



Town of Slave Lake South Expansion Area Structure Plan



Prepared for the:

Town of Slave Lake

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1.0 INTRODUCTION

1.1 Purpose and Scope

The purpose of this revised South Expansion Area Structure Plan (ASP) is *“to develop a new Area Structure Plan to replace the existing South Expansion Joint Area Structure Plan (ASP) and provide responsible land use planning and development of lands south of Highway 2. The Town of Slave Lake feels the existing Area Structure Plan remains an effective planning instrument, however, the Plan prepared in 1988 is in need of review and update.”*

This South Expansion Area Structure Plan (ASP) provides for orderly staged development of the area. The ASP specifies proposed land uses, residential density patterns, major roadway networks, transportation and utility requirements and staging in accordance with requirements of the Municipal Government Act.

The ASP also provides for a sound framework within which the municipal planning and review agencies can evaluate subsequent subdivisions and developmental applications.

The scope of the ASP includes the following:

- Residential land use areas and differing housing types;
- Population densities within the Plan area;
- Industrial, commercial, and institutional land uses and areas;
- Preferred sequence(s) of development;
- General location of arterial and collector roadways;
- General location and sizing of required mains and other facilities for the provision of water, sanitary sewer, and storm sewer services to new development areas;
- The assumption of existing municipal services and population densities within the Gloryland residential subdivision and the area of highway commercial development located immediately adjacent to Highway 2;
- Provision of municipal and environmental reserves, school sites, parks, playing fields, and open spaces including linkages and connections to schools, facilities, and services;
- Environmental resources of the area and suggestive means for the conservation of the significant resources as affected by future development;
- Right-of-ways required for roads, utility services, pedestrian pathways, and other linkages;
- Policies respecting development including the calculation of off-site levies and other development levies;
- Financial requirements of the Town for municipal infrastructure, land purchases, and other development costs; and
- An on-going review and amendment process.

1.2 Interpretation

Maps contained within this ASP are conceptual and provide a general description of proposed future land uses, roadway network, approximate locations of parks, open spaces and school sites, stormwater management facilities, and water management facilities. It should be noted that local streets indicated on maps are strictly conceptual in nature. Some flexibility is provided in varying the location and design of these at the more detailed outline plan preparation stage in keeping with the goals, objectives and policies contained within the ASP.

1.3 Plan Area

As shown in *Map 1– Location*, located in *Appendix I – List of Maps*, the ASP area is located south of Highway 2 and the Town of Slave Lake's existing urban area. The area is approximately 627 hectares (1549 acres). Legal descriptions of the land within the Plan area are as follows:

- Part of the SE ¼ Section of 35-72-6-W5M
- NW ¼ Section of 26-72-5-W5M
- Part of SW ¼ Section of 36-72-6-W5M
- Part of SE ¼ Section of 36-72-6-W5M
- NW ¼ Section of 25-72-6-W5M
- Part of NE ¼ Section of 25-72-6-W5M
- SE ¼ Section of 25-72-6-W5M
- Part of NW ¼ Section of 30-72-5-W5M
- Part of SW ¼ Section of 30-72-5-W5M
- Part of SE ¼ Section of 30-72-5-W5M
- NW ¼ Section of 19-72-5-W5M
- NE ¼ Section of 19-72-5-W5M
- Part of NW ¼ Section 20-72-5-W5M

1.4 Land Disposition

Within the ASP area, land is either privately owned or owned by the Crown. *Map 2 - Land Disposition* shows land ownership with the ASP area.

1.5 Plan Organization

The ASP document is organized into 6 sections:

Section 1.0: INTRODUCTION provides the overview, purpose and definition of the South Expansion Area Structure Plan area.

Section 2.0: PLANNING PROCESS describes the planning process followed in preparing the ASP. Along with opportunities provided for community consultation.

Section 3.0: **STATUTORY AND POLICY CONTEXT** provides a policy context in summary form of the existing policy framework that is in place, drawing upon other planning documents.

Section 4.0: **SITE CONTEXT AND DEVELOPMENT CONSIDERATIONS** provides a description of the site context and development considerations that influence the formulation of the ASP.

Section 5.0: **GOALS, OBJECTIVES AND POLICIES** describes the proposed Development Concept and supporting goals, objectives and policies.

Section 6.0: **IMPLEMENTATION** discusses the proposed Implementation Program.

2.0 PLANNING PROCESS

2.1 Enabling Legislation

The Town of Slave Lake South Expansion Area Structure Plan (ASP) has been prepared in accordance with the *Municipal Government Act* (MGA) (Statutes of Alberta, 1994, Chapter M-26.1 as amended). The MGA enables municipalities to adopt area structure plans to provide a framework for future subdivision and development of an area. Sections 633, 636, 638, and 692 of the MGA relate specifically to ASPs. The MGA stipulates the following:

- An ASP must describe the proposed sequence of development, land uses, population density, and location of major transportation routes and public utilities;
- The public and separate school boards must be given the opportunity to provide input in the planning process;
- A municipality must notify any adjacent municipality (in this case, the Municipal District (M.D.) of Lesser Slave River) of the plan preparation and provide opportunities for the adjacent municipality to make suggestions and representations;
- An ASP must be adopted by bylaw, which requires a public hearing to be held on the proposed ASP; and
- An ASP must conform to a municipality's Municipal Development Plan (MDP).

2.1 Community Consultation

Community consultation was an important part of the planning process. The following methods were used to involve residents, property owners, and other stakeholders in the ASP preparation process.

Community Information Program:

- A project backgrounder and map of the Plan area were prepared for distribution to landowners by the Town.
- A notice of the initiation of the ASP process was prepared for general distribution by the Town. This notice was run in the local newspaper.

Key Person Interviews and Survey of Gloryland Subdivision Residents: A survey was mailed to residents in the Plan area October 13, 2000 requesting their input on how the Plan area should be developed in the future. In addition, input was also gathered through in-person interviews with landowners and other stakeholders. The following are the key issues expressed by interviewees and survey respondents:

- Develop the area for residential purposes with suitable separation from industrial and highway commercial uses.
- A road hierarchy was required to facilitate traffic management. Furthermore most respondents want to see all roads developed to an appropriate standard, including paving.
- Ensuring that a mix of housing, in terms of type and affordability were accommodated.
- Concern over the natural environment was also an issue for most respondents. The development of trails, parks and the preservation of drainage courses were identified.

Mailout: The High Prairie School Division #8 and the Living Waters Catholic Regional Division #42 were notified of the planning process and asked to comment.

Public Open Houses: Two public open houses were held the first on January 29, 2001 and the second on September 10, 2002. These open houses enabled stakeholders to review the draft ASP, meet with project representatives, and provide feed back by completing a comment sheet.

Public Hearing: A public hearing was held on June 15, 2004 to provide residents, property owners and other stakeholders with the opportunity to comment on the proposed ASP prior to Council approval.

3.0 STATUTORY AND POLICY CONTEXT

3.1 Town of Slave Lake Municipal Development Plan Bylaw #16-1997

The Town of Slave Lake adopted its existing Municipal Development Plan (MDP), Bylaw #16-1997 in 1997. The Municipal Development Plan governs overall growth and development in the community and establishes policies governing land use planning, transportation, and other infrastructure and community development. The majority of lands with the ASP area are shown as residential land uses on the Future Land Use Map of the Town of Slave Lake Municipal Development Plan. Flood plain areas and low lying areas have been shown as Open Space (Environmental) and the eastern portion in the ASP near the weigh scales is shown as being Future Industrial Uses.

Relevant objectives and policies of the MDP directly applicable to the future growth and use of the ASP area are summarised below.

Future Land Use

Policies

- *Ensure that development generally conforms with the 'Future Land Use' map, subject to the preparation of or an existing ASP, outline plan, and the Town of Slave Lake Land Use Bylaw (LUB).*
- *Require careful consideration of areas designated environmental open space to determine the actual physical boundary of development.*
- *Permit neighbourhood commercial, institutional, community facilities, parks, and playgrounds to be incorporated into any residential area, subject to an ASP, outline plan, and compliance with the Town's LUB.*

Development Coordination

Policy

- *Maintain a detailed development process policy which will guide the subdivision and development of land within the Town.*

Aesthetics Along Major Roads

Policies

- *Retain a buffer of trees, berm or other effective screen, particularly along Highways 2 and 88 where possible, and also between incompatible uses like the future industrial and residential development areas.*

Proposed Residential Areas

Policy

- *Direct residential development to those areas allocated for housing on the 'Future Land Use' map.*
- *Determine phasing, housing type, and housing mix at the area structure plan or outline plan stage of the planning process.*

Business Development and Commercial Land Use

Policy

- *Encourage the development of automobile-oriented commercial land uses including visitor services, in the locations Main Street, south of 6th Avenue South and along the Highway 2 corridor shown on the 'Future Land Use' map.*

Tourist Related Business

Policy

- *Support developments which will capture visitors, draw traffic to the downtown area and provide services along the primary highways.*

Natural Landscape

Policies

- *Request the provision of Environmental Reserve or Environmental Reserve Easements at the time of subdivision and in accordance with the requirements of the ASP.*
- *Protect the natural area and drainage course of Sawridge Creek.*
- *Promote timber resource management and recovery south of Highway 2 at the time of subdivision and development.*

Flood Potential

Policies

- *In the area south of Highway 2, ensure that development takes place above the 1:100 year designated flood area (design flood elevation).*
- *Ensure development complies with the Flood Damage Reduction Program.*

Proposed Open Space and Recreation Areas

Policy

- *Support the low intensity use of open space designated on the 'Future Land Use' map.*

Municipal Reserve

Policies

- *Require the dedication of land to effect its parks and open space standards, in its area structure plans and in applications for subdivisions.*
- *Request the maximum municipal reserve dedication through the subdivision process.*
- *Require, as municipal reserve, usable land, and will not support the dedication of reserve as buffers or walkways.*
- *Ensure, through the development agreement, that municipal reserve parcels are contoured and grassed by developers, and, where necessary, serviced, for school use.*
- *Work toward agreements with school authorities regarding the provision of reserves.*

Proposed Roadway System

Policy

- *Generally support the basic roadway classification system (shown on the 'Future Land Use' map), and as refined by an area structure plan or outline plan.*

Arterial Roads

Policy

- *Ensure the arterial road network for development south of Highway 2 meets the objectives of the ASP.*

Community Trail Plan

Policies

- *Request the Subdivision Approving Authority to provide the right-of-way for walkways and bicycle paths as part of the roadway dedication;*
- *Ensure that the ASPs address pedestrian linkages;*
- *Through its Municipal Planning Commission and Subdivision Approving Authority, ensure the objectives of the community trail plan are implemented; and*
- *Include within a development agreement the responsibility to construct neighbourhood walkways within the development area.*

3.2 Gloryland Area Structure Plan (Draft)

The Draft Gloryland ASP (August 2000) sets forth the desired future land use pattern for land in the north west corner of the NW ¼ section 25-72-6-5. Gloryland Estate is a residential development on larger half acre (.20 ha) lots. The objectives and intent of the Draft ASP have been considered in developing a preferred future land use concept for the South Expansion ASP area.

3.3 Town of Slave Lake Land Use Bylaw #07 - 2000

The Town of Slave Lake Land Use Bylaw (LUB) #07-2000 regulates and controls the use and development of land and buildings within the Town of Slave Lake. *Map 5 – Existing Land Use & Zoning* shows how lands within the ASP area are designated. The stated purpose of each district under the existing Land Use Bylaw is as follows:

Urban Expansion District (UR): To reserve those lands in the undeveloped areas of Town for future subdivision and development, and prevent premature subdivision and development. This does not permit intensive animal husbandry.

Estate Residential District (R1C): To provide for very low-density residential development in the form of detached dwellings in an acreage residential setting.

Community District (P): To establish an area of public land for active and passive recreational uses.

Institutional District (I): To permit development of uses of either a public or private nature, which provides services to the community.

Highway Commercial District (C3): To provide for commercial uses to serve the travelling public. It should be noted that Bylaw #07-2000 has been amended to allow for a broader range of permitted and discretionary uses under the Highway Commercial District.

Council Direct Control (CDC): To provide for developments that could not be effectively accommodated under any other Land Use District because of unique land use characteristics, necessity for innovative ideas, or unusual site constraints as determined by Council.

3.4 The Town of Slave Lake Parks & Open Space Master Plan

Randall Conrad & Associates Ltd., on behalf of the Town of Slave Lake is in the process of developing a Parks and Open Space Masters Plan. The Plan provides for the overall policy direction for open space opportunities throughout the Town, including recommendations for the placement, configuration, and development of outdoor parks, and open space resources. The following goals are outlined in the plan:

- *“To conserve and enhance the Town’s natural area (forests, wetlands, wildlife habitat) through their integration with urban development.*
- *To create neighbourhoods which have individual identities, but are inter-linked with one another to promote social interaction.*
- *To provide ongoing opportunities for community participation in community decision-making.*
- *To create opportunities for a broad range of social and aesthetic community experiences.*
- *To preserve important historical elements of the community, and integrate them with new development.*
- *To integrate local commercial development with other neighbourhood facilities to create community focal points.*
- *To ensure that parks and community service facilities are appropriately located and built to minimum design standards relative to their service populations.*
- *To recognize and enhance the role of community streets as potential social places in addition to their functional role in the urban transportation system.*
- *To ensure that future urban development accommodates a variety of transportation modes through the development of an integrated trail network.*
- *To encourage diversity in neighbourhood living experiences.*
- *To recognize and provide a range of parks and recreation experiences varying in scale and service area.*
- *To cooperate with adjacent municipalities where mutual interests exist in planning development, and the provision of municipal services”.*

3.5 The Town of Slave Lake Development Standards & Procedures – 2000

The Town of Slave Lake Development Standards & Procedures (2000) states the minimum development requirements of the Town. The document describes the development process including requirements for Area Structure Plans and Outline Plans. It also describes the design reports and studies, standards for design and drawings, and construction procedures to be undertaken during the development process.

4.0 SITE CONTEXT AND DEVELOPMENT CONSIDERATIONS

4.1 Topography, Hydrology and Vegetation

The Plan area is in the lower slopes of the Sawridge Creek Drainage Basin in the Boreal Plains Ecozone. The landscape in the Plan area is diverse with flat plains, steep slopes, and a series of plateaus and ravines that orient in a southwest to northeast direction. Generally, the landscape has a northeast aspect and rises up toward the southwest. The area is on the cusp and transition between the Peace Lowland Ecoregion and the Western Alberta Uplands Ecoregion, reflective in the diversity of the landscape in the Plan area. The topography of the ASP area is illustrated in *Map 3 – Topography*.

Sawridge Creek, which bisects the Plan area, is a meandering channel with numerous oxbows. The creek flows in a northeast direction and drains into the Lesser Slave River (north of the Town of Slave Lake), eventually exiting into the Athabasca River. Surface drainage is good throughout most of the Plan area with the exception of SE-35-72-6-5 (except the SW corner), NE-19-72-5-5 (except the SW and SE corner) and the floodplains, which are primarily flat. These areas have very poor drainage with small depressions (water pockets) dispersed throughout. A small lake, which drains into Sawridge Creek, also exists in SE-25-72-6-5 on one of several plateaus.

Most of the Plan area consists of second or third growth forests. Mixed forests consist of Trembling Aspen (*Populus tremuloides*), Balsam Poplar (*Populus Balsamifera*), and White Spruce (*Picea glauca*). Wetter areas may consist of more shrubs like Willow (*Salix spp.*) and Black Spruce (*Picea mariana*), species more adapted to poorly drained and acidic soils.

The Canada Land Inventory for Agricultural Production rates the subject lands as Class 3 and 4 with moderate to severe limitations arising from slope and high water table constraints.

4.2 Existing Land Uses

The existing land use districts within the ASP area are illustrated in *Map 5 - Existing Land Use & Zoning*. The ASP area is predominately forested. The sole existing estate residential land use is located in the Gloryland area in the northwest area of NW ¼ Section 72-6-5 of the ASP area. This residential area lies on the west side of the Sawridge Creek and access is provided by gravel roads. Aside from this residential pocket, the Gloryland area is largely undeveloped, characterized by the natural setting of the Sawridge Creek and small pockets of agricultural land.

Other developments in the ASP area include the Town's cemetery, located on top of the main rise in the northwest corner of SW ¼ Section 30-72-5-W5M. The Town's water reservoir is located west of the cemetery. In addition, a former landfill site is also located in the south central area of the aforementioned ¼ section. South of the Town reservoir is a Telus communications tower, which is located in the northeast corner of the SE ¼ Section 25-72-6-5. A pipeline right-of-way runs roughly parallel to Highway 2, approximately one kilometre to the south of Highway 2. Finally, situated in the southeast corner of the area are the Slave Lake Fish and Game Association and a grazing lease.

4.3 Surrounding Land Uses

The developed area of the Town of Slave Lake lies north of Highway 2. Surrounding land uses include Natural, Low Density Residential, Highway Commercial, Light Industrial, and Natural Areas. Most of the land to the north of the ASP area is residential. Commercial land uses are located adjacent to Highway 2, north of the ASP Area. No significant development has occurred immediately to the west, south, or east of the ASP area. This land area is primarily in a natural state and in some instances, heavily treed.

4.4 Natural Constraints and Opportunities

There are a number of natural constraints, as shown on *Map 4a – Natural Constraints & Opportunities*, which will influence future land use and development within the ASP area. These constraints are summarized below.

4.4.1 Drainage Courses/ Low Lying Areas

Development needs to be avoided in these areas and adequate setbacks provided. Geotechnical studies by a qualified professional need to be required prior to considering applications of subdivision. The Sawridge Creek is a major constraint on existing development within Town and future development within the ASP area. Major dyke and flood diversion controls have been constructed north of Highway 2 to minimize the potential of flooding within the Town.

The Sawridge Creek flood plain is subject to the Canada – Alberta Flood Damage Reduction Program. Therefore, no permanent development or structures should be allowed to be built below the 1:100 flood area (design flood elevation). Delineation of the Sawridge Creek area to be protected would be determined by the 1:100 year flood event, soil conditions, slope constraints and suitable buffer strip for trails and drainage.

4.4.2 Steep Slopes

There are several areas with steep slopes, (i.e. greater than 15%) within the ASP area that are not suitable for development and should be maintained in their natural state with adequate setbacks at the top of the bank. Geotechnical studies by a qualified professional need to be required, prior to considering plans of the subdivision.

4.4 Man-Made Constraints and Opportunities

There are a number of man-made constraints, as shown on *Map 4b – Man-Made Constraints & Opportunities*, which will impact future land use and development decisions within the ASP area. These constraints are summarized below.

4.4.1 Pipelines and Utilities

A Nova Gas pipeline right-of-way crosses the ASP area from east to west. The pipeline needs to be kept clear of development and required setbacks as per AEUB policies apply. A pipeline proposal by Fortune Energy also impacts the ASP area. Prior to development, the owners of these facilities will need to be consulted with respect to their legal access, crossing requirements, setbacks, and any other concerns.

4.4.2 Highway 2

Highway 2 is a two-lane highway, which forms the north boundary of the ASP area. Plans are to have Highway 2 upgraded to a four-lane divided highway. Direct access is restricted and is subject to access management restrictions by Alberta Transportation.

4.4.3 Landfill Site

An abandoned solid waste landfill site is located in the SW ¼ Section 30-72-5 W5M. This would affect future development of the site as, in accordance with the Subdivision and Development Regulations, no subdivision or development authority can approve a plan of subdivision or development permit within 300 metres of the property line of a school, hospital, food establishment, residence, or building site proposed for a school, hospital, food establishment or residence. This requirement may be varied by a subdivision or development authority obtaining written consent from the Deputy Minister of Environment.

4.4.4 Clay Pit

The draft Gloryland Area Structure Plan indicates the existence of a surface materials lease (clay pit) that has recently been reclaimed to be re-landscaped for the purposes of a country residential development site.

4.6 Historical and Archaeological Resources

Alberta Community Development advised that the ASP area is characterized by high archaeological potential. The ASP area includes riparian and upland environments in a broader region containing known archaeological sites and historic period aboriginal and Euro-Canadian land uses. It has been determined by Alberta Community Development that, pursuant to Section 33(2) of the Historical Resources Act, any future development in the ASP area must be preceded by a Historical Resources Impact Assessment (HRIA).

4.7 Schools

The Town of Slave and the surrounding region are serviced by the Living Waters Catholic Regional Division #42, which operates St. Mary of the Lake Catholic School with grades K-12, and the High Prairie School Division #8 which operates three schools. These schools are C.J. Schurter School, E.G. Wahlstrom School, and Roland Michener Junior / Senior High School. Currently, the total enrollment for the three schools is 1480 students. The following table identifies current enrolment and school capacities.

Table: 1 Public School Enrolment and School Capacities

<u>Public Schools</u>	<u>Current Enrolment 2003-2004</u>	<u>Rated Student Capacity</u>
C.J. Schurter School	480 (FTE)	667
E.G. Wahlstrom School	371	636
Roland Michener School	<u>629</u>	<u>912</u>
TOTAL	1480	2215

Note: The enrolment of C.J Schurter includes Kindergarten students as 0.5 full-time equivalent (FTE). Should government increase Kindergarten to full day programs, FTE enrolments would increase.

Planning for new schools buildings within the school division would commence when schools reach a capacity of 80% (1772) students. Current projections indicate that facilities will be able to accommodate student growth for at least five years. A new school site would need to be at least 5 hectares for an elementary school or 7 hectares for a junior/senior school. Latest communications with the High Prairie School Division indicates that the school division was interested in developing a joint school site, which would increase the land required to 8 hectares.

The Living Water Regional School Division did not provide enrolment information but indicated that they would be interested in a joint public/separate school site.

4.8 Parks, Open Spaces, and Trails

Currently, lands within the ASP area contain no developed parks, open spaces, or trail systems. A “*Town of Slave Lake Parks & Open Space Master Plan*” for parks and open spaces is currently being developed by the consulting firm Randall Conrad & Associates Ltd.

4.8.2 Parks and Open Spaces

Several parks have been designated in the ASP area, as shown on *Map 7 – Parks, Open Spaces, & Trails*. Where possible, these parks will be linked to the trail system. A park/recreation area will be located adjacent to the school sites. This park will be connected to the trail system, providing students with the opportunity to walk or bike to school.

The Sawridge Creek floodplain is an attractive natural area. Conservation of this natural area and protection of stream and drainage courses would benefit property values and enhance quality of life for future residential areas. Protected streams and drainage courses would offset development costs related

to underground servicing, especially stormwater management. Other natural areas could be preserved for use as buffers between incompatible land uses.

4.8.3 Trails

Currently, a number of informal trails exist within the ASP area. Connections are envisioned from the established urban area north of Highway 2 to the proposed Sawridge Creek Trail system and to future residential areas within the ASP area, as shown on *Map 7 – Parks, Open Spaces, & Trails*. The Municipal Development Plan (MDP) supports the use of Sawridge Creek as a natural open space greenway corridor for trail development. While the trail system will be environmentally sensitive, it will nevertheless offer many opportunities for passive recreation and transportation for pedestrians and cyclists. These facilities will be developed further during the design of neighbourhoods at the Outline Plan stage.

4.9 Transportation

The following transportation section describes the transportation network adjacent to and within the ASP area including highways, major roads, and railroads (see to *Map 11 – Transportation*).

4.9.1 Highway 2

Highway 2 is a major two-lane highway that forms a barrier between the developed north end of the Town of Slave Lake and the largely undeveloped south end of the Town. Highway 2 defines the northern boundary of the ASP area. The primary function of Highway 2 is to carry traffic generated from outside of the region to the Town of Slave Lake or through the Town to other destinations. Highway 2 is Alberta's major north-south highway for passengers and freight. The highway travels through Calgary and Edmonton. At Athabasca, Highway 2 turns northwest to Slave Lake and then west into Peace River country.

Highway 2 also allows residents to use the road as a southern ring road since Highway 2 is currently the southern boundary of the Town. With the new southern extension to Slave Lake, Highway 2 will likely become more important as a local commuter road especially since the only way of traveling between some neighbourhoods in the southern part of Slave Lake will be to drive along Highway 2. The highway will likely be widened and upgraded in the future (pending approval by Alberta Transportation) thus increasing the need for effective buffers. An Access Management study is currently being undertaken by Alberta Transportation. It should be noted that allowances for future widening need to be provided west of the NW $\frac{1}{4}$ Section 30-72-5-5. In addition the existing adjacent sanitary trunk sewer and foremains are located on the south extent of future widening requirements.

4.9.2 Highway 88 (Holmes Trail)

Highway 88 (Holmes Trail) is located just north of the ASP area and Highway 2. It defines the eastern boundary of current development in the Town of Slave Lake. Highway 88 (Holmes Trail) is a north-south highway whose southern terminus is Slave Lake and whose northern terminus is Highway 58, just north of Fort Vermillion in northern Alberta. Highway 88 (Holmes Trail) functions as a truck bypass and links Highway 2 to the industrial area located in the northern part of Slave Lake. Highway 88 (Holmes Trail) also provides a major access link for service industries servicing the oil and forestry industries located in northern Slave Lake. Highway 88 (Holmes Trail) will be extended south of Highway 2 into the future development area. South of the ASP area Holmes Trail becomes Flat Top Tower Road. Access to this road will be maintained south of the ASP area as this road provides access to public lands to the south for resource development, forestry service access, and access to the former municipal landfill.

4.9.3 Main Street

Main Street is an arterial roadway that provides a linkage between the Town's residential areas and the downtown commercial core. Main Street will be extended into the future southern development.

4.9.4 Caribou Trail

The Ring Road (Caribou Trail) is an arterial roadway and is located at the western end of Slave Lake. It links Highway 2 to the north area of Slave Lake.

4.10 Municipal Services

The Town of Slave Lake's goal concerning municipal services as stated in the current MDP is, "*to ensure the orderly and economic extension of infrastructure.*" Ongoing development and re-development of the existing Town municipal services has generally provided allowances for future development of the ASP area where reasonable. The overall Town servicing strategy enables development with the south expansion area to begin without any key infrastructure components requiring immediate upgrade. Certain components may require upgrade once development reaches population thresholds.

4.10.1 Water Servicing

The current water treatment plant is suitable to supply water to a town population up to 10,750 people. (Water Treatment Improvements, prepared by Associated Engineering, 2000; and Water Treatment Plan Pre-design, prepared by Associated Engineering, 2001), *Map 8 – Water Serving Concept* illustrates the existing and proposed water supply system in the ASP area.

Potable water is currently supplied to the Town from the water treatment plant located in the north industrial area. High lift pumps at the water treatment plant supply treated lake water to the distribution system and into an existing reservoir in the ASP area. The existing 4,5000 cubic metre reservoir floats on the system with a normal water level of 635.8 meters.

The water treatment plant treatment system capacity is currently 125 L/s, and the raw water and treated water pumping capacities are both 144 L/s. The water treatment system has undergone extensive study over the last five years resulting in recent treatment system upgrades.

A computer modelled network analysis of the existing and ultimate water distribution system was completed as portion of the 1989 Area Structure Plan prepared by Associated Engineering Alberta Ltd, and re-analyzed during the Water Treatment Improvement study completed from 2000 through 2002.

The previous analyses assumed more overall development within the ASP area than the current plan. The Town distribution system is capable of servicing an equivalent population of 18,000 (residential and commercial/industrial flows). Limiting factors to service the south expansion area are water storage and pressure requirements to service high parcels. Extension of the water distribution system is to be designed and constructed as per the Town Development Standards and Procedures.

4.10.2 Sanitary Servicing

The condition and capacity of the wastewater treatment system was reviewed in a report entitled “*Town of Slave Lake Wastewater System Evaluation*”, prepared by Associated Engineering Alberta Ltd., in May 2001. The system consists of three aerated lagoons and one sludge-drying cell. This study concluded the current aerated lagoon system has sufficient capacity to service a Town population of 8890. As the Town nears this population additional study and wastewater treatment upgrades will be required. The Sawridge lift station has suitable capacity to service the ASP area providing that pumping capacity is upgraded to meet overall flows as required. *Map 9 – Sanitary Serving Concept* illustrates the existing and proposed sanitary serving system in the ASP area.

All sanitary sewer flow within the Town and proposed expansion area discharge into the Sawridge lift station located east of Highway 88 immediately north of the CNR rail line. From the Sawridge lift station sewage is pumped into the Town’s aerated lagoon system with continuous discharge into Sawridge Creek.

The ASP area is already serviced by the south sanitary trunk sewer installed in 1992, and Lift Station F constructed in 1993. Both of these system components were designed providing sufficient capacity for development within the ASP area, as per the 1989 Area Structure Plan. The system was further reviewed in the “*Town of Slave Lake Sanitary Sewer Master Plan*”, prepared by Associated Engineering Alberta Ltd. in February 2000. The capacity of additional flow ultimately available to development within the ASP area is dependent upon the amount of flow transferred to the south trunk from existing developed areas experiencing capacity problems. Significant transfer of flows appears unlikely, which should ensure suitable capacity of the south trunk for the proposed future development. Sanitary sewer system extensions are to be designed in accordance with the Town Development and Standards and Procedures.

4.10.3 Stormwater Servicing

Stormwater north of Highway 2 is conveyed by underground and above ground drainage systems into Sawridge Creek, Lesser Slave Lake and adjacent low lying areas. An overflow channel was constructed on the north side of Highway 2 to divert floodwater within Sawridge Creek around existing development within the Town. Considering severe flood potential already exists downstream of the ASP area, stormwater discharges to Sawridge creek will have to be restricted to pre-development rates (See *Map 10 – Storm Servicing Concept*).

4.10.4 Franchise Utilities

Franchise utilities are provided by the following: ATCO Electric (power), ATCO Gas (gas), Telus Communications Inc. (telephone), and Cable T.V. Slave Lake (cable). Developers will be required to coordinate the design and layout of franchise utilities, which will be required with subdivision applications.

4.11 Protective and Emergency Services

Protective and emergency services within the Town of Slave Lake include fire and rescue, ambulance, and policing services. The Lesser Slave Regional Fire Service provides fire and rescue services for the Town of Slave Lake. Ambulance services for the Town are provided by Slave Lake Air / Ground Ambulance Society. The RCMP Slave Lake detachment based in the Town provides police services in the Plan area.

Appropriate wildfire mitigation measures should be undertaken. A 30 m firebreak is recommended to follow along the NOVA pipeline south of the ASP area. *Map 6 – Development Concept* illustrates the proposed trajectory of the firebreak.

5.0 GOALS, OBJECTIVES, AND POLICIES

5.1 Guiding Principles

When discussing ways of achieving sustainable communities current planning literature while often discuss Smart Growth. Smart Growth promotes the building of communities in ways that create strong communities with a range of housing options, commercial and transportation options, promote a clean environment, and support economic development. Ways in which this can be achieved are as follows:

- Mix land uses.
- Promote compact neighbourhood design to avoid costly sprawl.
- Create a range of housing opportunities and choices;
- Foster “walkable”, close-knit neighbourhoods.
- Foster distinctive attractive communities with a strong sense of place.
- Preserve open space, farmlands, natural beauty, and critical environmental areas.
- Plan for green infrastructure, including greenways and corridors connecting larger preserved areas.
- Make development decisions predictable, fair and cost effective.
- Encourage community and stakeholder collaboration in development decisions

5.2 Development Concept

The Development Concept would accommodate an estimated additional 8141 people. The Development Concept illustrates the geographical distribution of various proposed land uses. **An important note to review is that the Development Concept Map is not to be amended on a site-specific basis. Areas have been generalized and are only approximate. It should also be noted that local streets indicated on maps are strictly conceptual in nature.** The development concept and relevant policies for each land use are described below and are also shown on *Map 6 – Development Concept*. A *Summary of Land Use and Population Statistics* are provided in Appendix II. The Development Concept and accompanying goals, objectives, and policies were determined giving regard to the following:

- To achieve orderly, economical and beneficial use of development of land and use of land.
- To minimize the negative impacts of all new developments on the surrounding natural environment and to work to appropriately respond to environmental concerns.
- To ensure that adequate land is identified and set aside for recreation, parks, school and trail development within the ASP area.
- To provide a functional, economic and effective transportation system that serves both local and regional needs.
- To ensure that development proceeds in an orderly and effective manner with municipal services developed to a standard acceptable to the Town of Slave Lake to meet present and future growth.

5.3 Residential Land Use

Goal

To ensure residential development with the South Expansion Area Structure Plan area proceeds in an orderly and contiguous fashion.

Overview

Low Density Residential is the predominant housing form proposed within the ASP area, as shown on *Map 6 – Development Concept*. This includes single-family detached dwellings, manufactured homes and estate residential development corresponding to the RI, RIA, RIC, RID, RPSL, RMHS, and RMHP Districts in the Town of Slave Lake Land Use Bylaw#07-2000 (LUB). Currently within the ASP area the only residential development is located in the Gloryland area in the northwest area of the NW ¼ Section 72-6-5 as seen on *Map 5 – Existing Land Use & Zoning*.

Higher Density Residential sites have been located in strategic areas adjacent to collector roadways, school sites, and open spaces to take advantage of view and opportunities to provide amenity space. In some instances, a higher density residential use was also used as an appropriate transitional use between a commercial area and a lower density residential area. Higher density residential corresponds to the R2 and R3 Districts in the LUB. The housing form in these areas could be in low density, tri-plexes, four-plexes, row housing and apartment blocks. The latter would have a maximum height of three stories above ground.

Objectives

- To encourage a variety and mix of housing types that are of a high standard.
- Determine phasing, housing type and housing mix at the area structure plan or outline plan stage of the planning process.
- To encourage and integrate the development of special needs housing which is required in the community.
- To reinforce standards of housing development, and, where required, improve the quality of housing and housing developments.

Policies

5.3.1 Low Density Residential

As indicated on *Map 6 – Development Concept*, low density housing forms will be the main land use and be developed to reflect the range of densities and building forms permitted in the Town of Slave Lake Land Use Bylaw including a range of single detached residential development on a variety of lot sizes and semi-detached residential opportunities.

5.3.2 Manufactured Homes	Manufactured housing is considered to be a form of low-density housing. <i>Map 6 – Development Concept</i> indicates areas designated for low density housing. Developers shall be encouraged to provide manufactured houses which resemble conventional housing in such architectural elements as the pitch of the roof, articulation, exterior finish and overall shape and dimensions. Conventional municipal standards with regard to street width, spacing, emergency/fire access and other standards shall apply. Appropriate streetscape and landscape development standards shall be encouraged.
5.3.3 Higher Density Residential	Various sites for higher density residential development have been identified in <i>Map 6 - Development Concept</i> , to accommodate medium to high-density residential development in the form of town housing and apartments consistent with High Density Residential District (R3) in the Land Use Bylaw.
5.3.4 Transition or Buffering from Non-Residential Uses	Where residential development is located adjacent to industrial or commercial development, or arterial roads, developers will take adequate measures to minimize conflicts between uses. To determine what measures are required, a detailed review for buffering and access will be necessary at the time of preparation and approval of the outline plans.

5.4 Commercial Land Use

Goal

To provide commercial development, within the South Expansion Area Structure Plan area, to meet the needs of residents and tourists.

Overview

The Development Concept identifies commercial development along Highway 2 to accommodate not only the future demand for automobile related uses but also big box retailers that could benefit from the highway exposure. In addition to providing automobile access site planning should locate proposed buildings to the street edge and provide sidewalks to create a 'pedestrian oriented environment' with good pedestrian connections to nearby higher density residential sites, school sites, and a 'greenway' along Sawridge Creek. This also addresses the need to accommodate uses such as big box retailers, major grocery stores and other uses for which larger sites are not available in the interior area.

Planning has already commenced for commercial development at the intersections of Highway 88 and Highway 2 (i.e. Holmes Trail) with service road format to ensure proper access management along Highway 2. Proposed uses under consideration are a Petro Canada Service Station and Tim Hortons. Given current problems with access and egress and parking for large trucks on the north side of Highway 2,

deeper commercial parcels are proposed with front service roads designed to be able to accommodate large truck parking on both sides. In other areas designated for commercial development, a rear service road is preferable for functional, cost and aesthetic reasons.

Given the size of the community and amount of land that has been designated for commercial purposes along Highway 2, it is felt that there is no need to allocate areas for neighbourhood commercial sites internal to the two residential neighbourhood cells. Experience in other communities has shown that these 'local neighbourhood' shopping areas have caused problems with noise, traffic and litter and were incompatible with nearby residential development and school sites.

Objectives

- Ensure and adequate supply of commercial land.
- Locate commercial sites along Highway 2 and collector roadways to ensure high visibility and easy access.
- Ensure that commercial development is aesthetically attractive and does not create an adverse impact on adjacent uses through landscaping, set-backs and buffering.

Policies

5.4.1 Commercial Development	Sites for future commercial development are shown on <i>Map 6 – Development Concept</i> . Through the provisions of the LUB, ensure the siting, form and character of commercial development improves the visual quality and marketability of these sites along Highway 2 and arterial roadways.
5.4.2 Buffering Requirements for Commercial Development Adjacent to Residential Uses	Where commercial development is located adjacent to residential development developers will take adequate measures to minimize conflicts between uses. To determine what measures are required, a detailed review for buffering and access will be necessary at the time of presentation of the outline plans.

5.5 Industrial Land Use

Goals

To promote and support continued industrial development within the areas designated for this purpose.

Overview

The Development Concept proposes the development of both Light Industrial and General Industrial development within the ASP. Light Industrial development is proposed immediately along Highway 2 and adjacent to General Industrial. This would allow light industrial and manufacturing uses which carry out their operations so that any nuisance factor (noise, vibration, smoke, dust, particle matter, radiation, fire,

explosive hazards and heat, humidity and glare) does not extend beyond the boundaries of the parcel consistent with the M-1 District in the LUB. Given the high profile location along the Highway, performance standards need to be put into place to ensure quality development through the setting and design of buildings, landscaping, screening of storage, and parking areas and size of signage. This may necessitate a review and amendments to Part 7, 8 and 9 of the LUB. General Industrial development is proposed in the interior of the proposed Industrial Park consistent with the M2 District of the LUB.

Objectives

- Provide for an adequate supply of industrial land with the Town.
- Avoid potential land use conflicts with non-industrial uses.
- Maintain appropriate development policies and design standards for industrial parks.
- Ensure industrial development adjacent to Highway 2 is visually attractive.

Policies

5.5.1 Light Industrial	Allow Light Industrial uses within the ASP area, consistent with the Light Industrial District M1 designation in the LUB. As shown on <i>Map 6 – Development Concept</i> , Light Industrial uses are located in the south east section of the ASP.
5.5.2 General Industrial	Allow General Industrial uses on interior sites as shown on <i>Map 6 – Development Concept</i> . General industrial includes uses such as manufacturing, processing, assembly, distribution of repair services, which carry out part of their operations outdoors or require outdoor yard storage. The General Industrial designation is M2.
5.5.3 Roadway Development Standards Within Industrial Areas	A rural roadway cross-section is recommended within industrial areas. This provides simpler site development both on and off lots minimizing development and maintenance costs. Stormwater drainage within roadside ditches enables simpler tracking and control of accidental spills, and primary treatment of sediment laden runoff prior to discharge to stormwater management facilities.
5.5.4 Development Standards for Industrial Uses Adjacent to Highway 2 and Greenway	Through the provisions of the LUB, ensure the siting and design of buildings, landscaping, screening of storage and parking area, appropriate size of storage, and the restriction of any external objectionable or dangerous conditions apparent beyond any building housing processes wherein such effects may be produced.

5.6 Environmental Management

Goal

To protect and preserve scenic and natural landscape features and areas and/or lands that are environmentally sensitive.

Overview

Sawridge Creek is the predominant natural feature within the ASP area and should be protected as a natural area and integrated as a greenway into future development. There are also a number of other tree stands and wetlands, which should be protected if possible. Refer to *Map 4a – Natural Constraints & Opportunities*.

Objectives

- Dedicate environmentally sensitive areas as “environmental reserve” in accordance with the provisions of the Municipal Government Act, and integrate them with other open spaces and parks areas wherever possible.
- Work with the development industry to ensure the protection and integration of natural areas into future development.
- Mitigate against negative environmental impacts resulting from future development.
- Avoid development in hazard lands.

Policies

5.6.1	Natural Areas Designated for Environmental Protection	Designate environmentally sensitive and natural areas for environmental protection, restrict public access if necessary, and allow only passive recreation uses for lands identified for this purpose on <i>Map 6 – Development Concept</i> . Methods for protecting and conserving environmental sensitive areas would include the Sawridge Creek Greenway.
5.6.2	Hazard Lands Geotechnical Study Requirements	Do not allow development in areas that are prone to flooding, erosion, landslides, subsidence or any other natural or human-induced hazards. Development on or in proximity to escarpments, steep or unstable slopes may be considered only if recommended in a geotechnical study prepared by a qualified professional and if adequate setbacks are provided. The approving authority may require restrictive covenants or caveats registered to the title as notification to respective purchasers.

5.6.3 Sawridge Creek Greenway	<p>As shown on <i>Map 6 – Development Concept</i> multi-purpose greenways are proposed following natural drainage courses within the Plan area to provide for the following purposes:</p>
	<ul style="list-style-type: none"> • Preserve natural areas • Storm water management • Allow for trail connections and passive recreation uses • Maintain wildlife corridors
5.6.4 Buffers Along Creeks	<p>Require a buffer that is a 60 m wide setback measured from the top of the bank or high water mark of water bodies to the property lot line.</p>
5.6.5 Fish and Wildlife Habitat	<p>Work with Alberta Sustainable Resource Development and conservation associations to protect and enhance significant fish and wildlife habitats by:</p> <ul style="list-style-type: none"> • Ensuring that development or subdivision is sensitive to the character of the resource. • Incorporating habitats such as lakes, rivers, streams, wetlands and wildlife corridors into open space planning and municipal and environmental reserves. • Ensuring where possible, that natural features of development sites (vegetation, wetlands, etc.) are not removed, filled or otherwise significantly altered.
5.6.6 Canada Alberta Flood Management Agreement	<p>Ensure that development takes place above the 1:100 designated flood area (design flood elevation) in accordance with the provision of the Canada-Alberta Flood Damage Reduction Program.</p>
5.6.7 Environmental Reserve Dedication	<p>Require subdivision applications to dedicate as environmental reserve, all lands within an area to be subdivided that can be defined as environmental reserve as described in the <i>Municipal Government Act</i>. A minimum 60 m wide environmental reserve strip will be required measured from the top of the bank of the upland area along Sawridge Creek or the high water mark of any other water body. Specific circumstances may warrant a larger environmental reserve dedication. In some circumstances the Town of Slave Lake may consider a conservation easement agreement in place of an environmental reserve dedication.</p>

5.6.8	Historical Resource Impact Assessments	Refer proposed development or subdivision application to the Archaeological Section of Alberta Community Development to determine the need for a Historical Resource Impact Assessment.
5.6.9	Pipeline Development Setback	Require minimum setbacks from pipelines in accordance with the specified guidelines of the Alberta Energy and Utilities Board
5.6.10	Future Residential Development Adjacent to Landfill	Prior to approving subdivision or development within 300 metres of the landfill an environmental site assessment by a qualified professional would be required to determine if development could safely occur in this area before a relaxation could be granted under the provisions of the Subdivision and Development Regulation. The environmental assessment would be required to determine the actual location and conditions of the buried waste, as well as the surrounding soil, gas and groundwater conditions. Written consent needs to be obtained from the Deputy Minister of the Environment to vary the required separation distance.

5.7 Schools

Goal

To provide adequate and well-located school sites through the municipal reserve dedication to meet the schooling needs of a growing population.

Overview

The Development Concept proposes to locate two schools on a joint 8 hectare site which includes a shared play field directly northeast of the existing Gloryland subdivision as illustrated in *Map 6 – Development Concept*. *Appendix II - Summary of Land Use and Population Statistics* provides an analysis of the projected student population.

Objective

- Plan and site future schools in cooperation with School Authorities

Policies

5.7.1 Future School Sites

Work with school authorities regarding provision of school reserves. A fully serviced school site, must be provided by the developer when needed. This need may occur in advance of services being easily accessed. Responsibility for provision and servicing of school sites shall be with the developer

5.8 Parks, Open Space, & Trails

Goal

To plan, develop and maintain a variety of parks, natural areas, and trail ways to meet the present and future recreational, environmental, aesthetic, educational, and quality of life needs of the Town of Slave Lake residents.

Overview

Large areas along Sawridge Creek and other areas with low-lying areas and steep slopes have been deemed as being environmentally sensitive and not suitable for development. These would serve as greenways that could continue to serve as wildlife corridors and riparian areas along streams where vegetation would be retained to prevent siltation. As well, some areas have been identified for passive recreation and trail development linking with parks, open spaces, and other focal points in the neighbourhood. This system would link with the existing trail system within the Town of Slave Lake. In addition to the environmentally sensitive areas already noted, smaller parks spaces have been conceptually shown throughout the residential areas. These would be suitable for more active recreational uses and exact locations would need to be determined at an outline plan stage prior to considering a plan of subdivision.

Objectives

- To ensure that parks are appropriately located and built to minimum design standards relative to their service populations.
- To ensure that future urban development accommodates a variety of transportation modes through the development of an integrated trail network.
- Create greenways along Sawridge Creek and other drainage courses.
- Ensure that provisions are made for the deferral of municipal reserves to ensure adequate lands are dedicated for municipal reserve purposes at the time subdivision takes place.

Policies

5.8.1 Park Locations

The proposed location of parks is shown on *Map 6 – Development Concept*. These are intended to be centrally located, where possible integrated with school sites, and linked to the Town's trail network.

5.8.2 Municipal Reserves

Take 10% of the gross developable land (minus environmental reserves) to be subdivided as municipal reserve, or cash in lieu of land. If land is taken, it should be in a configuration that supports the ASP objectives of establishing linked open park spaces, trails and school sites as conceptually shown on *Map 7 – Parks, Open Spaces and Trails*. Dedication of land rather than cash in lieu is preferred in residential areas.

5.8.3 Trail Development Standards

Trail Development Standards are specified in the *Town of Slave Lake Parks and Open Space Master Plan*. The majority of the trails proposed in Map 7 – Parks, Open Spaces and Trails are nature trails which are to be developed to be low impact and low cost trails designed primarily for walking. The following guidelines apply:

- Width 1.5 – 2.5 metres
- Compacted shale, gravel, or wood chip surface
- Trail amenities (rest nodes, benches, trash receptacles, viewpoints, interpretive signage).

The location of trails is conceptual in nature. The identification of proposed trails on private lands does not indicate that such property is available for public use. Trail development for public use will be defined at the time of subdivision.

5.9 Transportation

Goal

To provide a functional, economic and effective transportation system that serves both local and regional needs.

Overview

The transportation system envisaged for the ASP area includes a network, which accommodates the movement of automobiles, trucks, pedestrians and bicycles. The development of the transportation system involved the use of a hierarchical roadway system to serve the needs of the existing and future residents of the area.

Alberta Transportation is in the process of undertaking a functional planning study for Highway 2 within the boundaries of the ASP. Access management is seen as a key element in maintaining highway integrity. As such Alberta Transportation has identified 4 major intersection points in the plan area. From west to east these are: Caribou Trail, Main Street, Holmes Trail, and Popular Lane. Any other intersection points than those noted will be subject to a traffic impact assessment and approval by Alberta Transportation.

Objectives

- Plan and manage transportation improvements in cooperation with Alberta Transportation and the Municipal District of Lesser Slave River.
- Reflect access management requirements of Alberta Transportation.
- Improve safety and circulation of the Plan areas transportation network.
- Establish a roadway hierarchy in accordance with the MDP.

Policies

5.9.1 Development and Access Management along Highway 2

Alberta Transportation is in the process of undertaking a functional planning study for Highway 2 within the boundaries of the ASP. Access management is seen as a key element in maintaining highway integrity. As such Alberta Transportation has identified 4 major intersection points in the plan area. From west to east these are:

- Caribou Trail
- Main Street
- Holmes Trail
- Popular Lane

Any other intersection points than those noted will be subject to a traffic impact assessment (TIA) and approval by Alberta Transportation.

5.9.2 Widening of Highway 2

Where Alberta Transportation determines that additional land is required for widening of Highway 2 and/or that a service road is required adjacent to Highway 2, the Town shall impose conditions of subdivision approval to ensure that these requirements are accommodated.

5.9.3 Collector Roadways

Roadways to be constructed to a standard acceptable to the Town as set out in the *Town of Slave Lake Development Standards and Procedures – Manual*.

5.9.4 Standards for Service Roads

Standards for service roads require a 20-metre right-of-way with a 12-metre wide paved road surface. The Town of Slave Lake requires service roads within highway commercial areas provide sufficient road width to accommodate two travel and two parking lanes suitable for large vehicles. Service roads within highway commercial areas shall provide a 13.5 metre wide road surface.

5.9.5 Trail Development (Bicycle Paths and Trails)

Bicycle paths shall be provided in accordance with the *Town of Slave Lake Parks and Open Space Master Plan*. Developers will be required to provide suitable links with existing bicycle paths and trails and to incorporate the development of bicycle paths and trails in accordance with the Towns requirements for the developers subdivision area. Design and construction of bicycle paths and trails shall be in accordance with Section 3.0 of the *Town of Slave Lake Development Standards and Procedures – 200 Manual*. Costs associated with design and construction shall be the sole responsibility of the developer.

5.10 Municipal Services

Goal

To ensure that development proceeds in an orderly and effective manner with municipal services developed to a standard acceptable to the Town of Slave Lake to meet present and future growth.

Overview

The *Town of Slave Lake Development Standards and Procedures 2000* will be used as the required standard for roadways, sanitary systems, water systems, stormwater systems and other infrastructure.

Objectives

- Require the orderly and economic expansion of services.
- Ensure the cost of servicing land is borne by the developer.
- Ensure the stormwater management services & facilities are developed in an environmentally sound manner that meets Provincial Guidelines.

Policies

5.10.1 Servicing Standards

Require municipal services and roadways to be developed to a standard specified in the *Town of Slave Lake Standards and Procedures Manual* as approved and amended by Council from time to time. Proposed variances from the Town Development Standards and Procedures must be clearly outlined in subdivision approvals and supported by suitable reasoning or engineering study, as required.

5.10.2 Water Servicing Concept

A water servicing concept is illustrated conceptually on *Map 8 – Water Servicing Concept*. Due to the steep terrain south of Highway 2, it proposed the ASP area be serviced with two pressure zones. This will provide a more manageable pressure to consumers. Part of the proposed development will be serviced by the existing system, Zone 1. A new system, or Zone 2 would service all parcels of the expansion higher than 600 meters. Zone 2 would feed back into Zone 1 at key locations requiring pressure reducing valves to prevent Zone 1 from experiencing too much pressure

The existing water supply facilities appear adequate to supply proposed development within Zone 1. Development in higher areas will require construction of facilities to service Zone 2.

West of Sawridge Creek - Proposed development within Zone 2 is limited to a small residential parcel. Due to the small size of this parcel a booster station would be sufficient to service this area, additional storage should not be required. The new booster pump station would draw from the 300 millimetre main within Pioneer Drive feed the upper parcels and tie back into the Zone 1 along the revised Caribou Trail extension.

East of Sawridge Creek - Substantial development is proposed within Zone 2 east of Sawridge Creek requiring a new reservoir and pumphouse. This would facilitate additional storage requirements for the overall Town supply, pumping surge capacity and increased system pressure. It is proposed the reservoir and pumphouse be located adjacent the existing reservoir, enabling interlinking of the two tanks.

The proposed head at the new pumphouses is 660 m or 61 psi above the highest ground elevation in Zone 2.

5.10.3 Sanitary Servicing Concept

A sanitary servicing concept is illustrated conceptually on *Map 9 – Sanitary Servicing Concept*. The proposed sanitary system within the ASP area proposes the extension of the existing south trunk sewer system as required by development and the following:

West of Sawridge Creek - Once Caribou trail is realigned and development west of Gloryland is to proceed, Lift Station F requires relocation to the west extent of the development. The remainder of the development area would be serviced by gravity sewer discharging to the relocated lift station. Sewage is then pumped to the south trunk.

East of Sawridge Creek - All sanitary flow from development east of Sawridge Creek is to be conveyed to the existing south trunk. Most areas should be serviceable by gravity sewer. A lift station may be required to service the residential parcel furthest south on Holmes trail.

5.10.4 Stormwater Servicing Concept

A stormwater servicing concept is illustrated conceptually on *Map 10 – Storm Servicing Concept*. The overall stormwater management system within the proposed development area must control discharges to Sawridge Creek to that equivalent to 1:100-year storm pre-development rates, to prevent increasing flows. This is to be achieved by a number of stormwater management ponds, shown conceptually, that would control discharge rates from various catchments within the development area.

This overall concept, allowable discharge rates and pond design standards need to be developed as a “Master Stormwater Management Plan” for the development area. Developers would then be expected to submit stormwater management plans with subdivision applications

5.10.5 Franchise Utilities

Require individual developments to determine requirements for the provision of shallow utilities at the subdivision stage based upon capacities and right-of-ways required. Franchise utilities that service the Plan area include telecommunications, electricity, gas and water.

5.10.6 Wildfire Interface Provisions

Provide for a 30-metre wide firebreak around the periphery of the ASP area as conceptually shown in *Map 6 – Development Concept*.

5.10.7 Police, Fire and Emergency Services

Evaluate the impact of subdivisions and development on police, fire and emergency services through the normal application circulation process.

6.0 IMPLEMENTATION

6.1 Implementation

Goal

To effectively implement the goals, objectives and policies contained in the Town of Slave Lake South Expansion Area Structure Plan.

Overview

This ASP will guide the Town of Slave Lake Council and Administration, and other agencies regarding growth and development within the South Expansion area. Once the ASP is adopted, certain amendments will be necessary to the Land Use Bylaw and Municipal Development Plan. Also, further detailed studies and capital budget allocations will be required in order to implement specific improvements to roadways, utilities, and infrastructure. Please refer to *Figure 1 –Hierarchy of Planning Documents* on the following page.

Objectives

- Implement the policies contained in the ASP to guide decision-making regarding growth, development and capital investment in infrastructure.
- Maintain the ASP as a current tool, updating it through an orderly amendment procedure to reflect changes in the Town's goals and objectives.
- Consider future phasing of urban expansion and recommend boundaries for outline plans.

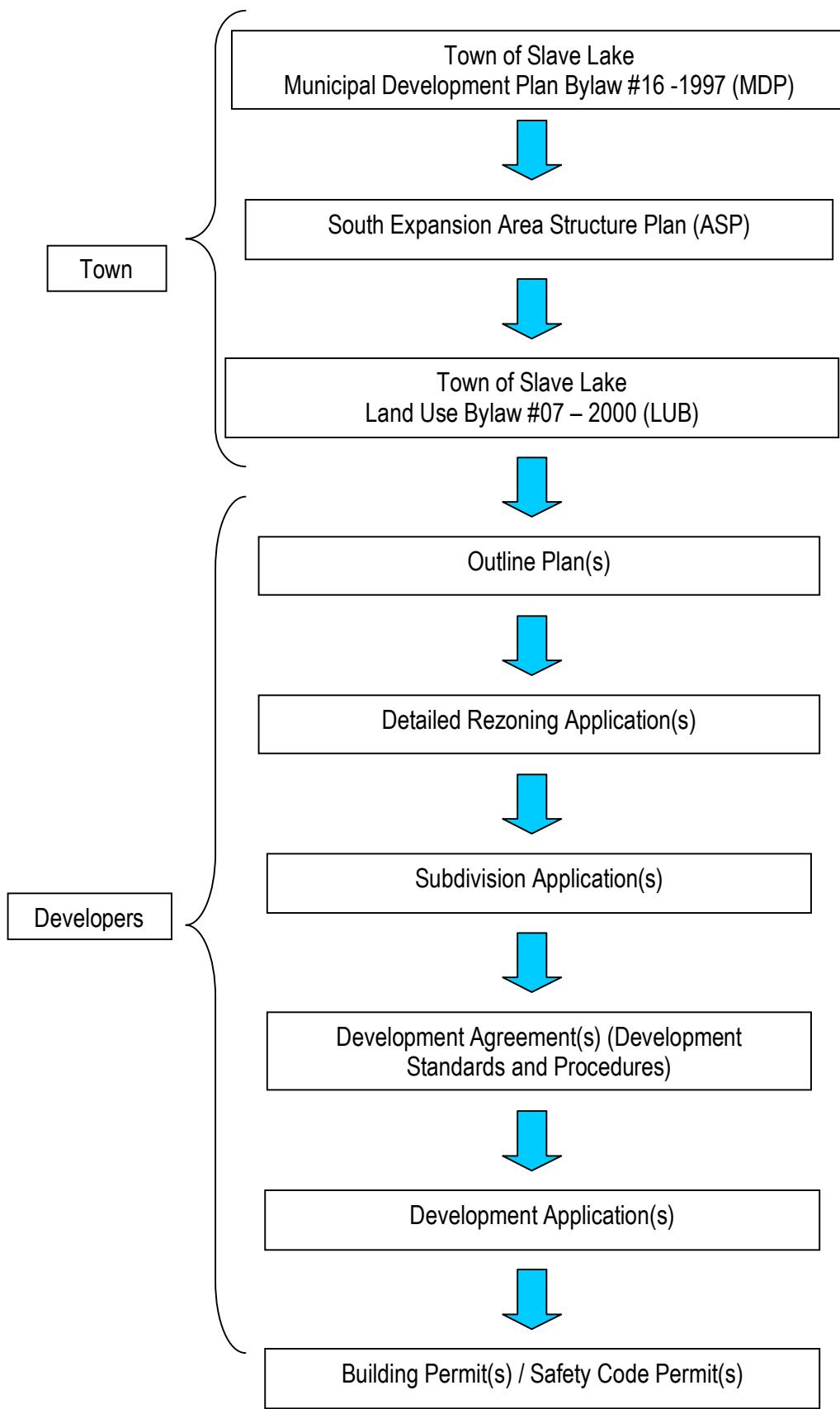
Policies

6.1.1 Outline Plan Requirements

Require applicants to prepare and submit an Outline Plan prior to submitting a tentative plan of subdivision to facilitate the approval process. Outline plans shall include the following:

- Proposed land uses.
- Proposed access and internal roadway system including connections to adjacent lands.
- Site servicing details for water, sewer, stormwater, power, natural gas, telecommunications and any required external upgrading.
- Proposed location for municipal and/or environmental reserve and buffers.
- Proposed phasing.
- Any other matters identified by the Town.

Figure 1 - Hierarchy Of Planning Documents



6.1.2 Amendments to the Municipal Development Plan	<p>Undertake the necessary amendments to the Municipal Development Plan (MDP) to comply with Section 636 of the <i>Municipal Government Act</i>, which requires “all statutory plans adopted by the municipality must be consistent with each other.” Specific amendments required to the Town of Slave Lake MDP include the following:</p>
	<ul style="list-style-type: none"> • The Town of Slave Lake Future Land Use Map needs to reflect the Development Concept proposed in the South Expansion Area Structure Plan
6.1.3 Amendments to Land Use Bylaw	<p>Amendments to the Land Use Bylaw will need to be submitted by the developer for approval by the Town of Slave Lake.</p>
6.1.4 Subdivision and Development	<p>Developers will be responsible for submitting plans of subdivision for approval by the Town of Slave Lake. Plans of subdivision will comply with the goals, objectives, and policies contained in this Area Structure Plan, the provisions of the <i>Municipal Government Act</i>, and Subdivision and Development Regulation.</p>
6.1.5 Development Levies and Agreements	<p>Require on-site and off-site costs associated with servicing new developments with roadways and infrastructure (water, sanitary sewer and stormwater management measures) to be borne by the developer through development agreements and development levies established and amended from time to time, by Council.</p>
6.1.7 Phasing (Sequence of Development)	<p>A recommended sequence of development is shown on <i>Map 12 – Phasing</i>. Market demand and the logical and economical extension of roadways, municipal services and infrastructure will determine the phasing of subdivision and development. If proposed subdivision and development results in the need to construct roadways and other municipal infrastructure in advance of the logical phasing of subdivision, this should be allowed provided the developer finances the required front end costs.</p>

6.1.8 Plan Amendments

Provide for an orderly amendment process, which includes community consultation for any proposed amendments to the ASP. In considering amendments to the ASP, Council will give due regard for the proposed change considering the following:

- Consistency of the proposal to goals and objectives of the Town of Slave Lake South Expansion Area Structure Plan.
- The extent to which existing areas designated for this proposed use are available for development.
- The cumulative effects the proposed amendment and related development will have on the natural environment and surrounding land uses.
- The cumulative effect the proposed use will have on water, sewer, and other services
- Potential impacts on adjacent lands.

6.1.9 Monitoring and Updating the Plan

Undertake a review and update to the ASP at five year intervals to ensure it is a 'living and relevant' document.

6.1.10 Integration of Planning with Municipal District of Lesser Slave River

In keeping with the Provincial Land Use Regulations the Town of Slave Lake and the Municipal District of Lesser Slave River will endeavour to coordinate land use, future growth patterns and municipal infrastructure to ensure orderly and efficient urban expansion through the provisions of the Intermunicipal Development Plan.

6.1.11 Transfer of Crown Land to Town of Slave Lake

Use the adopted South Expansion Area Structure Plan as a basis for negotiation with Provincial Authorities for the transfer of Crown land to the Town of Slave Lake to accommodate future town expansion.

7.0 GLOSSARY OF TERMS

Area Structure Plan	A statutory plan, formally adopted by Council, which is intended to provide a framework for the subsequent subdivision and development of an area of land in a municipality. Refer to Section 633 of the <i>Municipal Government Act</i> .
Arterial Road	A road intended to move large volumes of traffic with minimum interruptions, primarily connecting residential and employment areas.
Collector Road	A road intended to collect traffic from local roadways and carry it to arterial roadways.
Density	The number of persons, families, or dwelling units per unit of land (hectares or acres). The more people living in one area, the higher the density.
Development Agreement	A servicing agreement made between a developer and the municipality, made pursuant to the Municipal Government Act. Refer to Section 651 of the Municipal Government Act.
Environmental Reserve Easement	Refers to land dedicated, as part of the subdivision process, which is physically undevelopable or ought not to be developed for environmental reasons. . Refer to Section 664 of the Municipal government Act.
Flood Plain	A flood-prone area, defined as having a risk of flood once every 100 years.
General Industrial	Refers to Light industrial and manufacturing development, with heavier industry permitted in approved locations at the discretion of the Municipal Planning Commission. These uses carry out their operations such that no nuisance factor associated with the use extends beyond the boundaries of the parcel.
Goal	An idealized end towards which planned action is directed and which provides an indication of what is to be achieved.
Gross Developable Area	The total area of the land to be subdivided less the land to be provided as environmental reserve.

Guiding Principle	A strategic direction or principle for achieving the vision.
Land Use Bylaw (Zoning Bylaw)	A bylaw adopted by Council, which establishes land use districts and prescribes rules for development within those districts. Refer to Sections 639 and 640 of the <i>Municipal Government Act</i> .
Light Industrial	Refers to light industrial and manufacturing uses that carry out their operations such that no nuisance factor associated with the use extend beyond the boundaries of the parcel.
Local Road	Roads that provide access to sites and lots and are designated for low volume and slow moving traffic.
Municipal Development Plan	A statutory plan, formally adopted by Council, which is intended to describe the future land uses proposed for the municipality. Refer to Section 632 of the Municipal Government Act.
Municipal Government Act, Part 17	The land use planning legislation under which municipalities may regulate the use and development of land.
Municipal Infrastructure	All physical improvements that are required to provide roads, boulevards and walkways, sanitary sewer, storm sewer, water service, and parks.
Municipal Reserve	Land dedicated, as part of the subdivision process, for municipal park use. Refer to Section 616 of the Municipal Government Act.
Municipal Utilities	<p>Includes:</p> <ul style="list-style-type: none"> • Facilities for the collection, treatment, distribution or supply of water; • Facilities for the collection, treatment, movement or disposal of sanitary sewage; • Storm sewer drainage facilities; and • Electrical utilities.
Environmentally Sensitive Area	The presence of one of the following: natural vegetation; naturally occurring water; some other natural feature. In some instances, natural areas may be disturbed.
Objective	Directional statements that are usually phrased immeasurable terms for given time frames.

Off-site Levy	A fee levied against any land to be developed or subdivided which is intended to go toward the cost of off-site services provided by the municipality.
Outline Plan	A land use plan, informally endorsed by Council, which describes the future development of a neighbourhood in a municipality.
Park	A designated piece of public land comprised of either man made or natural elements, that is laid out and kept for the sole purpose of creating and defining the space for visual, mental and physical stimulation.
Policy	A statement identifying a specific course of action for achieving objectives.
Setback	The distance that a development or a specified portion of it, must be set back from a property line. The setback shall be measured from the building foundation to front, rear, or side property lines.

8.0 REFERENCES

Alberta Environment, "Guidelines for the Approval and Design of Natural and Constructed Treatment Wetlands for Water Quality Improvement", March 2000.

Alberta Environmental Protection, "Environmental Reference Manual for the Review of Subdivisions in Alberta," November 1996.

Alberta Environmental Protection, "Stormwater Management Guidelines for the Province of Alberta", January 1999.

Environment Canada, "Canada-Alberta Flood Damage Reduction Program, Flood Information Map Town of Slave Lake, 1993

Municipal District of Lesser Slave River No. 124, "Land Use Bylaw, Bylaw No. 2000 – 01," 2000.

New Era Municipal Services, "Gloryland Area Structure Plan," August 2000.

Randall Conrad & Associated Ltd, "Town of Slave Lake Parks & Open Space Master Plan". Draft Copy, September 29, 2003.

Town of Slave Lake, "Town of Slave Lake Municipal Development Plan Bylaw #16-1997," 1997.

Town of Slave Lake, "Town of Slave Lake Land Use Bylaw #07-2000," 2000.

Town of Slave Lake, "Town of Slave Lake Development Standards and Procedures Manual – 2000." 2000.

Town of Slave Lake, "Draft Town of Slave Lake and Municipal District of Lesser Slave River Intermunicipal Development Plan, November 2000." 2000.

9.0 PERSONAL COMMUNICATION

Allan Anderson	Town of Slave Lake, Director of Operations
Martin Brilling	Alberta Sustainable Resource Development, Fisheries Technician
Robert Cain	The Cadastral Group Inc, Operations / Business Development
Randall Conrad	Randall Conrad & Associates Ltd., Principal
Jeanne de Valois	Alberta Sustainable Resource Development, Recreation and Planning Specialist
Oswald Fereira	Town of Slave Lake, Planner/Development Officer
Roy Hewitt	Alberta Sustainable Resource Development, Rangeland Agrologist
Michael La Framboise	Living Waters Catholic Regional Division No.42, Facilities Manager
Raymonde Lussier	High Prairie School Division No.48, Asst. Superintendent of Business
Norma MacQuarie	Town of Slave Lake, Director of Community Development
Perry Neufeld	M.D. of Lesser Slave River, Planning / Development Officer
Barry Newton	Alberta Community Development, Resource Management Planner
Bob Paul	Remco Management Services Ltd., Senior Planner
Howard Peterson	Alberta Infrastructure, Operations Services Coordinator
Jay Simons	Town of Slave Lake, Town Manager
Laurie Skrynyk	Town of Slave Lake, Assistant Development Officer
Martin Taylor	Municipal District of Lesser Slave River, Director of Administrative Services / Development Officer
David Vanderwell	Alberta Sustainable Resource Development, Public Lands Officer

APPENDIX I: MAPS

Map 1 – Location

Map 2 – Land Disposition

Map 3 – Topography

Map 4a – Natural Constraints & Opportunities

Map 4b – Man-made Constraints & Opportunities

Map 5 – Existing Land Use & Zoning

Map 6 – Development Concept

Map 7 – Parks, Open Spaces & Trails

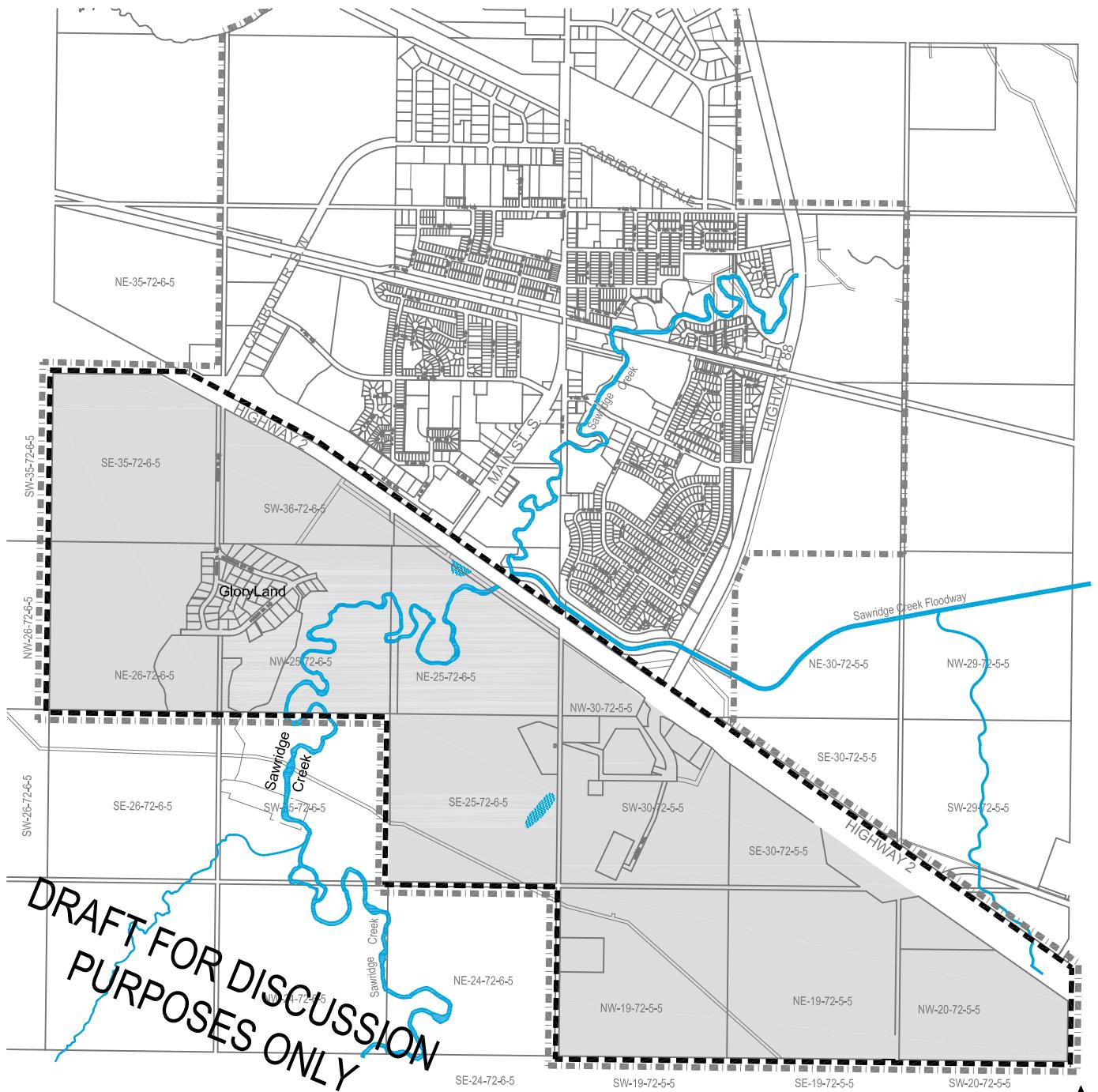
Map 8 – Water Servicing Concept

Map 9 – Sanitary Servicing Concept

Map 10 – Storm Servicing Concept

Map 11 – Transportation

Map 12 – Phasing



This map is not intended to be interpreted on a site specific basis. Rather, it is a conceptual framework meant to guide future land use. Areas have been generalized and are only approximated. The Town of Slave Lake does not guarantee the map's accuracy. All information should be verified.

0 0.25 0.5 1.0 km



Legend

- Area Structure Plan Boundary (626.84 ha)
- Town of Slave Lake Boundary (1542.8 ha)
- Location Area
- River, Creek, Floodway

Map 1 Location

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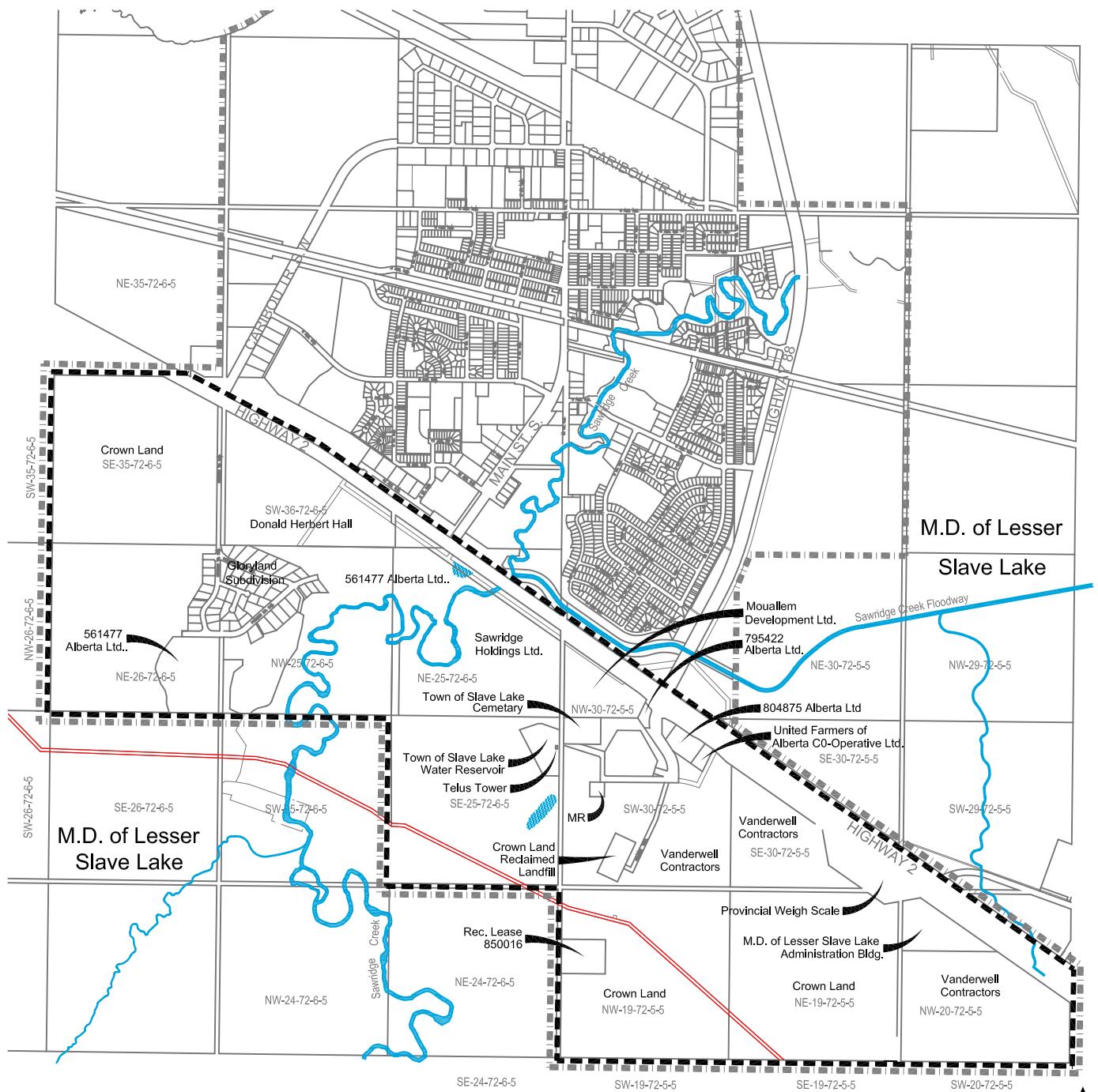


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& ASSOCIATES LTD.

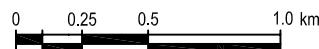


TOWN OF SLAVE LAKE

Slave Lake South Expansion - Area Structure Plan



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Legend

- Area Structure Plan Boundary
- Town of Slave Lake Boundary
- River, Creek, Floodway
- Pipeline

Map 2 Land Disposition

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TOWN OF SLAVE LAKE

Slave Lake South Expansion - Area Structure Plan



Legend

- Area Structure Plan Boundary
- Town of Slave Lake Boundary
- Contours (5.0m Intervals)

Map 3 Topography

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F:\AAP Project Files\ASPs\03-027 Slave Lake South Expansion ASP\Mapping\New Maps\03-027 Map 3 - Topography.dwg

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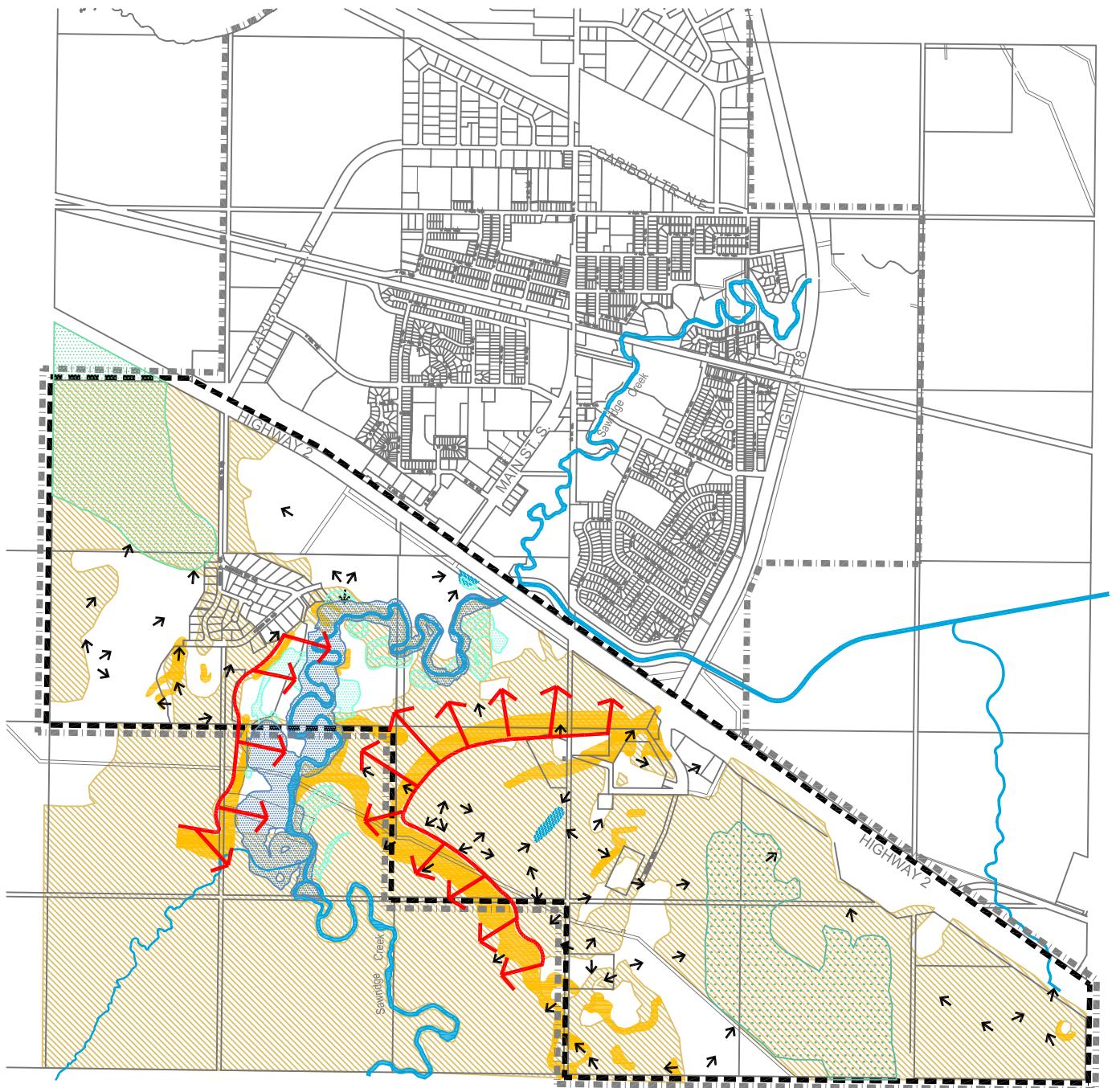


TOWN OF SLAVE LAKE

Slave Lake South Expansion - Area Structure Plan

Project No.: 03-027

Date: May 10, 2004



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0 0.25 0.5 1.0 km



Legend

- Area Structure Plan Boundary
- Town of Slave Lake Boundary
- River, Creek
- Flood Plain
- Flood Fringe
- Permanent Water Body
- High Water Table
- Bog and Peat
- Steep Slopes
- Views and Vistas
- Direction of Drainage
- Yellow hatched area: Trees & Natural Growth
- White area: Cleared Land

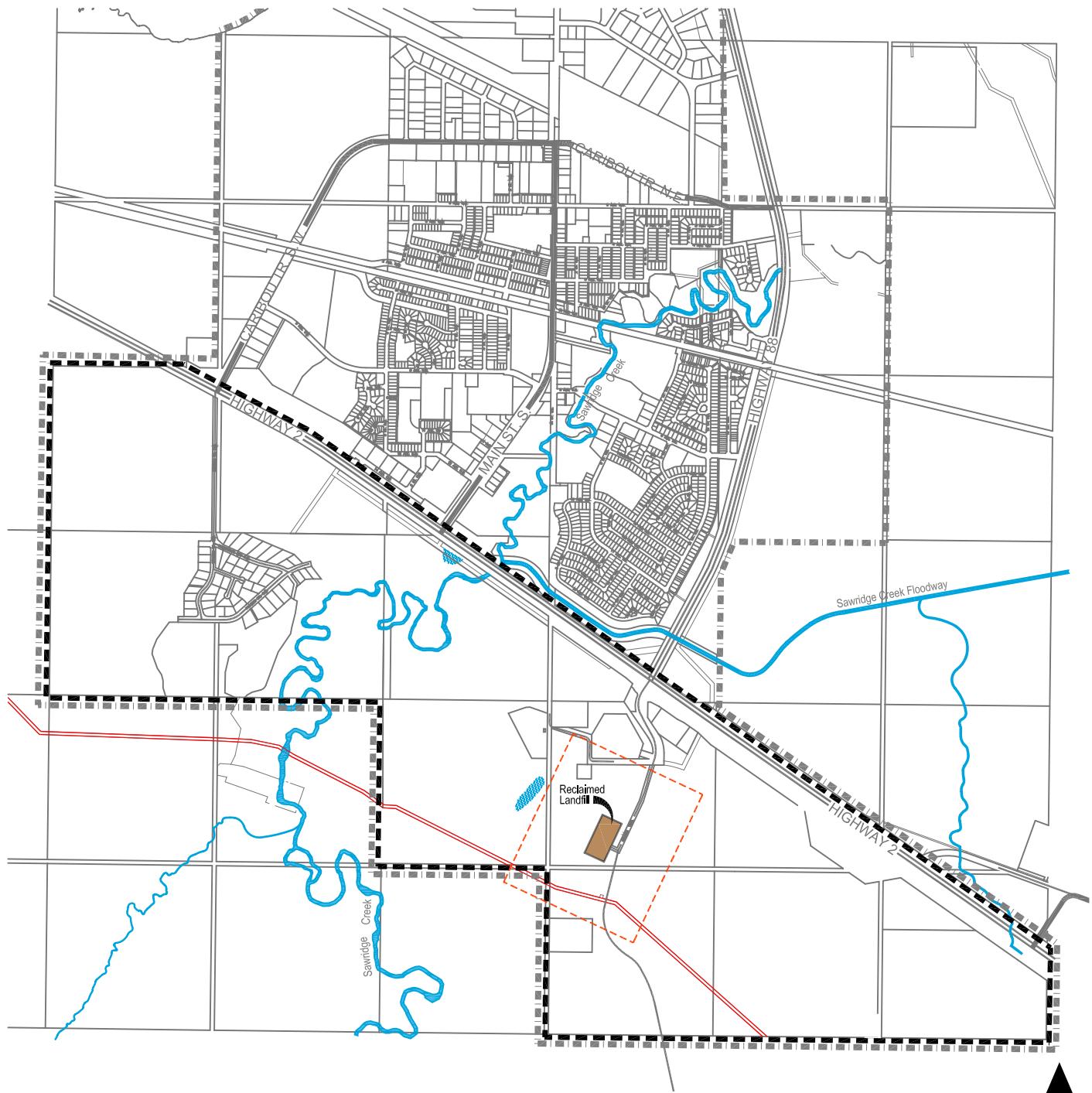
Map 4a Natural Constraints & Opportunities

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TOWN OF SLAVE LAKE

Slave Lake South Expansion - Area Structure Plan



Legend

- Area Structure Plan Boundary
- Town of Slave Lake Boundary
- River, Creek, Floodway
- Permanent Water Body
- Pipeline
- Reclaimed Landfill
- Landfill Setback (300m)

Map 4b

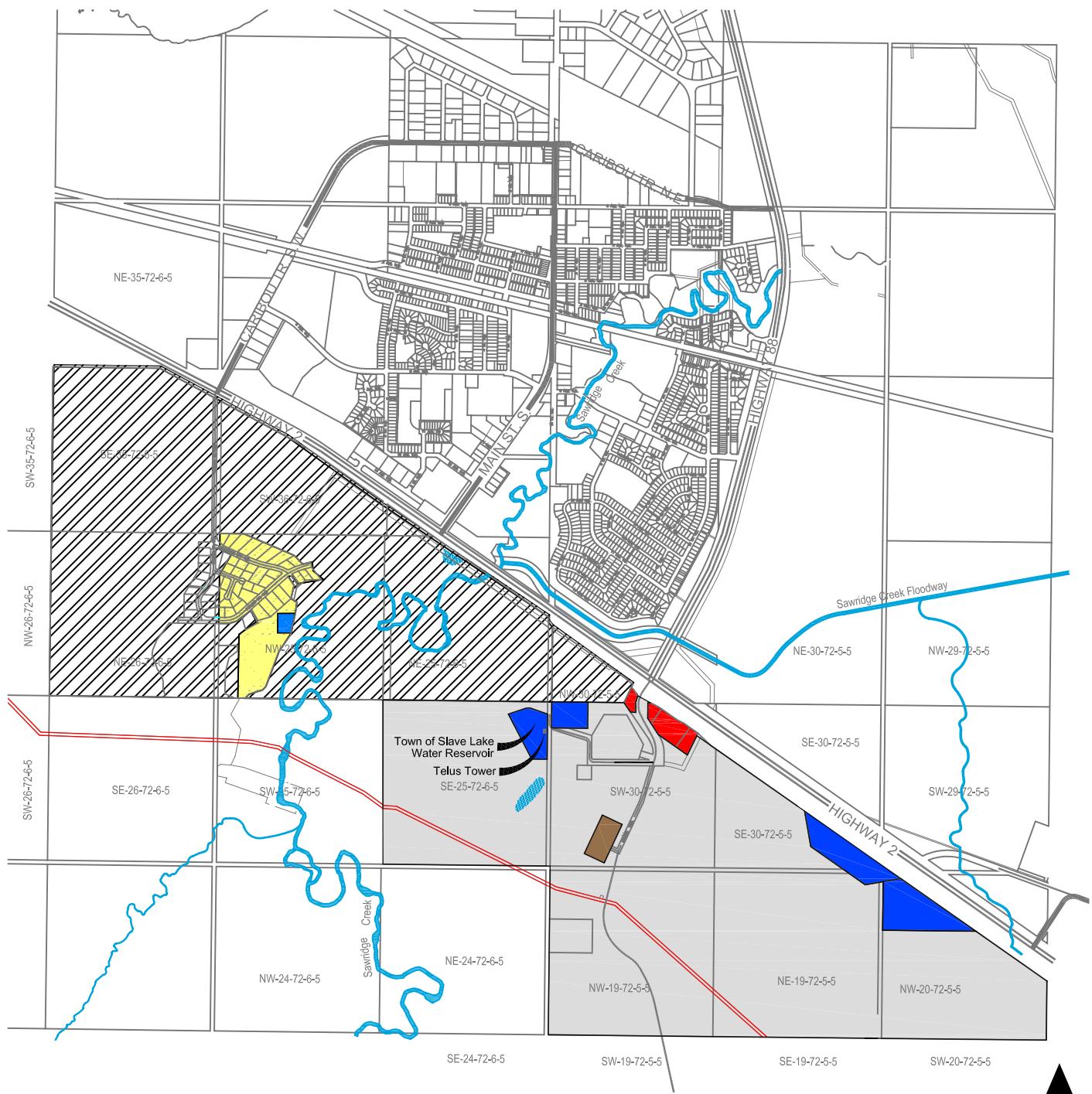
Manmade Constraints & Opportunities

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TOWN OF SLAVE LAKE

Slave Lake South Expansion - Area Structure Plan



Legend

- Area Structure Plan Boundary
- Town of Slave Lake Boundary
- River, Creek, Floodway
- Pipeline
- Estate Residential (RIC)
- Institutional (I)
- Community (P)
- Highway Commercial (C-3)
- Urban Reserve (UR)
- Council Direct Control (CDC)
- Reclaimed Landfill

Map 5

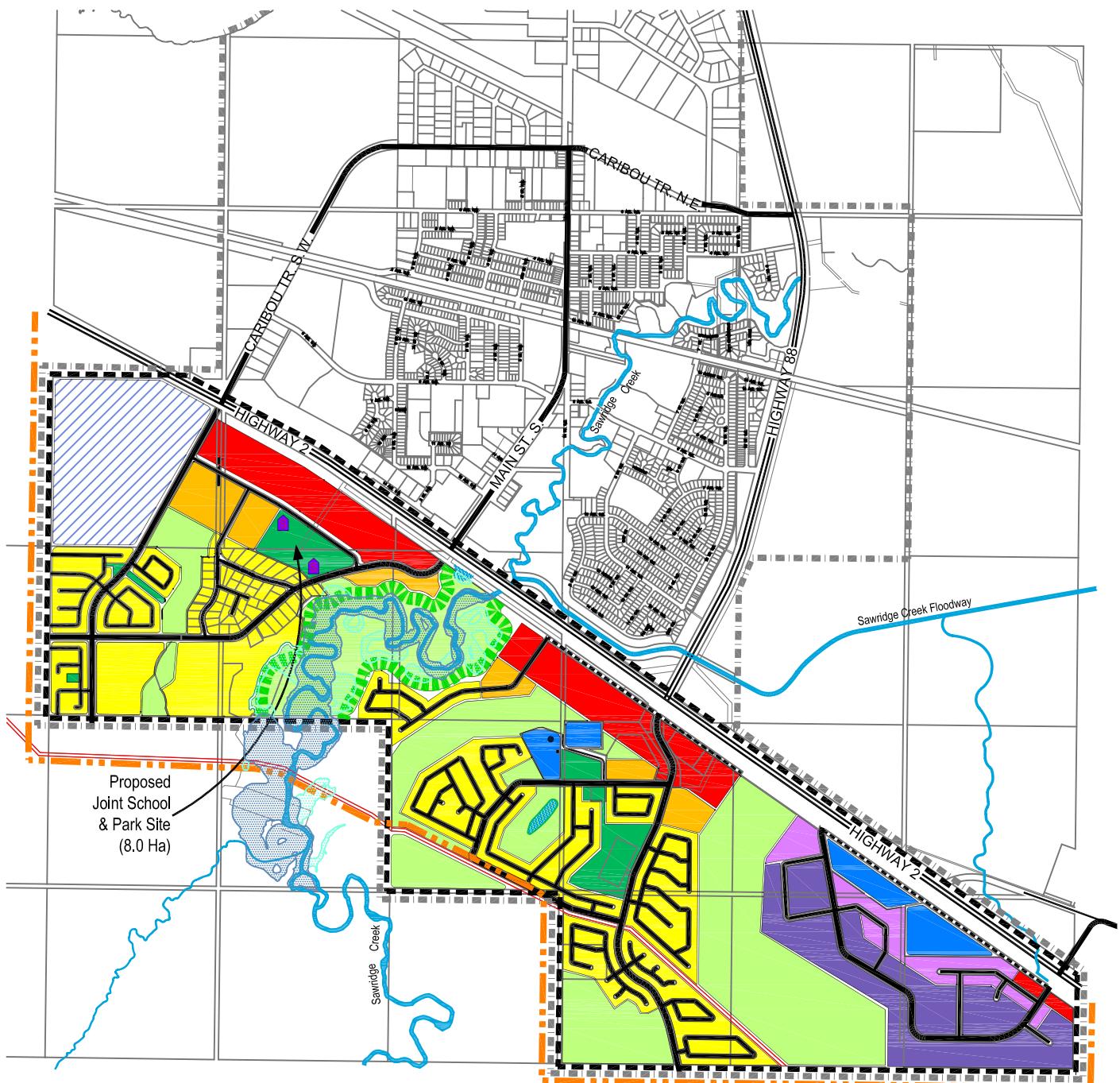
Existing Land Use & Zoning

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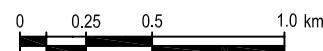


TOWN OF SLAVE LAKE

Slave Lake South Expansion - Area Structure Plan



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Legend

- Area Structure Plan Boundary
- Slave Lake Boundary
- River, Creek, Floodway
- Low Density Residential
- Higher Density Residential
- Commercial
- Light Industrial
- General Industrial
- Public Use (Parks, Recreation)
- Environmentally Sensitive Areas
- Institutional

- Special Study Area
- Public/Separate Joint School Site
- Pipeline
- 30m Fire Break
- 60m Water Body Setback
- 1:100 Year Flood Plain
- Flood Fringe
- Highway
- Arterial / Collector Road
- Local & Service Road

Note: Local Streets are shown for discussion purposes only

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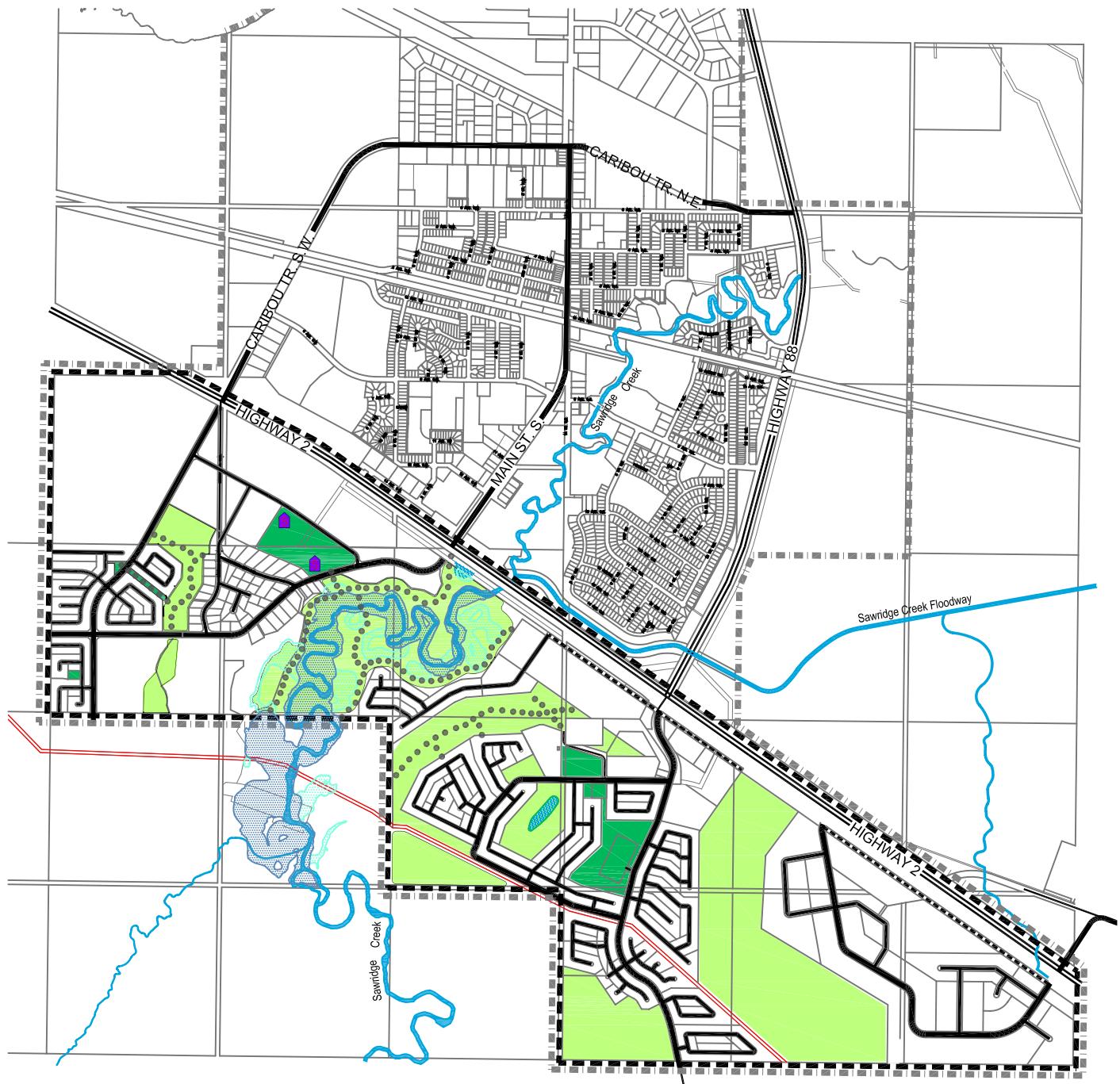


TOWN OF SLAVE LAKE

Slave Lake South Expansion - Area Structure Plan

Map 6

Development Concept



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0 0.25 0.5 1.0 km



Legend

- Area Structure Plan Boundary
- Slave Lake Boundary
- River, Creek, Floodway
- Pipeline
- School Site
- Public Use (Parks, Recreation)
- Environmentally Sensitive Areas
- Potential Low-Impact Trail System

Map 7

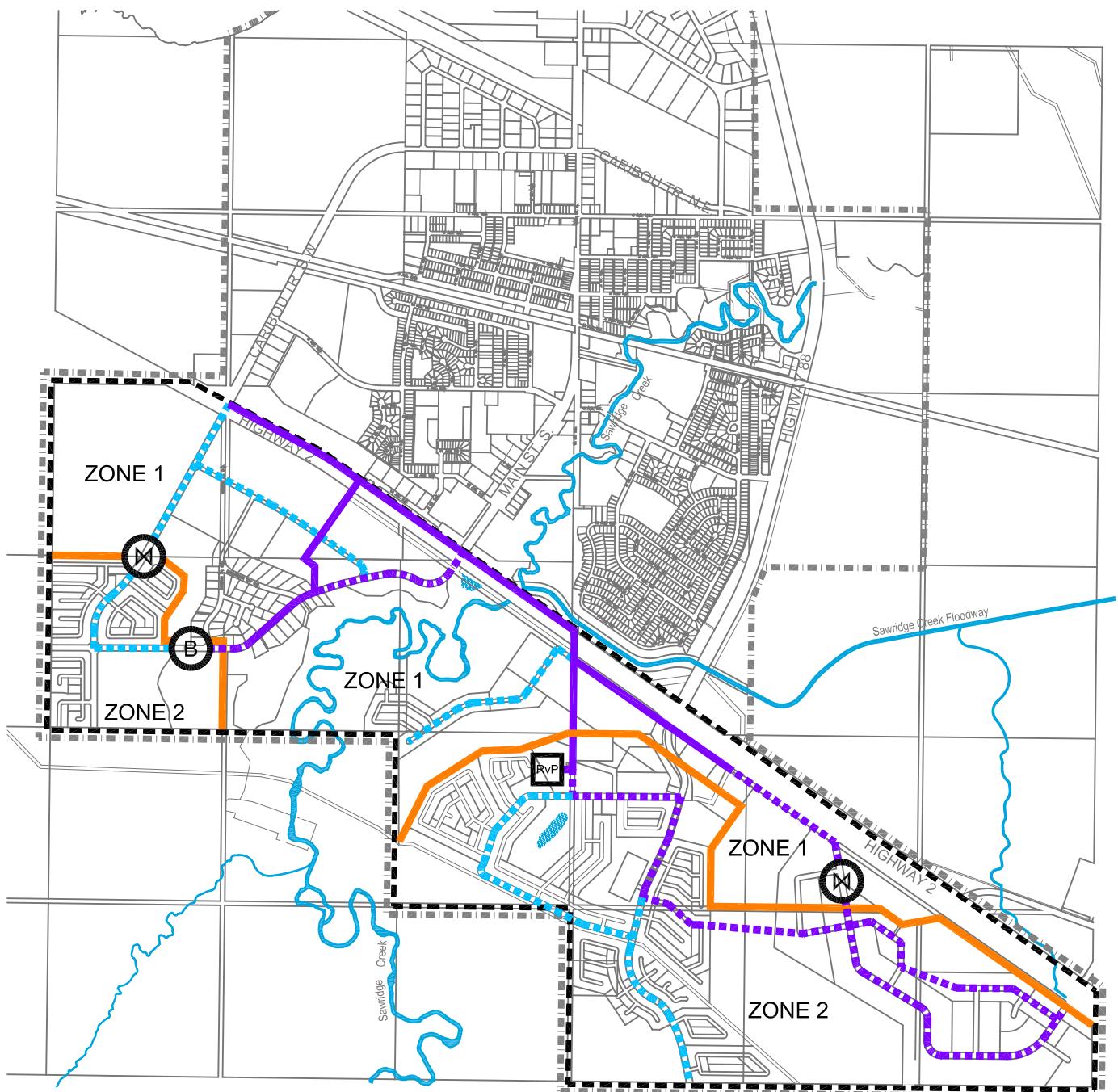
Parks, Open Spaces & Trails

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TOWN OF SLAVE LAKE

Slave Lake South Expansion - Area Structure Plan



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0 0.25 0.5 1.0 km



Legend

- Area Structure Plan Boundary
- Slave Lake Boundary
- River, Creek, Floodway
- Existing 300mmØ or Greater Water Main
- Proposed 250mm Ø or Greater Water Main
- Proposed 300mm Ø Water Main
- Pressure Zone Line (Approx. 600m)
- Proposed Reservoir & Pumphouse
- Proposed Pressure Reducing Valve



Proposed Booster Station

Map 8 Water Servicing Concept

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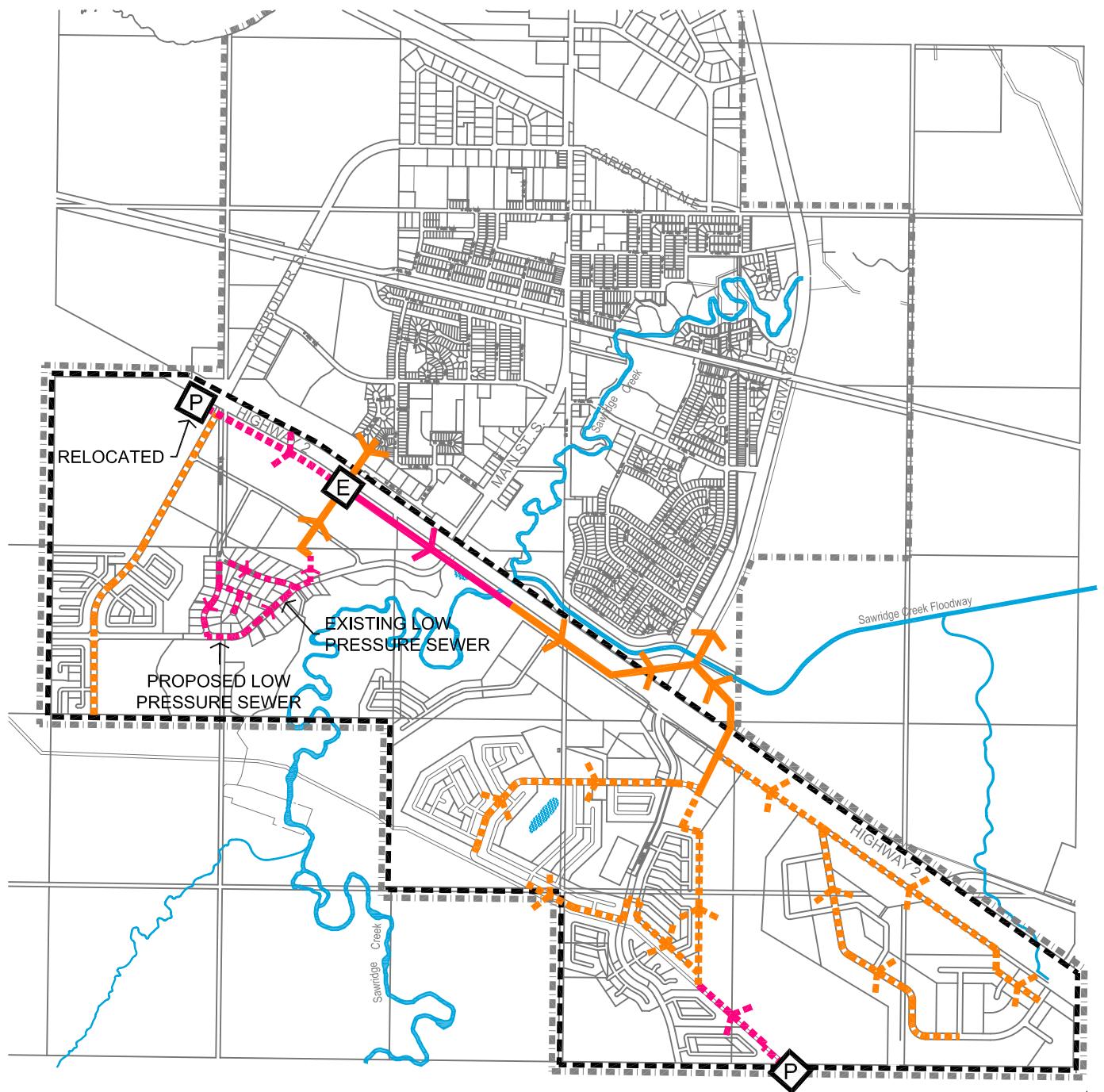


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TOWN OF SLAVE LAKE

Slave Lake South Expansion - Area Structure Plan



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0 0.25 0.5 1.0 km



Legend

- Area Structure Plan Boundary
- Slave Lake Boundary
- River, Creek, Floodway
- Existing Trunk Main
- Existing Force Main
- Proposed Trunk Main
- Proposed Force Main
- Existing Lift Station
- Proposed Lift Station

Map 9

Sanitary Servicing Concept

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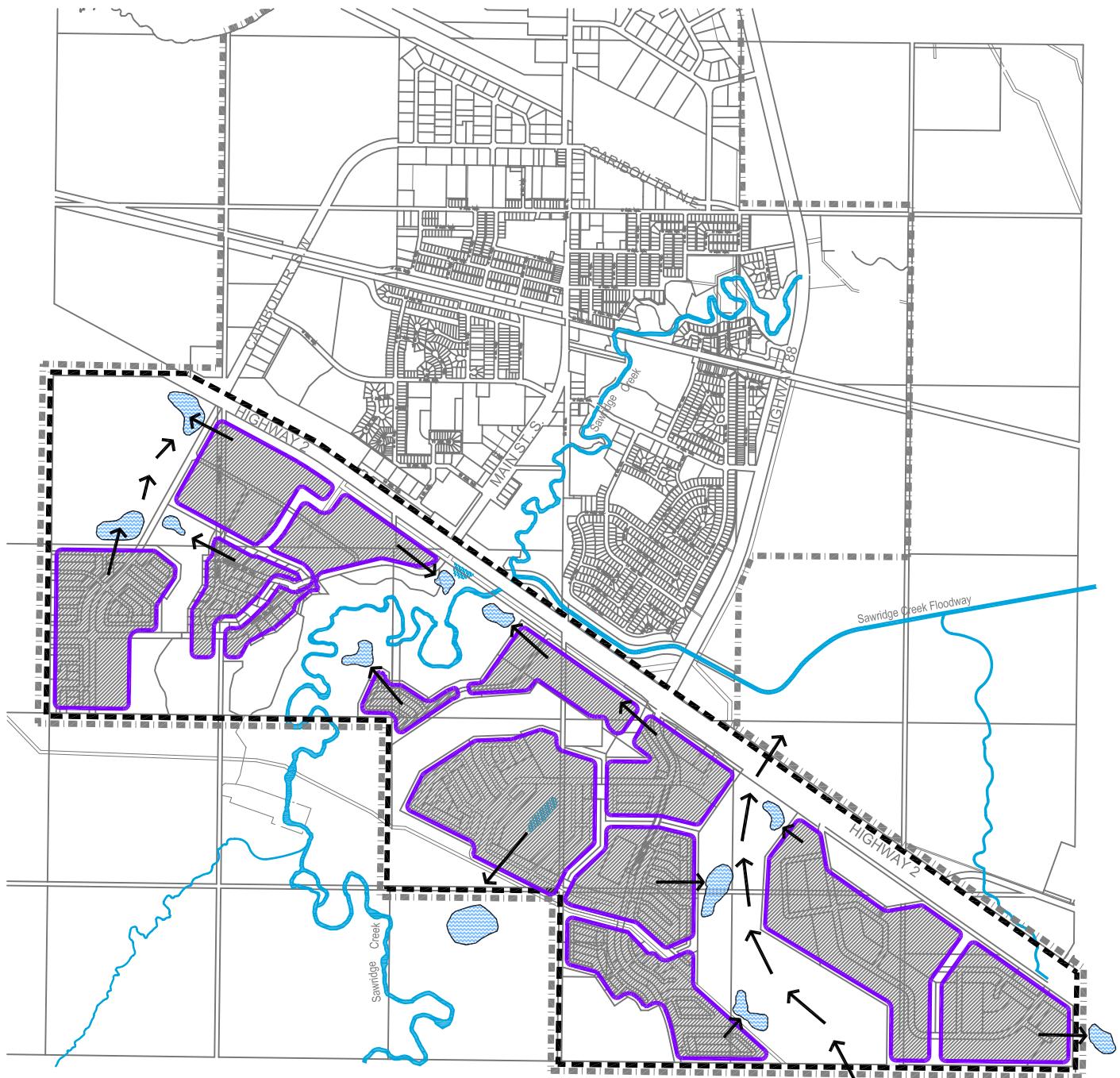


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TOWN OF SLAVE LAKE

Slave Lake South Expansion - Area Structure Plan



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0 0.25 0.5 1.0 km



Legend

- Area Structure Plan Boundary
- Slave Lake Boundary
- River, Creek, Floodway
- ██████████ Catchment Area
- Direction of Drainage
- ██ S.W.M. Pond

Map 10 Storm Servicing Concept

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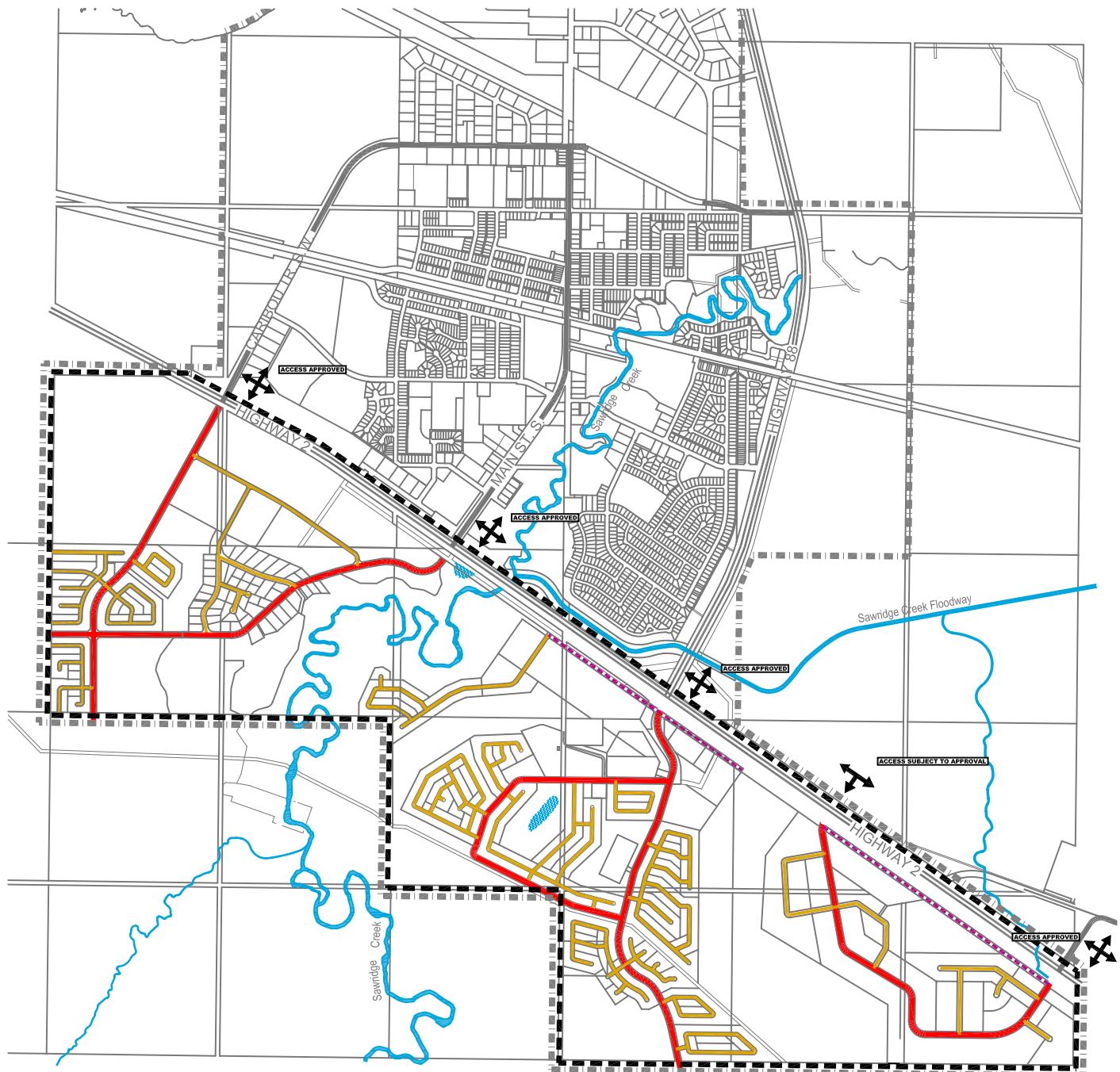


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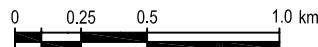


TOWN OF SLAVE LAKE

Slave Lake South Expansion - Area Structure Plan



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Legend

- Area Structure Plan Boundary
- Slave Lake Boundary
- River, Creek, Floodway
- Highway - Existing
- Arterial Road - Existing
- Arterial Road - Proposed
- Local Road - Proposed
- Local Road - Access (13.5m)
- Access - Full

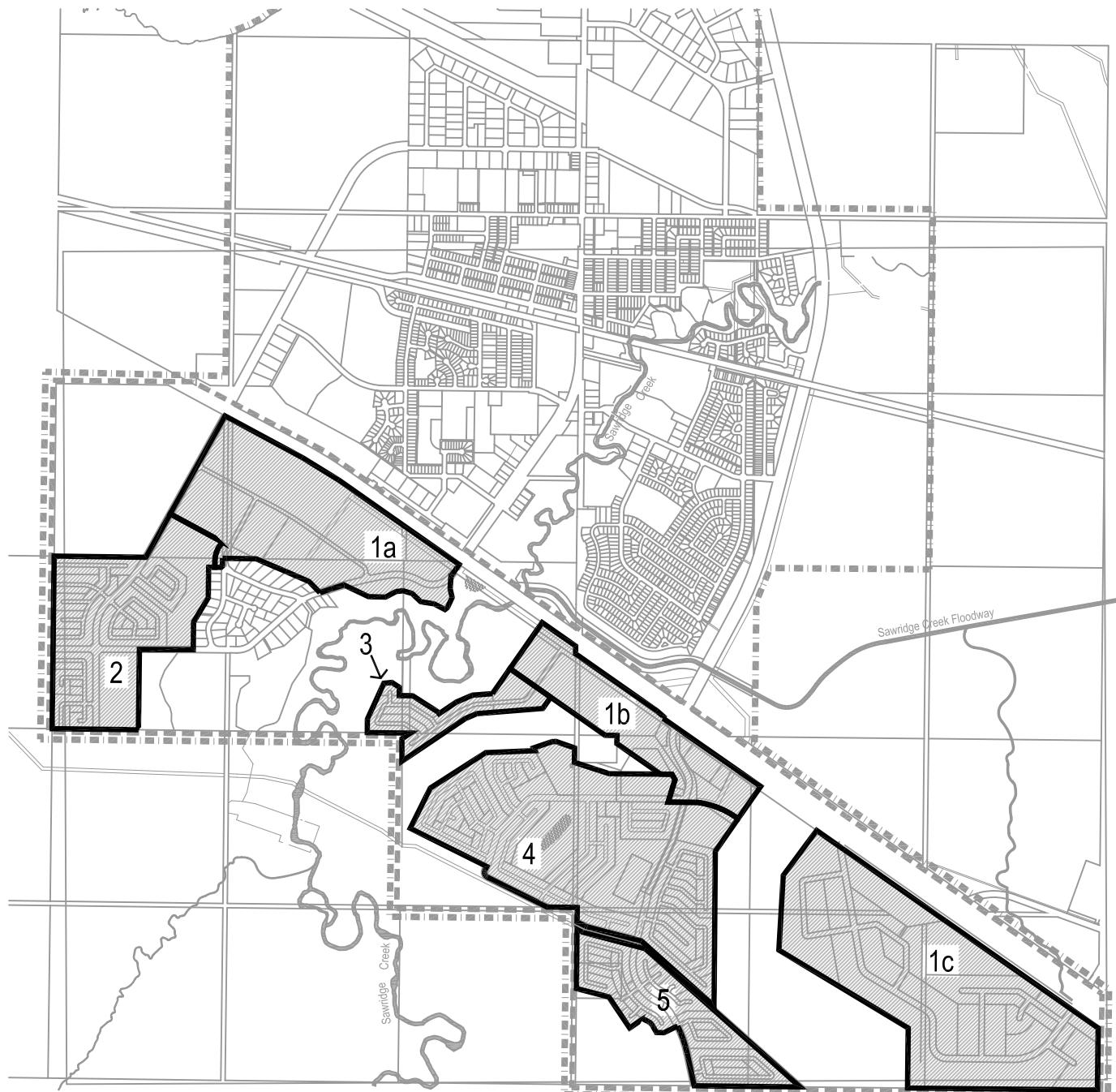
Map 11 Transportation

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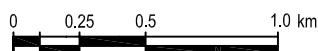


TOWN OF SLAVE LAKE

Slave Lake South Expansion - Area Structure Plan



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Legend

- Area Structure Plan Boundary
- Slave Lake Boundary
-  River
-  Phase Area
- 5 Phase Number

Map 12 Phasing

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TOWN OF SLAVE LAKE

Slave Lake South Expansion - Area Structure Plan

APPENDIX II: SUMMARY OF LAND USE AND POPULATION STATISTICS

TOWN OF SLAVE LAKE SOUTH EXPANSION AREA STRUCTURE PLAN - AREA 1

West

	AREA (ha)
GROSS AREA	259.22
Roadways	
Arterial Roadways & Widening	15.86
Flood Plain Areas	
Flood Plain Area	20.04
Flood Fringe Area	11.18
	31.22
Environmental Reserve	32.20
Existing Developed Area	
Existing GloryLand Subdivision & Vanderwell Property	38.88
Special Study Area	45.79
GROSS DEVELOPABLE AREA	95.27
Stormwater Management Facilities & Public Utility Lots¹	
Stormwater Management Facilities	7.11
Municipal Reserves (10%)	
Public School	8.00
Parks & Open Spaces	0.94
	8.94
Non - Residential Area	
Commercial	24.36
Circulation	8.05
	32.41
NET RESIDENTIAL AREA	46.81

RESIDENTIAL LAND USE ANALYSIS

Land Use	Area (ha)	Units/Ha	Units	Pop/Unit	Population
Low Density Residential	32.31	20	646	3.00	1938
Higher Density Residential	14.50	45	653	2.20	1437
TOTAL	46.81		1299		3375

STUDENT GENERATION STATISTICS

Level	Public	Separate	TOTAL	LDR/MDR RATIO	
				69%	31%
Elementary (K-6)	273	117	390		
Junior High (7-9)	104	45	149		
Senior High (10-12)	96	40	136		
TOTAL	473	202	675		
				Persons/Gross Dev. ha.	
				35.43	

¹ Areas of Stormwater Management Facilities have been subtracted from the area figures of the land use areas in which they occur (ie. special study area, environmental reserve)

Note: all areas are estimated and subject to change during the detailed subdivision design stage

TOWN OF SLAVE LAKE SOUTH EXPANSION AREA STRUCTURE PLAN - AREA 2

Central

	AREA (ha)
GROSS AREA	279.24
Roadways	
Arterial Roadways & Widenings	15.61
Utility / Pipeline Corridors	2.97
Environmental Reserve	113.23
GROSS DEVELOPABLE AREA	147.43
Stormwater Management Facilities & Public Utility Lots¹	
Stormwater Management Facilities	4.60
Municipal Reserves (10%)	
Parks & Open Spaces	11.49
Non - Residential Area	
Commercial	24.43
Institutional	5.48
Circulation	19.50
	49.41
NET RESIDENTIAL AREA	81.93

RESIDENTIAL LAND USE ANALYSIS

Land Use	Area (ha)	Units/Ha	Units	Pop/Unit	Population
Low Density Residential	72.92	20	1458	3.00	4374
Higher Density Residential	9.01	45	405	2.20	891
TOTAL	81.93		1863		5265

STUDENT GENERATION STATISTICS

Level	Public	Separate	TOTAL	LDR/MDR RATIO
	Persons/Gross Dev. ha.			89% 11%
Elementary (K-6)	426	183	609	
Junior High (7-9)	162	70	232	
Senior High (10-12)	150	63	213	
TOTAL	738	316	1054	35.71

¹ Areas of Stormwater Management Facilities have been factored out of the area figures for the land use areas in which they are located (ie. special study area, environmental reserve)

Note: all areas are estimated and subject to change during the detailed subdivision design stage

TOWN OF SLAVE LAKE SOUTH EXPANSION AREA STRUCTURE PLAN - AREA 3

East (Industrial)

	AREA (ha)
GROSS AREA	88.38
Roadways	
Arterial Roadways & Widenings	5.67
GROSS DEVELOPABLE AREA	82.71
Non - Residential Area	
Commercial	1.83
Light Industrial	15.52
General Industrial	47.54
Institutional	12.38
Circulation	5.44
	<hr/>
	82.71

Note: all areas are estimated and subject to change during the detailed subdivision design stage