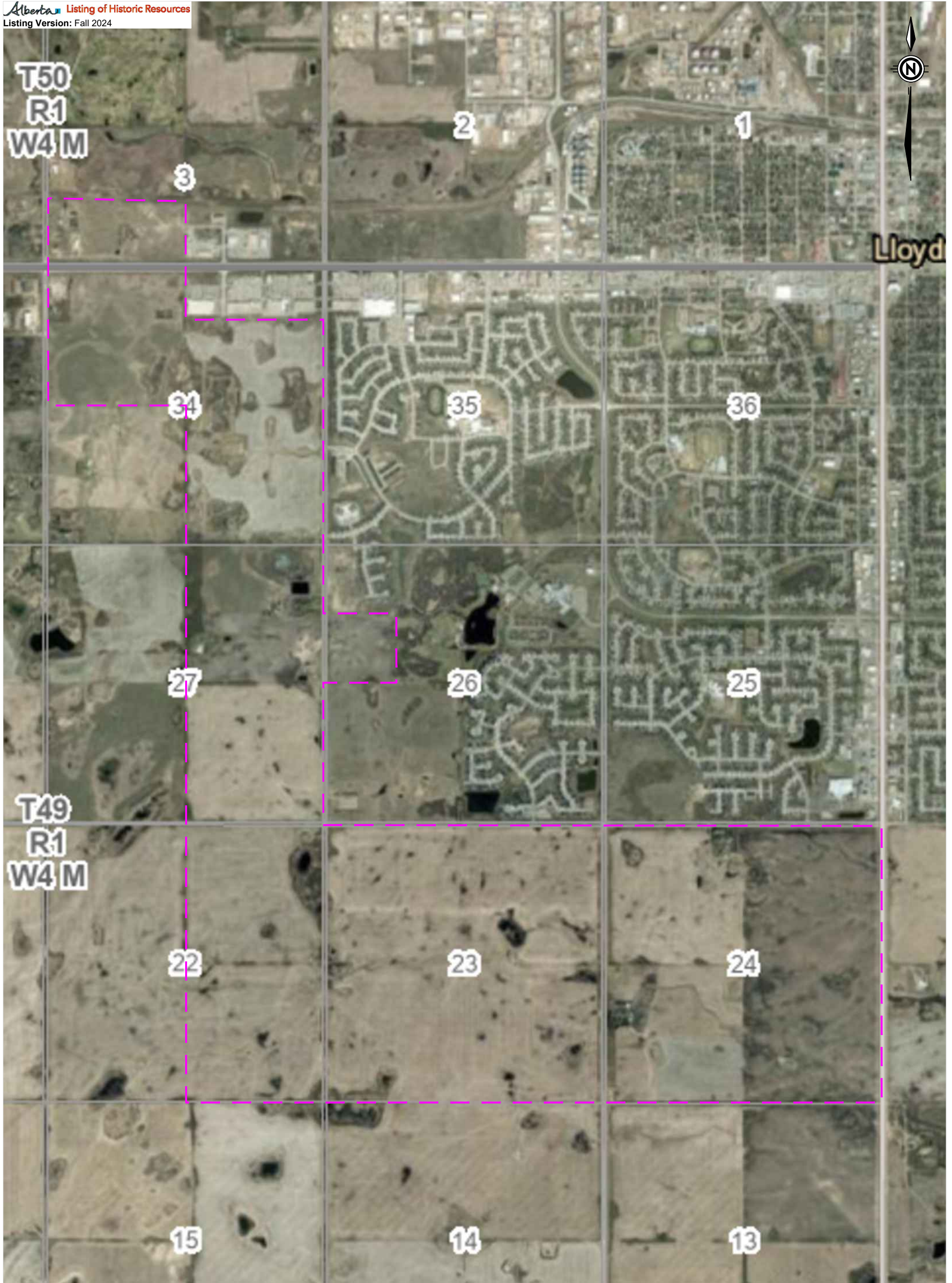
110,684.47

1.69 Kilometers 0

Projection and Datum:

WGS84 Web Mercator Auxiliary Sphere





Historic Resource Values

- HRV 1: Designated under the Act as a Provincial Historic Resource
- HRV 3: Contains a significant historic resource that will likely require avoidance
- HRV 4: Contains a historic resource that may require avoidance
- HRV 5: Believed to contain a historic resource

Category of Concern

- a : Archaeological
- c : Cultural
- gl : Geological
- h : Historic Period
- n : Natural
- p : Palaeontological

SCALE: NTS	DRAWN BY: CB	FIGURE No.: 19	REVISION No.: 0	PROJECT NAME: Desktop ESA for the SW ASP Lands City of Lloydminster, Alberta	CLIENT:
DATUM: -		PROJECT No.: PE24-5236		DRAWING TITLE: Historic Resources	
SolidEarth Geotechnical Inc. 4336 97 Street, Edmonton, AB, T6E 5R9					

Appendix A

- A1- Historical Oil and Gas Wells
- A2- Spill Data
- A3- Wetlands and Water Bodies
- A4- Summary of Reclamation Certificates

Table A2-Spill Data

Spill ID	Spill Location	Spill Incident Date	Incident Number	Notified Date	Licensee	Source	Fail Type	Complete Date
1	03-03-050-01 W4M	1988-Apr-16	19880635	1988-Apr-16	HUSKY OIL OPERATIONS LIMITED	CRUDE OIL GROUP BATTERY	OPERATOR ERROR	1989-Feb-21
2	09-34-049-01 W4M	2008-Nov-25	20082809	2008-Nov-25	PROVIDENT ENERGY LTD.	MULTIPHASE PIPELINE	CORROSION INTERNAL	2009-Sep-30
3	07-34-049-01 W4M	2010-Aug-19	20101668	2010-Aug-19	EMERGE OIL & GAS INC.	MULTIPHASE PIPELINE	CONSTRUCTION DEFICIENCY	2010-Dec-21
4	01-34-049-01 W4M	2016-May-05	20161251	2016-May-05	TWIN BUTTE ENERGY LTD.	MULTIPHASE PIPELINE	CONSTRUCTION DEFICIENCY	2016-Nov-09
5	01-27-049-01 W4M	1976-Aug-17	19761045	1976-Aug-17	HUSKY OIL OPERATIONS LIMITED	CRUDE OIL PIPELINE	DAMAGE BY OTHERS (CONTACT DAMAGE)	1984-Aug-27
6	16-22-049-01 W4M	2017-May-19	20171620	2017-May-19	PETROCAPITA GP I LTD.	OIL WELL	OPERATOR ERROR	2017-Jun-27
7	09-22-049-01 W4M	2005-May-03	20051037	2005-May-03	CANADIAN NATURAL RESOURCES LIMITED	OIL WELL	VANDALISM/DAMAGE OTHERS	2005-May-18
8	11-23-049-01 W4M	1983-Aug-22	19830742	1983-Aug-22	CANADIAN NATURAL RESOURCES LIMITED	GAS WELL	VANDALISM/DAMAGE OTHERS	1984-Oct-09
9	10-23-049-01 W4M	1983-Aug-22	19830741	1983-Aug-22	CANADIAN NATURAL RESOURCES LIMITED	GAS WELL	VANDALISM/DAMAGE OTHERS	1984-Sep-12

Spill ID	Current Licensee	Cause	Jurisdiction	Spill Off-site	Sensitive Area	Public Affected	Wildlife Affected
1		CONVERSION	CROWN PUBLIC LANDS	YES	NO	CONVERSION FROM ENV SYSTEM	CONVERSION FROM ENV SYSTEM
2	TWIN BUTTE ENERGY LTD.	EQUIPMENT FAILURE - INTERNAL CORROSION	FREEHOLD PRIVATE LAN	NO	NO	NO AFFECT/NORMAL NOTIFICATION	NO AFFECT
3	TWIN BUTTE ENERGY LTD.	PROCEDURAL OR DESIGN - CONSTRUCTION	CROWN ANY AREA	NO	NO	NO AFFECT/NORMAL NOTIFICATION	NO AFFECT
4	TWIN BUTTE ENERGY LTD.	PROCEDURAL OR DESIGN - CONSTRUCTION	FREEHOLD PRIVATE LAN	NO	NO	NO AFFECT/NORMAL NOTIFICATION	NO AFFECT
5	CENOVUS ENERGY INC.	CONVERSION	CROWN PUBLIC LANDS	YES	NO	CONVERSION FROM ENV SYSTEM	CONVERSION FROM ENV SYSTEM
6	REVITALIZE ENERGY INC.	OPERATOR ERROR - ACCIDENTAL	CROWN ANY AREA	YES	NO	NO AFFECT/NORMAL NOTIFICATION	ANIMAL(S) AFFECTED
7	CANADIAN NATURAL RESOURCES LIMITED	EXTERNAL - VANDALISM	FREEHOLD PRIVATE LAN	NO	NO	NO AFFECT/NORMAL NOTIFICATION	NO AFFECT
8	CANADIAN NATURAL RESOURCES LIMITED	CONVERSION	CROWN PUBLIC LANDS	YES	NO	CONVERSION FROM ENV SYSTEM	CONVERSION FROM ENV SYSTEM
9	CANADIAN NATURAL RESOURCES LIMITED	CONVERSION	CROWN PUBLIC LANDS	NO	NO	CONVERSION FROM ENV SYSTEM	CONVERSION FROM ENV SYSTEM

Spill ID	Area Affected	Environment Affected	Clean UpDate	Substances Spilled 1	Substances Spilled 2
1	CONVERSION FROM ENV SYSTEM	FLOWING WATER	1989-Feb-21	5.0 m ³ CRUDE OIL (5.0 m ³ RECOVERED)	45.0 m ³ PRODUCED WATER (40.0 m ³ RECOVERED)
2	OVER 100 BUT LESS THAN 1000 SQUARE METERS	AIR/LAND	2008-Nov-28	1.0 m ³ CRUDE OIL (0.0 m ³ RECOVERED)	1.0 m ³ PRODUCED WATER (0.0 m ³ RECOVERED)
3	100 SQUARE METERS OR LESS	AIR/LAND	2010-Aug-20	0.5 m ³ PRODUCED WATER (0.5 m ³ RECOVERED)	
4	100 SQUARE METERS OR LESS	AIR/LAND	2016-May-05	0.3 m ³ CRUDE OIL (0.0 m ³ RECOVERED)	1.7 m ³ PRODUCED WATER (0.0 m ³ RECOVERED)
5	CONVERSION FROM ENV SYSTEM	AIR/LAND	1984-Aug-27	64.0 m ³ CRUDE OIL (60.0 m ³ RECOVERED)	
6	OVER 1000 SQUARE METERS	AIR/LAND	2017-Jun-26	0.1 m ³ CRUDE OIL (0.1 m ³ RECOVERED)	
7	100 SQUARE METERS OR LESS	AIR/LAND	2005-May-04	25.0 m ³ CRUDE OIL (25.0 m ³ RECOVERED)	
8	CONVERSION FROM ENV SYSTEM	AIR/LAND	1984-Oct-09	16.0 m ³ CRUDE OIL (10.0 m ³ RECOVERED)	
9	CONVERSION FROM ENV SYSTEM	AIR/LAND	1984-Sep-12	10.0 m ³ CRUDE OIL (5.0 m ³ RECOVERED)	

Table A3-Wetlands and Water Bodies

ID	Class	Area m ²
1	Marsh	2,539
2	Marsh	1,886
3	Marsh	3,282
4	Marsh	1,403
5	Swamp	3,595
6	Marsh	2,241
7	Marsh	7,592
8	Swamp	47,288
9	Marsh	1,212
10	Marsh	1,934
11	Marsh	1,333
12	Marsh	1,883
13	Marsh	1,976
14	Marsh	1,325
15	Marsh	1,013
16	Marsh	2,607
17	Marsh	1,455
18	Marsh	2,911
19	Marsh	1,931
20	Marsh	1,048
21	Marsh	2,582
22	Marsh	1,233
23	Swamp	13,548
24	Open Water	24,775
25	Marsh	16,007
26	Marsh	23,944
27	Marsh	793
28	Marsh	696
29	Marsh	4,288
30	Open Water	998
31	Open Water	1,852
32	Open Water	13,318
33	Marsh	2,042
34	Marsh	1,969
35	Marsh	2,899
36	Marsh	2,764
37	Marsh	3,543
38	Open Water	1,146
39	Marsh	2,634
40	Marsh	2,873
41	Marsh	2,953
42	Marsh	1,815
43	Marsh	1,772
44	Marsh	4,760
45	Marsh	1,371
46	Open Water	1,933
47	Swamp	4,900
48	Marsh	2,375
49	Open Water	2,136
50	Marsh	972
51	Marsh	995
52	Marsh	1,586
53	Marsh	3,186
54	Marsh	2,444
55	Marsh	1,491
56	Marsh	1,832
57	Marsh	1,834
58	Marsh	1,168
59	Marsh	5,867
60	Marsh	3,463
61	Marsh	5,774
62	Open Water	704
63	Marsh	26,756
64	Marsh	1,819
65	Marsh	6,621
66	Marsh	19,163
67	Swamp	22,933
68	Marsh	1,339
69	Marsh	1,266
70	Marsh	9,478
71	Marsh	53,709
72	Marsh	3,060
73	Marsh	6,024
74	Swamp	23,092
75	Open Water	780
76	Open Water	2,642
77	Marsh	1,392
78	Marsh	1,826
79	Marsh	4,699
80	Marsh	14,462
81	Marsh	1,230
82	Marsh	1,346
83	Swamp	30,315
84	Marsh	1,217
85	Marsh	1,068
86	Open Water	653
87	Marsh	1,188
88	Marsh	5,098
89	Marsh	2,046
90	Marsh	3,314
91	Swamp	26,238
92	Marsh	11,821
93	Marsh	5,991
94	Marsh	13,203
95	Marsh	2,820
96	Marsh	2,093
97	Marsh	2,673
98	Marsh	999
99	Marsh	944
100	Marsh	8,792
101	Marsh	1,411
102	Marsh	1,250

ID	Class	Area m ²
103	Marsh	1,029
104	Marsh	1,113
105	Marsh	788
106	Swamp	2,461
107	Marsh	1,383
108	Marsh	8,268
109	Marsh	608
110	Marsh	2,382
111	Marsh	2,992
112	Marsh	1,876
113	Marsh	1,939
114	Open Water	1,476
115	Marsh	4,637
116	Marsh	2,470
117	Marsh	1,953
118	Marsh	1,496
119	Marsh	1,651
120	Marsh	4,900
121	Marsh	1,445
122	Marsh	1,335
123	Marsh	987
124	Marsh	974
125	Marsh	2,260
126	Marsh	1,309
127	Marsh	771
128	Marsh	926
129	Marsh	1,444
130	Marsh	4,542
131	Marsh	2,129
132	Marsh	6,766
133	Marsh	7,111
134	Marsh	3,155
135	Marsh	1,020
136	Marsh	1,391
137	Marsh	941
138	Marsh	2,017
139	Marsh	2,806
140	Marsh	2,078
141	Marsh	1,526
142	Marsh	2,006
143	Marsh	1,296
144	Marsh	3,454
145	Marsh	708
146	Marsh	1,463
147	Marsh	1,002
148	Marsh	1,173
149	Marsh	900
150	Marsh	1,177
151	Marsh	2,905
152	Marsh	26,358
153	Marsh	1,027
154	Swamp	14,577
155	Marsh	991
156	Marsh	1,105
157	Marsh	1,511
158	Marsh	1,066
159	Swamp	22,013
160	Marsh	40,200
161	Marsh	1,362
162	Marsh	1,731
163	Marsh	1,471
164	Marsh	2,201
165	Open Water	622
166	Swamp	4,216
167	Swamp	17,529
168	Swamp	1,906
169	Swamp	1,917
170	Marsh	1,238
171	Marsh	1,169
172	Marsh	2,349
173	Marsh	9,385
174	Marsh	401
175	Marsh	3,758
176	Marsh	910
177	Marsh	1,278
178	Marsh	1,559
179	Marsh	3,277
180	Marsh	1,383
181	Marsh	2,073
182	Marsh	1,793
183	Marsh	3,543
184	Marsh	703
185	Marsh	2,180
186	Marsh	458
187	Marsh	695
188	Marsh	424
189	Marsh	913
190	Marsh	271
191	Marsh	1,484
192	Marsh	1,570
193	Marsh	402
194	Marsh	540
195	Marsh	822
196	Marsh	551
197	Marsh	2,407
198	Marsh	6,671
199	Marsh	1,968
200	Swamp	1,053
201	Swamp	1,332
202	Marsh	2,254
203	Swamp	4,704
204	Marsh	762

ID	Class	Area m ²
205	Marsh	1,037
206	Marsh	424
207	Marsh	526
208	Marsh	891
209	Swamp	1,876
210	Swamp	4,544
211	Marsh	1,350
212	Marsh	1,254
213	Swamp	2,501
214	Swamp	5,111
215	Marsh	1,882
216	Marsh	563
217	Marsh	935
218	Marsh	510
219	Marsh	378
220	Marsh	893
221	Marsh	696
222	Marsh	607
223	Marsh	3,975
224	Marsh	4,536
225	Marsh	607
226	Marsh	607
227	Swamp	1,570
228	Marsh	2,402
229	Marsh	663
230	Marsh	434
231	Marsh	865
232	Marsh	959
233	Marsh	351
234	Marsh	1,247
235	Marsh	495
236	Marsh	1,205
237	Marsh	2,247
238	Marsh	726
239	Marsh	860
240	Marsh	759
241	Marsh	766
242	Marsh	1,284
243	Marsh	529
244	Marsh	516
245	Marsh	848
246	Marsh	719
247	Marsh	803
248	Marsh	1,937
249	Marsh	3,049
250	Marsh	1,483
251	Marsh	1,685
252	Marsh	371
253	Marsh	973
254	Marsh	860
255	Marsh	530
256	Marsh	342
257	Marsh	2,358
258	Marsh	1,116
259	Marsh	880
260	Marsh	696
261	Marsh	994
262	Marsh	801
263	Marsh	937
264	Marsh	1,106
265	Marsh	744
266	Marsh	583
267	Marsh	722
268	Marsh	240
269	Marsh	231
270	Marsh	1,720
271	Marsh	1,222
272	Marsh	2,456
273	Marsh	2,002
274	Marsh	1,622
275	Marsh	1,677
276	Marsh	1,305
277	Marsh	1,529
278	Marsh	1,483
279	Marsh	1,092
280	Marsh	703
281	Marsh	1,137
282	Marsh	951
283	Marsh	1,284
284	Marsh	1,895
285	Marsh	636
286	Marsh	873
287	Marsh	851
288	Marsh	859
289	Marsh	483
290	Marsh	949
291	Marsh	608
292	Marsh	1,112
293	Marsh	771
294	Marsh	508
295	Marsh	544
296	Marsh	479
297	Marsh	1,223
298	Marsh	2,335
299	Marsh	922
300	Marsh	615
301	Marsh	3,038
302	Marsh	577
303	Marsh	3,647
304	Marsh	721
305	Marsh	492
306	Marsh	909

ID	Class	Area m ²
307	Marsh	866
308	Marsh	469
309	Marsh	561
310	Marsh	731
311	Marsh	490
312	Marsh	650
313	Marsh	1,759
314	Marsh	494
315	Marsh	2,649
316	Marsh	653
317	Marsh	649
318	Marsh	2,073
319	Marsh	1,607
320	Marsh	6,335
321	Marsh	880
322	Marsh	5,072
323	Open Water	1,109
324	Open Water	487
325	Open Water	312
326	Open Water	393
327	Open Water	596
328	Open Water	604
329	Open Water	982
330	Open Water	2,402
331	Open Water	959
332	Open Water	799
333	Open Water	1,198
334	Open Water	566
335	Open Water	174
336	Open Water	286
337	Open Water	850
338	Swamp	5,494
339	Marsh	1,944
340	Marsh	1,659
341	Marsh	1,538
342	Marsh	3,065
343	Marsh	2,752
344	Marsh	664
345	Marsh	785
346	Marsh	3,691
347	Marsh	1,383
348	Marsh	2,110
349	Marsh	660
350	Marsh	582
351	Marsh	2,531
352	Swamp	70,828
353	Marsh	1,074
354	Marsh	3,255
355	Marsh	655
356	Marsh	2,340
357	Swamp	1,916
358	Swamp	11,751
359	Marsh	828
360	Marsh	1,057
361	Marsh	2,063
362	Marsh	1,181
363	Marsh	1,909
364	Marsh	2,504
365	Marsh	1,175
366	Marsh	812
367	Marsh	687
368	Marsh	1,960
369	Marsh	552
370	Marsh	512
371	Marsh	1,478
372	Marsh	7,522
373	Marsh	3,064
374	Marsh	1,044
375	Open Water	3,411
376	Open Water	588
377	Marsh	2,486
378	Marsh	3,038
379	Swamp	63,054
380	Marsh	4,893
381	Marsh	4,569
382	Marsh	8,071
383	Marsh	985
384	Marsh	1,058
385	Marsh	3,230
386	Swamp	1,408
387	Marsh	303
388	Marsh	1,576
389	Marsh	2,292
390	Marsh	721
391	Marsh	2,907
392	Marsh	2,391
393	Marsh	2,122
394	Marsh	623
395	Marsh	594
396	Marsh	1,356
397	Marsh	552
398	Marsh	945
399	Marsh	1,700
400	Marsh	2,329
401	Marsh	487
402	Marsh	29,176
403	Open Water	4,728
41677	Lake - Recurring	6,458
41716	Lake - Recurring	8,800
41801	Lake - Recurring	11,433
41426	Lake - Recurring	51,783

Table A4-Summary of Reclamation Certificates

Label	Well ID	Notes/Well Name	Name	Well Status	Spud Date	License Date	Latitude	Longitude	License No	License Status	Reclamation Certificate		STAT_MODE	Visible on Airphoto										
											ID	Date		1949	1965	1971	1978	1985	1995	2005	2015	2024		
02-22	0494012202002	GEAR LLOYD 2-22-49-1	GEAR ENERGY LTD.	SUSPENDED OIL	2006-08-20	2006-07-27	53.236877	-110.061382	0360837	Suspension	--	--	SUSP											
07-22	0494012207000	WLEC LLOYD 7-22-49-1	PRONGHORN RESOURCES LTD.	PUMPING OIL	1997-05-13	1997-05-02	53.240498	-110.0619	0200888	Issued	--	--	PUMP											
08-22	0494012208000	WLEC 8D LLOYD 8-22-49-1	PRONGHORN RESOURCES LTD.	PUMPING OIL	1997-05-09	1997-05-02	53.240493	-110.055912	0200886	Suspension	--	--	PUMP											
09-22	0494012209000	MURPHY LLOYD 9A-22-49-1	CANADIAN NATURAL RESOURCES LIMITED	ABANDONED	1984-07-16	1984-02-20	53.24194	-110.055165	0106075	Suspension	--	--	ABZONE											
10-22	0494012210002	CNRL LLOYD 10-22-49-1	CANADIAN NATURAL RESOURCES LIMITED	UNKNOWN	2007-03-07	2006-12-20	53.242209	-110.064982	0369548	Abandoned	--	--	ABZONE											
16-22	0494012216000	RevitalizeAB LLOYD 16-22-49-1	REVITALIZE ENERGY INC.	PUMPING OIL	2006-08-22	2006-07-24	53.248105	-110.05603	0360562	Issued	--	--	PUMP											
D0/16-22	0494012216D00	BURROWS & SPARKS LLOYD 16-22-49-1	T.A. BURROWS & T.A. SPARKS	ABANDONED	1948-05-20	1948-05-22	53.247916	-110.055928	B0002115	RecExempt	--	--	ABD											
01-23	0494012301000	CNRL LLOYDMINSTER 1A-23-49-1	CANADIAN NATURAL RESOURCES LIMITED	ABANDONED	1981-06-24	1981-06-16	53.235491	-110.0316	0090747	RecCertified	00304205	28 March 2012	ABD											
02-23	0494012302002	CNRL LLOYDMINSTER 2-23-49-1	CANADIAN NATURAL RESOURCES LIMITED	ABANDONED	1981-03-23	1981-03-13	53.234945	-110.037351	0089531	Abandoned	--	--	ABD											
03-23	0494012303002	CNRL LLOYDMINSTER 3-23-49-1	CANADIAN NATURAL RESOURCES LIMITED	ABANDONED	1981-06-29	1981-06-29	53.234962	-110.043122	0090974	RecCertified	00133654	August 7, 2001	ABD											
05-23	0494012305000	CNRL LLOYDMINSTER 5-23-49-1	CANADIAN NATURAL RESOURCES LIMITED	ABANDONED	1981-07-04	1981-06-29	53.239136	-110.049412	0090973	RecCertified	00140138	August 7, 2001	ABD											
2/05-23	0494012305022	CNRL 102 HZ LLOYD 5-23-49-1	CANADIAN NATURAL RESOURCES LIMITED	SUSPENDED OIL	2011-08-21	2011-07-22	53.236982	-110.025351	0435375	Suspension	--	--	SUSP											
06-23	0494012306000	CNRL LLOYDMINSTER 6-23-49-1	CANADIAN NATURAL RESOURCES LIMITED	ABANDONED	1981-03-09	1981-02-27	53.239132	-110.043058	0089262	RecCertified	00133875	August 7, 2001	ABD											
07-23	0494012307000	CNRL LLOYDMINSTER 7-23-49-1	CANADIAN NATURAL RESOURCES LIMITED	ABANDONED	1979-11-15	1979-11-14	53.239166	-110.037016	0079231	RecCertified	--	--	ABD											
08-23	0494012308002	CNRL 8C LLOYD 8-23-49-1	CANADIAN NATURAL RESOURCES LIMITED	UNKNOWN	2010-08-06	2010-05-19	53.241059	-110.028704	0420530	Suspension	--	--	ABD											
09-23	0494012309000	CNRL LLOYDMINSTER 9-23-49-1	CANADIAN NATURAL RESOURCES LIMITED	ABANDONED	1981-06-16	1981-06-16	53.24217	-110.032071	0090739	RecCertified	00291966	July 6, 2011	ABD											
10-23	0494012310002	CNRL LLOYDMINSTER 10-23-49-1	CANADIAN NATURAL RESOURCES LIMITED	SUSPENDED OIL	1981-06-10	1981-06-11	53.242136	-110.037952	0090656	Suspension	--	--	SUSP											
C0/11-23	0494012311C00	CNRL LLOYDMINSTER 11-23-49-1	CANADIAN NATURAL RESOURCES LIMITED	ABANDONED	1977-06-22	1977-06-22	53.243923	-110.04756	0064442	Abandoned	--	--	ABD											
16-23	0494012316002	CNRL HZ LLOYD 16-23-49-1	CANADIAN NATURAL RESOURCES LIMITED	SUSPENDED OIL	2011-08-12	2011-07-22	53.237114	-110.025401	0435374	Suspension	--	--	SUSP											
2/04-24	0494012404022	CNRL 4D LLOYD 4-24-49-1	CANADIAN NATURAL RESOURCES LIMITED	PUMPING OIL	2011-08-05	2011-07-22	53.236851	-110.025302	0435376	Issued	--	--	PUMP											
2/05-24	0494012405020	CNRL 5A LLOYD 5-24-49-1	CANADIAN NATURAL RESOURCES LIMITED	SUSPENDED OIL	2011-08-02	2011-07-22	53.236741	-110.025093	0435377	Suspension	--	--	SUSP											
A0/06-24	0494012406A00	MURPHY LLOYD 6A-24-49-1	MURPHY OIL COMPANY LTD.	MISCELLANEOUS	1975-07-30	1975-07-29	53.239105	-110.018854	0054401	Re-Entered	3907	August 24, 1976	ABDREE											
A0/06-24	0494012406A02	TIMBERWOLF RES LLOYD 6-24-49-1	TIMBERWOLF RESOURCES LTD.	ABANDONED	1997-09-21	1997-09-04	53.239078	-110.018857	0205745	RecCertified	00230455	July 5, 2006	ABD											
12-24	0494012412002	CNRL 12B LLOYD 12-24-49-1	CANADIAN NATURAL RESOURCES LIMITED	SUSPENDED OIL	2010-08-04	2010-06-02	53.241014	-110.028779	0420877	Suspension	--	--	SUSP											
15-24	0494012415000	CNRL LLOYD 15-24-49-1	CANADIAN NATURAL RESOURCES LIMITED	ABANDONED	2012-07-25	2012-05-24	53.240111	-110.018598	0446044	Abandoned	--	--	ABD											
A0/12-26	0494012612A00	S.C.C. LLOYD NO. 3	CENOVUS ENERGY INC.	ABANDONED	1952-07-28	1952-06-25	53.257159	-110.049613	0004900	RecExempt	9226	April 16, 1970	ABD											
C0/12-26	0494012612C00	SCC LLOYD NO. 2	CENOVUS ENERGY INC.	ABANDONED	1952-06-10	1952-06-06	53.25897	-110.052629	0004790	RecCertified	2696	December 2, 1970	ABD											
B0/08-27	0494012708B00	L.D.C. NO.27-2	KODIAK PETROLEUMS LTD.	ABANDONED	1955-06-13	1955-06-01	53.253519	-110.058949	0009505	RecExempt	8575	September 10, 1969	ABD											
3/09-27	0494012709033	HUSKY LLOYD 9-27-49-1	CENOVUS ENERGY INC.	ABANDONED	2001-08-22	2001-08-15	53.256651	-110.057686	0258603	Abandoned	--	--	ABD											
C0/09-27	0494012709C00	BLUE CROWN FLETCHER C.P.R. NO.4	CLARK, S.C.	ABANDONED	1953-08-31	1953-08-27	53.258975	-110.058946	0006998	RecExempt	9235	April 16, 1970	ABD											
D0/09-27	0494012709D00	L.D.C. 27-9-D	KODIAK PETROLEUMS LTD.	ABANDONED	1946-05-02	1957-06-07	53.258968	-110.055943	0013485	RecExempt	8576	September 11, 1969	ABD											
B0/15-27	0494012715B00	WESTERRA LLOYD 15-27-49-1	CENOVUS ENERGY INC.	ABANDONED	1955-06-08	1955-06-07	53.260778	-110.064985	0009535	Abandoned	--	--	ABD											
D0/15-27	0494012715D00	BLUE CROWN FLETCHER C.P.R. NO. 3	CLARK, S.C.	ABANDONED	1953-08-15	1953-08-17	53.262585	-110.061956	0006934	RecExempt	9234	April 16, 1970	ABD											
A0/16-27	0494012716A00	L.D.C. 27-16-A	KODIAK PETROLEUMS LTD.	ABANDONED	1944-09-25	1957-06-07	53.260774	-110.055946	0013484	RecExempt	8577	September 11, 1969	ABD											
A0/01-34	0494013401A00	L.D.C. NO. 46 WELL	MURPHY OIL COMPANY LTD.	ABANDONED	1952-11-21	1952-11-20	53.264393	-110.05595	0005676	RecCertified	17991	November 22, 1978	ABD											
A2/01-34	0494013401A20	WLEC LLOYD 1-34-49-1	WEST LAKE ENERGY CORP.	ABANDONED	1993-03-03	1991-03-01	53.264163	-110.056391	0148224	Abandoned	--	--	ABD											
B0/01-34	0494013401B02	L.D.C. NO. 48 WELL	NORTHWESTERN UTILITIES LIMITED	ABANDONED	1952-12-08	1952-11-28	53.264393	-110.058964	0005731	RecCertified	9354	May 8, 1970	ABD											
C0/01-34	0494013401C00	MURPHY LLOYD 1C-34-49-1	MURPHY OIL COMPANY LTD.	ABANDONED	1951-10-17	1951-09-27	53.2662	-110.058965	0003544	RecCertified	--	--	ABD											
C2/01-34	0494013401C22	WLEC LLOYD 1-34-49-1	WEST LAKE ENERGY CORP.	ABANDONED	1996-10-18	1996-10-11	53.266217	-110.058891	0192235	Abandoned	--	--	ABD											
D0/01-34	0494013401D00	L.D.C. NO 34	MURPHY OIL COMPANY LTD.	ABANDONED	1952-11-10	1952-11-07	53.2662	-110.055951	0005612	RecCertified	--	--	ABD											
A0/02-34	0494013402A00	L.D.C. NO. 47 WELL	MURPHY OIL COMPANY LTD.	ABANDONED	1952-11-27	1952-11-24	53.264392	-110.061976	0005701	RecCertified	27667	July 24, 1990	ABD											
A2/02-34	0494013402A22	WLEC LLOYD 2-34-49-1	WEST LAKE ENERGY CORP.	ABANDONED	1996-11-16	1996-10-11	53.264465	-110.062373	0192236	Abandoned	--	--	ABD											
A3/02-34	0494013402A30	WLEC LLOYD 2-34-49-1	WEST LAKE ENERGY CORP.	WATER INJECTION	1997-08-26	1997-08-13	53.267215	-110.065529	0204872	Abandoned	--	--	ABD											
B0/02-34	0494013402B00	L.D.C. NO. 49	KODIAK PETROLEUMS LTD.	ABANDONED	1952-12-03	1952-11-28	53.264392	-110.06499	0005730	RecExempt	8847	October 8, 1965	ABD											
C0/02-34	0494013402C00	L.D.C. NO. 30	KODIAK PETROLEUMS LTD.	ABANDONED	1952-11-16	1952-07-23	53.266199	-110.064991	0005044	RecExempt	8848	October 8, 1964	ABD											
C2/02-34	0494013402C22	WLEC LLOYD 2-34-49-1	WEST LAKE ENERGY CORP.	ABANDONED	1996-12-10	1996-11-04	53.266195	-110.064861	0193031	Abandoned	--	--	ABD											
D0/02-34	0494013402D00	L.D.C. LLOYD IN 2D-34-49-1	MURPHY OIL COMPANY LTD.	WATER INJECTION	1952-11-05	1952-11-04	53.266199	-110.061977	0005594	RecCertified	14979	October 28, 1975	ABD											
06-34	0494013406000	WLEC LLOYD 6-34-49-1	WEST LAKE ENERGY CORP.	ABANDONED	1996-11-12	1996-10-11	53.268637	-110.06587	0192238	Abandoned	--	--	ABD											
07-34	0494013407003	WLEC LLOYD 7-34-49-1	WEST LAKE ENERGY CORP.	ABANDONED	1988-10-06	1988-08-03	53.268249	-110.062384	0135303	Abandoned	--	--	ABD											
2/07-34	0494013407022	WLEC LLOYD 7-34-49-1	WEST LAKE ENERGY CORP.	WATER INJECTION	1996-11-29	1996-11-04	53.269859	-110.064932	0193039	Abandoned	--	--	ABD											
08-34	0494013408000	WLEC LLOYD 8-34-49-1	WEST LAKE ENERGY CORP.	ABANDONED	1996-10-19	1996-10-11	53.268338	-110.056052	0192237	Abandoned	--	--	ABD											
2/08-34	0494013408020	WLEC LLOYD 8-34-49-1	WEST LAKE ENERGY CORP.	ABANDONED	1996-11-21	1996-11-04	53.269859	-110.058939	0193044	Abandoned	--	--	ABD											
B0/08-34	0494013408B02	SPARKY #4	KODIAK PETROLEUMS LTD.	ABANDONED	1944-08-12	1944-07-25	53.268008	-110.05896	B0000740	RecCertified	1122	September 16, 1964	ABD											
2/09-34	0494013409020	EMERGO LLOYD 9-34-49-1	TWIN BUTTE ENERGY LTD.	ABANDONED	1970-06-01	1970-05-13	53.271624	-110.055496	0038143	RecCertified	--	--	ABD											
3/09-34	0494013409030	EMERGO LLOYD 9-34-49-1	TWIN BUTTE ENERGY LTD.	WATER INJECTION	1996-11-25	1996-11-04	53.273457	-110.058941	0193043	RecCertified	--	--	ABD											

Appendix B

Historical Land Titles
Findings of Database Searches
Correspondence with Governmental Agencies



LAND TITLE CERTIFICATE

S
LINC SHORT LEGAL TITLE NUMBER
0027 990 886 4;1;50;3;SW 162 203 262

LEGAL DESCRIPTION

MERIDIAN 4 RANGE 1 TOWNSHIP 50
SECTION 3
ALL THAT PORTION OF THE SOUTH WEST QUARTER
WHICH LIES SOUTH OF THE RIGHT OF WAY TO THE CANADIAN NORTHERN
RAILWAY AS SHOWN ON PLAN 3999R CONTAINING 29.1 HECTARES
(71.88 ACRES) MORE OR LESS.

EXCEPTING THEREOUT: HECTARES (ACRES) MORE OR LESS
A) PLAN 2033PX ROAD 2.04 5.05
B) PLAN 8322705 ROAD 1.276 3.15
C) PLAN 9924265 SUBDIVISION 6.19 15.30
EXCEPTING THEREOUT ALL MINES AND MINERALS

ESTATE: FEE SIMPLE

MUNICIPALITY: CITY OF LLOYDMINSTER

REFERENCE NUMBER: 992 179 857 +1

REGISTERED OWNER(S)
REGISTRATION DATE (DMY) DOCUMENT TYPE VALUE CONSIDERATION

162 203 262 28/07/2016 TRANSFER OF LAND \$4,800,000 \$4,800,000

OWNERS

1642869 ALBERTA LTD.
OF 35393 JADE DRIVE
ABBOTSFORD
BRITISH COLUMBIA V3G 3B6

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION
NUMBER DATE (D/M/Y) PARTICULARS

222 107 790 12/05/2022 MORTGAGE
MORTGAGEE - SYNERGY CREDIT UNION LTD.

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2
162 203 262

REGISTRATION
NUMBER DATE (D/M/Y) PARTICULARS

101, 4908-42 ST
LLOYDMINSTER
SASKATCHEWAN S9V0E5
ORIGINAL PRINCIPAL AMOUNT: \$3,000,000

222 107 791 12/05/2022 CAVEAT
RE : ASSIGNMENT OF RENTS AND LEASES
CAVEATOR - SYNERGY CREDIT UNION LTD.
101,4908-42T
LLOYDMINSTER
SASKATCHEWAN S9V0E5
AGENT - DONNON F REVERING

TOTAL INSTRUMENTS: 002

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 21 DAY OF
OCTOBER, 2024 AT 08:28 A.M.

ORDER NUMBER: 51933200

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED
FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER,
SUBJECT TO WHAT IS SET OUT IN THE PARAGRAPH BELOW.

THE ABOVE PROVISIONS DO NOT PROHIBIT THE ORIGINAL PURCHASER FROM
INCLUDING THIS UNMODIFIED PRODUCT IN ANY REPORT, OPINION,
APPRAISAL OR OTHER ADVICE PREPARED BY THE ORIGINAL PURCHASER AS
PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING
OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



LAND TITLE CERTIFICATE

S
LINC SHORT LEGAL TITLE NUMBER
0013 939 178 4;1;49;34;NW 192 092 810

LEGAL DESCRIPTION

THE NORTH WEST QUARTER OF SECTION THIRTY FOUR (34)
TOWNSHIP FORTY NINE (49)

RANGE ONE (1)

WEST OF THE FOURTH MERIDIAN

CONTAINING 64.7 HECTARES (160 ACRES) MORE OR LESS.

EXCEPTING THEREOUT:

A) 4.05 HECTARES (10.00 ACRES) MORE OR LESS, OUT OF THE

SAID QUARTER, FOR STOCKPILE SITE, AS SHOWN ON PLAN 2034PX

B) 0.251 HECTARES (0.62 ACRES) MORE OR LESS, OUT OF THE SAID QUARTER
AS SHOWN ON ROAD PLAN 8120427

C) 3.238 HECTARES (8.00 ACRES) MORE OR LESS, OUT OF THE SAID QUARTER,
AS SHOWN ON ROAD PLAN 8322705.

EXCEPTING THEREOUT ALL MINES AND MINERALS

ESTATE: FEE SIMPLE

MUNICIPALITY: CITY OF LLOYDMINSTER

REFERENCE NUMBER: 162 139 412

REGISTERED OWNER(S)				
REGISTRATION	DATE (DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
192 092 810	25/04/2019	TRANSFER OF LAND	\$10,600,000	\$1

OWNERS

FROG LAKE ECONOMIC DEVELOPMENT CORPORATION.

OF GENERAL DELIVERY

FROG LAKE

ALBERTA T0A 1M0

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2
192 092 810

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
961UK	15/10/1973	CAVEAT RE : EASEMENT CAVEATOR - ALBERTA POWER LIMITED.
752 123 962	11/09/1975	UTILITY RIGHT OF WAY GRANTEE - ALBERTA POWER LIMITED.
802 139 022	20/06/1980	UTILITY RIGHT OF WAY GRANTEE - ALBERTA POWER LIMITED.
902 175 053	15/06/1990	CAVEAT RE : EASEMENT CAVEATOR - ALBERTA POWER LIMITED. 10035 105 STREET, EDMONTON ALBERTA AGENT - LORRIE SAWCHUK
162 139 413	26/05/2016	CAVEAT RE : PURCHASERS INTEREST CAVEATOR - AXIOM HOLDINGS INC. PO BOX 21075 LLOYDMINSTER ALBERTA T9V2S1

TOTAL INSTRUMENTS: 005

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 21 DAY OF
OCTOBER, 2024 AT 08:32 A.M.

ORDER NUMBER: 51933259

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED
FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER,
SUBJECT TO WHAT IS SET OUT IN THE PARAGRAPH BELOW.

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INCLUDING THIS UNMODIFIED PRODUCT IN ANY REPORT, OPINION,
APPRAISAL OR OTHER ADVICE PREPARED BY THE ORIGINAL PURCHASER AS
PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING
OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



LAND TITLE CERTIFICATE

S
LINC SHORT LEGAL TITLE NUMBER
0036 552 579 4;1;49;34;NE 152 052 874 +1

LEGAL DESCRIPTION

MERIDIAN 4 RANGE 1 TOWNSHIP 49
SECTION 34
QUARTER NORTH EAST
CONTAINING 64.7 HECTARES (160 ACRES) MORE OR LESS.

EXCEPTING THEREOUT:

		HECTARES	(ACRES)	MORE OR LESS
A)	PLAN 3115PX ROAD	0.028	0.068	
B)	PLAN 8322705 ROAD	2.819	6.97	
C)	PLAN 0425808 ROAD	0.200	0.49	
D)	PLAN 0721697 SUBDIVISION	8.88	21.94	
E)	PLAN 1423737 SUBDIVISION	5.76	14.23	
F)	PLAN 1520781 SUBDIVISION	4.931	12.18	

EXCEPTING THEREOUT ALL MINES AND MINERALS

ESTATE: FEE SIMPLE

MUNICIPALITY: CITY OF LLOYDMINSTER

REFERENCE NUMBER: 142 269 582 +1

REGISTERED OWNER(S)
REGISTRATION DATE (DMY) DOCUMENT TYPE VALUE CONSIDERATION

152 052 874 13/02/2015 SUBDIVISION PLAN

OWNERS

AMMTIL ENTERPRISES LTD.
OF 1024 EDMONTON ROAD NW
CALGARY
ALBERTA T3A 2J3

(DATA UPDATED BY: CHANGE OF ADDRESS 152106113)

(DATA UPDATED BY: CHANGE OF ADDRESS 202065004)

 ENCUMBRANCES, LIENS & INTERESTS

PAGE 2
 # 152 052 874 +1

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
782 064 231	31/03/1978	UTILITY RIGHT OF WAY GRANTEE - THE COUNTY OF VERMILION RIVER NO. 24. BOX 69, 4912 50 ST KITSCOTY ALBERTA T0B2P0 "DATA UPDATED BY CHANGE OF ADDRESS FOR SERVICE 832181148 & TRANSFER OF UTRW 862248484" (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT OF WAY 042097707) (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT OF WAY 052295899)
972 332 289	29/10/1997	CAVEAT RE : UTILITY RIGHT OF WAY CAVEATOR - ALBERTA POWER LIMITED. ATTENTION: LAND & PROPERTIES 10035-105 STREET EDMONTON ALBERTA T5J2V6 AGENT - LORRIE SAWCHUK
072 116 732	28/02/2007	RESTRICTIVE COVENANT
082 100 431	05/03/2008	CAVEAT RE : UTILITY RIGHT OF WAY CAVEATOR - CENOVUS ENERGY INC. PO BOX 766, 225-6 AVENUE SW CALGARY ALBERTA T2P0M5 AGENT - DWAYNE L LUNDQUIST (DATA UPDATED BY: CHANGE OF NAME 222118035)
142 269 583	20/08/2014	CAVEAT RE : DEFERRED RESERVE CAVEATOR - THE CITY OF LLOYDMINSTER. 4420-50 AVENUE LLOYDMINSTER ALBERTA T9V0W2
142 269 586	20/08/2014	RESTRICTIVE COVENANT
152 052 871	13/02/2015	DISCHARGE OF UTILITY RIGHT OF WAY 782064231 PARTIAL EXCEPT PLAN/PORTION: 7720647
152 052 876	13/02/2015	CAVEAT RE : DEFERRED RESERVE CAVEATOR - THE CITY OF LLOYDMINSTER. 4420-50 AVENUE LLOYDMINSTER

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 3
152 052 874 +1

REGISTRATION
NUMBER DATE (D/M/Y) PARTICULARS

ALBERTA T9V0W2

152 077 010 10/03/2015 RESTRICTIVE COVENANT

152 080 151 12/03/2015 MORTGAGE
MORTGAGEE - BRENTWOOD VENTURES PROPERTIES INC.
1407,10088 102 AVE
EDMONTON
ALBERTA T5J2Z1
ORIGINAL PRINCIPAL AMOUNT: \$590,000

202 163 978 11/08/2020 AMENDING AGREEMENT
AMOUNT: \$365,000
AFFECTS INSTRUMENT: 152080151

TOTAL INSTRUMENTS: 011

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 21 DAY OF
OCTOBER, 2024 AT 08:33 A.M.

ORDER NUMBER: 51933281

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED
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APPRAISAL OR OTHER ADVICE PREPARED BY THE ORIGINAL PURCHASER AS
PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING
OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



LAND TITLE CERTIFICATE

S
LINC SHORT LEGAL TITLE NUMBER
0013 864 905 4;1;49;34;SE 902 327 358

LEGAL DESCRIPTION
MERIDIAN 4 RANGE 1 TOWNSHIP 49
SECTION 34
QUARTER SOUTH EAST
EXCEPTING THEREOUT ALL MINES AND MINERALS
AREA: 64.7 HECTARES (160 ACRES) MORE OR LESS

ESTATE: FEE SIMPLE

MUNICIPALITY: CITY OF LLOYDMINSTER

REFERENCE NUMBER: 822 256 060

REGISTERED OWNER(S)
REGISTRATION DATE (DMY) DOCUMENT TYPE VALUE CONSIDERATION

902 327 358 09/11/1990 TRANSFER OF LAND \$155,000 \$155,000

OWNERS

AMMTIL ENTERPRISES LTD.
OF 238, 900 ARBOUR LAKE ROAD NW
CALGARY
ALBERTA T3G 5J1

(DATA UPDATED BY: CHANGE OF ADDRESS 022475212)

(DATA UPDATED BY: CHANGE OF ADDRESS 152106113)

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION
NUMBER DATE (D/M/Y) PARTICULARS

782 064 233 31/03/1978 UTILITY RIGHT OF WAY
GRANTEE - THE COUNTY OF VERMILION RIVER NO. 24.
BOX 69, 4912 50 ST
KITSCOTY
ALBERTA T0B2P0
AS TO PORTION OR PLAN: 7720647
"DATA UPDATED BY TRANSFER OF UTRW NO. 862248484
DATA UPDATED BY CHANGE OF ADDRESS NO. 832181148

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2
902 327 358

REGISTRATION
NUMBER DATE (D/M/Y) PARTICULARS

TAKES PRIORITY DATE OF CAVE 762139290 PART"
(DATA UPDATED BY: TRANSFER OF UTILITY RIGHT
OF WAY 042097708)
(DATA UPDATED BY: TRANSFER OF UTILITY RIGHT
OF WAY 052295899)

882 296 256 10/12/1988 CAVEAT
RE : UTILITY RIGHT OF WAY
CAVEATOR - RIDGEBACK RESOURCES INC.
PO BOX 1958, STATION M
CALGARY
ALBERTA T2P2M2
 (DATA UPDATED BY: TRANSFER OF CAVEAT
 962328054)
 (DATA UPDATED BY: TRANSFER OF CAVEAT
 122379679)
 (DATA UPDATED BY: CHANGE OF NAME 132163343)
 (DATA UPDATED BY: TRANSFER OF CAVEAT
 172250899)

962 288 816 21/10/1996 CAVEAT
RE : SURFACE LEASE
CAVEATOR - WEST LAKE ENERGY CORP.
SUITE 410, 396 - 11 AVENUE SW
CALGARY
ALBERTA T2R0C5
 (DATA UPDATED BY: TRANSFER OF CAVEAT
 002357117)
 (DATA UPDATED BY: CHANGE OF NAME 012257600)
 (DATA UPDATED BY: CHANGE OF ADDRESS 032291000)
 (DATA UPDATED BY: TRANSFER OF CAVEAT
 102172559)
 (DATA UPDATED BY: CHANGE OF ADDRESS 122070055)
 (DATA UPDATED BY: CHANGE OF NAME 182098213)
 (DATA UPDATED BY: TRANSFER OF CAVEAT
 192042870)

962 288 817 21/10/1996 CAVEAT
RE : SURFACE LEASE
CAVEATOR - WEST LAKE ENERGY CORP.
SUITE 410, 396 - 11 AVENUE SW
CALGARY
ALBERTA T2R0C5
 (DATA UPDATED BY: TRANSFER OF CAVEAT
 002357117)
 (DATA UPDATED BY: CHANGE OF NAME 012257600)
 (DATA UPDATED BY: CHANGE OF ADDRESS 032291000)
 (DATA UPDATED BY: TRANSFER OF CAVEAT
 102172559)

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTSPAGE 3
902 327 358

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
		(DATA UPDATED BY: CHANGE OF ADDRESS 122070055) (DATA UPDATED BY: CHANGE OF NAME 182098213) (DATA UPDATED BY: TRANSFER OF CAVEAT 192042870)
962 288 818	21/10/1996	CAVEAT RE : SURFACE LEASE CAVEATOR - WEST LAKE ENERGY CORP. SUITE 410, 396 - 11 AVENUE SW CALGARY ALBERTA T2R0C5 (DATA UPDATED BY: TRANSFER OF CAVEAT 002357117) (DATA UPDATED BY: CHANGE OF NAME 012257600) (DATA UPDATED BY: CHANGE OF ADDRESS 032291000) (DATA UPDATED BY: TRANSFER OF CAVEAT 102151732) (DATA UPDATED BY: CHANGE OF ADDRESS 122070055) (DATA UPDATED BY: CHANGE OF NAME 182098211) (DATA UPDATED BY: TRANSFER OF CAVEAT 192042818)
962 288 819	21/10/1996	CAVEAT RE : SURFACE LEASE CAVEATOR - WEST LAKE ENERGY CORP. SUITE 410, 396 - 11 AVENUE SW CALGARY ALBERTA T2R0C5 (DATA UPDATED BY: TRANSFER OF CAVEAT 002357117) (DATA UPDATED BY: CHANGE OF NAME 012257600) (DATA UPDATED BY: CHANGE OF ADDRESS 032291000) (DATA UPDATED BY: TRANSFER OF CAVEAT 102151732) (DATA UPDATED BY: CHANGE OF ADDRESS 122070055) (DATA UPDATED BY: CHANGE OF NAME 182098214) (DATA UPDATED BY: TRANSFER OF CAVEAT 192042874)
962 318 291	20/11/1996	CAVEAT RE : SURFACE LEASE CAVEATOR - WEST LAKE ENERGY CORP. SUITE 410, 396 - 11 AVENUE SW CALGARY ALBERTA T2R0C5 (DATA UPDATED BY: TRANSFER OF CAVEAT 002357118) (DATA UPDATED BY: CHANGE OF NAME 012257601) (DATA UPDATED BY: TRANSFER OF CAVEAT

(CONTINUED)

 ENCUMBRANCES, LIENS & INTERESTS

PAGE 4
 # 902 327 358

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
		102172559) (DATA UPDATED BY: CHANGE OF NAME 122069740) (DATA UPDATED BY: TRANSFER OF CAVEAT 192042873)
962 318 292	20/11/1996	CAVEAT RE : SURFACE LEASE CAVEATOR - WEST LAKE ENERGY CORP. SUITE 410, 396 - 11 AVENUE SW CALGARY ALBERTA T2R0C5 (DATA UPDATED BY: TRANSFER OF CAVEAT 002357118) (DATA UPDATED BY: CHANGE OF NAME 012257601) (DATA UPDATED BY: TRANSFER OF CAVEAT 102151732) (DATA UPDATED BY: CHANGE OF NAME 122069740) (DATA UPDATED BY: TRANSFER OF CAVEAT 192042871)
962 318 293	20/11/1996	CAVEAT RE : SURFACE LEASE CAVEATOR - WEST LAKE ENERGY CORP. SUITE 410, 396 - 11 AVENUE SW CALGARY ALBERTA T2R0C5 (DATA UPDATED BY: TRANSFER OF CAVEAT 002357118) (DATA UPDATED BY: CHANGE OF NAME 012257601) (DATA UPDATED BY: TRANSFER OF CAVEAT 102151732) (DATA UPDATED BY: CHANGE OF NAME 122069740) (DATA UPDATED BY: TRANSFER OF CAVEAT 192042906)
972 120 476	01/05/1997	UTILITY RIGHT OF WAY GRANTEE - WEST LAKE ENERGY CORP. SUITE 410, 396 - 11 AVENUE SW CALGARY ALBERTA T2R0C5 (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT OF WAY 002334340) (DATA UPDATED BY: CHANGE OF NAME 012258290) (DATA UPDATED BY: CHANGE OF NAME 122222581) (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT OF WAY 152049715) (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT OF WAY 192049175)

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 5
902 327 358

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
972 260 668	28/08/1997	CAVEAT RE : SURFACE LEASE UNDER 20 ACRES CAVEATOR - WEST LAKE ENERGY CORP. SUITE 410, 396 - 11 AVENUE SW CALGARY ALBERTA T2R0C5 (DATA UPDATED BY: TRANSFER OF CAVEAT 002357120) (DATA UPDATED BY: CHANGE OF NAME 012257829) (DATA UPDATED BY: CHANGE OF ADDRESS 032291027) (DATA UPDATED BY: TRANSFER OF CAVEAT 102172559) (DATA UPDATED BY: CHANGE OF NAME 122069732) (DATA UPDATED BY: TRANSFER OF CAVEAT 192042870)
972 260 669	28/08/1997	CAVEAT RE : SURFACE LEASE UNDER 20 ACRES CAVEATOR - WEST LAKE ENERGY CORP. SUITE 410, 396 - 11 AVENUE SW CALGARY ALBERTA T2R0C5 (DATA UPDATED BY: TRANSFER OF CAVEAT 002357120) (DATA UPDATED BY: CHANGE OF NAME 012257829) (DATA UPDATED BY: CHANGE OF ADDRESS 032291028) (DATA UPDATED BY: TRANSFER OF CAVEAT 102151135) (DATA UPDATED BY: CHANGE OF NAME 122069732) (DATA UPDATED BY: TRANSFER OF CAVEAT 192042871)
972 332 289	29/10/1997	CAVEAT RE : UTILITY RIGHT OF WAY CAVEATOR - ALBERTA POWER LIMITED. ATTENTION: LAND & PROPERTIES 10035-105 STREET EDMONTON ALBERTA T5J2V6 AGENT - LORRIE SAWCHUK
982 001 249	03/01/1998	CAVEAT RE : UTILITY RIGHT OF WAY CAVEATOR - THE COUNTY OF VERMILION RIVER NO. 24. BOX 69, KITSKOTY ALBERTA T0B2P0
012 100 517	11/04/2001	CAVEAT RE : SURFACE RIGHTS BOARD ORDER

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 6
902 327 358

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

CAVEATOR - WEST LAKE ENERGY CORP.
SUITE 410, 396 - 11 AVENUE SW
CALGARY
ALBERTA T2R0C5

(DATA UPDATED BY: CHANGE OF NAME 012257017)
(DATA UPDATED BY: CHANGE OF ADDRESS 032292287)
(DATA UPDATED BY: TRANSFER OF CAVEAT
102151135)
(DATA UPDATED BY: CHANGE OF NAME 122051544)
(DATA UPDATED BY: TRANSFER OF CAVEAT
192046928)

012 100 583 11/04/2001 CAVEAT

RE : SURFACE RIGHTS BOARD ORDER
CAVEATOR - WEST LAKE ENERGY CORP.
SUITE 410, 396 - 11 AVENUE SW
CALGARY
ALBERTA T2R0C5

(DATA UPDATED BY: CHANGE OF NAME 012257017)
(DATA UPDATED BY: CHANGE OF ADDRESS 032292287)
(DATA UPDATED BY: TRANSFER OF CAVEAT
102151135)
(DATA UPDATED BY: CHANGE OF NAME 122051544)
(DATA UPDATED BY: TRANSFER OF CAVEAT
192042817)

082 100 439 05/03/2008 CAVEAT

RE : UTILITY RIGHT OF WAY
CAVEATOR - CENOVUS ENERGY INC.
PO BOX 766, 225-6 AVENUE SW
CALGARY
ALBERTA T2P0M5

AGENT - DWAYNE L LUNDQUIST
(DATA UPDATED BY: CHANGE OF NAME 222118035)

TOTAL INSTRUMENTS: 017

(CONTINUED)

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 21 DAY OF
OCTOBER, 2024 AT 08:35 A.M.

ORDER NUMBER: 51933312

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED
FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER,
SUBJECT TO WHAT IS SET OUT IN THE PARAGRAPH BELOW.

THE ABOVE PROVISIONS DO NOT PROHIBIT THE ORIGINAL PURCHASER FROM
INCLUDING THIS UNMODIFIED PRODUCT IN ANY REPORT, OPINION,
APPRAISAL OR OTHER ADVICE PREPARED BY THE ORIGINAL PURCHASER AS
PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING
OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



LAND TITLE CERTIFICATE

M
LINC SHORT LEGAL TITLE NUMBER
0016 287 567 4;1;49;27;NE 152 358 542 +5

LEGAL DESCRIPTION

* ALL MINES AND MINERALS WITHIN, UPON OR UNDER:
MERIDIAN 4 RANGE 1 TOWNSHIP 49
SECTION 27
QUARTER NORTH EAST
AREA: 64.7 HECTARES (160 ACRES) MORE OR LESS

ESTATE: FEE SIMPLE

MUNICIPALITY: COUNTY OF VERMILION RIVER

REFERENCE NUMBER: 092 416 117 +11

 REGISTERED OWNER(S)
REGISTRATION DATE (DMY) DOCUMENT TYPE VALUE CONSIDERATION

152 358 542 18/11/2015 TRANSFER OF LAND SEE INSTRUMENT

OWNERS

HERITAGE ROYALTY RESOURCE CORP.
OF 710, 215-2 STREET SW
CALGARY
ALBERTA T2P 1M4
(DATA UPDATED BY: CHANGE OF ADDRESS 242172853)

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION
NUMBER DATE (D/M/Y) PARTICULARS

912 316 803 18/11/1991 CAVEAT
 RE : SEE CAVEAT
 CAVEATOR - CENOVUS ENERGY INC.
 PO BOX 766, 225-6 AVENUE SW
 CALGARY
 ALBERTA T2P0M5
 (DATA UPDATED BY: CHANGE OF NAME 232167281)

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

152 358 542 +5

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

972 214 084 22/07/1997 CAVEAT
RE : LEASE
CAVEATOR - CENOVUS ENERGY INC.
PO BOX 766, 225-6 AVENUE SW
CALGARY
ALBERTA T2P0M5
AGENT - BRIAN J BASS
(DATA UPDATED BY: CHANGE OF NAME 232175406)

012 069 125 09/03/2001 CAVEAT
RE : ASSIGNMENT OF LEASE
CAVEATOR - ATCO GAS AND PIPELINES LTD.
400, 909-11 AVE SW
CALGARY
ALBERTA T2R1L8
AGENT - KATHY MOORE

022 185 458 28/05/2002 CAVEAT
RE : BENEFICIAL OWNER
CAVEATOR - WESTERRA 2000 INC.
C/O GOWLING LAFLEUR HENDERSOIN
ATTN: JUSTIN K LOUIE
1400, 700 2ND STREET SW
CALGARY
ALBERTA T2P4V5
AGENT - JUSTIN K LOUIE

032 094 452 17/03/2003 CAVEAT
RE : LEASE
CAVEATOR - RIFE RESOURCES LTD.
400,144-4TH AVE.SW
CALGARY
ALBERTA T2P3N4
(DATA UPDATED BY: TRANSFER OF CAVEAT
072554165)

TOTAL INSTRUMENTS: 005

(CONTINUED)

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 21 DAY OF
OCTOBER, 2024 AT 08:38 A.M.

ORDER NUMBER: 51933430

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED
FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER,
SUBJECT TO WHAT IS SET OUT IN THE PARAGRAPH BELOW.

THE ABOVE PROVISIONS DO NOT PROHIBIT THE ORIGINAL PURCHASER FROM
INCLUDING THIS UNMODIFIED PRODUCT IN ANY REPORT, OPINION,
APPRAISAL OR OTHER ADVICE PREPARED BY THE ORIGINAL PURCHASER AS
PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING
OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



LAND TITLE CERTIFICATE

M	LINC	SHORT LEGAL	TITLE NUMBER
	0017 983 867	4;1;49;27;NW	152 358 542 +3
	0023 831 423	4;1;49;27;SW	
	0023 831 431	4;1;49;27;SE	

LEGAL DESCRIPTION

FIRST

*ALL MINES AND MINERALS AND THE RIGHT TO WORK THE SAME
WITHIN, UPON OR UNDER:
MERIDIAN 4 RANGE 1 TOWNSHIP 49
SECTION 27
QUARTER NORTH WEST
AREA: 64.7 HECTARES (160 ACRES) MORE OR LESS

SECOND

*ALL MINES AND MINERALS AND THE RIGHT TO WORK THE SAME
WITHIN, UPON OR UNDER:
MERIDIAN 4 RANGE 1 TOWNSHIP 49
SECTION 27
QUARTER SOUTH WEST
AREA: 64.7 HECTARES (160 ACRES) MORE OR LESS

THIRD

*ALL MINES AND MINERALS AND THE RIGHT TO WORK THE SAME
WITHIN, UPON OR UNDER:
MERIDIAN 4 RANGE 1 TOWNSHIP 49
SECTION 27
QUARTER SOUTH EAST
AREA: 64.7 HECTARES (160 ACRES) MORE OR LESS

ESTATE: FEE SIMPLE

MUNICIPALITY: COUNTY OF VERMILION RIVER

REFERENCE NUMBER: 092 405 895 +4

(CONTINUED)

REGISTRATION	DATE (DMY)	REGISTERED OWNER(S) DOCUMENT TYPE	VALUE	CONSIDERATION
152 358 542	18/11/2015	TRANSFER OF LAND		SEE INSTRUMENT

OWNERS

HERITAGE ROYALTY RESOURCE CORP.
OF 710, 215-2 STREET SW
CALGARY
ALBERTA T2P 1M4
(DATA UPDATED BY: CHANGE OF ADDRESS 242172851)

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION NUMBER	DATE (D/M/Y)	PARTICULARS
912 316 803	18/11/1991	CAVEAT RE : SEE CAVEAT CAVEATOR - CENOVUS ENERGY INC. PO BOX 766, 225-6 AVENUE SW CALGARY ALBERTA T2P0M5 "(M & M AS DESC.)" (DATA UPDATED BY: CHANGE OF NAME 232167281)
972 214 084	22/07/1997	CAVEAT RE : LEASE CAVEATOR - CENOVUS ENERGY INC. PO BOX 766, 225-6 AVENUE SW CALGARY ALBERTA T2P0M5 AGENT - BRIAN J BASS (DATA UPDATED BY: CHANGE OF NAME 232175406)
022 185 458	28/05/2002	CAVEAT RE : BENEFICIAL OWNER CAVEATOR - WESTERRA 2000 INC. C/O GOWLING LAFLEUR HENDERSOIN ATTN: JUSTIN K LOUIE 1400, 700 2ND STREET SW CALGARY ALBERTA T2P4V5 AGENT - JUSTIN K LOUIE
032 094 453	17/03/2003	CAVEAT RE : LEASE CAVEATOR - RIFE RESOURCES LTD. 400,144-4TH AVE.SW

(CONTINUED)

REGISTRATION
NUMBER DATE (D/M/Y) PARTICULARS

CALGARY
ALBERTA T2P3N4
(DATA UPDATED BY: TRANSFER OF CAVEAT
072554165)

TOTAL INSTRUMENTS: 004

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 21 DAY OF
OCTOBER, 2024 AT 08:40 A.M.

ORDER NUMBER: 51933468

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED
FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER,
SUBJECT TO WHAT IS SET OUT IN THE PARAGRAPH BELOW.

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INCLUDING THIS UNMODIFIED PRODUCT IN ANY REPORT, OPINION,
APPRAISAL OR OTHER ADVICE PREPARED BY THE ORIGINAL PURCHASER AS
PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING
OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



LAND TITLE CERTIFICATE

M
LINC SHORT LEGAL TITLE NUMBER
0023 830 110 4;1;49;26;NW 242 161 904 +8

LEGAL DESCRIPTION

*ALL MINES AND MINERALS AND THE RIGHT TO WORK THE SAME
WITHIN, UPON OR UNDER:
MERIDIAN 4 RANGE 1 TOWNSHIP 49
SECTION 26
QUARTER NORTH WEST

ESTATE: FEE SIMPLE

MUNICIPALITY: CITY OF LLOYDMINSTER

REFERENCE NUMBER: 072 618 503

REGISTERED OWNER(S)
REGISTRATION DATE (DMY) DOCUMENT TYPE VALUE CONSIDERATION

242 161 904 02/07/2024 TRANSFER OF LAND \$85,000 NOMINAL

OWNERS

CANPAR HOLDINGS LTD.
OF 1000, 517-10TH AVENUE SW
CALGARY
ALBERTA T2R 0A8
AS TO AN UNDIVIDED 9.5625% INTEREST

CANADIAN NATURAL RESOURCES LIMITED.
OF BOX 6926, STATION "D"
CALGARY
ALBERTA T2P 2G1
AS TO AN UNDIVIDED 27.8275% INTEREST

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION
NUMBER DATE (D/M/Y) PARTICULARS

283UN 03/12/1973 CAVEAT

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2
242 161 904 +8

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

CAVEATOR - CANADIAN NATURAL RESOURCES LIMITED.
BOX 6926, STATION "D"
CALGARY
ALBERTA T2P2G1
(DATA UPDATED BY: TRANSFER OF CAVEAT
022207215)

802 202 863 04/09/1980 CAVEAT
CAVEATOR - CANADIAN NATURAL RESOURCES LIMITED.
BOX 6926, STATION "D"
CALGARY
ALBERTA T2P2G1
"(M & M AS DESC.)"
(DATA UPDATED BY: TRANSFER OF CAVEAT
022207215)

862 152 847 22/07/1986 CAVEAT
RE : ROYALTY AGREEMENT , ETC.
CAVEATOR - CANPAR HOLDINGS LTD.
P.O. BOX 2246,STN "M"
CALGARY
ALBERTA T2P2M6
AGENT - DAVID J SANDMEYER
"DATA UPDATED BY CHANGE OF ADDRESS FOR SERVICE
#982124205"

TOTAL INSTRUMENTS: 003

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 21 DAY OF
OCTOBER, 2024 AT 08:44 A.M.

ORDER NUMBER: 51933586

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

(CONTINUED)

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER, SUBJECT TO WHAT IS SET OUT IN THE PARAGRAPH BELOW.

THE ABOVE PROVISIONS DO NOT PROHIBIT THE ORIGINAL PURCHASER FROM INCLUDING THIS UNMODIFIED PRODUCT IN ANY REPORT, OPINION, APPRAISAL OR OTHER ADVICE PREPARED BY THE ORIGINAL PURCHASER AS PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



LAND TITLE CERTIFICATE

S	LINC	SHORT LEGAL	TITLE NUMBER
	0012 884 657	4;1;49;22;NW	902 098 347
	0012 884 664	4;1;49;22;NE✓	
	0012 884 672	4;1;49;22;SW	
	0012 884 680	4;1;49;22;SE✓	

LEGAL DESCRIPTION

FIRST

THE NORTH WEST QUARTER OF SECTION TWENTY
TOWNSHIP FORTY NINE (49)
RANGE ONE (1)
WEST OF THE FOURTH MERIDIAN
CONTAINING 64.7 HECTARE (160 ACRES) MORE
EXCEPTING THEREOUT:
0.416 HECTARES (1.03 ACRES) MORE OR LESS
AS SHOWN ON ROAD PLAN 8222347.
EXCEPTING THEREOUT ALL MINES AND MINERALS

a of the exact same.

SECOND

THE NORTH EAST QUARTER OF SECTION TWENTY
TOWNSHIP FORTY NINE (49)
RANGE ONE (1)
WEST OF THE FOURTH MERIDIAN
CONTAINING 64.7 HECTARE (160 ACRES) MORE OR LESS
EXCEPTING THEREOUT:
0.417 HECTARES (1.03 ACRES) MORE OR LESS
AS SHOWN ON ROAD PLAN 8222347
EXCEPTING THEREOUT ALL MINES AND MINERALS

THIRD

THE SOUTH WEST QUARTER OF SECTION TWENTY TWO (22)
TOWNSHIP FORTY NINE (49)
RANGE ONE (1)
WEST OF THE FOURTH MERIDIAN
CONTAINING 64.7 HECTARE (160 ACRES) MORE OR LESS
EXCEPTING THEREOUT ALL MINES AND MINERALS

FOURTH

THE SOUTH EAST QUARTER OF SECTION TWENTY TWO (22)
TOWNSHIP FORTY NINE (49)
RANGE ONE (1)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 4
902 098 347

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

132097099)

062 483 387 24/10/2006 CAVEAT
RE : SURFACE LEASE UNDER 20 ACRES
CAVEATOR - GEAR ENERGY LTD.
800, 205-5 AVE SW
CALGARY
ALBERTA T2P2V7
AFFECTED LAND: 4;1;49;22;SW
4;1;49;22;SE
(DATA UPDATED BY: TRANSFER OF CAVEAT
212013306)

072 114 483 27/02/2007 CAVEAT
RE : SURFACE LEASE
CAVEATOR - CANADIAN NATURAL RESOURCES LIMITED.
BOX 6926, STATION "D"
CALGARY
ALBERTA T2P2G1
AGENT - PIONEER LAND SERVICES LTD.
AFFECTED LAND: 4;1;49;22;NE

082 240 649 16/06/2008 CAVEAT
RE : UTILITY RIGHT OF WAY
CAVEATOR - CENOVUS ENERGY INC.
PO BOX 766, 225-6 AVENUE SW
CALGARY
ALBERTA T2P0M5
AGENT - DWAYNE L LUNDQUIST
AFFECTED LAND: 4;1;49;22;NW
(DATA UPDATED BY: CHANGE OF NAME 222118058)

082 240 653 16/06/2008 CAVEAT
RE : UTILITY RIGHT OF WAY
CAVEATOR - CENOVUS ENERGY INC.
PO BOX 766, 225-6 AVENUE SW
CALGARY
ALBERTA T2P0M5
AGENT - DWAYNE L LUNDQUIST
AFFECTED LAND: 4;1;49;22;NE
(DATA UPDATED BY: CHANGE OF NAME 222118058)

242 022 747 22/01/2024 CONSTRUCTION LIEN
LIENOR - ENSIGN WELL SERVICING A DIVISION OF ENSIGN
DRILLING INC.
C/O DENTONS CANADA LLP
2500 STANTEC TOWER
10220-103 AVENUE NW
EDMONTON

(CONTINUED)

REGISTRATION
NUMBER DATE (D/M/Y) PARTICULARS

ALBERTA T5J0K4
AGENT - JUSTIN LOUIE
AMOUNT: \$16,875
RECEIVED ON 2023-12-22

242 156 226 25/06/2024 CERTIFICATE OF LIS PENDENS
AFFECTS INSTRUMENT: 242022747
RECEIVED JUNE 6, 2024

TOTAL INSTRUMENTS: 012

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 21 DAY OF
OCTOBER, 2024 AT 08:49 A.M.

ORDER NUMBER: 51933668

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED
FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER,
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APPRAISAL OR OTHER ADVICE PREPARED BY THE ORIGINAL PURCHASER AS
PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING
OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



LAND TITLE CERTIFICATE

S

LINC SHORT LEGAL
0012 884 813 4;1;49;23;NW
0012 884 821 4;1;49;23;NE

TITLE NUMBER
902 098 554

LEGAL DESCRIPTION

FIRST

MERIDIAN 4 RANGE 1 TOWNSHIP 49
SECTION 23
QUARTER NORTH WEST
EXCEPTING THEREOUT ALL MINES AND MINERALS
AND THE RIGHT TO WORK THE SAME
AREA: 64.7 HECTARES (160 ACRES) MORE OR LESS

SECOND

MERIDIAN 4 RANGE 1 TOWNSHIP 49
SECTION 23
QUARTER NORTH EAST
CONTAINING 64.7 HECTARES (160 ACRES) MORE OR LESS
EXCEPTING THEREOUT:
0.421 HECTARES (1.04 ACRES), MORE OR LESS
FOR ROAD, AS SHOWN ON ROAD PLAN 443RS
EXCEPTING THEREOUT ALL MINES AND MINERALS
AND THE RIGHT TO WORK THE SAME

ESTATE: FEE SIMPLE

MUNICIPALITY: CITY OF LLOYDMINSTER

REFERENCE NUMBER: 812 240 396 H

REGISTERED OWNER(S)				
REGISTRATION	DATE (DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
902 098 554	09/04/1990	TRANSFER OF LAND	\$213,700	\$1

OWNERS

GERHARD CZERWIONKA
OF GRAF-PREYSING-STRASSE 16
84056 ROTTENGURG A.D. LAABER
GERMANY

(DATA UPDATED BY: CHANGE OF ADDRESS 232383032)

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2
902 098 554

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
1896VD	16/10/1974	UTILITY RIGHT OF WAY GRANTEE - PLAINS MIDSTREAM CANADA ULC. (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT OF WAY 022048459) (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT OF WAY 112012907)
762 033 337	27/02/1976	UTILITY RIGHT OF WAY GRANTEE - ALBERTA POWER LIMITED. AFFECTED LAND: 4;1;49;23;NW
782 019 789	30/01/1978	CAVEAT RE : LEASE CAVEATOR - CANADIAN NATURAL RESOURCES LIMITED. CALGARY PLACE POSTAL OUTLET P.O.BOX 20004 CALGARY ALBERTA T2P4J2 AGENT - A M KNIGHT AFFECTED LAND: 4;1;49;23;NW (DATA UPDATED BY: TRANSFER OF CAVEAT 942110266) (DATA UPDATED BY: CHANGE OF ADDRESS 992006544)
782 064 101	31/03/1978	UTILITY RIGHT OF WAY GRANTEE - THE COUNTY OF VERMILION RIVER NO. 24. BOX 69, 4942 50 ST KITSCOTY ALBERTA T0B2P0 "TAKE PRIORITY DATE OF CAVEAT 762139286 DATA UPDATED BY CHANGE OF NAME & ADDRESS 832181148" (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT OF WAY 052295901)
852 215 522	03/10/1985	UTILITY RIGHT OF WAY GRANTEE - THE COUNTY OF VERMILION RIVER NO. 24. AFFECTED LAND: 4;1;49;23;NE
902 098 552	09/04/1990	LIFE ESTATE TITLE IN FAVOUR OF - RUDOLF CZERWIONKA IN FAVOUR OF - HILDEGARD CZERWIONKA BOTH OF: C/O ROLA WEINBRENNEREI UND LIKORFABRIK, G.M.B.H. & CO KG 8303 NEIDERHATZKOFEN, LANDKREIS LANDSHUT WEST GERMANY AS JOINT TENANTS
942 232 011	26/07/1994	UTILITY RIGHT OF WAY

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 3
902 098 554

REGISTRATION
NUMBER DATE (D/M/Y) PARTICULARS

GRANTEE - ATCO GAS AND PIPELINES LTD.
10035-105 ST
EDMONTON
ALBERTA T5J2V6
AFFECTED LAND: 4;1;49;23;NE
(DATA UPDATED BY: TRANSFER OF UTILITY RIGHT
OF WAY 012021995)

132 105 924 16/04/2013 DISCHARGE OF UTILITY RIGHT OF WAY 942232011
PARTIAL
EXCEPT PLAN/PORTION: 9422938

TOTAL INSTRUMENTS: 008

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 21 DAY OF
OCTOBER, 2024 AT 08:59 A.M.

ORDER NUMBER: 51933862

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED
FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER,
SUBJECT TO WHAT IS SET OUT IN THE PARAGRAPH BELOW.

THE ABOVE PROVISIONS DO NOT PROHIBIT THE ORIGINAL PURCHASER FROM
INCLUDING THIS UNMODIFIED PRODUCT IN ANY REPORT, OPINION,
APPRAISAL OR OTHER ADVICE PREPARED BY THE ORIGINAL PURCHASER AS
PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING
OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



LAND TITLE CERTIFICATE

S
LINC SHORT LEGAL TITLE NUMBER
0012 884 797 4;1;49;23;SE 902 098 488

LEGAL DESCRIPTION

THE SOUTH EAST QUARTER OF SECTION TWENTY THREE (23)
TOWNSHIP FORTY NINE (49)
RANGE ONE (1)
WEST OF THE FOURTH MERIDIAN
CONTAINING 64.7 HECTARES (160 ACRES), MORE OR LESS.
EXCEPTING THEREOUT:
0.417 HECTARES (1.03 ACRES), MORE OR LESS, AS SHOWN ON ROAD
PLAN 443RS
EXCEPTING THEREOUT ALL MINES AND MINERALS
AND THE RIGHT TO WORK THE SAME

ESTATE: FEE SIMPLE

MUNICIPALITY: CITY OF LLOYDMINSTER

REFERENCE NUMBER: 812 240 396 J

REGISTERED OWNER(S)				
REGISTRATION	DATE (DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
902 098 488	09/04/1990	TRANSFER OF LAND	\$128,800	\$1

OWNERS

GERHARD CZERWIONKA
OF GRAF-PREYSING-STRASSE 16
84056 ROTTENGURG A.D. LAABER
GERMANY

(DATA UPDATED BY: CHANGE OF ADDRESS 232383032)

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION	DATE (D/M/Y)	PARTICULARS
1895VD	16/10/1974	UTILITY RIGHT OF WAY GRANTEE - PLAINS MIDSTREAM CANADA ULC. (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTSPAGE 2
902 098 488

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
		OF WAY 022048460) (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT OF WAY 112012907)
782 064 105	31/03/1978	UTILITY RIGHT OF WAY GRANTEE - THE COUNTY OF VERMILION RIVER NO. 24. BOX 69, 4912 50 ST KITSCOTY ALBERTA T0B2P0 "TAKES PRIORITY DATE OF CAVEAT 762139285 DATA UPDATED BY CHANGE OF ADDRESS FOR SERVICE 832181148 DATA UPDATED BY TRANSFER OF UTRW 862243484" (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT OF WAY 042097655) (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT OF WAY 052295899)
852 215 524	03/10/1985	UTILITY RIGHT OF WAY GRANTEE - THE COUNTY OF VERMILION RIVER NO. 24.
902 098 480	09/04/1990	LIFE ESTATE TITLE IN FAVOUR OF - RUDOLF CZERWIONKA IN FAVOUR OF - HILDEGARD CZERWIONKA BOTH OF: C/O ROLA WEINBRENNEREI UND LIKORFABRIK, G.M.B.H. & CO KG 8303 NEIDERHATZKOFEN, LANDKREIS LANDSHUT WEST GERMANY AS JOINT TENANTS
942 232 011	26/07/1994	UTILITY RIGHT OF WAY GRANTEE - ATCO GAS AND PIPELINES LTD. 10035-105 ST EDMONTON ALBERTA T5J2V6 (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT OF WAY 012021995)

TOTAL INSTRUMENTS: 005

(CONTINUED)

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 21 DAY OF
OCTOBER, 2024 AT 09:00 A.M.

ORDER NUMBER: 51933904

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED
FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER,
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APPRAISAL OR OTHER ADVICE PREPARED BY THE ORIGINAL PURCHASER AS
PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING
OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



LAND TITLE CERTIFICATE

S
LINC SHORT LEGAL TITLE NUMBER
0012 901 484 4;1;49;23;SW 902 098 346

LEGAL DESCRIPTION
MERIDIAN 4 RANGE 1 TOWNSHIP 49
SECTION 23
QUARTER SOUTH WEST
EXCEPTING THEREOUT ALL MINES AND MINERALS
AND THE RIGHT TO WORK THE SAME
AREA: 64.7 HECTARES (160 ACRES) MORE OR LESS

ESTATE: FEE SIMPLE

MUNICIPALITY: CITY OF LLOYDMINSTER

REFERENCE NUMBER: 812 240 396 I

REGISTERED OWNER(S)
REGISTRATION DATE (DMY) DOCUMENT TYPE VALUE CONSIDERATION

902 098 346 09/04/1990 TRANSFER OF LAND \$142,500 \$1

OWNERS

GERHARD CZERWIONKA
OF GRAF-PREYSING-STRASSE 16
84056 ROTTENGURG A.D. LAABER
GERMANY

(DATA UPDATED BY: CHANGE OF ADDRESS 232383032)

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION
NUMBER DATE (D/M/Y) PARTICULARS

762 033 039 26/02/1976 UTILITY RIGHT OF WAY
782 064 105 31/03/1978 UTILITY RIGHT OF WAY
GRANTEE - THE COUNTY OF VERMILION RIVER NO. 24.
BOX 69, 4942 50 ST
KITSCOTY
ALBERTA T0B2P0
"DATA UPDATED BY CHANGE OF ADDRESS NO. 832181148 &

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2
902 098 346

REGISTRATION
NUMBER DATE (D/M/Y) PARTICULARS

TRANSFER OF UTRW NO. 862248484"
(DATA UPDATED BY: TRANSFER OF UTILITY RIGHT
OF WAY 052295904)

872 125 952 05/06/1987 CAVEAT
RE : SURFACE LEASE
CAVEATOR - CANADIAN NATURAL RESOURCES LIMITED.
CALGARY PLACE POSTAL OUTLET
P.O.BOX 20004
CALGARY
ALBERTA T2P4J2
AGENT - A M KNIGHT
(DATA UPDATED BY: TRANSFER OF CAVEAT
942110266)
(DATA UPDATED BY: CHANGE OF ADDRESS 992004485)

902 098 326 09/04/1990 LIFE ESTATE TITLE
IN FAVOUR OF - RUDOLF CZERWIONKA
IN FAVOUR OF - HILDEGARD CZERWIONKA
BOTH OF:
C/O ROLA WEINBRENNEREI UND LIKORFABRIK, G.M.B.H. &
CO KG
8303 NEIDERHATZKOFEN, LANDKREIS
LANDSHUR, WEST GERMANY
AS JOINT TENANTS

TOTAL INSTRUMENTS: 004

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 21 DAY OF
OCTOBER, 2024 AT 09:01 A.M.

ORDER NUMBER: 51933922

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

(CONTINUED)

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER, SUBJECT TO WHAT IS SET OUT IN THE PARAGRAPH BELOW.

THE ABOVE PROVISIONS DO NOT PROHIBIT THE ORIGINAL PURCHASER FROM INCLUDING THIS UNMODIFIED PRODUCT IN ANY REPORT, OPINION, APPRAISAL OR OTHER ADVICE PREPARED BY THE ORIGINAL PURCHASER AS PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



LAND TITLE CERTIFICATE

S			
LINC	SHORT LEGAL	TITLE NUMBER	
0012 901 476	4;1;49;24;NE	902 098 489 +1	

LEGAL DESCRIPTION

ALL THAT PORTION OF THE NORTH EAST QUARTER OF SECTION TWENTY FOUR (24) TOWNSHIP FORTY NINE (49) RANGE ONE (1) WEST OF THE FOURTH MERIDIAN WHICH LIES NORTH OF A LINE DRAWN PARALLEL TO THE NORTH BOUNDARY OF THE SAID QUARTER SECTION THROUGH A POINT ON THE EAST BOUNDARY THEREOF THIRTEEN HUNDRED AND TWENTY (1320) FEET SOUTH OF THE NORTH EAST CORNER OF THE SAID QUARTER SECTION, CONTAINING 32.4 HECTARES (80 ACRES), MORE OR LESS.

EXCEPTING THEREOUT:

0.478 HECTARES (1.18 ACRES), MORE OR LESS, AS SHOWN ON ROAD PLAN 4448DY

EXCEPTING THEREOUT ALL MINES AND MINERALS

ESTATE: LIFE ESTATE

MUNICIPALITY: CITY OF LLOYDMINSTER

REFERENCE NUMBER: 812 240 396 M

REGISTERED OWNER(S)				
REGISTRATION	DATE (DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
902 098 489	09/04/1990	LIFE ESTATE TITLE	NIL	

OWNERS

RUDOLF CZERWIONKA

AND

HILDEGARD CZERWIONKA

BOTH OF:

GRAF-PREYSING-STRASSE 19

84056 ROTTENBURG A.D. LAABER

GERMANY

AS JOINT TENANTS

(DATA UPDATED BY: CHANGE OF ADDRESS 232383037)

(CONTINUED)

REGISTRATION
NUMBER DATE (D/M/Y) PARTICULARS

SEE TITLE FOR ESTATE OF LARGER EXTENT,
IF ANY, FOR REGISTRATIONS PRIOR TO LIFE ESTATE

TOTAL INSTRUMENTS: 000

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 21 DAY OF
OCTOBER, 2024 AT 09:03 A.M.

ORDER NUMBER: 51933959

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

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PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING
OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



LAND TITLE CERTIFICATE

S
 LINC SHORT LEGAL TITLE NUMBER
 0012 884 722 4;1;49;24;NW 902 098 248

LEGAL DESCRIPTION

THE NORTH WEST QUARTER OF SECTION TWENTY FOUR (24)
 TOWNSHIP FORTY NINE (49)
 RANGE ONE (1)
 WEST OF THE FOURTH MERIDIAN
 CONTAINING 64.7 HECTARES (160 ACRES), MORE OR LESS.
 EXCEPTING THEREOUT:
 0.421 HECTARES (1.04 ACRES), MORE OR LESS, FOR ROAD, AS SHOWN
 ON ROAD PLAN 443RS
 EXCEPTING THEREOUT ALL MINES AND MINERALS

ESTATE: FEE SIMPLE

MUNICIPALITY: CITY OF LLOYDMINSTER

REFERENCE NUMBER: 812 240 396 K

REGISTERED OWNER(S)				
REGISTRATION	DATE (DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
902 098 248	06/04/1990	TRANSFER OF LAND	\$250,900	\$1

OWNERS

GERHARD CZERWIONKA
 OF C/O ROLA WEINBRENNEREI UND LIKORFABRIK, G.M.B.H. & CO KG
 8303 NEIDERHATZKOFEN, LANDKREIS
 LANDSHUT, WEST GERMANY

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION NUMBER	DATE (D/M/Y)	PARTICULARS
6601NI	04/11/1963	UTILITY RIGHT OF WAY GRANTEE - ALBERTA POWER LIMITED. "PT. DATA UPDATED BY TRANSFER OF UTRW 6699SQ"

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2
902 098 248

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
1910PM	27/10/1967	UTILITY RIGHT OF WAY GRANTEE - ALBERTA POWER LIMITED. "PT. DATA UPDATED BY TRANSFER OF UTRW 6699SQ"
852 215 523	03/10/1985	UTILITY RIGHT OF WAY GRANTEE - THE COUNTY OF VERMILION RIVER NO. 24.
862 044 975	03/03/1986	UTILITY RIGHT OF WAY GRANTEE - THE COUNTY OF VERMILION RIVER NO. 24.
902 098 237	06/04/1990	LIFE ESTATE TITLE IN FAVOUR OF - RUDOLF CZERWIONKA IN FAVOUR OF - HILDEGARD CZERWIONKA BOTH OF: C/O ROLA WEINBRENNEREI UND LIKORFABRIK, G.M.B.H. & CO KG 8303 NEIDERHATZKOFEN, LANDKREIS LANDSHUT WEST GERMANY AS JOINT TENANTS

TOTAL INSTRUMENTS: 005

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 21 DAY OF
OCTOBER, 2024 AT 09:04 A.M.

ORDER NUMBER: 51933970

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED
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PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING
OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



LAND TITLE CERTIFICATE

S
LINC SHORT LEGAL TITLE NUMBER
0017 983 883 4;1;49;24;SW 142 382 982

LEGAL DESCRIPTION

THE SOUTH WEST QUARTER OF
SECTION TWENTY FOUR (24)
TOWNSHIP FORTY NINE (49)
RANGE ONE (1)
WEST OF THE FOURTH MERIDIAN,
CONTAINING 64.7 HECTARES (160 ACRES) MORE OR LESS
EXCEPTING THEREOUT:
0.417 HECTARES (1.03 ACRES) MORE OR LESS AS SHOWN
ON ROAD PLAN 443RS
EXCEPTING THEREOUT ALL MINES AND MINERALS

ESTATE: FEE SIMPLE

MUNICIPALITY: CITY OF LLOYDMINSTER

REFERENCE NUMBER: 142 362 530

 REGISTERED OWNER(S)
REGISTRATION DATE (DMY) DOCUMENT TYPE VALUE CONSIDERATION

142 382 982 12/11/2014 TRANSFER OF LAND \$1,120,000 ESTATE

OWNERS

SHIRLEY ANN PARKIN
OF PO BOX 12914
LLOYDMINSTER
ALBERTA T9V 2J3

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION
NUMBER DATE (D/M/Y) PARTICULARS

6603NI 04/11/1963 UTILITY RIGHT OF WAY
 GRANTEE - ALBERTA POWER LIMITED.
 "PART, DATA UPDATED BY TRANSFER OF UTRW 6699SQ"

(CONTINUED)

 ENCUMBRANCES, LIENS & INTERESTS

PAGE 2
 # 142 382 982

REGISTRATION NUMBER	DATE (D/M/Y)	PARTICULARS
4728RQ	13/11/1969	UTILITY RIGHT OF WAY GRANTEE - ALBERTA POWER LIMITED. "TAKES PRIORITY DATE OF CAVEAT 3152PL DATA UPDATED BY TRNASFER OF UTRW 6699SQ"
1894VD	16/10/1974	UTILITY RIGHT OF WAY GRANTEE - PLAINS MIDSTREAM CANADA ULC. (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT OF WAY 022048460) (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT OF WAY 112012907)
792 151 563	29/06/1979	UTILITY RIGHT OF WAY GRANTEE - THE COUNTY OF VERMILION RIVER NO. 24.
922 086 457	02/04/1992	CAVEAT RE : RIGHT OF WAY AGREEMENT CAVEATOR - ATCO GAS AND PIPELINES LTD. ATTENTION: LAND DEPARTMENT 10035-105 STREET EDMONTON ALBERTA T5J2V6 (DATA UPDATED BY: TRANSFER OF CAVEAT 012014255)
922 400 121	23/12/1992	CAVEAT RE : SURFACE LEASE CAVEATOR - ATCO GAS AND PIPELINES LTD. ATTENTION: LAND DEPARTMENT 10035-105 STREET EDMONTON ALBERTA T5J2V6 (DATA UPDATED BY: TRANSFER OF CAVEAT 012015325)
102 080 257	11/03/2010	CAVEAT RE : LEASE INTEREST UNDER 20 ACRES CAVEATOR - CANADIAN NATURAL RESOURCES LIMITED. BOX 6926, STATION "D" CALGARY ALBERTA T2P2G1 AGENT - PIONEER PROFESSIONAL SERVICES GROUP LTD.
112 225 276	22/07/2011	CAVEAT RE : LEASE INTEREST UNDER 20 ACRES CAVEATOR - CANADIAN NATURAL RESOURCES LIMITED. BOX 6926, STATION "D" CALGARY ALBERTA T2P2G1

(CONTINUED)

REGISTRATION
NUMBER DATE (D/M/Y) PARTICULARS

AGENT - PIONEER PROFESSIONAL SERVICES GROUP LTD.

122 138 780 07/05/2012 CAVEAT
RE : LEASE INTEREST UNDER 20 ACRES
CAVEATOR - CANADIAN NATURAL RESOURCES LIMITED.
BOX 6926, STATION "D"
CALGARY
ALBERTA T2P2G1
AGENT - PIONEER PROFESSIONAL SERVICES GROUP LTD.

152 275 232 03/09/2015 UTILITY RIGHT OF WAY
GRANTEE - MANY ISLANDS PIPE LINES (CANADA) LIMITED.

202 215 921 06/10/2020 DISCHARGE OF UTILITY RIGHT OF WAY 152275232
PARTIAL
EXCEPT PLAN/PORTION: 1622534

TOTAL INSTRUMENTS: 011

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 21 DAY OF
OCTOBER, 2024 AT 09:04 A.M.

ORDER NUMBER: 51933976

CUSTOMER FILE NUMBER:



END OF CERTIFICATE

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED
FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER,
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PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING
OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE

TITLE CANCELLED ON JULY 28,2016

S LINC SHORT LEGAL TITLE NUMBER
0027 990 886 4;1;50;3;SW 992 179 857 +1

LEGAL DESCRIPTION

MERIDIAN 4 RANGE 1 TOWNSHIP 50 SECTION 3 ALL THAT PORTION OF THE SOUTH WEST QUARTER WHICH LIES SOUTH OF THE RIGHT OF WAY TO THE CANADIAN NORTHERN RAILWAY AS SHOWN ON PLAN 3999R CONTAINING 29.1 HECTARES (71.88 ACRES) MORE OR LESS.

Table with 4 columns: EXCEPTING THEREOUT, HECTARES, (ACRES), MORE OR LESS. Rows include PLAN 2033PX ROAD, PLAN 8322705 ROAD, PLAN 9924265 SUBDIVISION.

EXCEPTING THEREOUT ALL MINES AND MINERALS

ESTATE: FEE SIMPLE

MUNICIPALITY: CITY OF LLOYDMINSTER

REFERENCE NUMBER: 972 199 022

Table with 5 columns: REGISTRATION, DATE (DMY), REGISTERED OWNER(S), DOCUMENT TYPE, VALUE, CONSIDERATION. Row: 992 179 857 25/06/1999 SUBDIVISION PLAN

OWNERS

LOUBOB HOLDINGS LTD. OF BOXX 916,LLOYDMINSTER ALBERTA S9V 1C4

ENCUMBRANCES, LIENS & INTERESTS

Table with 3 columns: REGISTRATION NUMBER, DATE (D/M/Y), PARTICULARS. Row: 152 216 140 17/07/2015 CAVEAT RE : PURCHASERS INTEREST CAVEATOR - KUNDAN INVESTMENTS LTD.

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

#2500, 10303 JASPER AVENUE
EDMONTON
ALBERTA T5J3N6
AGENT - ERIC P VAILLANT

162 203 261 28/07/2016 DISCHARGE OF CAVEAT 152216140

162 203 262 28/07/2016 TRANSFER OF LAND
OWNERS - 1642869 ALBERTA LTD.
35393 JADE DRIVE
ABBOTSFORD
BRITISH COLUMBIA V3G3B6
NEW TITLE ISSUED

TOTAL INSTRUMENTS: 003

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 20 DAY OF
NOVEMBER, 2024 AT 12:30 P.M.

ORDER NUMBER: 52208122

CUSTOMER FILE NUMBER: PE24-5236



END OF CERTIFICATE

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED
FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER,
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OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON JUNE 25,1999

S
LINC SHORT LEGAL TITLE NUMBER
0021 753 421 4;1;50;3;SW 972 199 022

LEGAL DESCRIPTION

MERIDIAN 4 RANGE 1 TOWNSHIP 50
SECTION 3
ALL THAT PORTION OF THE SOUTH WEST QUARTER
WHICH LIES SOUTH OF THE RIGHT OF WAY TO THE CANADIAN NORTHERN
RAILWAY AS SHOWN ON PLAN 3999R CONTAINING 29.1 HECTARES
(71.88 ACRES) MORE OR LESS.

EXCEPTING THEREOUT:	HECTARES	ACRES (MORE OR LESS)
A) PLAN 2033PX ROAD	2.04	5.05
B) PLAN 8322705 ROAD	1.276	3.15
C) PLAN 8521645 SUBDIVISION	2.02	4.99

EXCEPTING THEREOUT ALL MINES AND MINERALS

ESTATE: FEE SIMPLE

MUNICIPALITY: COUNTY OF VERMILION RIVER

REFERENCE NUMBER: 852 246 508

REGISTERED OWNER(S)				
REGISTRATION	DATE (DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
972 199 022	08/07/1997	TRANSFER OF LAND	\$342,500	\$342,500

OWNERS

LOUBOB HOLDINGS LTD.
OF BOXX 916, LLOYDMINSTER
ALBERTA S9V 1C4

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION	DATE (D/M/Y)	PARTICULARS
992 179 857	25/06/1999	SUBDIVISION PLAN 9924265 TITLE CANCELLED AS TO PART AND NEW TITLE ISSUED FOR THE REMAINDER

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

TOTAL INSTRUMENTS: 001

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 20 DAY OF
NOVEMBER, 2024 AT 12:30 P.M.

ORDER NUMBER: 52208122

CUSTOMER FILE NUMBER: PE24-5236



END OF CERTIFICATE

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APPRAISAL OR OTHER ADVICE PREPARED BY THE ORIGINAL PURCHASER AS
PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING
OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE

TITLE CANCELLED ON JULY 08,1997

S
LINC SHORT LEGAL TITLE NUMBER
0021 753 421 4;1;50;3;SW 852 246 508

LEGAL DESCRIPTION

MERIDIAN 4 RANGE 1 TOWNSHIP 50
SECTION 3

ALL THAT PORTION OF THE SOUTH WEST QUARTER
WHICH LIES SOUTH OF THE RIGHT OF WAY TO THE CANADIAN NORTHERN
RAILWAY AS SHOWN ON PLAN 3999R CONTAINING 29.1 HECTARES
(71.88 ACRES) MORE OR LESS.

EXCEPTING THEREOUT:	HECTARES	ACRES (MORE OR LESS)
A) PLAN 2033PX ROAD	2.04	5.05
B) PLAN 8322705 ROAD	1.276	3.15
C) PLAN 8521645 SUBDIVISION	2.02	4.99

EXCEPTING THEREOUT ALL MINES AND MINERALS

ESTATE: FEE SIMPLE

MUNICIPALITY: COUNTY OF VERMILION RIVER

REGISTERED OWNER(S)				
REGISTRATION	DATE (DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
852 246 508	08/11/1985			SEE INSTRUMENT

OWNERS

ROBERT KERR
OF P.O. BOX 60
BLACKFOOT
ALBERTA T0B 0L0

AND

BARRY MICHAEL KERR
OF 3908 57B AVE
LLOYDMINSTER
ALBERTA

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

972 199 021 08/07/1997 STATUTORY DECLARATION RE LOST DCT

972 199 022 08/07/1997 TRANSFER OF LAND
OWNERS - LOUBOB HOLDINGS LTD.
BOXX 916,LLOYDMINSTER
ALBERTA S9V1C4
NEW TITLE ISSUED

TOTAL INSTRUMENTS: 002

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 20 DAY OF
NOVEMBER, 2024 AT 12:30 P.M.

ORDER NUMBER: 52208122

CUSTOMER FILE NUMBER: PE24-5236



END OF CERTIFICATE

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED
FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER,
SUBJECT TO WHAT IS SET OUT IN THE PARAGRAPH BELOW.

THE ABOVE PROVISIONS DO NOT PROHIBIT THE ORIGINAL PURCHASER FROM
INCLUDING THIS UNMODIFIED PRODUCT IN ANY REPORT, OPINION,
APPRAISAL OR OTHER ADVICE PREPARED BY THE ORIGINAL PURCHASER AS
PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING
OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S) .



HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON NOVEMBER 18,2015

M
LINC SHORT LEGAL TITLE NUMBER
0016 287 567 4;1;49;27;NE 092 416 117 +11

LEGAL DESCRIPTION

* ALL MINES AND MINERALS WITHIN, UPON OR UNDER:
MERIDIAN 4 RANGE 1 TOWNSHIP 49
SECTION 27
QUARTER NORTH EAST
AREA: 64.7 HECTARES (160 ACRES) MORE OR LESS

ESTATE: FEE SIMPLE

MUNICIPALITY: COUNTY OF VERMILION RIVER

REFERENCE NUMBER: 36M103

REGISTERED OWNER(S)					
REGISTRATION	DATE (DMY)	DOCUMENT	TYPE	VALUE	CONSIDERATION
092 416 117	18/11/2009	TRANSFER OF LAND			SEE INSTRUMENT

OWNERS

CENOVUS ENERGY INC.
OF BOX 766
CALGARY
ALBERTA T2P 0M5
(DATA UPDATED BY: 102030109)
(DATA UPDATED BY: CHANGE OF ADDRESS 132304696)

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION	NUMBER	DATE (D/M/Y)	PARTICULARS
912 316 803	18/11/1991	CAVEAT	RE : SEE CAVEAT CAVEATOR - HUSKY OIL OPERATIONS LTD. P.O. BOX 6525, STATION D, CALGARY ALBERTA T2P3G7
972 214 084	22/07/1997	CAVEAT	

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

092 416 117 +11

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

RE : LEASE
CAVEATOR - HUSKY OIL OPERATIONS LTD.
P.O. BOX 6525, STATION D, CALGARY
ALBERTA T2P3G7
AGENT - BRIAN J BASS

012 069 125 09/03/2001 CAVEAT
RE : ASSIGNMENT OF LEASE
CAVEATOR - ATCO GAS AND PIPELINES LTD.
400, 909-11 AVE SW
CALGARY
ALBERTA T2R1L8
AGENT - KATHY MOORE

022 185 458 28/05/2002 CAVEAT
RE : BENEFICIAL OWNER
CAVEATOR - WESTERRA 2000 INC.
C/O GOWLING LAFLEUR HENDERSOIN
ATTN: JUSTIN K LOUIE
1400, 700 2ND STREET SW
CALGARY
ALBERTA T2P4V5
AGENT - JUSTIN K LOUIE

032 094 452 17/03/2003 CAVEAT
RE : LEASE
CAVEATOR - RIFE RESOURCES LTD.
400,144-4TH AVE.SW
CALGARY
ALBERTA T2P3N4
(DATA UPDATED BY: TRANSFER OF CAVEAT
072554165)

072 554 165 13/09/2007 TRANSFER OF CAVEAT 032094452
TRANSFeree - RIFE RESOURCES LTD.
400,144-4TH AVE.SW
CALGARY
ALBERTA T2P3N4

102 030 109 27/01/2010 CORRECTION OF TITLE
AFFECTS INSTRUMENT: 092416117 +11
"ADDRESS CHANGED FROM: 421-7 AVE SW;P.O. BOX
786;CALGARY TO: 421-7 AVE SW;P.O. BOX 766;CALGARY
PROVINCE CHANGED FROM: AB TO: AB POSTAL CODE
CHANGED FROM: T2P0M5 TO: T2P0M5"

132 304 696 25/09/2013 CHANGE OF ADDRESS FOR SERVICE
RE: CENOVUS ENERGY INC.
BOX 766

(CONTINUED)

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

CALGARY
ALBERTA T2P0M5
AFFECTS INSTRUMENT: 092416117 +11

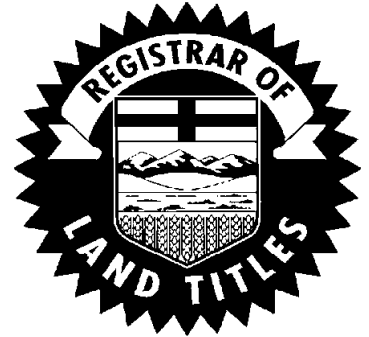
152 358 542 18/11/2015 TRANSFER OF LAND
OWNERS - HERITAGE ROYALTY RESOURCE CORP.
CALGARY PLACE P.O. BOX 20056
CALGARY
ALBERTA T2P4J2
NEW TITLE ISSUED

TOTAL INSTRUMENTS: 009

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 20 DAY OF
NOVEMBER, 2024 AT 12:49 P.M.

ORDER NUMBER: 52208371

CUSTOMER FILE NUMBER: PE24-5236



END OF CERTIFICATE

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HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON NOVEMBER 18,2009

M
LINC SHORT LEGAL TITLE NUMBER
0016 287 567 4;1;49;27;NE 36M103

LEGAL DESCRIPTION

* ALL MINES AND MINERALS WITHIN, UPON OR UNDER:
MERIDIAN 4 RANGE 1 TOWNSHIP 49
SECTION 27
QUARTER NORTH EAST
AREA: 64.7 HECTARES (160 ACRES) MORE OR LESS

ESTATE: FEE SIMPLE

MUNICIPALITY: COUNTY OF VERMILION RIVER

REGISTERED OWNER(S)					
REGISTRATION	DATE (DMY)	DOCUMENT	TYPE	VALUE	CONSIDERATION
36M103	19/09/1944			\$1	REF: 120K62

OWNERS

ENCANA CORPORATION.
OF 150-9 AVE SW
P.O. BOX 2850
CALGARY
ALBERTA T2P 2S5

(DATA UPDATED BY: CHANGE OF NAME 062101163)

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION		
NUMBER	DATE (D/M/Y)	PARTICULARS
912 316 803	18/11/1991	CAVEAT RE : SEE CAVEAT CAVEATOR - HUSKY OIL OPERATIONS LTD. P.O. BOX 6525, STATION D, CALGARY ALBERTA T2P3G7
972 214 084	22/07/1997	CAVEAT RE : LEASE CAVEATOR - HUSKY OIL OPERATIONS LTD.

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTSPAGE 2
36M103

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
		P.O. BOX 6525, STATION D, CALGARY ALBERTA T2P3G7 AGENT - BRIAN J BASS
012 069 125	09/03/2001	CAVEAT RE : ASSIGNMENT OF LEASE CAVEATOR - ATCO GAS AND PIPELINES LTD. 400, 909-11 AVE SW CALGARY ALBERTA T2R1L8 AGENT - KATHY MOORE
012 279 994	07/09/2001	CAVEAT RE : AGREEMENT CHARGING LAND CAVEATOR - ALTAGAS SERVICES INC. 1700, 355-4 AVENUE SW CALGARY ALBERTA T2P0J1 AGENT - STEVEN BROWN
022 167 299	14/05/2002	CAVEAT RE : AGREEMENT CHARGING LAND CAVEATOR - WESTERRA 2000 INC. C/O GOWLINGS LAFLEUR HENDERSON 1400, 700-2 ST SW CALGARY ALBERTA T2P4V5 AGENT - JUSTIN K LOUIE
022 178 768	23/05/2002	DISCHARGE OF CAVEAT 022167299
022 185 458	28/05/2002	CAVEAT RE : BENEFICIAL OWNER CAVEATOR - WESTERRA 2000 INC. C/O GOWLING LAFLEUR HENDERSOIN ATTN: JUSTIN K LOUIE 1400, 700 2ND STREET SW CALGARY ALBERTA T2P4V5 AGENT - JUSTIN K LOUIE
022 260 192	17/07/2002	DISCHARGE OF CAVEAT 012279994
032 094 452	17/03/2003	CAVEAT RE : LEASE CAVEATOR - RIFE RESOURCES LTD. 400,144-4TH AVE.SW CALGARY ALBERTA T2P3N4

(DATA UPDATED BY: TRANSFER OF CAVEAT
(CONTINUED)

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

072554165)

062 101 163 06/03/2006 CHANGE OF NAME
RE: ENCANA CORPORATION.
150-9 AVE SW
P.O. BOX 2850
CALGARY
ALBERTA T2P2S5
AFFECTS INSTRUMENT: 36M103

072 554 165 13/09/2007 TRANSFER OF CAVEAT 032094452
TRANSFEEEE - RIFE RESOURCES LTD.
400,144-4TH AVE.SW
CALGARY
ALBERTA T2P3N4

092 416 117 18/11/2009 TRANSFER OF LAND
OWNERS - CENOVUS ENERGY INC.
421-7 AVE SW
P.O. BOX 786
CALGARY
ALBERTA T2P0M5
NEW TITLE ISSUED

TOTAL INSTRUMENTS: 012

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 20 DAY OF
NOVEMBER, 2024 AT 12:49 P.M.

ORDER NUMBER: 52208371

CUSTOMER FILE NUMBER: PE24-5236



END OF CERTIFICATE

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FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER,
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OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON NOVEMBER 18,2015

M	LINC	SHORT LEGAL	TITLE NUMBER
	0017 983 867	4;1;49;27;NW	092 405 895 +4
	0023 831 423	4;1;49;27;SW	
	0023 831 431	4;1;49;27;SE	

LEGAL DESCRIPTION

FIRST

*ALL MINES AND MINERALS AND THE RIGHT TO WORK THE SAME
WITHIN, UPON OR UNDER:
MERIDIAN 4 RANGE 1 TOWNSHIP 49
SECTION 27
QUARTER NORTH WEST
AREA: 64.7 HECTARES (160 ACRES) MORE OR LESS

SECOND

*ALL MINES AND MINERALS AND THE RIGHT TO WORK THE SAME
WITHIN, UPON OR UNDER:
MERIDIAN 4 RANGE 1 TOWNSHIP 49
SECTION 27
QUARTER SOUTH WEST
AREA: 64.7 HECTARES (160 ACRES) MORE OR LESS

THIRD

*ALL MINES AND MINERALS AND THE RIGHT TO WORK THE SAME
WITHIN, UPON OR UNDER:
MERIDIAN 4 RANGE 1 TOWNSHIP 49
SECTION 27
QUARTER SOUTH EAST
AREA: 64.7 HECTARES (160 ACRES) MORE OR LESS

ESTATE: FEE SIMPLE

MUNICIPALITY: COUNTY OF VERMILION RIVER

REFERENCE NUMBER: 120K62

REGISTRATION	DATE (DMY)	REGISTERED OWNER(S) DOCUMENT TYPE	VALUE	CONSIDERATION
092 405 895	10/11/2009	TRANSFER OF LAND		SEE INSTRUMENT

OWNERS

CENOVUS ENERGY INC.
OF BOX 766
CALGARY
ALBERTA T2P 0M5

(DATA UPDATED BY: CHANGE OF ADDRESS 132296972)

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
912 316 803	18/11/1991	CAVEAT RE : SEE CAVEAT CAVEATOR - HUSKY OIL OPERATIONS LTD. P.O. BOX 6525, STATION D, CALGARY ALBERTA T2P3G7 " (M & M AS DESC.) "
972 214 084	22/07/1997	CAVEAT RE : LEASE CAVEATOR - HUSKY OIL OPERATIONS LTD. P.O. BOX 6525, STATION D, CALGARY ALBERTA T2P3G7 AGENT - BRIAN J BASS
022 185 458	28/05/2002	CAVEAT RE : BENEFICIAL OWNER CAVEATOR - WESTERRA 2000 INC. C/O GOWLING LAFLEUR HENDERSOIN ATTN: JUSTIN K LOUIE 1400, 700 2ND STREET SW CALGARY ALBERTA T2P4V5 AGENT - JUSTIN K LOUIE
032 094 453	17/03/2003	CAVEAT RE : LEASE CAVEATOR - RIFE RESOURCES LTD. 400,144-4TH AVE.SW CALGARY ALBERTA T2P3N4 (DATA UPDATED BY: TRANSFER OF CAVEAT 072554165)

(CONTINUED)

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
072 554 165	13/09/2007	TRANSFER OF CAVEAT 032094453 TRANSFEEE - RIFE RESOURCES LTD. 400,144-4TH AVE.SW CALGARY ALBERTA T2P3N4
132 296 972	19/09/2013	CHANGE OF ADDRESS FOR SERVICE RE: CENOVUS ENERGY INC. BOX 766 CALGARY ALBERTA T2P0M5 AFFECTS INSTRUMENT: 092405895 +4
152 358 542	18/11/2015	TRANSFER OF LAND OWNERS - HERITAGE ROYALTY RESOURCE CORP. CALGARY PLACE P.O. BOX 20056 CALGARY ALBERTA T2P4J2 NEW TITLE ISSUED

TOTAL INSTRUMENTS: 007

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 20 DAY OF
NOVEMBER, 2024 AT 12:53 P.M.

ORDER NUMBER: 52208437

CUSTOMER FILE NUMBER: PE24-5236



END OF CERTIFICATE

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OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON NOVEMBER 10,2009

M	LINC	SHORT LEGAL	TITLE NUMBER
	0017 983 867	4;1;49;27;NW	120K62
	0023 831 423	4;1;49;27;SW	
	0023 831 431	4;1;49;27;SE	

LEGAL DESCRIPTION

FIRST

*ALL MINES AND MINERALS AND THE RIGHT TO WORK THE SAME
WITHIN, UPON OR UNDER:
MERIDIAN 4 RANGE 1 TOWNSHIP 49
SECTION 27
QUARTER NORTH WEST
AREA: 64.7 HECTARES (160 ACRES) MORE OR LESS

SECOND

*ALL MINES AND MINERALS AND THE RIGHT TO WORK THE SAME
WITHIN, UPON OR UNDER:
MERIDIAN 4 RANGE 1 TOWNSHIP 49
SECTION 27
QUARTER SOUTH WEST
AREA: 64.7 HECTARES (160 ACRES) MORE OR LESS

THIRD

*ALL MINES AND MINERALS AND THE RIGHT TO WORK THE SAME
WITHIN, UPON OR UNDER:
MERIDIAN 4 RANGE 1 TOWNSHIP 49
SECTION 27
QUARTER SOUTH EAST
AREA: 64.7 HECTARES (160 ACRES) MORE OR LESS

ESTATE: FEE SIMPLE

MUNICIPALITY: COUNTY OF VERMILION RIVER

REGISTRATION	DATE (DMY)	REGISTERED OWNER(S) DOCUMENT TYPE	VALUE	CONSIDERATION
120K62	01/10/1925		\$1	REF. CPR1273

OWNERS

ENCANA CORPORATION.
OF 150-9 AVE SW
P.O. BOX 2850
CALGARY
ALBERTA T2P 2S5

(DATA UPDATED BY: CHANGE OF NAME 062110757)

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION NUMBER	DATE (D/M/Y)	PARTICULARS
912 316 803	18/11/1991	CAVEAT RE : SEE CAVEAT CAVEATOR - HUSKY OIL OPERATIONS LTD. P.O. BOX 6525, STATION D, CALGARY ALBERTA T2P3G7 "(M & M AS DESC.)"
972 214 084	22/07/1997	CAVEAT RE : LEASE CAVEATOR - HUSKY OIL OPERATIONS LTD. P.O. BOX 6525, STATION D, CALGARY ALBERTA T2P3G7 AGENT - BRIAN J BASS
012 279 994	07/09/2001	CAVEAT RE : AGREEMENT CHARGING LAND CAVEATOR - ALTAGAS SERVICES INC. 1700, 355-4 AVENUE SW CALGARY ALBERTA T2P0J1 AGENT - STEVEN BROWN
022 167 299	14/05/2002	CAVEAT RE : AGREEMENT CHARGING LAND CAVEATOR - WESTERRA 2000 INC. C/O GOWLINGS LAFLEUR HENDERSON 1400, 700-2 ST SW CALGARY ALBERTA T2P4V5 AGENT - JUSTIN K LOUIE

ENCUMBRANCES, LIENS & INTERESTSPAGE 3
120K62

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
022 178 768	23/05/2002	DISCHARGE OF CAVEAT 022167299
022 185 458	28/05/2002	CAVEAT RE : BENEFICIAL OWNER CAVEATOR - WESTERRA 2000 INC. C/O GOWLING LAFLEUR HENDERSOIN ATTN: JUSTIN K LOUIE 1400, 700 2ND STREET SW CALGARY ALBERTA T2P4V5 AGENT - JUSTIN K LOUIE
022 260 192	17/07/2002	DISCHARGE OF CAVEAT 012279994
032 094 453	17/03/2003	CAVEAT RE : LEASE CAVEATOR - RIFE RESOURCES LTD. 400,144-4TH AVE.SW CALGARY ALBERTA T2P3N4 (DATA UPDATED BY: TRANSFER OF CAVEAT 072554165)
062 110 757	10/03/2006	CHANGE OF NAME RE: ENCANNA CORPORATION. 150-9 AVE SW P.O. BOX 2850 CALGARY ALBERTA T2P2S5 AFFECTS INSTRUMENT: 120K62
072 554 165	13/09/2007	TRANSFER OF CAVEAT 032094453 TRANSFeree - RIFE RESOURCES LTD. 400,144-4TH AVE.SW CALGARY ALBERTA T2P3N4
092 405 895	10/11/2009	TRANSFER OF LAND OWNERS - CENOVUS ENERGY INC. 421-7TH AVENUE SW PO BOX 766 CALGARY ALBERTA T2P0M5 NEW TITLE ISSUED

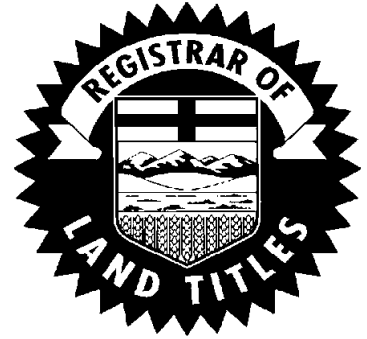
TOTAL INSTRUMENTS: 011

(CONTINUED)

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 20 DAY OF
NOVEMBER, 2024 AT 12:53 P.M.

ORDER NUMBER: 52208437

CUSTOMER FILE NUMBER: PE24-5236



END OF CERTIFICATE

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OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE

TITLE CANCELLED ON JULY 02, 2024

M
LINC SHORT LEGAL TITLE NUMBER
0023 830 110 4;1;49;26;NW 072 618 503

LEGAL DESCRIPTION

*ALL MINES AND MINERALS AND THE RIGHT TO WORK THE SAME
WITHIN, UPON OR UNDER:
MERIDIAN 4 RANGE 1 TOWNSHIP 49
SECTION 26
QUARTER NORTH WEST

ESTATE: FEE SIMPLE

MUNICIPALITY: CITY OF LLOYDMINSTER

REFERENCE NUMBER: 002 267 311 +5

REGISTERED OWNER(S)					
REGISTRATION	DATE (DMY)	DOCUMENT	TYPE	VALUE	CONSIDERATION
072 618 503	17/10/2007	TRANSFER OF LAND			SEE INSTRUMENT

OWNERS

RIFE RESOURCES LTD.
OF 400,144-4TH AVE.SW
CALGARY
ALBERTA T2P 3N4
AS TO AN UNDIVIDED 9.5625% INTEREST

CANADIAN NATURAL RESOURCES LIMITED.
OF BOX 6926, STATION "D"
CALGARY
ALBERTA T2P 2G1
AS TO AN UNDIVIDED 27.8275% INTEREST

ENCUMBRANCES, LIENS & INTERESTS		
REGISTRATION	DATE (D/M/Y)	PARTICULARS
NUMBER		
283UN	03/12/1973	CAVEAT

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

072 618 503

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
		CAVEATOR - CANADIAN NATURAL RESOURCES LIMITED. BOX 6926, STATION "D" CALGARY ALBERTA T2P2G1 (DATA UPDATED BY: TRANSFER OF CAVEAT 022207215)
802 202 863	04/09/1980	CAVEAT CAVEATOR - CANADIAN NATURAL RESOURCES LIMITED. BOX 6926, STATION "D" CALGARY ALBERTA T2P2G1 "(M & M AS DESC.)" (DATA UPDATED BY: TRANSFER OF CAVEAT 022207215)
862 152 847	22/07/1986	CAVEAT RE : ROYALTY AGREEMENT , ETC. CAVEATOR - CANPAR HOLDINGS LTD. P.O. BOX 2246, STN "M" CALGARY ALBERTA T2P2M6 AGENT - DAVID J SANDMEYER "DATA UPDATED BY CHANGE OF ADDRESS FOR SERVICE #982124205"
872 072 970	06/04/1987	CAVEAT RE : SEE CAVEAT CAVEATOR - RIFE RESOURCES LTD. 400,144-4TH AVE.SW CALGARY ALBERTA T2P3N4 "(M & M AS DESC.)"
002 169 710	20/06/2000	CAVEAT RE : LEASE CAVEATOR - CANADIAN NATURAL RESOURCES LIMITED. BOX 6926, STATION "D" CALGARY ALBERTA T2P2G1 AGENT - ANNE SCHULER
022 207 215	10/06/2002	TRANSFER OF CAVEAT 283UN AND CAVEAT 802202863 TRANSFEEE - CANADIAN NATURAL RESOURCES LIMITED. BOX 6926, STATION "D" CALGARY ALBERTA T2P2G1

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 3

072 618 503

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
072 553 845	13/09/2007	TRANSFER OF CAVEAT 872072970 TRANSFeree - RIFE RESOURCES LTD. 400,144-4TH AVE.SW CALGARY ALBERTA T2P3N4
092 108 763	09/04/2009	DISCHARGE OF CAVEAT 872072970 AND TRANSFER OF 072553845
122 263 438	14/08/2012	CAVEAT RE : MINES AND MINERALS LEASE INTEREST CAVEATOR - CANADIAN NATURAL RESOURCES LIMITED. BOX 6926, STATION "D" CALGARY ALBERTA T2P2G1 AGENT - MELISSA NICHOLS
122 302 515	13/09/2012	CAVEAT RE : SEE CAVEAT CAVEATOR - CANADIAN NATURAL RESOURCES LIMITED. BOX 6926, STATION "D" CALGARY ALBERTA T2P2G1 AGENT - MELISSA NICHOLS SEE CAVEAT FOR INTEREST
122 376 126	14/11/2012	DISCHARGE OF CAVEAT 002169710
152 182 177	19/06/2015	DISCHARGE OF CAVEAT 122263438 AND CAVEAT 122302515
242 161 904	02/07/2024	TRANSFER OF LAND OWNERS - CANPAR HOLDINGS LTD. 1000, 517-10TH AVENUE SW CALGARY ALBERTA T2R0A8 AS TO 9.5625% OWNERS - CANADIAN NATURAL RESOURCES LIMITED. BOX 6926, STATION "D" CALGARY ALBERTA T2P2G1 AS TO 27.8275% NEW TITLE ISSUED

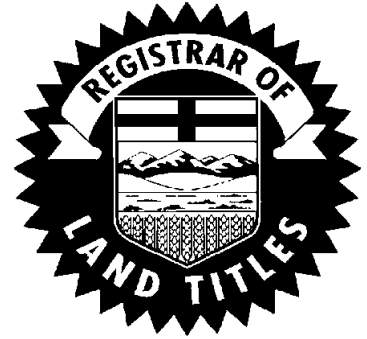
TOTAL INSTRUMENTS: 013

(CONTINUED)

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 20 DAY OF
NOVEMBER, 2024 AT 12:56 P.M.

ORDER NUMBER: 52208483

CUSTOMER FILE NUMBER: PE24-5236



END OF CERTIFICATE

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED
FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER,
SUBJECT TO WHAT IS SET OUT IN THE PARAGRAPH BELOW.

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INCLUDING THIS UNMODIFIED PRODUCT IN ANY REPORT, OPINION,
APPRAISAL OR OTHER ADVICE PREPARED BY THE ORIGINAL PURCHASER AS
PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING
OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON OCTOBER 17,2007

M
LINC SHORT LEGAL TITLE NUMBER
0023 830 110 4;1;49;26;NW 002 267 311 +5

LEGAL DESCRIPTION

*ALL MINES AND MINERALS AND THE RIGHT TO WORK THE SAME
WITHIN, UPON OR UNDER:
MERIDIAN 4 RANGE 1 TOWNSHIP 49
SECTION 26
QUARTER NORTH WEST

ESTATE: FEE SIMPLE

MUNICIPALITY: CITY OF LLOYDMINSTER

REFERENCE NUMBER: 942 319 917 +3

REGISTERED OWNER(S)					
REGISTRATION	DATE (DMY)	DOCUMENT	TYPE	VALUE	CONSIDERATION
002 267 311	13/09/2000	TRANSFER OF LAND		\$484	SEE INSTRUMENT

OWNERS

CANADIAN NATURAL RESOURCES LIMITED.
OF BOX 6926, STATION "D"
CALGARY
ALBERTA T2P 2G1
AS TO AN UNDIVIDED 27.8275% INTEREST

TALISMAN ENERGY INC.
OF SUITE 2400, 855-2 STREET SW
CALGARY
ALBERTA T2P 4J9
AS TO AN UNDIVIDED 9.5625% INTEREST

ENCUMBRANCES, LIENS & INTERESTS		
REGISTRATION	DATE (D/M/Y)	PARTICULARS
NUMBER		
283UN	03/12/1973	CAVEAT

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

002 267 311 +5

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

CAVEATOR - CANADIAN NATURAL RESOURCES LIMITED.
BOX 6926, STATION "D"
CALGARY
ALBERTA T2P2G1
(DATA UPDATED BY: TRANSFER OF CAVEAT
022207215)

802 202 863 04/09/1980 CAVEAT
CAVEATOR - CANADIAN NATURAL RESOURCES LIMITED.
BOX 6926, STATION "D"
CALGARY
ALBERTA T2P2G1
"(M & M AS DESC.)"
(DATA UPDATED BY: TRANSFER OF CAVEAT
022207215)

862 152 847 22/07/1986 CAVEAT
RE : ROYALTY AGREEMENT , ETC.
CAVEATOR - CANPAR HOLDINGS LTD.
P.O. BOX 2246, STN "M"
CALGARY
ALBERTA T2P2M6
AGENT - DAVID J SANDMEYER
"DATA UPDATED BY CHANGE OF ADDRESS FOR SERVICE
#982124205"

872 072 970 06/04/1987 CAVEAT
RE : SEE CAVEAT
CAVEATOR - RIFE RESOURCES LTD.
400,144-4TH AVE.SW
CALGARY
ALBERTA T2P3N4
"(M & M AS DESC.)"
(DATA UPDATED BY: TRANSFER OF CAVEAT
072553845)

002 169 710 20/06/2000 CAVEAT
RE : LEASE
CAVEATOR - CANADIAN NATURAL RESOURCES LIMITED.
BOX 6926, STATION "D"
CALGARY
ALBERTA T2P2G1
AGENT - ANNE SCHULER

022 207 215 10/06/2002 TRANSFER OF CAVEAT 283UN
AND CAVEAT 802202863
TRANSFEREE - CANADIAN NATURAL RESOURCES LIMITED.
BOX 6926, STATION "D"
CALGARY

(CONTINUED)

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

ALBERTA T2P2G1

072 553 845 13/09/2007 TRANSFER OF CAVEAT 872072970
 TRANSFEREE - RIFE RESOURCES LTD.
 400,144-4TH AVE.SW
 CALGARY
 ALBERTA T2P3N4

072 618 503 17/10/2007 TRANSFER OF LAND
 OWNERS - RIFE RESOURCES LTD.
 400,144-4TH AVE.SW
 CALGARY
 ALBERTA T2P3N4
 AS TO 9.5625%
 OWNERS - CANADIAN NATURAL RESOURCES LIMITED.
 BOX 6926, STATION "D"
 CALGARY
 ALBERTA T2P2G1
 AS TO 27.8275%
 NEW TITLE ISSUED

TOTAL INSTRUMENTS: 008

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
 ACCURATE REPRODUCTION OF THE CERTIFICATE OF
 TITLE REPRESENTED HEREIN THIS 20 DAY OF
 NOVEMBER, 2024 AT 12:56 P.M.

ORDER NUMBER: 52208483

CUSTOMER FILE NUMBER: PE24-5236



END OF CERTIFICATE

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED
 FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER,
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 APPRAISAL OR OTHER ADVICE PREPARED BY THE ORIGINAL PURCHASER AS
 PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING
 OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON SEPTEMBER 13,2000

M
LINC SHORT LEGAL TITLE NUMBER
0023 830 110 4;1;49;26;NW 942 319 917 +3

LEGAL DESCRIPTION

*ALL MINES AND MINERALS AND THE RIGHT TO WORK THE SAME
WITHIN, UPON OR UNDER:
MERIDIAN 4 RANGE 1 TOWNSHIP 49
SECTION 26
QUARTER NORTH WEST

ESTATE: FEE SIMPLE

MUNICIPALITY: CITY OF LLOYDMINSTER

REFERENCE NUMBER: 942 283 972 +19

REGISTERED OWNER(S)					
REGISTRATION	DATE (DMY)	DOCUMENT	TYPE	VALUE	CONSIDERATION
942 319 917	14/10/1994	SEPARATION -	INTERESTS		

OWNERS

TALISMAN ENERGY INC.
OF SUITE 2400, 855-2 STREET SW
CALGARY
ALBERTA T2P 4J9
AS TO AN UNDIVIDED 9.5625% INTEREST

AMOCO CANADA RESOURCES LTD.
OF BOX 200
CALGARY
ALBERTA T2P 2H8
AS TO AN UNDIVIDED 27.8275% INTEREST

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION
NUMBER DATE (D/M/Y) PARTICULARS

283UN 03/12/1973 CAVEAT

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

REGISTRATION

942 319 917 +3

NUMBER	DATE (D/M/Y)	PARTICULARS
		CAVEATOR - HUDSON'S BAY OIL AND GAS COMPANY LIMITED.
802 202 863	04/09/1980	CAVEAT CAVEATOR - HUDSON'S BAY OIL AND GAS COMPANY LIMITED. "(M & M AS DESC.)"
862 152 847	22/07/1986	CAVEAT RE : ROYALTY AGREEMENT , ETC. CAVEATOR - CANPAR HOLDINGS LTD. P.O. BOX 2246, STN "M" CALGARY ALBERTA T2P2M6 AGENT - DAVID J SANDMEYER "DATA UPDATED BY CHANGE OF ADDRESS FOR SERVICE #982124205"
872 072 970	06/04/1987	CAVEAT RE : SEE CAVEAT CAVEATOR - ENCOR ENERGY CORPORATION INC. 3700, 700 SECOND STREET, S.W., CALGARY ALBERTA AGENT - L ARDELLE ANDERSON "(M & M AS DESC.)"
002 169 710	20/06/2000	CAVEAT RE : LEASE CAVEATOR - CANADIAN NATURAL RESOURCES LIMITED. BOX 6926, STATION "D" CALGARY ALBERTA T2P2G1 AGENT - ANNE SCHULER
002 267 311	13/09/2000	TRANSFER OF LAND OWNERS - CANADIAN NATURAL RESOURCES LIMITED. BOX 6926, STATION "D" CALGARY ALBERTA T2P2G1 AS TO 27.8275% OWNERS - TALISMAN ENERGY INC. SUITE 2400, 855-2 STREET SW CALGARY ALBERTA T2P4J9 AS TO 9.5625% NEW TITLE ISSUED

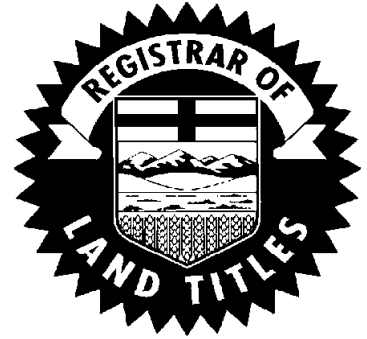
TOTAL INSTRUMENTS: 006

(CONTINUED)

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
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TITLE REPRESENTED HEREIN THIS 20 DAY OF
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ORDER NUMBER: 52208483

CUSTOMER FILE NUMBER: PE24-5236



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OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON OCTOBER 14, 1994

M
LINC SHORT LEGAL TITLE NUMBER
0023 830 110 4;1;49;26;NW 942 283 972 +19

LEGAL DESCRIPTION

*ALL MINES AND MINERALS AND THE RIGHT TO WORK THE SAME
WITHIN, UPON OR UNDER:
MERIDIAN 4 RANGE 1 TOWNSHIP 49
SECTION 26
QUARTER NORTH WEST

ESTATE: FEE SIMPLE

MUNICIPALITY: CITY OF LLOYDMINSTER

REFERENCE NUMBER: 812 109 191 BJ

REGISTERED OWNER(S)					
REGISTRATION	DATE (DMY)	DOCUMENT	TYPE	VALUE	CONSIDERATION
942 283 972	12/09/1994	TRANSFER OF LAND			SEE INSTRUMENT

OWNERS

CANPAR HOLDINGS LTD.
OF 1530,140-4TH AVE SW
CALGARY
ALBERTA T2P 3N3
AS TO AN UNDIVIDED 62.61% INTEREST

TALISMAN ENERGY INC.
OF SUITE 2400, 855-2 STREET SW
CALGARY
ALBERTA T2P 4J9
AS TO AN UNDIVIDED 9.5625% INTEREST

AMOCO CANADA RESOURCES LTD.
OF BOX 200
CALGARY
ALBERTA T2P 2H8
AS TO AN UNDIVIDED 27.8275% INTEREST

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

942 283 972 +19

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
283UN	03/12/1973	CAVEAT CAVEATOR - HUDSON'S BAY OIL AND GAS COMPANY LIMITED.
802 202 863	04/09/1980	CAVEAT CAVEATOR - HUDSON'S BAY OIL AND GAS COMPANY LIMITED. "(M & M AS DESC.)"
822 127 292	08/06/1982	CAVEAT CAVEATOR - CANADIAN IMPERIAL BANK OF COMMERCE. "(M & M AS DESC.)"
822 127 293	08/06/1982	CAVEAT CAVEATOR - ROYAL BANK OF CANADA. "(M & M AS DESC.)"
832 165 524	11/07/1983	CAVEAT RE : SEC 177 OF BANK ACT CAVEATOR - ROYAL BANK OF CANADA. 339-8TH AVE., S.W., CALGARY ALBERTA "(M & M AS DESC.)"
862 152 847	22/07/1986	CAVEAT RE : ROYALTY AGREEMENT , ETC. CAVEATOR - CANPAR HOLDINGS LTD. ATTN: DAVID J. SANDMEYER P.O. BOX 2246, STATION M CALGARY ALBERTA T2P2M6 AGENT - DAVID J SANDMEYER
872 072 970	06/04/1987	CAVEAT RE : SEE CAVEAT CAVEATOR - ENCOR ENERGY CORPORATION INC. 3700, 700 SECOND STREET, S.W., CALGARY ALBERTA AGENT - L ARDELLE ANDERSON "(M & M AS DESC.)"
942 297 334	26/09/1994	DISCHARGE OF CAVEAT 822127292
942 314 769	11/10/1994	DISCHARGE OF CAVEAT 822127293
942 314 865	11/10/1994	DISCHARGE OF CAVEAT 832165524
942 319 917	14/10/1994	SEPARATION - INTERESTS NEW TITLE ISSUED

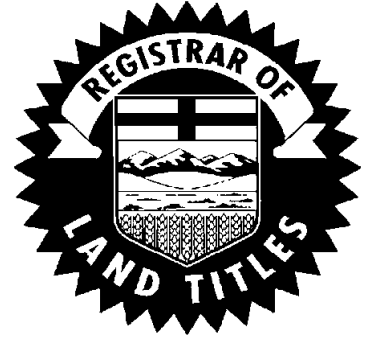
(CONTINUED)

TOTAL INSTRUMENTS: 011

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 20 DAY OF
NOVEMBER, 2024 AT 12:56 P.M.

ORDER NUMBER: 52208483

CUSTOMER FILE NUMBER: PE24-5236



END OF CERTIFICATE

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PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING
OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON SEPTEMBER 12, 1994

M
LINC SHORT LEGAL TITLE NUMBER
0023 830 110 4;1;49;26;NW 812 109 191 BJ

LEGAL DESCRIPTION

*ALL MINES AND MINERALS AND THE RIGHT TO WORK THE SAME
WITHIN, UPON OR UNDER:
MERIDIAN 4 RANGE 1 TOWNSHIP 49
SECTION 26
QUARTER NORTH WEST

ESTATE: FEE SIMPLE

MUNICIPALITY: CITY OF LLOYDMINSTER

REGISTERED OWNER(S)					
REGISTRATION	DATE (DMY)	DOCUMENT	TYPE	VALUE	CONSIDERATION
812 109 191	12/05/1981			\$1,500	REF. 35A270

OWNERS

DOME PETROLEUM LIMITED.
OF P.O. BOX 200
CALGARY
ALBERTA

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION	DATE (D/M/Y)	PARTICULARS
NUMBER		
283UN	03/12/1973	CAVEAT CAVEATOR - HUDSON'S BAY OIL AND GAS COMPANY LIMITED.
802 202 863	04/09/1980	CAVEAT CAVEATOR - HUDSON'S BAY OIL AND GAS COMPANY LIMITED. "(M & M AS DESC.)"
822 111 016	19/05/1982	CAVEAT

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

812 109 191 BJ

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
		CAVEATOR - THE ROYAL TRUST COMPANY. "(M & M AS DESC.)"
822 119 260	31/05/1982	CAVEAT CAVEATOR - THE ROYAL TRUST COMPANY. "INT. AS DESC., (M & M AS DESC.)"
822 121 035	01/06/1982	CAVEAT CAVEATOR - THE ROYAL TRUST COMPANY. "(M & M AS DESC.)"
822 127 292	08/06/1982	CAVEAT CAVEATOR - CANADIAN IMPERIAL BANK OF COMMERCE. "(M & M AS DESC.)"
822 127 293	08/06/1982	CAVEAT CAVEATOR - ROYAL BANK OF CANADA. "(M & M AS DESC.)"
822 148 800	05/07/1982	CAVEAT CAVEATOR - THE ROYAL TRUST COMPANY. "INT. AS DESC., (M & M AS DESC.)"
822 148 801	05/07/1982	CAVEAT CAVEATOR - THE ROYAL TRUST COMPANY. "INT. AS DESC., (M & M AS DESC.)"
832 165 523	11/07/1983	CAVEAT RE : SEC 177 OF BANK ACT CAVEATOR - CANADIAN IMPERIAL BANK OF COMMERCE. 628-8 AVE. S.W. CALGARY ALBERTA "(M & M AS DESC.)"
832 165 524	11/07/1983	CAVEAT RE : SEC 177 OF BANK ACT CAVEATOR - ROYAL BANK OF CANADA. 339-8TH AVE., S.W., CALGARY ALBERTA "(M & M AS DESC.)"
852 016 063	25/01/1985	CAVEAT RE : SEE CAVEAT CAVEATOR - THE ROYAL TRUST COMPANY. C/O MACLEOD DIXON #1500, 324-8TH SW CALGARY ALBERTA T2P2Z2 AGENT - A GAIL VICKERY "(M & M AS DESC.)"

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 3

REGISTRATION

812 109 191 BJ

NUMBER	DATE (D/M/Y)	PARTICULARS
852 258 132	25/11/1985	CAVEAT RE : SEE CAVEAT CAVEATOR - THE ROYAL TRUST COMPANY. C/O MACLEOD DIXON 1500,324-8TH AVE SW CALGARY ALBERTA T2P2Z2 AGENT - J JAY PARK "(M & M AS DESC.)"
862 152 847	22/07/1986	CAVEAT RE : ROYALTY AGREEMENT , ETC. CAVEATOR - CANPAR HOLDINGS LTD. ATTN: DAVID J. SANDMEYER P.O. BOX 2246, STATION M CALGARY ALBERTA T2P2M6 AGENT - DAVID J SANDMEYER
872 072 970	06/04/1987	CAVEAT RE : SEE CAVEAT CAVEATOR - ENCOR ENERGY CORPORATION INC. 3700, 700 SECOND STREET, S.W., CALGARY ALBERTA AGENT - L ARDELLE ANDERSON "(M & M AS DESC.)"
882 186 919	15/08/1988	CAVEAT RE : AGREEMENT CHARGING LAND CAVEATOR - MONTREAL TRUST COMPANY OF CANADA. ATTENTION MANAGER, CORPORATE TRUST 411 EIGHTH AVENUE S.W. CALGARY ALBERTA T2P1E7 AGENT - BRIAN A YAWORSKI "(M & M AS DESC.)"
882 227 790	26/09/1988	CAVEAT RE : AGREEMENT CHARGING LAND CAVEATOR - MONTREAL TRUST COMPANY OF CANADA. ATTENTION: MANAGER CORP. TRUST 411 EIGHTH AVE SW CALGARY ALBERTA T2P1E7 AGENT - BRIAN A YAWORSKI "(M & M AS DESC.)"
942 027 808	30/01/1994	DISCHARGE OF CAVEAT 822119260
942 027 812	30/01/1994	DISCHARGE OF CAVEAT 822148801

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 4

812 109 191 BJ

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
942 027 813	30/01/1994	DISCHARGE OF CAVEAT 822121035
942 027 818	30/01/1994	DISCHARGE OF CAVEAT 822111016
942 027 825	30/01/1994	DISCHARGE OF CAVEAT 852258132
942 028 953	31/01/1994	DISCHARGE OF CAVEAT 852016063
942 030 250	01/02/1994	DISCHARGE OF CAVEAT 822148800
942 062 104	02/03/1994	DISCHARGE OF CAVEAT 882227790
942 062 447	03/03/1994	DISCHARGE OF CAVEAT 882186919
942 238 295	01/08/1994	DISCHARGE OF CAVEAT 832165523
942 283 972	12/09/1994	TRANSFER OF LAND OWNERS - CANPAR HOLDINGS LTD. 1530,140-4TH AVE SW CALGARY ALBERTA T2P3N3 AS TO 62.61% OWNERS - TALISMAN ENERGY INC. SUITE 2400, 855-2 STREET SW CALGARY ALBERTA T2P4J9 AS TO 9.5625% OWNERS - AMOCO CANADA RESOURCES LTD. BOX 200 CALGARY ALBERTA T2P2H8 AS TO 27.8275% NEW TITLE ISSUED

TOTAL INSTRUMENTS: 028

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 20 DAY OF
NOVEMBER, 2024 AT 12:56 P.M.

ORDER NUMBER: 52208483

CUSTOMER FILE NUMBER: PE24-5236



END OF CERTIFICATE

(CONTINUED)

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HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON NOVEMBER 12,2014

S
LINC SHORT LEGAL TITLE NUMBER
0017 983 883 4;1;49;24;SW 142 362 530

LEGAL DESCRIPTION

THE SOUTH WEST QUARTER OF
SECTION TWENTY FOUR (24)
TOWNSHIP FORTY NINE (49)
RANGE ONE (1)
WEST OF THE FOURTH MERIDIAN,
CONTAINING 64.7 HECTARES (160 ACRES) MORE OR LESS
EXCEPTING THEREOUT:
0.417 HECTARES (1.03 ACRES) MORE OR LESS AS SHOWN
ON ROAD PLAN 443RS
EXCEPTING THEREOUT ALL MINES AND MINERALS

ESTATE: FEE SIMPLE

MUNICIPALITY: CITY OF LLOYDMINSTER

REFERENCE NUMBER: 862 094 322

REGISTERED OWNER(S)				
REGISTRATION	DATE (DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
142 362 530	28/10/2014	TRANSMISSION OF LAND		

OWNERS

SHIRLEY ANN PARKIN
OF BOX 12914
LLOYDMINSTER
ALBERTA T9V 2J3
EXECUTRIX FOR FRANCIS JAMES PARKIN

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION	DATE (D/M/Y)	PARTICULARS
NUMBER		
6603NI	04/11/1963	UTILITY RIGHT OF WAY GRANTEE - ALBERTA POWER LIMITED.

(CONTINUED)

 ENCUMBRANCES, LIENS & INTERESTS

PAGE 2
 # 142 362 530

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
"PART, DATA UPDATED BY TRANSFER OF UTRW 6699SQ"		
4728RQ	13/11/1969	UTILITY RIGHT OF WAY GRANTEE - ALBERTA POWER LIMITED. "TAKES PRIORITY DATE OF CAVEAT 3152PL DATA UPDATED BY TRNASFER OF UTRW 6699SQ"
1894VD	16/10/1974	UTILITY RIGHT OF WAY GRANTEE - PLAINS MIDSTREAM CANADA ULC. (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT OF WAY 022048460) (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT OF WAY 112012907)
792 151 563	29/06/1979	UTILITY RIGHT OF WAY GRANTEE - THE COUNTY OF VERMILION RIVER NO. 24.
922 086 457	02/04/1992	CAVEAT RE : RIGHT OF WAY AGREEMENT CAVEATOR - ATCO GAS AND PIPELINES LTD. ATTENTION: LAND DEPARTMENT 10035-105 STREET EDMONTON ALBERTA T5J2V6 (DATA UPDATED BY: TRANSFER OF CAVEAT 012014255)
922 400 121	23/12/1992	CAVEAT RE : SURFACE LEASE CAVEATOR - ATCO GAS AND PIPELINES LTD. ATTENTION: LAND DEPARTMENT 10035-105 STREET EDMONTON ALBERTA T5J2V6 (DATA UPDATED BY: TRANSFER OF CAVEAT 012015325)
012 014 255	15/01/2001	TRANSFER OF CAVEAT 922086457 TRANSFEREE - ATCO GAS AND PIPELINES LTD. ATTENTION: LAND DEPARTMENT 10035-105 STREET EDMONTON ALBERTA T5J2V6
012 015 325	15/01/2001	TRANSFER OF CAVEAT 922400121 TRANSFEREE - ATCO GAS AND PIPELINES LTD. ATTENTION: LAND DEPARTMENT 10035-105 STREET EDMONTON ALBERTA T5J2V6

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 3

142 362 530

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
022 048 460	08/02/2002	TRANSFER OF UTILITY RIGHT OF WAY 1894VD TRANSFEEE - PMC (NOVA SCOTIA) COMPANY.
102 080 257	11/03/2010	CAVEAT RE : LEASE INTEREST UNDER 20 ACRES CAVEATOR - CANADIAN NATURAL RESOURCES LIMITED. BOX 6926, STATION "D" CALGARY ALBERTA T2P2G1 AGENT - PIONEER PROFESSIONAL SERVICES GROUP LTD.
112 012 907	14/01/2011	TRANSFER OF UTILITY RIGHT OF WAY 1894VD TRANSFEEE - PLAINS MIDSTREAM CANADA ULC.
112 225 276	22/07/2011	CAVEAT RE : LEASE INTEREST UNDER 20 ACRES CAVEATOR - CANADIAN NATURAL RESOURCES LIMITED. BOX 6926, STATION "D" CALGARY ALBERTA T2P2G1 AGENT - PIONEER PROFESSIONAL SERVICES GROUP LTD.
122 138 780	07/05/2012	CAVEAT RE : LEASE INTEREST UNDER 20 ACRES CAVEATOR - CANADIAN NATURAL RESOURCES LIMITED. BOX 6926, STATION "D" CALGARY ALBERTA T2P2G1 AGENT - PIONEER PROFESSIONAL SERVICES GROUP LTD.
142 382 982	12/11/2014	TRANSFER OF LAND OWNERS - SHIRLEY ANN PARKIN PO BOX 12914 LLOYDMINSTER ALBERTA T9V2J3 NEW TITLE ISSUED

TOTAL INSTRUMENTS: 014

(CONTINUED)

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 20 DAY OF
NOVEMBER, 2024 AT 01:01 P.M.

ORDER NUMBER: 52208558

CUSTOMER FILE NUMBER: PE24-5236



END OF CERTIFICATE

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED
FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER,
SUBJECT TO WHAT IS SET OUT IN THE PARAGRAPH BELOW.

THE ABOVE PROVISIONS DO NOT PROHIBIT THE ORIGINAL PURCHASER FROM
INCLUDING THIS UNMODIFIED PRODUCT IN ANY REPORT, OPINION,
APPRAISAL OR OTHER ADVICE PREPARED BY THE ORIGINAL PURCHASER AS
PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING
OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON OCTOBER 28, 2014

S
LINC SHORT LEGAL TITLE NUMBER
0017 983 883 4;1;49;24;SW 862 094 322

LEGAL DESCRIPTION

THE SOUTH WEST QUARTER OF
SECTION TWENTY FOUR (24)
TOWNSHIP FORTY NINE (49)
RANGE ONE (1)
WEST OF THE FOURTH MERIDIAN,
CONTAINING 64.7 HECTARES (160 ACRES) MORE OR LESS
EXCEPTING THEREOUT:
0.417 HECTARES (1.03 ACRES) MORE OR LESS AS SHOWN
ON ROAD PLAN 443RS
EXCEPTING THEREOUT ALL MINES AND MINERALS

ESTATE: FEE SIMPLE

MUNICIPALITY: CITY OF LLOYDMINSTER

REGISTERED OWNER(S)					
REGISTRATION	DATE (DMY)	DOCUMENT	TYPE	VALUE	CONSIDERATION
862 094 322	07/05/1986				\$75,000

OWNERS

FRANCIS JAMES PARKIN (FARMER)
OF GENERAL DELIVERY, LLOYDMINSTER
ALBERTA S9V 0X5

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION	NUMBER	DATE (D/M/Y)	PARTICULARS
6603NI	04/11/1963		UTILITY RIGHT OF WAY GRANTEE - ALBERTA POWER LIMITED. "PART, DATA UPDATED BY TRANSFER OF UTRW 6699SQ"
52920G	01/06/1965		MORTGAGE OF UTILITY RIGHT OF WAY MORTGAGEE - MONTREAL TRUST COMPANY.

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

862 094 322

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
		AFFECTS INSTRUMENT: 6603NI
4728RQ	13/11/1969	UTILITY RIGHT OF WAY GRANTEE - ALBERTA POWER LIMITED. "TAKES PRIORITY DATE OF CAVEAT 3152PL DATA UPDATED BY TRNASFER OF UTRW 6699SQ"
670SU	15/10/1971	MORTGAGE OF UTILITY RIGHT OF WAY MORTGAGEE - MONTREAL TRUST COMPANY. AFFECTS INSTRUMENT: 4728RQ AFFECTS INSTRUMENT: 4116SG (DATA UPDATED BY: 912195450)
1894VD	16/10/1974	UTILITY RIGHT OF WAY GRANTEE - PLAINS MIDSTREAM CANADA ULC. (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT OF WAY 022048460) (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT OF WAY 112012907)
792 151 563	29/06/1979	UTILITY RIGHT OF WAY GRANTEE - THE COUNTY OF VERMILION RIVER NO. 24.
862 094 323	07/05/1986	CAVEAT RE : LEASE CAVEATOR - MARY SOPHIE PARKIN C/O JOHNSTON BENNETT SHOLTER BODNAR P.O. BOX 500, LLOYDMINSTER ALBERTA
912 195 450	26/07/1991	CORRECTION OF INSTRUMENT AFFECTS INSTRUMENT: 670SU REGISTRATION DATE CHANGED FROM: 19711016 TO : 19711015
922 086 457	02/04/1992	CAVEAT RE : RIGHT OF WAY AGREEMENT CAVEATOR - ATCO GAS AND PIPELINES LTD. ATTENTION: LAND DEPARTMENT 10035-105 STREET EDMONTON ALBERTA T5J2V6 (DATA UPDATED BY: TRANSFER OF CAVEAT 012014255)
922 139 782	20/05/1992	DISCHARGE OF MORTGAGE OF UTILITY RIGHT OF WAY 5292OG
922 155 696	02/06/1992	DISCHARGE OF MORTGAGE OF UTILITY RIGHT OF WAY 670SU

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 3

862 094 322

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
922 400 121	23/12/1992	CAVEAT RE : SURFACE LEASE CAVEATOR - ATCO GAS AND PIPELINES LTD. ATTENTION: LAND DEPARTMENT 10035-105 STREET EDMONTON ALBERTA T5J2V6 (DATA UPDATED BY: TRANSFER OF CAVEAT 012015325)
972 274 692	09/09/1997	CAVEAT RE : SURFACE LEASE UNDER 20 ACRES CAVEATOR - TIMBERWOLF RESOURCES LTD. 800, 717 7 AVE SW CALGARY ALBERTA T2P0Z3 AGENT - DANELL KOKOL
012 014 255	15/01/2001	TRANSFER OF CAVEAT 922086457 TRANSFeree - ATCO GAS AND PIPELINES LTD. ATTENTION: LAND DEPARTMENT 10035-105 STREET EDMONTON ALBERTA T5J2V6
012 015 325	15/01/2001	TRANSFER OF CAVEAT 922400121 TRANSFeree - ATCO GAS AND PIPELINES LTD. ATTENTION: LAND DEPARTMENT 10035-105 STREET EDMONTON ALBERTA T5J2V6
022 048 460	08/02/2002	TRANSFER OF UTILITY RIGHT OF WAY 1894VD TRANSFeree - PMC (NOVA SCOTIA) COMPANY.
102 080 257	11/03/2010	CAVEAT RE : LEASE INTEREST UNDER 20 ACRES CAVEATOR - CANADIAN NATURAL RESOURCES LIMITED. BOX 6926, STATION "D" CALGARY ALBERTA T2P2G1 AGENT - PIONEER PROFESSIONAL SERVICES GROUP LTD.
102 080 266	11/03/2010	CAVEAT RE : LEASE INTEREST UNDER 20 ACRES CAVEATOR - CANADIAN NATURAL RESOURCES LIMITED. BOX 6926, STATION "D" CALGARY ALBERTA T2P2G1

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 4
862 094 322

REGISTRATION

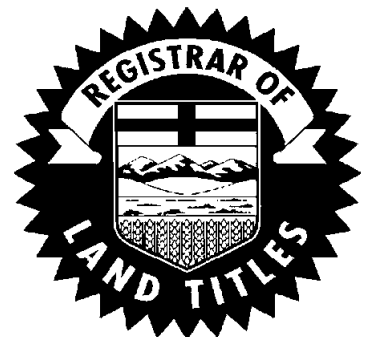
NUMBER	DATE (D/M/Y)	PARTICULARS
		AGENT - PIONEER PROFESSIONAL SERVICES GROUP LTD.
112 012 907	14/01/2011	TRANSFER OF UTILITY RIGHT OF WAY 1894VD TRANSFEEE - PLAINS MIDSTREAM CANADA ULC.
112 225 276	22/07/2011	CAVEAT RE : LEASE INTEREST UNDER 20 ACRES CAVEATOR - CANADIAN NATURAL RESOURCES LIMITED. BOX 6926, STATION "D" CALGARY ALBERTA T2P2G1 AGENT - PIONEER PROFESSIONAL SERVICES GROUP LTD.
112 247 269	10/08/2011	DISCHARGE OF CAVEAT 102080266
122 138 780	07/05/2012	CAVEAT RE : LEASE INTEREST UNDER 20 ACRES CAVEATOR - CANADIAN NATURAL RESOURCES LIMITED. BOX 6926, STATION "D" CALGARY ALBERTA T2P2G1 AGENT - PIONEER PROFESSIONAL SERVICES GROUP LTD.
122 193 176	19/06/2012	LAPSE OF CAVEAT 972274692
122 193 177	19/06/2012	LAPSE OF CAVEAT 862094323
142 362 530	28/10/2014	TRANSMISSION OF LAND OWNERS - SHIRLEY ANN PARKIN EXECUTRIX FOR FRANCIS JAMES PARKIN BOX 12914 LLOYDMINSTER ALBERTA T9V2J3 NEW TITLE ISSUED

TOTAL INSTRUMENTS: 025

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 20 DAY OF
NOVEMBER, 2024 AT 01:01 P.M.

ORDER NUMBER: 52208558

CUSTOMER FILE NUMBER: PE24-5236



END OF CERTIFICATE

(CONTINUED)

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER, SUBJECT TO WHAT IS SET OUT IN THE PARAGRAPH BELOW.

THE ABOVE PROVISIONS DO NOT PROHIBIT THE ORIGINAL PURCHASER FROM INCLUDING THIS UNMODIFIED PRODUCT IN ANY REPORT, OPINION, APPRAISAL OR OTHER ADVICE PREPARED BY THE ORIGINAL PURCHASER AS PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S) .



HISTORICAL LAND TITLE CERTIFICATE
 TITLE CANCELLED ON FEBRUARY 13,2015

S
 LINC SHORT LEGAL TITLE NUMBER
 0036 261 907 4;1;49;34;NE 142 269 582 +1

LEGAL DESCRIPTION

MERIDIAN 4 RANGE 1 TOWNSHIP 49
 SECTION 34
 QUARTER NORTH EAST
 CONTAINING 64.7 HECTARES (160 ACRES) MORE OR LESS.

EXCEPTING THEREOUT:		HECTARES (ACRES) MORE OR LESS	
A) PLAN 3115PX	ROAD	0.028	0.068
B) PLAN 8322705	ROAD	2.819	6.97
C) PLAN 0425808	ROAD	0.200	0.49
D) PLAN 0721697	SUBDIVISION	8.88	21.94
E) PLAN 1423737	SUBDIVISION	5.76	14.23

EXCEPTING THEREOUT ALL MINES AND MINERALS

ESTATE: FEE SIMPLE

MUNICIPALITY: CITY OF LLOYDMINSTER

REFERENCE NUMBER: 072 116 589 +4

REGISTERED OWNER(S)				
REGISTRATION	DATE (DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
142 269 582	20/08/2014	SUBDIVISION PLAN		

OWNERS

AMMTIL ENTERPRISES LTD.
 OF 3306-58 AVE
 LLOYDMINSTER
 ALBERTA T9V 1X6

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION		
NUMBER	DATE (D/M/Y)	PARTICULARS
782 064 231	31/03/1978	UTILITY RIGHT OF WAY GRANTEE - THE COUNTY OF VERMILION RIVER NO. 24.

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

142 269 582 +1

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
		BOX 69, 4912 50 ST KITSCOTY ALBERTA T0B2P0 "DATA UPDATED BY CHANGE OF ADDRESS FOR SERVICE 832181148 & TRANSFER OF UTRW 862248484" (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT OF WAY 042097707) (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT OF WAY 052295899)
972 332 289	29/10/1997	CAVEAT RE : UTILITY RIGHT OF WAY CAVEATOR - ALBERTA POWER LIMITED. ATTENTION: LAND & PROPERTIES 10035-105 STREET EDMONTON ALBERTA T5J2V6 AGENT - LORRIE SAWCHUK
042 097 707	08/03/2004	TRANSFER OF UTILITY RIGHT OF WAY 782064231 TRANSFEREE - BARCOMP PETROLEUM LTD. P.O.BOX 500,5105-49 STREET LLOYDMINSTER ALBERTA S9V0Y6 AGENT - PETER T JOHNSON
052 295 899	20/07/2005	TRANSFER OF UTILITY RIGHT OF WAY 782064231 TRANSFEREE - THE COUNTY OF VERMILION RIVER NO. 24. BOX 69, 4912 50 ST KITSCOTY ALBERTA T0B2P0
072 116 591	28/02/2007	CAVEAT RE : DEFERRED RESERVE CAVEATOR - THE CITY OF LLOYDMINSTER. 4420-50 AVENUE LLOYDMINSTER ALBERTA T9V0W2
072 116 592	28/02/2007	UTILITY RIGHT OF WAY GRANTEE - THE CITY OF LLOYDMINSTER. AS TO PORTION OR PLAN:0721698
072 116 594	28/02/2007	CAVEAT RE : SEE CAVEAT CAVEATOR - THE CITY OF LLOYDMINSTER. 4420-50 AVENUE LLOYDMINSTER ALBERTA T9V0W2 AGENT - RICK COLLINS

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 3

142 269 582 +1

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
072 116 732	28/02/2007	RESTRICTIVE COVENANT
082 100 431	05/03/2008	CAVEAT RE : UTILITY RIGHT OF WAY CAVEATOR - HUSKY OIL OPERATIONS LTD. 4429-44 STREET LLOYDMINSTER SASKATCHEWAN S9V0Z8 AGENT - DWAYNE L LUNDQUIST
142 269 583	20/08/2014	CAVEAT RE : DEFERRED RESERVE CAVEATOR - THE CITY OF LLOYDMINSTER. 4420-50 AVENUE LLOYDMINSTER ALBERTA T9V0W2
142 269 586	20/08/2014	RESTRICTIVE COVENANT
142 269 588	20/08/2014	DISCHARGE OF CAVEAT 072116591
142 377 988	07/11/2014	DISCHARGE OF CAVEAT 072116594
152 052 871	13/02/2015	DISCHARGE OF UTILITY RIGHT OF WAY 782064231 PARTIAL EXCEPT PLAN/PORTION: 7720647
152 052 872	13/02/2015	SURVEYS DISCHARGE AFFECTS INSTRUMENT: 972332289 AS TO NEW PLAN
152 052 873	13/02/2015	SURVEYS DISCHARGE AFFECTS INSTRUMENT: 142269583 AS TO NEW PLAN
152 052 874	13/02/2015	SUBDIVISION PLAN 1520781 TITLE CANCELLED AS TO PART AND NEW TITLE ISSUED FOR THE REMAINDER

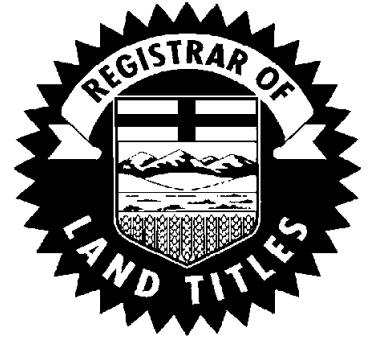
TOTAL INSTRUMENTS: 017

(CONTINUED)

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 20 DAY OF
NOVEMBER, 2024 AT 12:46 P.M.

ORDER NUMBER: 52208332

CUSTOMER FILE NUMBER: PE24-5236



END OF CERTIFICATE

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED
FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER,
SUBJECT TO WHAT IS SET OUT IN THE PARAGRAPH BELOW.

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INCLUDING THIS UNMODIFIED PRODUCT IN ANY REPORT, OPINION,
APPRAISAL OR OTHER ADVICE PREPARED BY THE ORIGINAL PURCHASER AS
PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING
OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE

TITLE CANCELLED ON AUGUST 20,2014

S
LINC SHORT LEGAL TITLE NUMBER
0032 277 519 4;1;49;34;NE 072 116 589 +4

LEGAL DESCRIPTION

THE NORTH EAST QUARTER OF SECTION THIRTY FOUR (34)
TOWNSHIP FORTY NINE (49)
RANGE ONE (1)
WEST OF THE FOURTH MERIDIAN
CONTAINING 64.7 HECTARES (160 ACRES) MORE OR LESS.

Table with columns: EXCEPTING THEREOUT:, HECTARES (ACRES) MORE OR LESS. Rows A) PLAN 3115PX ROAD 0.028 0.068, B) PLAN 8322705 ROAD 2.819 6.97, C) PLAN 0425808 ROAD 0.200 0.49, D) PLAN 0721697 SUBDIVISION 8.88 21.94

EXCEPTING THEREOUT ALL MINES AND MINERALS

ESTATE: FEE SIMPLE

MUNICIPALITY: CITY OF LLOYDMINSTER

REFERENCE NUMBER: 042 458 114

Table with columns: REGISTRATION, DATE (DMY), REGISTERED OWNER(S), DOCUMENT TYPE, VALUE, CONSIDERATION. Row: 072 116 589 28/02/2007 SUBDIVISION PLAN

OWNERS

AMMTEL ENTERPRISES LTD.
OF 3306-58 AVE
LLOYDMINSTER
ALBERTA T9V 1X6

ENCUMBRANCES, LIENS & INTERESTS

Table with columns: REGISTRATION NUMBER, DATE (D/M/Y), PARTICULARS. Row: 752 068 815 11/06/1975 CAVEAT CAVEATOR - EMERGE OIL & GAS INC.

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

072 116 589 +4

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

TWIN BUTTE ENERGY LTD
410,396 11TH AVE SW
CALGARY
ALBERTA T2R0C5

(DATA UPDATED BY: CHANGE OF NAME 012257035)

(DATA UPDATED BY: CHANGE OF ADDRESS 032291045)

(DATA UPDATED BY: CHANGE OF ADDRESS 122069903)

752 077 499 25/06/1975 CAVEAT

CAVEATOR - EMERGE OIL & GAS INC.
TWIN BUTTE ENERGY LTD
410,396 11TH AVE SW
CALGARY
ALBERTA T2R0C5

(DATA UPDATED BY: CHANGE OF NAME 012257035)

(DATA UPDATED BY: CHANGE OF ADDRESS 032291045)

(DATA UPDATED BY: CHANGE OF ADDRESS 122069903)

782 064 231 31/03/1978 UTILITY RIGHT OF WAY

GRANTEE - THE COUNTY OF VERMILION RIVER NO. 24.
BOX 69, 4912 50 ST
KITSCOTY
ALBERTA T0B2P0

"DATA UPDATED BY CHANGE OF ADDRESS FOR SERVICE
832181148 & TRANSFER OF UTRW 862248484"

(DATA UPDATED BY: TRANSFER OF UTILITY RIGHT
OF WAY 042097707)(DATA UPDATED BY: TRANSFER OF UTILITY RIGHT
OF WAY 052295899)

912 033 414 08/02/1991 TRANSFER OF CAVEAT 752077499

TRANSFEREE - CANADA NORTHWEST ENERGY LIMITED.
2700, 300-5TH AVE., SW CALGARY
ALBERTA T2P3C4

912 033 415 08/02/1991 TRANSFER OF CAVEAT 752068815

TRANSFEREE - CANADA NORTHWEST ENERGY LIMITED.
2700, 300-5TH AVE., SW CALGARY
ALBERTA T2P3C4

962 288 820 21/10/1996 CAVEAT

RE : SURFACE LEASE
CAVEATOR - TWIN BUTTE ENERGY LTD.
410, 396-11TH AVE SW
CALGARY
ALBERTA T2R0C5

(DATA UPDATED BY: CHANGE OF NAME 012257600)

(DATA UPDATED BY: CHANGE OF ADDRESS 032291000)

(DATA UPDATED BY: CHANGE OF NAME 122069740)

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 3

072 116 589 +4

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
962 318 294	20/11/1996	CAVEAT RE : SURFACE LEASE CAVEATOR - TWIN BUTTE ENERGY LTD. 410, 396-11TH AVE SW CALGARY ALBERTA T2R0C5 (DATA UPDATED BY: CHANGE OF NAME 012257601) (DATA UPDATED BY: CHANGE OF NAME 122069740)
962 318 295	20/11/1996	CAVEAT RE : SURFACE LEASE CAVEATOR - TWIN BUTTE ENERGY LTD. 410, 396-11TH AVE SW CALGARY ALBERTA T2R0C5 (DATA UPDATED BY: CHANGE OF NAME 012257601) (DATA UPDATED BY: CHANGE OF NAME 122069740)
962 318 296	20/11/1996	CAVEAT RE : SURFACE LEASE CAVEATOR - TWIN BUTTE ENERGY LTD. 410, 396-11TH AVE SW CALGARY ALBERTA T2R0C5 (DATA UPDATED BY: CHANGE OF NAME 012257602) (DATA UPDATED BY: CHANGE OF NAME 122069740)
962 318 297	20/11/1996	CAVEAT RE : SURFACE LEASE CAVEATOR - TWIN BUTTE ENERGY LTD. 410, 396-11TH AVE SW CALGARY ALBERTA T2R0C5 (DATA UPDATED BY: CHANGE OF NAME 012257602) (DATA UPDATED BY: CHANGE OF NAME 122069732)
962 328 054	28/11/1996	TRANSFER OF CAVEAT 752068815 AND CAVEAT 752077499 TRANSFeree - BARRINGTON PETROLEUM LTD. BOX 1958, STATION "M" CALGARY ALBERTA T2P2M2
972 273 064	08/09/1997	UTILITY RIGHT OF WAY GRANTEE - PEMBINA NGL CORPORATION. 3800, 525-8 AVE SW CALGARY ALBERTA T2P1G1 (DATA UPDATED BY: CHANGE OF NAME 012258291)

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 4

REGISTRATION

072 116 589 +4

NUMBER DATE (D/M/Y) PARTICULARS

(DATA UPDATED BY: CHANGE OF NAME 122249674)

972 332 289 29/10/1997 CAVEAT
RE : UTILITY RIGHT OF WAY
CAVEATOR - ALBERTA POWER LIMITED.
ATTENTION: LAND & PROPERTIES
10035-105 STREET
EDMONTON
ALBERTA T5J2V6
AGENT - LORRIE SAWCHUK

002 334 340 09/11/2000 TRANSFER OF UTILITY RIGHT OF WAY 972273064
TRANSFeree - MAXX PETROLEUM LTD.

002 357 117 30/11/2000 TRANSFER OF CAVEAT 752068815
AND CAVEAT 752077499
AND CAVEAT 962288820
TRANSFeree - MAXX PETROLEUM LTD.
ATTN: LAND DEPT, 900, 606-4 ST SW
CALGARY
ALBERTA T2P1T1

002 357 118 30/11/2000 TRANSFER OF CAVEAT 962318294
AND CAVEAT 962318295
AND CAVEAT 962318296
AND CAVEAT 962318297
TRANSFeree - MAXX PETROLEUM LTD.
ATTN: LAND DEPT, 900, 606-4 ST SW
CALGARY
ALBERTA T2P1T1

012 257 035 21/08/2001 CHANGE OF NAME
RE: PROVIDENT ENERGY LTD.
900 606 4 ST SW
CALGARY
ALBERTA T2P1T1
AFFECTS INSTRUMENT: 752068815
AFFECTS INSTRUMENT: 752077499

012 257 600 21/08/2001 CHANGE OF NAME
RE: PROVIDENT ENERGY LTD.
900 606 4 ST SW
CALGARY
ALBERTA T2P1T1
AFFECTS INSTRUMENT: 962288820

012 257 601 21/08/2001 CHANGE OF NAME
RE: PROVIDENT ENERGY LTD.
900 606 4 ST SW
CALGARY

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 5

072 116 589 +4

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
		ALBERTA T2P1T1 AFFECTS INSTRUMENT: 962318294 AFFECTS INSTRUMENT: 962318295
012 257 602	21/08/2001	CHANGE OF NAME RE: PROVIDENT ENERGY LTD. 900 606 4 ST SW CALGARY ALBERTA T2P1T1 AFFECTS INSTRUMENT: 962318296 AFFECTS INSTRUMENT: 962318297
012 258 291	22/08/2001	CHANGE OF NAME RE: PROVIDENT ENERGY LTD. 900 606 4 ST SW CALGARY ALBERTA T2P1T1 AFFECTS INSTRUMENT: 972273064
032 291 000	11/08/2003	CHANGE OF ADDRESS FOR SERVICE RE: PROVIDENT ENERGY LTD. 700, 112-4 AVE SW CALGARY ALBERTA T2P0H3 AFFECTS INSTRUMENT: 962288820
032 291 045	11/08/2003	CHANGE OF ADDRESS FOR SERVICE RE: PROVIDENT ENERGY LTD. 700, 112-4 AVE SW CALGARY ALBERTA T2P0H3 AFFECTS INSTRUMENT: 752068815 752077499
042 097 707	08/03/2004	TRANSFER OF UTILITY RIGHT OF WAY 782064231 TRANSFeree - BARCOMP PETROLEUM LTD. P.O.BOX 500,5105-49 STREET LLOYDMINSTER ALBERTA S9V0Y6 AGENT - PETER T JOHNSON
052 295 899	20/07/2005	TRANSFER OF UTILITY RIGHT OF WAY 782064231 TRANSFeree - THE COUNTY OF VERMILION RIVER NO. 24. BOX 69, 4912 50 ST KITSCOTY ALBERTA T0B2P0
072 116 591	28/02/2007	CAVEAT RE : DEFERRED RESERVE CAVEATOR - THE CITY OF LLOYDMINSTER. 4420-50 AVENUE (CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 6

072 116 589 +4

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
		LLOYDMINSTER ALBERTA T9V0W2
072 116 592	28/02/2007	UTILITY RIGHT OF WAY GRANTEE - THE CITY OF LLOYDMINSTER. AS TO PORTION OR PLAN:0721698
072 116 594	28/02/2007	CAVEAT RE : SEE CAVEAT CAVEATOR - THE CITY OF LLOYDMINSTER. 4420-50 AVENUE LLOYDMINSTER ALBERTA T9V0W2 AGENT - RICK COLLINS
072 116 732	28/02/2007	RESTRICTIVE COVENANT
082 100 431	05/03/2008	CAVEAT RE : UTILITY RIGHT OF WAY CAVEATOR - HUSKY OIL OPERATIONS LTD. 4429-44 STREET LLOYDMINSTER SASKATCHEWAN S9V0Z8 AGENT - DWAYNE L LUNDQUIST
102 151 135	06/05/2010	TRANSFER OF CAVEAT 962318295 AND CAVEAT 962318297 AND CAVEAT 962318296 AND CAVEAT 752077499 TRANSFEREE - EMERGE OIL & GAS INC. SUITE 1800,250 2ND STREET SW CALGARY ALBERTA T2P0C1
102 151 732	06/05/2010	TRANSFER OF CAVEAT 752068815 AND CAVEAT 962318294 AND CAVEAT 962288820 TRANSFEREE - EMERGE OIL & GAS INC. SUITE 1800,250 2ND STREET SW CALGARY ALBERTA T2P0C1
122 069 732	07/03/2012	CHANGE OF NAME RE: TWIN BUTTE ENERGY LTD. 410, 396-11TH AVE SW CALGARY ALBERTA T2R0C5 AFFECTS INSTRUMENT: 962318297
122 069 740	07/03/2012	CHANGE OF NAME

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 7

072 116 589 +4

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
		RE: TWIN BUTTE ENERGY LTD. 410, 396-11TH AVE SW CALGARY ALBERTA T2R0C5 AFFECTS INSTRUMENT: 962288820 AFFECTS INSTRUMENT: 962318294 AFFECTS INSTRUMENT: 962318295 AFFECTS INSTRUMENT: 962318296
122 069 903	07/03/2012	CHANGE OF ADDRESS FOR SERVICE RE: EMERGE OIL & GAS INC. TWIN BUTTE ENERGY LTD 410,396 11TH AVE SW CALGARY ALBERTA T2R0C5 AFFECTS INSTRUMENT: 752068815 752077499
122 249 674	01/08/2012	CHANGE OF NAME RE: PEMBINA NGL CORPORATION. 3800, 525-8 AVE SW CALGARY ALBERTA T2P1G1 AFFECTS INSTRUMENT: 972273064
142 138 678	13/05/2014	DISCHARGE OF CAVEAT 962318296
142 138 698	13/05/2014	DISCHARGE OF CAVEAT 752068815 AND TRANSFER OF 912033415
142 138 703	13/05/2014	DISCHARGE OF CAVEAT 752077499 AND TRANSFER OF 912033414 AND TRANSFER OF 962328054 AND CHANGE OF NAME 012257035 AND CHANGE OF ADDRESS FOR SERVICE 032291045 AND CHANGE OF ADDRESS FOR SERVICE 122069903
142 138 705	13/05/2014	DISCHARGE OF CAVEAT 962318294
142 212 161	08/07/2014	DISCHARGE OF CAVEAT 962288820 AND TRANSFER OF 002357117 AND CHANGE OF NAME 012257600 AND CHANGE OF ADDRESS FOR SERVICE 032291000 AND TRANSFER OF 102151732
142 212 166	08/07/2014	DISCHARGE OF CAVEAT 962318295 AND CHANGE OF NAME 012257601 AND CHANGE OF NAME 122069740

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REGISTRATION

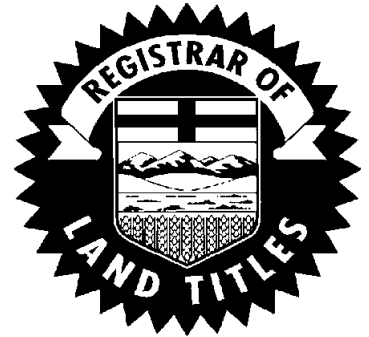
NUMBER	DATE (D/M/Y)	PARTICULARS
142 244 360	30/07/2014	DISCHARGE OF CAVEAT 962318297 AND TRANSFER OF 002357118 AND CHANGE OF NAME 012257602 AND TRANSFER OF 102151135 AND CHANGE OF NAME 122069732
142 249 339	05/08/2014	DISCHARGE OF UTILITY RIGHT OF WAY 972273064 AND TRANSFER OF 002334340 AND CHANGE OF NAME 012258291 AND CHANGE OF NAME 122249674
142 269 581	20/08/2014	SURVEYS DISCHARGE AFFECTS INSTRUMENT: 972332289 AS TO NEW PLAN
142 269 582	20/08/2014	SUBDIVISION PLAN 1423737 TITLE CANCELLED AS TO PART AND NEW TITLE ISSUED FOR THE REMAINDER

TOTAL INSTRUMENTS: 046

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 20 DAY OF
NOVEMBER, 2024 AT 12:46 P.M.

ORDER NUMBER: 52208332

CUSTOMER FILE NUMBER: PE24-5236



END OF CERTIFICATE

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED
FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER,
SUBJECT TO WHAT IS SET OUT IN THE PARAGRAPH BELOW.

THE ABOVE PROVISIONS DO NOT PROHIBIT THE ORIGINAL PURCHASER FROM
INCLUDING THIS UNMODIFIED PRODUCT IN ANY REPORT, OPINION,
APPRAISAL OR OTHER ADVICE PREPARED BY THE ORIGINAL PURCHASER AS
PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING
OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON FEBRUARY 28,2007

S
LINC SHORT LEGAL TITLE NUMBER
0030 742 754 4;1;49;34;NE 042 458 114

LEGAL DESCRIPTION

THE NORTH EAST QUARTER OF SECTION THIRTY FOUR (34)
TOWNSHIP FORTY NINE (49)
RANGE ONE (1)
WEST OF THE FOURTH MERIDIAN
CONTAINING 64.7 HECTARES (160 ACRES) MORE OR LESS.

EXCEPTING THEREOUT:		HECTARES (ACRES) MORE OR LESS	
A) PLAN 3115PX	ROAD	0.028	0.068
B) PLAN 8322705	ROAD	2.819	6.97
C) PLAN 0425808	ROAD	0.200	0.49

EXCEPTING THEREOUT ALL MINES AND MINERALS

ESTATE: FEE SIMPLE

MUNICIPALITY: CITY OF LLOYDMINSTER

REFERENCE NUMBER: 902 331 759

REGISTERED OWNER(S)				
REGISTRATION	DATE (DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
042 458 114	19/10/2004	ROAD PLAN		

OWNERS

AMMTIL ENTERPRISES LTD.
OF 3306-58 AVE
LLOYDMINSTER
ALBERTA T9V 1X6

ENCUMBRANCES, LIENS & INTERESTS		
REGISTRATION NUMBER	DATE (D/M/Y)	PARTICULARS
61730G	25/06/1965	CAVEAT RE : LEASE CAVEATOR - KODIAK PETROLEUMS LTD.

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

042 458 114

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
752 068 815	11/06/1975	CAVEAT CAVEATOR - PROVIDENT ENERGY LTD. 700, 112-4 AVE SW CALGARY ALBERTA T2P0H3 (DATA UPDATED BY: TRANSFER OF CAVEAT 912033415) (DATA UPDATED BY: TRANSFER OF CAVEAT 962328054) (DATA UPDATED BY: TRANSFER OF CAVEAT 002357117) (DATA UPDATED BY: CHANGE OF NAME 012257035) (DATA UPDATED BY: CHANGE OF ADDRESS 032291045)
752 077 499	25/06/1975	CAVEAT CAVEATOR - PROVIDENT ENERGY LTD. 700, 112-4 AVE SW CALGARY ALBERTA T2P0H3 (DATA UPDATED BY: TRANSFER OF CAVEAT 912033414) (DATA UPDATED BY: TRANSFER OF CAVEAT 962328054) (DATA UPDATED BY: TRANSFER OF CAVEAT 002357117) (DATA UPDATED BY: CHANGE OF NAME 012257035) (DATA UPDATED BY: CHANGE OF ADDRESS 032291045)
782 064 231	31/03/1978	UTILITY RIGHT OF WAY GRANTEE - THE COUNTY OF VERMILION RIVER NO. 24. BOX 69, 4912 50 ST KITSCOTY ALBERTA T0B2P0 "DATA UPDATED BY CHANGE OF ADDRESS FOR SERVICE 832181148 & TRANSFER OF UTRW 862248484" (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT OF WAY 042097707) (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT OF WAY 052295899)
902 331 760	14/11/1990	REQUEST FOR RELEASE OF D.C.T. DCT ISSUED SURRENDERED BY 072116589
912 033 414	08/02/1991	TRANSFER OF CAVEAT 752077499 TRANSFEREE - CANADA NORTHWEST ENERGY LIMITED. 2700, 300-5TH AVE., SW CALGARY ALBERTA T2P3C4

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 3

042 458 114

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
912 033 415	08/02/1991	TRANSFER OF CAVEAT 752068815 TRANSFeree - CANADA NORTHWEST ENERGY LIMITED. 2700, 300-5TH AVE., SW CALGARY ALBERTA T2P3C4
962 288 820	21/10/1996	CAVEAT RE : SURFACE LEASE CAVEATOR - PROVIDENT ENERGY LTD. 700, 112-4 AVE SW CALGARY ALBERTA T2P0H3 (DATA UPDATED BY: TRANSFER OF CAVEAT 002357117) (DATA UPDATED BY: CHANGE OF NAME 012257600) (DATA UPDATED BY: CHANGE OF ADDRESS 032291000)
962 318 294	20/11/1996	CAVEAT RE : SURFACE LEASE CAVEATOR - PROVIDENT ENERGY LTD. 900 606 4 ST SW CALGARY ALBERTA T2P1T1 (DATA UPDATED BY: TRANSFER OF CAVEAT 002357118) (DATA UPDATED BY: CHANGE OF NAME 012257601)
962 318 295	20/11/1996	CAVEAT RE : SURFACE LEASE CAVEATOR - PROVIDENT ENERGY LTD. 900 606 4 ST SW CALGARY ALBERTA T2P1T1 (DATA UPDATED BY: TRANSFER OF CAVEAT 002357118) (DATA UPDATED BY: CHANGE OF NAME 012257601)
962 318 296	20/11/1996	CAVEAT RE : SURFACE LEASE CAVEATOR - PROVIDENT ENERGY LTD. 900 606 4 ST SW CALGARY ALBERTA T2P1T1 (DATA UPDATED BY: TRANSFER OF CAVEAT 002357118) (DATA UPDATED BY: CHANGE OF NAME 012257602)
962 318 297	20/11/1996	CAVEAT RE : SURFACE LEASE CAVEATOR - PROVIDENT ENERGY LTD.

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 4

042 458 114

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
		900 606 4 ST SW CALGARY ALBERTA T2P1T1 (DATA UPDATED BY: TRANSFER OF CAVEAT 002357118) (DATA UPDATED BY: CHANGE OF NAME 012257602)
962 328 054	28/11/1996	TRANSFER OF CAVEAT 752068815 AND CAVEAT 752077499 TRANSFEEE - BARRINGTON PETROLEUM LTD. BOX 1958, STATION "M" CALGARY ALBERTA T2P2M2
972 114 102	25/04/1997	CAVEAT RE : SURFACE LEASE UNDER 20 ACRES CAVEATOR - PROVIDENT ENERGY LTD. 700, 112-4 AVE SW CALGARY ALBERTA T2P0H3 (DATA UPDATED BY: CHANGE OF NAME 012257809) (DATA UPDATED BY: CHANGE OF ADDRESS 032291014)
972 273 064	08/09/1997	UTILITY RIGHT OF WAY GRANTEE - PROVIDENT ENERGY LTD. 900 606 4 ST SW CALGARY ALBERTA T2P1T1 (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT OF WAY 002334340) (DATA UPDATED BY: CHANGE OF NAME 012258291)
972 332 289	29/10/1997	CAVEAT RE : UTILITY RIGHT OF WAY CAVEATOR - ALBERTA POWER LIMITED. ATTENTION: LAND & PROPERTIES 10035-105 STREET EDMONTON ALBERTA T5J2V6 AGENT - LORRIE SAWCHUK
002 334 340	09/11/2000	TRANSFER OF UTILITY RIGHT OF WAY 972273064 TRANSFEEE - MAXX PETROLEUM LTD.
002 357 117	30/11/2000	TRANSFER OF CAVEAT 752068815 AND CAVEAT 752077499 AND CAVEAT 962288820 TRANSFEEE - MAXX PETROLEUM LTD. ATTN:LAND DEPT,900,606-4 ST SW

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 5

042 458 114

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
		CALGARY ALBERTA T2P1T1
002 357 118	30/11/2000	TRANSFER OF CAVEAT 962318294 AND CAVEAT 962318295 AND CAVEAT 962318296 AND CAVEAT 962318297 TRANSFEEE - MAXX PETROLEUM LTD. ATTN:LAND DEPT,900,606-4 ST SW CALGARY ALBERTA T2P1T1
002 357 119	30/11/2000	TRANSFER OF CAVEAT 972114102 TRANSFEEE - MAXX PETROLEUM LTD. ATTN:LAND DEPT,900,606-4 ST SW CALGARY ALBERTA T2P1T1
012 257 035	21/08/2001	CHANGE OF NAME RE: PROVIDENT ENERGY LTD. 900 606 4 ST SW CALGARY ALBERTA T2P1T1 AFFECTS INSTRUMENT: 752068815 AFFECTS INSTRUMENT: 752077499
012 257 600	21/08/2001	CHANGE OF NAME RE: PROVIDENT ENERGY LTD. 900 606 4 ST SW CALGARY ALBERTA T2P1T1 AFFECTS INSTRUMENT: 962288820
012 257 601	21/08/2001	CHANGE OF NAME RE: PROVIDENT ENERGY LTD. 900 606 4 ST SW CALGARY ALBERTA T2P1T1 AFFECTS INSTRUMENT: 962318294 AFFECTS INSTRUMENT: 962318295
012 257 602	21/08/2001	CHANGE OF NAME RE: PROVIDENT ENERGY LTD. 900 606 4 ST SW CALGARY ALBERTA T2P1T1 AFFECTS INSTRUMENT: 962318296 AFFECTS INSTRUMENT: 962318297
012 257 809	21/08/2001	CHANGE OF NAME

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

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042 458 114

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
		RE: PROVIDENT ENERGY LTD. 900 606 4 ST SW CALGARY ALBERTA T2P1T1 AFFECTS INSTRUMENT: 972114102
012 258 291	22/08/2001	CHANGE OF NAME RE: PROVIDENT ENERGY LTD. 900 606 4 ST SW CALGARY ALBERTA T2P1T1 AFFECTS INSTRUMENT: 972273064
032 291 000	11/08/2003	CHANGE OF ADDRESS FOR SERVICE RE: PROVIDENT ENERGY LTD. 700, 112-4 AVE SW CALGARY ALBERTA T2P0H3 AFFECTS INSTRUMENT: 962288820
032 291 014	11/08/2003	CHANGE OF ADDRESS FOR SERVICE RE: PROVIDENT ENERGY LTD. 700, 112-4 AVE SW CALGARY ALBERTA T2P0H3 AFFECTS INSTRUMENT: 972114102
032 291 045	11/08/2003	CHANGE OF ADDRESS FOR SERVICE RE: PROVIDENT ENERGY LTD. 700, 112-4 AVE SW CALGARY ALBERTA T2P0H3 AFFECTS INSTRUMENT: 752068815 752077499
042 097 707	08/03/2004	TRANSFER OF UTILITY RIGHT OF WAY 782064231 TRANSFeree - BARCOMP PETROLEUM LTD. P.O.BOX 500,5105-49 STREET LLOYDMINSTER ALBERTA S9V0Y6 AGENT - PETER T JOHNSON
052 295 899	20/07/2005	TRANSFER OF UTILITY RIGHT OF WAY 782064231 TRANSFeree - THE COUNTY OF VERMILION RIVER NO. 24. BOX 69, 4912 50 ST KITSCOTY ALBERTA T0B2P0

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 7
042 458 114

REGISTRATION

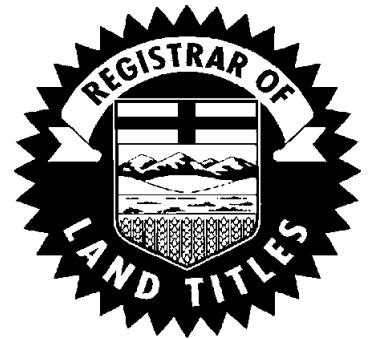
NUMBER	DATE (D/M/Y)	PARTICULARS
052 470 645	26/10/2005	DISCHARGE OF CAVEAT 972114102 AND TRANSFER OF 002357119 AND CHANGE OF NAME 012257809 AND CHANGE OF ADDRESS FOR SERVICE 032291014
062 018 085	12/01/2006	LAPSE OF CAVEAT 61730G
072 116 586	28/02/2007	SURVEYS DISCHARGE AFFECTS INSTRUMENT: 752068815 AFFECTS INSTRUMENT: 752077499 AFFECTS INSTRUMENT: 962288820 AFFECTS INSTRUMENT: 962318294 AFFECTS INSTRUMENT: 962318295 AFFECTS INSTRUMENT: 962318296 AFFECTS INSTRUMENT: 962318297 AS TO NEW PLAN
072 116 587	28/02/2007	SURVEYS DISCHARGE AFFECTS INSTRUMENT: 972273064 AS TO NEW PLAN
072 116 588	28/02/2007	SURVEYS DISCHARGE AFFECTS INSTRUMENT: 972332289 AS TO NEW PLAN
072 116 589	28/02/2007	SUBDIVISION PLAN 0721697 TITLE CANCELLED AS TO PART AND NEW TITLE ISSUED FOR THE REMAINDER

TOTAL INSTRUMENTS: 037

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 20 DAY OF
NOVEMBER, 2024 AT 12:46 P.M.

ORDER NUMBER: 52208332

CUSTOMER FILE NUMBER: PE24-5236



END OF CERTIFICATE

(CONTINUED)

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER, SUBJECT TO WHAT IS SET OUT IN THE PARAGRAPH BELOW.

THE ABOVE PROVISIONS DO NOT PROHIBIT THE ORIGINAL PURCHASER FROM INCLUDING THIS UNMODIFIED PRODUCT IN ANY REPORT, OPINION, APPRAISAL OR OTHER ADVICE PREPARED BY THE ORIGINAL PURCHASER AS PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON OCTOBER 19,2004

S
LINC SHORT LEGAL TITLE NUMBER
0015 838 238 4;1;49;34;NE 902 331 759

LEGAL DESCRIPTION

THE NORTH EAST QUARTER OF SECTION THIRTY FOUR (34)
TOWNSHIP FORTY NINE (49)
RANGE ONE (1)
WEST OF THE FOURTH MERIDIAN
CONTAINING 64.7 HECTARES (160 ACRES) MORE OR LESS.
EXCEPTING THEREOUT:

- A) 0.028 HECTARES (0.068 ACRES) MORE OR LESS, AS SHOWN ON ROAD PLAN 3115PX.
 - B) 2.819 HECTARES (6.97 ACRES) MORE OR LESS, AS SHOWN ON ROAD PLAN 8322705.
- EXCEPTING THEREOUT ALL MINES AND MINERALS

ESTATE: FEE SIMPLE

MUNICIPALITY: CITY OF LLOYDMINSTER

REFERENCE NUMBER: 78R261

REGISTERED OWNER(S)				
REGISTRATION	DATE (DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
902 331 759	14/11/1990	TRANSFER OF LAND	\$254,000	SEE INSTRUMENT

OWNERS

AMMIL ENTERPRISES LTD.
OF 3306-58 AVE
LLOYDMINSTER
ALBERTA T9V 1X6

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION	DATE (D/M/Y)	PARTICULARS
61730G	25/06/1965	CAVEAT RE : LEASE

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

902 331 759

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

CAVEATOR - KODIAK PETROLEUMS LTD.

752 068 815 11/06/1975 CAVEAT
CAVEATOR - PROVIDENT ENERGY LTD.
700, 112-4 AVE SW
CALGARY
ALBERTA T2P0H3
 (DATA UPDATED BY: TRANSFER OF CAVEAT
 912033415)
 (DATA UPDATED BY: TRANSFER OF CAVEAT
 962328054)
 (DATA UPDATED BY: TRANSFER OF CAVEAT
 002357117)
 (DATA UPDATED BY: CHANGE OF NAME 012257035)
 (DATA UPDATED BY: CHANGE OF ADDRESS 032291045)

752 077 499 25/06/1975 CAVEAT
CAVEATOR - PROVIDENT ENERGY LTD.
700, 112-4 AVE SW
CALGARY
ALBERTA T2P0H3
 (DATA UPDATED BY: TRANSFER OF CAVEAT
 912033414)
 (DATA UPDATED BY: TRANSFER OF CAVEAT
 962328054)
 (DATA UPDATED BY: TRANSFER OF CAVEAT
 002357117)
 (DATA UPDATED BY: CHANGE OF NAME 012257035)
 (DATA UPDATED BY: CHANGE OF ADDRESS 032291045)

762 216 077 07/12/1976 CAVEAT
CAVEATOR - WALTER TARAPACKI

782 064 231 31/03/1978 UTILITY RIGHT OF WAY
GRANTEE - BARCOMP PETROLEUM LTD.
P.O.BOX 500,5105-49 STREET LLOYDMINSTER
ALBERTA S9V0Y6
AGENT - PETER T JOHNSON
"DATA UPDATED BY CHANGE OF ADDRESS FOR SERVICE
832181148 & TRANSFER OF UTRW 862248484"
 (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT
 OF WAY 042097707)

902 331 760 14/11/1990 REQUEST FOR RELEASE OF D.C.T.

912 033 414 08/02/1991 TRANSFER OF CAVEAT 752077499
TRANSFEREE - CANADA NORTHWEST ENERGY LIMITED.
2700, 300-5TH AVE., SW CALGARY
ALBERTA T2P3C4

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 3

902 331 759

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
912 033 415	08/02/1991	TRANSFER OF CAVEAT 752068815 TRANSFeree - CANADA NORTHWEST ENERGY LIMITED. 2700, 300-5TH AVE., SW CALGARY ALBERTA T2P3C4
962 288 820	21/10/1996	CAVEAT RE : SURFACE LEASE CAVEATOR - PROVIDENT ENERGY LTD. 700, 112-4 AVE SW CALGARY ALBERTA T2P0H3 (DATA UPDATED BY: TRANSFER OF CAVEAT 002357117) (DATA UPDATED BY: CHANGE OF NAME 012257600) (DATA UPDATED BY: CHANGE OF ADDRESS 032291000)
962 318 294	20/11/1996	CAVEAT RE : SURFACE LEASE CAVEATOR - PROVIDENT ENERGY LTD. 900 606 4 ST SW CALGARY ALBERTA T2P1T1 (DATA UPDATED BY: TRANSFER OF CAVEAT 002357118) (DATA UPDATED BY: CHANGE OF NAME 012257601)
962 318 295	20/11/1996	CAVEAT RE : SURFACE LEASE CAVEATOR - PROVIDENT ENERGY LTD. 900 606 4 ST SW CALGARY ALBERTA T2P1T1 (DATA UPDATED BY: TRANSFER OF CAVEAT 002357118) (DATA UPDATED BY: CHANGE OF NAME 012257601)
962 318 296	20/11/1996	CAVEAT RE : SURFACE LEASE CAVEATOR - PROVIDENT ENERGY LTD. 900 606 4 ST SW CALGARY ALBERTA T2P1T1 (DATA UPDATED BY: TRANSFER OF CAVEAT 002357118) (DATA UPDATED BY: CHANGE OF NAME 012257602)
962 318 297	20/11/1996	CAVEAT RE : SURFACE LEASE CAVEATOR - PROVIDENT ENERGY LTD.

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 4

902 331 759

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
		900 606 4 ST SW CALGARY ALBERTA T2P1T1 (DATA UPDATED BY: TRANSFER OF CAVEAT 002357118) (DATA UPDATED BY: CHANGE OF NAME 012257602)
962 328 054	28/11/1996	TRANSFER OF CAVEAT 752068815 AND CAVEAT 752077499 TRANSFEEE - BARRINGTON PETROLEUM LTD. BOX 1958, STATION "M" CALGARY ALBERTA T2P2M2
972 114 102	25/04/1997	CAVEAT RE : SURFACE LEASE UNDER 20 ACRES CAVEATOR - PROVIDENT ENERGY LTD. 700, 112-4 AVE SW CALGARY ALBERTA T2P0H3 (DATA UPDATED BY: TRANSFER OF CAVEAT 002357119) (DATA UPDATED BY: CHANGE OF NAME 012257809) (DATA UPDATED BY: CHANGE OF ADDRESS 032291014)
972 273 064	08/09/1997	UTILITY RIGHT OF WAY GRANTEE - PROVIDENT ENERGY LTD. 900 606 4 ST SW CALGARY ALBERTA T2P1T1 (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT OF WAY 002334340) (DATA UPDATED BY: CHANGE OF NAME 012258291)
972 332 289	29/10/1997	CAVEAT RE : UTILITY RIGHT OF WAY CAVEATOR - ALBERTA POWER LIMITED. ATTENTION: LAND & PROPERTIES 10035-105 STREET EDMONTON ALBERTA T5J2V6 AGENT - LORRIE SAWCHUK
002 334 340	09/11/2000	TRANSFER OF UTILITY RIGHT OF WAY 972273064 TRANSFEEE - MAXX PETROLEUM LTD.
002 357 117	30/11/2000	TRANSFER OF CAVEAT 752068815 AND CAVEAT 752077499 AND CAVEAT 962288820

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTSPAGE 5
902 331 759

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
		TRANSFEE - MAXX PETROLEUM LTD. ATTN:LAND DEPT,900,606-4 ST SW CALGARY ALBERTA T2P1T1
002 357 118	30/11/2000	TRANSFER OF CAVEAT 962318294 AND CAVEAT 962318295 AND CAVEAT 962318296 AND CAVEAT 962318297 TRANSFEE - MAXX PETROLEUM LTD. ATTN:LAND DEPT,900,606-4 ST SW CALGARY ALBERTA T2P1T1
002 357 119	30/11/2000	TRANSFER OF CAVEAT 972114102 TRANSFEE - MAXX PETROLEUM LTD. ATTN:LAND DEPT,900,606-4 ST SW CALGARY ALBERTA T2P1T1
012 257 035	21/08/2001	CHANGE OF NAME RE: PROVIDENT ENERGY LTD. 900 606 4 ST SW CALGARY ALBERTA T2P1T1 AFFECTS INSTRUMENT: 752068815 AFFECTS INSTRUMENT: 752077499
012 257 600	21/08/2001	CHANGE OF NAME RE: PROVIDENT ENERGY LTD. 900 606 4 ST SW CALGARY ALBERTA T2P1T1 AFFECTS INSTRUMENT: 962288820
012 257 601	21/08/2001	CHANGE OF NAME RE: PROVIDENT ENERGY LTD. 900 606 4 ST SW CALGARY ALBERTA T2P1T1 AFFECTS INSTRUMENT: 962318294 AFFECTS INSTRUMENT: 962318295
012 257 602	21/08/2001	CHANGE OF NAME RE: PROVIDENT ENERGY LTD. 900 606 4 ST SW CALGARY ALBERTA T2P1T1 AFFECTS INSTRUMENT: 962318296

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTSPAGE 6
902 331 759

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
		AFFECTS INSTRUMENT: 962318297
012 257 809	21/08/2001	CHANGE OF NAME RE: PROVIDENT ENERGY LTD. 900 606 4 ST SW CALGARY ALBERTA T2P1T1 AFFECTS INSTRUMENT: 972114102
012 258 291	22/08/2001	CHANGE OF NAME RE: PROVIDENT ENERGY LTD. 900 606 4 ST SW CALGARY ALBERTA T2P1T1 AFFECTS INSTRUMENT: 972273064
022 461 556	03/12/2002	DISCHARGE OF CAVEAT 762216077
032 291 000	11/08/2003	CHANGE OF ADDRESS FOR SERVICE RE: PROVIDENT ENERGY LTD. 700, 112-4 AVE SW CALGARY ALBERTA T2P0H3 AFFECTS INSTRUMENT: 962288820
032 291 014	11/08/2003	CHANGE OF ADDRESS FOR SERVICE RE: PROVIDENT ENERGY LTD. 700, 112-4 AVE SW CALGARY ALBERTA T2P0H3 AFFECTS INSTRUMENT: 972114102
032 291 045	11/08/2003	CHANGE OF ADDRESS FOR SERVICE RE: PROVIDENT ENERGY LTD. 700, 112-4 AVE SW CALGARY ALBERTA T2P0H3 AFFECTS INSTRUMENT: 752068815 752077499
042 097 707	08/03/2004	TRANSFER OF UTILITY RIGHT OF WAY 782064231 TRANSFEREE - BARCOMP PETROLEUM LTD. P.O.BOX 500,5105-49 STREET LLOYDMINSTER ALBERTA S9V0Y6 AGENT - PETER T JOHNSON
042 458 114	19/10/2004	ROAD PLAN 0425808 TITLE CANCELLED AS TO PART AND NEW TITLE ISSUED FOR THE REMAINDER

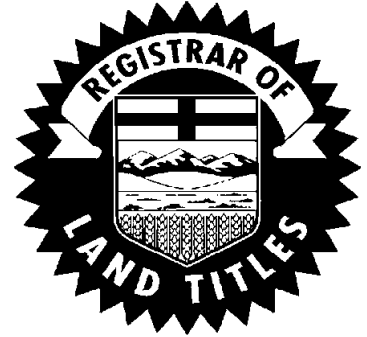
(CONTINUED)

TOTAL INSTRUMENTS: 033

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 20 DAY OF
NOVEMBER, 2024 AT 12:46 P.M.

ORDER NUMBER: 52208332

CUSTOMER FILE NUMBER: PE24-5236



END OF CERTIFICATE

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED
FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER,
SUBJECT TO WHAT IS SET OUT IN THE PARAGRAPH BELOW.

THE ABOVE PROVISIONS DO NOT PROHIBIT THE ORIGINAL PURCHASER FROM
INCLUDING THIS UNMODIFIED PRODUCT IN ANY REPORT, OPINION,
APPRAISAL OR OTHER ADVICE PREPARED BY THE ORIGINAL PURCHASER AS
PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING
OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON NOVEMBER 14,1990

S
LINC SHORT LEGAL TITLE NUMBER
0015 838 238 4;1;49;34;NE 78R261

LEGAL DESCRIPTION

THE NORTH EAST QUARTER OF SECTION THIRTY FOUR (34)
TOWNSHIP FORTY NINE (49)
RANGE ONE (1)
WEST OF THE FOURTH MERIDIAN
CONTAINING 64.7 HECTARES (160 ACRES) MORE OR LESS.
EXCEPTING THEREOUT:

- A) 0.028 HECTARES (0.068 ACRES) MORE OR LESS, AS SHOWN ON ROAD PLAN 3115PX.
 - B) 2.819 HECTARES (6.97 ACRES) MORE OR LESS, AS SHOWN ON ROAD PLAN 8322705.
- EXCEPTING THEREOUT ALL MINES AND MINERALS

ESTATE: FEE SIMPLE

MUNICIPALITY: CITY OF LLOYDMINSTER

REGISTERED OWNER(S)				
REGISTRATION	DATE (DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
78R261	26/01/1973		\$80,000	

OWNERS

AMILE ALEXANDER IWANIC
OF 5732-51 ST
LLOYDMINSTER
ALBERTA

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION NUMBER	DATE (D/M/Y)	PARTICULARS
61730G	25/06/1965	CAVEAT RE : LEASE CAVEATOR - KODIAK PETROLEUMS LTD.

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
752 068 815	11/06/1975	CAVEAT CAVEATOR - MURPHY OIL COMPANY LTD.
752 077 499	25/06/1975	CAVEAT CAVEATOR - MURPHY OIL COMPANY LTD.
762 216 077	07/12/1976	CAVEAT CAVEATOR - WALTER TARAPACKI
782 064 231	31/03/1978	UTILITY RIGHT OF WAY GRANTEE - MOBIL OIL CANADA, LTD. ATTN: LAND ADMINISTRATION, P.O. BOX 800, 330-5 AVE. SW, CALGARY ALBERTA T2P2J7 "DATA UPDATED BY CHANGE OF ADDRESS FOR SERVICE 832181148 & TRANSFER OF UTRW 862248484"
902 331 759	14/11/1990	TRANSFER OF LAND OWNERS - AMMTIL ENTERPRISES LTD. 3306-58 AVE LLOYDMINSTER ALBERTA T9V1X6 NEW TITLE ISSUED

TOTAL INSTRUMENTS: 006

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 20 DAY OF
NOVEMBER, 2024 AT 12:46 P.M.

ORDER NUMBER: 52208332

CUSTOMER FILE NUMBER: PE24-5236



END OF CERTIFICATE

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OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON APRIL 25, 2019

S
LINC SHORT LEGAL TITLE NUMBER
0013 939 178 4;1;49;34;NW 162 139 412

LEGAL DESCRIPTION

THE NORTH WEST QUARTER OF SECTION THIRTY FOUR (34)
TOWNSHIP FORTY NINE (49)
RANGE ONE (1)
WEST OF THE FOURTH MERIDIAN
CONTAINING 64.7 HECTARES (160 ACRES) MORE OR LESS.
EXCEPTING THEREOUT:

- A) 4.05 HECTARES (10.00 ACRES) MORE OR LESS, OUT OF THE SAID QUARTER, FOR STOCKPILE SITE, AS SHOWN ON PLAN 2034PX
 - B) 0.251 HECTARES (0.62 ACRES) MORE OR LESS, OUT OF THE SAID QUARTER AS SHOWN ON ROAD PLAN 8120427
 - C) 3.238 HECTARES (8.00 ACRES) MORE OR LESS, OUT OF THE SAID QUARTER, AS SHOWN ON ROAD PLAN 8322705.
- EXCEPTING THEREOUT ALL MINES AND MINERALS

ESTATE: FEE SIMPLE

MUNICIPALITY: CITY OF LLOYDMINSTER

REFERENCE NUMBER: 162 139 393

REGISTERED OWNER(S)				
REGISTRATION	DATE (DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
162 139 412	26/05/2016	TRANSFER OF LAND	\$10,600,000	CASH & MORT

OWNERS

FROG LAKE OFF RESERVE HOUSING CORPORATION.
OF GENERAL DELIVERY
FROG LAKE
ALBERTA T0A 1M0

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

162 139 412

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
961UK	15/10/1973	CAVEAT RE : EASEMENT CAVEATOR - ALBERTA POWER LIMITED.
752 123 962	11/09/1975	UTILITY RIGHT OF WAY GRANTEE - ALBERTA POWER LIMITED.
802 139 022	20/06/1980	UTILITY RIGHT OF WAY GRANTEE - ALBERTA POWER LIMITED.
902 175 053	15/06/1990	CAVEAT RE : EASEMENT CAVEATOR - ALBERTA POWER LIMITED. 10035 105 STREET, EDMONTON ALBERTA AGENT - LORRIE SAWCHUK
162 139 394	26/05/2016	MORTGAGE MORTGAGEE - THE BANK OF NOVA SCOTIA. 2850 SUNRIDGE BLVD NE CALGARY ALBERTA T1Y6G2 ORIGINAL PRINCIPAL AMOUNT: \$9,500,000
162 139 395	26/05/2016	CAVEAT RE : ASSIGNMENT OF RENTS AND LEASES CAVEATOR - THE BANK OF NOVA SCOTIA. 2850 SUNRIDGE BLVD NE CALGARY ALBERTA T1Y6G2 AGENT - DAN R CHUBB
162 139 397	26/05/2016	CAVEAT RE : LEASE INTEREST , ETC. CAVEATOR - TERRY NESTOR ELKOW CAVEATOR - GLENDA ANNE ELKOW BOTH OF: C/O MORROW TCHIR LLP PO BOX 336 ST PAUL ALBERTA T0A3A0 AGENT - JAMES E MORROW
162 139 413	26/05/2016	CAVEAT RE : PURCHASERS INTEREST CAVEATOR - AXIOM HOLDINGS INC. PO BOX 21075 LLOYDMINSTER ALBERTA T9V2S1

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

PAGE 3

162 139 412

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
162 139 414	26/05/2016	MORTGAGE MORTGAGEE - ROYAL BANK OF CANADA. 3RD FLR, 180 WELLINGTON STREET W TORONTO ONTARIO M5J1J1 ORIGINAL PRINCIPAL AMOUNT: \$10,600,000
162 139 415	26/05/2016	CAVEAT RE : ASSIGNMENT OF RENTS AND LEASES CAVEATOR - ROYAL BANK OF CANADA. 3RD FLR, 180 WELLINGTON STREET W TORONTO ONTARIO M5J1J1 AGENT - ROBERT J DE GUZMAN
162 139 423	26/05/2016	POSTPONEMENT OF CAVE 162139413 TO MORT 162139414 CAVE 162139415
162 167 709	23/06/2016	DISCHARGE OF MORTGAGE 162139394
162 167 710	23/06/2016	DISCHARGE OF CAVEAT 162139395
172 195 069	28/07/2017	DISCHARGE OF CAVEAT 162139415
172 195 240	28/07/2017	DISCHARGE OF MORTGAGE 162139414 AND POSTPONEMENT 162139423
192 092 810	25/04/2019	TRANSFER OF LAND OWNERS - FROG LAKE ECONOMIC DEVELOPMENT CORPORATION. GENERAL DELIVERY FROG LAKE ALBERTA T0A1M0 NEW TITLE ISSUED

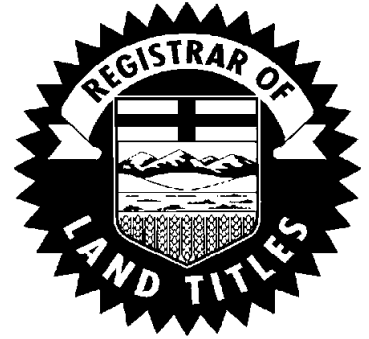
TOTAL INSTRUMENTS: 016

(CONTINUED)

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 20 DAY OF
NOVEMBER, 2024 AT 12:38 P.M.

ORDER NUMBER: 52208229

CUSTOMER FILE NUMBER: PE24-5236



END OF CERTIFICATE

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FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER,
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PART OF THE ORIGINAL PURCHASER APPLYING PROFESSIONAL, CONSULTING
OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON MAY 26,2016

S
LINC SHORT LEGAL TITLE NUMBER
0013 939 178 4;1;49;34;NW 162 139 393

LEGAL DESCRIPTION

THE NORTH WEST QUARTER OF SECTION THIRTY FOUR (34)
TOWNSHIP FORTY NINE (49)
RANGE ONE (1)
WEST OF THE FOURTH MERIDIAN
CONTAINING 64.7 HECTARES (160 ACRES) MORE OR LESS.
EXCEPTING THEREOUT:

- A) 4.05 HECTARES (10.00 ACRES) MORE OR LESS, OUT OF THE SAID QUARTER, FOR STOCKPILE SITE, AS SHOWN ON PLAN 2034PX
 - B) 0.251 HECTARES (0.62 ACRES) MORE OR LESS, OUT OF THE SAID QUARTER AS SHOWN ON ROAD PLAN 8120427
 - C) 3.238 HECTARES (8.00 ACRES) MORE OR LESS, OUT OF THE SAID QUARTER, AS SHOWN ON ROAD PLAN 8322705.
- EXCEPTING THEREOUT ALL MINES AND MINERALS

ESTATE: FEE SIMPLE

MUNICIPALITY: CITY OF LLOYDMINSTER

REFERENCE NUMBER: 162 039 049

REGISTERED OWNER(S)					
REGISTRATION	DATE (DMY)	DOCUMENT	TYPE	VALUE	CONSIDERATION
162 139 393	26/05/2016	TRANSFER OF LAND			SEE INSTRUMENT

OWNERS

AXIOM HOLDINGS INC.
OF PO BOX 21075
LLOYDMINSTER
ALBERTA T9V 2S1

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2
162 139 393

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
961UK	15/10/1973	CAVEAT RE : EASEMENT CAVEATOR - ALBERTA POWER LIMITED.
752 123 962	11/09/1975	UTILITY RIGHT OF WAY GRANTEE - ALBERTA POWER LIMITED.
802 139 022	20/06/1980	UTILITY RIGHT OF WAY GRANTEE - ALBERTA POWER LIMITED.
902 175 053	15/06/1990	CAVEAT RE : EASEMENT CAVEATOR - ALBERTA POWER LIMITED. 10035 105 STREET, EDMONTON ALBERTA AGENT - LORRIE SAWCHUK
162 060 972	26/02/2016	CAVEAT RE : PURCHASERS INTEREST CAVEATOR - AXIOM HOLDINGS INC. ATTN: ARON R. BALAKRISHNAN CARSCALLEN LLP 1500,407-2 ST SW CALGARY ALBERTA T2P2Y3 AGENT - ARON BALAKRISHNAN
162 139 394	26/05/2016	MORTGAGE MORTGAGEE - THE BANK OF NOVA SCOTIA. 2850 SUNRIDGE BLVD NE CALGARY ALBERTA T1Y6G2 ORIGINAL PRINCIPAL AMOUNT: \$9,500,000
162 139 395	26/05/2016	CAVEAT RE : ASSIGNMENT OF RENTS AND LEASES CAVEATOR - THE BANK OF NOVA SCOTIA. 2850 SUNRIDGE BLVD NE CALGARY ALBERTA T1Y6G2 AGENT - DAN R CHUBB
162 139 397	26/05/2016	CAVEAT RE : LEASE INTEREST , ETC. CAVEATOR - TERRY NESTOR ELKOW CAVEATOR - GLENDA ANNE ELKOW BOTH OF: C/O MORROW TCHIR LLP PO BOX 336 ST PAUL

(CONTINUED)

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

ALBERTA T0A3A0
AGENT - JAMES E MORROW

162 139 398 26/05/2016 DISCHARGE OF CAVEAT 162060972

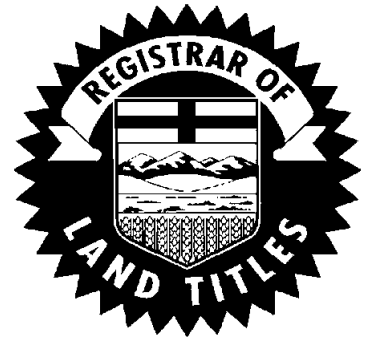
162 139 412 26/05/2016 TRANSFER OF LAND
OWNERS - FROG LAKE OFF RESERVE HOUSING CORPORATION.
GENERAL DELIVERY
FROG LAKE
ALBERTA T0A1M0
NEW TITLE ISSUED

TOTAL INSTRUMENTS: 010

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 20 DAY OF
NOVEMBER, 2024 AT 12:38 P.M.

ORDER NUMBER: 52208229

CUSTOMER FILE NUMBER: PE24-5236



END OF CERTIFICATE

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OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON MAY 26, 2016

S
LINC SHORT LEGAL TITLE NUMBER
0013 939 178 4;1;49;34;NW 162 039 049

LEGAL DESCRIPTION

THE NORTH WEST QUARTER OF SECTION THIRTY FOUR (34)
TOWNSHIP FORTY NINE (49)
RANGE ONE (1)
WEST OF THE FOURTH MERIDIAN
CONTAINING 64.7 HECTARES (160 ACRES) MORE OR LESS.
EXCEPTING THEREOUT:

- A) 4.05 HECTARES (10.00 ACRES) MORE OR LESS, OUT OF THE SAID QUARTER, FOR STOCKPILE SITE, AS SHOWN ON PLAN 2034PX
 - B) 0.251 HECTARES (0.62 ACRES) MORE OR LESS, OUT OF THE SAID QUARTER AS SHOWN ON ROAD PLAN 8120427
 - C) 3.238 HECTARES (8.00 ACRES) MORE OR LESS, OUT OF THE SAID QUARTER, AS SHOWN ON ROAD PLAN 8322705.
- EXCEPTING THEREOUT ALL MINES AND MINERALS

ESTATE: FEE SIMPLE

MUNICIPALITY: CITY OF LLOYDMINSTER

REFERENCE NUMBER: 132 012 983

REGISTERED OWNER(S)					
REGISTRATION	DATE (DMY)	DOCUMENT	TYPE	VALUE	CONSIDERATION
162 039 049	04/02/2016	TRANSFER OF LAND			SEE INSTRUMENT

OWNERS

TNE CONTRACTING SERVICES LTD.
OF BOX 11891
LLOYDMINSTER
ALBERTA T9V 3C2

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2

162 039 049

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
961UK	15/10/1973	CAVEAT RE : EASEMENT CAVEATOR - ALBERTA POWER LIMITED.
752 123 962	11/09/1975	UTILITY RIGHT OF WAY GRANTEE - ALBERTA POWER LIMITED.
802 139 022	20/06/1980	UTILITY RIGHT OF WAY GRANTEE - ALBERTA POWER LIMITED.
902 175 053	15/06/1990	CAVEAT RE : EASEMENT CAVEATOR - ALBERTA POWER LIMITED. 10035 105 STREET, EDMONTON ALBERTA AGENT - LORRIE SAWCHUK
162 039 050	04/02/2016	CAVEAT RE : VENDOR'S LIEN CAVEATOR - TNE CONTRACTING SERVICES LTD. C/O MORROW TCHIR LLP 5226 - 50TH AVENUE PO BOX 336 ST. PAUL ALBERTA T0A3A0 AGENT - JAMES E MORROW
162 060 972	26/02/2016	CAVEAT RE : PURCHASERS INTEREST CAVEATOR - AXIOM HOLDINGS INC. ATTN: ARON R. BALAKRISHNAN CARSCALLEN LLP 1500,407-2 ST SW CALGARY ALBERTA T2P2Y3 AGENT - ARON BALAKRISHNAN
162 131 378	17/05/2016	DISCHARGE OF CAVEAT 162039050
162 139 393	26/05/2016	TRANSFER OF LAND OWNERS - AXIOM HOLDINGS INC. PO BOX 21075 LLOYDMINSTER ALBERTA T9V2S1 NEW TITLE ISSUED

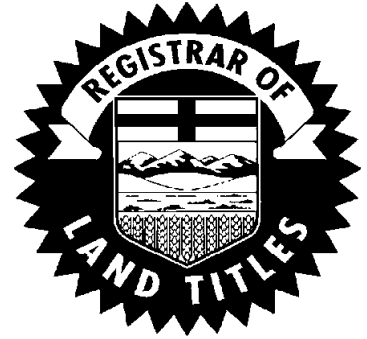
TOTAL INSTRUMENTS: 008

(CONTINUED)

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
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TITLE REPRESENTED HEREIN THIS 20 DAY OF
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ORDER NUMBER: 52208229

CUSTOMER FILE NUMBER: PE24-5236



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OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON FEBRUARY 04,2016

S
LINC SHORT LEGAL TITLE NUMBER
0013 939 178 4;1;49;34;NW 132 012 983

LEGAL DESCRIPTION

THE NORTH WEST QUARTER OF SECTION THIRTY FOUR (34)
TOWNSHIP FORTY NINE (49)
RANGE ONE (1)
WEST OF THE FOURTH MERIDIAN
CONTAINING 64.7 HECTARES (160 ACRES) MORE OR LESS.
EXCEPTING THEREOUT:

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- EXCEPTING THEREOUT ALL MINES AND MINERALS

ESTATE: FEE SIMPLE

MUNICIPALITY: CITY OF LLOYDMINSTER

REFERENCE NUMBER: 992 328 997

REGISTERED OWNER(S)				
REGISTRATION	DATE (DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
132 012 983	14/01/2013	TRANSFER OF LAND	\$1,600,000	SEE INSTRUMENT

OWNERS

GLENDA ANNE ELKOW

AND
TERRY NESTOR ELKOW
BOTH OF:
P.O. BOX 11891
LLOYDMINSTER
ALBERTA T9V 3C2
AS JOINT TENANTS

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2
132 012 983

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

961UK 15/10/1973 CAVEAT
 RE : EASEMENT
 CAVEATOR - ALBERTA POWER LIMITED.

752 123 962 11/09/1975 UTILITY RIGHT OF WAY
 GRANTEE - ALBERTA POWER LIMITED.

802 139 022 20/06/1980 UTILITY RIGHT OF WAY
 GRANTEE - ALBERTA POWER LIMITED.

902 175 053 15/06/1990 CAVEAT
 RE : EASEMENT
 CAVEATOR - ALBERTA POWER LIMITED.
 10035 105 STREET, EDMONTON
 ALBERTA
 AGENT - LORRIE SAWCHUK

162 039 049 04/02/2016 TRANSFER OF LAND
 OWNERS - TNE CONTRACTING SERVICES LTD.
 BOX 11891
 LLOYDMINSTER
 ALBERTA T9V3C2
 NEW TITLE ISSUED

TOTAL INSTRUMENTS: 005

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 20 DAY OF
NOVEMBER, 2024 AT 12:38 P.M.

ORDER NUMBER: 52208229

CUSTOMER FILE NUMBER: PE24-5236



END OF CERTIFICATE

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OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON JANUARY 14, 2013

S
LINC SHORT LEGAL TITLE NUMBER
0013 939 178 4;1;49;34;NW 992 328 997

LEGAL DESCRIPTION

THE NORTH WEST QUARTER OF SECTION THIRTY FOUR (34)
TOWNSHIP FORTY NINE (49)
RANGE ONE (1)
WEST OF THE FOURTH MERIDIAN
CONTAINING 64.7 HECTARES (160 ACRES) MORE OR LESS.
EXCEPTING THEREOUT:

- A) 4.05 HECTARES (10.00 ACRES) MORE OR LESS, OUT OF THE SAID QUARTER, FOR STOCKPILE SITE, AS SHOWN ON PLAN 2034PX
 - B) 0.251 HECTARES (0.62 ACRES) MORE OR LESS, OUT OF THE SAID QUARTER AS SHOWN ON ROAD PLAN 8120427
 - C) 3.238 HECTARES (8.00 ACRES) MORE OR LESS, OUT OF THE SAID QUARTER, AS SHOWN ON ROAD PLAN 8322705.
- EXCEPTING THEREOUT ALL MINES AND MINERALS

ESTATE: FEE SIMPLE

MUNICIPALITY: CITY OF LLOYDMINSTER

REFERENCE NUMBER: 942 138 132

REGISTERED OWNER(S)				
REGISTRATION	DATE (DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
992 328 997	01/11/1999	TRANSFER OF LAND	\$254,484	\$113,104

OWNERS

GLENDA ELKOW
OF PO BOX 620
LLOYDMINSTER
ALBERTA S9V 0Y8

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2
992 328 997

REGISTRATION

NUMBER	DATE (D/M/Y)	PARTICULARS
961UK	15/10/1973	CAVEAT RE : EASEMENT CAVEATOR - ALBERTA POWER LIMITED.
752 123 962	11/09/1975	UTILITY RIGHT OF WAY GRANTEE - ALBERTA POWER LIMITED.
802 139 022	20/06/1980	UTILITY RIGHT OF WAY GRANTEE - ALBERTA POWER LIMITED.
902 175 053	15/06/1990	CAVEAT RE : EASEMENT CAVEATOR - ALBERTA POWER LIMITED. 10035 105 STREET, EDMONTON ALBERTA AGENT - LORRIE SAWCHUK
002 364 913	07/12/2000	CAVEAT RE : SURFACE LEASE UNDER 20 ACRES CAVEATOR - PROVIDENT ENERGY LTD. 700, 112-4 AVE SW CALGARY ALBERTA T2P0H3 AGENT - SHERRY MILNE (DATA UPDATED BY: CHANGE OF NAME 012257015) (DATA UPDATED BY: CHANGE OF ADDRESS 032292255)
012 257 015	21/08/2001	CHANGE OF NAME RE: PROVIDENT ENERGY LTD. 900 606 4 ST SW CALGARY ALBERTA T2P1T1 AFFECTS INSTRUMENT: 002364913 AFFECTED PARTY: MAXX PETROLEUM LTD.
032 292 255	12/08/2003	CHANGE OF ADDRESS FOR SERVICE RE: PROVIDENT ENERGY LTD. 700, 112-4 AVE SW CALGARY ALBERTA T2P0H3 AFFECTS INSTRUMENT: 002364913
072 221 145	20/04/2007	DISCHARGE OF CAVEAT 002364913 AND CHANGE OF NAME 012257015 AND CHANGE OF ADDRESS FOR SERVICE 032292255
132 012 983	14/01/2013	TRANSFER OF LAND OWNERS - GLENDA ANNE ELKOW OWNERS - TERRY NESTOR ELKOW BOTH OF:

(CONTINUED)

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

P.O. BOX 11891
LLOYDMINSTER
ALBERTA T9V3C2
AS JOINT TENANTS
NEW TITLE ISSUED

TOTAL INSTRUMENTS: 009

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 20 DAY OF
NOVEMBER, 2024 AT 12:38 P.M.

ORDER NUMBER: 52208229

CUSTOMER FILE NUMBER: PE24-5236



END OF CERTIFICATE

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OR TECHNICAL EXPERTISE FOR THE BENEFIT OF CLIENT(S).



HISTORICAL LAND TITLE CERTIFICATE
TITLE CANCELLED ON NOVEMBER 01,1999

S
LINC SHORT LEGAL TITLE NUMBER
0013 939 178 4;1;49;34;NW 942 138 132

LEGAL DESCRIPTION

THE NORTH WEST QUARTER OF SECTION THIRTY FOUR (34)
TOWNSHIP FORTY NINE (49)
RANGE ONE (1)
WEST OF THE FOURTH MERIDIAN
CONTAINING 64.7 HECTARES (160 ACRES) MORE OR LESS.
EXCEPTING THEREOUT:

- A) 4.05 HECTARES (10.00 ACRES) MORE OR LESS, OUT OF THE SAID QUARTER, FOR STOCKPILE SITE, AS SHOWN ON PLAN 2034PX
 - B) 0.251 HECTARES (0.62 ACRES) MORE OR LESS, OUT OF THE SAID QUARTER AS SHOWN ON ROAD PLAN 8120427
 - C) 3.238 HECTARES (8.00 ACRES) MORE OR LESS, OUT OF THE SAID QUARTER, AS SHOWN ON ROAD PLAN 8322705.
- EXCEPTING THEREOUT ALL MINES AND MINERALS

ESTATE: FEE SIMPLE

MUNICIPALITY: CITY OF LLOYDMINSTER

REFERENCE NUMBER: 762 040 403

REGISTERED OWNER(S)				
REGISTRATION	DATE (DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
942 138 132	10/05/1994	SEPARATION - LINCS		

OWNERS

RAYMOND JOSEPH NELSON (BUSINESSMAN)
OF BOX 620, LLOYDMINSTER
ALBERTA

ENCUMBRANCES, LIENS & INTERESTS		
REGISTRATION NUMBER	DATE (D/M/Y)	PARTICULARS
961UK	15/10/1973	CAVEAT

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2
942 138 132

REGISTRATION

NUMBER DATE (D/M/Y) PARTICULARS

RE : EASEMENT
CAVEATOR - ALBERTA POWER LIMITED.

752 123 962 11/09/1975 UTILITY RIGHT OF WAY
GRANTEE - ALBERTA POWER LIMITED.

802 139 022 20/06/1980 UTILITY RIGHT OF WAY
GRANTEE - ALBERTA POWER LIMITED.

902 175 053 15/06/1990 CAVEAT
RE : EASEMENT
CAVEATOR - ALBERTA POWER LIMITED.
10035 105 STREET, EDMONTON
ALBERTA
AGENT - LORRIE SAWCHUK

942 151 833 19/05/1994 REQUEST FOR RELEASE OF D.C.T.
DCT ISSUED
SURRENDERED BY 992328997

992 328 997 01/11/1999 TRANSFER OF LAND
OWNERS - GLENDA ELKOW
PO BOX 620
LLOYDMINSTER
ALBERTA S9V0Y8
NEW TITLE ISSUED

TOTAL INSTRUMENTS: 006

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN
ACCURATE REPRODUCTION OF THE CERTIFICATE OF
TITLE REPRESENTED HEREIN THIS 20 DAY OF
NOVEMBER, 2024 AT 12:38 P.M.

ORDER NUMBER: 52208229

CUSTOMER FILE NUMBER: PE24-5236



END OF CERTIFICATE

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HISTORICAL LAND TITLE CERTIFICATE

TITLE CANCELLED ON MAY 10, 1994

S	LINC	SHORT LEGAL	TITLE NUMBER
	0013 939 178	4;1;49;34;NW	762 040 403
	0013 939 186	4;1;49;34;SW	

LEGAL DESCRIPTION

FIRST

THE NORTH WEST QUARTER OF SECTION THIRTY FOUR (34)
TOWNSHIP FORTY NINE (49)
RANGE ONE (1)

WEST OF THE FOURTH MERIDIAN
CONTAINING 64.7 HECTARES (160 ACRES) MORE OR LESS.
EXCEPTING THEREOUT:

- A) 4.05 HECTARES (10.00 ACRES) MORE OR LESS, OUT OF THE SAID QUARTER, FOR STOCKPILE SITE, AS SHOWN ON PLAN 2034PX
 - B) 0.251 HECTARES (0.62 ACRES) MORE OR LESS, OUT OF THE SAID QUARTER AS SHOWN ON ROAD PLAN 8120427
 - C) 3.238 HECTARES (8.00 ACRES) MORE OR LESS, OUT OF THE SAID QUARTER, AS SHOWN ON ROAD PLAN 8322705.
- EXCEPTING THEREOUT ALL MINES AND MINERALS

SECOND

THE SOUTH WEST QUARTER OF SECTION THIRTY FOUR (34)
TOWNSHIP FORTY NINE (49)
RANGE ONE (1)

WEST OF THE FOURTH MERIDIAN,
CONTAINING 64.7 HECTARES (160 ACRES) MORE OR LESS
EXCEPTING THEREOUT:

- A) THE MOST SOUTHERLY SIX HUNDRED AND SIXTY (660) FEET IN PERPENDICULAR WIDTH THROUGHOUT THE SAID QUARTER, CONTAINING 16.2 HECTARES (40.00 ACRES) MORE OR LESS
 - B) 0.313 HECTARES (0.77 ACRES) MORE OR LESS, OUT OF THE SAID QUARTER AS SHOWN ON ROAD PLAN 8120427
- EXCEPTING THEREOUT ALL MINES AND MINERALS

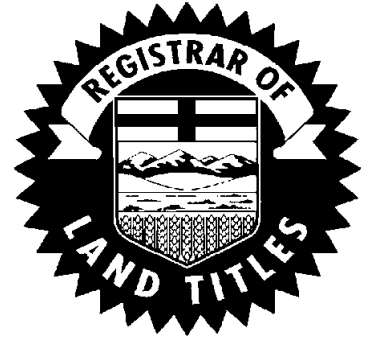
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MUNICIPALITY: CITY OF LLOYDMINSTER

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Name	Address	View Map	View Docs
Reclamation	2-34-49-1-4		
Reclamation	8-34-49-1-4		
Reclamation	1-34-49-1-4		
Reclamation	2-34-49-1-4		
Reclamation	2-34-49-1-4		
Reclamation	2-34-49-1-4		
Reclamation	1-34-49-1-4		
Reclamation	1-34-49-1-4		

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3 Result(s)

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Reclamation	15-34-49-1-4		
Reclamation	9-34-49-1-4		
Reclamation	16-34-49-1-4		

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4 Result(s)

Name	Address	View Map	View Docs
Reclamation	15-27-49-1-4		
Reclamation	9-27-49-1-4		
Reclamation	9-27-49-1-4		
Reclamation	16-27-49-1-4		

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Reclamation	SE-23-49-1-4		
Reclamation	3-23-49-1-4		

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Reclamation	SE-23-49-1-4		
Reclamation	1-23-49-1-4		

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1 Result(s)

Name	Address	View Map	View Docs
Reclamation	9-23-49-1-4		

Document Results

2 Result(s)

Select	Name	Description	File Type (MB)	FileSize	Date
<input type="checkbox"/>	Reclamation	Reclamation Certificate Documentation - CNRL LLOYDMINSTER 9-23-49-1 WELL	pdf	0.19	7/6/2011
<input type="checkbox"/>	Reclamation	Reclamation Application Documentation - CNRL LLOYDMINSTER 9-23-49-1 WELL	pdf	9.93	3/4/2011

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-A marker identified as REC is the location of a site where Environment and Protected Areas has received an application for a reclamation certificate.

Comments and questions can be directed to:
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Reclamation	12-22-49-1-4		

Document Results

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Select	Name	Description	File Type	FileSize (MB)	Date
<input type="checkbox"/>	Reclamation	Reclamation Certificate Documentation - HUSKY SMYTH LLOYD 12A-22-49-1 WELL	pdf	0.23	4/10/1970
<input type="checkbox"/>	Reclamation	Reclamation Application Documentation - HUSKY SMYTH LLOYD 12A-22-49-1 WELL	pdf	0.29	1/10/1970

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Format: Plan - [Block] - [Lot]
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Note:

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Comments and questions can be directed to:
 ESAR-Support@gov.ab.ca

Search Results

1 Result(s)

Name	Address	View Map	View Docs
Reclamation	16-22-49-1-4		

Document Results

2 Result(s)

Select	Name	Description	File Type	FileSize (MB)	Date
<input type="checkbox"/>	Reclamation	Reclamation Certificate Documentation - MCLAUGHLIN-GLOBE LLOYD 16-22-49-1 WELL	pdf	0.21	4/10/1970
<input type="checkbox"/>	Reclamation	Reclamation Application Documentation - MCLAUGHLIN-GLOBE LLOYD 16-22-49-1 WELL	pdf	0.28	1/10/1970

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Plan: Block: [] Lot: []

Format: Plan - [Block] - [Lot]
 [] denotes that the Block and/or Lot are optional.

Note:

An ESA document does not necessarily mean the site is, or ever was, contaminated. Please refer to the studies and reports to determine the condition of the site.
Place Name, Street Address, and Coordinate Searches are available on the map page

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November 28, 2024

Alex Khamis
SolidEarth Geotechnical Inc.
4336 97 St NW,
Edmonton AB T6E 5R9
Email: akhamis@solidearth.ca

Re: ASCA Storage Tank Search - Your File PE24-5236 Order ID #15354

Dear Alex,

As per your search request submitted on November 24, 2024, Alberta Safety Codes Authority (ASCA) has searched the storage tank database for existing and former installations of storage tank systems, as defined by the Fire Code, including those known to be inside structures at the following addresses:

1. SW 27 49 1 W4
2. SW 3 50 1 W4
3. NW 34 49 1 W4
4. 22 49 1 W4
5. SE 27 49 1 W4
6. NE 34 49 1 W4
7. NE 27 49 1 W4
8. NE, NW,W 24 49 1 W4
9. SE 34 49 1 W4
10. NW 26 49 1 W4
11. **NW 23 49 1 W4**
(NE,SW,SE)
12. NW 27 49 1 W4

(Search Location containing records is in BOLD)

The search of the storage tank database determined no records were available for location(s) #1 as requested.

The search of the storage tank database determined records were available for location(s) #2 as requested. Please see the attached report for details.

The Freedom of information and Protection of Privacy Act governs information provided. Please note that the database is *not* complete. The main limitation of these databases is that they only include information reported through registration and permitting or a survey of abandoned sites completed in 1992 and should not be considered as a comprehensive inventory of all past or present storage tank sites. ASCA's storage tank systems database is solely maintained based on information provided by owners and or operators of storage tank systems; therefore, the database may not reflect information

.....



**Safety
Codes
Council**

Alberta Safety Codes Authority

related to all existing or former storage tank systems in Alberta. Further information on storage tank systems or investigations involving a spill/release or contamination may be filed with the local fire service or Alberta Environment.

Regards,

Fredwatson Desroches
Program Advisor, Client Support Services
Alberta Safety Codes Authority
Safety Codes Council | safetycodes.ab.ca
(587) 415-4082 | toll-free 1-888-413-0099

.....
.....
.....

TMS - Tank Management System

Generic Site/Tank Detail by Site Name Reporting (PUBLIC DOCUMENT) (Section A General Information)

1. Site Name: AGLAND CORPORATION **Site #: 7561** Class: A

2. Reference:

3a. Urban: Address: Status: Active

City/Town: 0329 VERMILION RIVER COUNTY (P)

3b. Rural: County/MD/ID:

3b. Legal Land Description: LSD: NW ¼ of Sec. 23 / Twp. 49 / Rge. 1 / W. of 4

Lot: 1 Block: 1 Plan: 0420440

4. Owner: #5597
AGLAND CORPORATION
PO BOX 10039
LLOYDMINSTER AB T9V 3A2

5. Operator: #5597
AGLAND CORPORATION
PO BOX 10039
LLOYDMINSTER AB T9V 3A2

6. Type of Facility: a. Petroleum Sales:
b. Facility Owner Usage: Commercial / Industrial

7. Supplier of Petroleum Products: PETRO CANADA

8. Number of Tanks: Underground: 0 Aboveground: 3

Under the authority of the Safety Codes Act, this information is being collected by ASCA and will be released to the public upon request in accordance with the Freedom of Information and Protection of Privacy (FOIP) Act.
If you have any questions, please contact ASCA at the address noted on the form or call 780-413-0099 or 1-888-413-0099.

TMS - Tank Management System**Generic Site/Tank Detail by Site Name Reporting
(PUBLIC DOCUMENT)****(Section B Petroleum Tank Information)****Site Name: AGLAND CORPORATION****Site #: 7561**

	Tank ID Number: 1	2	3
Tank Type:	Aboveground	Aboveground	Aboveground
Split Tank:			
Tank Serial #:	H-100403	H-100545	34339
Year & Month of Removal:			
Removal Company:			
Foreman's Name:			
Foreman's Certification Number:			
Reason for Removal:			
Is the tank a:	New	New	New
Facility Design Engineer:			
Engineering Firm:			
Professional Registration #:			
Installer Company Name:	AGLAND CORPORATION	AGLAND CORPORATION	
Foreman's Name:			
Foreman's Certification Number:			
Year and Month of Installation:	06/02	06/02	11/12
Condition at Installation:	New	New	New
Years of previous service:	0	0	0
Status of Tank:	Currently In Service	Currently In Service	Currently In Service
Year & Month of last use:			
Tank Material:	Steel	Steel	Steel
Other Tank Material:			
Contents:	Diesel	Diesel	Gasoline
Allied Petroleum Products:			
Tank Capacity:	4328	4328	4600
Tank Construction Specifications:	ULC 653	ULC 653	ULC 601
Other:			

TMS - Tank Management System

Generic Site/Tank Detail by Site Name Reporting (PUBLIC DOCUMENT)

Site Name: **AGLAND CORPORATION**

Site #: **7561**

Tank ID Number: 1	2	3
Tank Type: Aboveground	Aboveground	Aboveground
Cathodic Corrosion Protection:		
Secondary Containment: Double Wall	Double Wall	Double Wall
Other:		
Tank Collision Protection: Curbs	Curbs	Curbs
Spill Containment:		
Overfill Prevention: Tank Gauging	Tank Gauging	Tank Gauging
Other:		
Leak Detection: Monitor Secondary Containment	Monitor Secondary Containment	Monitor Secondary Containment
Other:		
Sumps Installed:		
Sump Leak Detection:		
Tank Leak Test:		
Date:		
Method:		
Testing Company:		
Result:		
Pipe Leak Test:		
Date:		
Method:		
Testing Company:		
Result:		
Underground Piping: No	No	No
Piping Material:		
Other:		
Steel Piping Cathodic Protection:		
Piping Secondary Containment:		
Type of Pumping System:		
Line Leak Detection: SVC Valves	SVC Valves	SVC Valves
Other:		

TMS - Tank Management System

Generic Site/Tank Detail by Site Name Reporting (PUBLIC DOCUMENT)

Site #: 7561

(Section C Site Sensitivity)

Site Name: AGLAND CORPORATION

1. Tanks located within 500 meters of a groundwater well: Yes

2. Tanks located within 200 meters of a surface water body: Yes

Type of surface water: Dugout

Other:

3. Tanks located within 150 meters of a major underground structure: No

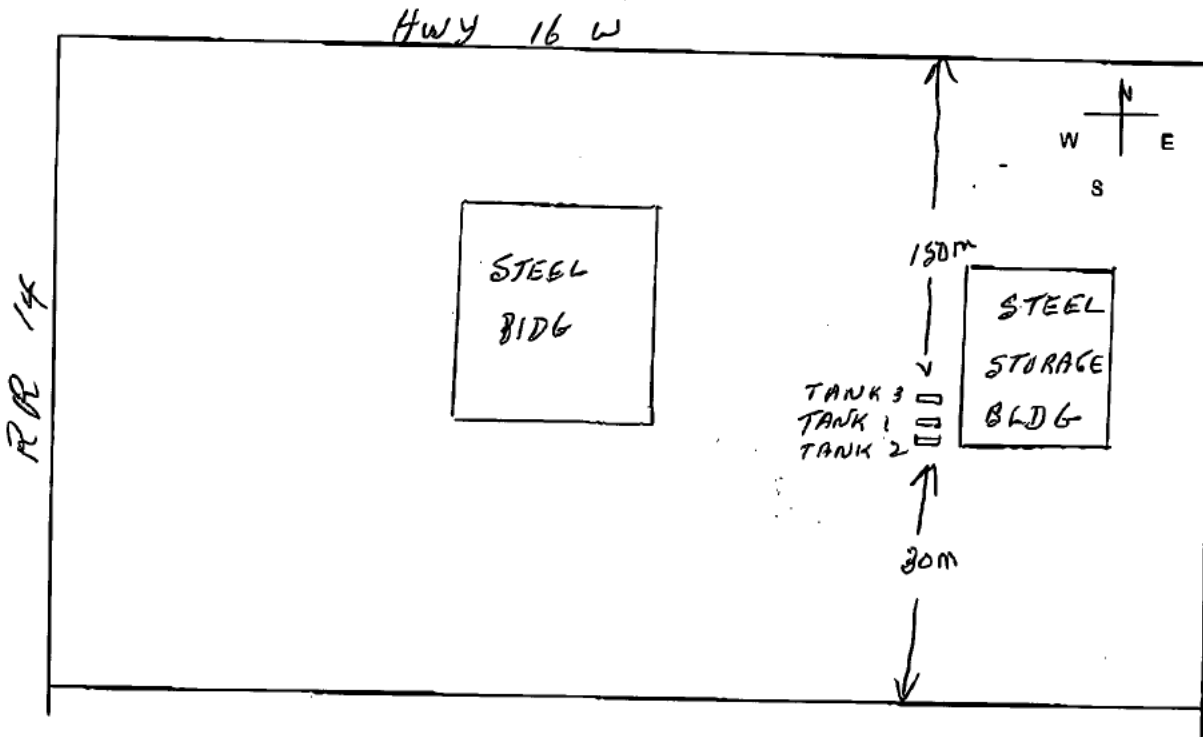
Type of underground structure:

Other:

S-7561

**SECTION E:
OTHER INFORMATION**

1. **Site Diagram:** (Please number tanks in accordance with information provided and illustrate in relation to streets and buildings.)



2. **Comments:**

WE HAVE THIS PROJECT TO DO AS PTMAA INSPECTOR
WANTS EXISTING TANKS 1 & 2 MOVED 1/2 METER SO
AT THE SAME TIME WE WISH TO ADD A 3RD TANK
BESIDE THE OTHERS

3. **Questionnaire Completed By:** _____
(Name, Please Print) (Bus. Phone #)

4. I hereby confirm that the information provided on this questionnaire is complete and accurate to the best of my knowledge.

2011/11/18
(YYMM/DD)

Signature (Owner of Tanks(s) or Authorized Representative)

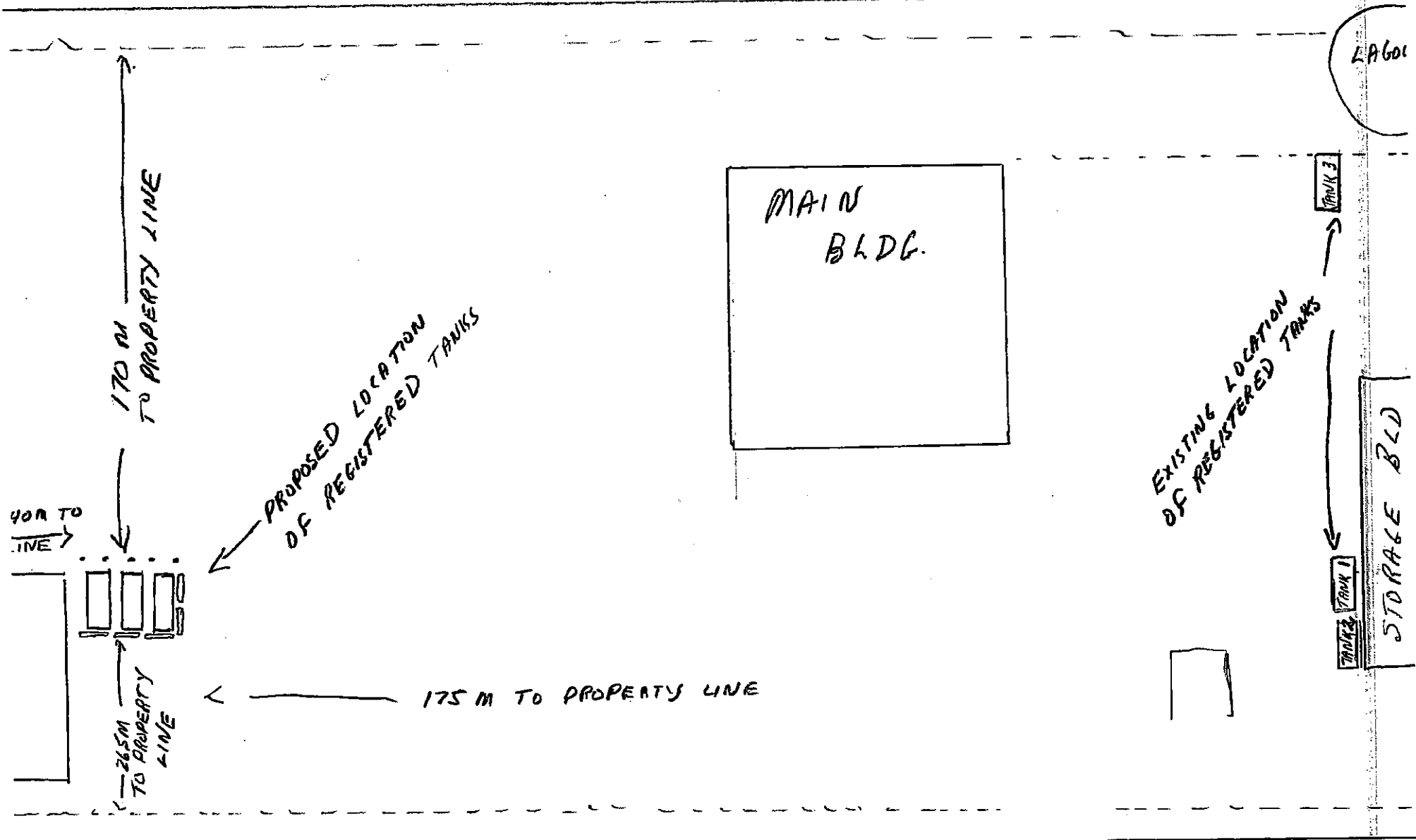
Under the authority of the Safety Codes Act, this information is being collected by the Petroleum Tank Management Association of Alberta (PTMAA) and will be released to the public upon request in compliance with the Freedom of Information and Protection of Privacy (FOIP) Act. If you have any questions, please contact the PTMAA at the address noted on this form or call (780)425-8265.

SITE PLAN (OF NEW TANK LOCATION)



HWY 16

LA 601



S-7561

(2014)



Box 69 Kitscoty, AB T0B 2P0

P. 780.846.2244 | F. 780.846.2716

November 26, 2024

SolidEarth Geotechnical
4336 – 97th Street
Edmonton, AB T6E 5R9

Attention: Alex

RE: PUBLIC RECORD SEARCH FOR PHASE I ESA ON MULTIPLE LAND LOCATIONS

Dear Alex:

In response to your request for information dated November 20, 2024, please find the County of Vermilion River response:

SW-3-50-1W4M

- Development Permit issued in 2014 for a Water Retention Pond
- No Bylaw infractions

NE/NW/SE-34-49-1W4M

- Development Permit issued in 2016 for a 512ft² Sign
- No Bylaw infractions

NE/NW/SW/SE-27-49-1W4M

- NE-27-49-1W4M: Development Permit issued in 2016 for a Microbrewery in Existing Shop
- NW-27-49-1W4M: Development Permit issued in 2006 for a Telus Tower
- No Bylaw infractions

NW-26-49-1W4M

- No permits
- No Bylaw infractions

NE/NW/SW/SE-22-49-1W4M

- No permits
- No Bylaw infractions

NE/NW/SE/SW-23-49-1W4M

- NW-23-49-1W4M: Development Permit issued in 1986
 - o No information available
- No Bylaw infractions

NE/NW/W-24-49-1W4M

- W-24-49-1W4M: Development Permit issued in 1994
 - o No information available
- No Bylaw infractions



Box 69 Kitscoty, AB T0B 2P0

P. 780.846.2244 | F. 780.846.2716

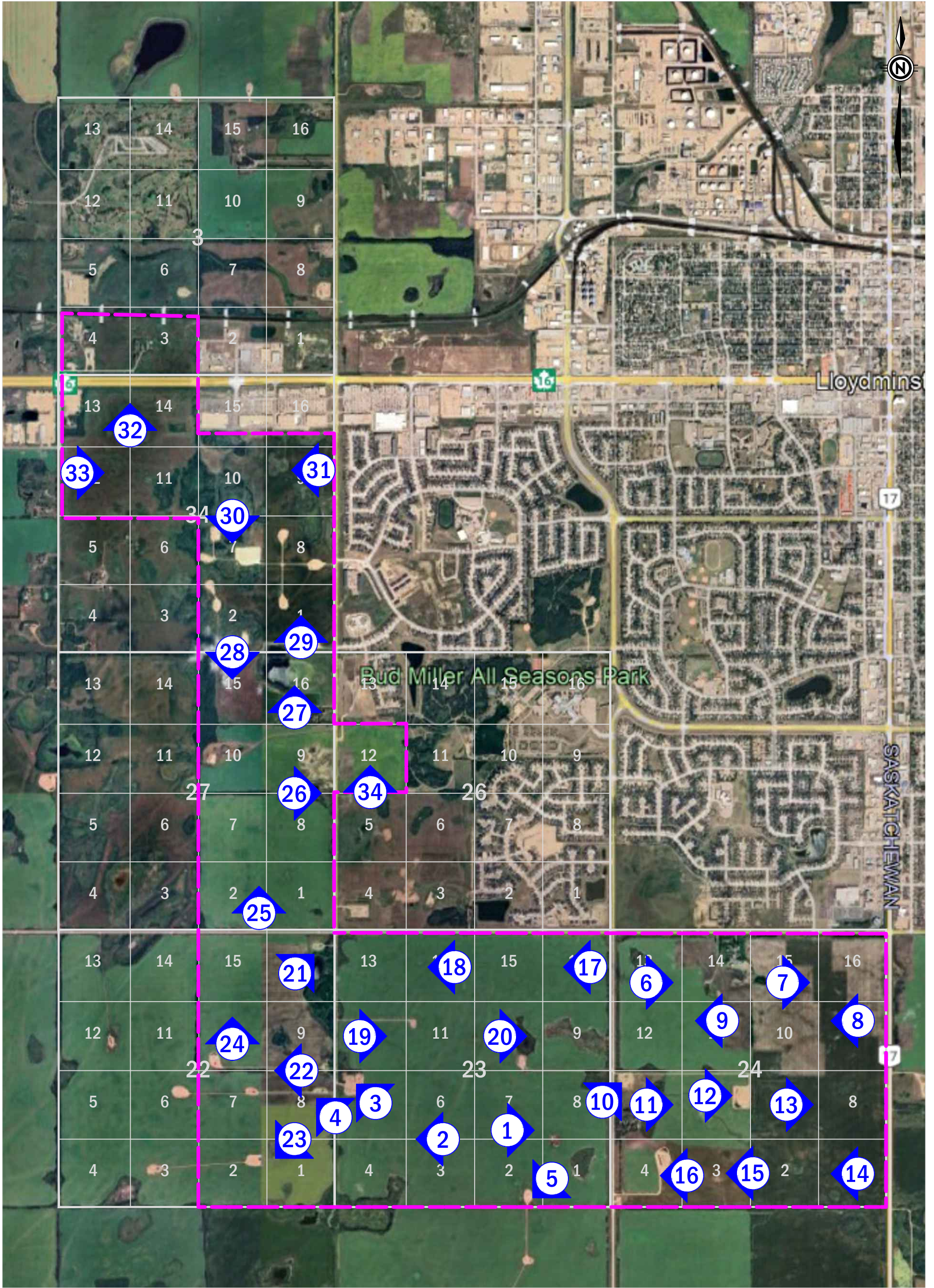
Please note that the information provided is based upon department circulation and review of County files. Any information that the County was not privy to or is outside the scope of this request is not included within this response. The County of Vermilion River is not responsible for any additional concerns or findings on the aforementioned lands in whole or in part of a quarter section, with the Environmental Site Assessment your company is conducting on the above noted lands.

Sincerely,

Roger Garnett, C.E.T.
Director of Planning and Community Services

Appendix C

Drone Images Taken During the Site Visit



SCALE: NTS	DRAWN BY: CB	FIGURE No.: 0	REVISION No.: 0	PROJECT NAME: Desktop ESA for the SW ASP Lands City of Lloydminster, Alberta	CLIENT:
DATUM: -	DATE: December 2024	PROJECT No.: PE24-5236		DRAWING TITLE: Photograph Locations	
SolidEarth Geotechnical Inc. 4336 97 Street, Edmonton, AB, T6E 5R9					



Photograph 1: Looking east towards SW-23-49-01 W4M



Photograph 2: Looking west towards SE-23-49-01 W4M



Photograph 3: Looking northwest towards stockpile yard within 5-23-49-01 W4M



Photograph 4: Looking northwest towards Oil and Gas installation within 8-22-49-01 W4M



Photograph 5: Looking southwest towards Oil and Gas installation within 2-23-49-01 W4M



Photograph 6: Looking east towards 13 & 14-24-49-01 W4M



Photograph 7: Looking east towards 15 & 16-24-49-01 W4M



Photograph 8: Looking west towards 9 & 10-24-49-01 W4M



Photograph 9: Looking west towards 11 & 12-24-49-01 W4M



Photograph 10: Looking northeast towards Oil and Gas installation within 5-24-49-01 W4M



Photograph 11: Looking east towards 5 & 6-24-49-01 W4M



Photograph 12: Looking east towards Oil and Gas installation within 6-24-49-01 W4M



Photograph 13: Looking east towards 7 & 8-24-49-01 W4M



Photograph 14: Looking west towards 1 & 2-24-49-01 W4M



Photograph 15: Looking west towards 3 & 4-24-49-01 W4M



Photograph 16: Looking west towards Oil and Gas installation within 4-24-49-01 W4M



Photograph 17: Looking west towards 15 & 16-23-49-01 W4M



Photograph 18: Looking west towards 13 & 14-23-49-01 W4M



Photograph 19: Looking east towards Oil and Gas installation within 11 & 12-23-49-01 W4M



Photograph 20: Looking east towards field and Oil and Gas installation within 9 & 10-23-49-01 W4M



Photograph 21: Looking northeast towards Oil and Gas installation within 16-22-49-01 W4M



Photograph 22: Looking west towards Oil and Gas installation within NE & SE-22-49-01 W4M



Photograph 23: Looking southwest towards Oil and Gas installation within 1 & 2-22-49-01 W4M



Photograph 24: Looking north towards 10 & 15-22-49-01 W4M



Photograph 25: Looking north towards SE-27-49-01 W4M



Photograph 26: Looking east towards a waterbody within 9-27-49-01 W4M



Photograph 27: Looking north towards 16-27-49-01 W4M



Photograph 28: Looking south towards 10 & 15-27-49-01 W4M



Photograph 29: Looking north towards Oil and Gas installation within 1 & 8-34-49-01 W4M



Photograph 30: Looking south towards Oil and Gas installation within 2 & 7-34-49-01 W4M



Photograph 31: Looking west towards 9 & 10-34-49-01 W4M



Photograph 32: Looking north towards 13 & 14-34-49-01 W4M and 3 & 4-03-50-01 W4M

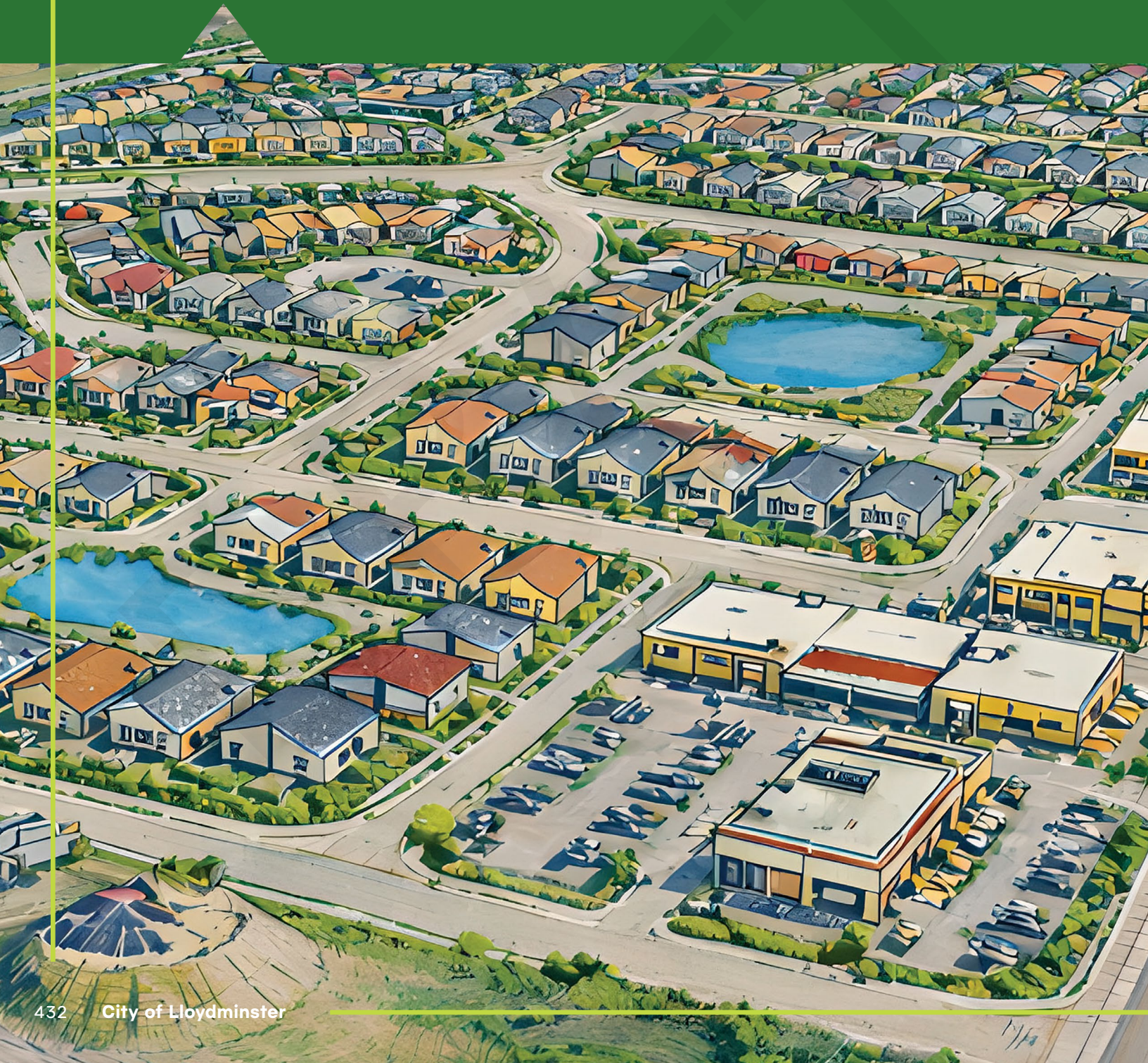


Photograph 33: Looking east towards 11 & 12-34-49-01 W4M



Photograph 34: Looking north towards 12-26-49-01 W4M

13.3 Appendix 3: Servicing Design Brief





Southwest Area Structure Plan

Servicing Design Brief

April 2025
City of Lloydminster- Engineering Services

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Map

Map 1. SWASP Study Area

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Table 1. Population Horizon Assessment Scenarios

Table 2. Future Water Distribution System Demands

Table 3. Areas for Recommended Upgrades

Appendices

Appendix 1a. Water Master Plan Figure 7.1

Appendix 2a. Sanitary Sewer Master Plan Figure 7.1

Appendix 2b. Sanitary Sewer Master Plan Figure 7.2

Appendix 3a. Stormwater Master Plan Figure 4.4

Appendix 3b. Stormwater Master Plan Figure 6.3

Appendix 3c. Stormwater Master Plan Figure 7.2

Appendix 3d. Stormwater Master Plan Table 7.2

Appendix 4a. Transportation Master Plan Time Horizon-Linked Improvement Tables and
Figures

Appendix 4b. Transportation Master Plan Figure 6.6

Appendix 4c. Transportation Master Plan Figure 6.8

1. Territory Acknowledgement

The City of Lloydminster acknowledges that we are located on Treaty 6 Territory, and the City of Lloydminster respects the histories and cultures of First Nations, Metis, Inuit, and all First Peoples of Canada, whose presence continues to enrich our vibrant community.

2. Limitation of Analysis

The analysis contained herein shall not be relied upon without independent validation and verification. The information presented herein shall be verified and updated as needed to align with the recommendations of the day. The recommendations and analysis contained within the latest editions of the City of Lloydminster's (City's) Master Plans and Municipal Development Standards available at the time of development shall take precedent over the recommendations contained herein.

Updating of the City's Master Plans and Municipal Development Standards from time to time shall not relieve the Developer or any other entity who relies on this document of its responsibilities associated with adhering to the requirements and recommendations for servicing the lands within the Southwest Area Structure Plan (SWASP) study area in accordance with the documents available at the time of development as well as all other applicable codes, regulations, and requirements.

The timelines for improvements and the staging of development, as identified within the Master Plans, are estimates based on projected population growth and therefore are highly dependent upon actual development within the City. As such, it is recommended that the City continually monitor the growth populations within the respective catchment areas and introduce a flow monitoring and traffic counting programs to confirm the improvement timelines to coincide with development requirements.

3. Purpose & Application

The purpose of the Servicing Design Brief (Brief) is to provide a high-level overview of the network locations, classifications, and capacities of the water, sanitary, stormwater, and transportation systems in the City as they apply to the SWASP study area (see Map 1).

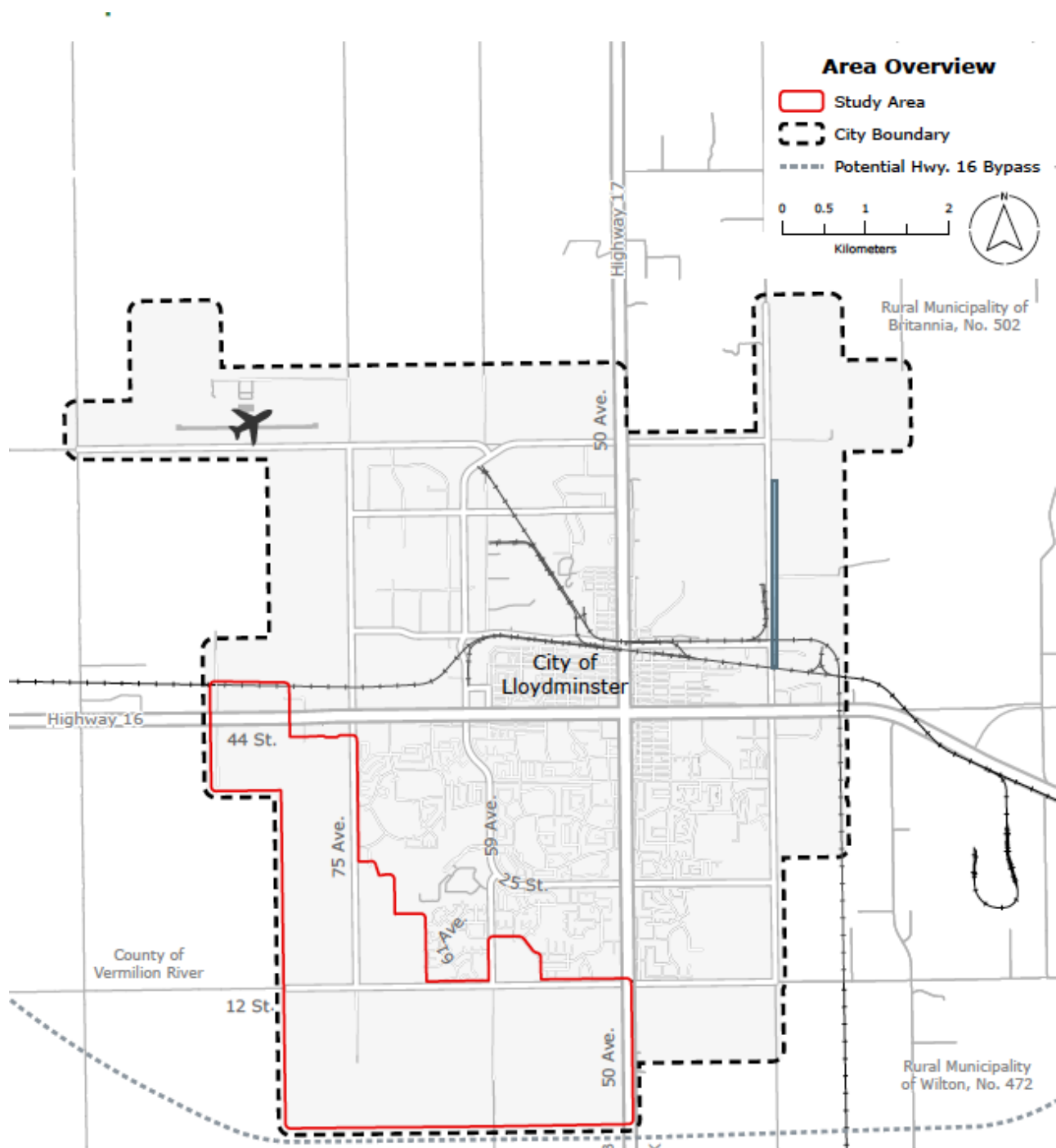
The analysis contained herein is intended to inform the development concept and policy direction of the SWASP that will guide subsequent Neighbourhood Structure Plans (NSPs) prepared in support of future development proposals.

This Brief is based upon the existing City's infrastructure Master Plans, including, but not limited to, the following:

- 2024 Water Master Plan, ISL Engineering and Land Services Ltd.
- 2024 Sanitary Sewer Master Plan, ISL Engineering and Land Services Ltd.
- 2024 Stormwater Master Plan, ISL Engineering and Land Services Ltd.
- 2025 Transportation Master Plan, ISL Engineering and Land Services Ltd.

As well as the latest edition of the City of Lloydminster's Municipal Development Standards.

Map 1. SWASP Study Area



4. Servicing Overview

While there are existing systems adjacent to the SWASP study area, the servicing of the SWASP study area will require the upgrading of existing systems to increase capacity, the development of new systems to bypass existing development, as well as existing system analysis to ensure the additional demands on the City's systems can be efficiently accommodated. Although the SWASP study area is adjacent to all the systems required to provide servicing to the lands, many of these systems have reached their maximum allowable catchment areas and cannot be extended further into the SWASP without extensive downstream improvements.

In general, the water treatment and distribution systems can accommodate the development of the SWASP with minor system modifications as development occurs, the sanitary sewer collection system will require extensive modifications to increase capacity as well as the development of new trunk main systems to connect the SWASP to the Wastewater Treatment Plant, the sanitary sewer treatment system has been designed to accommodate future growth, the stormwater will be serviced through the development of new systems, with the transportation network requiring upgrades as development occurs and the demand on adjacent roads increases. Select areas within the SWASP study area will be able to be developed with minor modifications where the majority of the SWASP study area will not be developable until the servicing has been extended.

As such, the servicing of the SWASP study area will require careful planning, analysis, and coordination involving all developers and interested parties along the proposed alignments with the goal of bringing services to the SWASP study area to ensure that the long-term growth of Lloydminster can be sustained.

5. Population Horizons

The growth populations within the Master Plans were initially determined by applying an annual growth rate of 2.2%. This growth rate was kept consistent with that applied within the design of the City's Wastewater Treatment Plant (WWTP). This was based on the City and County of Vermilion River Joint Regional Growth Study (Applications Management, et.al, 2019). Additionally, the target population allocation of 70% to the Alberta side of Lloydminster and 30% to the Saskatchewan side of Lloydminster was used to scale the populations for the future development areas.

Staging of growth areas was then refined by the City to align with the anticipated growth horizon for each future development area. This resulted in a non-linear growth rate that deviated from the annual growth rate of 2.2% that was initially applied across Lloydminster.

Additionally, the 3-Year Growth Horizon incorporated a densification population of 1,579 people. This population is based on a densification rate of 5% applied to the existing population which was obtained from the 2021 Census. This densification rate is also outlined within the Joint Regional Growth Study as part of the 2016 Draft Land Demand Generators Summary (Applications Management, et.al, 2019).

Growth did not occur at the rate anticipated within the 2019 Joint Regional Growth Study (Applications Management, et.al, 2019) between 2019 and 2021; therefore, the population growth assumptions as identified within the Master Plans were reset to reflect the actual 2021 Census population (Statistics Canada, 2022).

Table 1. Population Horizon Assessment Scenarios

Scenario	Year	Cumulative Population		
		Alberta	Saskatchewan	Total
Existing	2021	19,739	11,843	31,582
3-year	2025	22,081	12,570	34,651
5-year	2027	22,475	13,658	36,132
10-year	2032	23,564	17,584	41,148
20-year	2042	37,085	20,185	57,271
Ultimate	2051	46,461	20,688	67,149

6. Water Distribution

The Water Master Plan (ISL, 2024) analysed the City’s existing water distribution system under existing conditions, assessed future capacity needs to accommodate expected growth, and developed servicing plans to support the expansion of the City’s water distribution system. The study area of the Water Master Plan (ISL, 2024) included the SWASP lands.

6.1 Analysis

The analysis relied upon incremental population growth at the 3-, 5-, 10-, 20-, and ultimate boundary-year horizons that aligned with the expected development staging found in Figure 2.8¹ of the Water Master Plan (ISL, 2024).

¹ Water Master Plan, ISL Engineering and Land Services Ltd., 2024

Population growth assumed an average annual growth rate of 2.2% derived from the 2019 Joint Regional Growth Study (Applications Management, et.al, 2019).

6.2 Existing Water System

6.2.1 Supply & Treatment

The North Saskatchewan River, located north of the City along Highway 17, provides the City's raw water supply through infrastructure that was commissioned in 1983. The raw water supply infrastructure provides raw water to the City's Water Treatment Plant (WTP). The WTP is located in the northeast of the City, south of 67 Street and east of 50 Avenue. The WTP provides potable water to the City's water distribution system as well as fills the West End Reservoir.

Along with providing potable water to lands within the City's boundary, the WTP also provides potable water to regional partners through the Alberta Central East (ACE) and the Prairie North Regional Potable Water Line (SaskWater) distribution networks.

6.2.2 Storage & Distribution

Potable water from the WTP is stored at the West End Reservoir (WER), comprised of an above-ground concrete tank constructed in 1974 as well as two underground cells constructed in 2006. The WER provides potable water and operating pressure to the City's water distribution system when the WTP is offline.

6.2.3 System Assessment

The watermains within the water distribution system are predominately made of polyvinyl chloride (PVC) or asbestos cement (AC) with pipe diameters ranging from 50 mm to 750 mm.

Updated modelling for the average daily demand (ADD), maximum daily demand (MDD), peak hour demand (PHD), MDD + fire flow (FF) and reservoir filled under ADD concluded that the existing water distribution system is functioning within acceptable tolerances.

A fire flow assessment was undertaken across the City at hydrant locations, with fire flows ranging from 100 L/s to 300 L/s. There are many areas within the existing water distribution system where fire flow is inadequate. Some deficiencies are due to small diameter pipes that are unable to provide the required fire flow at the minimum pressure of 150 kPa. While some deficiencies are due to the hydrant being situated on a long single feed or due to a lack of looping within the water distribution system. However, the available fire flow within the existing water distribution system is generally sufficient to accommodate existing development.

The WTP and the WER have sufficient pumping capacity to support the existing water

distribution system, and no additional pumping capacity is required to service the existing population.

Overall, the upgrades recommended to the existing water distribution system are proposed in order to meet fire flow standards and increase system redundancy through upsizing and watermain looping. The recommended existing water distribution system upgrades are found in the Water Master Plan (ISL, 2024) in section 6.7, starting on page 53.

6.3 Future Water System Assessment

The Water Master Plan (ISL, 2024) proposes a water distribution system in the SWASP study area consisting of a 300 mm diameter grid network supplemented by 400 mm and 500 mm diameter watermains as needed to meet servicing requirements.² Actual alignments should be tailored to each subdivision and should avoid dead-end mains.

The proposed servicing concept found in Figure 7.1 on page 66 of the Water Master Plan (ISL, 2024), and appended herein as Appendix 1a, assumes all existing water distribution system upgrades have been implemented. Thus, the existing water distribution system upgrades are required prior to substantial new development and densification.

The servicing alignments as proposed within the Water Master Plan (ISL, 2024) are conceptual and ultimately the developer will need to determine, in consultation with the City, how best to fulfill the intent of the servicing concepts presented.

The future water distribution system was assessed in a similar manner to the existing system reflecting incremental growth. Future water distribution system assessment generally analysed the full build out (i.e., ultimate time horizon) of the water distribution system and determined the ultimate upgrades needed before considering staging of growth. Table 2 summarizes the future demand findings by time horizon.³

² *Ibid.*

³ *Ibid*, pg. 67

Table 2. Future Water Distribution System Demands (Total)

Horizon	ADD (L/s)	MDD (L/s)	PHD (L/s)
Existing	114	228	342
3-year	124	249	373
5-year	133	265	398
10-year	154	309	463
20-year	214	428	642
Ultimate	262	524	738

Pressure assessments revealed no additional upgrades are required. However, the system’s pumping capacity will need to be increased during the 20-year time horizon to align with growing demands and meet future fire flow requirements. In the 20-year horizon an additional 101 L/s pumping capacity is required and in the ultimate horizon an additional 197 L/s is required. These capacities refer to cumulative ‘firm capacities’ of the WTP and the WER.

Future reservoir storage capacity falls short at and beyond the 10-year time horizon according to the Saskatchewan requirements (AEPA standards are maintained in the 10- year horizon and beyond). Therefore, the following additional storage capacity needs to be online by the 10-year, 20-year, and ultimate horizons to meet future capacity requirements: 1,891 m³, 12,158 m³, and 20,454 m³, respectively.

6.3.1 Recommended Upgrades

To accommodate future growth, upgrades to the existing water distribution system are recommended including additional reservoir storage and pumping capacity. These upgrades are required in the 10-year and ultimate horizons to accommodate future growth. Both upgrades can be completed at the WER as it is designed to accommodate two additional cells, piping already exists for the extra cells, and there is room in the pumphouse for an additional pump. Alternatively, the upgrades can be accommodated by the construction of a new reservoir and pump station located per Figure 7.1 of the Water Master Plan (ISL, 2024) and providing an additional 20,500 m³ storage and 200 L/s pumping capacity. However, it is recommended that the new reservoir and pump station be built to introduce redundancy into the water distribution system. The new construction could be built in phases, commencing in the 10-year horizon timeline with an additional 1,891 m³.

6.4 SWASP Related Upgrades

According to Figure 7.1 of the Water Master Plan (ISL, 2024), the majority of the upgrades within the SWASP study area includes a water distribution system consisting

of 300 mm diameter water mains with a section of 400 mm diameter water main looping in the northwest of the SWASP study area, crossing 44 Street (Highway 16) along 80 Avenue. The proposed 300 mm diameter water distribution system will serve as the backbone of the new water distribution network within the SWASP study area as well as provide connection points for lands identified within the ultimate horizon.

Coupled with the 300 mm diameter water distribution system, a 400 mm diameter water main connecting the Lakeside and Parkview Estates neighbourhoods, as well as connecting the College Park and Lakeside neighbourhoods is proposed to provide existing system looping.

The extension of the water distribution system to be within the SWASP study area shall be coordinated with the required treatment, pumping, and storage improvements to ensure adequate capacity and fire flow are available within the development lands. All future NSPs shall consider interim looping as part of development staging to maintain efficient system operation.

Where existing water distribution system connections exist, the developer shall endeavour to connect at all points available to ensure the water distribution system within the SWASP study area has adequate fire flows, pressures, and is looped to provide system redundancy.

To service the lands outside of the SWASP, connection points for future expansion of the City's water distribution system shall be contemplated. These connection points shall be situated within collector or arterial roads where the water distribution system can be easily connected to and extended.

7. Sanitary Sewer

The Sanitary Sewer Master Plan (ISL, 2024) assessed the existing sanitary sewer collection system condition and its capacity to convey the current and expected future growth sanitary flow volumes effectively. It developed servicing plans and provided a framework for future capital planning. The study area of the Sanitary Sewer Master Plan (ISL, 2024) included the SWASP lands.

7.1 Analysis

The analysis relied upon the same population horizons and growth projections as the Water Master Plan (ISL, 2024), with an average annual growth rate of 2.2% as derived from the 2019 Joint regional Growth Study (Applications Management, et.al, 2019).

Within the Sanitary Sewer Master Plan (ISL, 2024) the design criteria and level of service were derived from the City's Municipal Development Standards, typical municipal servicing standards, and a Type 4 Huff design storm with a 1:25 year 24-hour return period. The system's performance was assessed in terms of peak

discharge relative to pipe capacity and maximum hydraulic grade line elevation relative to ground.⁴

7.2 Existing Sanitary System

The mains within the sanitary sewer collection system are predominately made of polyvinyl chloride (PVC) or vitrified clay tile (VCT) with pipe diameters ranging from 100 mm to 1350 mm.

In conjunction with the local sanitary sewer collection system, the system has several trunk sewers which collect flows from various catchment areas throughout Lloydminster, combines the flows, and then conveys the flows to the Wastewater Treatment Plan (WWTP), including the following:

- **25 Street Trunk:** This trunk is along 25 Street from 59 Avenue to 47 Avenue, conveying flows from the 25 Street Trunk collection area to the Southeast Trunk.
- **36 Street Trunk:** This trunk is along 36 Street from 52 Avenue to 40 Avenue, conveying flows from the 25 Street Trunk, 36 Street Trunk, and Southeast Trunk collection areas to the East Trunk.
- **47 Street Trunk:** This trunk is along 46 Street from 45 Avenue to 43 Avenue, crosses the Legion Ball Park, then is along 47 Street from 40 Avenue to 37 Avenue, conveying flows from the 47 Street Trunk collection area to the East Trunk.
- **52 Street Trunk:** This trunk is along 52 Street from 50 Avenue to east of 37 Avenue, conveying flows from the 52 Street Trunk collection area to the East Trunk.
- **62 Street Trunk:** This trunk is along 62 Street from 63 Avenue to 53 Avenue, conveying flows from the 62 Street Trunk collection area to the West Trunk.
- **East Trunk:** This trunk is along 36 Street, 39 Avenue, 41 Street, 37 Avenue, and 44 Street, and follows the alignment of the East Drainage Channel from 40 Avenue and 36 Street to 67 Street. This trunk conveys flows from the 25 Street Trunk, 36 Street Trunk, 52 Street Trunk, Southeast, and East Trunk collection areas to the City's WWTP.
- **North Trunk:** This trunk is along 49 Avenue and 67 Street from 62 Street to the East Trunk, conveying flows from the 62 Street Trunk and West Trunk collection areas to the East Trunk. It should be noted that there is no existing collection area for the North Trunk, as these lands are currently undeveloped.
- **Southeast Trunk:** This trunk is along 18 Street, 47A Avenue, 19 Street, 47 Avenue, 20 Street, 46 Avenue, 27 Street, 45 Avenue, and 33 Street from 52

⁴ Sanitary Sewer Master Plan, ISL Engineering and Land Services Ltd., 2025

Avenue and 18 Street to 45 Avenue and 36 Street. This trunk conveys flows from the 25 Street Trunk and Southeast Trunk collection areas to the 36 Street Trunk.

- **West Trunk:** This trunk is along 70 Avenue, 59 Street, 53 Avenue, and 62 Street, and follows the alignment of the Northwest Drainage Channel from 70 Avenue and 43 Street to 49 Avenue and 62 Street. This trunk conveys flows from the 62 Street and West Trunk collection areas to the North Trunk.⁵

The SWASP would be primarily serviced by both the East Trunk and the West Trunk.

7.2.1 Existing System Capacity Assessment

Modelling revealed thirteen capacity upgrade recommendations to the existing sanitary sewer collection system, summarized in the Sanitary Sewer Master Plan (ISL, 2024), within Table 6.3 on page 49 and shown in Figure 6.9, page 58.

Further, a condition assessment of pipes within the existing sanitary sewer collection system was undertaken, with conditions listed from excellent to failing where excellent condition required no further action, good condition indicated maintenance is recommended, fair condition indicated repairs are recommended in the next 10 to 20 years, and poor condition indicated repairs are recommended in the next 5 to 10 years, while failing condition requires immediate repair due to collapse or where a pipe has a hole with a visible void. Figure 6.13 on page 63 and Table 6.6 on page 65 of the Sanitary Sewer Master Plan (ISL, 2024) illustrate and summarize the pipe segment conditions, respectively.

Of the fourteen pipe segments identified, only one was rated as failing. Roughly 20% of the City's existing sanitary sewer collection system, installed in the 1970s, has a generalized rating of poor. Sanitary sewer mains installed prior to 1960 were not inspected as part of the condition assessment. Table 6.8 found in the Sanitary Sewer Master Plan (ISL, 2024), page 69, summarizes the recommended condition upgrades to the existing sanitary sewer collection system.

The proposed servicing concept found in Figure 7.1 and 7.2 on page 66 of the Sanitary Sewer Master Plan (ISL, 2024), and appended herein as Appendix 2a and 2b, assumes all existing sanitary sewer collection system upgrades are implemented. Thus, the existing sanitary sewer collection system upgrades are required prior to substantial new development and densification.

The servicing concepts are conceptual and ultimately the developer will need to determine, in consultation with the City, how best to fulfill the intent of the servicing concepts presented.

⁵ *Ibid*, pp. 20-21

While the Sanitary Sewer Master Plan (ISL,2024) was only concerned with the sanitary sewer collection system, it should be noted that the Wastewater Treatment Plant (WWTP), commissioned in 2024, had established a 20-year design horizon from 2021, such that, the WWTP would service the projected population in 2041. The anticipated total population of the City at the 2041 horizon was calculated to be 53,974 (Lloydminster Wastewater Treatment Facility IPD Team, 2020). This population is in alignment with the 2.2% growth projection as determined by the 2019 Joint Regional Growth Study (Applications Management, et.al, 2019) and was part of the assumptions of the Sanitary Sewer Master Plan (ISL,2024). The expansion of the WWTP to accommodate the growth within the SWASP catchment areas beyond the 2041 horizon should be monitored as development occurs within Lloydminster in order to understand timelines and staging for improvements.

7.2.2 Pipe Diameter

The future design concept uses the smallest possible pipe diameters determined based on the minimum design slope to provide a self-cleansing full-sewer velocity of greater than 0.60 m/s, as presented in Table 7.16 of the Sanitary Sewer Master Plan (ISL, 2024), page 76.

Flatter slopes are possible but could pose challenges of reduced capacities. If warranted, flatter slopes would need to be offset by a larger pipe diameter to meet specified capacity requirements. Conversely, if steeper slopes are warranted then a smaller pipe diameter may be required. However, both scenarios would require careful review at the detail design stage.

7.2.3 Future System Assessment

The future concepts were assessed for level of service during a 1:25 year rainfall event (24- hour Huff design storm) to determine what, if any, upgrades to the existing sanitary sewer collection system would be required to support the future system. Both concepts were assessed at the ultimate timeframe (2051).

There were many locations in the existing sanitary sewer collection system, and seven notable locations between the two concepts, where the additional tie-ins from the future system caused surcharging in the downstream pipes. These locations are illustrated on Figure 7.7 on page 87, and the associated recommended upgrades are summarized in Table 7.3 on page 82 of the Sanitary Sewer Master Plan (ISL, 2024) and recreated as Table 6. Upgrade number five affects the SWASP study area should Concept 2 be implemented.

Table 3. Areas for Recommended Upgrades

Upgrade No.	Triggering Concept	Description
1	C1 & C2	Very minor surcharging with some sections of pipe illustrating an HGL above the crown of the pipe. This is a flatter and downsized section of pipe, thus the reduced capacity. Recommend replacement to a 1,200 mm with next roadworks in the vicinity.
2	C1 & C2	Apparent surcharging, HGL above crown of the pipe therefore upgrades triggered. Recommend replacement with a 675 mm sewer.
5	1	Some surcharging in localized section of pipe. Recommend replacement with a 300 mm sewer.

The preferred development concept is Concept 1, depicted on Figure 7.1 in Appendix 2a as additional surcharging with future development is limited to just one area. The staging of the preferred concept aligns with the growth horizons of the 5-, 10-, 20- and ultimate horizons. The assessment revealed that the East Trunk sewer is triggered prior to the 10-year growth horizon and is therefore required within the next 10 years.

The proposed servicing concept staging has been oversized to account for future development up to the ultimate time horizon based upon a sewer service life of 60 years.⁷ However, oversizing could result in operational and maintenance concerns due to low velocities prior to the ultimate build out. Therefore, detailed design of future infrastructure should consider how best to mitigate such concerns, including staged infrastructure, twinned sewers, or interim smaller diameter sewers housed within the ultimate sewer.⁸

7.3 SWASP Related Upgrades

As identified within the Sanitary Sewer Master Plan (ISL, 2024), two concepts associated with servicing the SWASP were prepared. Concept 1 included servicing portions of the lands west of 75 Avenue through existing neighbourhoods, where Concept 2 assumed all lands south of 29 Street would be serviced through the development of the South Trunk, the twinning of the East Trunk, as well as the connection of the East Trunk to the South Trunk through the lands east of Wallacefield. Concept 1 is shown in Figure 7.1 of the Sanitary Sewer Master Plan (ISL, 2024) where Concept 2 is shown in Figure 7.2 of the Sanitary Sewer Master Plan (ISL, 2024). The lands within the SWASP north of 29 Street

⁷ *Ibid.*

⁸ *Ibid.*

and west of 75 Avenue are to be serviced from the north via the West Trunk regardless of the concept chosen.

Concept 1 is preferred if development along 75 Avenue, in the vicinity of 29 Street, occurs before the parcels south of 12 Street and the development of the South Trunk are contemplated. Servicing the SWASP study area, in particular the lands west of 75 Avenue and south of 12 Street, through existing neighbourhoods, other than those identified within Concept 1, is not permitted due to the lack of conveyance capacity remaining within these systems.

It should be noted that some lands within the SWASP study area may be serviced through the existing sanitary sewer collection system, particularly the land east of 75 Avenue and north of 12 Street, i.e., Parkview Estates, Lakeside, College Park, provided the analysis of the downstream systems is not indicating capacity issues as there are no other connection points available to these neighbourhoods. If downstream capacity issues are identified, these will need to be resolved prior to the development of these lands.

As part of future development stages including planning and design for NSPs, the downstream sanitary sewer collection system shall be included within the analysis to ensure the development does not negatively impact the existing sanitary sewer collection system.

The SWASP study area shall also provide connections points for future development beyond the lands identified within the ultimate horizon. These connection points shall be situated within collector or arterial roads or other suitable alignments, where the sanitary sewer system can be easily connected to and extended.

8. Stormwater Management

The Stormwater Master Plan (ISL, 2024) assessed the capacity of the existing and future stormwater conveyance systems. It developed servicing plans and provided a framework for future capital planning. The study area of the Stormwater Master Plan (ISL, 2024) included the SWASP lands.

8.1 Analysis

The analysis relied on the same growth time horizons used in the Water Master Plan (ISL, 2024) and the Sanitary Sewer Master Plan (ISL, 2024). Criteria for designing and assessing the systems were derived from the City's Municipal Development Standards and typical municipal servicing standards.

8.2 Existing Stormwater System

The existing stormwater system comprises both major and minor systems. The major system includes:

- surface (overland) drainage consisting of roads, ditches/swales, overland escape routes and natural watercourses as well as storage facilities, ponds, and trap lows.

The minor system includes:

- Piped systems, catch basins, inlets and leads, manholes and junctions, and outfalls.
- Drainage infrastructure such as culverts, curbs and gutter, as well as roof leaders are part of both the minor and the major systems.
- The storm sewer mains within the stormwater collection system are predominately made of polyvinyl chloride (PVC) or concrete (CONC) with pipe diameters ranging from 100 mm to 2400 mm. Box culverts range in dimension up to 3000 mm by 5000 mm.

8.2.1 Existing Drainage Patterns SWMF

There are two main drainage routes in the City which direct stormwater towards the northeast: the Northwest Drainage Channel and the East Drainage Channel, as shown on Figure 4.4 on page 25 of the Stormwater Master Plan (ISL, 2024), attached herein as Appendix 3a.

The Northwest Drainage Channel is a natural drainage course as well as a constructed waterway originating west of Lloydminster within the County of Vermilion River and flows northeast to Lake V (Brekko Lake). From here the channel continues northeast within the Rural Municipality of Britannia before re-entering the City's boundary as it flows through the Landfill and ultimately terminates at Neale Lake West. The catchment area within Lloydminster for this drainage channel is the northwest and northern parts of Lloydminster.

The East Drainage Channel is a constructed waterway originating at Lake J (Jaycee Park) and passes through Lake K on its way north to Lake N. From Lake N it flows northward parallelling the City's eastern boundary until it crosses 67 Street and goes through a drop structure terminating at Neale Lake West. The catchment area within Lloydminster for this drainage channel is the majority of the southeast, a portion of the southwest, and some areas along the south and east boundaries of the City.

The remaining lands within the southern portion of the City, drain eastward towards the Big Gully Creek through a series of swales, small tributaries, lakes, and drainage channels.

8.2.2 Stormwater Management Facilities

Stormwater management facilities (SWMFs) are designed to store large volumes of runoff during intense storm events and the slowly release flows afterwards to attenuate

peak flows into the downstream storm sewer system.⁹ There are seventeen existing SWMF in the City as shown in Figure 4.4, attached as Appendix 3a.

8.2.3 Wetlands

The Stormwater Master Plan (ISL, 2024) recommends the retention of reasonably permanent, large and/or complex wetlands due to potential hydrologic impact of their removal.¹⁰ Lesser wetlands also provide important hydrological and ecological functions, and their disturbance should be avoided where practical.

8.3 Existing System Assessment

The level of service for the stormwater minor system is based on the 1:5 year 4-hour Modified Chicago design storm while the major system is based on the 1:100 year 4-hour Modified Chicago design storm and the 1:100 year 24-hour Huff design storm.¹¹

The minor system is assessed in terms of a peak discharge relative to pipe capacity ratio and maximum hydraulic grade line elevation relative to ground (freeboard). The major system is assessed through surface flooding depth and velocity.¹²

The 1:5 year 4-hour Modified Chicago design storm for the peak flow to full pipe capacity ratio model results indicate that over 13.5% of the total existing manholes would have less than the required 1.5 m freeboard and almost 11% of the pipes would convey flows exceeding capacity.

The 1:100 year 4-hour Modified Chicago design storm model produced more surface flooding than the 1:100 year 24-hour Huff storm event as it is more intense over a shorter timeframe. These results were expected and indicated that several locations throughout the city would experience surface flooding to some extent under the 1:100-year event. The areas of concern are noted on Figure 6.3 of the Stormwater Master Plan (ISL, 2024), appended herein as Appendix 3b. While Figure 6.3 focuses on areas of concern in developed locations, showing numbered locations where specific upgrades recommendations are listed in Table 6.7 starting on page 48 of the Stormwater Master Plan (ISL, 2024), Figure 6.3 also shows flooding in the undeveloped areas. Of particular interest, Figure 6.3 shows flooding in the SWASP, up to 500 mm flood depth in some locations. This illustrates two things: the first is that the SWASP in its natural state shows a propensity for flooding during intense storm events; and second, how critical effective stormwater management will be as the SWASP develops.

⁹ Stormwater Master Plan, ISL Engineering and Land Services Ltd., 2024

¹⁰ *Ibid.*

¹¹ *Ibid.*

¹² *Ibid.*

8.4 Future Stormwater System

The future stormwater system seeks to use minor and major stormwater drainage systems to balance pre- and post-development runoff in currently undeveloped areas, including the SWASP. Drainage patterns for undeveloped areas are generally divided on a per quarter section basis and further split or grouped based on major changes in topography.¹³ Some undeveloped areas are within existing catchments and use existing stormwater infrastructure and should be reviewed at the time of development.

8.4.1 Future Stormwater Concept & Design Parameters

The future stormwater concept for undeveloped areas generally includes a stormwater management facility in every quarter section with associated regulating outlets and conveyance pipes. New development within existing catchments would connect to adjacent existing stormwater systems and drain to the respective existing downstream SWMF.¹⁴ The future stormwater management concept is depicted in Figure 7.2 on page 95 of the Stormwater Master Plan (ISL, 2024) and appended herein as Appendix 3c.

The SWMFs were designed to provide sufficient storage capacity to temporarily store and attenuate peak flow while controlling the flow release rate below a stipulated limit while not infringing on freeboard requirements.¹⁵ Table 7.2 starting on page 75 of the Stormwater Master Plan (ISL, 2024) provides the design parameters for future SWMFs shown in the future stormwater concept (Figure 7.2/Appendix 3c). Table 7.2 is included herein as Appendix 3d.

To determine required orifice size for SWMFs, allowable discharge rates were applied to the orifice equation with the assumption that the orifice would be submerged and that the maximum flow release rate would be reached when the water level reaches the high-water level. Note that orifice diameter was rounded down to the nearest commercially available orifice size to accommodate total volume without exceeding the maximum release rate.¹⁶

The storm sewers were designed to retain the minimum slope required to achieve the full pipe flow self-cleaning velocity of 0.9 m/s in accordance with the City's Municipal Development Standards. All of the proposed storm sewers were assumed to follow the quarter section boundaries before reaching the discharge outfall.

In addition to the above traditional design parameters, the Stormwater Master Plan (ISL, 2024) discusses alternative or 'green infrastructure' stormwater management principles, including low impact design (LID) and source control measures.

¹³ *Ibid.*

¹⁴ *Ibid.*

¹⁵ *Ibid.*

¹⁶ *Ibid.*

Low impact development best practices are recommended in new development areas to improve stormwater conditions by attenuating peak flow, improving water quality and reducing volume through infiltration and evaporation/evapotranspiration.¹⁷

Moreover, source control measures are suggested that include rainwater harvesting, use of bioswales or vegetated swales, reducing impermeable surfaces, developing green roofs, and creating bioretention areas, depressed landscaped areas designed to collect, store and utilize local stormwater volumes.

8.4.2 Future Stormwater Assessment

The future SWMF and conveyance system were modelled to assess the adequacy to accommodate future development. Since most of the future systems is dependant on the existing stormwater system, the modelling exercise was primarily used to assess the existing capacity downstream of proposed future development. The model used was the 1:5 year 4-hour Modified Chicago design storm.

The modelling revealed that there were no capacity deficiencies caused by the future development and therefore no additional system upgrades were required to support future development. However, backflow prevention valves are recommended to be installed at outfall servicing catchment areas with ground or basement elevations below the local 1:100-year waterbody flood level.¹⁸

8.4.3 Erosion and Sedimentation Control

The Stormwater Master Plan (ISL, 2024) promotes the use of erosion and sedimentation control plans in new development, in alignment with the City's Municipal Development Standards.

The lack of control measures can have negative impacts on the stormwater system as well as the environment. Examples of control measures include vegetative check dams and erosion control blankets, but since each site is unique, the best control method should be assessed on site in the field before construction begins.

8.5 SWASP Related Upgrades

As identified within Figure 7.2 of the Stormwater Master Plan (ISL, 2024), stormwater management within the SWASP is most reliant upon the development of a new storm sewer trunk system, consisting of pipe diameters ranging from 450 mm to 1200 mm, and new SWMF's. The lands adjacent to 75 Avenue in the vicinity of 29 Street up to 44 Street can be serviced through the City's existing storm water collection system with the rest of the SWASP study area reliant upon the development of a new storm sewer trunk system.

¹⁷ *Ibid.*

¹⁸ *Ibid.*

The development of lands within the SWASP study area shall consider natural drainage patterns and account for these flows within the development. All proposed developments shall be designed such that this pre-development flow is accommodated. Accommodating existing natural drainage and pre-development flows from lands outside the development shall be addressed through piped connections or through drainage channels. Existing natural drainage shall never be severed.

9. Transportation

The Transportation Master Plan (ISL, 2025) assessed the existing transportation system based on existing travel demands, developed a travel demand model to the 20-year horizon, assessed the future transportation system, made recommendations for key transportation improvements and provided guidance for implementation. The study area of the Transportation Master Plan (ISL, 2025) included the SWASP lands.

9.1 Existing Transportation Network

The existing transportation network in Lloydminster includes corridors for motorized vehicles, non-motorized active modes of transportation, and mixed modal transportation routes.

There is also a heavy rail network within and around Lloydminster, however this network would be located north of 44 Street (Highway 16) and currently does not provide any service to the lands contained within the SWASP study area.

The transportation network comprises of rural roads, service roads, local roads, arterial roads, collector roads, and urban highways.

9.1.1 Existing Traffic Conditions

Within the SWASP study area there is minimal existing transportation infrastructure. The main transportation network adjacent to the SWASP study area would be 12 Street and 75 Avenue which consist of a rural two-lane cross section with ditches on both sides. Some intersection improvements along these corridors have been implemented however most of 12 Street and 75 Avenue remain a rural cross section. Intersection signalization would be present at 44 Street and 75 Avenue, 43 Street and 75 Avenue, 19 Street and 75 Avenue, 12 Street and 75 Avenue, and 50 Avenue and 12 Street. All other intersection along 12 Street and 75 Avenue within the SWASP study area would be stop-controlled in varying directions.

9.1.2 Future Transportation Network

The future transportation network was conceptualized building out at key time horizons: 3-, 5-, 10-, and 20-year. The Transportation Master Plan (ISL, 2025) provides a table of improvements and a figure illustrating the location of the improvements for each time

horizon, starting on page 43 with the 3-year horizon. The tables and figures are appended herein as Appendix 4a.

9.1.3 Truck and Dangerous Goods Routes Review

The Transportation Master Plan (ISL, 2025) evaluated the suitability of the current network to support future growth against the Dangerous Goods Route and Truck Routes Establishment Report (ISL, 2020), and made recommendations for future alignments, illustrated graphically in Figure 6.6 appended herein as Appendix 4b.

Within the Transportation Master Plan (ISL, 2025) it was recommended that both 12 Street and 75 Avenue would remain part of the City's Truck Route and Dangerous Goods Route.

9.1.4 Long-Term Road Network

The future road network presented in the Transportation Master Plan (ISL, 2025) ultimate build out is not linked to a specific year or population threshold and is high-level and conceptual to help inform future planning processes, intermunicipal coordination, and long-range infrastructure strategies.¹⁹ The ultimate road network is illustrated in Figure 6.8 of the Transportation Master Plan (ISL, 2025), appended herein as Appendix 4c, and does not include local roads as those will be determined by future planning, such as the Neighbourhood Structure Plan stage.

9.2 SWASP Related Upgrades

The tables and figures in Appendix 4a identify the required upgrades according to their respective time horizons. Most of the upgrades in the 3- to 5-year time horizons are at the periphery of the SWASP study area along 75 Avenue and 12 Street and a segment of conceptual road alignment in the northwest, as listed in Tables 5.2 through 5.5 and illustrated in Figures 5.1 and 5.3. The improvements beyond the 5-year horizon are identified in Tables 5.6 through 5.9 and illustrated in Figures 5.5 and 5.7. The 10-year horizon adds more conceptual road layout in the northwest of the SWASP study area, and the 20-year horizon adds the remaining future conceptual road alignments within the study area.

In conjunction with the Transportation Master Plan (ISL, 2025), any applicable functional plans, in particular the 12 Street Functional Plan and the 75 Avenue Function Plan, shall be referenced to ensure access requirements, setbacks, and road right-of-way requirements are accounted for.

The transportation network within the SWASP study area shall consist of arterial roads, collector roads, and local roads connecting key destinations and access points. The transportation network shall limit the possibility of 'short-cutting' between key destinations

¹⁹ *Ibid.*

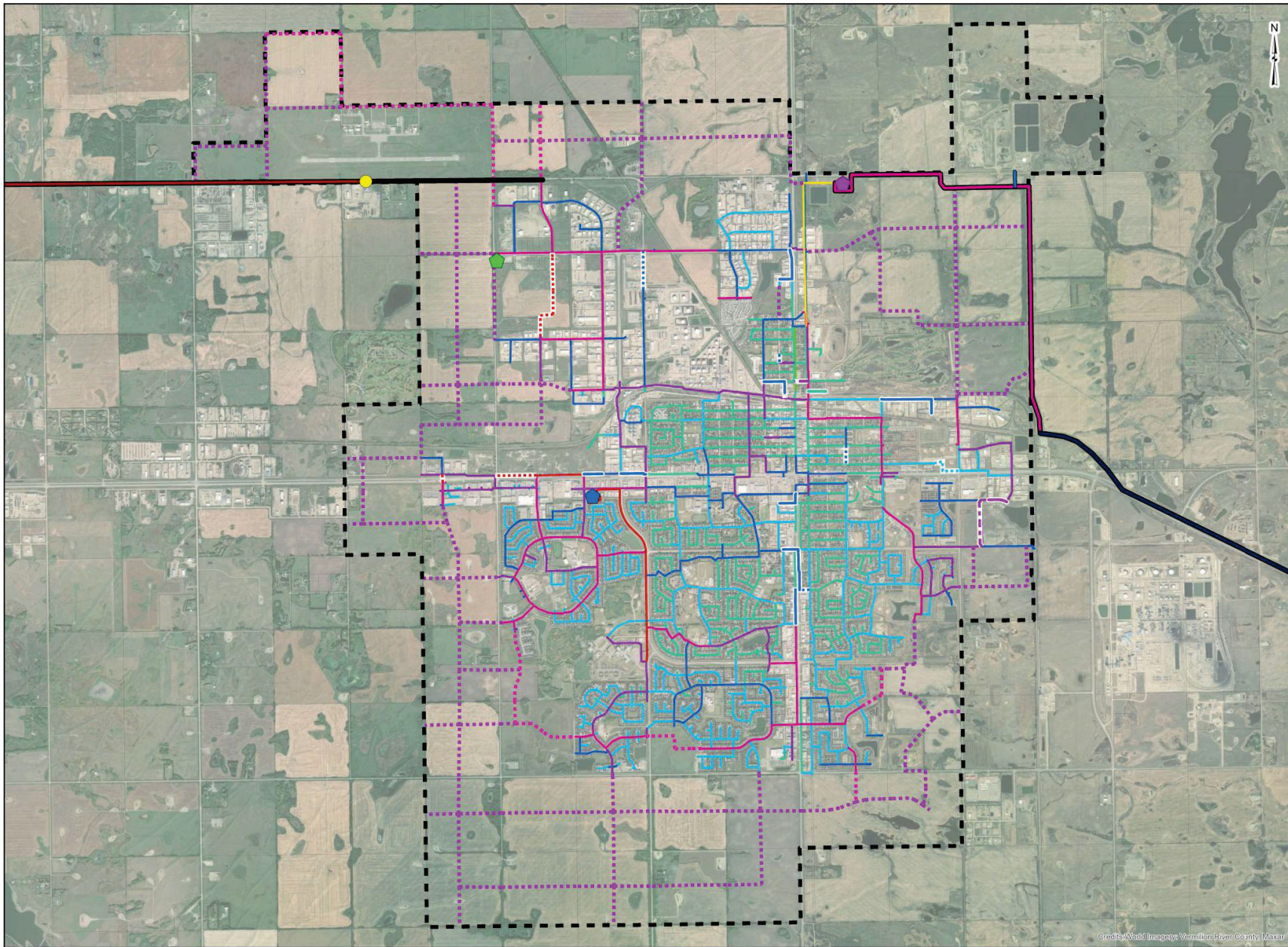
and shall provide connection points to the existing transportation network, and the future network beyond the ultimate scenario.

For any development of the lands south of 12 Street within the SWASP study area, the Highway 16X Bypass shall be referenced to ensure access requirements, setbacks, and road right-of-way requirements are accounted for.

Pedestrian mobility and alternate mode of transportation accommodation shall be considered in all stages of development to ensure the SWASP study area is connected to the existing infrastructure as well as appropriate right-of-way allocation is present to provide the opportunity for this infrastructure to be developed and key destinations connected.

Appendices

Appendix 1a. Water Master Plan Figure 7.1



- Legend**
- Study Area
 - Water Treatment Plant
 - West End Reservoir
 - Proposed Reservoir (Alternate to WER Upgrades)
 - ACE Tie-in Location
- ACE Water Line**
- ACE Water Line
 - City of Lloydminster Owned ACE Water Line
- SaskWater Line**
- City of Lloydminster Owned SaskWater Line 450 mm
 - City of Lloydminster Hydrant Service Line 250 mm
 - SaskWater Line
- Existing Pipe Diameter**
- 50 mm
 - 100 mm
 - 150 mm
 - 200 mm
 - 250 mm
 - 300 mm
 - 350 mm
 - 400 mm
 - 500 mm
 - 600 mm
 - 750 mm
 - Unknown
- Existing Pipe Upgrades**
- Replace with 150 mm
 - Upsize to 250 mm
 - Upsize to 300 mm
 - Loop with 200 mm
 - Loop with 250 mm
 - Loop with 400 mm
 - Loop with 500 mm
 - Twin with 300 mm
- Proposed Future Pipe**
- Proposed 300 mm
 - Proposed 400 mm

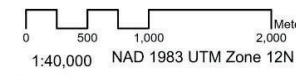
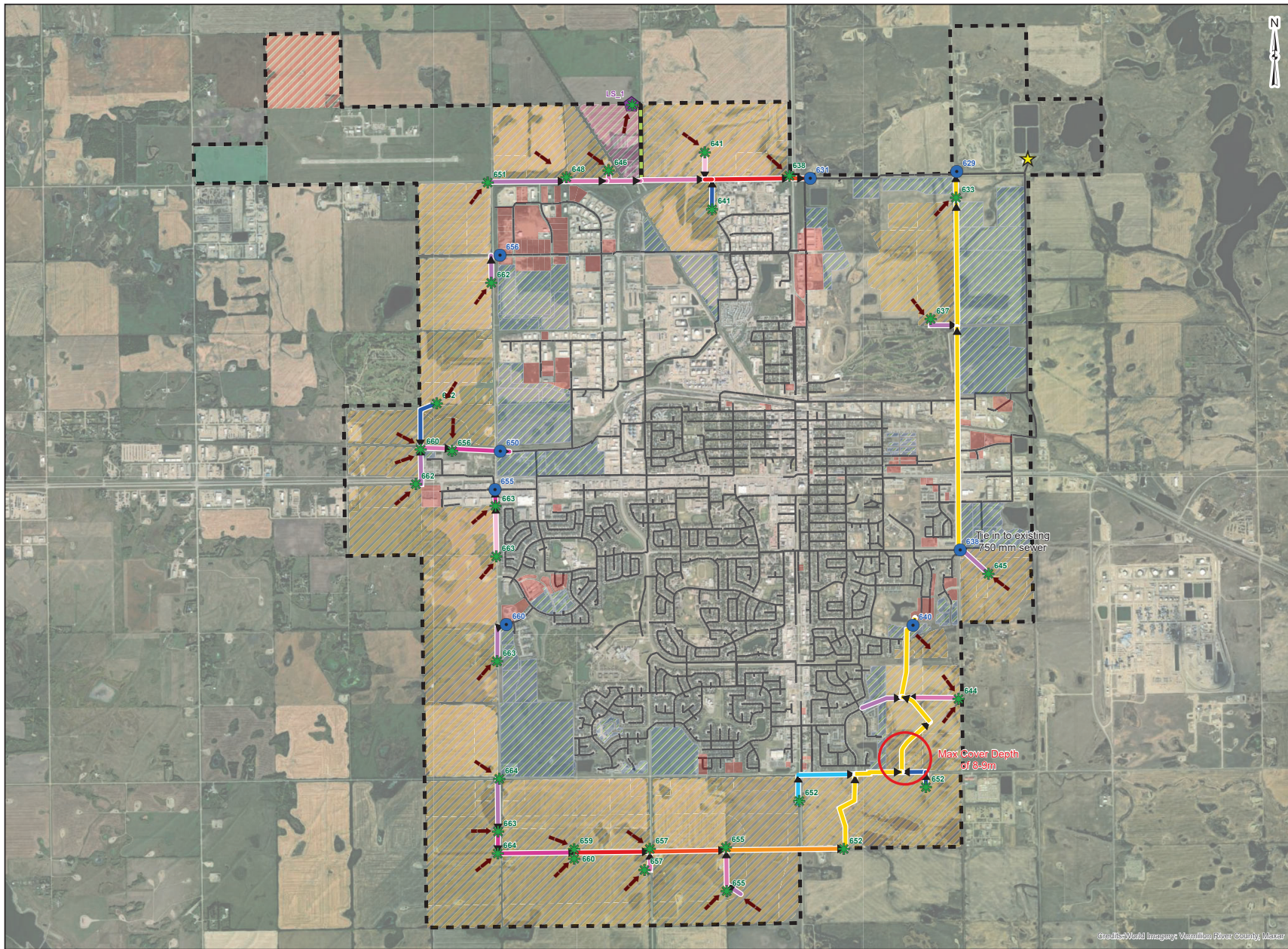


FIGURE 7.1
FUTURE WATER SYSTEM CONCEPT
PIPE DIAMETER
LLOYDMINSTER WATER MASTER PLAN



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Appendix 2a. Sanitary Sewer Master Plan Figure 7.1



- Legend**
- Gravity Tie-In Location
 - ★ Servicing Area Minimum Elevation
 - ◆ Proposed Lift Station
 - ★ Wastewater Treatment Plant
 - Existing Sewer
 - ▭ Study Area
- Future Parcel Tie-In**
- ▨ New Service
 - ▨ Existing Service
 - ◆ Lift Station Required
 - ▨ Septic Tanks
 - ▨ Serviced But Vacant
 - ▨ Airport Expansion
- Proposed Pipe Diameter**
- 200 mm Forcemain
 - 300 mm Sewer
 - 375 mm Sewer
 - 450 mm Sewer
 - 525 mm Sewer
 - 600 mm Sewer
 - 675 mm Sewer
 - 750 mm Sewer
 - 900 mm Sewer
 - 1050 mm Sewer
 - 1200 mm Sewer

Service area minimum points (green) and tie-in elevations at the upstream invert of the existing pipe (blue) are in m.

Maximum cover depths provided are approximate ranges.

Sizing assumes single forcemains. Twinned forcemains can be considered for optimal redundancy if an equivalent capacity is accomplished.

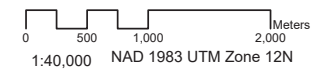
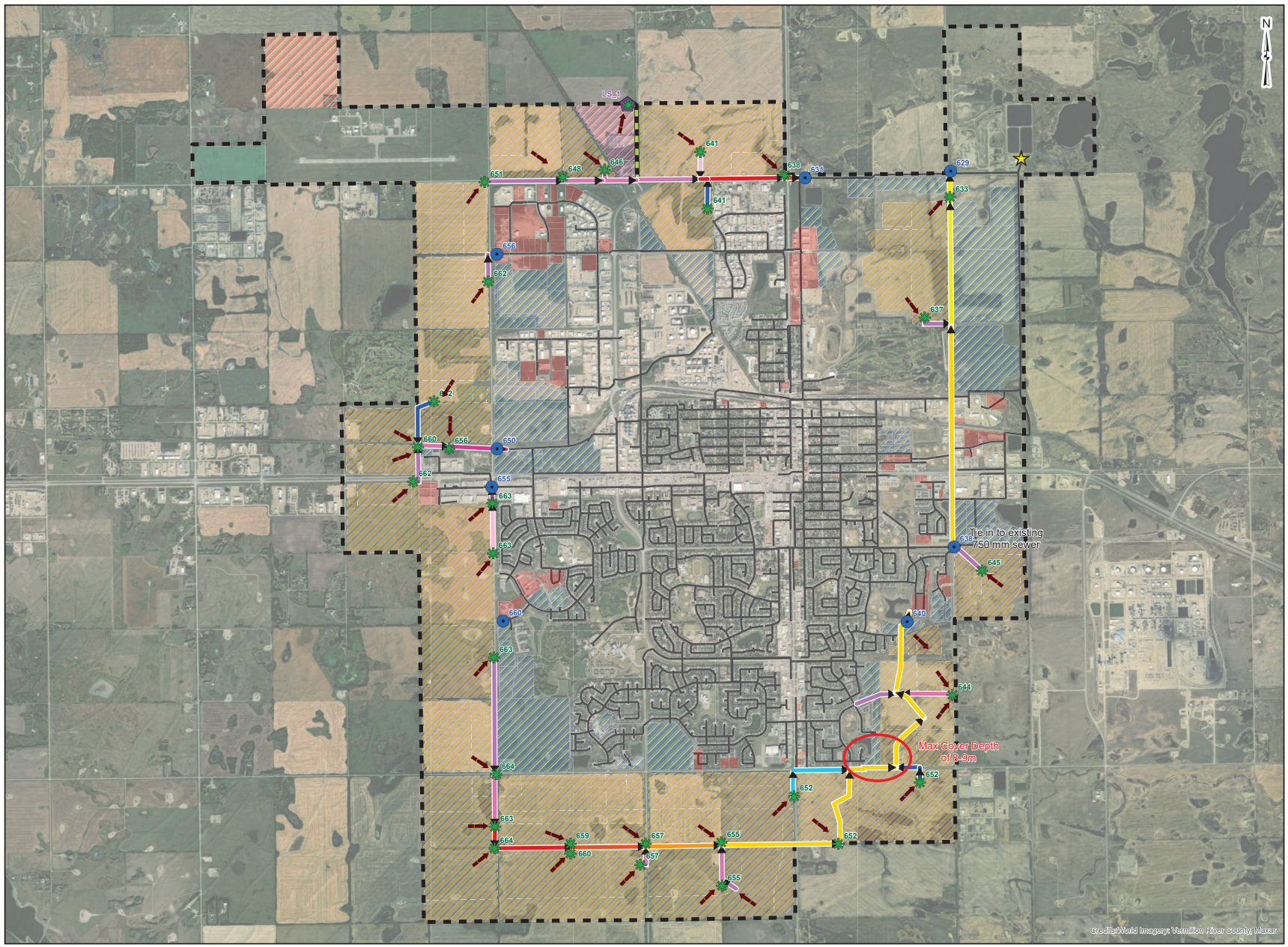


FIGURE 7.1
FUTURE SERVICING CONCEPT 1
LLOYDMINSTER SANITARY SEWER
MASTER PLAN

Appendix 2b. Sanitary Sewer Master Plan Figure 7.2



Legend

- ★ Wastewater Treatment Plant
- Existing Sewer
- ▭ Study Area

Future Parcel Tie-In

- ▨ New Service
- ▨ Existing Service
- ▨ Lift Station Required
- ▨ Septic Tanks
- ▨ Serviced But Vacant
- ▨ Airport Expansion

Proposed Pipe Diameter

- ▬ 200 mm Forcemain
- ▬ 300 mm Sewer
- ▬ 375 mm Sewer
- ▬ 450 mm Sewer
- ▬ 525 mm Sewer
- ▬ 600 mm Sewer
- ▬ 675 mm Sewer
- ▬ 750 mm Sewer
- ▬ 900 mm Sewer
- ▬ 1050 mm Sewer
- ▬ 1200 mm Sewer
- ▬ 1350 mm Sewer

Service area minimum points (green) and tie-in elevations at the upstream invert of the existing pipe (blue) are in m.

Maximum cover depths provided are approximate ranges.

Sizing assumes single forcemains. Twinned forcemains can be considered for optimal redundancy if an equivalent capacity is accomplished.

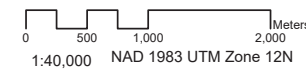
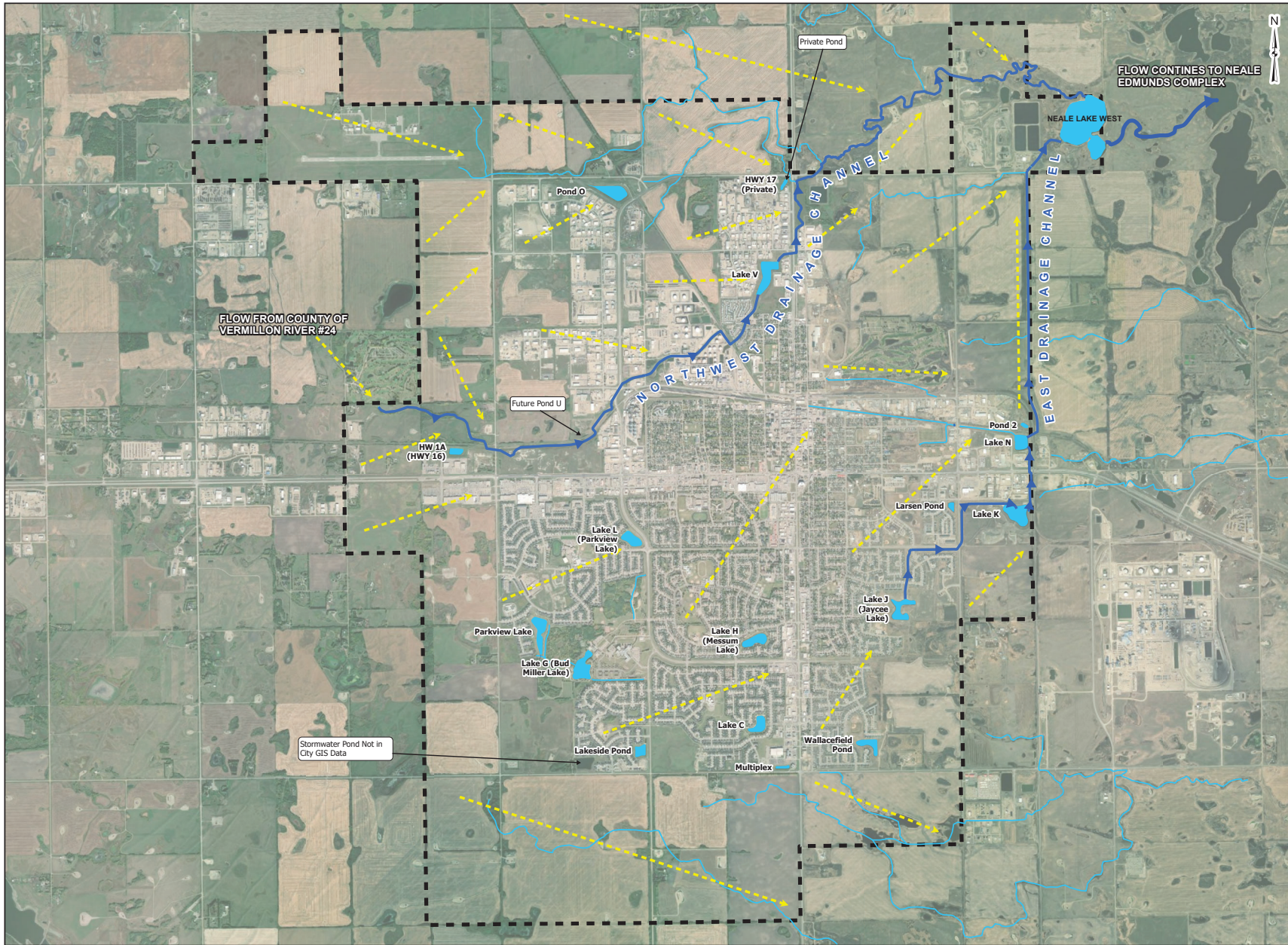


FIGURE 7.2
FUTURE SERVICING CONCEPT 2
LLOYDMINSTER SANITARY SEWER
MASTER PLAN



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Appendix 3a. Stormwater Master Plan Figure 4.4



Legend

- Study Area
- Main Drainage Channels
- Watercourse/Stream
- Existing Drainage Pattern

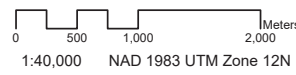


FIGURE 4.4
EXISTING SYSTEM DRAINAGE PATTERN
CITY OF LLOYDMINSTER
STORMWATER MASTER PLAN



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7.2 Future System Concept Development

The future stormwater management servicing concept generally includes a proposed SWMF in each quarter section of future development land, an orifice to regulate outlet discharge rate, and sections of storm sewer to convey flow from SWMF to a downstream outfall. New development areas within existing catchments would connect to adjacent existing stormwater systems and drain to the respective existing SWMF downstream (this assumes the system was previously receiving pre-development level flows, which as an assumption has been broadly validated). The overall future stormwater management servicing concept is illustrated in Figure 7.2. It should be noted that onsite stormwater drainage and management infrastructure are not included in this SWMP, as their design and construction will be completed by the respective developers at the time of development.

7.2.1 Proposed Future Stormwater Management Facilities

SWMFs are designed to provide sufficient storage capacity to temporarily store and attenuate the peak flow in the stormwater pond, while controlling the flow release rate below the stipulated limit and not infringing the freeboard requirements. The runoff coefficients specified in Table 5.5 were used to calculate the weighted average of all parcels in each catchment, which were then used to estimate total runoff volume. The maximum flow release rates were calculated based on the 1.5 L/s/ha rate as stipulated in the City's Municipal Development Standards. The greater of the required storage volume calculated using the 1:100-year 4-hour Modified Chicago storm and 1:100-year 24-hour Huff storm was used to design the stormwater pond geometry, which provides the required storage capacity at the HWL. Design parameters used to size the proposed SWMFs are shown in Table 7.2. It should be noted that, despite not being shown in the City's GIS data, some proposed future SWMFs may already exist or are under development based on aerial imagery review and discussions with the City. Design parameters of such future SWMFs are still provided in the tables below for reference.

As one of the best management practices (BMP), the City could consider implementing low impact development (LID) techniques in the new development areas to assist with reducing stormwater runoff and increasing the quality of stormwater being distributed into the downstream receiving bodies of water. Some of these techniques include rain gardens, green roofs and pervious pavement. A summary of various available BMP options is discussed in Section 7.5.

Table 7.2: Proposed Future SWMF Design Parameters

ID	Area	Runoff Coefficient	Maximum Flow Release Rate	Required Storage Volume ^{1,2}	
	ha			1:100 Yr 4 Hr Chicago	1:100 Yr 24 Hr Huff
			L/s	m ³	m ³
FUT_SWMF_1	30.58	0.865	45.9	19,400	26,900
FUT_SWMF_2	64.50	0.852	96.8	40,100	55,500
FUT_SWMF_3	63.50	0.792	95.3	36,700	50,400
FUT_SWMF_4	61.28	0.786	91.9	35,100	48,100
FUT_SWMF_5	64.22	0.780	96.3	36,500	50,200
FUT_SWMF_6	61.04	0.814	91.6	36,300	49,800
FUT_SWMF_7	64.06	0.808	96.1	37,800	52,100
FUT_SWMF_8	17.49	0.835	26.2	10,700	14,900
FUT_SWMF_9	67.05	0.780	100.6	38,200	52,700

ID	Area	Runoff Coefficient	Maximum Flow Release Rate	Required Storage Volume ^{1,2}	
				1:100 Yr 4 Hr Chicago	1:100 Yr 24 Hr Huff
	ha		L/s	m ³	m ³
FUT_SWMF_10	62.35	0.789	93.5	35,900	49,300
FUT_SWMF_11	60.31	0.780	90.5	34,300	46,900
FUT_SWMF_12	12.45	0.780	18.7	7,100	9,500
FUT_SWMF_13	81.49	0.780	122.2	46,100	61,500
FUT_SWMF_14	58.93	0.780	88.4	33,500	45,700
FUT_SWMF_15	62.73	0.781	94.1	35,700	49,000
FUT_SWMF_16	45.25	0.780	67.9	25,600	34,000
FUT_SWMF_17	56.29	0.818	84.4	33,600	45,800
FUT_SWMF_18 ³ (Future Pond U)	68.80	0.780	103.2	39,200	54,100
FUT_SWMF_19	59.52	0.570	89.3	24,500	32,500
FUT_SWMF_20	48.87	0.637	70.3	21,500	28,100
FUT_SWMF_21	58.89	0.514	88.3	21,900	28,600
FUT_SWMF_22	65.30	0.440	98.0	20,700	26,900
FUT_SWMF_23	19.13	0.447	28.7	6,200	8,200
FUT_SWMF_24	62.54	0.574	93.8	26,000	34,700
FUT_SWMF_25 ³	44.90	0.620	67.4	20,400	28,400
FUT_SWMF_26	108.25	0.440	162.4	34,200	44,100
FUT_SWMF_27	64.97	0.480	97.5	22,500	29,500
FUT_SWMF_28	63.28	0.476	94.9	21,700	28,300
FUT_SWMF_29	63.25	0.464	94.9	21,200	27,500
FUT_SWMF_30	63.04	0.464	94.6	21,100	27,500
FUT_SWMF_31	62.15	0.539	93.2	24,200	32,000
FUT_SWMF_32	78.51	0.535	117.8	30,600	41,300
FUT_SWMF_33	64.47	0.440	96.7	20,400	26,500
FUT_SWMF_34	64.37	0.440	96.6	20,400	26,400
FUT_SWMF_35	64.04	0.440	96.1	20,300	26,200
FUT_SWMF_36	64.31	0.440	96.5	20,400	26,400
FUT_SWMF_37	61.80	0.532	92.7	23,800	31,300
FUT_SWMF_38 ³	57.72	0.780	86.6	32,800	44,700
FUT_SWMF_39	31.72	0.865	47.6	20,100	27,900
FUT_SWMF_40	64.41	0.440	96.6	20,400	26,500
FUT_SWMF_41	17.75	0.780	26.6	10,100	14,000
FUT_SWMF_42	26.38	0.440	39.6	8,400	10,700
FUT_SWMF_43	34.96	0.780	52.4	19,800	27,400

¹ Required storage volume is calculated based on the design rainfall intensity, discounting the estimated orifice discharge rate, and rounded to the nearest hundred cubic metres.

² Bold values are the governing storage capacity requirement between the 1:100 year 4-hour Chicago and 1:100 year 24-hour Huff storm events

³ Proposed future SWMF that may already exist or be under development.

Table 5.2: Corridor Projects within 3 years

#	Road Name	Scope of Improvement	Development Horizon (Years)	Cost Estimate
1	73 Avenue	New two-lane local (Hill Industrial)	3	\$1.4M ^B
2	70 Avenue	New two-lane local (Hill Industrial)	3	\$2.0M ^B
3	56 Street	New two-lane collector (Robinson Industrial)	3	\$1.5M ^B
4	52 Street	New two-lane arterial (Robinson Industrial)	3	\$4.2M ^A
5	62 Street	New two-lane arterial (Meridian Industrial)	3	\$2.6M ^A
6	57 Street	Upgrade to paved rural arterial (North East Industrial)	3	\$4.1M ^A
7	39 Avenue	New two-lane collector (Wigfield)	3	\$2.6M ^B
8	36 Street	New two-lane collector (Wigfield)	3	\$3.5M ^B
9	19 Street	New two-lane collector (Lakeside)	3	\$0.8M ^B
10	75 Avenue	Road Widening from 12 Street to 19 Street	3	\$2.3M ^A
11	72 Avenue	New two-lane collector (Lakeside)	3	\$2.1M ^B
12	College Park Connections	New two-lane collectors	3	\$5.5M ^B
13	52B Avenue	New two-lane collector, south of 12 Street	3	\$1.5M ^B

Table 5.3: Intersection Upgrade Projects^C within 3 years

#	Intersection Name	Scope of Improvement	Development Horizon (Years)	Cost Estimate
101	75 Avenue and 12 Street	Signalized	3	\$0.5M ^A
102	40 Avenue and 36 Street	Signalized and Additional Turning Lanes	3	\$0.8M ^A
103	40 Avenue and 41 Street	Signalized	3	\$0.5M ^A

^A City-funded capital asset. The City assumes both construction costs and future maintenance liabilities.

^B Developer-funded. The City assumes no construction cost but accepts future maintenance liabilities.

^C Intersection upgrades located at the junctions of corridor projects are considered part of the overall corridor scope and cost.

Shortcutting

Much of the lands acquired by the City in 2022 do not yet have applicable developmental reports or designs for the road network. For these areas, a simple collector roadway network was assumed to provide direct land access. These simplified layouts promoted high levels of shortcutting within the neighbourhood collector roads (future 78 Avenue, 10 Street, and 19 Street). ISL recommends that either a) traffic calming measures or b) curvilinear road layouts be explored for these corridors to limit the degree of shortcutting that could occur. Such projects are not listed below but should remain in consideration as Lloydminster expands.

Table 5.8: Corridor Projects within 20 years

#	Road Name	Scope of Improvement	Development Horizon (Years)	Cost Estimate
33	Northwest Annexed Area	New two-lane collectors (West of Hill Industrial)	20	\$6.9M ^B
34	Northwest Annexed Area	New two-lane collectors (West of Hill Industrial)	20	\$8.1M ^B
35	75 Avenue	Four-lanes between 44 Street and 62 Street	20	\$12.1M ^A
36	North Industrial Connections	New two-lane collectors (Meridian Industrial)	20	\$11.0M ^B
37	West Commercial Connections	New two-lane collector (West of Hill Industrial)	20	\$6.6M ^B
38	West Annexed Area	New two-lane collector (West of West Commercial)	20	\$5.2M ^B
39	75 Avenue	Four-lanes between 10 Street and 44 Street plus intersection improvements	20	\$18.2M ^A
40	34 Street	New two-lane collector (West of Parkview Estates)	20	\$5.2M ^B
41	29 Street	New two-lane collector (West of Parkview Estates)	20	\$7.3M ^B
42	Southwest Annexed Area	New four-lane arterial (West of Parkview Estates)	20	\$5.2M ^A
43	19 Street	New two-lane collector (West of Lakeside)	20	\$3.8M ^B
44	Southwest Annexed Area	New two-lane collector (West of Lakeside, North from 12 Street)	20	\$9.6M ^B
45	South Annexed Area	New two-lane collectors	20	\$17.0M ^B
46	59 Avenue	Four-lanes between 12 Street and 25 Street	20	\$6.9M ^A
47	25 Street	Four-lanes between 53 Avenue and 59 Avenue	20	\$4.6M ^A

#	Road Name	Scope of Improvement	Development Horizon (Years)	Cost Estimate
48	12 Street	Four-lanes between 52B Avenue and 78 Avenue plus intersection improvements	20	\$75.3M ^A
49	South Annexed Area	New two-lane collectors	20	\$7.9M ^B
50	50 Avenue	Four-lanes between 12 Street and 25 Street	20	\$9.0M ^A
51	12 Street	Four-lanes between 40 Avenue and 49 Avenue plus intersection improvements	20	\$33.4M ^A
52	The Willows Connections	New two-lane collectors	20	\$8.0M ^B
53	40 Avenue	Four-lanes between 12 Street and 44 Street	20	\$16.1M ^A
54	Wigfield Connections	New two-lane collectors	20	\$7.7M ^B

^A City-funded capital asset. The City assumes both construction costs and future maintenance liabilities.

^B Developer-funded. The City assumes no construction cost but accepts future maintenance liabilities.

Table 5.9: Intersection Projects within 20 years

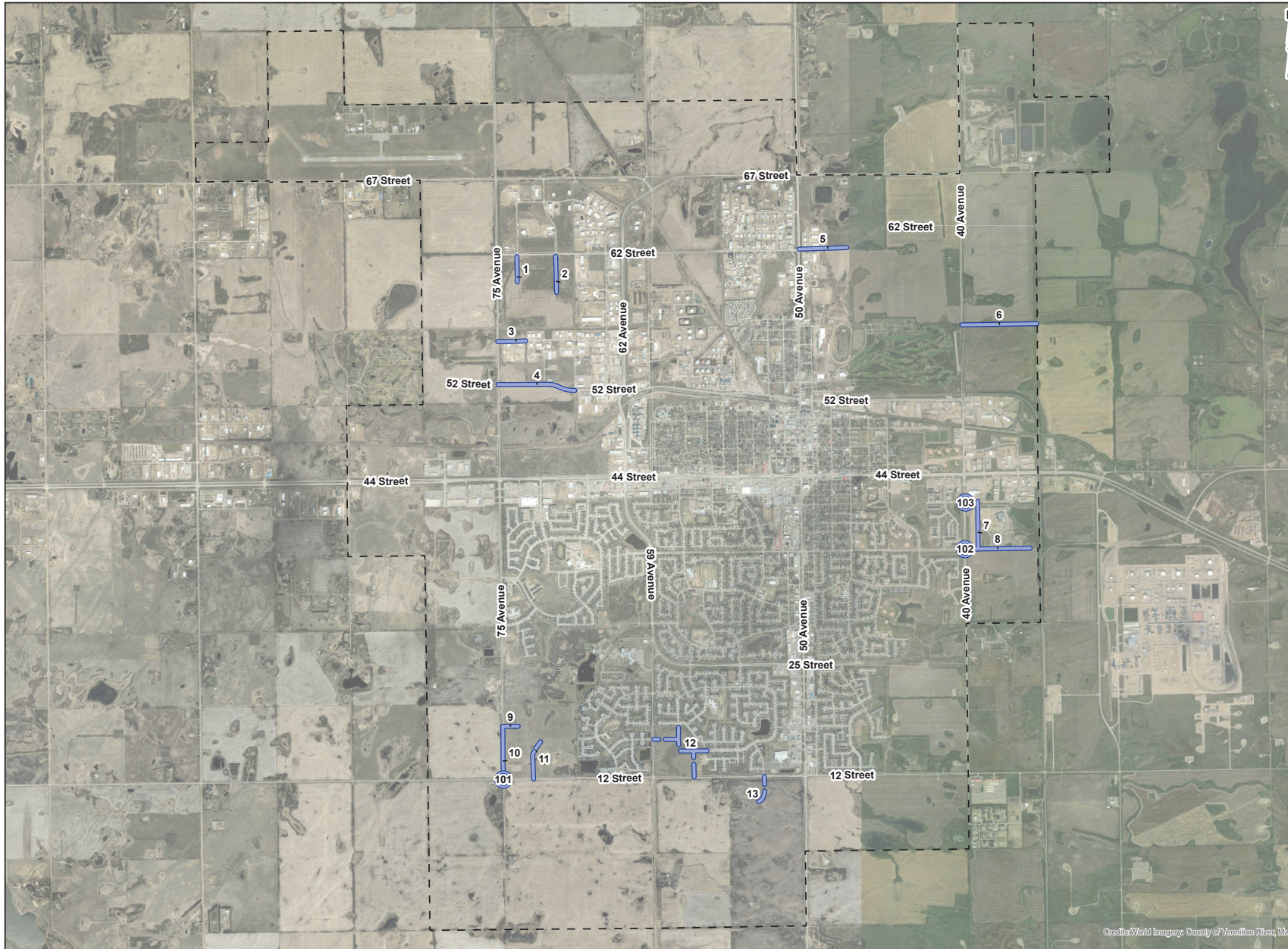
#	Intersection Name	Scope of Improvement	Development Horizon (Years)	Cost Estimate
118	40 Avenue and 25 Street	Signalized	20	\$0.5M
119	40 Avenue and 44 Street	Increase intersection capacity (signal timing, additional lanes and/or roundabout conversion)	20	\$0.5M-\$1.5M
120	50 Avenue and 44 Street	Increase intersection capacity (signal timing, additional lanes and/or roundabout conversion)	20	\$0.5M-\$2.5M
121	50 Avenue and 52 Street	Increase intersection capacity (signal timing, additional lanes and/or roundabout conversion)	20	\$0.5M-\$1.5M
122	75 Avenue and 44 Street	Major Intersection Improvements specified in Functional Plans for 75 Avenue	20	\$0.7M

^A City-funded capital asset. The City assumes both construction costs and future maintenance liabilities.

^B Developer-funded. The City assumes no construction cost but accepts future maintenance liabilities.

^C Intersection upgrades located at the junctions of corridor projects are considered part of the overall corridor scope and cost.

Appendix 4a



Legend

- City Limits
- Intersection Projects**
- Year 3
- Corridor Projects**
- Year 3**
- Known Alignments
- Conceptual Alignments

Note: Future road alignments shown on this map are conceptual and are based on preliminary assumptions. Segments labeled as conceptual alignments are subject to future planning and development processes.

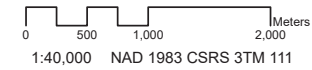
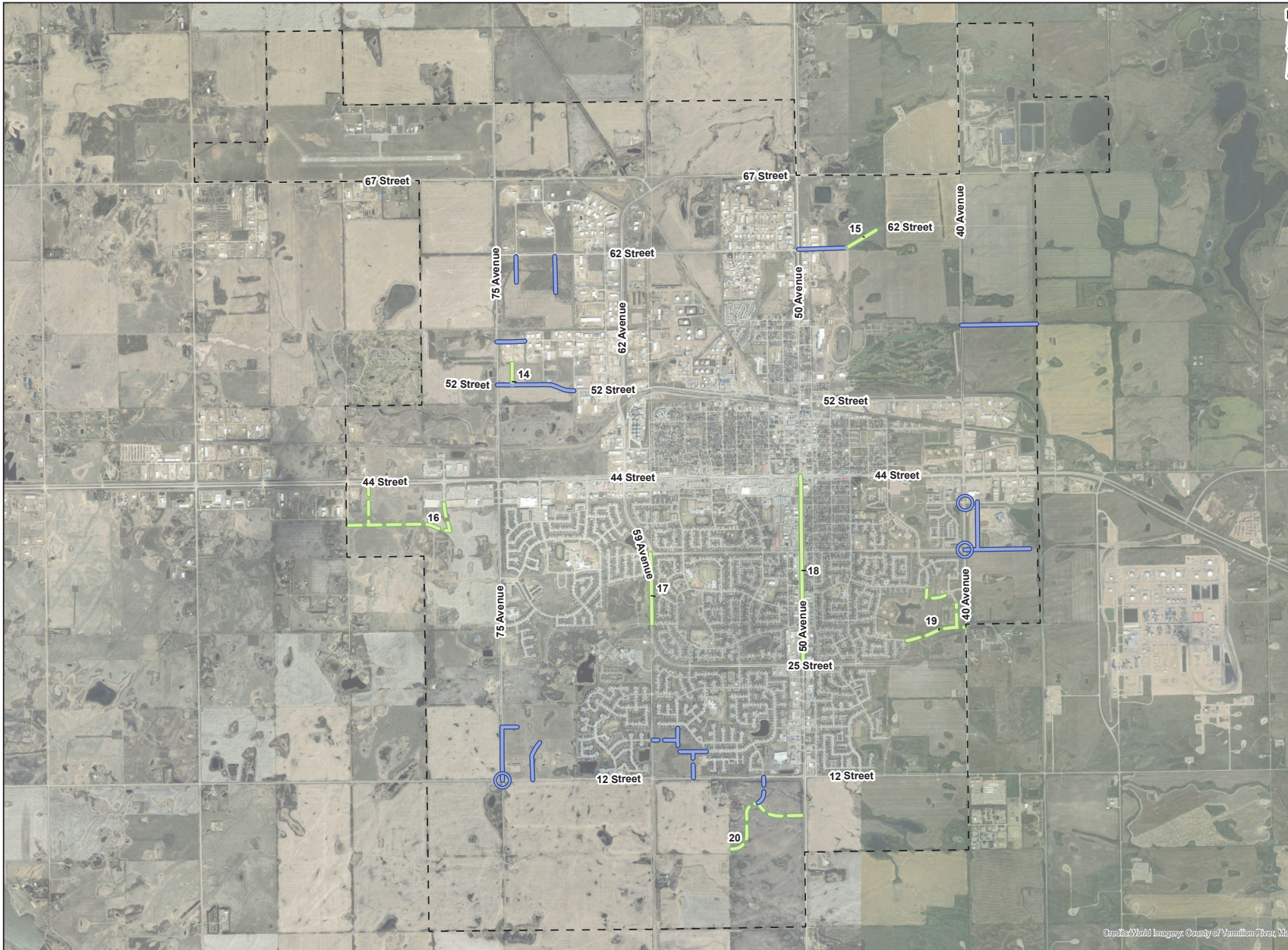


FIGURE 5.1
FUTURE ROAD PROJECTS
YEAR 3
LLOYDMINSTER TRANSPORTATION
MASTER PLAN



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Appendix 4a



Legend

- City Limits
- Intersection Projects**
- Year 3
- Corridor Projects**
- Year 3**
- Known Alignments
- Conceptual Alignments
- Year 5**
- Known Alignments
- Conceptual Alignments

Note: Future road alignments shown on this map are conceptual and are based on preliminary assumptions. Segments labeled as conceptual alignments are subject to future planning and development processes.

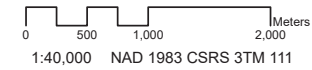
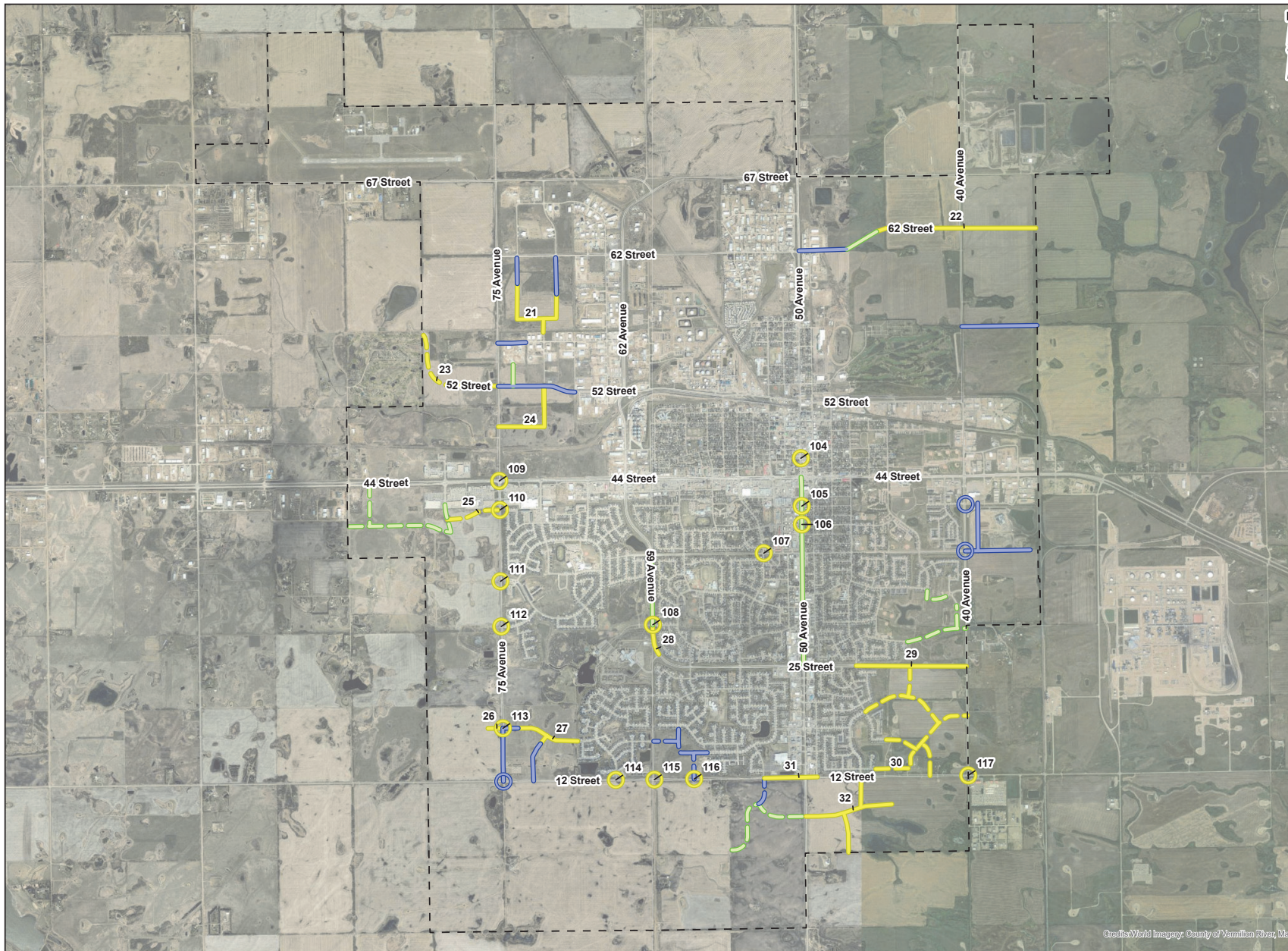


FIGURE 5.3
FUTURE ROAD PROJECTS
YEAR 5
LLOYDMINSTER TRANSPORTATION
MASTER PLAN



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Appendix 4a



- Legend**
- [- - -] City Limits
 - Intersection Projects**
 - Year 3
 - Year 10
 - Corridor Projects**
 - Year 3**
 - Known Alignments
 - - - Conceptual Alignments
 - Year 5**
 - Known Alignments
 - - - Conceptual Alignments
 - Year 10**
 - Known Alignments
 - - - Conceptual Alignments

Note: Future road alignments shown on this map are conceptual and are based on preliminary assumptions. Segments labeled as conceptual alignments are subject to future planning and development processes.

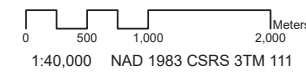
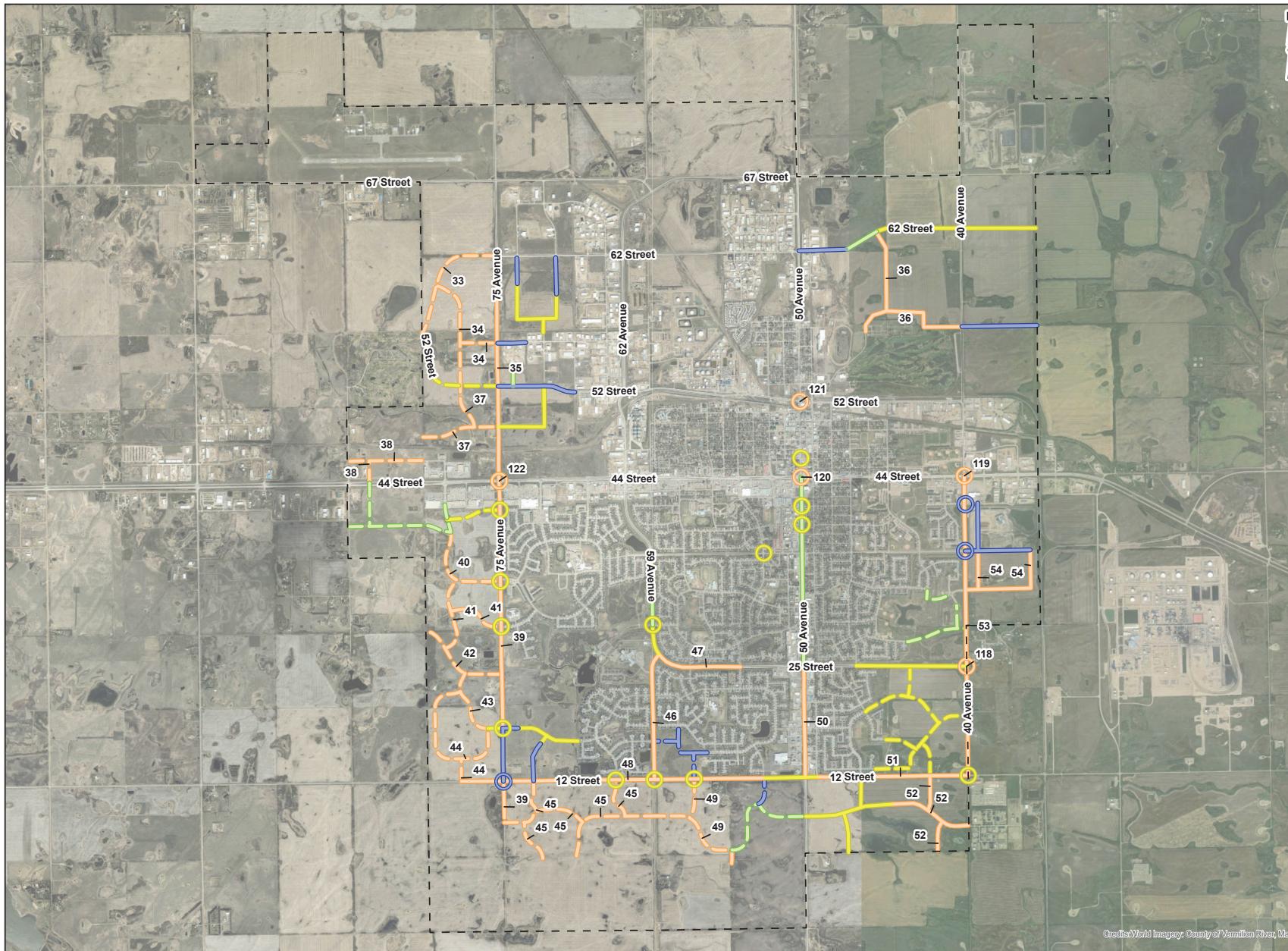


FIGURE 5.5
FUTURE ROAD PROJECTS
YEAR 10
LLOYDMINSTER TRANSPORTATION
MASTER PLAN



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Appendix 4a



Legend

City Limits

Intersection Projects

- Year 3
- Year 10
- Year 20

Corridor Projects

Year 3

- Known Alignments
- Conceptual Alignments

Year 5

- Known Alignments
- Conceptual Alignments

Year 10

- Known Alignments
- Conceptual Alignments

Year 20

- Known Alignments
- Conceptual Alignments

Note: Future road alignments shown on this map are conceptual and are based on preliminary assumptions. Segments labeled as conceptual alignments are subject to future planning and development processes.

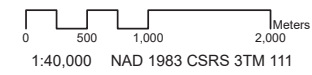


FIGURE 5.7
FUTURE ROAD PROJECTS
YEAR 20
LLOYDMINSTER TRANSPORTATION
MASTER PLAN



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Table 5.4: Corridor Projects within 5 years

#	Road Name	Scope of Improvement	Development Horizon (Years)	Cost Estimate
14	73 Avenue	New two-lane local (Robinson Industrial)	5	\$1.2M ^B
15	62 Street	New two-lane arterial (Meridian Industrial)	5	\$1.9M ^A
16	West Commercial Connections	New two-lane collectors (West Commercial)	5	\$9.6M ^B
17	59 Avenue	Four-lanes between 29 Street and 36 Street	5	\$3.8M ^A
18	50 Avenue	Four-lanes between 25 Street and 44 Street	5	\$15.3M ^A
19	Aurora Connections	New two-lane collectors	5	\$6.0M ^B
20	Annexed Land Connections	New two-lane collectors	5	\$6.2M ^B

Table 5.5: Intersection Projects^C within 5 years

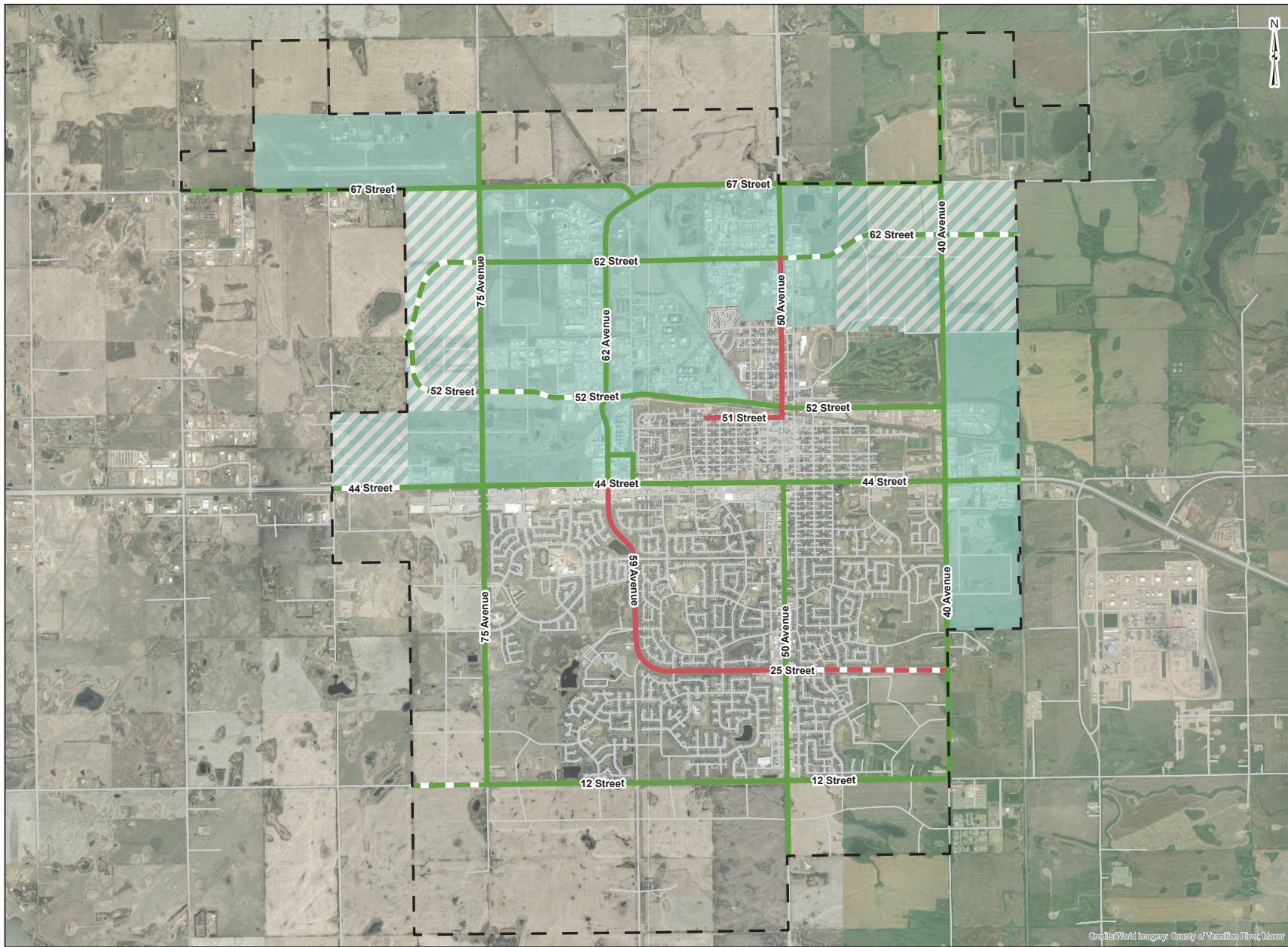
#	Intersection Name	Scope of Improvement	Development Horizon (Years)	Cost Estimate
	None			

^A City-funded capital asset. The City assumes both construction costs and future maintenance liabilities.

^B Developer-funded. The City assumes no construction cost but accepts future maintenance liabilities.

^C Intersection upgrades located at the junctions of corridor projects are considered part of the overall corridor scope and cost.

Appendix 4b



Legend

- City Limits
- Truck Routes**
- Existing**
- 24 Hour Truck Route
- Restricted Truck Route
- Future**
- 24 Hour Truck Route
- Restricted Truck Route
- Truck Route Areas**
- Existing
- Future

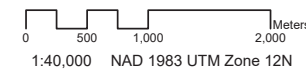


FIGURE 6.6
PROPOSED 20-YEAR TRUCK ROUTES
LLOYDMINSTER TRANSPORTATION
MASTER PLAN



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Table 5.6: Corridor Projects within 10 years

#	Road Name	Scope of Improvement	Development Horizon (Years)	Cost Estimate
21	Hill Industrial Connections	New two-lane local	10	\$6.1M ^B
22	62 Street	New two-lane arterial (Meridian Industrial)	10	\$8.6M ^A
23	West Commercial Connections	New two-lane arterial	10	\$6.1M ^A
24	Hill Industrial Connections	New two-lane local	10	\$5.8M ^B
25	West Commercial Connections	New two-lane collector (West of Parkview Estates)	10	\$2.9M ^B
26	19 Street	New two-lane collector, west of 75 Avenue in newly annexed lands.	10	\$0.8M ^B
27	19 Street	New two-lane collector with traffic calming in Lakeside	10	\$4.0M ^B
28	59 Avenue	Four-lanes between 25 Street and 29 Street	10	\$1.6M ^A
29	25 Street	New two-lane arterial	10	\$6.0M ^A
30	Wallacefield Connections	New two-lane collectors	10	\$16.7M ^B
31	12 Street	Four-lanes between 49 Avenue and 52B Avenue plus other intersection improvements	10	\$25.7M ^A
32	The Willows Connections	New two-lane collectors	10	\$8.5M ^B

^A City-funded capital asset. The City assumes both construction costs and future maintenance liabilities.

^B Developer-funded. The City assumes no construction cost but accepts future maintenance liabilities.

Table 5.7: Intersection Projects^c within 10 years

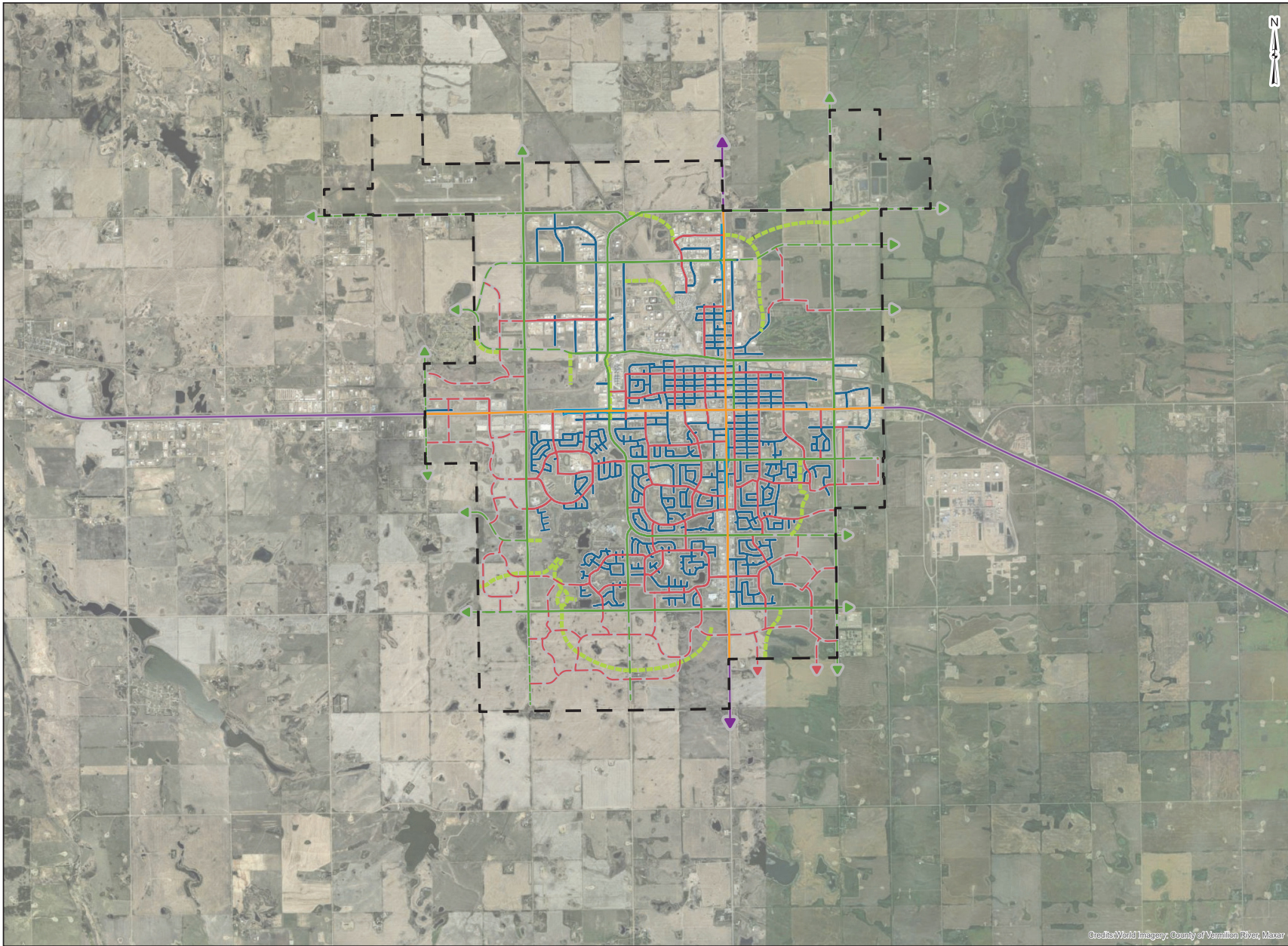
#	Intersection Name	Scope of Improvement	Development Horizon (Years)	Cost Estimate
104	50 Avenue and 46 Street	Signalize or Restrict left turns onto 50 Avenue and through movements crossing 50 Avenue	10	\$0.5M
105	50 Avenue and 42 Street	Signalized or Roundabout	10	\$0.5M-\$1.5M
106	50 Avenue and 39 Street	Signalized or Roundabout	10	\$0.5M-\$1.5M
107	52 Avenue and 36 Street	Signalized or Roundabout	10	\$0.5M-\$1.5M
108	59 Avenue and 29 Street	Signalized or Roundabout	10	\$0.5M-\$1.5M
109	75 Avenue and 44 Street	Major Intersection Improvements specified in Functional Plans for 75 Avenue	10	\$5.0M
110	75 Avenue and 39 Street	Major Intersection Improvements specified in Functional Plans for 75 Avenue	10	\$0.5M
111	75 Avenue and 34 Street	Major Intersection Improvements specified in Functional Plans for 75 Avenue	10	\$0.5M
112	75 Avenue and 29 Street	Major Intersection Improvements specified in Functional Plans for 75 Avenue	10	\$0.5M
113	75 Avenue and 19 Street	Major Intersection Improvements specified in Functional Plans for 75 Avenue	10	\$0.3M
114	61 Avenue and 12 Street	Major Intersection Improvements specified in Functional Plans for 12 Street	10	\$0.7M
115	59 Avenue and 12 Street	Major Intersection Improvements specified in Functional Plans for 12 Street	10	\$0.3M
116	57 Avenue and 12 Street	Major Intersection Improvements specified in Functional Plans for 12 Street	10	\$0.9M
117	40 Avenue and 12 Street	Major Intersection Improvements specified in Functional Plans for 12 Street	10	\$0.6M

^A City-funded capital asset. The City assumes both construction costs and future maintenance liabilities.

^B Developer-funded. The City assumes no construction cost but accepts future maintenance liabilities.

^C Intersection upgrades located at the junctions of corridor projects are considered part of the overall corridor scope and cost.

Appendix 4c



Legend

City Limits

Existing Roads

Classification

- Highway
- Highway Urban
- Arterial
- Collector
- Local
- Service Road

Ultimate Road Concept Plan

Classification

- Arterial
- Collector
- Off-Street Trails

Highway 16X Bypass

- Highway 16X Conceptual Alignment

Note: Future road alignments shown on this map are conceptual and are based on preliminary assumptions. Segments labeled as conceptual alignments are subject to future planning and development processes.

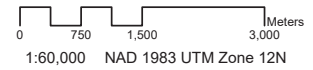


FIGURE 6.8
PROPOSED ULTIMATE ROAD NETWORK CONCEPT
LLOYDMINSTER TRANSPORTATION MASTER PLAN



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