ATTACHMENT 6
Executive Summary

The City of Leduc has developed a proposed Area Structure Plan (ASP) for the East Telford Lake Area (Sections 30 and 31-49-24-W4M) within the corporate limits of the City of Leduc. This agricultural impact assessment is a desktop-based estimate of the impacts of the proposed ASP on current and future agricultural activities both within the ASP and within 1 km surrounding it based on a previously completed Agricultural Baseline Assessment. It also makes recommendations for the mitigation of these impacts.

The proposed ASP does not provide for the continuation of agriculture use within its boundaries. As a result, there will be a loss of approximately 981 acres of cultivation and 166 acres of pasture within the ASP as it is developed for non-agricultural purposes over time. Within 1 km of the proposed ASP, there is currently no agricultural land to the west within the City of Leduc. The City of Leduc and Leduc County have identified lands to the north for business and industrial development while preserving lands east of Saunders Lake for long-term agricultural use. Lands to the east of the proposed ASP are currently identified for open space and greenways. Lands to the south have been identified for future commercial/industrial development.

The following recommendations are intended to mitigate the agricultural impacts and minimize potential land use conflicts of the proposed East Telford Lake ASP.

1. Agricultural lands and agricultural operations compatible with surrounding land uses within the proposed ASP should continue until land development is initiated as designated in the approved East Telford Lake ASP.

2. The City of Leduc support Leduc County to retain lands east of Saunders Lake for long-term agricultural use.

3. The City of Leduc continue to support Leduc County in retaining a large contiguous area for agricultural purposes within the “South Central /East Agriculture Lands” south and east of the City as identified in the County’s 2016 Agricultural Strategy.

4. The City of Leduc support the development of a hub for transportation and agri-business in the East Telford Lake ASP as identified in the Aerotropolis Viability Study for the area identified as the Telford Lake Southern District. This would include an Agri-Food Processing Complex and a Cold Chain Logistics hub for warehousing and distribution of perishables.
Table of Contents

Executive Summary ................................................................................................................................. i
Introduction ............................................................................................................................................. 1
Agricultural Impacts within the Proposed ASP .................................................................................. 3
Agricultural Impacts within 1 km of the Proposed ASP ....................................................................... 4
Aerotropolis Viability Study ................................................................................................................... 5
Recommendations for the Mitigation of Agricultural Impacts ............................................................. 7
References ............................................................................................................................................... 7
Glossary .................................................................................................................................................. 8
Appendix 1 ............................................................................................................................................. 9

List of Figures

Figure 1. East Telford Lake Proposed Area Structure Planning Area ..................................................... 1
Figure 2. Future Land uses within the Proposed East Telford Lake ASP ............................................. 2
Figure 4. Inter-municipal Development Plan Policy Areas ................................................................... 5
Figure 5. Aerotropolis Viability Study ................................................................................................. 6
Introduction

The City of Leduc has developed a proposed Area Structure Plan (ASP) for the East Telford Lake Area within Sections 30 and 31-49-24-W4M. These lands are all within the corporate limits of the City of Leduc. Figure 1 provides an aerial overview of the current lands within the proposed ASP.

This agricultural impact assessment is a desktop-based estimate of the potential impacts of the proposed ASP on current and future agricultural activities both within the ASP and within 1 km surrounding it as required by the recently approved Edmonton Metropolitan Growth Plan (EMRCP). This assessment is based on a previously completed Agricultural Baseline Assessment (Appendix 1) and makes recommendations as to possible mitigation of these impacts. Figure 2 provides an overview of the future land uses within the proposed ASP.

Figure 1. East Telford Lake Proposed Area Structure Planning Area
Figure 2. Future Land uses within the Proposed East Telford Lake ASP
Agricultural Impacts within the Proposed ASP

The City of Leduc Municipal Development Plan (MDP) identifies policy areas for the East Telford Lake ASP planning area as Business Industrial, Commercial Development, Office, Business Park, and Open and Greenspace as seen in Figure 3. The general intent of these policy areas is to require that commercial, office, light industrial and Business Park uses are developed in the non-residential areas that are compatibility with adjacent residential neighbourhoods, parks, and natural areas, and to mitigate environmental and visual impacts on Telford Lake and the surrounding riparian areas.¹

Figure 4: Municipal Development Plan Policy Areas

Figure 3. City of Leduc Municipal Development Plan Policy Areas

¹ City of Leduc Municipal Development Plan 2012 (amended August 2017), p 48
The MDP also requires the preserving of agricultural land and protecting agricultural operations that are compatible with urban uses until the land is required for urban development. It also prohibits agricultural uses, such as intensive agriculture, which are incompatible with urban uses.²

The proposed ASP does not provide for the continuation of agriculture within it. As a result, there will be a loss to agriculture of approximately 981 acres of cultivation and 166 acres of pasture within the proposed ASP. These areas are composed largely of moderately fine textured well drained loam³ and clay loam Angus Ridge Eluviated Black Chernozemics with a Suitability Class of 3 (potentially moderately severe limitations that restrict the range of crops or require special conservation practices).

The estimated highest average annual gross revenue loss from cultivated crops (Canola) from agricultural land in the ASP is estimated at $564,075.⁴ Based on the City of Leduc’s municipal property assessments there will also be a loss of agricultural municipal land assessment of approximately $444,576.⁵ As the agricultural lands within the proposed ASP are operated by off site operators, the impacts of the ASP to direct machinery and equipment investment are anticipated to be zero.

**Agricultural Impacts within 1 km of the Proposed ASP**

The current Municipal and Inter-Municipal Development Plan (IDP) of the City of Leduc and Leduc County guides the current and proposed land uses within 1 km of the planning area as identified in Figure 3.

There is no agricultural land within 1 km to the west of the proposed ASP. These lands contain a mixture of industrial, commercial, residential developments and open/green spaces exist within the corporate boundaries of the City of Leduc.

To the north of the proposed ASP is a mixture of agricultural lands both under cultivation, forage production, and a few rural residences. These lands are currently identified for business industrial use to the west of Saunders Lake, while preserving a natural buffer to protect the lake, and retaining the lands east of the lake for long-term agricultural use.⁶

Most of the land to the east of the proposed ASP is currently used for primary agricultural production, with a few rural residents. The Leduc and District Regional Waste Management Facility is immediately east of the proposed ASP. These lands have been identified as future open space and Greenways.

Finally, to the south are a mixture of cultivated and forage lands with some rural residences. The community of Robinson is currently under development and contains mixed-use and traditional single

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² City of Leduc Municipal Development Plan 2012, (amended August 2017), p 39
³ Loam soils normally have the best soil texture for growing plants.
⁴ Appendix 1, page 17.
⁵ Appendix 1, page 17.
⁶ Appendix 1, page 21.
detached housing. The Leduc County Agricultural Strategy identifies areas further south of the proposed ASP as potentially providing a large contiguous area for a broad range of agriculture purposes including dairy operations.  

Figure 4. Inter-municipal Development Plan Policy Areas

**Aerotropolis Viability Study**

An Aerotropolis Viability Study (AVS) prepared for the City of Leduc and Leduc County provides a comprehensive plan and feasibility study for the development of an Aerotropolis. The AVS assessed the viability of various land-uses and economic industries centered on the Edmonton International Airport. The intent is to improve connections between air, ground, and rail, and create new business through economic diversification that relies upon transportation connectivity. The study proposes that the East Telford Lake ASP planning area (referred to as the Telford Lake Southern District) in Figure 4, be a hub for transportation and agri-business. This would include an Agri-Food Processing Complex providing

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7 Leduc County Agricultural Strategy Page 1
8 Leduc County Ag strategy page ii
9 An Aerotropolis is a metropolitan sub region where the layout, infrastructure, and economy are centered on an airport as a multimodal commercial core.
food processing, bottling, brewing, food science and research and development, and a Cold Chain Logistics hub for warehousing and distribution of perishables.\textsuperscript{10}

The annual property taxes generated by the Telford Lake Southern District once fully built out over the next 15 years, is estimated at $16,686,753\textsuperscript{11} with a corresponding increase in annual gross revenues from the businesses that locate within it. This is a dramatic increase from the current municipal assessment and gross revenues from the agricultural lands in the proposed ASP area.

\begin{center}
\textbf{Figure 5. Aerotropolis Viability Study}
\end{center}

\textsuperscript{10} Appendix 1, page 11.
\textsuperscript{11} Aerotropolis Viability Study – Final Report, page 122.
Recommendations for the Mitigation of Agricultural Impacts

The following recommendations are intended to mitigate the agricultural impacts and minimize potential land use conflicts of the proposed East Telford Lake ASP.

1. Agricultural lands and agricultural operations compatible with surrounding land uses within the proposed ASP should continue until land development is initiated as designated in the approved East Telford Lake ASP.

2. The City of Leduc support Leduc County to retain lands east of Saunders Lake for long-term agricultural use.

3. The City of Leduc continue to support Leduc County in retaining a large contiguous area for agricultural purposes within the “South Central / East Agriculture Lands” south and east of the City as identified in the County’s 2016 Agricultural Strategy.

4. The City of Leduc support the development of a hub for transportation and agri-business in the East Telford Lake ASP as identified in the Aerotropolis Viability Study for the area identified as the Telford Lake Southern District. This would include an Agri-Food Processing Complex and a Cold Chain Logistics hub for warehousing and distribution of perishables.

References


3. City of Leduc/Leduc County Inter-municipal Plan, available at https://www.leduc.ca/sites/default/files/City%20of%20Leduc%20-%20Leduc%20County%20Intermunicipal%20Development%20Plan%202011.pdf


5. Leduc County Municipal Development Plan, available at: https://www.leduc.ca/sites/default/files/City%20of%20Leduc%20-%20Leduc%20County%20Intermunicipal%20Development%20Plan%202011.pdf
Glossary

Area Structure Plan (ASP) is a statutory plan adopted by a municipality by bylaw to provide a framework for the subsequent subdivision and development of a defined area of land.

Canadian Land Inventory (CLI) classes soil on a scale from Class 1 to 7, with 1 representing soil with no significant limitations in use for crops and Class 7 representing soils with virtually no capability for agriculture. These classes account for constraints, or “limiting factors”, such as topography (slope), erosion, salinity, agro-climate (aridity and heat), and physical impediments (stoniness or drainage). Classes 1, 2 and 3 are commonly considered prime agricultural soils, while Classes 4-6 are lands that have capacity for perennial forages and are generally used for sustainable grazing of livestock.

Intermunicipal Development Plan (IDP) is a statutory plan adopted by two or more municipalities by bylaw that applies to lands of mutual interest to the participating municipalities, typically along their shared boundaries.

Land Suitability Rating System (LSRS) is Agriculture and Agri-Food Canada’s soil classification system used by the Government of Alberta to determine soil classification. The classification system addresses the suitability or capability of land for sustained agricultural production but does not assess the productivity of the land. Classifications are useful for identifying factors such as topography, climate or drainage that may limit agricultural production.

Metropolitan Region is an area consisting of a densely populated urban core and it’s less populated surrounding area, interconnected by industry, infrastructure, and housing.

Municipal Property Assessment is the process of assigning a dollar value to a property for taxation purposes. Farmland is assessed based on its productive value which is the ability of the land to produce income from the growing of crops and/or the raising of livestock. The productive value of farmland is determined using a process that sets a value for the best soils, and then adjusts for less-than optimum conditions such as stones, the presence of sloughs, or topography. Buildings associated with the agricultural operation are assessed at market value.

Municipal Development Plan (MDP) is a statutory plan adopted by a municipality by bylaw that addresses future land use and development within the municipality, and provides for transportation systems, municipal services, and facilities.
Appendix 1 Agricultural Baseline Assessment
Agricultural Baseline Assessment – East Telford Lake Area Structure Plan

Agricultural Baseline Assessment

Prepared for:
City of Leduc

Prepared by:
Stantec Consulting Ltd.

Project Number
1161106060

Updated April 9, 2018
Executive Summary

The City of Leduc is developing an Area Structure Plan (ASP) for the East Telford Lake Area. This Agricultural Baseline Assessment is a desktop-based description of the agricultural lands within the planning area, and a summary of the relevant municipal policies and plans related to the future use of these lands and lands within 1 km around it. It will be considered in both the development of land use options for the ASP, and once a preferred option is chosen, to estimate the potential impacts on agricultural and influence proposed mitigation measures to help address them.

The planning area consists of approximately 1,159 acres (not including the bed and shore of Telford Lake or other publicly owned wetlands) with approximately 981 acres under annual cultivation, 166 acres of unimproved pasture, 6 acres of rural residential development and 6 acres owned by the City of Leduc. An estimate of the current capital investment in agricultural lands in the planning area based on the City of Leduc’s municipal property assessments is $444,576.

Although the planning area has predominately been used for cultivated agricultural cropping since the 1940s, the future of these lands has been envisioned through existing municipal planning documents to provide land for future business, commercial, and industrial development and support the Aerotropolis concept as well as provide open/greenspace. Leduc County and the City of Leduc have an approved Intermunicipal Development Plan that also supports future business, commercial, industrial development, and open/greenspace within the proposed ASP.

There is currently a mix of land uses within 1 km of the planning area. Areas further south and south-east within Leduc County have been identified as having potential for providing a large contiguous area for continued agriculture production. Proposed development to the north and west is a mix of industrial, business, manufacturing, service commercial and office uses. To the east and north east there is a desire to protect the integrity of Saunders Lake and adjacent land for use as part of a recreational multi use trail network and the lands east of the lake for agriculture.
Table of Contents

Executive Summary .................................................................................................................................................. i
Acknowledgements ............................................................................................................................................... 3
Introduction ...................................................................................................................................................... 3
Planning and Policy Context Related to Agriculture ....................................................................................... 5
Agricultural Capability .................................................................................................................................... 12
Land Use, and Tenure Patterns ....................................................................................................................... 15
Overview of Capital Investment in Agriculture ................................................................................................. 17
Existing and Potential Constraints to Agriculture ............................................................................................ 19
Availability of Agricultural Services ................................................................................................................ 19
Surrounding Land Use ..................................................................................................................................... 19
References ....................................................................................................................................................... 23
Glossary ............................................................................................................................................................ 25

List of Tables

Table 1. Expected Soil Profile in the Planning Area .......................................................................................... 14
Table 2. General Land Use in the Planning Area ............................................................................................. 16
Table 3. Estimate of the Current Capital Investment in Agricultural Lands .................................................. 18

List of Figures

Figure 1 East Telford Lake Proposed Area Structure Plan Planning Area ..................................................... 4
Figure 2 Agricultural Designated Lands in the Capital Region ..................................................................... 6
Figure 3 Agricultural Land Suitability Ratings ............................................................................................. 7
Figure 4 Municipal Plan Policy Areas within the City of Leduc ................................................................. 8
Figure 5 Intermunicipal Development Plan Policy Areas ........................................................................... 9
Figure 6 Existing/Proposed Area Structure Plans ..................................................................................... 11
Figure 7 Aerotropolis Priority Areas .......................................................................................................... 12
Figure 8 Topography of the ASP Planning Area ........................................................................................... 13
Figure 9 Priority Agriculture Areas in Leduc County ............................................................................... 21
Figure 10 Proposed Northwest Saunders ASP .......................................................................................... 22
Acknowledgements

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Garett Broadbent - Director Agricultural Services Leduc County

Sylvain Losier – Manager, Regional Planning and Initiatives, City of Leduc

Jordan Evans - Manager of Long Range Planning, Leduc County

Harry Brook – Crop Specialist Agriculture Information Center

Introduction

The City of Leduc is developing an Area Structure Plan (ASP) for the East Telford Lake Area within Sections 30 and 31-49-24-W4M. These lands are all within the corporate limits of the City of Leduc and encompass several smaller land parcels. Figure 1 provides an overview of the planning area.

This agricultural baseline assessment is a desktop-based description of the agricultural lands within the planning area, and a summary of the relevant municipal policies and plans related to the future use of these lands and lands within 1 km around it. It will be considered in the development of land use options for the ASP in consideration of their potential impact on future agricultural use. Once a preferred option is chosen, this information will form part of a final Agricultural Impact Assessment that will estimate the potential impacts on future agricultural activities and recommend mitigation measures to help address them.
Figure 1 East Telford Lake Proposed Area Structure Plan Planning Area
Planning and Policy Context Related to Agriculture

Edmonton Metropolitan Growth Plan

On October 13, 2017 the Edmonton Metropolitan Region Growth Plan (EMRGP), formerly the Capital Region Growth Plan, was approved by the Government of Alberta as a 35-year blueprint for a coordinated and integrated municipal strategic planning and decision-making process in the Edmonton Metropolitan Region. The Plan covers the lands lying within the boundaries of 11 municipalities (Lamont County is no longer a member) including the City of Leduc and Leduc County as seen in Figure 2. It includes a land use plan that identifies the overall development pattern in the region including lands designated for long term agricultural use. Lands within the East Telford Lake ASP planning area are not designated for long term agricultural use in the EMRGP.

The EMRGP contains a guiding principle related to Agriculture:

“Ensure the wise management of prime agricultural resources.”

The plans objective related to this guiding principle is to:

“Identify and conserve an adequate supply of prime agricultural lands to provide a secure local food source for future generations.”

The stated policy related to this objective is:

“Prime agricultural lands shall be assessed to identify, conserve and maintain a supply of prime agricultural lands. The plan intends to pursue this through preparing a Regional Agriculture Master Plan (RAMP) and to develop a land evaluation and site assessment tool to identify and quantify a supply of prime agricultural lands. Until these initiatives are in place, the plan proposes the use of Agricultural Land Suitability Ratings to identify prime agricultural lands.”

The plan directs that in the designated metropolitan area, prime agricultural lands shall be conserved for agricultural purposes for as long as possible, recognizing that these lands will urbanize over time to accommodate growth. The proposed East Telford Lake ASP is within this metropolitan area.

The plan also requires an agricultural impact assessment when a new area structure plan proposes development in a greenfield area that contains prime agricultural land as identified in Schedule 11 of the plan. (Figure 3).
The City of Leduc Municipal Development Plan (MDP) is the primary planning document within the City of Leduc. It defines future land uses in the City by Policy Areas as identified in Figure 4, and provides direction for the provision of open space, transportation, and servicing infrastructure. All future land use plans, policies, guidelines, planning approvals, and developments must conform to the MDP.

The MDP policy areas for the East Telford Lake ASP planning area currently include: Business Industrial, Commercial Development, Office, Business Park, and Open and Greenspace. The general intent of these policy areas is to require that commercial, office, light industrial and business park uses are developed in the non-residential areas compatible with adjacent residential neighbourhoods, parks, and natural areas, and to mitigate environmental and visual impacts on Telford Lake and the surrounding riparian areas.12

12 City of Leduc Municipal Development Plan 2012 (amended August 2017), p 48
The MDP also requires the preserving of agricultural land and protecting agricultural operations that are compatible with urban uses until the land is required for urban development. It also prohibits agricultural uses, such as intensive agriculture, which are incompatible with urban uses.\(^{13}\)

\(^{13}\) City of Leduc Municipal Development Plan 2012, (amended August 2017), p 39
The City of Leduc/Leduc County Inter-Municipal Development Plan (IDP) addresses a range of issues and interests of common concern on lands under the separate jurisdictions of the City of Leduc and Leduc County. It includes a development pattern based on development opportunities and constraints, and existing policies and plans. The relevant policy areas to the ASP planning area are: Saunders/Telford Lake Business (Policy Area B), Business to Greenways Transition (Policy Area J), and Open Space and Greenways (Policy Area I) as identified in Figure 5.
The general purpose and intent of the Saunders/Telford Lake Business Policy Area B is to provide for high quality business, light industrial and office development with complimentary uses along the northeast side of the City of Leduc.\textsuperscript{14} The general purpose of the Business to Greenways Transition Policy Area J is to ensure that Saunders Lake, Telford Lake and their surrounding natural habitats are maintained in a healthy and natural state, to promote a development typology with a higher aesthetic appeal, and to ensure planned access points to greenways for low-impact recreational uses.\textsuperscript{15} The general purpose and intent of the Open Space and Greenways Policy Area is to establish a regional system of public open spaces, trails, and natural areas.\textsuperscript{16}

**Lakeside Industrial Park ASP**

The Lakeside Industrial ASP area (Figure 6) will be developed for primarily industrial uses with complementary commercial uses to take advantage of access to future major roadway extension forming the north boundary of the ASP. Natural open spaces are planned to protect the ecology of the Telford Lake area and to provide expanded passive recreation opportunities.

\textsuperscript{14}City of Leduc/Leduc County Intermunicipal Development Plan, p 54.  
\textsuperscript{15} City of Leduc/Leduc County Intermunicipal Development Plan, p 63.  
\textsuperscript{16} City of Leduc/Leduc County Intermunicipal Development Plan, p 62.
Telford Lake Master Plan

The Telford Lake Master Plan provides for the long-term development and management of Telford Lake and the lands surrounding it. The focus of the plan for the east end of Telford Lake is the protection of the shoreline and outlet channel, to extend the Telford Lake multi-use trail around Telford Lake, and provide opportunities to development a future trail that will link into a regional trail system including Saunders’s Lake.17

Aerotropolis Viability Study

The Aerotropolis Viability Study (AVS) was prepared for the City of Leduc and Leduc County in September 2015, and provides a comprehensive plan and feasibility study for the development of an Aerotropolis18. The AVS assesses the viability of various land-uses and economic industries centered around the Edmonton International Airport that would improve connections between air, ground, and rail, and create new business through economic diversification that rely upon transportation connectivity. The land uses directly relevant to the ASP planning area are indicated in Figure 7.

The Telford Lake Southern District which includes the ASP planning area depicted in blue in Figure 7 is proposed to be a hub for transportation and logistics, and agri-business19. This would include an Agri-Food Processing Complex providing food processing and manufacturing, greenhouses, bottling, brewing, food science and research and development, and a Cold Chain Logistics hub for warehousing and distribution of perishables.20

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17 Telford Lake Master Plan
18 An Aerotropolis is a metropolitan sub region where the layout, infrastructure, and economy are centered on an airport as a multimodal commercial core.
20 Aerotropolis Viability Study, page 89.
Figure 6 Existing/Proposed Area Structure Plans
Agricultural Capability

Based on a historical air photograph review, the planning area has been predominantly utilized for cultivated annual agricultural cropping since at least 1949. Areas not cultivated include several treed and wetland areas, the shoreline of Telford Lake and along the Telford Lake drainage that is the main outlet from Telford Lake.
Slope/Topography/Drainage Patterns

The planning area has a slightly undulating landscape with limited topographic relief with some lower lying wet areas. Elevations range from approximately 740 m above sea level (ASL) in the southwest corner of the ASP to approximately 720 m ASL in the northeast corner of the ASP. Generally, the planning area slopes to the east as seen in Figure 8.

Telford Lake is located along the Telford Lake drainage and drains eastward through a drainage channel into Saunders’s Lake approximately 2 km east of Telford Lake. There is a v-notched weir located on the main outlet of Telford Lake which maintains the lake at .5 m above normal level. The weir is held through a License of Occupation by Ducks Unlimited Canada and an associated Water Licence. There is an ongoing concern with beaver activity in the Telford Lake drainage which the City of Leduc manages on a regular basis to prevent the flooding of adjacent lands.
Groundwater

There are five documented groundwater wells located in the planning area. Based on the logs from these wells, the average static depth to groundwater is between 9.17 and 10.13 m with a tested flow rate of 63.65 l/min.\textsuperscript{21} In addition, 6 test holes were completed in 2016 to provide groundwater table levels for the proposed development of a cemetery in NE 30-49-24 W4M. These test holes determined that the average depth of the water table in this area ranged from 4.77 m to 2.06 m.\textsuperscript{22}

Soils

The Alberta Soil Information Center (ASID 2015) classifies soils within the area as being predominantly Black Solodized Solonetzsics with some Eluviated Black Chernozemics. The planning area is largely composed of moderately fine textured well drained loam\textsuperscript{23} and clay loam Angus Ridge Eluviated Black Chernozemics.\textsuperscript{24}

Black Chernozemic soils are fertile black soils typically formed under temperate grasslands that were historically found on the North American prairies. Eluviated Black Chernozemic soils have an eluviated soil horizon where soil material (clay) has moved down in the soil over time carried by water. The expected soil profile for Eluviated Black Chernozemic soils in the planning areas (ASIC 2015) is summarized in Table 1.

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<td>23-70</td>
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<td>BC\textsuperscript{28}</td>
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<td>C\textsuperscript{29}</td>
<td>100-120</td>
<td>Clay Loam (sand 43%, silt 27%, clay 30%)</td>
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</table>

\textbf{Table 1. Expected Soil Profile in the Planning Area}

The Land Suitability Rating System (LSRS) was used to interpret the agricultural production potential in the ASP planning area.\textsuperscript{30} The planning area consists of lands with a Suitability Class of 3, which indicates they have potentially moderately severe limitations that restrict the range of crops or require special conservation practices (ASIC 2015).

\textsuperscript{21} Alberta Environment and Parks, Alberta Water Well Information Database
\textsuperscript{22} Groundwater Table Investigations, J.R. Paine & Associates Ltd., 2016.
\textsuperscript{23} Loam soils normally have the best soil texture for growing plants.
\textsuperscript{24} Concluded through field observation and through discussions with Alberta Agriculture and Forestry and Leduc County Agriculture Services Staff. No on site soil evaluation work was undertaken.
\textsuperscript{25} Upper soil layer that is usually disturbed through agricultural cropping operations.
\textsuperscript{26} Upper soil layer, below the plow layer where clay has moved down in the soil profile due to downward water movement over time.
\textsuperscript{27} Subsoil layer with clay accumulation from the upper layer.
\textsuperscript{28} Subsoil transitional layer from subsurface mineral horizon to parent mineral horizon.
\textsuperscript{29} Parent Material is the underlying geological material in which soil horizons form.
\textsuperscript{30} Land Suitability range from Suitability Class 1 (i.e., areas that have no significant limitations in use for crops) to Suitability Class 7 (i.e., areas that have no capability for agriculture.
Climate

The planning area is located within the Aspen Parkland Ecoregion which is rated as having an Agroclimate of 2H (slight heat limitation). 2H is very favourable for crop growth and one of the highest Agroclimate ratings in Alberta. The planning area has a growing season of approximately 180-185 days and a frost-free period generally greater than 125 days. Longer spring-summer day length compensate to some degree for this shorter growing season.

The area receives approximately 450-500 mm of precipitation annually. Over 70% of this precipitation occurs during the growing season (May to September) and in most years, provides adequate moisture for growing dryland crops.

Land Use, and Tenure Patterns

Historic and current land uses were determined through interpretation of available historic aerial photography back to 1949, City of Leduc property assessment information, and road reconnaissance.

There was a small feedlot developed in the 1960’s that has not operated for many years and some limited livestock grazing particularly in the wooded areas has occurred in the past. There are no agricultural related irrigation improvements in the planning area.

Table 2 provides an overview of agricultural land within the planning area.

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31 Measured as the period during which average daily temperature exceeds 50C.
32 Alberta Agriculture and Rural Development, 2009
33 Pedocan Land Evaluation Ltd., 1993
34 (Alberta Agriculture and Rural Development, 2009)
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Table 2. General Land Use in the Planning Area

35 As determined through a review of municipal property assessment documents
36 This does not include the bed and shore of Telford Lake or wetlands owned by the province of Alberta under Section 3 of the Public Lands Act.
Spring Wheat and Canola rotations are generally seeded in the planning area with average yields of 40-60 bushels/acre for Canola and 60-75 bushels/acre for Wheat\(^37\). Some producers also include Barley, Peas, and forages in their rotations generally for crop disease management purposes. All cultivated lands have good agricultural machinery accessibility from the surrounding municipal road network.

The estimated average gross revenue from these cultivated crops is calculated using the following equation.

\[ \text{acreage under cultivation} \times \frac{\text{average yield/acre}}{\text{average market price}} \]

At the time of writing, Canola was selling for approximately $11.50/bushel\(^38\) and Canadian Western Spring Wheat was selling for approximately $7.03/bushel. With approximately 981 acres under cultivation and using an average yield of 50 bushels/acre of Canola and 70 bushels/aces for Wheat, the planning area would generate approximately $564,075 gross revenue if seeded to Canola and $482,750 if seeded to Wheat.

There does not appear to be any major conflicts between the agricultural and non-agricultural user in the planning area currently.

**Overview of Capital Investment in Agriculture**

Table 3 provides an estimate of the current capital investment in agricultural lands in the planning area based on the City of Leduc’s municipal property assessments. The current total municipal assessment for agricultural lands in the proposed ASP is $444,576. These assessments are not intended to be a land appraisal or opinion of value for a specific parcel of land. A comprehensive appraisal should be performed to determine the actual market value of a specific parcel of land.\(^39\)

\(^37\) Alberta & Forestry Agriculture Information Center
\(^38\) http://dashboard.albertacanola.com/
\(^39\) As an example, lands of similar zoning in proximity to the planning area are being offered for sale for $75,000/acre.
<table>
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Table 3. Estimate of the Current Capital Investment in Agricultural Lands

40 Only lands designated as agriculture lands by the municipality are included.
Average machinery and equipment investment in Alberta averages $267/acre or 1.5 X gross margins\textsuperscript{41}. As the agricultural lands in the planning area are managed by off site operators, presumably through a rental or lease arrangement, the direct machinery and equipment investment in the planning area are anticipated to be zero.

**Existing and Potential Constraints to Agriculture**

There are several small intermittent drainages, wetlands, and treed areas within the planning area in addition to Telford Lake and its main outlet channel. These can reduce the efficiency of agricultural equipment (especially large equipment) as they need to work around these areas resulting in covering the same areas multiple times. Weed infestations of Common Tansy and Canadian Thistle have been documented in the planning area, generally in the uncultivated areas.\textsuperscript{42}

The City of Leduc MDP also prohibits intensive agriculture uses which are considered incompatible with urban uses.\textsuperscript{43}

**Availability of Agricultural Services**

When Leduc was incorporated as a village in 1899, it was already the service centre for a large grain-growing district. When it became a town in 1906, it was the largest such centre on the Calgary & Edmonton Railway between Strathcona and Wetaskiwin. From these early days, the agricultural industry in the area has had access to a wide range of agricultural services. These services include grain storage, handling, transportation, and processing, agronomic and grain buying and marketing expertise, business management, crop inputs (chemical, fertilizers, seed, fuel, etc.), custom seeding and harvesting, hay and silage processing, manure management, livestock fencing, custom feeding and veterinarian care, equipment dealers, and building construction.

**Surrounding Land Use**

There are currently a mix of land uses within 1 km of the planning area. To the west is a mixture of industrial, commercial, residential developments and open/green spaces (e.g. William F. Lede Park) within the corporate boundaries of the City of Leduc. To the north is a mixture of agricultural lands both under cultivation and in forage production, and a few rural residences. Most of the land to the east is currently used for primary agricultural production, with a few rural residents. There are also treed and wetland areas associated with the Telford Lake Drainage. The Leduc and District Regional Waste Management Facility is in the N ½ of 29-49-24-W4M, immediately east across the road from the planning area. Finally, lands to the south are a mixture of cultivated and forage lands with some rural

\textsuperscript{41} Alberta & Forestry Agriculture Information Center
\textsuperscript{42} Telford Lake Management Plan
\textsuperscript{43} City of Leduc Municipal Development Plan 2012 | 39
residences and undeveloped lands. The community of Robinson in SW 19-49-24-W4M is currently under development and contains mixed-use and traditional single detached housing.

The Alberta Soil Information Center (ASID 2015) identifies soils surrounding the proposed ASP as being predominantly Black Solodized Solonetzics, Eluviated Black Chernozemics and some areas of Solonetzic soils. While Chernozemic soils are some of the best agricultural soils in Alberta, Solonetzic soils are generally harder when dry and swell to a sticky mass with low permeability when wet. This causes restrictive root and water penetration of the subsoil which cause crops to have an uneven growth pattern.

Figure 6 identifies the main municipal land use plan/policy areas pertaining to the lands surrounding the planning area. These plans/policies will direct future land use in these areas and are summarized below as they relate to agricultural use.

**City of Leduc/Leduc County Intermunicipal Development Plan 2010-2044**

As mentioned previously, the City of Leduc/Leduc County Intermunicipal Development Plan (IDP) includes a development pattern based on development opportunities and constraints, and existing policies and plans. The relevant policy areas to the ASP planning area are: Saunders/Telford Lake Business (Area B), Open Space and Greenways (Area I) and Business to Greenways Transition (Area J) as identified in Figure 5.

**Leduc County Agricultural Strategy**

The Leduc County Agricultural Strategy was approved by County Council in July 2016. It provides a general strategy for agriculture and land use planning in the County and is intended as one of the key drivers in shaping the new Municipal Development Plan that is currently under preparation. The strategy identified the areas further south of the planning area (South Central /East Agriculture Lands) as potentially providing a large contiguous area for a broad range of agriculture purposes including dairy operations that will not be adversely impacted by significant increases in population. These areas are identified in Figure 9.

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44 Leduc County Agricultural Strategy Page 1  
45 Leduc County Ag strategy page ii  
46 Leduc Ag Strategy page i
**Leduc County Municipal Development Plan**

The Leduc County Municipal Development Plan (MDP) sets out guidelines for orderly growth and development within the County. The MDP provides a comprehensive long-term land use policy framework and determines where growth is most feasible based on such factors as infrastructure, sustainable growth principles, and economic development opportunities. It also addresses such factors as the environment, the economy and tourism, social wellness and safety, recreation and culture, governance, and the administration, monitoring, and implementation of the MDP policies.

The MDPs Land Use Concept defers to the Saunders Lake ASP with respect to land uses adjacent to the planning area.\(^{47}\)

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\(^{47}\) County of Leduc MDP, p 29.
Northwest Saunders Lake Area Structure Plan

The Northwest Saunders Lake Area Structure Plan (Figure 10) was adopted by County Council in August 2017.

The ASP is intended to support business development and recreational use and habitat protection of areas adjacent to Saunders Lake. The type of development proposed is a mix of industrial, manufacturing, research, information technology, institutional, service commercial and office uses. A
transitional use designation between the business development to the west and the natural area/open space designation adjacent to Saunders Lake, is intended to protect the integrity of Saunders Lake and land adjacent to the lake through limitations on the types of industrial and employment uses permitted.

The development concept also designates land surrounding Saunders Lake as Natural Area/Open Space to ensure that Saunders Lake and its surrounding natural habitat are maintained in a healthy and natural state. The designation is intended to protect the lakeshore, control development in the flood plain, allow for appropriate public access to the lake, allow the development of lake related recreational facilities, and to conserve wildlife habitat and movement corridors. These lands are proposed to be part of a large recreational network for the area surrounding Saunders Lake consistent with Leduc County’s Parks and Open Space Concept Plan approved in 2008. It is anticipated that this trail will form part of a larger trail network, with other trail segments ultimately connecting to the east side of Saunders Lake, as well as to trails near Telford Lake.

The City of Leduc’s North Leduc Industrial Area Structure Plan (Figure 6) north west of the planning area designates most the area west of the Northwest Saunders Lake ASP lands as a mix of light and medium industrial uses. The Harvest Industrial Park Area Structure Plan (Figure 6) guides the development planning (including rezoning and subdivision) focusing on light and medium industrial development. The South East Leduc Area Structure Plan (Figure 6) focuses on single and multi-family residential development. The SE25-49-25-W4M ASP (Figure 6) supports single family and medium density residential and commercial development and provision of open space.

**References**


5. City of Leduc, Assessment Property Reports, 1996/97.
6. City of Leduc/Leduc County Intermunicipal Plan, available at
   https://www.leduc.ca/sites/default/files/City%20of%20Leduc%20-
   %20Leduc%20County%20Intermunicipal%20Development%20Plan%202011.pdf

   https://soil.agric.gov.ab.ca/agrasidviewer/

   available at http://groundwater.alberta.ca/WaterWells/d/

9. Government of Alberta, Municipal Affairs, Guide to Property Assessment and Taxation in Alberta,

10. J.R. Paine & Associated Ltd., Groundwater Table Investigation, Proposed Leduc Cemetery Site,


12. Leduc County Municipal Development Plan, available at:
    https://www.leduc.ca/sites/default/files/City%20of%20Leduc%20-
    %20Leduc%20County%20Intermunicipal%20Development%20Plan%202011.pdf

    at: https://www.leduc.ca/sites/default/files/Leduc%20Aerotropolis%20Final%20Report%20_WEB.pdf
Glossary

Agricultural Capability refers to the biophysical potential of land based on a combination of soil class, limiting factors such as topography or salinity, the availability of water, and climate (seasonal temperatures).

Alberta Soil Information Viewer is an online viewer that allows query on soils information in the Agricultural Region of Alberta Soil Inventory Database.

Area Structure Plan (ASP) is a statutory plan adopted by a municipality by bylaw to provide a framework for the subsequent subdivision and development of a defined area of land.

Canadian Land Inventory (CLI) classes soil on a scale from Class 1 to 7, with 1 representing soil with no significant limitations in use for crops and Class 7 representing soils with virtually no capability for agriculture. These classes account for constraints, or “limiting factors”, such as topography (slope), erosion, salinity, agro-climate (aridity and heat), and physical impediments (stoniness or drainage). Classes 1, 2 and 3 are commonly considered prime agricultural soils, while Classes 4-6 are lands that have capacity for perennial forages and are generally used for sustainable grazing of livestock.

Frost-Free Period is the average number of days between the last date of 0°C in the spring and the first date of 0°C in the fall. It provides a measure of the period during which plant growth should occur uninterrupted by frost.

Intermunicipal Development Plan (IDP) is a statutory plan adopted by two or more municipalities by bylaw that applies to lands of mutual interest to the participating municipalities, typically along their shared boundaries.

Land Suitability Rating System (LSRS) is Agriculture and Agri-Food Canada soil classification system used by the Government of Alberta to determine soil classification. The classification system addresses the suitability or capability of land for sustained agricultural production but does not assess the productivity of the land. Classifications are useful for identifying factors such as topography, climate or drainage that may limit agricultural production.

Metropolitan Region is an area consisting of a densely populated urban core and its less populated surrounding area, interconnected by industry, infrastructure, and housing.

Municipal Property Assessment is the process of assigning a dollar value to a property for taxation purposes. Farmland is assessed based on its productive value which is the ability of the land to produce income from the growing of crops and/or the raising of livestock. The productive value of farmland is determined using a process that sets a value for the best soils, and then adjusts for less-than optimum conditions such as stones, the presence of sloughs, or topography. Buildings associated with the agricultural operation are assessed at market value.
Municipal Development Plan (MDP) is a statutory plan adopted by a municipality by bylaw that addresses future land use and development within the municipality, and provides for transportation systems, municipal services, and facilities.

Open Spaces are passive and structured leisure and recreation areas that enhance the aesthetic quality and conserve the environment. They include parks, recreation and tourism attractions, and natural areas.

Soil is composed of a mixture of different amounts of sand (2 - 0.05 mm), silt (0.05 - 0.002 mm) and clay (<0.002 mm). The more sand in a soil the easier the soil drains but the less it retains moisture. The more silt and clay in the soil the more it retains moisture but is consequently less well drained. The best soils have a relatively even percentage of sand, silt and clay and are referred to as Loams.