

510 Local Area Structure Plan

Bylaw No. 12-25

LEDUC COUNTY

A BYLAW TO ADOPT THE 510 LOCAL AREA STRUCTURE PLAN

WHEREAS

The Council of Leduc County deems it to be in the public interest to adopt the 510 Local Area Structure Plan Bylaw 12-25;

NOW THEREFORE

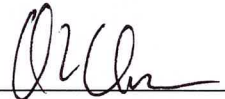
be it resolved that the council of Leduc County, duly assembled, enacts as follows:

1. That the 510 Local Area Structure Plan, being Schedule 'A' attached to and forming part of this Bylaw, be adopted.
2. This bylaw shall take effect on the date of third reading.

Read a first time this 10th day of June, 2025.

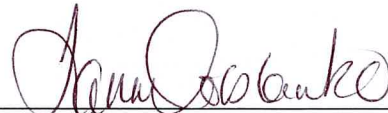


Mayor



County Manager

Read a second time this 8 day of July, 2025.

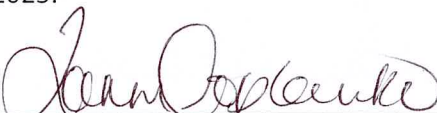


Mayor



County Manager

Read a third time and final time this 8 day of July, 2025.



Mayor



County Manager



510 Local Area Structure Plan

Created: May 2025

Prepared by: Long Range Planning

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1. Introduction and Plan Context

1.1. Introduction

The 510 Local Area Structure Plan (LASP) shall consider the unplanned lands remaining in Nisku located at 4-51-24-W4M and S ½ - 5-51-24-W4M comprising the remaining greenfield area of the Nisku Major Employment Centre Area Structure Plan (Nisku MEC). The purpose of planning for this area is to ensure an orderly progression and staging of development including the coordinated installation of services, transportation routes and utilities. The 510 LASP will also demonstrate to the development industry the County's commitment to supporting private investment and development.

Following the construction of the Nisku Spine Road to Township Road 510 the County anticipates increased private development interest in the area. As such, proactive statutory planning will provide the County and private landowners with the guidance needed to be able to proceed directly to the redistricting, subdivision and development stages.

1.2. Plan Area Context

Leduc County recognizes its role in helping define the southern sub-region of the Edmonton region. The plan area is located in the North Nisku area with nearby access to the Highway 2 corridor and in close proximity to the cities of Edmonton, Leduc and Beaumont; YEG Airport; and the Town of Devon. The 510 LASP was undertaken by Leduc County with the aim of coordinating land use in the sub-region in conjunction with its regional neighbours.

1.3. Objectives of the 510 Local Area Structure Plan

The intent of the 510 LASP includes but is not limited to:

- ▶ Completing the last Local Area Structure Plan within the Major Employment Centre, in accordance with the Municipal Development Plan;
- ▶ Setting policy framework to facilitate redistricting, subdivision and development within the plan area;
- ▶ Being proactive by planning for development adjacent to the Nisku Spine Road;
- ▶ Implementing protective environmental measures for Irvine Creek and its adjacent riparian lands;
- ▶ Reflecting the 2024 Transportation Master Plan;
- ▶ Determining a strategy for phasing of development; and
- ▶ Ensuring comprehensive planning for the area in alignment with the Municipal Development Plan and the Nisku Major Employment Centre Area Structure Plan.

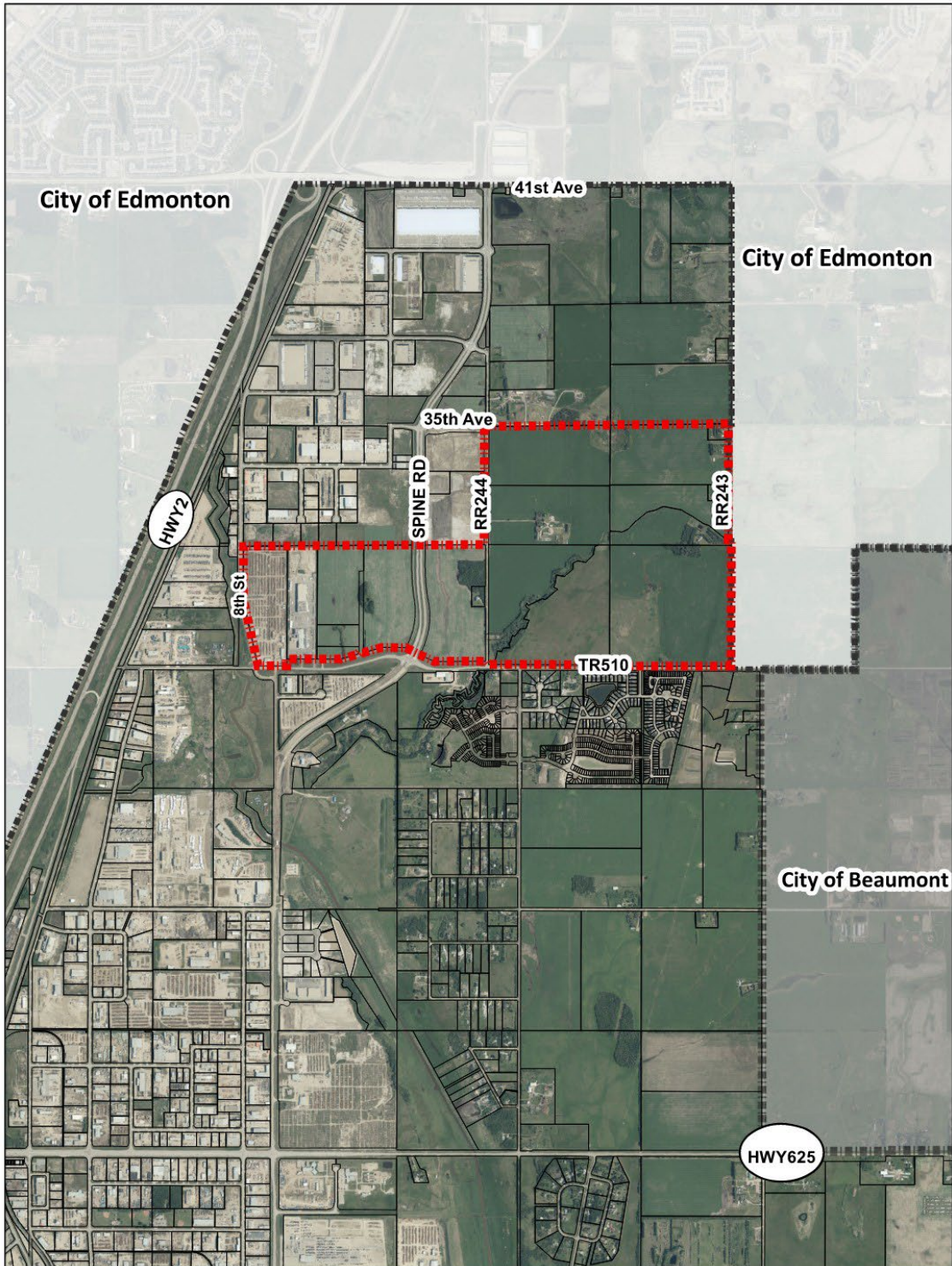


Figure 1: Plan Boundaries

1.4. Purpose of the 510 Local Area Structure Plan

The longer-term goals of the 510 LASP include, but are not limited to:

- ▶ Maintaining the subject lands as non-residential and employment areas;
- ▶ Providing guiding policy for private development to proceed directly to redistricting, subdivision and subsequent development permit applications;
- ▶ Identifying and investigating the environmentally significant areas surrounding Irvine Creek identified by the Leduc County Environmentally Significant Areas Study and the considerations of the Irvine Creek and the Blackmud/Whitemud Creek drainage basins;
- ▶ Ensuring that existing and planned land uses complement each other:
 - West and North – Warehousing and Logistics (e.g. Amazon, food processors);
 - South – East Vistas Urban Centre and Central Nisku; and
 - East – Boundary of City of Edmonton.
- ▶ Ensuring that the plan area develops in alignment with annexation agreements, the Interjurisdictional Cooperation Accord (the “Airport Accord”), and the Intermunicipal Planning Framework Agreement (IPFA);
- ▶ Coordinating the development of lands adjacent to the final leg of the Nisku Spine Road to ensure design standards and ensure the highest and best uses adjacent to major traffic corridors (Nisku Spine Road and Township Road 510); and
- ▶ Ensuring the orderly progression and staging of development to ensure lands remain in agricultural use for as long as possible.

1.5. Description of the Plan Area

The 510 LASP plan area consists of 4-51-24-W4M and S ½ - 5-51-24-W4M and is approximately 366 hectares (906 acres) in size. With the exception of the two (2) most western parcels (approximately 36 hectares (90 acres)), the lands are currently in agricultural production and are considered greenfield.

Environmental Considerations

Irvine Creek flows through the eastern portion of the plan area and joins the Blackmud Creek just south of the plan area. As these lands are undeveloped, and are considered undisturbed by activities other than agriculture, the [Leduc County Environmentally Significant Areas Study](#) (2015) identified potential environmentally significant areas that will require further study with recommendations for the qualification of Environmental Reserves as well as mitigation strategies to limit the development impacts on the sensitive lands, riparian areas and creek. As a regional initiative in 2017 the County participated in a robust study of the surface water and drainage considerations of the Blackmud and Whitemud drainage basins.

The [Blackmud/Whitemud Creek Surface Water Management Study Final Report](#) includes a detailed biophysical and hydrological analysis of Irvine Creek and its riparian areas. Other known information of the environmental and biophysical conditions within the plan area includes the background work completed in support of the construction of the Nisku Spine Road. It is anticipated that the environmental and biophysical conditions of the plan area can be extrapolated from these studies and applied specifically to the plan area in a desktop report. Additionally, some small wetland areas have been identified and will need to be reviewed for their significance.

Oil and Gas Infrastructure

A significant utility right-of-way containing oil and gas pipelines is registered on the SE-4-51-24-W4M Planning must consider this constraint and ensure appropriate setbacks are enforced as per the Alberta Energy Regulator (AER).

Table 1: Pipelines Within the 510 LASP Vicinity

Pipeline Owner	Substance Category	Right-of-Way Plan	Status
Alberta Products Pipeline Ltd	LVP Products	212 0672	Discontinued
Plains Midstream Canada ULC	Crude Oil	872 0402	Operating
ATCO Gas and Pipelines Ltd.	Natural Gas	952 2087	Operating
ATCO Gas and Pipelines Ltd.	Natural Gas		Abandoned

Table 2: Abandoned Wells Within the 510 LASP Area

Licensee Name	Well Name	Well License Number	Status
Cenovus Energy Inc.	A5D4	0022483	RecExempt
Harvest Operations Corp.	OZ0H	0061647	RecCertified
Canadian National Resources Ltd.	OHE9	005162	RecExempt

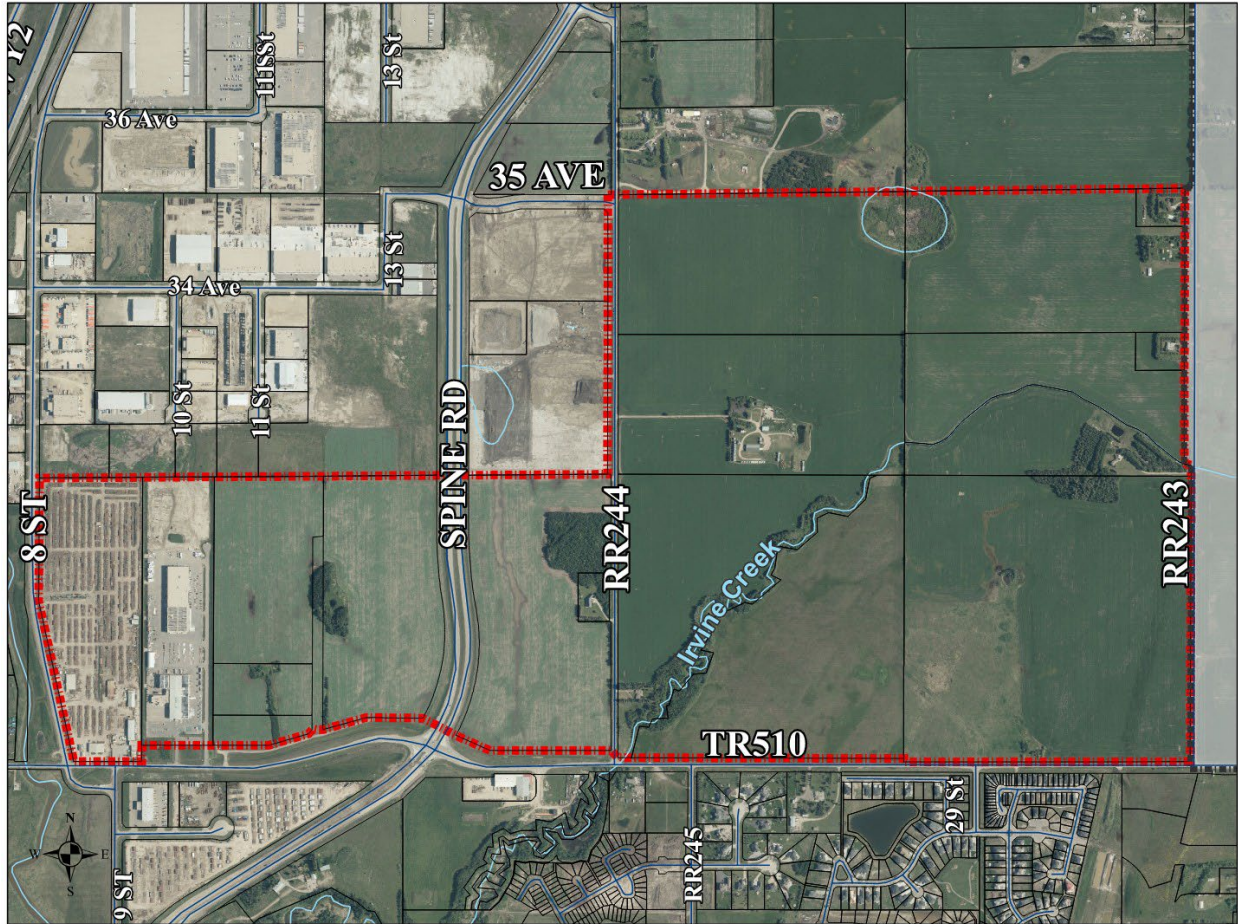


Figure 2: Existing Development

1.6. Existing Development within the Plan Area

The western-most 36 hectares (Pt: SW-5-51-24-W4M) house existing pipe and equipment laydown yards and storage, these uses may date back to the 1960's. There is no evidence that these uses will change in the foreseeable future.

Plan 2090, Block NY, Lot A has recently been developed and houses a high-tech manufacturing company within two (2) buildings. The site has been designed so that a third building can be constructed on the north end of the parcel. A private road has been constructed to County standard that could facilitate the future subdivision of the 15.16ha (37.47 ac) site.

Existing residential development including acreages and farmsteads are present within the plan area. There are 16 distinct property titles registered within the area.

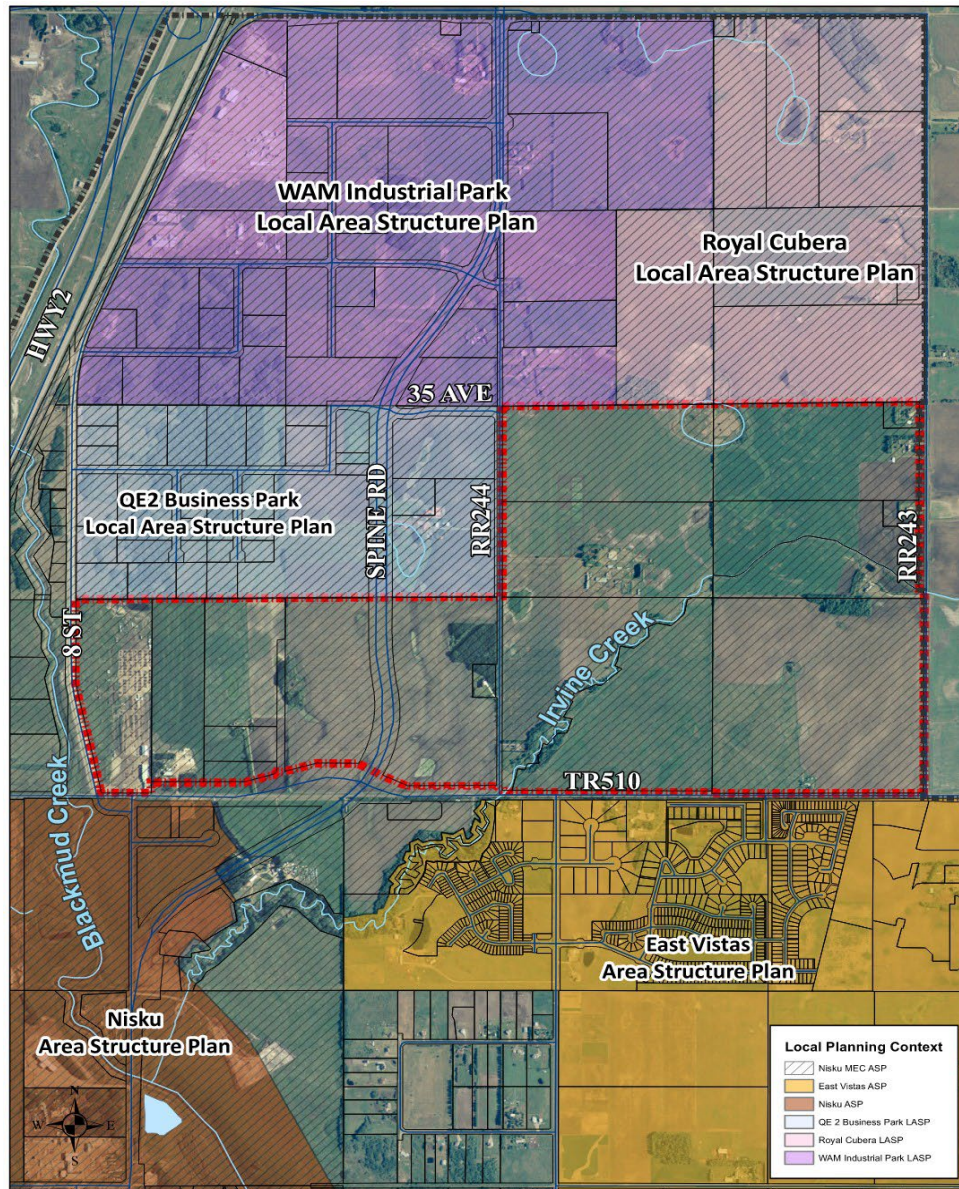


Figure 3: Local Planning Context

1.7. Existing Transportation Considerations

Nisku Spine Road

The plan area is bisected by the Nisku Spine Road, completed in fall of 2022. This major regional north-south arterial connection running through the central area of the plan links Central Nisku to North Nisku and provides an alternative truck route connecting 41st Avenue and Parsons Road into the City of Edmonton. This route now provides through access from the City of Edmonton to the City of Leduc.

Township Road 510 (East of Nisku Spine Road)

This east-west connection provides the name of the plan. Township Road 510 is a major regional arterial that serves as a commuter route in and out of Beaumont connecting Nisku, the Airport and to the QEII Highway. At its ultimate build out this road is planned for up to 6 lanes (3 in each direction). Special consideration for intermunicipal planning under the Intermunicipal Planning Framework Agreement for the lands adjacent to the road will be required as both Cities of Edmonton and Beaumont have jurisdiction within 1 km of the plan area and all three (3) partners are to share in infrastructure costs. Township Road 510 is also the correction line, the realignment of north-south roads in the area have been negotiated between the regional partners as outlined in the Intermunicipal Planning Framework Agreement.

Township Road 510 Service Road (west of Nisku Spine Road)

Due to the alignment, topography, visibility and design of the Township Road 510/Nisku Spine Road intersection, a service road was constructed to provide access to the two undeveloped parcels west of Nisku Spine Road. Consideration of access to these two parcels must be considered both at buildout, and during the interim stages of development. Both parcels are being actively farmed at the time of this report. It is noted that no additional access points will be permitted onto Township Road 510 between the Township Road 510/ Nisku Spine Road intersection and the existing approach west of the intersection.

Range Road 244

Range Road 244 will serve as the main north-south route within the plan area and is the boundary of the plan area at the North half of Section 4. The west side of Range Road 244 has a private ice arena, located outside of the plan area, and it is anticipated that this recreation use could have impacts on the traffic profiles within the area as well as impacting the commercial service needs. Range Road 244 is currently being realigned at Township Road 510 due to the correction line.

Range Road 243

Range Road 243 is a regional collector on the eastern boundary of the plan area and is also a municipal boundary with the City of Edmonton. The City of Edmonton is the road authority of Range Road 243 (91st Street), therefore a significant stakeholder. As noted in the Intermunicipal Planning Framework Agreement, Range Road 243 will also be realigned at Township Road 510 in the future.

35th Avenue

35th Avenue has been constructed across the north edge of the arena site to Range Road 244. This right-of-way has been planned with accommodations for piped municipal services to be extended to the plan area. It is also anticipated that an extension of 35th Avenue will serve as the northern boundary of the plan area as well as the boundary between the 510 LASP and Royal Cubera LASP located to the north.

Regional Transportation Advantages of Nisku

Nisku is a regional gateway to northern Alberta and has access to global markets via the Edmonton International Airport (EIA). This puts Nisku at the crossroads of multiple regional roads, being bordered by a Regional Arterial Road, a Regional Expressway, and a Regional Freeway. It also has a regional bus and Transit Priority Corridor running through it, and a planned LRT to the west running to the airport. Nisku also has an advantageous location close to existing and potential High Load Corridors, as well as Long Combination Vehicle Routes, giving Nisku's businesses easy access to its many connections.

8th Street

8th Street will serve as the most western boundary of the plan area. Due to the mature development existing on the west side of the spine road, additional connections to 8th Street may be considered as development progresses.

1.8. Existing Utility Considerations

The only parcels within the plan area that are currently serviced are the western 55 hectares which are serviced by both municipal water and sewer. Water and sewer mains are located in the rights-of-way of the following roads:

- ▶ 8th Street (water and sewer);
- ▶ Nisku Spine Road (water only); and
- ▶ Township road 510 (water full length of the plan area)
- ▶ The rural residential developments within the plan area are privately serviced by on-site water and septic systems. These greenfield areas within the plan boundary will require municipal servicing to be extended. The County has completed a Water and Sanitary Servicing Study for the larger North Nisku area, which includes the 510 LASP area, and provides the background information to complete an Engineering Design Brief for the purposes of this plan.

Registered utility Right-of-Ways include:

- ▶ A major overhead power transmission line runs parallel to Irvine Creek registered by Transmission Line Right-of-Way Plan No. 1217EO; and
- ▶ Irvine Creek is registered as a drainage ditch by Plan No. 842 2258.

2. Policy Framework

2.1. Municipal Government Act

Leduc County, in accordance with the Municipal Government Act (MGA), requires the preparation of statutory Area Structure Plans (ASPs), Area Redevelopment Plans (ARPs), Local Area Structure Plans (LASPs), and Local Area Redevelopment Plans (LARPs). These plans must describe the sequence of development proposed for the area; the land uses proposed for the area; and the general location of major transportation routes and public utilities. An Area Structure Plan may contain other matters as Council considers necessary and must be consistent with all higher-order plans, including the Municipal Development Plan and Intermunicipal Development Plans. These plans are County documents, and as such, the County is responsible for them.

2.2. Airport Vicinity Protection Area

The Edmonton International Airport Vicinity Protection Area Regulation 55/2006 (as amended) regulates land use surrounding airports to limit the impacts resulting from aircraft flying over communities. Due to the airport's proximity, regulations control the Noise Exposure Forecast (NEF) system, which accounts for the noise of aircraft operating at an airport, based on actual or forecast aircraft movement by runways and the time of night and day of activities. A portion of the plan area is located within NEF zones 25 and while it has some prohibited uses it will not impact the intended development under this plan.

2.3. Leduc County Municipal Development Plan (2024)

The Leduc County Municipal Development Plan (MDP) was adopted by Council in 2019 and underwent a comprehensive review and update in 2024. It contains policy to enhance opportunities within rural and urban areas throughout Leduc County, while maintaining the unique features of each. Within the Leduc County MDP, there are a subset of goals that are directly relevant to the Nisku area, being to:

- ▶ Protect agricultural land and support diversity in agriculture;
- ▶ Promote economic development;
- ▶ Develop complete communities;
- ▶ Identify and act on opportunities for recreation and tourism;
- ▶ Develop efficient and cost-effective transportation and utility service infrastructure; and
- ▶ Create efficiencies.

Within the MDP, the Nisku area is considered an area where higher density, fully serviced development is to be concentrated – a central location that can host a range of businesses, services, housing types, and amenities.

2.4. Nisku Major Employment Centre Area Structure Plan

The Nisku area is under the jurisdiction of the Nisku Major Employment Center Area Structure Plan Bylaw 14-21. This LASP splits the Nisku into three (3) large areas – North, Central and South. The 510 LASP is located in the North section of Nisku and has been identified for warehousing, distribution, logistics, food processing, agribusiness and other supporting uses such as commercial and retail.

2.5. East Vistas Area Structure Plan

The East Vistas Area Structure Plan (EVASP) is a mixed use urban residential neighbourhood. It is the only urban residential development within Leduc County and is located directly south of Township Road 510 and east of the Nisku Spine Road. The planning and development for the lands directly adjacent to the East Vistas should take into account the need for commercial services for the growing community as well as that a buffer will need to be considered between the residential and light industrial uses of the 510 LASP.

2.6. Local Area Structure and Local Area Redevelopment Plans

There are three (3) other approved Local Area Structure Plans (LASP's) adjacent to the 510 LASP plan area within North Nisku, and one (1) Local Area Redevelopment Plan (LARP) currently being drafted for Central Nisku, adjacent to the plan area.

North Nisku

WAM Industrial Park Pt: 8-51-24-W4M is approximately 317 hectares in size and houses major warehousing and distribution facilities. The LASP area is districted as Industrial and Business Park. Royal Cubera Local Area Structure Plan E ½ and Pt SW – 9-51-24-W4M is approximately 161 hectares in size and has been identified for future warehousing, distribution, logistics and business park uses. Queen Elizabeth II Business Park N ½ -5-51-24-W4M is approximately 145 hectares in size and is districted as Industrial and Light Industrial under the Land Use Bylaw.

Central Nisku

The mature area of Nisku, the original heart of Nisku, has been traditionally home of the oil and gas sectors and was originally developed beginning in the 1960's with the first plans adopted in the early 1980's. Leduc County is preparing a Local Area Redevelopment Plan which will provide policy direction and vision for future redevelopment and will be nimble to accommodate the changing economy. The Central Nisku Local Area Redevelopment Plan will replace the Nisku and Nisku West Area Structure Plans as well as consolidating the Blackmud Creek Area Structure Plan.

2.7. Leduc County Land Use Bylaw

The current Leduc County [Land Use Bylaw \(LUB\)](#) was approved in 2008 and provides an implementation framework for the development of lands within the County's control. The LUB establishes the Subdivision and the Development Authorities for the County and provides procedures for appealing decisions of the Subdivision and/or Development Authorities to the Subdivision and Development Appeal Board (SDAB). The LUB also provides regulations for obtaining a development permit, enforcement, and amendments to the LUB. The LUB contains general and specific development regulations for uses, natural resource and environmental areas, and ancillary development including landscaping and signage.

Within the plan area, with the exception of the three (3) most western parcels, the lands are considered unserviced greenfield and are currently generally in agricultural use.

2.8. Inter-Jurisdiction Cooperation Accord (Airport Accord)

The following reports were prepared and accepted by the *Oversight Committee* as part of phase 1 of the Airport Accord:

- | | | |
|---|--------------|--------------------|
| ▶ Economic Development | Final Report | June 28, 2019 |
| ▶ Land Use and Servicing Transportation Report | | |
| ○ Background Report | | August 9, 2019 |
| ○ Supplemental Report | | September 20, 2019 |
| ▶ Shared Investment for Shared Benefit Final Report | | November 22, 2019 |

In addition to these projects, there were immediate operational issues that were managed including: regional airport transit service; fire, emergency and police services; and 65th avenue fact sheet. Work on phase 2 of the Accord was paused.

2.9. Intermunicipal Planning Framework Agreement (IPFA)

The IPFA is a non-statutory agreement between Leduc County, the City of Edmonton, and the City of Beaumont. It was adopted by Council in 2018 and implemented through a joint Memorandum of Agreement signed by all parties, dated February 25, 2020. The IPFA was developed in alignment with the goals, objectives and policies of the Edmonton Metropolitan Region Growth Plan and the importance of Nisku and the surrounding areas as a primary economic driver for the region. It is noted that regional conceptual planning, particularly for municipal water and wastewater systems identify infrastructure within the 510 LASP area.

3. Market and Economic Considerations

Economic development opportunities for Leduc County in industrial investment and growth are on the rise, influenced by current and forecasted market demand for service lands and buildings spaces. Transportation, logistics, warehousing, distribution, manufacturing and food processing, are all key considerations. Access to serviced lands including water, sanitary, storm, and roads along with a competitive cost for these serviced lands positions Leduc County well for attracting further investment.

The 510 LASP will enhance the strong industrial base already existing in Leduc County. The proximity of the park to major transportation facilities such as the Queen Elizabeth II Highway (Gateway Boulevard/ Calgary Trail) Corridor, Anthony Henday Drive, Highway 19/625, the EIA, Nisku Spine Road, and the CPKC line make the plan area a very attractive location for industrial businesses. The County's location and proximity to the Alberta High Load Corridor (Highways 19 and 60) allow for the movement of goods and the workforce, providing an important competitive advantage for industrial development.

Nisku Business Park has a long history as a leader in concentrating industrial businesses and activities that have global outreach. Nisku has been recognized as an important service center throughout the Edmonton Metropolitan Region and is one of the largest industrial parks in western Canada. Historically, Nisku has been an example for many communities of how industrial development can support the attraction of businesses and build a strong local and regional economy.

3.1. Market Indicators and Reports

According to Colliers Edmonton Industrial Report Q4 2024, the Greater Edmonton Area's industrial market continued to experience positive absorption for the 18th consecutive quarter. Vacancy was the lowest since Q3 2019, at 6.1%. The Edmonton market closed the year with low vacancy and high leasing transaction volume.

CBRE's Q2 Market Report states that the availability and vacancy rates increased slightly, by 20 basis points (bps) and 10 bps respectively, but remain in the range of 10-year lows. The Southside submarket posted its strongest quarter since Q4 2023 with just over 600,000 sq. ft. of positive net absorption. Nisku-Leduc recorded over 400,000 sq. ft. of positive net absorption this quarter, mainly comprised of small bay manufacturing space.

3.2. Market Demands

With strong industrial demand forecast for the South Edmonton area and gradually diminishing greenfield opportunities within the City of Edmonton to accommodate growth, Leduc County is increasingly attractive for light industrial and business park development. Some economic advantages and points to consider for future development in Nisku include:

- ▶ the lowest non-residential municipal mill rate in the region;
- ▶ the lowest per-acre land prices in the region;
- ▶ tight industrial market conditions in Edmonton for serviced industrial land will continue to place considerable pressure on the development of industrial land in Leduc County;
- ▶ Leduc County is well positioned geographically to accommodate an increasing share of industrial development;
- ▶ the growth of business activity in Leduc County is expected to be largely tied to the growth potential of the larger economy across the Edmonton Metropolitan Region;
- ▶ based on recent growth trends and future employment growth drivers, it is anticipated that a large share of employment growth is expected to be in the industrial sector; and
- ▶ the competitiveness of Leduc County's export-based economy is partly determined by the availability and quality of its developable industrial lands.

Parcel size flexibility is required to address the range of potential market demands created by the exceptional location and large undeveloped area of land in north Nisku.

3.3. Nisku Today

Today, Nisku is a center of diversified industry. Energy sector businesses that are located within Nisku include pipefitters, welders, oil-rig builders, and the like. More recently, food processing and advanced manufacturing industries have been increasing in number, creating new types of employment, and giving the community a broader industrial base. As EIA continues to expand, there has been an increased demand for logistics and distribution-based businesses within Nisku and the surrounding area. Additionally, there has been an increase in international interest within the Nisku area due to heightened connectivity through the YEG Airport.

The existing Nisku Business Park presently has capacity for new development and redevelopment of the present type of industrial land use. However, this area is unable to satisfy the growing demand for corporations to amalgamate their multiple site locations into one comprehensive site capable of accommodating a variety of uses such as offices and light industrial components within a campus-like setting. These users are demanding a broader range of uses and higher aesthetic standards, with more utility capacity. The 510 LASP is in an ideal location to fulfil this need and is intended to fulfil Leduc County's vision of a more diverse industrial base.

3.4. Population and Employment Projections

Alberta's economy is in a state of transition that is expected to continue. Economic diversification efforts are expected to focus on leveraging existing strengths into new products and markets. For Leduc County, the key growth sectors include: energy, agriculture/food production and processing, and transportation & logistics.

Energy

The energy sector is diversifying with new investments in alternative energy projects, including: solar, wind, hydrogen, geothermal, bioenergy and discussions about the potential for nuclear energy.

Agriculture and Food Products Production and Processing

Agriculture has been a mainstay of the Alberta economy and in recent years there has been significant growth in value-added food production for local markets and food processing for export markets. While traditional crop farming has largely been corporatized, smaller farming operations that produce fruits, vegetables and protein for local markets have emerged. These operations are expanding their market reach beyond local markets.

Transportation & Logistics

The transportation and logistics sector is vital to the Alberta economy moving goods in and out of the province.

3.5. Leduc County Investment Readiness and Implementation Strategy

Leduc County's [Investment Readiness and Implementation Strategy](#) was conducted by IBI Group and MDB Insight between 2019 and 2021. The project's main goal was to create an economic and planning strategy to assess the County's investment readiness and competitiveness and provide clear direction for future growth and employment in crucial areas of rural development, agriculture, commercial and industrial growth within Leduc County. With the phase out of coal-fired electrical generating plants, there was an urgent need for economic diversification opportunities.

4. Supporting Studies

4.1. Transportation Master Plan (2023)

The Leduc County Transportation Master Plan (TMP) provides guidance on all modes of motorized and active transportation. The TMP provides the following direction for the Plan Area:

- ▶ Township Road 510 is identified as a regional arterial and is planned for an ultimate buildout of 6 lanes;
- ▶ Township Road 510 is a correction line;
- ▶ City of Edmonton is the road authority for Range Road 243;
- ▶ 35th Avenue could be extended towards the east, to provide access between the north end of the plan area to Nisku Spine Road; and
- ▶ An additional Nisku Spine Road access may be considered near the quarter line approximately 800m north of Township Road 510.

Other Transportation Considerations

- ▶ Transportation planning will need to consider the existing industrial developments on the western parcels of the plan area.
- ▶ Active transportation options and routes will be necessary to connect the East Vistas residents to services located in North Nisku.

4.2. Leduc County Environmentally Significant Areas Study (2015)

The Leduc County Environmentally Significant Area Study was completed by Fiera Biological Consulting in 2015 which provided a county wide assessment of the natural features. This document identifies Irvine Creek as an Environmentally Sensitive Area. Further Biophysical Assessments will be required to determine Environmental Reserve dedications.

Supplementary to the Environmentally Significant Areas Study, Leduc County partnered with the University of Alberta School of Urban and Regional Planning on the Nisku Wildlife Corridor Report which further considers the natural migration routes for wildlife. This study focused on Irvine and Blackmud Creeks. The studies identified Environmentally Significant Areas within the plan area, which will require further Biophysical Impact Assessments to be undertaken at the Concept Plan stages.

4.3. Blackmud/Whitemud Creek Surface Management Study (2017)

Between 2015-2017 an in-depth and comprehensive regional initiative was undertaken by: Leduc and Strathcona Counties; the Cities of Edmonton, Leduc and Beaumont; and the North Saskatchewan Watershed Alliance. This collective was named the *Blackmud/Whitemud Surface Water Management Group*. This in-depth study looked at the entire drainage basins for the Whitemud and Blackmud Creeks. This study included significant study and review of a portion of Irvine Creek that is relevant to this plan

area as Irvine Creek has struggled with flooding issues in the past. The following information has been identified within the surface management study as relevant to the 510 Local Area Structure Plan project:

Year	Item
2017	Mapping of the Whitemud/Blackmud drainage basins
2017	Flood mapping including profiles and cross sections for 2 year, 5 year and 100 year flood events
2014	Irvine Creek Maximum Instantaneous Flows Estimates
2017	Hydrogeomorphic Wetland Classifications for water quality and hydrogeologic Function
2016	Mapping of the Riparian Characteristics within 100 meters of Irvine Creek
2017	Associated Engineering developed a pilot model to define the key hydrologic processes, to explore the feasibility of a fully dynamic model, and to try to estimate how conservative the steady-state model would be specific to Irvine Creek.

It is expected that the comprehensive information provided within this report will provide a qualified Biologist with a solid set of data to review and extrapolate recommendations from the known information and apply them to the specifics of the 510 LASP area. It is anticipated that minimal field work will be required and needed only to confirm the known information and to determine Environmental Reserves to be dedicated at the time of subdivision. A survey of the Irvine Creek top-of-bank was conducted for the purposes of this plan and may provide a starting point for additional assessments to determine the location of environmental reserve boundaries, development setbacks and property boundaries at the time of subdivision.

4.4. Leduc County Agriculture Strategy (July 2016)

The Agriculture Strategy was commissioned and prepared as a background document to the 2019 Municipal Development Plan. It makes a number of recommendations on the preservation of agricultural lands and responsible, contiguous development to ensure agricultural lands stay in production for as long as possible. The strategy provides a terms of reference for Agriculture Impact Assessments which have been conducted during the land use planning process and are intended to help guide responsible phasing for development. This strategy was used to develop Council Policy [LR-01 Agriculture Impact Assessment \(AIA\)](#).

4.5. Recreation and Parks Master Plan (2023)

The Recreation and Parks Master Plan was undertaken help the County understand the current and future needs for parks and recreation services in Leduc County. The plan is a guiding document for the County, its partners, and residents for the next 10 to 15 years. This plan was developed based on a thorough research program, which includes the involvement of residents.

4.6. Transit Needs & Feasibility Assessment (Draft May 2023)

On June 27, 2023 Engineering Services presented the draft findings of the *Transit Needs and Feasibility Assessment* to Council Workshop. The study included public participation to seek feedback on user needs for transit services County wide, and makes a number of recommendations to pool existing resources and partner with other municipalities and organizations in the Leduc region to enhance transit services. It has been identified within the pre-planning for the 510 LASP project that both existing and future development in the North Nisku area would benefit from increased transit services. A fixed transit schedule already services the Amazon warehouse, this service could be amplified throughout the Nisku area to serve businesses as well as the transit needs of residents of the East Vistas.

5. Technical Work to Date

The County has assembled significant amounts of technical background information for the North Nisku area that can be used to support the planning process. This information exists in different documents, with different scopes, and has been extrapolated, interpreted, and applied to the plan area. It is hoped that the existing information such as drill logs, hydrogeological and biophysical field information will be useful and reduce the amount of field work required. The available resources include the following:

- ▶ Blackmud/Whitemud Creek Surface Management Study Blackmud/Whitemud Creek Surface Water Management Group – Blackmud/Whitemud Creek Surface Water Management Study Final Report, Associated Engineering, 2017
- ▶ Leduc County Environmentally Significant Areas Study, Fiera Biological Consulting, 2015
- ▶ Transportation Master Plan
- ▶ Nisku Spine Road (9 Street) Reconstruction Geotechnical Investigation, Thurber Engineering Ltd., 2013
- ▶ Final Environmental and Historical Overview, Leduc County Nisku Spine Road, Golder and Associates, 2012
- ▶ Geotechnical drill logs for the following parcels:
 - Plan 2090 NY, Lot A
 - Plan 232 0919 – newly registered – adjacent to plan area
- ▶ North Nisku Water and Sanitary Area Servicing Study, WSP, 2023
- ▶ Irvine Creek Top of Bank Survey

5.1. Existing Geotechnical Data

Development to date within the 510 LASP area has provided some geotechnical data including drill logs for the purposes of private development and construction as well as for the background related to the Nisku Spine Road. It is anticipated that this data shall help to reduce the number of drill sites required for the required geotechnical work. The County is in possession of geotechnical information for the following sites:

- ▶ Plan 2090 NY, Lot A;
- ▶ Plan 232 0919 – newly registered – adjacent to plan area; and
- ▶ Numerous drill sites located within the Nisku Spine Road and within 800 meters on either side of the Township Road 510 and Nisku Spine Road intersection.

5.2. Nisku Spine Road Environmental and Engineering Background

As a part of the due diligence background in advance of the construction of the Nisku Spine Road, the County had identified two technical background reports that may be relevant and used to inform and guide the technical work for the 510 LASP. It is noted that some of this information is 10-11 years old and will likely require review and confirmation, however it is anticipated that the existing information can be used to supplement the desktop work for this project.

5.2.1. Final Environmental and Historical Overview, Leduc County Nisku Spine Road, Golder and Associates, 2012

Prior to the construction of the Nisku Spine Road, an Environmental and Historical Overview of the subject lands was undertaken by the County as a part of the due diligence for this capital project. Due to the age of this study, it is anticipated that the biological and environmental information will need to be reviewed and updated by the consultant's submission. The scope of the reporting included field work located within the boundaries of the Nisku Spine Road right-of-way. The following items are discussed within the Golder and Associates report:

- ▶ Topsoil samples from select locations;
- ▶ Desktop and field surveys of vegetation, wetlands and wildlife;

5.2.2. Nisku Spine Road (9 Street) Reconstruction Geotechnical Investigation, Thurber Engineering Ltd., 2013

Prior to construction of the Nisku Spine Road a Geotechnical Investigation was undertaken that included a field drilling program focused within the Nisku Spine Road right-of way. In total 29 drill logs were taken, and standpipes were installed and monitored for groundwater seepage at 12 of these sites. The recommendations of the investigation provide guidance for the design, engineering and construction for the purpose of road construction.

5.3. Desktop Biophysical Assessment

Pintail Environmental Consulting Inc. completed a desktop biophysical assessment for the lands within the 510 LASP, including wetlands, for the purposes of this Plan. The purposes of the biophysical assessment was to:

- ▶ Identify, delineate, and classify any wetlands and other waterbodies located within the Project Area;
- ▶ Identify general vegetation communities within the Project Area;
- ▶ Identify any previously recorded rare plant observations;
- ▶ Identify any previously recorded wildlife observations and habitat potential; and

- Identify next steps and recommendations with respect to future assessments and potential regulatory requirement.

5.4. Historic Resources

Alberta Culture has granted Historical Resources Act clearance for the 510 LASP; please see Appendix A.

Development within the 510 LASP should have regard for the preservation of historical, archaeological and paleontological resources. If development proponents and/or their agents become aware of historic resources during the course of development activities, they are required, under Section 31 of the Historical Resources Act, to report these discoveries to the Heritage Division of Alberta Arts, Culture and Status of Women.

5.5. Agricultural Impact Assessment

An Agriculture Impact Assessment for the undeveloped lands within the plan area by Serecon Inc. The final assessment determined that the subject lands are deemed to be suitable for development. While nearly all the subject lands are also highly suitable for annual crop production, the assessment concluded that they are not unique in quality or current agricultural use. Therefore, its conversion to non-agricultural use, when cumulative impacts of regional agricultural land conversion are not considered, would not present a significant loss of agricultural potential to the surrounding Leduc County area or the greater Edmonton Region.

Development of the subject lands will incrementally reduce the agricultural use but if equipment access is accommodated, is unlikely to restrict the use of undeveloped subject lands or surrounding agricultural lands. In summary, the planned development would not unduly impact the overall viability of either the local agricultural community or crop production in surrounding areas.

Drainage issues will need to be considered as development proceeds. The subject lands are quite flat and are drained to the southwest via the Blackmud creek tributary, and so obstruction of drainage during development has a high potential to cause surface flooding or excessive soil saturation. Such an event, especially if it occurs during the spring snow melt or summer rain event could severely negatively impact agricultural production by hindering field operations or drowning perennial and annual crops. Ensuring adequate drainage during development is an important consideration to minimize impacts to agricultural production.

5.6. Irvine Creek Top of Bank Survey

A top-of-bank survey was conducted along Irvine Creek throughout the plan area in May of 2024. The top-of-bank data gathered through this survey will provide a reference point for the determination of environmental reserve boundaries, setbacks to development and subdivision design.

5.7. Nisku Growth Capacity Study

WSP delivered to the County in 2023, a water and sanitary servicing study and modeling that provides an area-based master plan for the water and sanitary utilities within the Nisku Area (including the 510 LASP area). The study identified three scenarios for the utility capacity in Nisku:

- ▶ Existing demand;
- ▶ Redevelopment; and
- ▶ Redevelopment & New Growth.

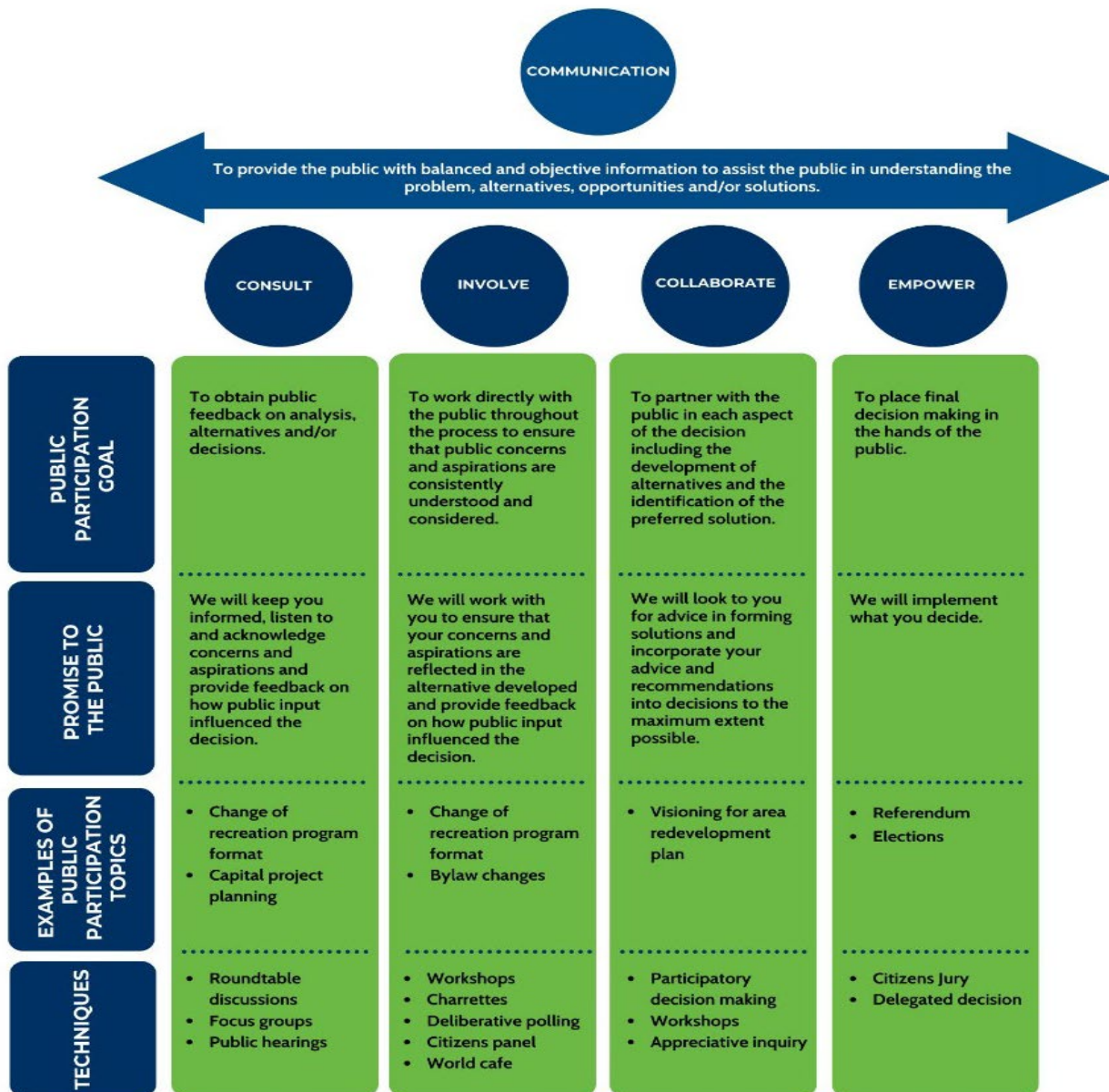
The 510 LASP plan area is within the Redevelopment & New Growth scenario. The Nisku Growth Capacity Study concludes that there is sufficient capacity for water and sanitary servicing throughout the plan area.

5.8. Fiscal Impact Assessment

A Fiscal Impact Analysis (FIA) was completed by Applications Management for the 510 LASP assuming a 30 year buildout period. The FIA calculates the long-term financial implications of the plan incorporating municipal revenues, operating and capital expenditures, life-cycle costs, infrastructure demands, and development patterns. The results of the FIA estimated that the development of the 510 LASP Area would result in 203.07 net ha of development in Industrial, Commercial/Retail, and Business Park uses with approximately 6,557,470 sq ft of Gross Building Floor Area and 11,000 jobs. This is anticipated to represent 16% of total jobs in Leduc County in 2054.

Ultimately, the FIA calculated that the 510 LASP will represent a 1-5% increase to Leduc County's overall operating expenditures. However, due to associated increase in assessment over the 30 year forecast horizon, the average municipal tax rate would be lower with the proposed 510 LASP than without the development.

6. Public and Landowner Involvement



Adapted from the International Association of Public Participation's Spectrum of Public Participation

Landowner Engagement

Planning and Development reached out to the individual landowners within the 510 LASP area in March of 2023, November of 2024 and again in March of 2025. County staff met with all the landowners in the plan area for one-on-one engagements throughout the early planning process and have received a generally favourable response to the project. Some of the feedback received and included in the conceptual planning of the 510 LASP include:

- ▶ Limiting or reducing the local road network to allow for flexibility during the initial subdivision and development design.
- ▶ The road network should avoid creating awkwardly shaped or undevelopable lots. Grid design/right angles area better fit for market demand.
- ▶ Utilities and infrastructure such as stormwater ponds and roads should be designed in such a way to avoid bottlenecking development, particularly in the south areas of the plan
- ▶ Franchise utilities should be included in the Nisku Spine Road right-of-way or in other collector road rights-of-way
- ▶ The plan should consider subdivision occurring with larger blocks of land to assemble pieces that may be further subdivided based on the specifications of end users
- ▶ Conceptual plans should consider shadow plans for adjacent lands but allow subdivision and redistricting to proceed without additional statutory planning steps

Public Open House

The public open house event was held at the Business and Entrepreneur Center on May 6th, 2025. Staff presented poster boards with the key features of the 510 LASP and were available for questions. The public was also able to leave comments on the 510 LASP Survey at the open house or on the project page at [Yoursayleduccounty.com](https://yoursayleduccounty.com) until May 16, 2025.

The feedback received from the open house, as well as all follow-up discussions held with stakeholders, informed the final LASP document.

More information on public engagement undertaken as part of the LASP process can be found in the 510 LASP What We Heard report.

7. Development Concept

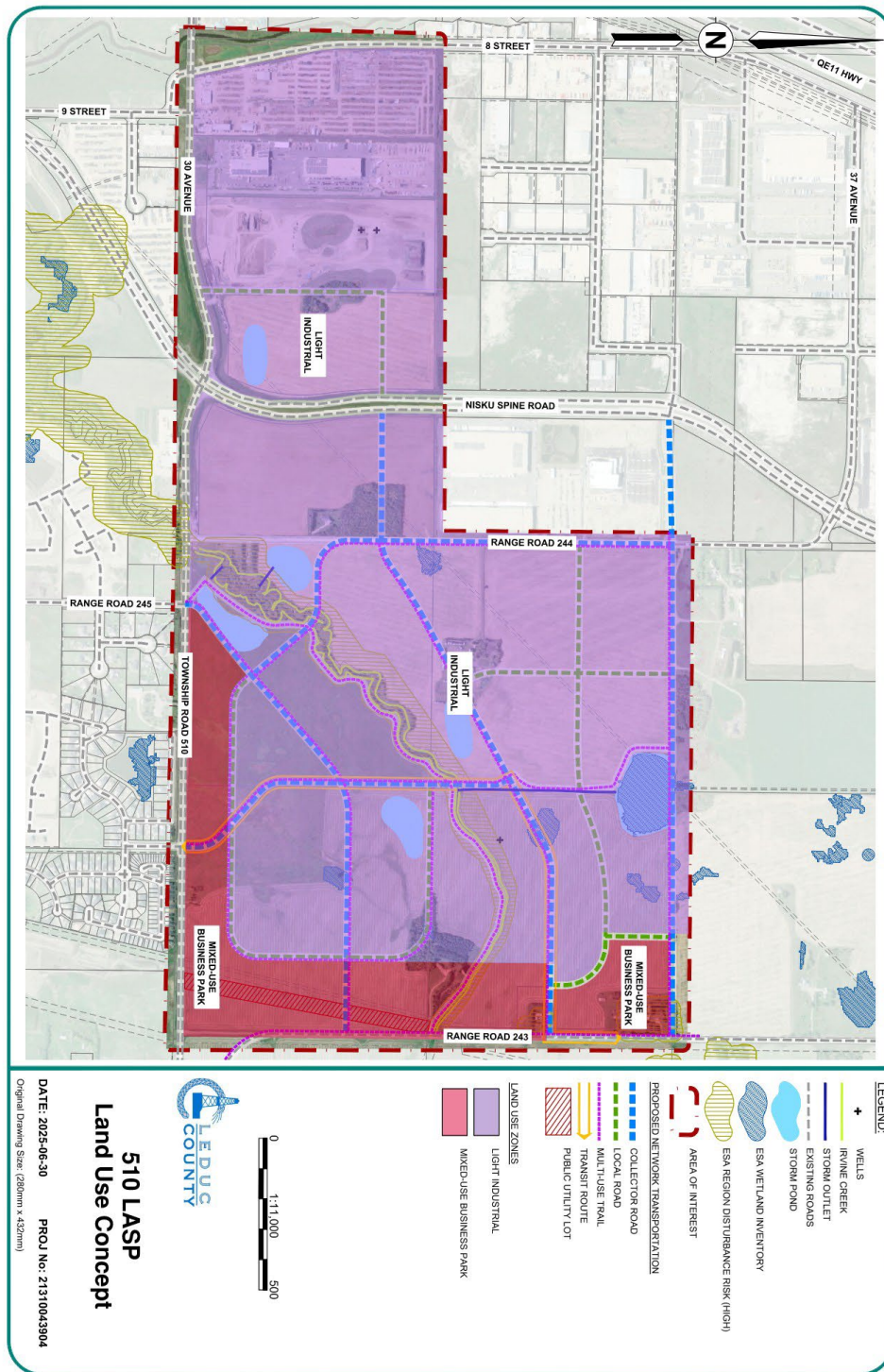


Figure 4: Land Use Concept

The 510 LASP development concept, see Figure 4 – Land Use Concept, has been designed in accordance with Leduc County policies and servicing standards. Development staging and extension of infrastructure will be logical, efficient, and economical while having regard for potential environmental and ecological impacts. The LASP development concept recognizes that lands within the plan area represent a transition from the Nisku Business Industrial Park to surrounding urban residential uses, and therefore developments within the LASP will be subject to a high standard of architectural design and landscaping requirements.

7.1. Agriculture



Much of the lands within the 510 LASP plan area are currently districted Agricultural and support existing agricultural activities, with the exception of the developed lands on the west side of the plan area with existing Industrial districting. The 510 LASP supports the ongoing agricultural use of these lands until such time that the lands are developed for light industrial, mixed-use business park and other uses in accordance with the goals of this LASP.

Objectives:

1. Support existing agricultural lands and practices within the plan area until the lands become redistricted and developed in accordance with the future land use concept of this Plan.
2. Encourage sustainable and environmentally responsible agricultural practices for the lands in the plan area currently used for agricultural purposes.

Policies:

3. Allow current agricultural uses that comply with existing Land Use Bylaw district regulations and this LASP to continue until development phasing allows the land to be converted for light industrial or mixed-use business park purposes.
4. Require new land uses proposed for the agricultural lands within the plan area to comply with this LASP and the County's Land Use Bylaw.
5. Allow private on-site servicing on agricultural lands where the existing or proposed development complies with the existing Land Use Bylaw regulations and this LASP.

7.2. Residential



There are six existing residential developments within the plan area that were developed under the existing Agricultural district. The 510 LASP supports the continued use and enjoyment of existing residential properties within the plan area by minimizing land use conflicts between the residential lands and new light industrial and mixed-use business park development.

Objectives:

1. Support existing residential land uses in the plan area and prohibit the creation of new multi-lot residential development.
2. Ensure light industrial and mixed-use business park development considers existing residential development.

Policies:

3. The creation of new multi-parcel residential subdivisions within the plan area shall be prohibited.
4. Site buffers, which may include a combination of fencing, landscaping and berms, shall be required adjacent to existing residential sites. Site buffers shall be installed and maintained to the satisfaction of Leduc County.
5. Existing natural features such as tree stands and other natural buffers adjacent to existing residential developments will be preserved, where possible.

7.3. Light Industrial



The majority of the 510 LASP lands, 309.3 hectares (764.38 acres), are identified as future Light Industrial. These lands are intended to be flexible in terms of lot size and specific uses. They also will not contain any heavy industrial or uses that create a nuisance beyond the building or the site. It is envisioned that the Light Industrial area will have a mix of uses, including but not limited to, business offices, warehousing and logistics operations, commercial retail, small-scale outdoor storage (at the discretion of the County), and other similar uses. It is anticipated that many of the uses in the Light Industrial area will take advantage of being in close proximity to Township Road 510, the Nisku Spine Road, Edmonton International Airport and the QE II.

Objectives:

1. Support economical and orderly expansion of light industrial development within the plan area.
2. Ensure light industrial development is developed in such a manner as to be compatible with adjacent land uses within the plan area and surrounding lands.
3. Developments along Township Road 510 or the Nisku Spine Road shall endeavour to incorporate a high standard of aesthetic design and appearance.
4. Provide for multiple access transportation opportunities to the Light Industrial area to support the efficient movement of goods to and from the plan area.

Policies:

5. Encourage the clustering of compatible businesses that support the sharing of information, products and linkages to resources and transportation networks.

6. Serviced light industrial development shall be located in the areas identified as Light Industrial on Figure 4 – Land Use Concept. Appropriate light Industrial uses are uses which require visibility from the Nisku Spine Road and Township Road 510 and are characterized by having higher quality building and site design standards and higher landscaping standards.
7. Light industrial development adjacent to Irvine Creek will minimize the impact on the Creek during construction and operation.
8. Sites will designed in such a way to ensure no outdoor storage, product display or commercial vehicle parking along arterial roads. Discretion may be used where site constraints are limited so long as the overall intent of this policy is met.
9. Light industrial development at the interface between business park and light industrial shall maintain compatibility in character, appearance and design. Appropriate light industrial uses in this area will have higher quality building and site design standards and higher landscaping standards.
10. Parcel size may be flexible to meet the needs of both primary and secondary uses as long as the uses are compatible and meet safety and engineering standards. Discretion may be used where site constraints are limited so long as the overall intent of this policy is met.

7.4. Mixed-Use Business Park



To provide a seamless transition and buffering from the 510 LASP lands to adjacent residential uses approximately 59.47 hectares (146.95 acres) have been designated as Mixed-Use Business Park. These lands, located along Township Road 510 east of the Spine Road, north of the East Vistas as well as on the eastern side of the plan area, adjacent to Range Road 243 and the City of Edmonton, will be characterized by corporate offices, service and convenience commercial, research institutions, financial services, eating establishments, and other similar uses.

The Mixed-Use Business Park area will serve as a transition at the interface between business park developments and urban residential development in the East Vistas to the south and compatible to the City of Edmonton to the east. There will be limited outdoor storage in the Mixed-Use Business Park character area. It is envisioned that the Mixed-Use Business Park will have visually impressive buildings and landscaping that will complement nearby residential uses.

Objectives:

1. Support economical and orderly expansion of business park and commercial development within the plan area.
2. Developments along Township Road 510 or Range Road 243/91st Street shall endeavour to incorporate a high standard of aesthetic design and appearance.

3. Ensure business park development is developed in such a manner as to be compatible with adjacent land uses within the plan area and surrounding lands.
4. Protect Township Road 510 and Range Road 243/91St Street transportation corridors at time of development.

Policies:

5. Encourage the clustering of compatible businesses that support the sharing of information, products and linkages to resources and transportation networks.
6. Appropriate business park uses are uses which operate in such a way as to create no disturbance outside of the enclosed buildings and be compatible with non-industrial development.
7. Support high quality business park and commercial developments along Township Road 510 with limited direct access and to allow for convenience, service and highway commercial opportunities for both local residents and travellers along the transportation corridors.
8. Outdoor storage in the Business Park area shall be limited to only what is required to support business operations and be fully screened from Township Road 510, Range Road 243/91St Street and adjacent uses.
9. All developments that face onto Township Road 510 and Range Road 243/91St Street shall be required to have higher architectural standards and landscaping requirements.
10. Sites will be designed in such a way to ensure no outdoor storage, product display or commercial vehicle parking along arterial roads.
11. Local commercial and retail sales and service within the Mixed-Use Business Park area will be encouraged. Typical uses in these areas may include commercial and service retail, accommodation services, convenience stores, eating establishments, service stations, and other uses that provide local services to employees, the travelling public, and residents.
12. Parcel size may be flexible to meet the needs of both primary and secondary uses as long as the uses are compatible and meet safety and engineering standards.

8. Environment, Parks and Open Space



8.1. Environment

As part of any future development design for the plan area, a more detailed wetland field assessment will be conducted if any of the wetlands within the Plan area may be directly affected by future development. This detailed wetland field assessment must be conducted according to the Alberta Wetland Identification and Delineation Directive, the Alberta Wetland Assessment and Impact Directive, and the Alberta Wetland Mitigation Directive.

According to the Alberta Wetland Assessment and Impact Report Directive there are two regulatory reporting processes that can be followed with it comes to development projects, the Wetland Assessment and Impact Form (WAIF) and the Wetland Assessment and Impact Report (WAIR). Depending on the scope of the proposed development it would most likely would fall under the WAIR process especially if it should be determined that the final Project Footprint will permanently impact wetlands.

8.2. Irvine Creek

Irvine Creek, a tributary of Blackmud Creek, traverses through a large portion of the plan area. Blackmud Creek is located to the southwest of the plan area. A desktop Biophysical Assessment Report was conducted throughout the plan area to provide the next step recommendations for development within

the plan area. It is recommended to maintain a setback of at minimum 100 m from Irvine Creek. This setback should be calculated to encompass the 100-year water level and floodway and be based on the width and dimensions of the watercourse.

It was also recommended in the Nisku Wildlife Corridor Report that Irvine Creek be maintained as a wildlife corridor for the purposes of natural connectivity of wildlife habitat zones. A minimum corridor width of 200 m, or 100 m setback from the top-of-bank for a watercourse is recommended. Further assessment is required to determine the final corridor width and setback, as approved by Leduc County. The setback may be reduced if it is determined through assessment that a lesser setback will maintain the overall objectives of creek and wildlife corridor protection and is geotechnically safe and free from flooding.

A top-of-bank survey of Irvine Creek within the plan area was completed in May of 2024. The top-of-bank survey data may serve as a starting point for determining appropriate setbacks from development and environmental reserve dedication at the time of development.

8.3. Parks and Open Space

The 510 LASP has been designed to incorporate natural features and to provide connectivity to parks and trails in adjacent developments. Many of the wetlands in the plan area are seasonal and will be enhanced with a shared purpose as a stormwater management facility, see Figure 4 – Land Use Concept. Municipal Reserve will be dedicated through cash in lieu to Leduc County in compliance with the regulations of the Municipal Government Act.

A multi-use trail will be developed along Irvine Creek (Figure 5 – Environmental Features & Pedestrian Network), connecting to the East Vistas at the intersection of Range Road 245 and Township Road 510 in the southwest, and following the creek eastwards through plan area, connecting to Range Road 243/91st Street to the east. The transmission and pipeline right-of-way, extending through the East Vistas, will be dedicated in the form of a public utility lot and will create a loop throughout the plan area.

The multi-use path will generally follow the collector road layout as shown in (Figure 5 – Environmental Features & Pedestrian Network), creating connections from south to north creating future connections to the multi-use path in the Royal Cubera LASP, as well as the collector road connection to Range Road 243/91st Street south of Irvine Creek. Further collaboration with the City of Edmonton will be required for best location of walking trail connecting to Range Road 243/91st Street.

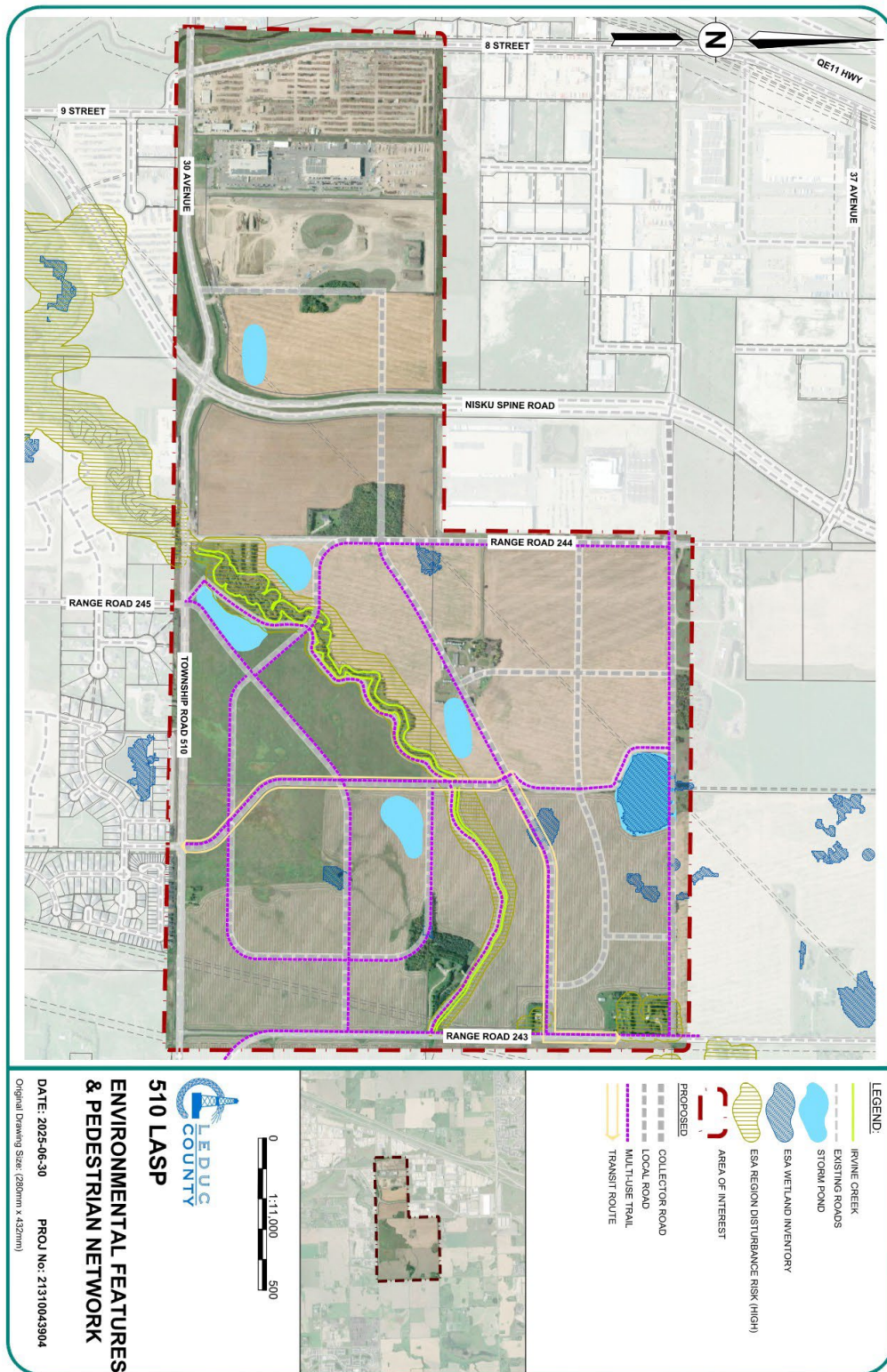


Figure 5: Environmental Features & Pedestrian Network

The intent of the multi-use path is to provide a looping connection along Irvine Creek and the boundaries of the plan area that may connect with future and/or existing pedestrian pathways adjacent to the 510 LASP plan area. The multi-use path, along with collector and local road development will be flexible and the final design, along with internal connections, will be determined at the time of development. Figure 5 – Environmental Features & Pedestrian Network is conceptual, and the final design may be altered without amendments to this plan, provided that the network aligns with the overall intent of walkability within the plan area. Practical alterations to the network area expected as development proceeds.

Objectives:

1. Mitigate adverse impacts to the natural environment as best as possible at all stages of development, including construction and operation of light industrial and mixed-use business park and commercial land uses.
2. Minimize environmental impacts including air, water and surface pollution and light, noise, and sound nuisances that may be associated with light industrial and mixed-use business park and commercial development.
3. Protect Irvine Creek and enhance walkability and opportunities for trail development along the creek.
4. Ensure multi-use trail development is flexible and practical within the context of development in the 510 LASP plan area.

Policies:

5. Developers in the plan area shall consider and protect the environment at all stages of development including construction, operation and site reclamation. This includes control of invasive species and noxious weeds, erosion and sedimentation, and point and non-point release of contaminants into the environment.
6. Require developers in the plan area to manage all environmental nuisances including light, sound, dust and noise pollution to acceptable levels. Developments shall adhere to federal and provincial policies related to air, soil and water pollution standards.
7. Require all hydrological, geological, hydrogeological, biophysical and environmental assessments conducted by the developer to be undertaken by qualified hydrologists, hydrogeologists, biologists, geologists or environmental specialists.
8. Existing floodplain areas along Irvine Creek will be identified through assessment and preserved as Environmental Reserve and protected from development.
9. Figure 5 – Environmental Features & Pedestrian Network is conceptual. The multi-use walking trail will be flexible to local road design and will be determined in the submission of Conceptual Plans at the time of development to allow for a practical walking network that achieves the overall intent of connecting walkable trails within the plan area that may connect to existing and/or future walking networks on adjacent lands.

10. Trail construction will comply with Leduc County Municipal Standards.
11. Protect Irvine Creek through Environmental Reserve designation at the time of subdivision.
12. The County will require development setbacks from the top of bank for Irvine Creek at the Concept Plan stage. Development setbacks will be determined through the use studies and assessments conducted by qualified professionals.
13. Assessments and studies will consider flood plain, geotechnical setbacks, environmental protection for Irvine Creek, wildlife corridor protection, and best practices as for the protection of Irvine Creek, as approved by Leduc County.
14. Investigate, at the time of Concept Plan and/or subdivision, the potential to establish Environmental Reserve and Environmental Reserve Easements to protect areas deemed to have environmental significance in accordance with the Municipal Government Act provisions.
15. Require all costs associated with remediation or compensation for impacted or removed wetlands to be borne by the developer. Remediation and compensation shall comply with provincial Wetland Policy requirements.
16. Concept Plans shall determine, through consultation with the Province of Alberta, whether wetlands are Crown owned land.
17. Municipal Reserves will be dedicated throughout the plan area as cash in lieu in compliance with the regulations of the Municipal Government Act.

9. Transportation and Mobility



Township Road 510 is located between the northern section of the Nisku Business Park and the Town of Beaumont, 3.2 kilometres north of Alberta Provincial Highway 625. Township Road 510 is identified as a major arterial roadway to provide a link between the Nisku Business Park and Highway 814 and Beaumont. As well, Township Road 510 will function to collect and distribute traffic within the 510 LASP plan area. This road will also become more important as the area develops because it will provide a link between major commercial and industrial centres in the greater Edmonton region. Upgrades to Township Road 510, beyond a 4 lane standard, and Range Road 243/244, including improvements, construction standards, timelines and financing shall be completed through coordination with the cities of Edmonton and Beaumont as outlined in the Intermunicipal Planning Framework, Intermunicipal Development Plan, Intermunicipal Collaboration Framework and/or other intermunicipal agreements.

The ongoing construction of Township Road 510 to four lane, and eventual six lane, will include an urban cross-section with full curb and gutter and below ground stormwater drainage. The Township Road 510 functional plans reflect this and benefits include reduced right-of-way requirements.

Consistent with providing an urban cross-section in an urban area, considerations were made for pedestrians and other non-vehicular users such as bikes, wheelchairs, and strollers. A 3.0 meter multi-use trail along the south side of the roadway and a standard 1.5 meter boulevard walkway on the north side of the roadway are included in the future design. The multi-use trail will also provide logical connections to the City of Edmonton and Town of Beaumont's trail and pedestrian system.

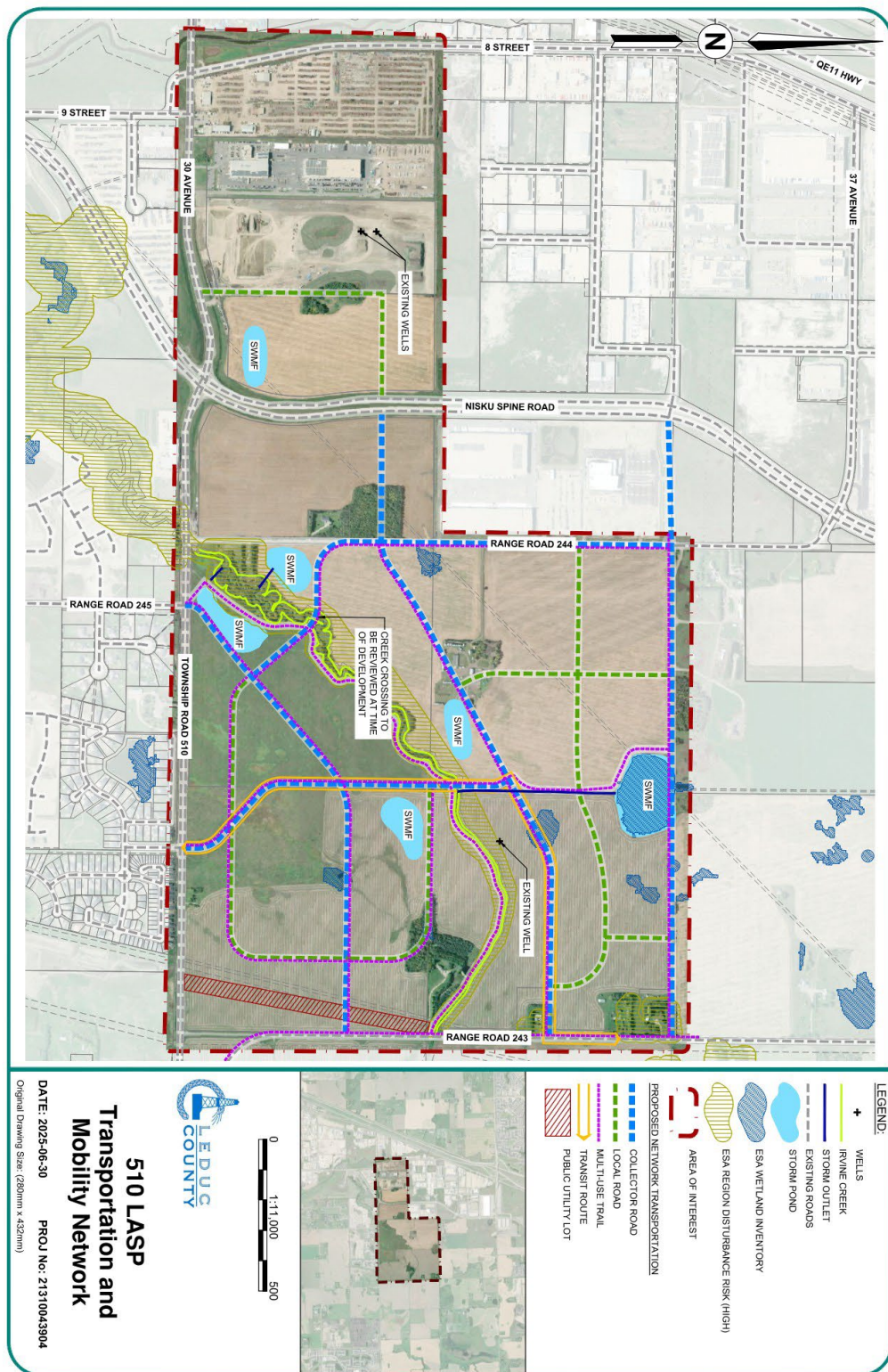


Figure 6: Transportation and Mobility Network

Consideration was also given to noise attenuation along the Township Road 510 corridor. An arterial roadway with over 30,000 vehicles a day generates significant noise which could be a nuisance to residents. Leduc County does not currently have noise attenuation guidelines for roadways. However, a small 1.0-metre-high berm into the roadway cross-section near residential lands will be incorporated. Recommendations have also been made for maximum allowable sound levels based on a City of Edmonton bylaw that outlines noise restrictions. Upon development of business park lands adjacent to Township Road 510 and Range Road 243/91st Street, sound modelling exercises should be carried out to determine if sound attenuation measures in addition to the 1.0 meter berm are required. Such additional sound attenuation measures should be provided upon detailed design by the developers at the Concept Plan stage.

“Rurban” cross-sections aim to balance the needs of both rural and urban environments. Local road development separating Mixed-Use Business Park along the southern and eastern edges of the plan area and the Light Industrial land uses will incorporate a “rurban” cross section with curb and gutter on the south and east sides, adjacent to the Mixed-Use Business Park area, and rural cross section along the north and west sides of the road, adjacent to the Light Industrial areas, (Figure 6: Transportation and Mobility Network).

It is recognized that multiple crossings of Irvine Creek may not be warranted for overall transportation circulation and potentially cost prohibitive within the context of development. For this reason, the west most crossing of Irvine Creek, as conceptualized in Figure 6 – Transportation and Mobility Network, may, or may not be developed without amendment to this plan at the time of Conceptual Plan submission.

Objectives:

1. Provide for the safe and efficient movement of traffic on Township Road 510, the Nisku Spine Road, arterial, collector and local roadways within the Plan as well as connections to roadway networks planned for adjacent lands.
2. Create an internal road network that plans for optimal access management while being flexible for the future subdivision of lands to address market needs.
3. Support regional public transportation opportunities.
4. Ensure ongoing dialogue and collaboration with adjacent jurisdictions and Provincial partners on transportation requirements and network improvements of shared interest.

Policies:

5. The network of major roadways should be provided as shown in Figure 6: Transportation and Mobility Network.
6. The construction of new roadways and expansion of existing roadways shall comply with the Leduc County Transportation Master Plan.

7. The intersections of collector roads to Township Road 510, the Nisku Spine Road, Range Road 243 or Range Road 244 shall follow Figure 6: Transportation and Mobility Network. No additional access is permitted.
8. The construction of roads shall comply with the County's municipal engineering standards. The locations of all collector and arterial roadways should generally comply with the locations as outlined in this LASP.
9. Local road shown in Figure 6: Transportation and Mobility Network has been included for conceptual purposes. The design of local road for the 510 LASP is intended to be finalized in the submission of Conceptual Plans to allow for maximum flexibility in meeting market needs for subdivision design. The overall intent of traffic circulation throughout the plan area though the location and design of local roads should be implemented with consideration to adjacent development and the overall transportation needs of the plan area.
10. A Traffic Impact Assessment (TIA) may be completed and incorporated into Concept Plans where further examination of the local road network is required for subdivision applications.
11. All developments in the plan area shall contribute proportionately to the construction and expansion of new and existing municipal roads. Exact contributions will be determined at the time of subdivision and/or development as specified in the County's Offsite Levy Bylaw.

Concept Plans

12. A Transportation Impact Assessment may be required as part of the Concept Plan preparation for subdivision and/or development application.
13. Concept Plans shall ensure the proposed transportation network aligns with the County's Transportation Master Plan and complies with Engineering Design Standards.
14. Concept Plans shall incorporate future roadside pullouts for signage, mailboxes, and future transit routes and stops where required.
15. Concept Plans shall address fire and protective response measures through consideration of road design, safe and efficient access for emergency service vehicles and fire control measures.

10. Servicing and Infrastructure

The 510 LASP will be fully serviced with water, sanitary sewer, and stormwater management, along with utilities that include power, natural gas, and telecommunications. Stormwater will be managed within the plan area through overland conveyance via roadside ditch systems. Extensions to municipal water and wastewater for servicing are proposed below. The details of the proposed servicing systems will be further defined through subsequent reports and detailed engineering design in the future.

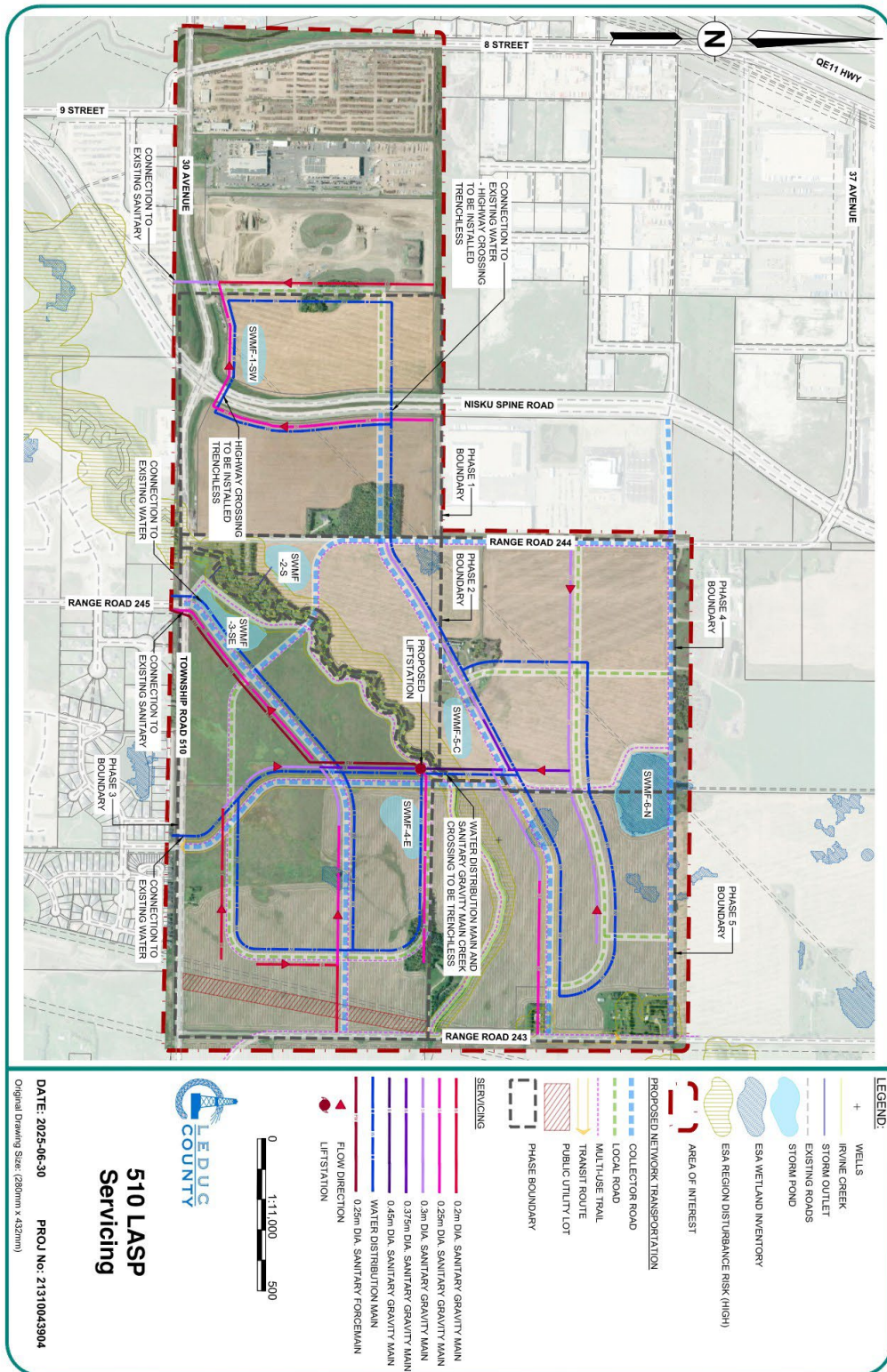


Figure 7: Servicing

The extension of water and sewer services have informed the phasing portion of this plan and will generally follow a south-to-north progression, connecting to the future water and sanitary infrastructure extending Township Road 510.

A sanitary lift station with a force main connection will be required for development of Phase 2 as shown in Figure 7: Servicing. The location of the lift station may be relocated provided the overall servicing strategy of the 510 LASP is maintained.

10.1. Water and Sanitary Servicing

Objectives:

1. Ensure a safe and secure servicing network that complies with federal, provincial and municipal health, safety and environmental standards.
2. Ensure that all development within the plan area is fully serviced through the orderly and effective extension of servicing infrastructure.
3. Locate future servicing infrastructure into Township Road 510 and Nisku Spine Road corridors as identified in Figure 7: Servicing.

Policies:

4. Water and sanitary servicing may be generally provided to the plan area as shown in Figure 7: Servicing. Flexibility with servicing may be considered with the support of sufficient engineering studies that consider the efficient servicing of the 510 LASP.
5. The construction of new and expansion of existing water servicing systems shall comply with the policies of this Plan and the Nisku Growth Capacity Study.
6. The construction of new and expansion of existing sanitary servicing systems shall comply with the policies of this Plan and Leduc County.
7. All water and sewer infrastructure shall be designed to conform to, and implement the recommendations of, approved applicable master plans for the plan area, adopted engineering standards and good engineering practices. All costs associated with the construction of water and sewer infrastructure on private sites are to be borne by the developer.
8. All parcels in the plan area that are districted for uses under the Land Use Bylaw in compliance with this Plan shall be serviced by full municipal water, sewer, and shallow utility servicing.
9. Require all Light Industrial and Mixed-Use Business Park developments in the LASP area to contribute proportionately to the installation and expansion of municipal water and sewer upgrades. Exact contributions will be determined at the time of subdivision and/or re-development, and as specified in the County's Offsite Levy Bylaw(s).

Concept Plans

10. An Engineering Design Brief for water and sanitary services will be required as part of the Concept Plan preparation for subdivision application. The Engineering Design Brief shall comply with the County's master infrastructure plans and Leduc County Municipal Standards.

10.2. Stormwater Servicing

Objectives:

1. Ensure storm servicing systems in the plan area comply with all applicable provincial Water Act approvals. Ensure that all development within the plan area is fully serviced through the orderly and effective extension of servicing infrastructure.
2. Ensure developers in the plan area reduce runoff quantity, improve runoff quality and protect recharge areas from extreme fluctuations and cumulative decreases in groundwater levels.
3. Peak flows to Irvine Creek may increase as development progresses, as outlined in the Blackmud/Whitemud Creek Surface Water Management Study Final Report. Assessments of the stormwater impacts to Irvine Creek will be required in association with proposed developments to ensure potential impacts are mitigated.
4. Ensure developers in the plan area reduce potential sources of contaminants and limit them from entering stormwater systems, Irvine Creek, Blackmud Creek and other drainage courses and natural areas.

Policies:

5. Stormwater servicing will be provided to the plan area as generally shown in Figure 7: Servicing.
6. Stormwater management plans will need to adopt a 3L/s/ha release rate and shall comply with the Blackmud/Whitemud Creek Surface Water Management Study Final Report and associated fenceline approval from the Government of Alberta.
7. All on-site stormwater management facilities shall comply with the County's Engineering Design Standards and be constructed to the satisfaction of Leduc County. All costs associated with the construction of on-site stormwater management facilities on a private site shall be borne by the developer.
8. Require all Light Industrial and Mixed-Use Business Park developments in the plan area to contribute proportionately to the installation and expansion of municipal storm servicing facilities. Contributions will be determined at the time of subdivision and/or redevelopment as specified in the County's Offsite Levy Bylaw.
9. All potential pollution sources shall be managed on-site and shall not be released into the County's stormwater system if they do not meet provincial or federal guidelines for environmental contaminant allowances.

Concept Plans

10. A Stormwater Management Plan will be required as part of the Concept Plan preparation or subdivision application. The Stormwater Management Plan shall comply with Leduc County's Municipal Standards.

10.3. Shallow Utilities

Power, gas and telecommunication services are located within the 510 LASP area and will be provided by the respective utility operators concurrently with development.

11. Phasing

Future development within the plan area should be generally consistent with Figure 8: Phasing. Phasing is approximate and subject to minor refinement at the time of Concept Plan submission based on detailed servicing studies and engineering evaluation. Phasing generally emanates from the south of the plan area, along Township Road 510. The initial phases of development may occur on the east or west side of the Nisku Spine Road or Irvine Creek and may develop concurrently. The phasing of development within the plan area shall be implemented in an efficient and logical manner to ensure a contiguous built form and efficient servicing.

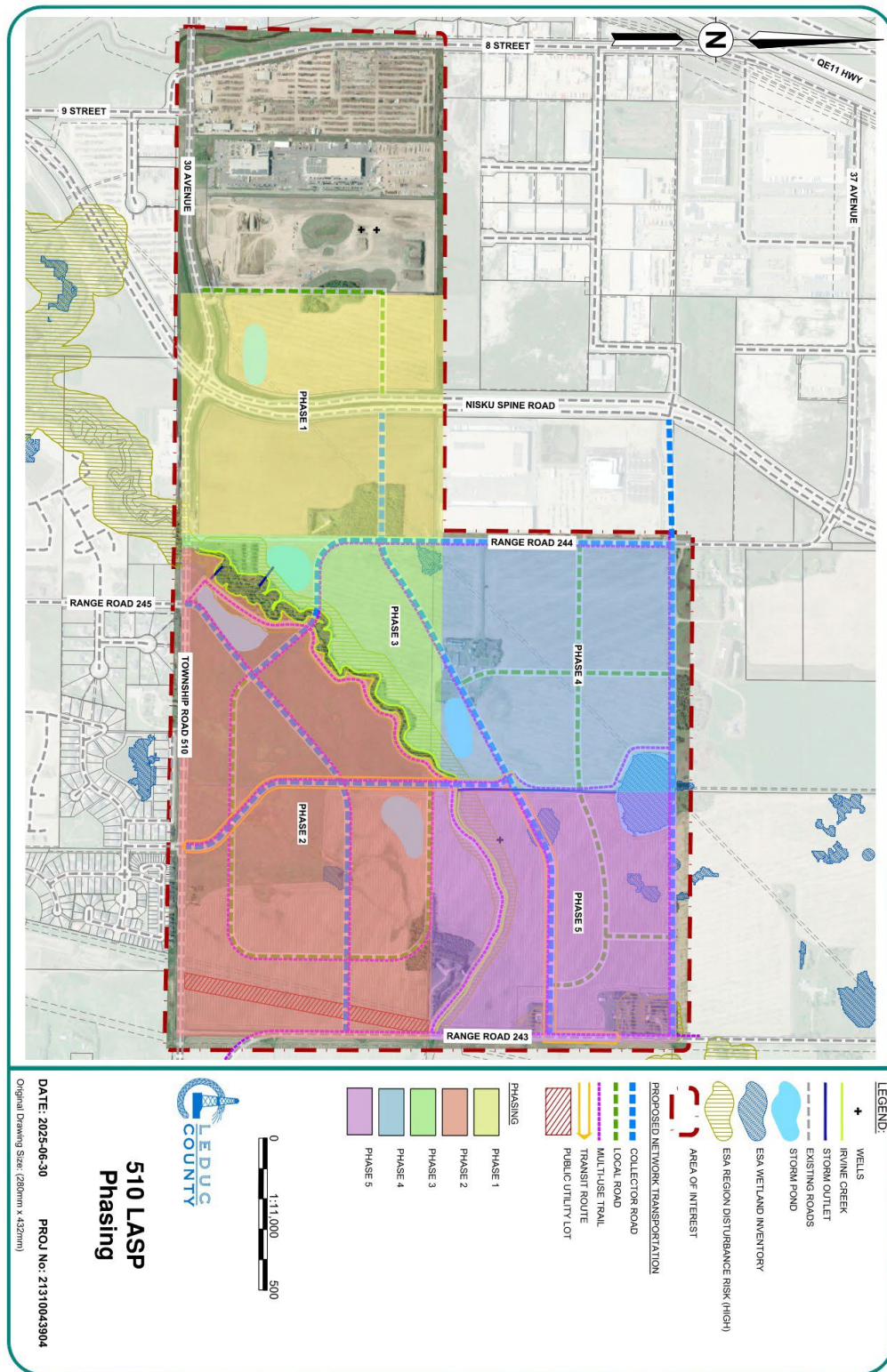


Figure 8: Phasing

12. Implementation

The figures contained in this plan should be interpreted as a general depiction of the vision for the 510 LASP. These figures illustrate the intended land uses in the area and the necessary infrastructure to enable those uses. The ultimate form and location of the infrastructure, boundaries, and features depicted in these figures will be determined through concept plans, redistricting and subdivision as the area is ultimately built out.

While the form and location of these elements may be modified through the process of implementation, their function in enabling the overall vision must be addressed to maintain the functional integrity of the plan.

1. A Concept Plan shall be required to support applications for subdivision and redistricting, as defined in the Leduc County Municipal Development Plan. A Concept Plan is a non-statutory land use plan that provides greater detail of the proposed development and/or subdivision.
2. A Concept Plan providing technical reports and studies as determined through the policies of this plan and pre-consultation with the County;
3. Address the policies of this Local Area Structure Plan, the Municipal Development Plan, other County policies, and the Land Use Bylaw regulations;
4. Provide an Engineering Design Brief that complies with the County's master infrastructure plans;
5. Comply with the County's Municipal Standards;
6. Provide high quality architectural and site development through landscaping, lot, building design, and consideration for pedestrian circulation;
7. Developments adjacent to Township Road 510, the Nisku Spine Road and Range Road 243 shall endeavour to incorporate a high standard of aesthetic design and appearance.; and
8. All water, sewer and stormwater infrastructure shall be designed to conform to, and implement the recommendations of, approved applicable master plans for the plan area, adopted engineering standards and good engineering practices. All costs associated with the construction of water and sewer infrastructure on private sites are to be borne by the developer.
9. Applicants shall undertake a required pre-consultation with the County to confirm the requirements of a Concept Plan before undertaking said work.

12.1. Plan Review and Amendment

8. The County shall review this LASP every five (5) years to ensure the policies and the Future Land Use Concept remain relevant and complies with the Municipal Development Plan, County policies and the Municipal Government Act.
9. The County shall review the Land Use Bylaw after any LASP update to ensure that the Land Use Bylaw remains in compliance with, and effectively implements, the goals and policies of this LASP.