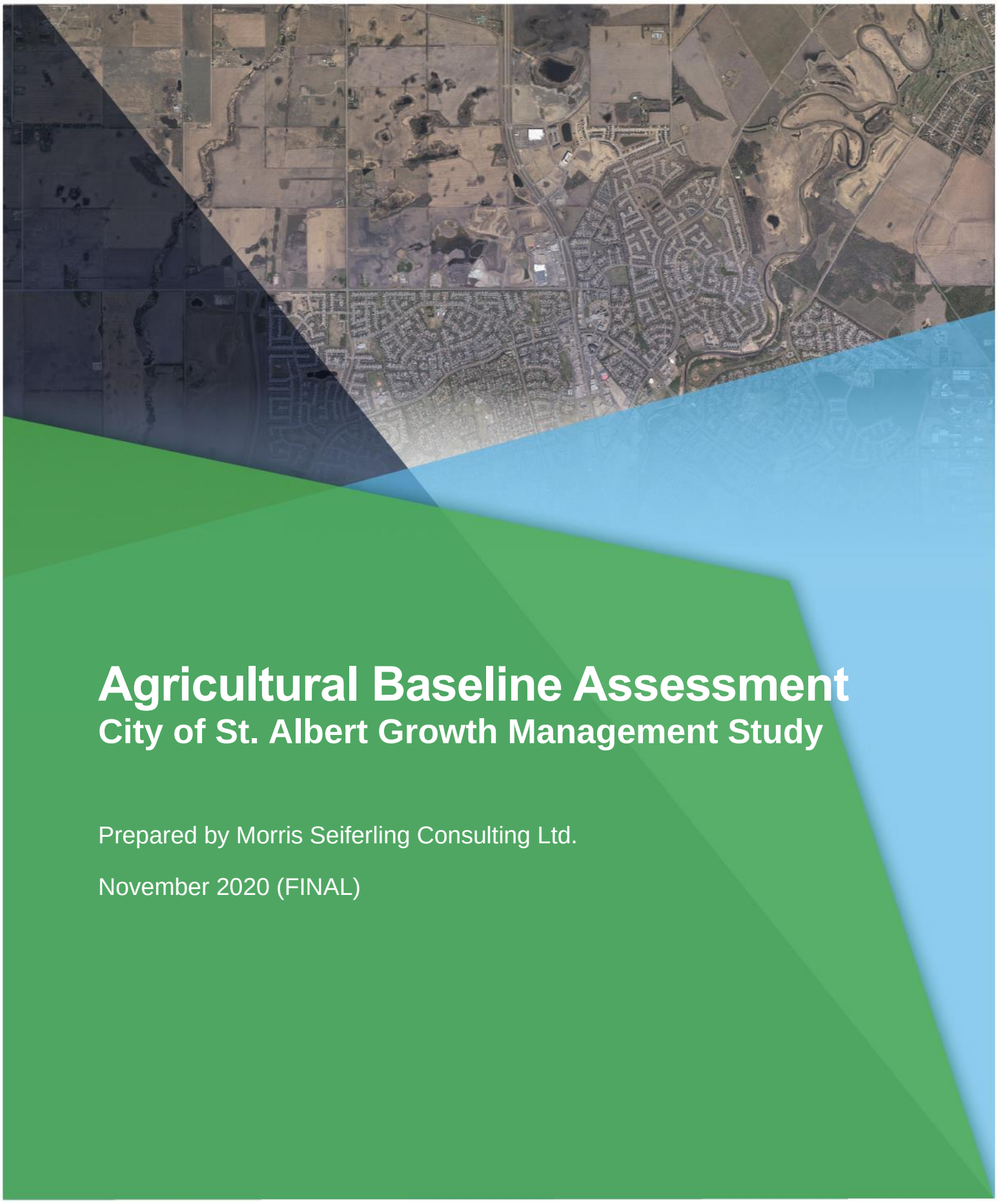
APPENDIX I
2020 Agricultural Baseline Assessment

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Agricultural Baseline Assessment
City of St. Albert Growth Management Study

Prepared by Morris Seiferling Consulting Ltd.

November 2020 (FINAL)

City of St. Albert Cultivate Life

Morris Seiferling Consulting Ltd.

ISL Engineering and Land Services

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1.0 Executive Summary

The City of St. Albert is undertaking a Growth Management Study on lands within Sturgeon County immediately north, west, and northeast of the City related to the potential annexation of lands within this area by the City of St. Albert.

As part of this initiative, a high level Agricultural Impact Assessment (AIA) is being undertaken to assess the potential impacts of the proposed annexation on current and future agricultural operations on lands in the Maximum Potential Annexation Area (MPAA) identified by the City of St. Albert and Sturgeon County. As these lands are within the Edmonton Metropolitan Region, this assessment will be based on the requirements for an AIA as set out in Appendix D of the Edmonton Metropolitan Region Growth Plan (EMRGP). As directed in Appendix D, Schedule 11: Agricultural Land Suitability Ratings will be used to identify prime agricultural lands in the MPAA.

The first phase in developing the AIA is to complete an Agricultural Baseline Assessment for the MPAA consistent with Appendix D of the EMRGP that will:

- provide an overview of the municipal planning and policy context affecting agriculture;
- summarize the existing agriculture land capability;
- provide an overview of the capital investment in agriculture;
- identify potential constraints to agricultural operations (e.g. confined feeding operations); and
- provide a summary of the surrounding land uses within 1 km from the boundary of the MPAA.

Although the overall MPAA is approximately 5,387 acres (2,180 hectares), based on the Sturgeon County municipal assessment there are approximately 3,551 acres (1,437 hectares) considered agricultural lands. Of these lands, 3,020 acres (1,222 hectares) are under annual cultivation and the remaining 526 acres (213 hectares) are used for pasture. Soils within the MPAA are predominantly moderately to finely textured Silty Clay Loam, Eluviated Black and Orthic Dark Gray Chernozems. Chernozemic soils are some of the most fertile agriculture soils in Alberta. There are also some areas of Black Solonetz and poorly drained Gleysolic soils, which are generally considered poorer soils for cultivated agriculture.

An estimate of the current capital investment in agricultural lands and buildings in the MPAA based on Sturgeon County's municipal property assessment is$3,413,360. The capital equipment, machinery, and infrastructure investment on the agricultural lands in the MPAA based on Alberta averages is estimated at $882,120 for an estimated overall investment of approximately $4,337,360.

The regional structure depicted on Schedule 2 of the EMRGP indicates the majority of lands within the MPAA are within the conceptually delineated Metropolitan Area policy tier. While some MPAA lands on the west side appear to be within the conceptually delineated Rural Area policy tier, an approximate equivalent amount of land north of the MPAA is within the

conceptually delineated Metropolitan Area. Table 1B of the EMRGP sets out the growth directions for the Metropolitan Area policy tier, some of which are generally to:[1]

- encourage intensification of built-up urban areas including brownfield sites to optimize existing and planned infrastructure;
- plan and develop greenfield areas[2] that are compact and contiguous, with a diverse and compatible mix of land uses including a range of housing and employment types; and
- promote the diversification and growth of the agriculture sector including agriculture in an urban context.

The EMRGP further directs in Regional Policy 6.1.3 that within this area, prime agriculture lands shall be conserved for agricultural purposes for as long as possible, recognizing that these lands will urbanize over time to accommodate growth.[3]

Table 1A of the EMRGP sets out the growth directions for the Rural Area policy tier, some of which are generally to:[4]

- encourage growth in existing towns, villages and in built-up urban areas and brownfield sites and plan and develop compact and contiguous greenfield areas to optimize servicing capacity and transportation connections;
- permit infill and build out of existing country residential areas in accordance with existing zoning and land use permissions, and in new areas subject to specific criteria; and
- promote the growth and diversification of the agriculture sector.

There is currently a mix of land use types within 1 km of the boundary of the MPAA. To the south and southeast is the City of St. Albert with its mix of residential, commercial, industrial, and recreational developments. Sturgeon County surrounds the MPAA to the north, east and west. The majority of these lands are used for agriculture purposes although there is a significant residential community (Sturgeon Valley) to the northeast, and a country residential subdivision to the southwest (Silver Chief). As within the MPAA, the majority of these agricultural lands are under annual cultivation, and areas not under cultivation are generally used for farm sites, pasture, country residential or are along drainage channels, in wetland and treed areas.

The University of Alberta's St. Albert Research Station and the ProNorth Industrial Park are located immediately north and adjacent to the MPAA.

[1] Edmonton Metropolitan Region Growth Plan (EMRGP), page 24.
[2] Greenfield area, in the EMRGP, refers to construction on previously undeveloped land outside of the built-up urban area or previously planned areas.
[3] EMRGP, page 24.
[4] Edmonton Metropolitan Region Growth Plan (EMRGP), page 24.

2.0 Acknowledgements

The writer would like to thank the following individuals who provided valuable information, local knowledge and expertise used in the development of this report.

- Arla Pirtle, Manager of Assessment Services – Sturgeon County
- Robin Beukens, Senior Planner (Annexation) – City of St. Albert
- Nathan Shirley, Approvals Officer – Natural Resources Conservation Board
- Angela Veenstra, Manager, Agriculture Services – Sturgeon County
- Ted Nibourg, Business Management Specialist – Alberta Agriculture and Forestry
- Grant Lastiwka, Livestock / Forage Business Specialist – Alberta Agriculture and Forestry
- Dr. Jayson Galbraith, Bison / Elk Specialist – Alberta Agriculture and Forestry

3.0 Introduction

On February 28, 2017, the City of St. Albert (City) and Sturgeon County (County) signed a Memorandum of Agreement to begin negotiations on an adjustment of their common boundary to facilitate the City's future urban growth and development within an expanded boundary.

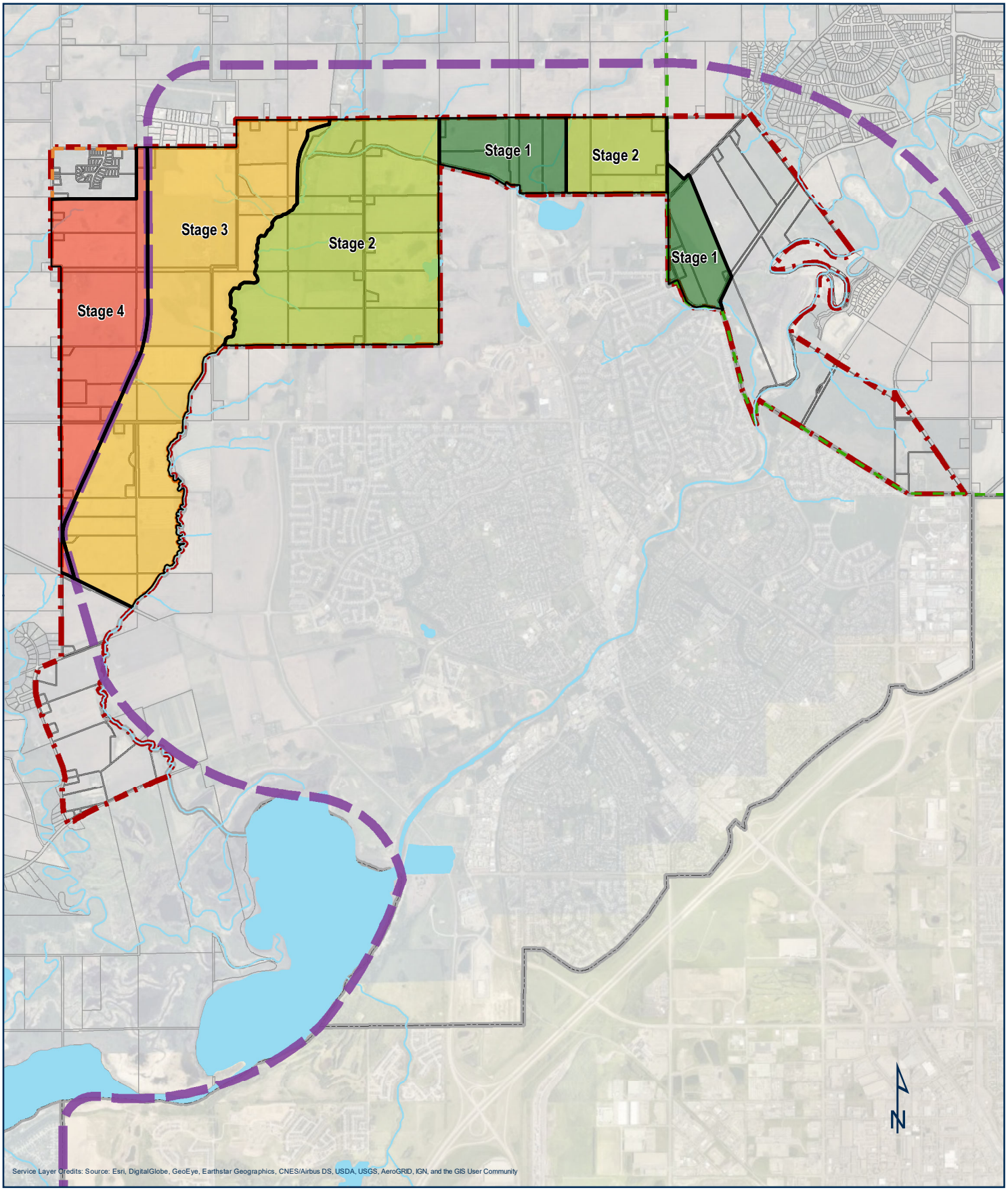
To support these negotiations, the City initiated a Growth Management Study (GMS) of a maximum potential annexation area (MPAA) totalling approximately 5,387 acres (2,180 hectares) of land within the County immediately north, west, and northeast of the City as shown in Map I.1. An Agricultural Impact Assessment (AIA) will be developed as a supporting study to the City of St. Albert GMS. It will inform the City's Growth Management Study and its subsequent annexation application to the Municipal Government Board.

The high-level AIA is being undertaken to assess the impacts of the proposed annexation on current and potential agricultural operations in the MPAA. As lands within the MPAA are within the Edmonton Metropolitan Region, the AIA will be based on the requirements set out in Appendix D of the Edmonton Metropolitan Region Growth Plan (EMRGP). As directed in Appendix D, Schedule 11: Agricultural Land Suitability Ratings will be used to identify prime agriculture lands in the MPAA.

The first phase in developing an AIA is to complete a high-level Agricultural Baseline Assessment (ABA) describing the current agriculture lands and their use within the MPAA. The ABA will be considered in selecting a recommended annexation area beyond the City's boundaries within the MPAA. Once a recommended expansion approach receives City Council approval, this ABA will be expanded upon to develop the AIA including an estimate of the potential impacts on agriculture in the recommended annexation expansion area and make recommendations for mitigation measures to help address them.

Within the MPAA, the ABA will:

- Provide an overview of the regional and municipal planning and policy context affecting agriculture;
- Summarize the existing agricultural land capability,
- Provide an overview of the capital investment in agriculture;
- Identify potential constraints to agricultural operations (e.g. confined feeding operations); and
- Provide a summary of the surrounding agricultural uses within 1 km from the boundary of the MPAA.



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0 0.2 0.4 0.8 1.2 1.6 km

- Agricultural Conversion Staging
- Metropolitan/Rural Area Boundary *
- Maximum Potential Annexation Area
- Sturgeon Valley Area Structure Plan (ASP)
- Northern Lights Estates ASP
- Municipal Boundary
- Parcel
- Watercourse
- Water Body

ST. ALBERT GROWTH MANAGEMENT STUDY: AGRICULTURAL BASELINE ASSESSMENT

MAP I.1:RECOMMENDED AGRICULTURAL CONVERSION STAGING

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4.0 Planning and Policy Context

4.1. Edmonton Metropolitan Region Growth Plan (EMRGP)

On October 13, 2017, the EMRGP, the successor to the Capital Region Growth Plan, was approved by the Government of Alberta. It is a 35-year blueprint for a coordinated and integrated municipal strategic planning and decision-making process in the Edmonton Metropolitan Region. The EMRGP applies to lands within the MPAA. The regional structure in the EMRGP depicts the majority of lands within the MPAA as within the conceptually delineated Metropolitan Area policy tier. While some MPAA lands along the west side appear to be within the conceptually delineated Rural Area policy tier as seen in Map I.1, an approximate equivalent amount of land north of the MPAA is within the conceptually delineated Metropolitan Area. Some of the growth directions set out by the EMRGP for the Metropolitan Area policy tier generally:[5]

- encourage intensification of built-up urban areas including brownfield sites to optimize existing and planned infrastructure;
- plan and develop greenfield areas that are compact and contiguous, with a diverse and compatible mix of land uses including a range of housing and employment types; and
- promote the diversification and growth of the agricultural sector including agriculture in an urban context.

The EMRGP further directs in Regional Policy 6.1.3 that:

> *"in the 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."*[6]

Some of the growth directions set out by the EMRGP for the Rural Area policy tier generally:[7]

- encourage growth in existing towns, villages and in built-up urban areas and brownfield sites and plan and develop compact and contiguous greenfield areas to optimize servicing capacity and transportation connections;
- permit infill and build out of existing country residential areas in accordance with existing zoning and land use permissions, and in new areas subject to specific criteria; and
- promote the growth and diversification of the agricultural sector.

The guiding principle within the EMRGP related to agriculture is to:

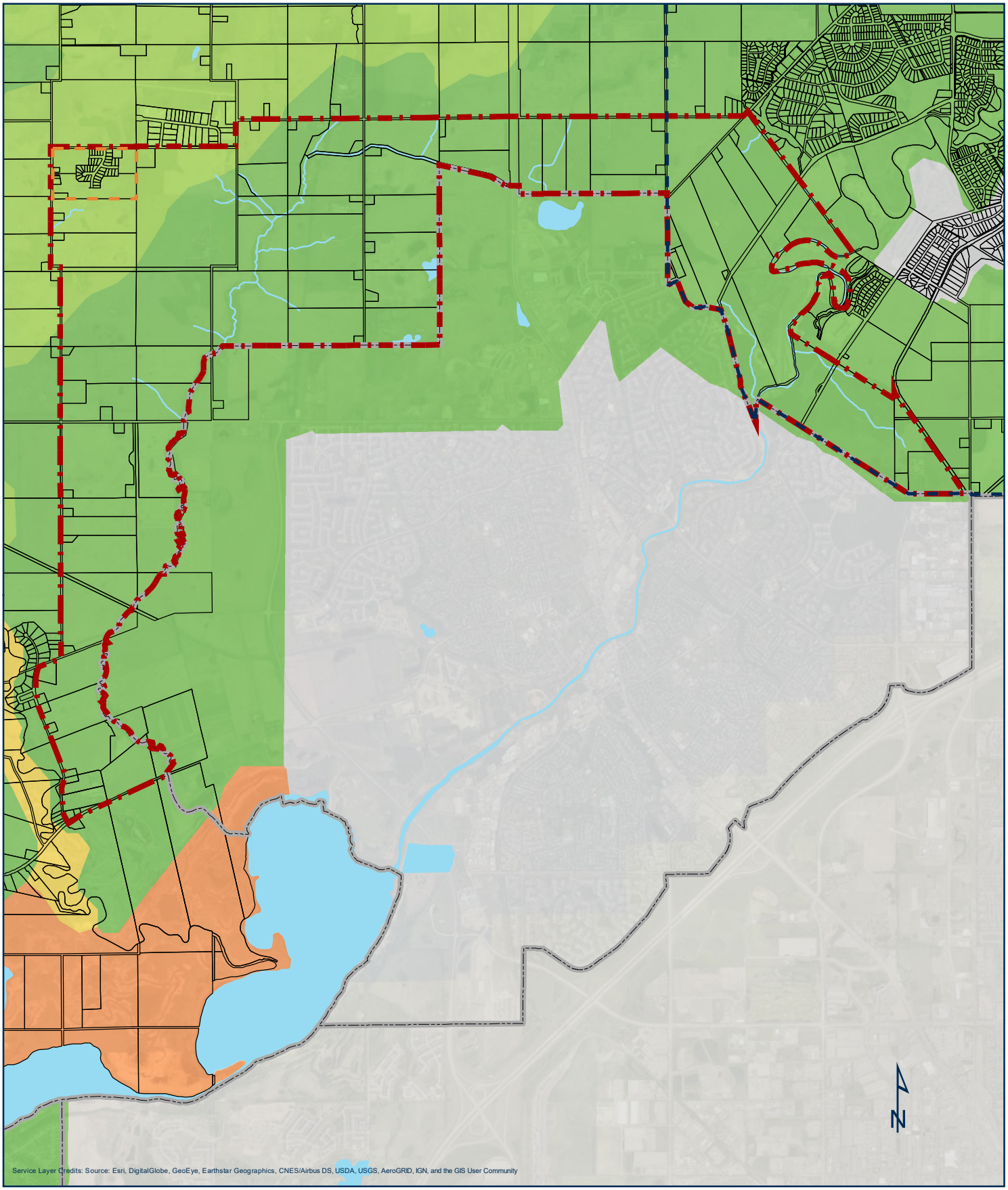
> *"Ensure the wise management of prime agricultural resources."*[8]

[5] EMRGP, page 24.
[6] EMRGP, page 78.
[7] EMRGP, page 23.
[8] EMRGP, page 76.

The EMRGP's objectives and policies supporting this guiding principle are to:

- Identify and conserve an adequate supply of prime agricultural lands to provide a secure local food source for future generations[9]
    - Prime agricultural lands shall be assessed to identify, conserve and maintain a supply of prime agricultural lands.[10]
    - In the metropolitan area, prime agricultural lands identified through the land evaluation and site assessment tool shall be conserved for agricultural purposes for as long as possible, recognizing that these lands will urbanize over time to accommodate growth.[11]
    - In the rural area, opportunities to redesignate prime agricultural lands for agricultural uses will be encouraged in areas defined by municipal zoning or designations for non-agricultural uses including, but not limited to, country residential areas or reclaimed resource extraction areas.[12]
- Minimize the fragmentation and conversion of prime agricultural lands for non-agricultural uses[13]
    - An agricultural impact assessment prepared by a qualified professional shall be required when a new area structure plan proposes development in a greenfield area that contains prime agricultural land as identified in Schedule 11[14] (as seen in Figure I.1 and presented at the MPAA level in Map I.2).
- Promote diversification and value-added agricultural production and plan infrastructure to support the agricultural sector and regional food system[15]
    - Value-added agriculture production and the diversification of the agricultural sector will be pursued by:
        - Advancing food production, processing and distribution, value-added opportunities related to agriculture products and services;
        - Supporting manufacturing, packaging, shipping and distribution to wholesalers, agri-tourism, farmers' markets and urban agriculture; and
        - Promoting diversification related to food production, processing and distribution.[16]

[9] EMRGP, page 78.
[10] EMRGP, page 78. Note that the EMRGP intends to pursue this through preparing a Regional Agriculture Master Plan and to develop a land evaluation and site assessment tool to identify and quantify a supply of prime agricultural lands. Until the tool is developed, Schedule 11 of the EMRGP will be used to identify prime agricultural lands. The development of this tool has since been initiated.
[11] EMRGP, page 78.
[12] EMRGP, page 78.
[13] EMRGP, page 79.
[14] EMRGP, page 79.
[15] EMRGP, page 81.
[16] EMRGP, page 81.



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Municipal Boundary
Maximum Potential Annexation Area
Sturgeon Valley ASP
Northern Lights Estates ASP

Soil Classification *

- ≥40% Class 2 Soil (Prime)
- ≥40% Class 3 Soil (Prime)
- ≥40% Class 4 Soil
- ≥40% Class 5 Soil
- ≥40% Class 6 Soil
- ≥40% Class 7 Soil
- ≥40% Unrated Soil

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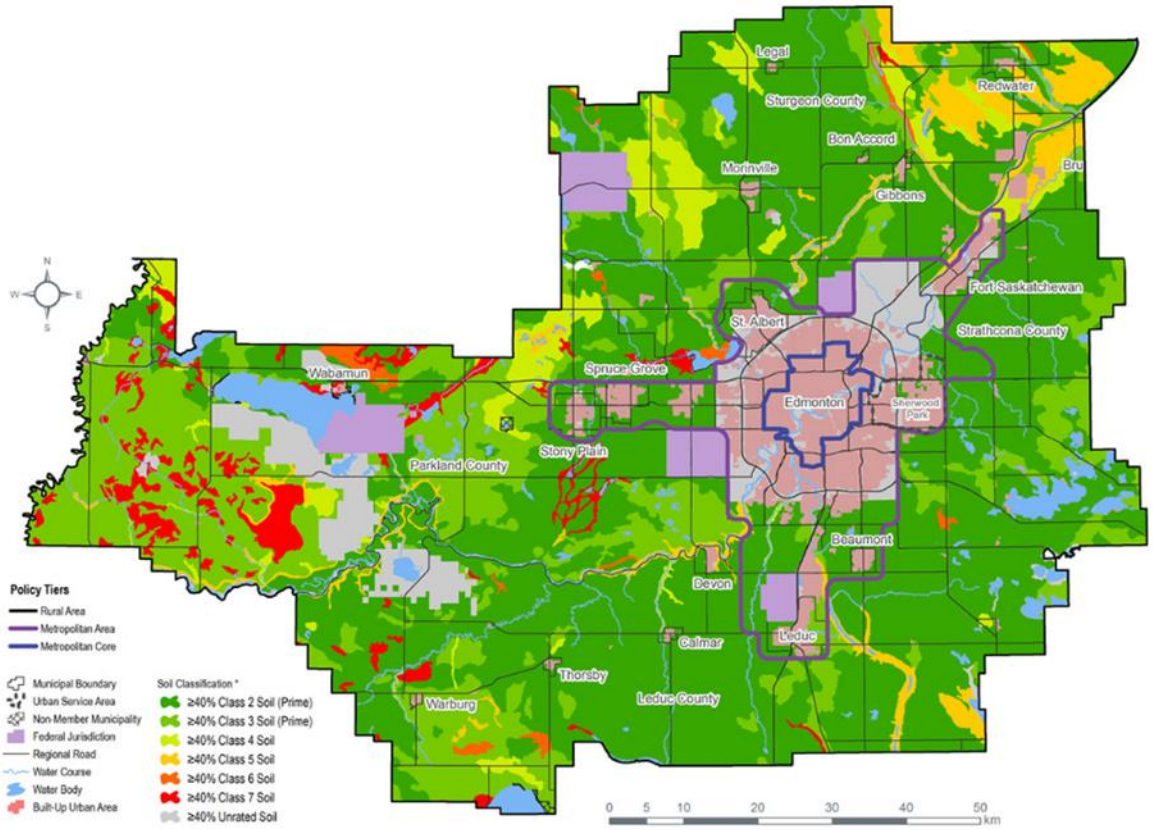
* Soil classifications from the 2016 EMRGP Schedule 11 based on the Land Suitability Rating System (LSRS) determined by Agriculture and Agri-Food Canada. Symbolization of soil classifications prepared for the EMRGP in consultation with a crop specialist at Alberta Agriculture and Forestry.

ST. ALBERT GROWTH MANAGEMENT STUDY: AGRICULTURAL BASELINE ASSESSMENT

MAP I.2:
AGRICULTURAL LAND SOIL CLASSIFICATIONS

- Supportive infrastructure for the agricultural sector to sustain the regional food system, attract new opportunities and maximize investment to grow and diversify the sector will be pursued through the following measures, including but not limited to:
  - Maintaining and improving transportation access and facilities; and
  - Providing drainage and irrigation infrastructure.[17]

Figure I.1: Agricultural Land Soil Classification in the Edmonton Metropolitan Region



4.2. City of St. Albert Municipal Development Plan (City Plan 2007)

The purpose of the 2007 Municipal Development Plan is to articulate the City's vision, goals, objectives, and policies to guide physical, social, and economic development to the year 2029.

The City Plan 2007 vision statement is:

"St. Albert is an inclusive, family-oriented community that values its natural, cultural, historical and recreational amenities. Our community secures the safety and well-being of its people through controlled growth, innovation and dynamic leadership."[18]

[17] EMRGP, page 81.
[18] City Plan 2007, page 1.

The goals, objectives, and policies established in City Plan 2007 with respect to agricultural land use are as follows.

Goal: Strengthen the protection of agricultural areas and minimize the potential for premature conversion to other land uses.[19]

Objectives[20]

- Avoid premature subdivision and conversion of agricultural land to other land uses
- Reduce leapfrog development, ensuring contiguous development from existing urban areas
- Reduce conflict between agriculture and other land uses
- Consider the impact of provincial and federal legislation on policies regarding agricultural uses

Policies[21]

- Provide for orderly, economic and beneficial development through the Area Structure Plan process to avoid premature subdivision of productive agricultural lands
- Develop policies to minimize premature subdivision, and leapfrog development that is not contiguous to existing development so that productive agricultural lands are not prematurely removed from production

4.3. Sturgeon County Strategic Plan 2018-2027

On September 11, 2018, Sturgeon County released its new 2018-2027 Strategic Plan that creates a 30-year vision for the County. It establishes priorities and provides the foundation for municipal long-term and short-term planning and provides the framework for how County Council establishes polices and when and why administration applies the policies into programs, services, and infrastructure. The strategy is the basis for the development of the County's three-year corporate business plan and one-year department business plans, to help ensure that all County actions work toward the achievement of the vision.

The Strategic Plan provides the following vision.

"Sturgeon County: a diverse, active community that pioneers opportunities and promotes initiative while embracing rural lifestyles."[22]

The Strategic Plan is built on six focus areas. The focus areas and associated outcomes, strategic directions, strategies, and indicators related to agriculture are summarized below in Table I.1.

[19] City Plan 2007, page 51.
[20] City Plan 2007, page 51.
[21] City Plan 2007, page 51.
[22] Sturgeon County Strategic Plan, page 7.

Table I.1: Sturgeon County Strategic Plan Focus Areas Related to Agriculture

Focus Areas[23]	Community Outcomes	Ten-Year Strategic Directions	Goals
Planned Growth and Prosperity	• We encourage varied and integrated enterprises that enhance our strong economic base, while balancing the needs of the community and natural environment.[24]	• Sturgeon County is a central hub for value-added industry.[25] • Sturgeon County has a thriving and diverse Agriculture industry, including value-added and agri-food.[26]	• Sturgeon County has a thriving business environment that supports a strong economic foundation by having … *a commitment to agriculture, with enabling supports to maintain and improve the County's position in the agriculture sector*.[27] • Sturgeon County plans for responsible growth through the Sturgeon County Municipal Development Plan and regional growth management plans by having … *a balance of commercial, agricultural, industrial, residential, and recreational land uses that attains long-term sustainability*.[28]
Maintain and Enhance Strong Communities	• We are committed to a safe and viable community, where our residents are provided with access to opportunities and quality of life.[29]	• Provide diversity of resources throughout the County to meet unique community needs.[30]	• Sturgeon County residents have access to programs and services that contribute to their well-being and quality of life by having … *plans in place which define the County's mandate, role and responsibilities for the delivery of agriculture extension, social services and community, municipal and recreation services.*[31]

[23] Sturgeon County Strategic Plan, page 15.
[24] Sturgeon County Strategic Plan, page 16.
[25] Sturgeon County Strategic Plan, page 16.
[26] Sturgeon County Strategic Plan, page 16.
[27] Sturgeon County Strategic Plan, page 17.
[28] Sturgeon County Strategic Plan, page 17.
[29] Sturgeon County Strategic Plan, page 18.
[30] Sturgeon County Strategic Plan, page 19.
[31] Sturgeon County Strategic Plan, page 19.

Focus Areas[23]	Community Outcomes	Ten-Year Strategic Directions	Goals
Environment Stewardship	We foster a healthy environment and minimize our impact on ecosystems.[32]	• The environment is sustained for current and future generations through responsible practices.[33] • Healthy co-existence of natural, industrial, agricultural, rural and urban environment.[34]	• Sturgeon County provides awareness of environmental issues impacting the County by having … *environmental education available on relevant topics impacting the County, including waste mitigation, agriculture impacts, air quality, water and wastewater management, and industrial uses.*[35]

4.4. Sturgeon County Municipal Development Plan

The 2014 Sturgeon County Municipal Development Plan (MDP) is the long-range (30-year) statutory planning document for the County. It highlights the County's needs, directs future growth, and envisions future spatial growth patterns. Developed in conjunction with the County's Strategic Plan, it incorporates the County's Integrated Regional Growth Strategy, sharing the same vision and reflecting principles and direction similar to the Strategic Plan as summarized below in Table I.2.

With respect to agriculture, the MDP:

- Describes the County's preferred direction with respect to land use, Residential and Non-Residential types, and future development zones;
- Guides policy creation and planning tools regarding land use; and
- Provides policy directives for future land use within the County, including policies respecting the protection of agricultural operations.

[32] Sturgeon County Strategic Plan, page 24.
[33] Sturgeon County Strategic Plan, page 24.
[34] Sturgeon County Strategic Plan, page 24.
[35] Sturgeon County Strategic Plan, page 24.

Table I.2: Sturgeon County MDP Guiding Principles and Actions Related to Agriculture

Vision			
A diverse, active community that pioneers opportunities and promotes initiative, while embracing rural lifestyles.[36]			
Guiding Principles	**Community Guiding Principle Statements Related to Agriculture**	**Guiding Principle Outcomes**	**Actions**
Responsible Governance	We promote consistent and accountable leadership through collaborative and transparent processes.[37]	Developing and Adopting Management Plans, Master Plans and Strategies[38]	• Should develop and implement an Agriculture Viability Strategy in close conjunction with the local agricultural community to strengthen and enhance agricultural viability across Sturgeon County. The Strategy is to recognize the importance of agriculture as a food source, an environmental resource, a heritage asset and as a significant contributor to the local economy.[39]
		Enacting Responsible Subdivision and Development Practices[40]	• Shall support "right-to-farm legislation" by applying the requirements outlined within the Province of Alberta's Agriculture Operations Practices Act (AOPA). When referred to by the Natural Resources Conservation Board (NRCB), Sturgeon County will apply the objectives of the Integrated Regional Growth Strategy (IRGS) in the referred evaluation (i.e., new or expanding Confined Feeding Operations).[41]

[36] Sturgeon County Municipal Development Plan (MDP), page 22.
[37] Sturgeon County MDP, page 28.
[38] Sturgeon County MDP, page 30.
[39] Sturgeon County MDP, page 30.
[40] Sturgeon County MDP, page 31.
[41] Sturgeon County MDP, page 31.

Guiding Principles	Community Guiding Principle Statements Related to Agriculture	Guiding Principle Outcomes	Actions
Residential Character	We are committed to creating a safe, secure community, where our residents are respected and provided with access to opportunities.[42]	Accommodating Diverse Housing Options[43]	• Shall apply 64 hectares/160 acres as the basic agricultural land unit, and unless otherwise indicated within a Planning Document, the maximum agricultural density is four (4) parcels for every 64 hectares/160 acres.[44] • Shall ensure that the maximum allowable agricultural subdivision layout for a 64 hectares/160 acre land unit contains two (2) Agricultural Parcels and two (2) Acreage Lots, as further defined within the Land Use Bylaw (LUB). Where a proposed development exceeds the above subdivision density, the applicant must submit an application for a plan amendment and redistricting for consideration by Council.[45] • Shall ensure that Acreage Lots minimize the total amount of land being taken out of agricultural production. The maximum lot density for an Acreage Lot shall be one (1) unit per 32 hectares, with a lot size subject to provisions under the LUB.[46] • May vary the size of an Acreage Lot and an Agricultural Parcel due to a Land Fragmentation or to accommodate an existing farmstead; however, compliance must be adhered to regarding the maximum agriculture density standard.[47] • Should ensure that parcels created from Land Fragmentation count towards the overall parcel density allowed on a 64 hectare/160 acre parcel.[48]

[42] Sturgeon County MDP, page 32.
[43] Sturgeon County MDP, page 32.
[44] Sturgeon County MDP, page 35.
[45] Sturgeon County MDP, page 35.
[46] Sturgeon County MDP, page 35.
[47] Sturgeon County MDP, page 35.
[48] Sturgeon County MDP, page 35.

Guiding Principles	Community Guiding Principle Statements Related to Agriculture	Guiding Principle Outcomes	Actions
Environmental Stewardship	We acknowledge the importance of a healthy environment and will minimize and monitor our impact on ecosystems.[49]	Ensuring Effective Environmental Risk Management[50]	• Shall endeavour to protect high quality soils (as identified by the Canadian Land Inventory: Land Capability for Agriculture), by directing non-Primary Industry to areas identified for densification as per the Integrated Regional Growth Strategy (IRGS).[51] • Shall encourage the application of the Province of Alberta's Agricultural Beneficial Management Practices, which encourage environmental stewardship by crop producers, while still considering overall practicality and implications for producers.[52]
Economic Health	We encourage varied and integrated enterprises that enhance our strong economic base, while balancing the needs of the community and natural environment.[53]	Promoting an Integrated Economy[54]	• Shall promote the growth and expansion of value-added agriculture, manufacturing, advanced energy, transportation and logistics, where the associated development is strategically located and supportive of the Integrated Regional Growth Strategy (IRGS).[55]

[49] Sturgeon County MDP, page 40.
[50] Sturgeon County MDP, page 43.
[51] Sturgeon County MDP, page 43.
[52] Sturgeon County MDP, page 43.
[53] Sturgeon County MDP, page 44.
[54] Sturgeon County MDP, page 45.
[55] Sturgeon County MDP, page 45.

Guiding Principles	Community Guiding Principle Statements Related to Agriculture	Guiding Principle Outcomes	Actions
		Administrating Responsible Primary Industry Subdivision and Development Practices[56]	• Shall encourage the layout of proposed agricultural subdivisions to maintain large contiguous tracts of land as a way to reduce land-use conflicts and support the long-term viability of the agricultural industry.[57] • May explore opportunities for small parcel lands to increase agricultural productivity.[58] • Should develop an agri- and eco-tourism off-site levy bylaw for required municipal roadway improvements required to ensure safe and adequate infrastructure services for agri-tourism and eco-tourism operators.[59] • Should work with food producers to expand local food production access and to contribute to the Capital Region local food-system network.[60]

[56] Sturgeon County MDP, page 46.
[57] Sturgeon County MDP, page 46.
[58] Sturgeon County MDP, page 46.
[59] Sturgeon County MDP, page 46.
[60] Sturgeon County MDP, page 46.

The implementation framework within the MDP is based on Neighbourhood Development Strategies, which focus on local considerations that are unique to each of the ten defined spatial areas within the County. These Neighbourhood Development Strategies provide tangible context and general direction to the Land Use Bylaw and current development proposals. Neighbourhood G and its associated strategies overlays the MPAA as summarized below in Table I.3.

Table I.3: Neighbourhood G and Associated Strategies

Distinctive Role of Neighbourhood G
To support the regional vision of growth where positive intermunicipal dialogue is facilitated and sustainable communities are the result.[61]
Sturgeon County will support the distinctive Neighbourhood Role through the following Outcomes:[62] • Providing a transition from more intensive urban-built forms to lower density rural and Primary Industry land-uses. • Facilitating Sturgeon County's emerging Non-Residential sectors, while leveraging diversification and opportunities with the University of Alberta, CFB Edmonton and agricultural producers.
Sturgeon County will support the long-term outcome of the Neighbourhood by:[63] • Liaising with the community to minimize land-use conflicts by discouraging the creation or expansion of Confined Feeding Operations in the Neighbourhood. • Encouraging new development to achieve a high degree of sustainability with respect to the environment, transportation, food production and land use.

4.5. Sturgeon County Land Use Bylaw

Land use and development within the County is regulated under the provisions of the County's Land Use Bylaw (LUB). The LUB defines agricultural use as the growing, raising, managing and/or sale of livestock, crops, food, horticulture, and agri-food related value-added enterprises including education, motivated either by profit or lifestyle.

The LUB divides the County into districts, and within each district, prescribes the uses that are permitted and discretionary, the purposes for which land and buildings may be used, and establishes the number of dwelling units permitted on a parcel of land. The LUB identifies the predominant land use district in the study area as AG – Agriculture District.[64] The general purpose of this district is to accommodate "traditional agricultural operations and the supportive services that are essential to grow and sustain the agricultural industry."[65] Generally within the

[61] Sturgeon County MDP, page 108.
[62] Sturgeon County MDP, page 108.
[63] Sturgeon County MDP, page 112.
[64] Sturgeon County Land Use Bylaw (LUB), Map 2 and Map 5 and page 85.
[65] Sturgeon County LUB, page 85. The Sturgeon County LUB should be referenced for more specific details.

district the LUB indicates that a quarter section shall normally contain a maximum combined density of four parcels comprised of a combination of agricultural and agricultural residential parcels.[66] This district distinguishes between major, minor and residential where:

- AG-Major are tracts of land 39.5 acres (16 hectares) or larger in size;
- AG-Minor are parcels between 9.8 acres (4 hectares) and 39.3 acres (15.9 hectares); and
- AG-Residential are parcels smaller than 9.8 acres (4 hectares).[67]

The permitted and discretionary uses within the Agriculture District are indicated in Table I.4.

Table I.4: Permitted and Discretionary Uses within the Agriculture District

Permitted Uses	Discretionary Uses
Accessory, building	Accessory, building
Accessory, use	Accessory, use
Bed and breakfast	Agricultural support service
Dugout	Auctioneering establishment[68]
Dwelling, single detached	Cannabis production and distribution, micro
Family day home	Community garden
Farm help accommodation	Equestrian facility[69]
Group home, minor	Garage suite
Home-based business, level 1 (office)	Garden suite
Home-based business, level 2	Group home, major
Intensive agriculture	Guest ranch
Secondary Suite	Home-based business, level 3
	Kennel and animal boarding
	Landscaping contractor service[70]
	Secondary dwelling
	Temporary asphalt plant[71]

[66] Sturgeon County LUB, page 85.
[67] Sturgeon County LUB, page 85.
[68] Only allowed on Ag-Major parcels.
[69] Only allowed on Ag-Major and Ag-Minor parcels.
[70] Only allowed on Ag-Major and Ag-Minor parcels.
[71] Only allowed on Ag-Major parcels.

Permitted Uses	Discretionary Uses
	Temporary concrete batch plant[72]
	Topsoil screening
	Veterinary clinic

An accessory agricultural building or use is not permitted on a parcel without a principal agricultural building or use being previously developed on the parcel and cannot be used as a dwelling unless approved as a secondary dwelling by the County and must comply with the prescribed setbacks for an accessory building. A secondary dwelling shall not be considered on AG parcels smaller than 80 acres (32.4 hectares) in area. A secondary dwelling may be permitted on a parcel that qualifies for subdivision and where it meets the intent of parcel density in the Municipal Development Plan.

4.6. Sturgeon Valley Area Structure Plan and Special Study Area

The Sturgeon Valley Area Structure Plan (SVASP) overlaps the MPAA as identified in Map I.1. The original SVASP set forth in general terms a proposed development pattern of land use until 2020 for over 5,060 acres (2,048 hectares) of land within Sturgeon Valley in Sturgeon County, lying northeast of the corporate boundaries of the City of St. Albert as seen in Figure I.2. The overlap between the SVSSA and the MPAA is in Area A as shown on Figure I.3. Area A is further broken down into A1 and A2 with A2 considered largely undevelopable as the majority of the lands are within the flood plain or consist of provincially significant park lands.[73]

Sturgeon County has been working toward updating the original SVASP in the context of the new EMRGP in collaboration with the cities of St. Albert and Edmonton through the EMRGP-mandated special study area planning process. As a result, on March 14, 2019, the EMRGP was amended by the Alberta Government to include Appendix G – Negotiated Policies for the Sturgeon Valley Special Study Area.[74] As detailed in the EMRB SVSSA policies, these policies take precedence over the EMRB Growth Plan policy tiers.[75] At such time as the SVASP update under development is approved, it will replace the original SVASP, and align with the EMRB's SVSSA policies and policy areas.

[72] Only allowed on Ag-Major parcels.
[73] Sturgeon Valley Special Study Area, page 8.
[74] By Ministerial Order MSL:017-19
[75] Amended EMRGP Appendix G, page 125.

The guiding principle for the SVASP is:

"Sturgeon County, in collaboration with the City of St. Albert and the City of Edmonton, will plan for the completion of the Sturgeon Valley in a contiguous, compact manner with transitions which are sensitive to existing established communities, surrounding agricultural area and metropolitan boundaries."[76]

Figure I.2: Sturgeon Valley Area Structure Plan Development Concept



The existing relevant SVSSA policies related to agriculture and pertain to that portion of the SVASP that overlaps the MPAA are as follows:[77]

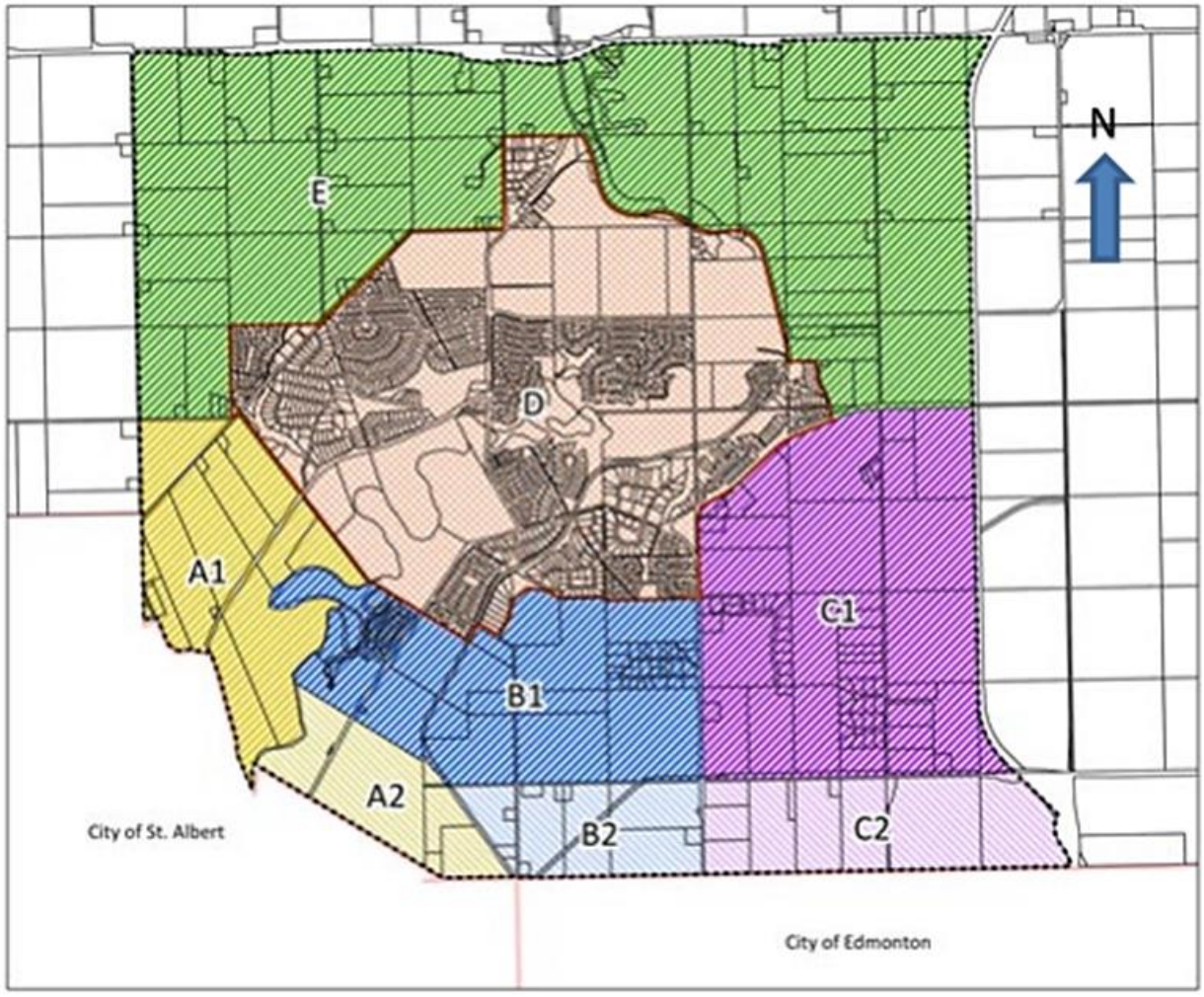
- Sturgeon County will:
    - Direct land uses not related to agriculture away from these areas of predominately better agricultural land as defined in the Municipal Development Plan,
- Acknowledge the right-to-farm and allow existing operations to continue to operate and expand if necessary, and
- Allow existing intensive livestock operations to continue to operate and if need be expand while enforcing the MDS from intensive livestock operations and other mitigative measures to reduce runoff and potential for conflict between agricultural and non-agricultural uses. No new or expansion of existing intensive livestock operations will be permitted.

[76] Amended EMRGP Appendix G, page 124.
[77] Sturgeon Valley Area Structure Plan, page 43.

Sturgeon County has been working toward updating the original SVASP in the context of the new EMRGP and approved SVSSA policies and policy areas in collaboration with the cities of St. Albert and Edmonton through the EMRGP-mandated special study area planning process.

Although the original SVASP contains a number of policies related to agriculture, the approved EMRB SVSSA policies and policy areas now apply to the SVASP area. The SVSSA policies do not include provisions related to agriculture on lands within the overlapping MPAA.

Figure I.3: Sturgeon Valley Special Study Area



4.7. Northern Lights Estates Area Structure Plan

The Northern Lights Estates Area Structure Plan (ASP) is nestled inside the northwest corner of the MPAA as identified in Map I.1. Within a plan area of 115.2 acres (46.6 hectares), it designates the subject lands for predominantly residential use (133 single detached lots), a commercial site, and supporting open space. No provisions are included in the ASP for the continuation of agricultural uses within the plan area.

5.0 Agricultural Capability

Based on a historical air photograph review, the MPAA has been predominantly utilized for cultivated annual agricultural cropping since the late 1940s. Areas not under cultivation are generally used for farm sites, pasture, country residential or are along drainage channels, in wetland and treed areas.

Slope/Topography/Drainage Patterns
The MPAA is within the North Saskatchewan Watershed, and the Sturgeon River Watershed Sub-basin as surface runoff drains into the Sturgeon River and eventually into the North Saskatchewan River. The lands are generally flat to gently undulating with a general slope of 2%, with some higher hills, some lower wetland areas, and some steeper banks along sections of the Sturgeon River. The average land elevation is 680 m above mean sea level with some hills reaching 690 m, and some areas of riverbed and wetlands as low as 660 meters as seen in Map I.3.

Groundwater
The Edmonton-Calgary Corridor Groundwater Atlas indicates that the depth to groundwater in the MPAA is between 516 and 650 m above sea level.[78] Given that the average surface land elevation is approximately 680 m above mean sea level, it is estimated that the average depth to groundwater is between 30 and 164 m. It should be noted that the average water table depth may vary depending on exact location and may fluctuate on a seasonal or yearly basis depending on precipitation in groundwater recharge areas, and groundwater usage.

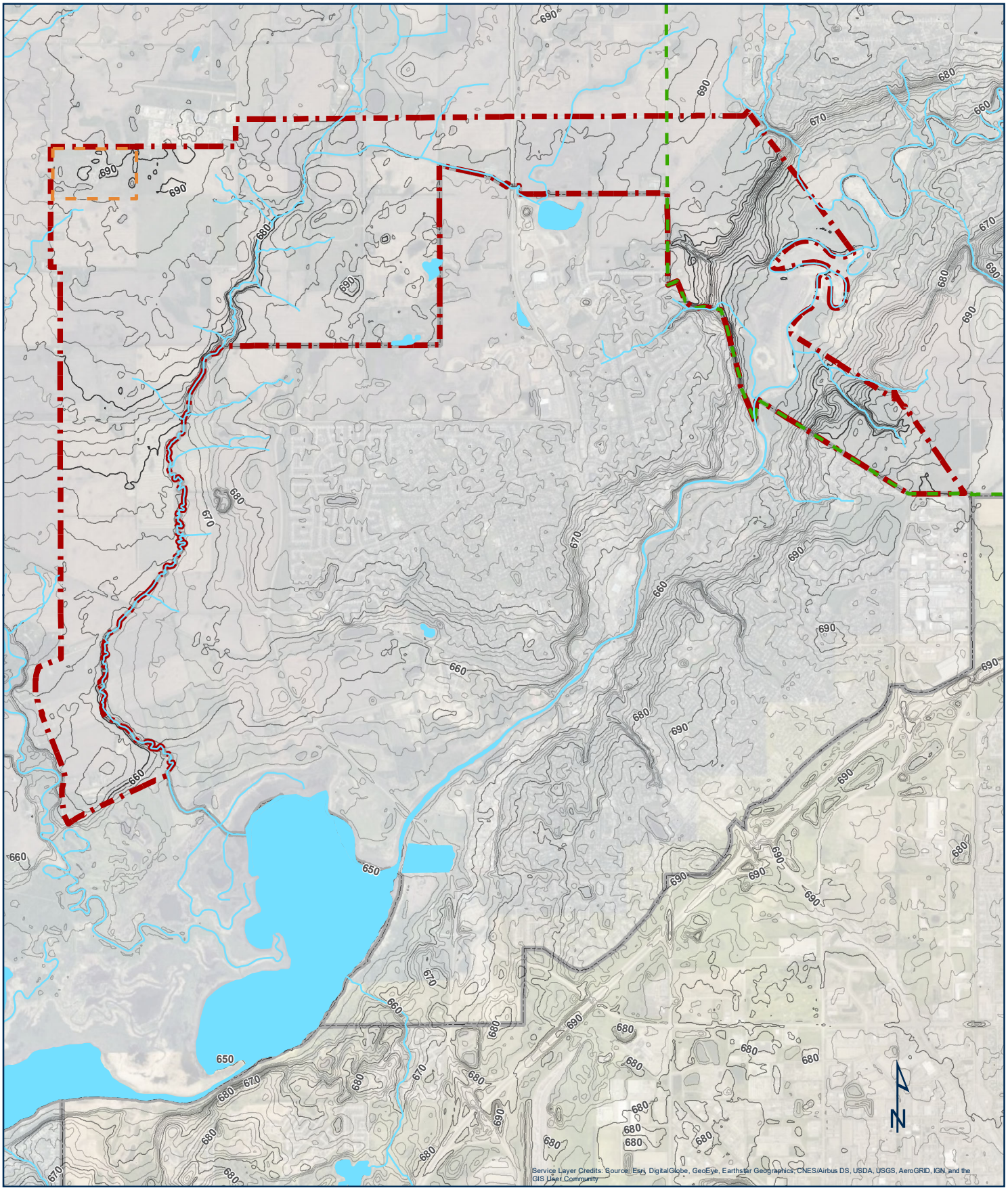
Soils
The Alberta Soil Information Centre classifies soils within the MPAA as being predominantly fine textured silty clay loam Eluviated Black Chernozems on upper and middle slopes. There are also some areas of Orthic Dark Gray Chernozems and Solonetz soils on lower slopes with Gleyed soils found in poorly drained areas. Chernozems are very fertile soils and can produce high agricultural yields due to their high organic component and moisture storage capacity. Chernozems show evidence of weathering in the upper part of the soil profile where precipitation over the years has moved clay further down in the soil where it has accumulated.

Although some Gleysolic soils can be used for native pasture and hay production, their use is highly dependent on the degree to which they dry out sufficiently in a given year to allow grazing or access by hay harvesting equipment. Solonetzic soils have a higher sodium level which may restrict plant growth by creating an inhospitable layer for root development.

The general distribution of the major soils in the study area is seen in Map I.4.

The expected profile of soils in the MPAA is summarized in Table I.5. More information on the general attributes of each soil horizon can be found in the glossary.

[78] Edmonton-Calgary Corridor Groundwater Atlas, page 50.



City of St. Albert Cultivate Life

- Municipal Boundary
- Maximum Potential Annexation Area
- Sturgeon Valley ASP
- Northern Lights Estates ASP
- Watercourse
- Water Body
- 10 m Contour
- 2 m Contour

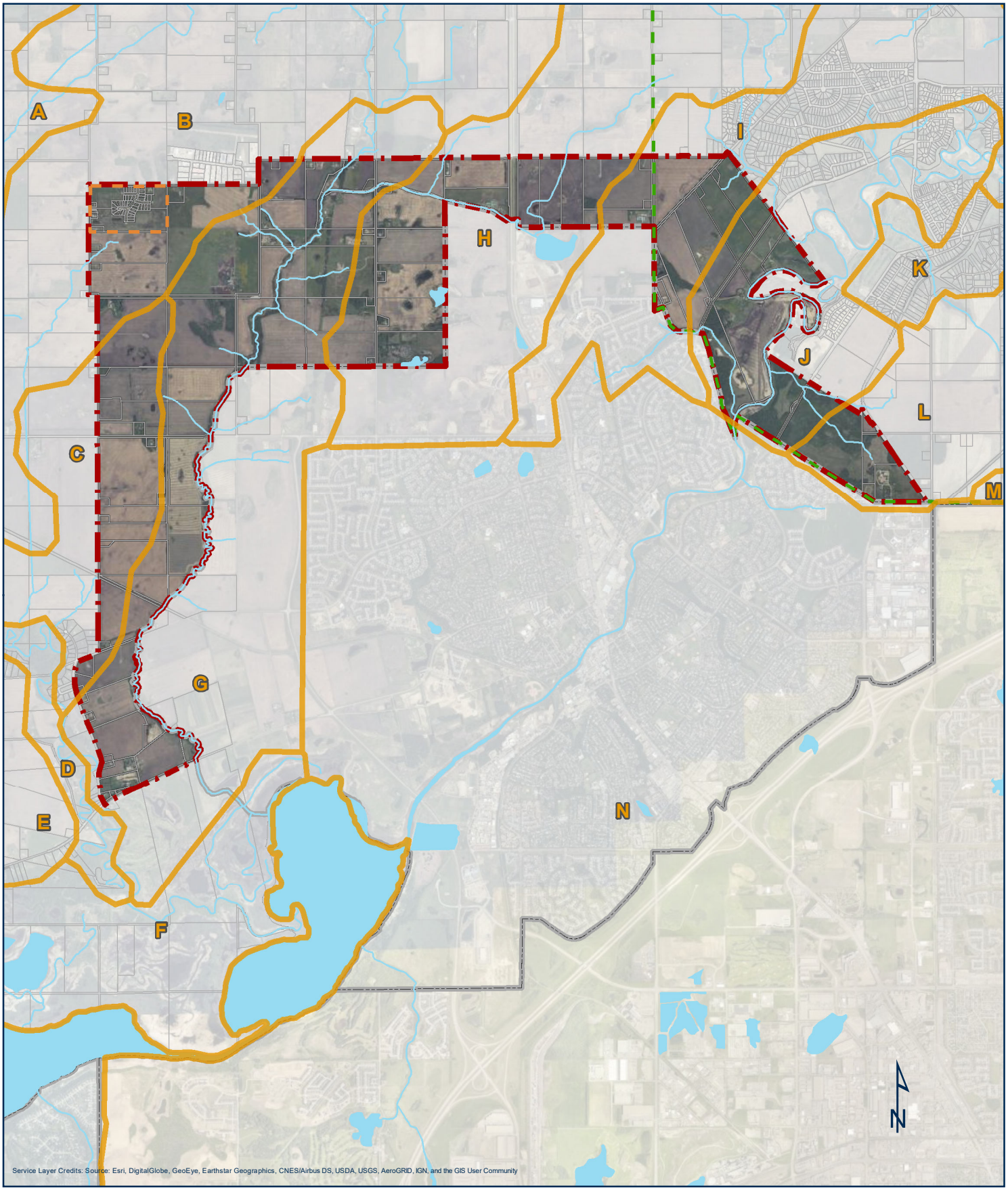
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ST. ALBERT GROWTH MANAGEMENT STUDY: AGRICULTURAL BASELINE ASSESSMENT

MAP I.3: TOPOGRAPHY

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Date: 2020-12-01 Document: J:\115100\15167_St_Albert_Growth_Study_Annexation\02_CADD\25_GIS\251_Figures\06_Agricultural_Impact_Assessment\15167_GMS_ABA_Map_I4_Soils_201201.mxd

City of St. Albert Cultivate Life

- Municipal Boundary
- Maximum Potential Annexation Area
- Sturgeon Valley ASP
- Northern Lights Estates ASP
- Parcel
- Watercourse
- Water Body
- Soil Area

0 0.25 0.5 1 1.5 2 km

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ST. ALBERT GROWTH MANAGEMENT STUDY: AGRICULTURAL BASELINE ASSESSMENT

MAP I.4:
SOIL DISTRIBUTION

The Land Suitability Rating System was used to interpret the agricultural production potential for spring grains and canola in the study area.[79] Lands within the study area are generally within Suitability Class 2H for spring grains and canola. This indicates a high productivity of field crops adapted to the area with a slight heat limitation that may restrict the range of crops or require special conservation practices. Suitability Class 2H is considered very favourable for crop growth and one of the best agro-climate ratings in Alberta. The study area has a growing season of approximately 180 to 185 days[80] and a frost-free period generally greater than 125 days.[81] Longer spring-summer day length compensate to some degree for a shorter growing season. The study area receives approximately 450 to 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.

There are also some areas with a Suitability Class of 2HT, which indicates areas of steep slopes (in addition to the heat limitation), enough to risk water erosion or to limit cultivation. There are also some suitability Class 5W in wetland areas, which indicates very severe limitations for sustained production of the specified crops due to poor drainage that may result from a high-water table or in adequate soil drainage.

Table I.5: Expected General Soil Profiles in the MPAA

Soil Areas	Landform Position	Horizon	Depth (cm)	Texture
Expected Eluviated Black Chernozem Soil Profile in the MPAA Study Area				
C, B, G, H, I, J, L	Upper/Mid slope	Ah (includes plow layer[82]	0-30	Silty Clay Loam (sand 6%, silt 56%, clay 38%)
		Ae[83]	30-35	Silt Loam (sand 10%, silt 66%, clay 24%)
		Bt[84]	35-90	Silty Clay (sand 2%, silt 42%, clay 56%)
		C[85]	90-100	Silty Clay (sand 1%, silt 42%, clay 57%)

[79] The Land Suitability Rating System ranges 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).
[80] Measured as the period during which average daily temperature exceeds 0°C.
[81] Alberta Agriculture and Rural Development, 2009.
[82] Upper soil layer that is usually disturbed through agriculture cropping operations.
[83] Upper soil layer, below the plow layer where clay has moved down in the soil profile due to downward water movement over time.
[84] Subsoil layer with clay accumulation from the upper layer.
[85] Parent Material is the underlying geological material in which soil horizons form.

Soil Areas	Landform Position	Horizon	Depth (cm)	Texture
Expected Orthic Dark Gray Chernozem Soil Profile in the MPAA Study Area				
G, L	Lower Slope	Ap	0-20	Silty Clay Loam (sand 10%, silt 50%, clay 40%)
		Bt	20-40	Heavy Clay (sand 3%, silt 27%, clay 70%)
		BC	40-75	Heavy Clay (sand 3%, silt 30%, clay 67%)
		Ck	75-100	Clay (sand 3%, silt 37%, clay 60%)
Expected Gleyed Black Chernozem Soil Profiles in the MPAA Study Area				
C	Depression	Ap	0-18	Silty Clay Loam (sand 11%, silt 49%, clay 40%)
		Ah	18-30	Silty Clay Loam (sand 11%, silt 49%, clay 40%)
		Bmgj	38-45	Clay Loam (sand 30%, silt 35%, clay 35%)
		Bg	45-75	Silty Clay (sand 2%, silt 47%, clay 51%)
		Ccag	75-100	Silty Clay Loam (sand 2%, silt 53%, clay 45%)
Expected Gleysolic Soil Profiles in the MPAA Study Area				
H, J	Depression	h	0-20	Loam (sand 40%, silt 40%, clay 20%)
		Bg	20-50	Clay Loam (sand 40%, silt 30%, clay 20%)
		Ckg	50-100	Clay Loam (sand 40%, silt 30%, clay30%)

Soil Areas	Landform Position	Horizon	Depth (cm)	Texture
Expected Black Solonetz Soil Profiles in the MPAA Study Area				
B	Lower Slope	Ap	0-20	Silty Clay (sand 5%, silt 45%, clay 50%)
		Bnt	20-25	Silty Clay (sand 8%, silt 40%, clay 52%)
		Bnt	25-50	Silty Clay (sand 5%, silt 48%, clay 47%)
		Csakgi	50-70	Clay (sand 8%, silt 39%, clay 53%)
		Csakgi	70-100	Silty Clay (sand 9%, silt 40%, clay 51%)
Expected Black Solidized Solonetz Profiles in the MPAA Study Area				
B	Mid Slope	Ap	0-18	Clay Loam (sand 20%, silt 50%, clay 30%)
		Ah	18-25	Clay Loam (sand 20%, silt 50%, clay 30%)
		Ae	25-30	Silty Clay Loam (sand 15%, silt 50%, clay 35%)
		Bnt	30-60	Silty Clay Loam (sand 10%, silt 50%, clay 40%)
		Bnt	60-85	Silty Clay (sand 10%, silt 45%, clay 45%)
		Csak	85-100	Silty Clay (sand 10%, silt 45%, clay 50%)

6.0 Current Agricultural Land Use and Tenure Patterns

Current agricultural land use and tenure patterns within the MPAA were determined through interpretation of available aerial photography, Sturgeon County property assessment information, and road reconnaissance.[86] There is a mixture of both private agricultural lands managed by the owner and/or family members, and agricultural lands owned by one party and rented/leased to other operators to manage.

There are approximately 3,551 acres (1,437 hectares) in the MPAA that Sturgeon County assesses as agricultural lands. Of these lands, 3,020 acres (1,222 hectares) are assessed as lands under cultivation and 525 acres (213 hectares) as pasture. While there are also agricultural related buildings in the MPAA, the municipality does not delineate the lands these buildings occupy. Table I.6 provides a specific breakdown of the agricultural land use in the MPAA.

[86] The results from a public survey conducted as part of the MPAA process was also used to verify this information.

7.0 Overview of Capital Investment in Agriculture

The estimated current capital investment in agriculturally based municipal assessments for agricultural lands and farm buildings in the MPAA is $3,241,050 as seen in Table I.6.

Table I.6: General Agriculture Land Use and Capital Investment in Agriculture

Legal	Area in acres (ha)[87]	Cultivated in acres (ha)[88]	Pasture in acres (ha)[89]	Municipal Value Assessment Farmland ($)	Municipal Value Assessment Exempt Farm Use Buildings ($)	Capital Equipment and Machinery Investment for Cultivated Land (estimated $)[90]	Capital Infrastructure Investment for Pasture Lands (estimated $)[91]
NW-36-53-26-4 [92]	75 (30)	65 (26)	10 (4)	18,320	0	18,200	1,200
SE-22-54-25-4	78 (32)	44 (18)	28 (11)	13,980	59,350	12,320	3,360
NW-15-54-25-4	3 (1)	0	3 (1)	150	0	0	360
NE-15-54-25-4	89 (36)	0	89 (36)	10,660	55,990	0	10,680
NW-17-54-25-4	141 (57)	97 (39)	44 (18)	49,060	30,450	27,160	5,280
SW-18-54-25-4	1 (1)	0	1 (1)	30	0	0	120

[87] Only lands designated as agriculture by the municipality are included.
[88] Based on Sturgeon County's Farmland Assessment.
[89] Generally unimproved pasture.
[90] Based on $280/ac, $113/ha
[91] Based on $120/ac, $48/ha
[92] Information on multiple parcels within the quarter section is combined.

Legal	Area in acres (ha)[87]	Cultivated in acres (ha)[88]	Pasture in acres (ha)[89]	Municipal Value Assessment Farmland ($)	Municipal Value Assessment Exempt Farm Use Buildings ($)	Capital Equipment and Machinery Investment for Cultivated Land (estimated $)[90]	Capital Infrastructure Investment for Pasture Lands (estimated $)[91]
NW-18-54-25-4	160 (65)	125 (51)	35 (19)	32,310	0	35,000	4,200
NE-18-54-25-4	155 (63)	130 (53)	25 (10)	35,070	10,920	36,400	3,000
SE-19-54-25-4	155 (63)	127 (51)	28 (11)	31,070	496,580	35,560	3,360
SW-19-54-25-4	137 (55)	99 (40)	38 (15)	92,160	150,960	27,720	4,560
NE-19-54-25-4	151(61)	102 (41)	49 (20)	26,090	158,450	28,560	5,880
NW-19-54-25-4	101(41)	100 (40)	1 (1)	25,880	150,960	28,000	120
SW-20-54-25-4	155 (63)	125 (51)	30 (12)	43,790	0	35,000	3,600
NW-20-54-25-4	147 (59)	133 (54)	14 (6)	26,200	0	37,240	1,680
NE-20-54-25-4	97 (39)	97 (39)	0	23,580	546,130	27,160	0
NW-21-54-25-4	96 (39)	89 (36)	7 (3)	20,970	0	24,920	840
NE-21-54-25-4	149 (60)	131 (53)	18 (7)	34,550	689,300	36,680	2,160
NW-22-54-25-4	80 (32)	78 (32)	2 (1)	21,180	0	21,840	240
NE-22-54-25-4	145 (59)	145	0	36,340	0	40,600	0

Legal	Area in acres (ha)[87]	Cultivated in acres (ha)[88]	Pasture in acres (ha)[89]	Municipal Value Assessment Farmland ($)	Municipal Value Assessment Exempt Farm Use Buildings ($)	Capital Equipment and Machinery Investment for Cultivated Land (estimated $)[90]	Capital Infrastructure Investment for Pasture Lands (estimated $)[91]
SW-22-54-25-4	101 (40)	100	1 (1)	24,390	0	28,000	120
NW-1-54-26-4	126 (51)	126	0	29,700	17,820	35,280	0
NE-1-54-26-4	11 (4)	9	2 (1)	1,640	0	2,520	240
SW-1-54-26-4	62 (25)	62	0	15,150	0	17,360	0
Pt-2-54-26-4	63 (25)	63	0	14,840	0	17,640	0
E-12-54-26-4	92 (37)	84	8 (3)	23,200	0	23,520	960
SW-12-54-26-4	159 (64)	156	3 (2)	39,280	0	43,680	360
NW-12-54-26-4	144 (58)	143	1 (1)	32,700	0	40,040	120
SW-13-54-26-4	126 (51)	119 (48)	7 (3)	51,180	0	34,720	840
SE-13-54-26-4	72 (29)	65	7 (3)	16,170	0	18,200	840
NW-13-54-26-4	152 (61)	131 (53)	21 (8)	31,990	130,180	36,680	2,520
NE-13-54-26-4	160 (65)	114 (46)	46 (19)	32,620	0	31,920	5,520
SE-24-54-26-4	9 (4)	5 (2)	4 (2)	1,110	0	1,400	480

Legal	Area in acres (ha)[87]	Cultivated in acres (ha)[88]	Pasture in acres (ha)[89]	Municipal Value Assessment Farmland ($)	Municipal Value Assessment Exempt Farm Use Buildings ($)	Capital Equipment and Machinery Investment for Cultivated Land (estimated $)[90]	Capital Infrastructure Investment for Pasture Lands (estimated $)[91]
SW-24-54-26-4	79 (32)	77 (31)	2 (1)	12,770	0	21,560	240
NW-24-54-26-4	81 (33)	79 (32)	2 (1)	16,030	0	22,120	240
Totals	**3,551 (1,437)**	**3,020 (1,222)**	**525 (213)**	**916,270**	**2,497,090**	**861,000**	**63,000**

Notes:
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.
Numbers in Table I.6 are rounded. Where there were numeric inconsistencies between the area calculations in the municipal assessment and the farmland assessment, Table I.6 includes the farmland assessment acreage area. Exempted Farm Buildings are included in the cultivated/pasture acreages in Table I.6 as Sturgeon County does not differentiate the associated lands from the surrounding farmlands in the municipal assessment.

The estimated capital investments in machinery and equipment for cultivated lands and capital infrastructure costs (fencing) for pasture lands in the MPAA based on provincial averages is $924,000. This is based on average machinery and equipment investment for cultivated lands in Alberta of $280/acre (113/hectare),[93] and average infrastructure investment for pasture lands for cattle in Alberta of $120/acre ($49/hectare).[94] As there is approximately 3,020 acres (1,222 hectares) under cultivation in the MPAA, the average total capital investment with respect to machinery is $861,000).[95] As there are approximately 525 acres (213 hectares) of pasture in the MPAA, the average total capital investment with respect to infrastructure is$63,000.

The estimated total capital investment in agriculture in the MPAA is therefore$4,337,360, a combination of the municipal assessments and associated infrastructure.

The cultivated lands in the MPAA are generally seeded to canola and wheat due to their normally higher gross revenues than other alternatives. Expected average yields of 40-60 bushels/acre (16-24 bushels/hectare) for canola and 60-75 bushels/acre (24-30 bushels/hectare) for wheat are expected in the area. Some producers also include barley, peas, rye, soya beans and forages in their rotations generally for crop disease management purposes particularly related to clubroot.[96] Generally, cultivated lands have good agricultural machinery accessibility from the surrounding municipal road network.

As the majority of cultivated lands in the MPAA are generally seeded to canola and wheat, they are used to determine the estimated annual average gross revenue for cultivated lands using the following equation.

"acreage under cultivation × average yield/acre (hectare) × average market price/bushel"

At the time of writing, canola was selling for approximately $11/bushel and Canadian Western Spring Wheat was selling for approximately $6.43/bushel. With approximately 3,020 acres (1,222 hectares) under annual cultivation, and an average yield of 50 bushels/acre (20 bushels/hectare) of canola and 70 bushels/acre (28 bushels/hectare) for wheat, the MPAA would generate approximately $1,661,000 gross revenue if seeded to canola and $1,359,300 if seeded to wheat annually.

The only apparent agricultural irrigation in the MPAA is associated with a small area of a sod production adjacent to Big Lake in the southwest corner of the MPAA. The only significant developed agricultural related drainage is a drainage ditch and associated wetlands system that runs south from Morinville in proximity to Highway 2 to the City of St. Albert boundary where it turns west and eventually drains into Carrot Creek. The system is maintained by Sturgeon County.

[93] Alberta and Forestry Agriculture Information Centre based on available 2016 information
[94] Alberta and Forestry Agriculture Information based on four-strand barb wire fencing, pressure treated posts and bracing. Although there are some areas fenced for bison in the study area, the areas fenced are unknown. Alberta and Forestry Agriculture Information based on seven-strand smoot wire (two hot) 5-6 ft. fencing, pressure treated posts, gates and bracing is $120/ac ($49/ha).
[95] Rounded
[96] Clubroot is a soil borne disease that affects canola preventing the plant's roots from taking up water and nutrients, reducing yield and potentially killing the plant.

8.0 Existing and Potential Constraints to Agriculture

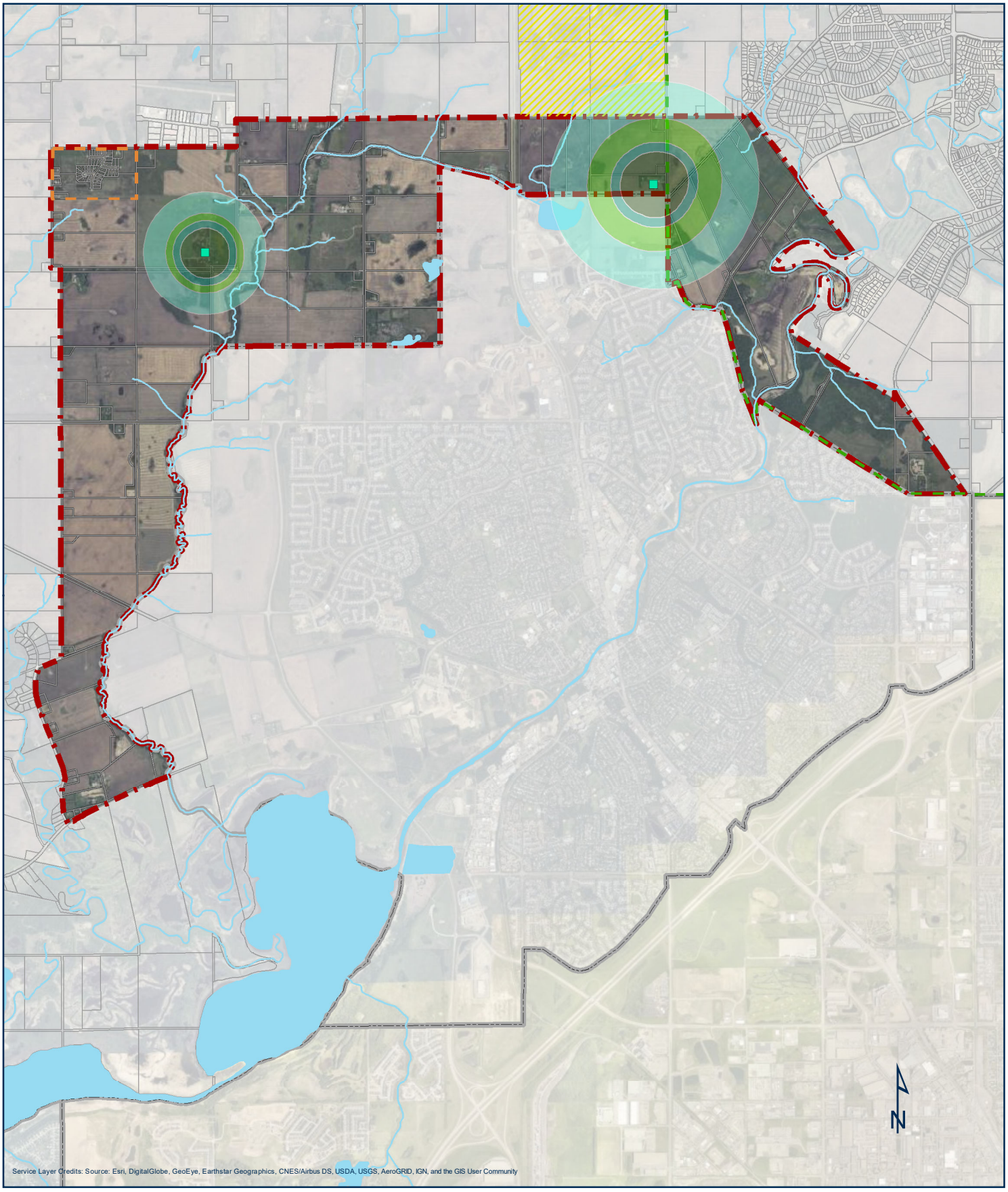
There are several permanent and intermittent watercourses and wetlands in the MPAA as well as many small treed areas. These can reduce the efficiency of agricultural equipment used for cultivated crop production (especially large equipment) as they need to work around these areas. There are also many non-agricultural uses (e.g. residential subdivisions, country residential, industrial) within and adjacent to the MPAA including the City of St. Albert. This has the potential for conflicts between these residents and the agricultural operations related to the dust, noise, etc. that may result from the normal farming practices associated with these types of operations.

8.1. Confined Feeding Operations

There are currently two non-operating Confined Feeding Operations (CFOs) in the MPAA as shown in Map I.5. A dairy operation exists on SE-24-54-26-4 and a poultry operation on SE-21-54-25-4. The poultry operation has a 1975 permit from Alberta Agriculture for a capacity of 29,000 laying hens with a liquid manure storage system.[97] The Natural Resources Conservation Board (NRCB) has confirmed that there have been no poultry in the barns since 1995. The NRCB has no information on the dairy operation.[98] In addition, the University of Alberta has indicated that they may consider developing a CFO for research purposes on the St. Albert Research Station immediately north of the MPAA, but no formal plans have been developed to date.

Although these CFOs are not currently operating, they could make application to the NRCB to reopen. The MDS[99] for these operations are estimated below in Table I.7. Since there is no information on the dairy operation, an estimated 70 milking cow capacity is used to determine MDS for these operations.

[97] Natural Resources Conservation Board.
[98] Natural Resources Conservation Board.
[99] The MDS is a setback established between a CFO facility and the neighbouring residences to minimize the impact of odour on neighbouring residences.



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City of St. Albert Cultivate Life

0 0.2 0.4 0.8 1.2 1.6 km

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- Municipal Boundary
- Maximum Potential Annexation Area
- Sturgeon Valley ASP
- Northern Lights Estates ASP
- University of Alberta (UofA) St. Albert Research Station
- Confined Feeding Operation
- MDS Category 1 Setback
- MDS Category 2 Setback
- MDS Category 3 Setback
- MDS Category 4 Setback

ST. ALBERT GROWTH MANAGEMENT STUDY: AGRICULTURAL BASELINE ASSESSMENT

MAP I.5: CONFINED FEEDING OPERATIONS

Table I.7: Minimum Distance Separation for Confined Feeding Operations

Confined Feeding Operation	Category 1 [100]	Category 2	Category 3	Category 4
Poultry	308 m	410 m	666 m	1066 m
Dairy	238 m	317 m	396 m	634 m

Within the MDS for these operations are residences on land zoned for agricultural purposes (e.g., farmstead, acreage residences), residences on land zoned for non-agricultural purposes (e.g., country residential, rural commercial businesses), residences on land zoned for commercial purposes, and residences on land zoned for large-scale country residential, and the City of St. Albert as seen in Map I.5 . As a result, some of these residents would be potentially adversely impacted by odour etc. from these CFOs.

[100] Category 1 – residences on land zoned for agricultural purposes (e.g., farmstead, acreage residences), Category 2 – residences on land zoned for non-agricultural purposes (e.g., country residential, rural commercial businesses), Category 3 – residences on land zoned for high use recreational or commercial purposes, Category 4 – residences on land zoned for large-scale country residential, rural hamlet, village, town or city.

9.0 Availability of Agricultural Services

When St. Albert received its town status in 1904 and was reached by the Canadian Northern Railway in 1906, it was already the service centre for a large grain-growing district. From these early days, the agricultural industry in the MPAA has had access to a wide range of agricultural services especially with its proximity to the cities of St. Albert and Edmonton. These include:

- grain, oilseed and alfalfa storage, handling, transportation, and processing;
- agronomic and grain and oilseed 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;
- fabrication;
- livestock auctions;
- custom feeding and veterinarian care;
- equipment dealers; and
- building construction.

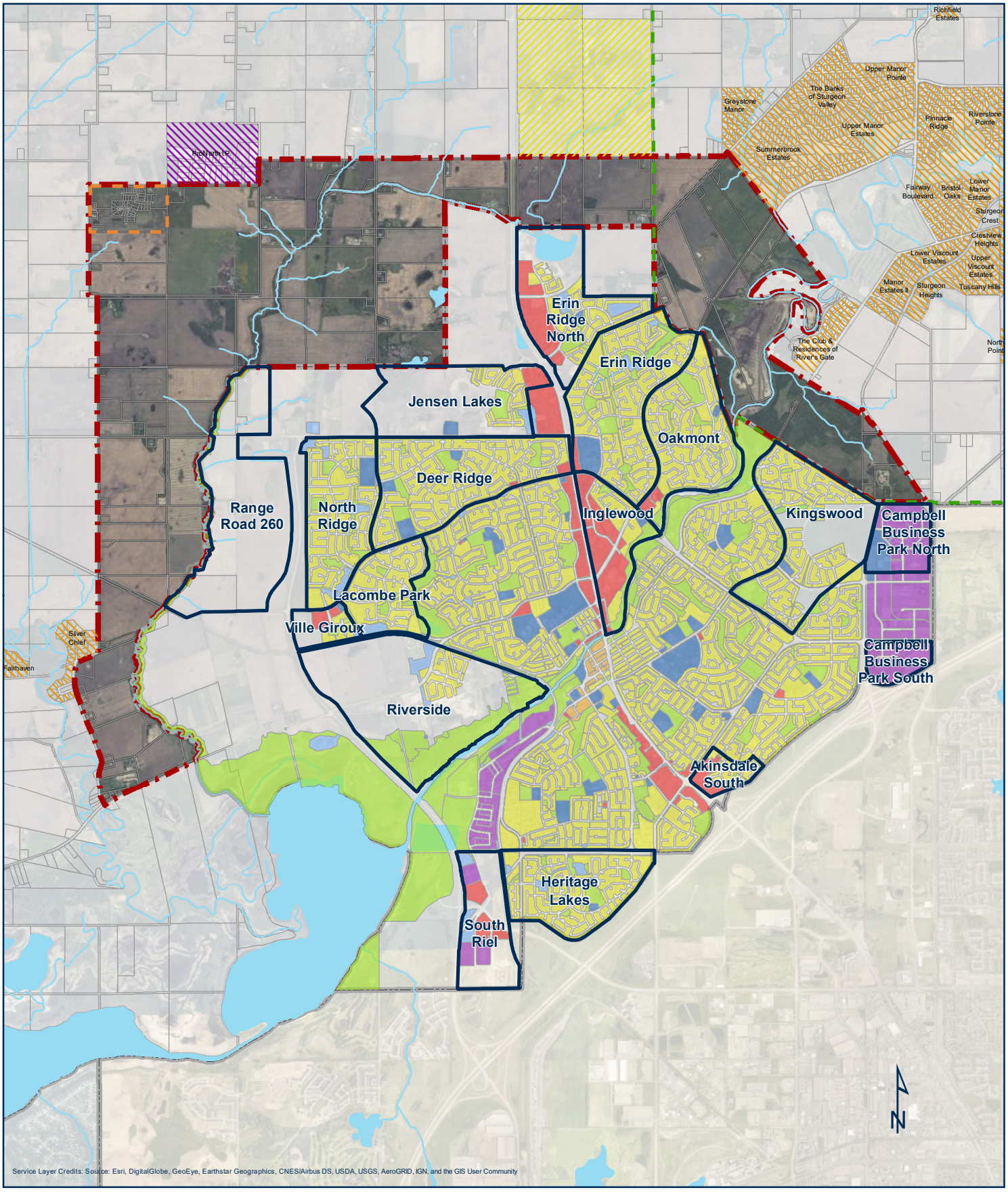
10.0 Surrounding Land Use

There is currently a mix of land uses within 1 km from the boundary of the MPAA. To the south and southeast is the City of St. Albert with its mix of residential, commercial, industrial, institutional, public utility, and recreational uses, as well as numerous previously approved ASPs that will facilitate further subdivision for urban development purposes.

Sturgeon County surrounds the MPAA to the north, east and west. The majority of these lands are used for agricultural purposes although, as shown in Map I.6, there is a significant residential community comprising numerous subdivisions to the northeast (within the Sturgeon Valley ASP), and a country residential subdivision to the southwest (Silver Chief). As within the MPAA, the majority of these agricultural lands are under annual cultivation, and areas not under cultivation are generally used for pasture, country residential or are along drainage channels, in wetland and treed areas.

The University of Alberta's St. Albert Research Station in 28-54-24-4 and the ProNorth Industrial Park is located north of Township Road 544 and west of Range Road 260. As shown in Map I.6, these parcels are immediately north and adjacent to the MPAA.

As in the MPAA, these lands are generally flat to gently undulating, with some higher hills and lower digressional areas. As seen in Map I.4, soils within 1 km from the boundary of the MPAA are similar to those found within the MPAA. Again, these soils are predominantly Eluviated Black Chernozems on the middle to upper slopes, with some Orthic Dark Gray Chernozems on the lower slopes, and Gleyed and some Solonetzic soils in low lying areas.



Date: 2020-12-01 Document: J:\15100\15167_St_Albert_Growth_Study_Annexation\02_CADD\25_GIS\251_Figures\06_Agricultural_Impact_Assessment\15167_GMS_ABA_Map_I6_Surrounding_LU_201201.mxd

City of St. Albert Cultivate Life

0 0.25 0.5 1 1.5 2 km

3TM114-83 1:60,000

- Maximum Potential Annexation Area
- City ASP Boundary
- Sturgeon Valley ASP
- Northern Lights Estates ASP
- UofA St. Albert Research Station
- County Subdivision (Residential)
- County Subdivision (Industrial)
- Municipal Boundary
- Residential
- Mixed Use
- Commercial
- Industrial
- Institutional
- Public Utility
- Recreational

ST. ALBERT GROWTH MANAGEMENT STUDY: AGRICULTURAL BASELINE ASSESSMENT

MAP I.6: SURROUNDING LAND USE

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13. Sturgeon County Strategic Plan 2018-2027; available at: https://www.sturgeoncounty.ca/Portals/0/Documents/Governance/Strategic-Plan-2018-2027.pdf
14. Sturgeon Valley Area Structure Plan, available at: https://www.sturgeoncounty.ca/Portals/0/Documents/Planning-Development/Area-Structure-Plan-Sturgeon.pdf
15. 2017 Sturgeon Valley Special Study Area

12.0 Glossary

Agricultural Use means the growing, raising, managing and/or sale of livestock (cattle, pigs, sheep, horses, game animals, poultry [hens, chickens, turkeys, chicks, game birds, other poultry]), crops (hay, field crops, tree fruits or nuts, berries or grapes, vegetables, seed), foods or other agricultural products (e.g., trees, greenhouses or nursery products, mushrooms, sod, honey), horticulture and agri-food related value-added enterprises including education, motivated either by profit or lifestyle [source: EMRGP].

Agricultural Capability refers to the agricultural 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).

Agricultural Land is land use in which agriculture is either a permitted or discretionary use under a municipal land use bylaw.

Agricultural Land, Prime are lands that include Class 2 and 3 soils according to the Land Suitability Rating System (LSRS) use by the Government of Alberta. These lands are equivalent to Canada Land Inventory (CLI) Class 1, 2 and 3 soils [source: EMRGP].

Agricultural Resources are the land and on-farm buildings, equipment, processing and handling and agri-business activities that contribute to the production, preparation and marketing of crops, livestock, and livestock products as a commercial enterprise [source: EMRGP].

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 is a statutory plan adopted by a municipality by bylaw in accordance with the MGA to provide a framework for the subsequent subdivision and development of a defined area of land [source: EMRGP].

Agriculture, Value-added means the addition of a process or service to an agricultural raw material being produced by the farmer (producer). This may include some form of processing (milling, drying, cleaning, sorting, slaughtering, distilling (winery), or direct marketing such as farm gate sales, farmer's markets, or direct distribution) [source: EMRGP].

Chernozemic Soils are dominant in the historic grassland regions of Alberta through the development of extensive root networks which cause organic material (or humus) to increase over time. The interaction of the roots and mineral material leads to the creation of a granular soil structure, which is very favourable for air and water movement in the soil and for plant growth. The four great groups of the Chernozemic order are Brown, Dark Brown, Black, and Dark Gray based on the colour of the A horizon. Black Chernozems are developed under grassland dominated soils while Dark Gray Chernozems are formed in transition areas between the grassland dominated soils and the Boreal forest showing evidence of both grass and forest vegetation.

Confined Feeding Operations include feedlots, dairies, hog, poultry, and other livestock operations of sufficient size as specified in the legislation. The Natural Resources Conservation Board is responsible for regulating CFOs under the *Agricultural Operation Practices Act*. CFOs need an approval if they have more than the minimum number of animals outlined in the regulations and must meet the technical standards in the regulations including protecting groundwater and surface water and reducing the impact of the operation on neighbours. Operations that existed on January 1, 2002 were grandfathered and deemed to have an approval under the legislation. These operations are not required to retrofit facilities built before 2002 to legislative standards but are also not allowed to create a risk to the environment. If these operations build new or expand/renovate structures, or increase their livestock numbers, they must obtain an approval from the NRCB.

Discretionary Use means a use of land or buildings described in the district regulations of Sturgeon County's Land Use Bylaw for which a development permit may be issued with or without conditions, and which conforms to the Bylaw.

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.

Gleysols are soils that have undergone prolonged periods of intermittent or continuous saturation with water which leads to depletion of oxygen in the soil and cause the transformation (reduction) of metals such as iron and subsequently the soil takes on a blue-grey hue.

Land Suitability Rating System is the Agriculture and Agri-Food Canada soil classification system that is used by the Government of Alberta to determine soil classification. The LSRS uses the same Class and Sub class designation system as the Canada Land Inventory (CLI) system, but the LSRS is slightly more specific than the CLI system with a few more factors taken into consideration for defining subclasses. The classification system addresses the suitability or capability of land (topography, climate, drainage) for sustained agricultural production but does not assess the productivity of the land [source: EMRGP].

Non-agricultural Land Uses are land uses for other than agricultural purposes including residential, industrial, commercial, institutional and recreation, resource extraction (e.g., gravel pits, coal mining (surface), oil and gas), landfill sites, highways, and other uses [source: EMRGP].

Metropolitan Area is a policy tier applying to an area surrounding the Metropolitan Core, including portions of county lands, urban communities, major and local employment areas and intervening undeveloped areas that are socio-economically tied and that share industry, housing and infrastructure [source: EMRGP].

Metropolitan Region is an area consisting of a densely populated urban core and the less populated surrounding area, interconnected by industry, infrastructure, and housing [source: EMRGP].

Minimum Distance Separation (MDS) is a setback established between a Confined Feeding Operation and neighbouring residences. Its purpose is to minimize the impact of odour as measured from the outside walls of neighbouring residences to the point closest to the facility. The MDS is determined by various characteristics of the operation which are assigned values

from which an operation's MDS is calculated. Confined feeding operation facilities must be set back from neighbouring residences, to help minimize the nuisance to neighbours caused by odour, dust, and noise. This includes:

- Livestock Siting Unit which is the basis for determining the MDS. The LSU establishes the odour potential of livestock facilities based on the type of livestock, manure production and manure handling system.
- Odour Objective which is based on the municipal land zoning of neighbouring residences. There are four categories that determine the odour objective used in the MDS calculation for that residence.
    - Category 1 – residences on land zoned for agricultural purposes (e.g., farmstead, acreage residences),
    - Category 2 – residences on land zoned for non-agricultural purposes (e.g., country residential, rural commercial businesses),
    - Category 3 – residences on land zoned for high use recreational or commercial purposes,
    - Category 4 – residences on land zoned for large-scale country residential, rural hamlet, village, town, or city.

Municipal Development Plan is a statutory plan adopted by a municipality by bylaw in accordance with the MGA that: addresses future land uses and development within the municipality; coordinates land use, growth patterns and infrastructure with adjacent municipalities (if there are no IDPs in place); and provides for transportation systems, municipal services and facilities (either generally or specifically) [source: EMRGP].

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.

Permitted Use means a use of land or building or structures described in the district regulations of Sturgeon County's Land Use Bylaw which conform to all applicable regulations of the Bylaw, for which a development permit shall be issued by the Development Authority with or without conditions.

Policy Tiers are a planning framework to reflect, respond and plan for the diversity and different contexts within the Edmonton Metropolitan Region. Source: EMRGP

Rural Area is a policy tier applying to lands outside of the Metropolitan Area within the wider Edmonton Metropolitan Region, consisting of rural working landscapes with agricultural lands, major employment areas and local employment areas, natural living systems, recreation areas and resource extraction areas, counties, town, villages incorporated hamlets and country residential development with some local levels of service and community amenities [source: EMRGP].

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 best agricultural soils have a relatively even percentage of sand, silt and clay and are referred to as Loams. Soils are described by their soil profile which includes horizons (horizontal layers) identified by their attributes and differences between the horizon above or below them. These include:

- A horizons form at or near the surface in the zone where organic matter accumulates.
    - An Ah horizon is characterized by an accumulation of humus (organic matter).
    - An Ae horizon is characterized by the eluviation (movement) of clay to a lower horizon.
    - An Ap horizon has been disturbed by human activity such as mixing of the upper soil by ploughing in agricultural landscapes.
- AB horizons are transitional mineral horizons that show characteristics of both A and B horizons.
- B horizons are commonly referred to as "subsoil" and consist of mineral layers below the A horizon and may contain concentrations of clay or minerals moved there by leaching from the A horizon.
    - A Bg horizon has undergone prolonged periods of intermittent or continuous saturation with water leading to the reduction of metals such as iron and subsequently the soil takes on a blue-grey hue.
    - A Bt horizon forms where translocated clays from higher in the profile accumulate.
    - A Bmgj horizon forms when a lack of carbonates occurs causing plant root impairment and is undergoing periods of water saturation.
- BC horizons are transitional layer than shows characteristics of both B and C horizons.
- C horizons are below the B horizons. This layer is little affected by soil forming processes and resembles the original parent material the soil formed from. The C horizon forms as bed rock weathers and rock breaks up into particles and consequently inherits its characteristics from the soil parent materials
    - A Cg horizon has undergone prolonged periods of intermittent or continuous saturation with water leading to the reduction of metals such as iron and subsequently the soil hue.
    - A Cca and Ck horizons have an accumulation of calcium carbonates (lime).
    - A Ckg horizon has undergone prolonged periods of intermittent or continuous saturation with water and contains calcium carbonate.
    - A Ckg horizon has both an accumulation of calcium carbonates and has undergone prolonged periods of intermittent or continuous saturation with water.
    - A Csak horizon has an enrichment of salts that may depress crop growth and show the presence of salt-tolerant plants.
    - A Cskgj horizon has both an enrichment in salts and is undergoing periods of intermittent or continuous saturation with water.

Solonetzic Soils have low Calcium to Sodium ratios which causes clay to clog the pores in the soil which forms an inhospitable layer for root development when it dries out. This layer is often referred to as hardpan.

Special Study Area is an area identified to address intermunicipal and/or regional growth issues that may require special policy consideration within the EMRGP to support the vision, guiding principles and objectives [source: EMRGP].

Translocation is the movement of soil components (e.g. clay, iron, organic matter, solutes) from one position in the soil profile to another. Translocation can be in any direction in the profile, although translocation vertically downwards to greater depths in the soil is most important for soil classification.