Rural Municipality of Lumsden No.189

EXHIBIT "A"

Bylaw No. 18-2015

A bylaw to amend Bylaw No. 6 - 2012 known as the Official Community Plan of the Rural Municipality of Lumsden No. 189.

The Council of the RM of Lumsden No. 189 in the Province of Saskatchewan enacts to amend Bylaw No. 6-2012 as follows:

- 1. That APPENDIX A JOINT GROWTH STRATEGY is added immediately following SECTION 7 COUNTRY RESIDENTIAL DEVLEOPMENT PROPOSAL WORKBOOK as set forth in Schedule A, which is attached to and forms part of this bylaw.
- 2. This bylaw shall come into force and take effect when approved by the Minister of Government Relations.

Readings:

Read a first time this

<u>13th</u> day of <u>August, 2015.</u>

Read a second time this

 8^{th} day of <u>October</u>, 2015.

Read a third time this

8th day of <u>October, 2015.</u>



NOV Reeve

Chief Administrative Office

Certified to be a true copy of Bylaw No. 18 201 adopted by the Council of the R.M. of Lumsden on the 2th day of 2000 per half and a second sec

Chief Administrative Officer

APPROVED
REGINA, SASK.

NOV - 5 2045

Assistant Deputy Minister Ministry of Government Relations



REPORT

Town of Lumsden RM of Lumsden No. 189

Lumsden Joint Growth Strategy









May 2015



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REPORT

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1 Introduction

The Town of Lumsden (the Town) and the Rural Municipality of Lumsden No. 189 (the RM) are experiencing a period of growth in both the Town and the surrounding area in the RM. The Town and the RM are committed to working together to develop their communities in a comprehensively planned manner. Since 1997 both municipalities have shared common administrative resources, and the development of a Joint Growth Strategy is one more step in strengthening this partnership.

The study area is located within the Qu'Appelle Valley system and provides a unique setting for development. The Town is located 30 km northwest of the City of Regina along Highway No. 11. Development and land servicing within this valley setting provides unique challenges given the topography of the area. Recognizing a common goal to encourage and support growth in the region, the two municipalities have committed to work collaboratively in examining strategies for extending Town water and sewer infrastructure to new developments within the future urban and rural service areas in order to maximize the economic, social and environmental returns for both communities.

The strategies contained herein are intended to build upon the development policies represented in the respective Official Community Plans, guiding development and municipal infrastructure decisions for the lands located in the rural-urban fringe. The direction represented in this report represents a 25 year time horizon.

1.1 PURPOSE OF THE JOINT GROWTH STRATEGY

Associated Engineering (Sask.) Ltd (AE) has been commissioned by the Town and the RM to lead the development of a Joint Growth Strategy (Strategy) to guide the future development of lands within the rural-urban fringe over the next 25 year period.

This plan is intended to identify the growth related goals and principles for the Town and the RM and based on these, together with the constraints, opportunities and relative serviceability, will identify the spatial distribution and phasing for both urban and rural development in the rural-urban fringe (the fringe). The development of the Strategy involves the following tasks:

- Preparation of rural and urban population growth projections for the next 25 year period
- Inventorying current and targeting projected densities for future urban and rural growth
- Inventorying of existing available land supply within the Town to accommodate short term growth
- Identification of constraints, potential constraints and opportunities for growth in the fringe area
- Assessment of existing infrastructure capacities to support short and long term rural and urban growth in the fringe area
- Identification of the relative serviceability of future growth areas relating specifically to the extension of Town sewer and water systems
- Establishment of complementary growth management principles and policies
- Defining future rural and urban development areas and an urban phasing plan.



1.2 REGULATORY FRAMEWORK

The Strategy is intended to serve both the Town and RM as a supplementary document to both municipalities' Official Community Plans (OCP) and each municipality will adopt the document as an amendment to its OCP. The Strategy may be amended in the future to respond to changing circumstances; but will serve to guide and direct the policies in each municipality's OCP which will also be reviewed and updated in the future. Figure 1-1 identifies the role of the Strategy within the planning framework as enabled by *The Planning and Development Act, 2007.*

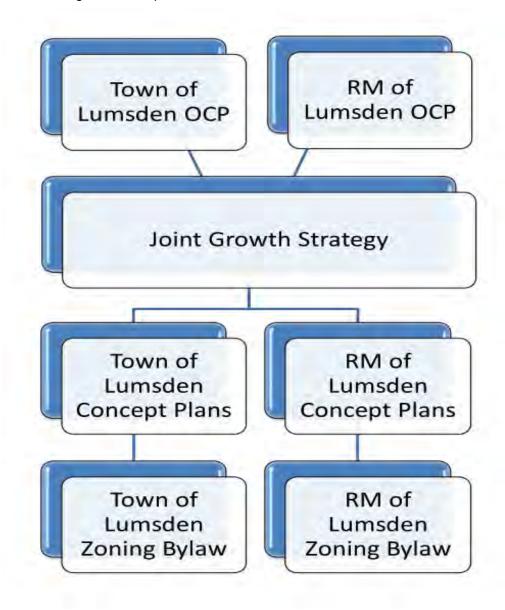
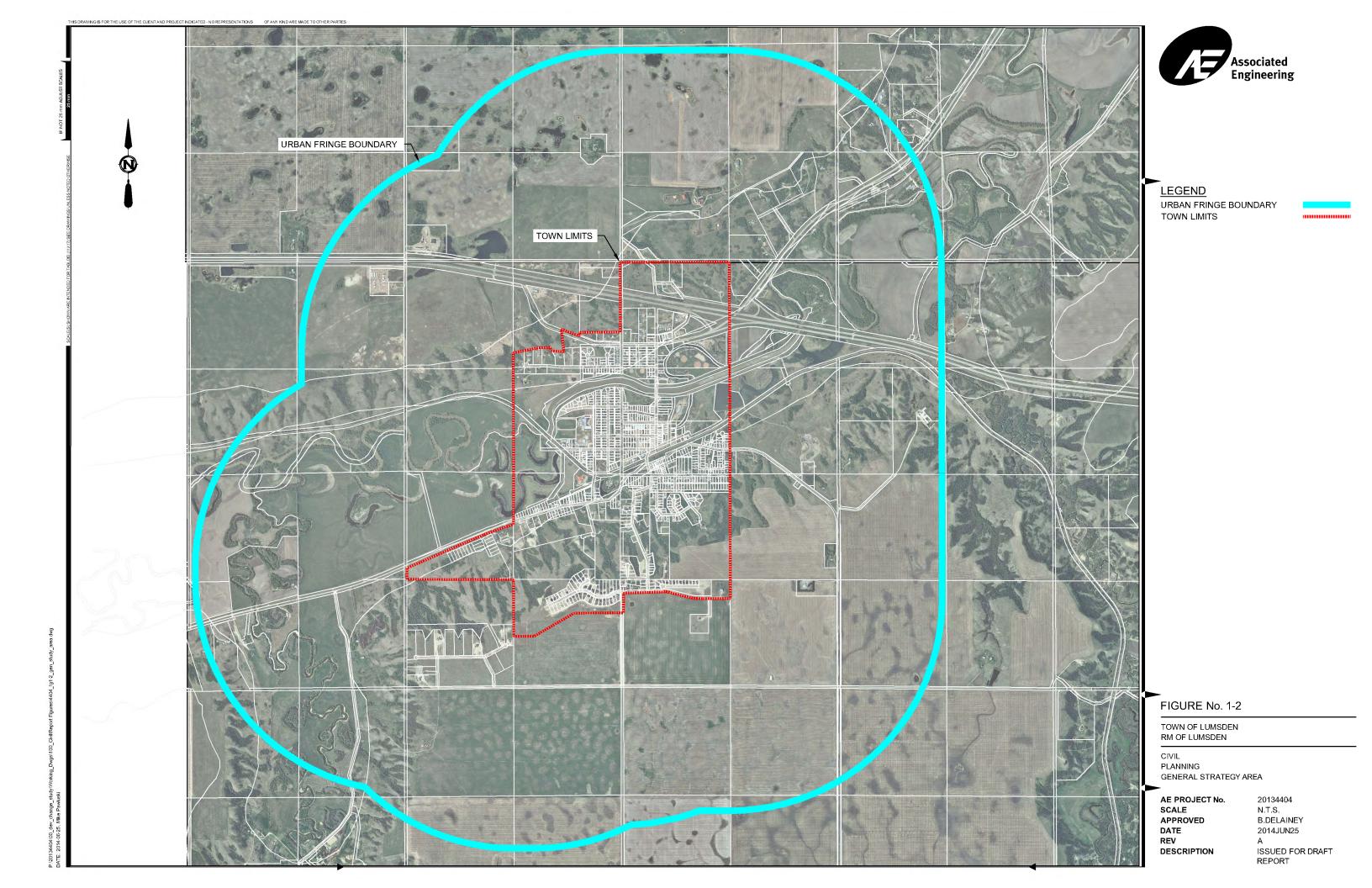


Figure 1-1 Planning Framework

1.3 STRATEGY STUDY AREA

The study area illustrated as Figure 1-2, General Study Area, represents an area surrounding the Town of Lumsden which is of mutual interest to the respective communities and encompasses lands which may be capable of being serviced in the future by Town water and sewer services.





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2 Growth Projections

2.1 POPULATION

Both the Town and the RM have experienced positive growth in recent years. From 2006 to 2011 the Town's population growth rate was 7.1% or 1.4% annually. In 2006 the population of the Town was 1523 and in 2011 based on 2011 Census data the population had expanded to 1631. The Town's growth, with the exception of development within existing approved subdivisions and infill of vacant lots, has been restricted in the last few years due to the limited capacity of its current sewage treatment facilities (i.e. the lagoon). The Town is currently considering options to construct a new mechanical treatment facility which would be capable of serving a population of approximately 3700 persons.

During the same five year period of time, the RM's population growth rate was 7.5% or 1.5% per annum. In 2006 the RM's population was 1612 and based upon the 2011 Census data, the population expanded to 1733. As the study area comprises only a small portion of the overall RM land base, population projections and distribution of growth within the study area is difficult to predict and as a result are provided for context and comparison purposes only.

2.2 POPULATION PROJECTIONS

Due to the fact that development within the Town and the surrounding areas has been hindered by a sewage treatment capacity shortfall, it is assumed that the Town's recent growth rates are somewhat underestimated. For the purposes of forecasting future population growth, two growth scenarios have been represented. The first scenario representing current annual growth of 1.4% assumes that no significant improvements are made to the Town's sewage treatment infrastructure. A second, more optimistic growth scenario of 3% annual growth is also represented acknowledging the expanded growth which may be accommodated by capital improvements to the Town's sewage treatment system. Similar rates were used to project the RM's population growth for a 25 year period. The following table reflects these growth projections.



Table 2-1 Population Projections

TOWN OF LUMSDEN			RM OF LUMSDEN		
Year	1.4% per Year	3.0% per Year	Year	1.5% per Year	3.0% per Year
2006	1523	1523	2006	1612	1612
2011	1631	1631	2011	1733	1733
2016	1748	1890	2016	1865	2010
2021	1874	2191	2021	2009	2710
2026	2009	2541	2026	2164	2710
2031	2153	2946	2031	2328	3142
2036	2307	3235	-	2506	3642
Increase from 2011	676	1604	Increase from 2011	773	1909
Average persons per dwelling unit	2.6	2.6	Average persons per dwelling unit	2.4	2.4
Number of new dwelling units	260	617	Number of new dwelling units	322	795

Based on the two growth scenarios combined with the Census data which estimates 2.6 persons per dwelling within the Town, the number of new dwelling units over this 25 year period for the Town is projected to increase within a range of 260 to 617 units. Similarly for the RM based on an average of 2.4 persons per dwelling unit, the RM can expect growth within a range of 322 to 795 new dwelling units over the same period.

2.3 POPULATION DENSITIES

In order to calculate the future land required for residential development the projected population density has to be estimated. The respective zoning bylaws will generally establish minimum and maximum dwelling densities for rural and urban subdivisions through the application of minimum and maximum site area regulations. The actual dwelling density employed on a site will be ultimately dictated by the developer and the municipality based upon a number of factors including but not limited to the site topography, property serviceability and target market. Table 2-2 below provides a high level summary of existing dwelling densities in established rural and urban developments along with the maximum dwelling densities permitted by the most applicable zoning districts.

Table 2-2 Residential Densities

		Maximum provided under Residential District (R1) Zoning	Existing Rural Subdivisions	Maximum provided under High Density Country Residential District (CR3) Zoning
Dwelling Units per Ha	4.0 – 12.0	20.0 ¹	0.25 – 2.5	2.5 ²
Average Persons per Dwelling Unit	2.6	2.6	2.4	2.4
Projected Persons per Ha	11 - 31	52	1 - 6	6

¹ The minimum site area within the Town's R1 Zone is 550 m² which would translate into a maximum dwelling density of 20 units/hectare.

In discussions with the Town and the RM it was determined that the existing density targets for new developments would likely continue in the future respecting each community's OCP and Zoning Bylaw standards. The area is characterized by relatively large lots in the valley setting and this is the type of development that is foreseen to continue in the future. The Town indicated that any new developments within the core area of the Town would reflect a higher density as this is the area where multi-unit development would be accommodated.

Although the Town's Zoning Bylaw provides four zoning districts relating to residential development, the Residential District (R1) is the most common zoning employed and as such has been used to predict future dwelling densities. It should be noted that the Town also employs a Residential Estate District (RE) in two areas of the community, one to the northwest of the Town and the other in the north part of the Town of which part is north of Hwy. No. 11. The minimum site area in the RE District is 0.4 ha which is the same minimum site area of the RM's High Density Country Residential District as noted below.



^{2.} The minimum site area within the RM's CR3 Zone is 0.4 hectares which translates into a dwelling density of 2.5 units/hectare.

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The RM has three zones that accommodate Country Residential Development designated low Density, Medium Density and High Density. The existing residential development in close proximity to the Town is zoned either Low or Medium Density Country Residential and ranges with minimum site sizes of 4.01 ha for Low Density to 1.01 ha for Medium Density. In the newer development southeast of the Town that is zoned R2 – Medium Density Valley residential, the sites are larger than the minimum requirement and the density is approximately 0.6 units per ha. The High Density Country Residential District accommodates development with a minimum site size of 0.4 ha and although this District is not in close proximity to the Town it is within the study area both north of Lumsden along Hwy. No. 20, 2.4 km west of the Town, and in the Deer Valley residential development approximately 5.0 km south of Lumsden. Converting these minimum site sizes to reflect density of the number of dwelling units per ha, the range is between 0.25 dwelling units per ha for the Low Density Country Residential District and 2.5 dwelling units per hectare for the High Density Country Residential District.

3 Land Inventory

3.1 TOWN OF LUMSDEN LAND USE INVENTORY

3.1.1 Residential

The Town presently has vacant land available for residential development within existing subdivisions. This is in addition to land designated for future residential use as illustrated on the Town's Future Land Use Map attached as Figure 3-1. According to the Town there are approximately 70 vacant lots within in existing subdivisions which are capable of being developed. However, many of the available lots in the newer developments are currently being sold and will be developed in the near future.

The Town has also put forward for consideration, an annexation proposal as illustrated in Figure 3-2. The lands proposed for annexation are located to the south and east of the Town and are designated primarily for residential development with non-residential uses intended to be considered to the east where the landfill and the lagoon buffers both restrict residential use.

These lands will be further evaluated later in the report for constraints, opportunities and serviceability.

3.1.2 Commercial

The Town has communicated an interest in strengthening its commercial core area and as such, no new commercial land use has been designated in the future residential areas. As Figure 3-1 demonstrates, the lands adjacent to the main street, James Street, are designated for continued commercial use along with designated areas adjacent to Highway No. 11 which have also been developed for commercial purposes.

3.1.3 Industrial

Industrial development within the Town is situated along the Qu'Appelle River and the area north of the river in the eastern part of the Town where the lagoon is located. The Town does foresee a large demand for additional industrial development and has indicated that this is likely a more appropriate land use for the RM to accommodate based upon the types of industrial uses attracted to this area and level of servicing required to support these uses.

3.2 RM OF LUMSDEN FUTURE LAND USE

3.2.1 Residential

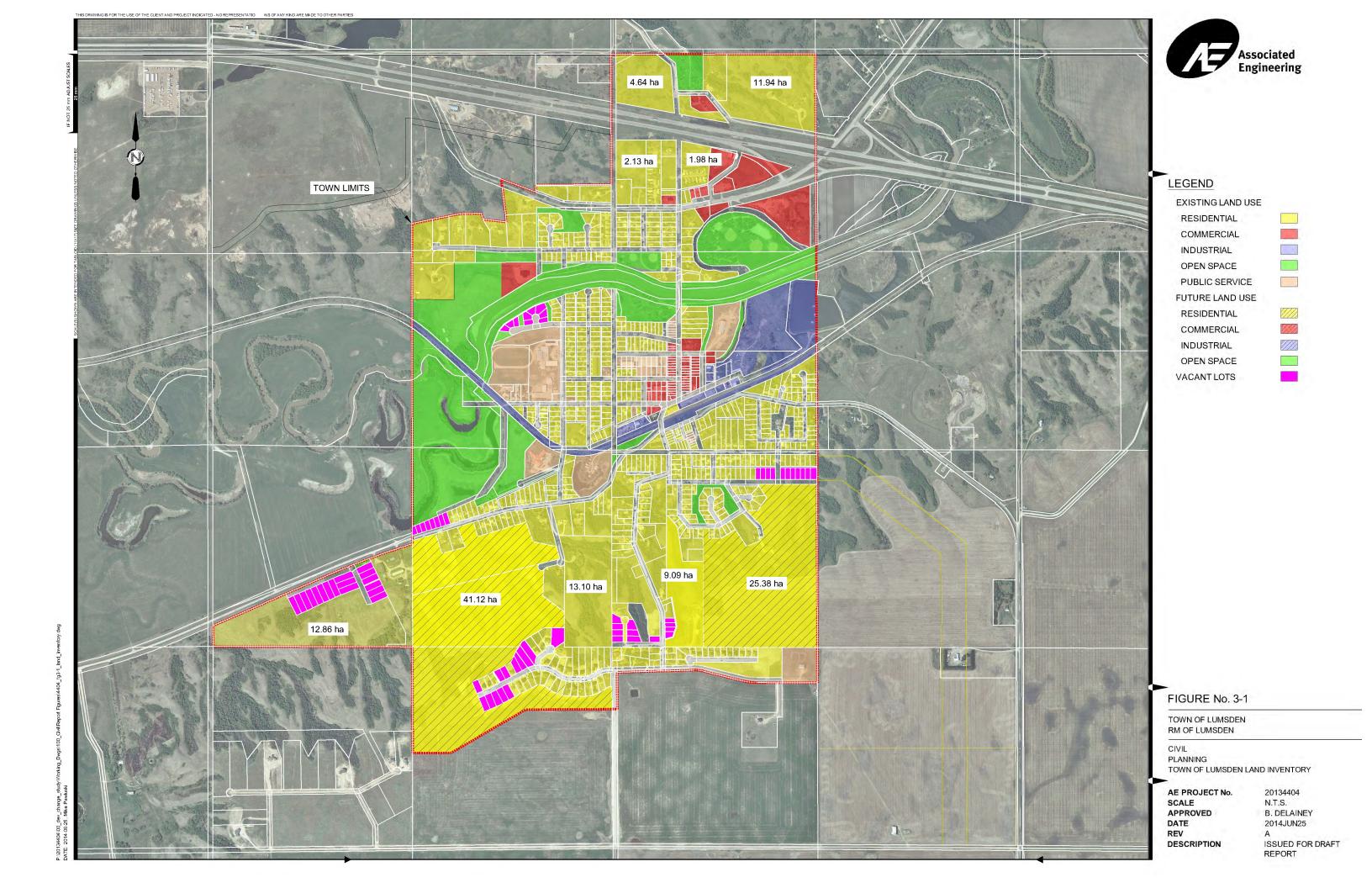
The RM has directed future growth within its OCP, along preferred transportation corridors. The preferred transportation corridors for residential growth are adjacent to Highways No. 641, 734 (Old Highway No. 11), 20, 54, 763 and adjacent to several all-season gravel roads. In addition residential growth has been designated along Highways No. 11 and 6 adjacent to the commercial/light industrial areas. These land uses are illustrated in Figure 3-3 which is reproduced from the RM's Future Land Use Map appended to its OCP.

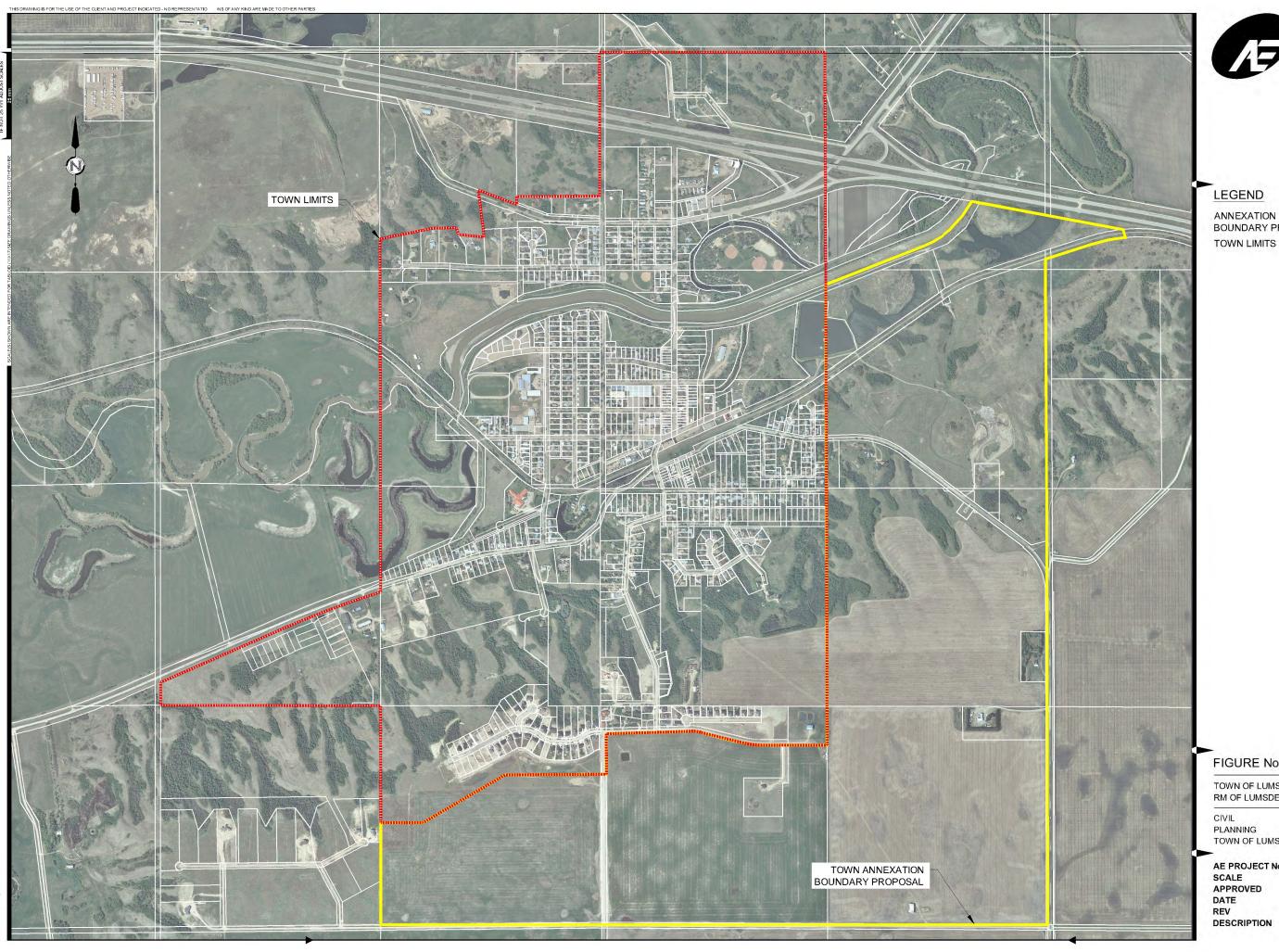


Town of Lumsden RM of Lumsden No. 189

3.2.2 Commercial/Industrial

As noted on the Future Land Use Map in Figure 3-3, the lands designated for future commercial/industrial use are along Highways No. 11 and 6 and will require service roads to the nearest highway access points. These uses rely on access to transportation and the RM wants to restrict these uses to the Provincial Highway Class 1 category.







LEGEND

ANNEXATION BOUNDARY PROPOSAL

FIGURE No. 3-2

TOWN OF LUMSDEN RM OF LUMSDEN

PLANNING

TOWN OF LUMSDEN ANNEXATION PROPOSAL

AE PROJECT No. SCALE APPROVED DATE DESCRIPTION

20134404 N.T.S. B. DELAINEY 2014JUN25

ISSUED FOR DRAFT REPORT

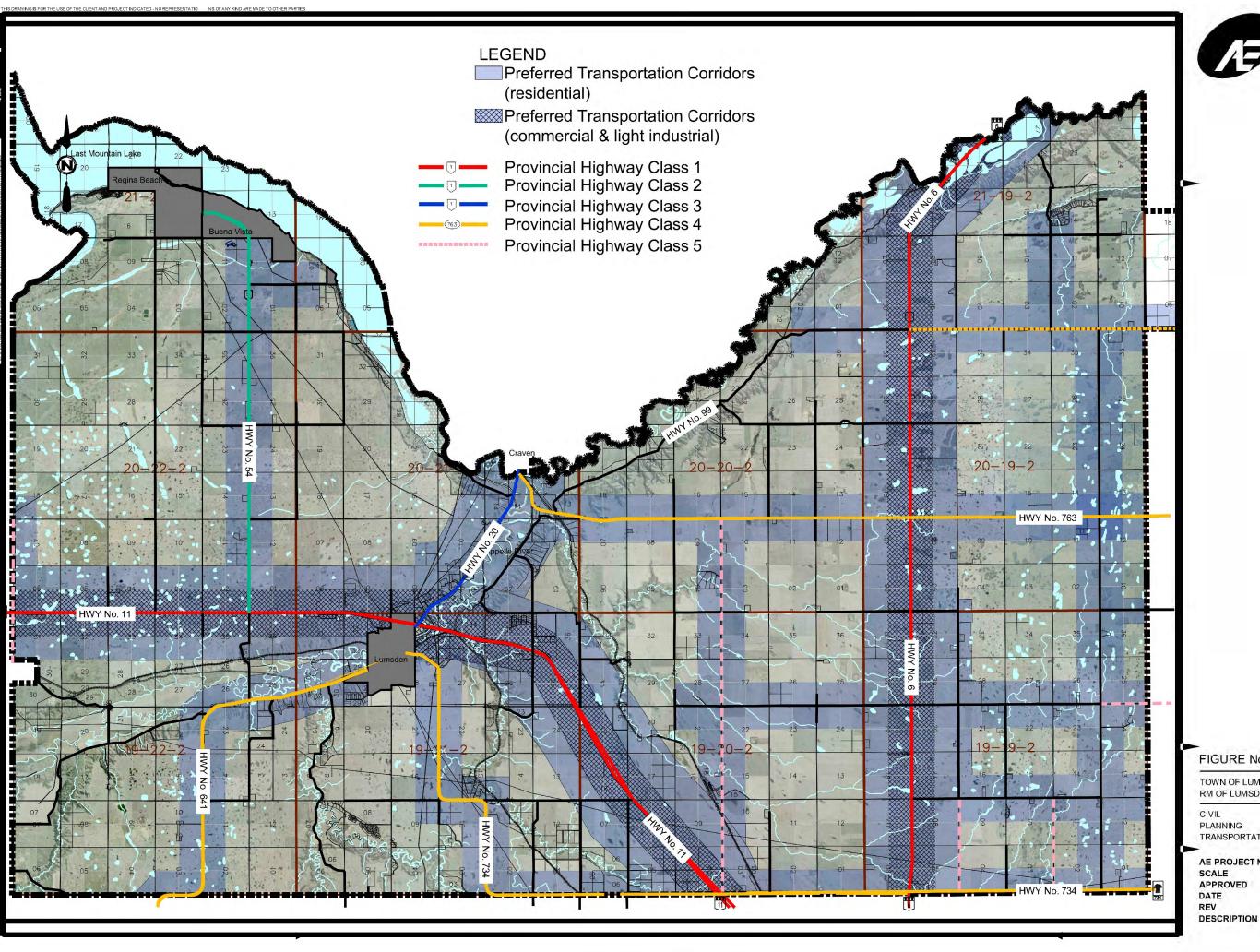




FIGURE No. 3-3

TOWN OF LUMSDEN RM OF LUMSDEN

CIVIL PLANNING

TRANSPORTATION CORRIDORS

AE PROJECT No. APPROVED

N.T.S. B. DELAINEY 2014JUN24

ISSUED FOR DRAFT

20134404

4 Land Evaluation

The land evaluation process examines the development potential of lands within the Strategy area. The intent is to provide direction on which areas are more likely to develop in the future. The land evaluation is based on examining the physical constraints and opportunities for development, combined with an evaluation of the relative serviceability of the lands.

4.1 PHYSICAL CONSTRAINTS

4.1.1 Floodplain

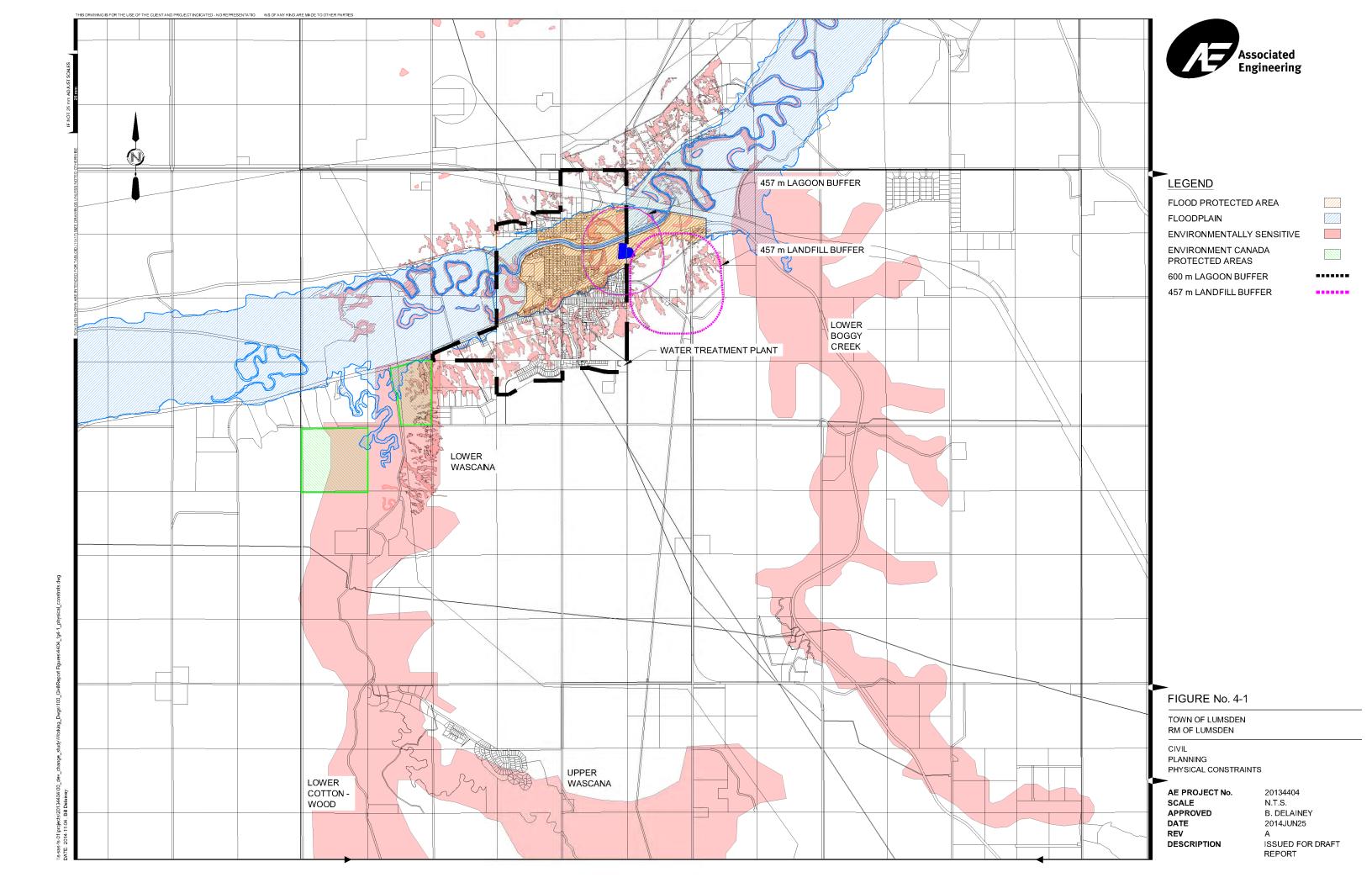
Both the Town and much of the RM are situated in the Qu'Appelle River Valley floodplain. After the major flood in 1974 a dyking and channelization system was constructed that was built to the 1:500 year flood event standard. The Statements of Provincial Interest require flood proofing of new buildings and additions to buildings to an elevation of 0.5 metres above the 1:500 flood elevation of any watercourse or water body in the flood fringe. As Figure 4-1 illustrates most of the Town is located within the dyking system so this provincial requirement for flood-proofing will be required. The rationale is that the existing dyke system provides protection for development but there is still a possibility that the dykes may fail or be breached resulting in possible property damage. There are several small portions of the Town that are below the 1:500 year flood level but these areas are primarily public open space. Figure 4-1 illustrates areas outside of the existing dyking system where development cannot be supported due to the high flood hazard potential.

4.1.2 Environment Canada Protected Areas

The Qu'Appelle Valley has significant areas of natural vegetation, natural corridors, wildlife, and other historic and archaeological features. Two specific areas in the RM along the Lower Wascana have been designated by Environment Canada as protected areas due to environmental sensitivity and development is restricted from these areas. See Figure 4-1 for the location of these areas.

4.1.3 Environmentally Sensitive Lands

The Town and the RM have significant areas that are environmentally sensitive due to natural features including natural drainage areas and riparian areas, areas with sensitive plants or animal /fish habitat or archaeological/historical features or artifacts. These areas are illustrated on Figure 4-1 and are adjacent to the Qu'Appelle River, the Lower Wascana, Lower Boggy Creek, Upper Wascana and Lower Cottonwood. In order to develop in any of these areas an environmental study is required that can demonstrate that the proposed development will not adversely affect these environmentally sensitive lands.



4.1.4 Lagoon Buffer and Capacity

The Town's current aerated lagoon is located north of the railway and south of the Qu'Appelle River near the Town's eastern boundary. The current lagoon is presently operating at full capacity which has resulted in development restrictions within the Town. The Town is examining options for a new sewage treatment system which will increase the threshold capacity of the system to serve a population of 3700. The exact location and type of sewage treatment system is not known at this time, but based upon the current Subdivision Regulations, a 457 metre buffer shall apply to any new residential subdivisions within the vicinity of the new system. This buffered area should not affect future residential development as the area affected is currently developed or within the floodplain area.

4.1.5 Landfill Buffer

The landfill that serves the Town and RM is located in the RM approximately 0.5 km southeast of the lagoon. The Province requires a separation distance of 457 metres between a landfill and residential development. Figure 4-1 indicates this buffer area which overlaps with the lagoon buffer area. Similar to the lagoon buffer, this separation requirement may be amended in the future to a slightly larger requirement in which case the buffer area would have to be amended. However, the landfill buffer area should not have any major impact on future development in the area.

4.2 POTENTIAL CONSTRAINTS

4.2.1 Slope Stability

The Qu'Appelle Valley's walls throughout the region are subject to surface erosion, soil creep, and slope failure (slumping). Soil erosion has been controlled in general with vegetation cover; and soil creep in the Lumsden area has not been significant in affecting the smaller, shallow structures on steep slopes. However, slumping has been a major concern and is addressed in both respective OCPs. The areas that are subject to potential unstable slopes are illustrated in Figure 4-2.

Slumping problems on the valley slopes have resulted in foundation issues in the past and both municipalities currently require the preparation of thorough geotechnical investigations by qualified geotechnical engineers specializing in slope stability to assess this risk and define mitigation strategies prior to the approval of development. Although this can result in additional costs at the start of a development, it reduces the risk of unmitigated soil erosion and slope failure on the site in the future. The respective OCP policies are intended to ensure that the hazards and potential long-term costs associated with the risk of erosion and slope failure are made known to the proponents, future owners, Councils and that acknowledgement of the inherent risks and informed land use decisions are made.



4.2.2 Heritage and Environmental Resources and Native Species

The Qu'Appelle Valley and surrounding area have an abundance of natural and heritage resources. These resources may include the following:

- Archaeological and paleontological objects
- Historical, cultural properties including Municipal or Provincial Heritage Property
- Natural vegetation areas, riparian corridors, "stepping stones" of native vegetation and special sites significant sites
- Natural and Critical Wildlife Habitat Areas.

While the Town has some of these resources present, the RM with its larger undeveloped areas has a greater potential for these resources. Both municipalities have policies in place to protect these resources and may require environmental or heritage resource impact studies prior to permitting development. Figure 4-2 illustrates the extent of the known potential sensitive areas within the RM.

4.3 POTENTIAL OPPORTUNITIES

4.3.1 Dyked Area and Vacant Lots

The dyking and channelization system was constructed and built to the 1:500 year flood event. The Statements of Provincial Interest require the provision of an additional 0.5 metre contingency above the 1:500 flood elevation as a means of ensuring adequate flood protection is provided for development. This dyked area is shown in Figure 4-3 and development is permitted within this area if it meets the provincial requirements providing an opportunity for both residential and commercial infill. The eastern area of the Town and fringe situated within the dyked area enables the future expansion of the sewage treatment system and the landfill and provides an opportunity for future industrial development.

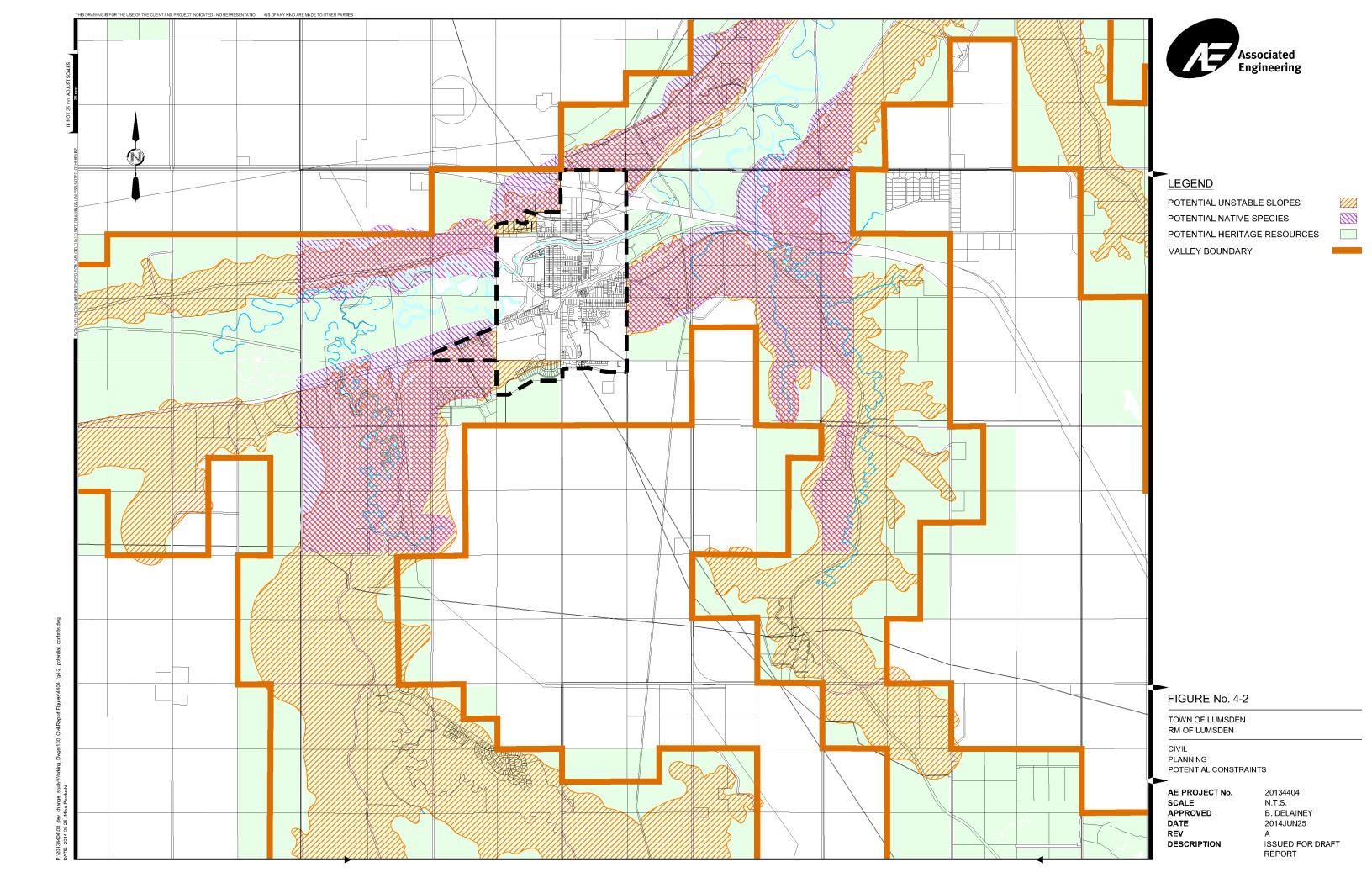
4.3.2 Future Commercial/Industrial Development

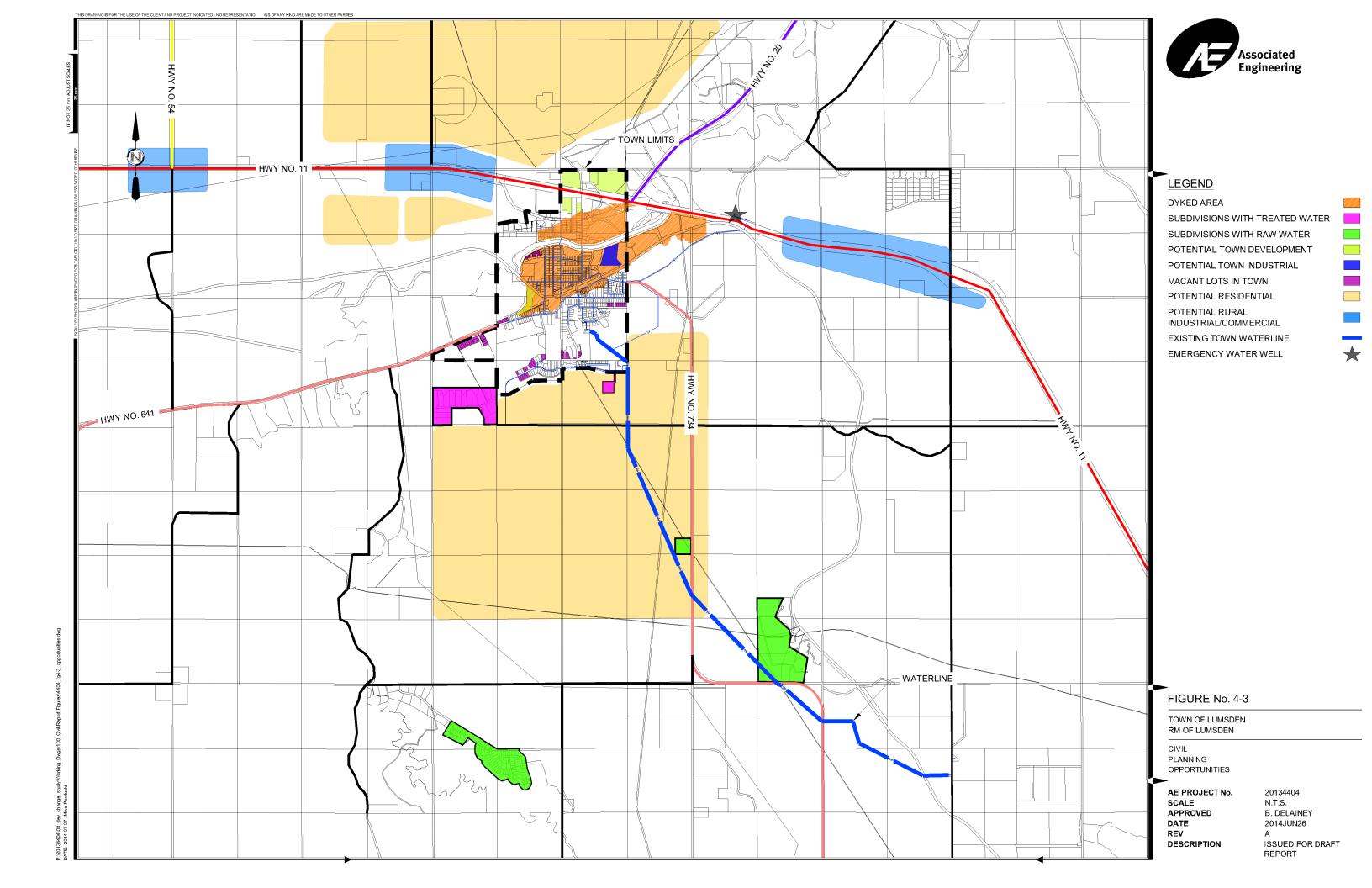
Highway No. 11 is the major transportation corridor that runs through the Strategy area. As stated within the RM's OCP, this highway offers an opportunity for future commercial/industrial development adjacent to the highway corridor centered on the access points. Service roads along the corridor would provide access to the developments and also to the highway access points. Figure 4-3 illustrates where this commercial/industrial growth for the RM could be accommodated.

4.3.3 Future Residential

The lands that will be examined for future potential residential growth are to the north, south and slightly west of the Town. The type of residential development will depend upon the serviceability of the land. As Figure 4-3 shows there are some rural developments that are provided with water service from the Town's water line that runs from the Lumsden aquifer north to the water treatment plant in the southeast corner of the Town. The developments that are marked in green have access to raw untreated water from the water line and the developments that are marked in pink are able to have access to treated water as they are closer to the Town.







REPORT

5 Infrastructure

5.1 EXISTING SERVICES

5.1.1 Potable Water

For the purpose of this report, water capacity is represented and assessed in three components. These components are broken out in Table 5-1 below. For the purposes of assessing future capacity, the system component with the least capacity is considered the ceiling capacity and defines the direction for future infrastructure upgrades. It should be noted that this assessment is based upon a desktop review of available data and should be substantiated in the future by a physical inspection of the component systems.

The Town's potable water is supplied from two raw water wells connected to the Lumsden Aquifer located approximately 10 km southeast of the Town via a pipeline where it is distributed to the Town's water treatment plant. The Town has a water rights license which permits the extraction of a maximum of 500,000 m³ of water per year from the aquifer. In addition there is a permit to extract 129,100 m³ of water per year from a well that is in an aquifer located in the bottom of the valley beside Highway No. 11. However, this well is only used for emergency services. When there is an emergency, the secondary well back feeds the distribution system to provide an emergency water source. Although there is a chemical feed pump at the emergency well where chlorine is added, the water does not meet drinkable health standards. Figure 5-1 shows the water lines for the Town and the location of this emergency well.

In addition to the Town's residents, the current water rights license applies to the developments at Deer Valley, Dodd's subdivision and Minerva Ridge located in the RM which is shown on Figure 4-3. These rural developments account for a combined rural service population of 400 people. The two raw water wells are estimated to have sufficient capacity to support a total population of approximately 3800 people based upon an average daily water consumption of 360 lcd calculated from water treatment plant (WTP) records.

The WTP is located in the southeast corner of the Town. The WTP is equipped with two filters which currently operate at an estimated capacity of 11.5 L/s per filter. Based upon this current rate, it is estimated that the current treatment system operated at the minimum design capacity could support a total service population of approximately 2600 people. This estimate is based upon a filtration rate of 11.5 L/s, and a Max Day Factor of 2.1 times the average daily water consumption of 360 lcd. Presently treated water serves the Town's residents and two developments in the RM; one directly southwest of the Town and the second directly south of the water treatment plant.

The third and final component of the Town's water system is the two treated water storage reservoirs. These reservoirs have a combined estimated storage capacity sufficient to support a service population of 2500 people. The following table summarizes the three components of the potable water system as it relates to supporting community growth.





Table 5-1
Water System Capacity Summary

Water System Component	Total Estimated Capacity	Rural Service Population	Projected Future Urban Population	Net Excess (Short-fall) System Capacity Available
License, raw water well and supply distribution capacity	3800 ¹	300 ²	3235 ³	265 ⁴
Treatment and filtration system capacity	2600	100 ⁵	3235	(735) ⁶
Reservoir and distribution pump capacity	2500	100	3235	(835) ⁷

The table above suggests that from a current system capacity standpoint, the treatment and reservoir components of the system represent the limiting factor in supporting projected growth. From the perspective of the filtration system, the maximum design capacity of each of the filters is double the current operational standard. A physical assessment of the system would be required to confirm the ability to increase the filtration rate from its current 11.5 L/s; however it would be unrealistic to assume they could sustain the maximum loading of 23 L/s. The Town will need to plan for an investment into the expansion of the storage reservoir and consider further investment into expansion of the treatment capacity to take full advantage of the current water allocation amounts in order to meet long term growth in the Strategy area.

The Water Security Agency Act and the Ground Water Regulations define a two-step approval process for expanding the Town's water allocation. The first stage involves the completion of a Ground Water Investigation Report intended to confirm the capacity of the aquifer to respond to the forecasted water demand acknowledging all of the wells relying on the aquifer. If the ground water investigation was successful, the Town would be capable of filing an Application for a Water Rights Licence and Approval to

⁷ This represents the capacity shortfall which currently exists in this component of the water system in relation to project urban growth.



¹ The current allotment of 500,000 m³ per year apportioned at 360 litres/capita/day equates to a total estimated service population of 3800.

² Based upon 120 lots within the Deer Valley subdivision and the current rural household densities, it is estimated that the current raw water line provides service to 300 rural customers.

³ This equates to the upper limit of the forecasted population growth for the Town of Lumsden (Table 2-1)

⁴ This represents the excess capacity that would be available in this component of the water system for distribution to future rural developments while protecting the Town's long term needs.

The developments at Dodd's subdivision and Minerva Ridge currently receive treated water from the Town and as such are discounting the treated component of the system.
 This represents the capacity shortfall which would exist if the current filtration system is only able to be

⁶ This represents the capacity shortfall which would exist if the current filtration system is only able to be operated at its design capacity. Physical testing of the facility would be required to confirm its ability to operate at a higher rate.

Construct and Operate Works under *The Water Security Agency Act*; enabling the Town to increase its draw from the aquifer. Within this stage of the application process, the Water Security Agency (WSA) would complete a technical review of the Ground Water Investigation Permit to confirm its accuracy.

5.1.2 Waste Water System

The Town's lagoon is located in the northeast part of the Town on the south side of the Qu'Appelle River. The capacity of the sanitary sewer system has reached its full capacity and cannot keep pace with its wastewater generation rates. Several times this has resulted in requiring special permits from the WSA to discharge effluent into the Qu'Appelle River. These effluents have high nitrogen and phosphorus concentrations and have a negative effect on the river quality. The WSA has indicated that the Town must address the insufficient capacity of its sanitary sewer system prior to any new developments being approved, severely inhibiting its future growth.

The Town is exploring options for a new waste water treatment plant that would replace the existing lagoon and would be able to meet the effluent limits set by the WSA. Initial designs for the proposed new system indicate that the system is scalable, allowing it to be constructed in stages in response to population demands. The initial stage of development will provide an estimated service capacity of 2,500 people with an additional capacity of 1,200 people created during stage 2 of the project. Based on the assumption that a new waste water treatment system will occur with a capacity to serve a population of approximately 3700 persons, developments will be able to proceed in the near future and growth in the area will be able to continue as planned once the waste water solution is in place.

5.2 SERVICABILITY OF OUTLYING AREAS

Following a review of the constraints and opportunities for growth in the Strategy area, a high level analysis on the feasibility of servicing the study area identified in Figure 4-3 for potential residential growth was undertaken. The areas were examined from both a water and waste water servicing perspective. Figure 5-2 illustrates and describes the potential growth areas indicating the relative servicing costs of each of these areas and Table 5-2 provides information on the areas and the rationale for these servicing costs.

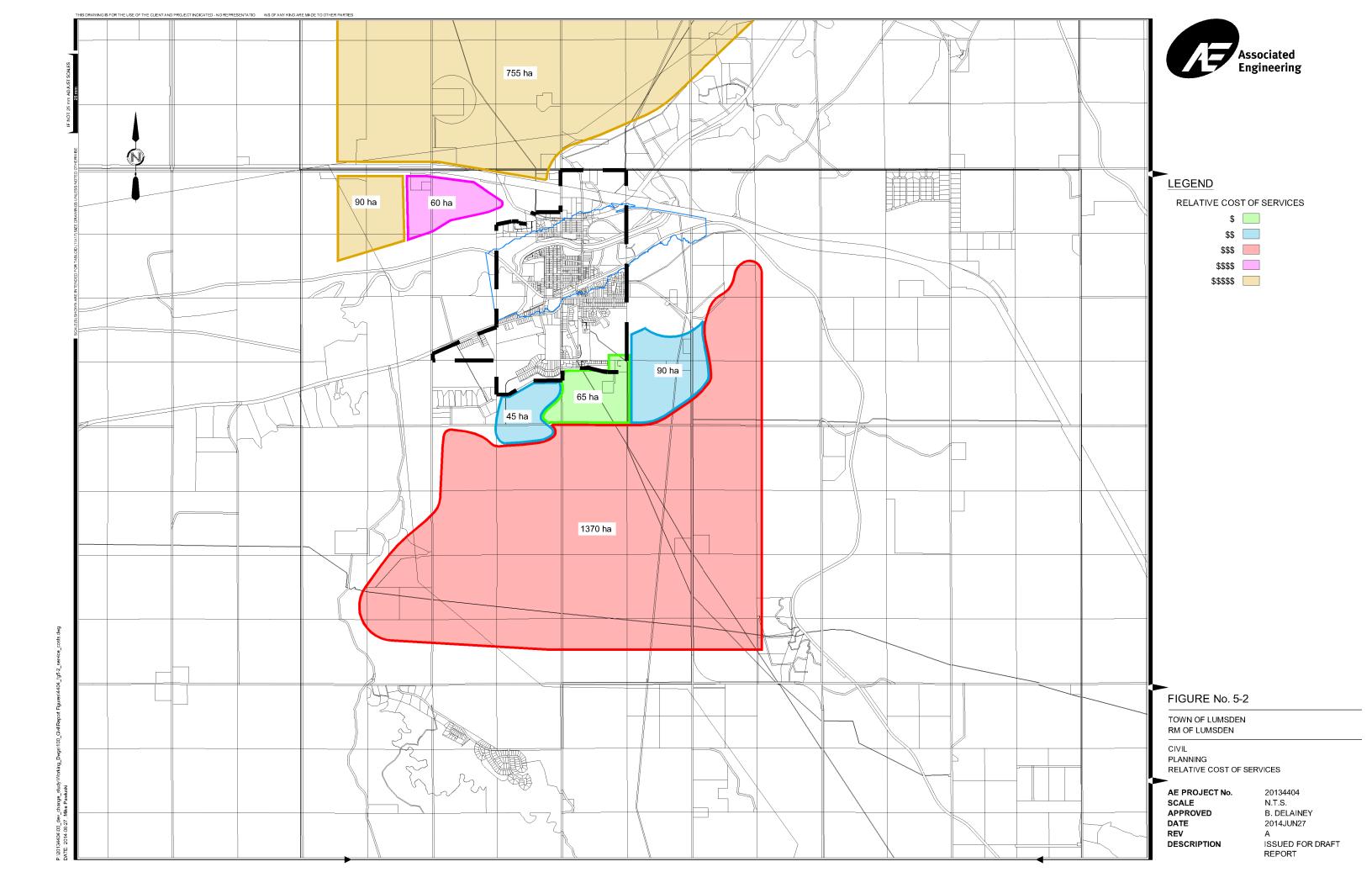
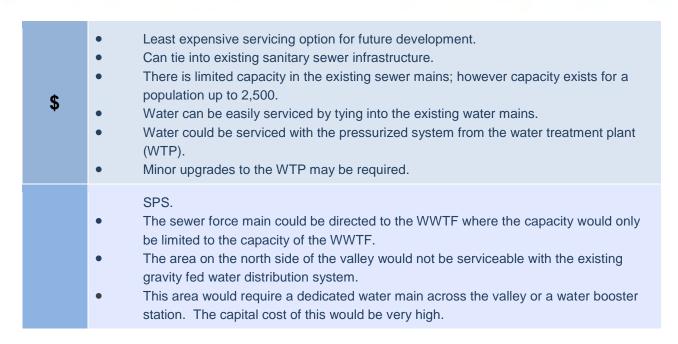


Table 5-2 Relative Servicing Costs by Area

\$	 Least expensive servicing option for future development. Can tie into existing sanitary sewer infrastructure. There is limited capacity in the existing sewer mains; however capacity exists for a population up to 2,500. Water can be easily serviced by tying into the existing water mains. Water could be serviced with the pressurized system from the water treatment plant (WTP). Minor upgrades to the WTP may be required.
\$\$	 Two options are available for a similar cost, West and East. Both options require a new sewer trunk main down the valley. Water can be easily serviced by tying into the existing water mains. Minor upgrades to the WTP may be required West Option: New sewer trunk main would tie into the Sewage Pumping Station (SPS) along Qu'Appelle Road which pumps to the existing gravity sewer system. The existing sewer mains and SPS have limited capacity. East Option: A new sewer trunk main is required to tie into the Waste Water Treatment Facility (WWTF). The sewer trunk main would be sized to accommodate a population of 3,000, and can be increased for additional development.
\$\$\$	 Development of this area is dependent on the construction of the East sewer trunk main down the valley as mentioned in the \$\$ option. Due to the terrain, gravity sewer to a future trunk main would be difficult and would likely require a SPS. Development further south is serviceable with water at a reasonable cost. Water mains would tie into the existing pressurized system. If the other less expensive options are implemented prior to this option, the population serviced in those options would satisfy growth up to a 4,000 population.
\$\$\$\$	 Gravity sewer would be feasible in this option, flowing to the existing sewer system. Capacity would be limited in the existing system. The area on the north side of the ravine would not be serviceable with the existing gravity fed water distribution system. This area would require a dedicated water main across the valley or a water booster station. The capital cost of this would be very high.
\$\$\$\$\$	Gravity to the existing sewer infrastructure would be difficult and would likely require a





The following two tables represent the forecasted development yield for each of the five service areas based upon the population projections and estimated dwelling densities. Table 5-3 utilizes an average dwelling density of 10 units per hectare and a household size of 2.6 persons as a means of establishing the population yield for each of the service areas.

Table 5-3
Spatial Population Growth Projection - Town

Location	Relative \$	Area (ha)	Target Density (units per ha)	Number of Units	Population
Area 1	\$	65	10	650	1690
Area 2 (a)	\$\$	90	10	900	2340
Area 2 (b)	\$\$	45	10	450	1170
Totals		200		2000	5200

Relating this information back to Table 2-1, even at 3% annual population growth, the Town's projected 25 year population can be easily accommodated within the three areas identified above recognizing the need to accommodate this growth in areas which are most easily serviced by Town infrastructure. It should be noted that where increased density is promoted by the Town, the amount of land required to support this projected growth is decreased even further.

Assuming that rural development would occur outside of the areas listed above based upon a maximum dwelling density of 2.5 units per hectare and a household size of 2.4 persons per dwelling, the following population yields could be reasonably projected:

Table 5-4
Spatial Population Growth Projection - RM

Location	Relative \$	Area (ha)	Target Density (units per ha)	Number of Units	Population
Area 3	\$\$\$	2001	2.5	500	1200
Area 4	\$\$\$\$	60	2.5	150	360
Area 5 (a)	\$\$\$\$\$	90	2.5	225	540
Area 5 (b)	\$\$\$\$\$	1151	2.5	230	552
Totals		465		1105	2652

^{1.} Although the total land areas represented within Areas 3 and 5 (b) are 1370 and 755 hectares respectively, realistically the entire area would not be developed for country residential use at the maximum density as this would represent the equivalent of a new urban community. It is more realistic that country residential development will occur in pockets with some undeveloped agricultural land retained. For the purpose of this table, we have allocated 15% of the total land area towards the projection.



6 Growth Management Principles and Policies

6.1 PRINCIPLES

The following growth principles were established through discussions with the Town and the RM. These principles will be used as a foundation for establishing the development policies.

Inter-municipal Partnership

The Joint Growth Strategy is mutually developed to manage the growth in the areas of common interest both in the Town and the RM.

Link to Official Community Plans

The Joint Growth Strategy is supplemental to the Town and RM OCPs but is intended to complement and serve as a guide to inform and direct the respective polices of each municipality.

Environmental, Heritage and Cultural Resources

Growth in the area shall recognize and protect the areas resources.

Complementary Growth

The Town and the RM shall not compete for the same type of residential growth but rather seek to support differential residential opportunities and lifestyles within the region.

Fiscally Responsible

Growth in both the Town and the RM shall be cost effective and maximize the net benefits to the residents and the individual municipalities.

Connected and Contiguous

Town growth shall be connected to ensure ease of movement and contiguous to ensure expansion is adjacent to developed areas. RM growth shall have access directly or through service roads to preferred transportation corridors.

Livable

Growth shall maintain the quality of life for the residents and densities of development will be based on the Town's new neighbourhoods and the RM's country residential developments.

Sustainable

Growth shall be socially, environmentally and economically sustainable.



6.2 POLICIES

The Strategy identifies areas for future urban residential growth, future rural country residential growth and areas for potential commercial industrial growth for the next 25 years as shown in Figure 8-1. The policies in this section, along with the policies outlined in the Town's and RM's OCPs, will guide the future growth in the Strategy area.

6.2.1 General Policies

- **6.2.1.1** The Joint Growth Strategy is a plan to manage the short and long term growth for a minimum period of 25 years for the Town and the RM within the Strategy area.
- **6.2.1.2** The Joint Growth Strategy and all future development shall comply with Statements of Provincial Interest.
- **6.2.1.3** A 5 year supply of land should be designated in appropriate land use categories to accommodate short term growth.
- 6.2.1.4 Any boundary alteration proposal by the Town shall be mutually agreed to by the RM where the proposal would accommodate up to 25 year's growth and is in conformity with the Joint Growth Strategy.
- 6.2.1.5 The Urban/Rural Joint Planning Area (Joint Planning Area) as shown in Figure 8-1 is an area of mutual interest to both municipalities and shall be managed by both the RM and the Town in a consultative and cooperative manner respecting the growth management principles and policies contained herein.
- 6.2.1.6 New residential subdivisions in designated urban growth areas shall be designed and serviced based upon a targeted minimum development density of 10.0 dwelling units per hectare (1 dwelling unit per 0.25 acres).
- 6.2.1.7 The maximum density for new rural residential subdivisions in the Joint Planning Area shall not exceed a density of 4.0 dwelling units per hectare (1 dwelling unit per 0.6 acres).
- **6.2.1.8** Notwithstanding 6.2.1.7, upon mutual agreement of the respective Councils, the maximum density for a rural residential subdivision in the Joint Planning Area may be exceeded for the purposes of accommodating a regionally significant development.
- 6.2.1.9 The density of new rural residential subdivisions shall be established based upon an evaluation of the carrying capacity of the lands to accommodate private waste water disposal systems or the operational capacity of a privately owned centralized waste water treatment facility; and the supply capacity for potable water.

- **6.2.1.10** Development should be financed in keeping with the principle that new development should pay its own way. All infrastructure, both on and off-site improvements, required to support development should be funded by the developer by either a payment in lieu or by construction of the required infrastructure for any future expansion.
- **6.2.1.11** Any land identified as having environmental, heritage or cultural resources shall be recognized and protected during the development stage.
- **6.2.1.12** Any land identified as having existing or potential environmental constraints shall only be developed in compliance with the conditions outlined in the Town's or the RM's OCPs and Zoning Bylaws.

6.2.2 Town Infrastructure Policies

- **6.2.2.1** Development shall make efficient use of the land, as well as existing and future infrastructure and facilities.
- **6.2.2.2** Development shall be cost-effective over its life-cycle from an operational perspective.
- **6.2.2.3** A comparable level of utility and public amenity services shall be provided in all existing and new residential areas.
- **6.2.2.4** Priority for access to the Town's sanitary sewer and water services shall be given to the Town's future growth.
- 6.2.2.5 Any rural development requesting access to and service by the Town's sanitary sewer collection and water distribution systems shall be at the discretion of the Town; and if the Town approves the extension of such services, the rural developer shall be solely responsible for financing and the construction of all necessary infrastructure to facilitate the new connection.
- **6.2.2.6** Rural subdivisions proposing to connect to the Town's sanitary sewer collection and/or water distribution system shall be required to execute a servicing agreement with the Town to confirm the conditions for service including but not limited to the standards for construction and payment of any direct or indirect capital costs associated with the construction of new or expansion of existing municipal infrastructure.



6.2.3 Rural Infrastructure Policies

- **6.2.3.1** Any new development shall minimize the costs and maximize the net benefits to the RM.
- **6.2.3.2** Rural subdivisions in designated rural growth areas shall be encouraged to connect to the Town's sanitary sewer collection and water distribution system. The developer shall bare full responsibility for financing and the construction of this new infrastructure.
- **6.2.3.3** The RM shall require that new rural subdivision proposing to connect to the Town's sanitary sewer collection and/or water distribution system enter into a servicing agreement with the Town as described in 6.2.2.6.
- **6.2.3.4** Rural subdivisions in designated rural growth areas proposing to construct a private centralized waste water treatment system shall be encouraged to establish a bare land condominium to provide the necessary private funding and management structure for the proposed facility.
- 6.2.3.5 Any new country residential development or commercial/industrial development shall be directed to one of the designated transportation corridors or provide a local service road that has access to an all weather public access road.

7 Infrastructure Scenarios for Future Development

Current and planned infrastructure capacity plays an important role in determining the amount, spatial distribution and phasing of urban and rural growth in the Joint Planning Area. The capacity of the water system - the supply, storage and treatment components; along with the capacity of a new sanitary sewer system needs to be considered. With this information and the relative serviceability costs of the potential growth areas, a phasing plan for new residential Town growth can be determined based on the Town's projected population growth. The additional built or planned capacity of these systems will also dictate the extension of these services to surrounding rural areas.

7.1 WASTE WATER SYSTEM

The Town's present lagoon has reached its effluent disposal capacity and cannot keep pace with its waste water generation rates. As noted in Section 5 the Water Security Agency (WSA) has indicated that the Town must address the insufficient capacity of its waste water disposal system prior to any new developments being approved. This has meant that the Town is unable to approve any new developments and the Town's future growth will be halted until such time as this situation is remedied.

The Town is exploring options for a new waste water treatment plant that would replace the existing lagoons and would be able to meet the effluent requirements prescribed by the WSA. The planned waste water treatment system is scalable, enabling its staged expansion in response to changing urban and rural demands for service. The proposed new system would accommodate the Town's present population of 1750 within stage 1 with a forecasted service population of 2500 persons. Upon completion of the planned stage 2 expansion, the total estimated population service capacity for the system is expected to increase to 3700 people which effectively generates excess capacity to extend this service to rural developments in the Joint Planning Area. It is important to note that the proposed new system is capable of additional expansion in the future if needed and that the land area hosting the system is sufficiently sized to accommodate additional expansion.

7.2 WATER SYSTEM

Service capacity for any system is ultimately dictated by the weakest component of the system. In this regard, the Town's current treatment and water storage capacity will ultimately dictate growth in the region as it pertains to the extension of new water services. As indicated in Section 5, the current raw water supply is adequate to respond to 100% of the projected urban growth and also to enable support for additional rural growth, but the filtration and storage reservoirs do not have sufficient capacity to respond to the full cumulative urban and rural growth in the Joint Planning Area. In order to add additional capacity to the water system to meet projected urban population forecasts and to enable the extension of additional water service to future rural developments, the Town will need to consider a capital expansion of the treated water storage reservoirs and the expansion of the treatment system itself.



Although the Town has indicated that ensuring that sufficient water capacity exists to service forecasted urban growth is the highest priority, there is a willingness to consider capacity expansions to enable the extension of water service to future rural developments but only where the expansion can be accommodated within the existing building footprint. The current WTP building was designed to accommodate a third pump and filtration system which would be capable of potentially expanding water treatment capacity to up to a service population of 5700 people. Adding a third filter to the existing system and continuing to operate these filters at the minimum design rate of 11.5 L/s would enable support for a forecasted population of 3800 people which is comparable to the current planned waste water treatment capacity referenced above, responding to a forecasted growth rate slightly below 3% annually. These system improvements combined with an expansion of the storage reservoirs should provide sufficient excess capacity to meet forecasted urban growth and enable the extension of water service to future rural developments within the Joint Planning Area.

7.3 INFRASTRUCTURE FUNDING

The infrastructure improvements contemplated in the previous sections represent large scale projects with multiple benefiting parties both within the Town's projected growth area and extending into the rural development areas. It is anticipated that the Town will utilize servicing agreements as the primary mechanism for ensuring that development contributes proportionately to the cost of these significant municipal infrastructure improvements.

Execution of a servicing agreement with the Town will be required as a condition of municipal endorsement of any future urban or rural subdivision. In addition to defining the developer's direct responsibility for funding and constructing all internal infrastructure, this agreement will establish the developer's responsibility for constructing any additional infrastructure necessary to connect to the Town's existing water and sanitary systems which may include but not be limited to linear infrastructure and pumping/lifting facilities. The agreement will also establish a per hectare developer contribution to the municipal investment into the expansion and/or improvement to the Town's water and wastewater treatment facilities as described above as represented in the Town's development charge bylaw. It should be noted that rural developers would be responsible for execution of a servicing agreement with both the RM and the Town where connection to the Town's water or sanitary sewer system is contemplated.

Within rural developments, in addition to being directly responsible for funding and constructing all necessary infrastructure to connect to the Town water or sanitary systems, rural developers will also be assessed the same per hectare development charge applied to urban developments. Urban and rural property owners connecting to these systems would then be subject to the applicable utility hook-up fees and ongoing service utility rates.

⁸ This assumes that the filtration rate of the existing two filters and a third added filter could be increased to 17.5 L/s. A filtration rate of 3 Igpm/ft² (or 17.5 L/s) is assumed to be a sustainable filtration rate based upon the system design specifications. This increase has not been confirmed and will be dependent on completing a physical test of the system. Operating the existing filters at a higher rate may cause some issues including increased backwashing.

8 Phasing of Growth

Based on the land evaluation and infrastructure analyses with the long term growth projections and in line with the growth management principles and policies, a Joint Growth Strategy for the Town and RM that identifies the future development areas with a phasing plan can be developed. Figure 8-1 in the Appendix illustrates the future growth areas for the Town and the RM.

8.1 IMMEDIATE URBAN GROWTH

As noted earlier in the report, major urban developments have been restricted from going forward until the waste water systems have been remedied. This work is underway and once completed will allow for urban growth to continue.

However, the Town can encourage infill development in the older sections of the Town where there are vacant lots or redevelopment of existing lots. There are approximately 70 vacant lots in the Town that are available for development which includes the lots in subdivisions that have been approved but are not completely built out.

8.2 PHASE 1 OF URBAN GROWTH

Phase 1 of the Town's future growth, located south of the Town's current corporate limit and outlined in green on Figure 8-1 comprises approximately 65 ha. This land has been previously identified within a proposed boundary alteration due to its relative serviceability.

Based on the present densities of newer developments in the Town that range from 4.0 to 5.2 units per ha, this area could accommodate a population of up to 880 people at the high end of this density range. Given that development densities in older areas exceeds that of newer subdivisions within the Town and that current trends are to encourage more compact forms of development, it is safe to assume that the higher density value is achievable within the designated growth areas. Based upon this assumption this area could accommodate almost 50% of the Town's projected 25 year growth.

8.3 PHASE 2 OF URBAN GROWTH

The lands flanking Phase 1 to the east and west identified in red on Figure 8-1 represent the next logical extension of the Town's growth. This land area has also been included in the Town's annexation boundary proposal. These areas have the same relative servicing costs and require a new sewer trunk main and can tie into the existing water mains. Details of the servicing requirements are outlined in Table 5-1.

The east area of Phase 2 comprises 90 ha, while the west area has a gross developable area of 45 ha. The west area would be a southerly extension of the existing development located along Rosewood Drive while the east area would represent the easterly extension of Phase 1. It is not assumed that either one of the areas would develop fully before the other area starts development; however, the principle that Town growth must be connected and contiguous would be a controlling factor.



Based on the same assumptions applied to Phase 1, the east area could accommodate a population of 1215 people while the west area could accommodate approximately 608 residents. Combined with the Phase 1 the three projected growth areas would accommodate an additional 2700 people, resulting in a total Town population of 4335 at full development. This population exceeds the forecasted 25 year growth of a population of 3235.

It should be noted that by increasing the target net development density for new residential subdivisions to parallel the current densities within the community core, the Town's projected 25 year growth projections could be accommodated within Phase 1 and the western sector of Phase 2, making the best use of public investments into new infrastructure.

8.4 POTENTIAL FOR LONG TERM URBAN GROWTH

Potential future phases of urban growth past the 25 year forecast have been identified in light yellow on Figure 8-1. These areas are not in the Town's annexation boundary proposal and should remain within the RM as they are not required for the Town's 25 year growth plan. However, these areas should be retained for the Town's long term growth. No development should take place in this area that would impede long term future urban growth and is recommended that no rural country residential developments be approved in these two areas with the one exception noted below.

The area directly to the west of the Phase 2 growth area - the Minerva Ridge subdivision - has been identified as a potential urban area as the residents may want to access the Town's sewer system if it is cost effective for them. This area is presently serviced with the Town's treated water. Notwithstanding the restriction of no new rural country residential developments in this designated area, future rural country residential would not be restricted in this area as it has not been completely subdivided.

8.5 URBAN/RURAL JOINT PLANNING AREA

The Urban/Rural Joint Planning Area as shown in the red outline on Figure No. 8-1 is the area of common interest for the Town and RM and development in this area should be managed through an inter-municipal partnership. Prior to this study, the urban/rural fringe was an arbitrary radial distance from the Town's boundaries into the RM. The recommended Urban/Rural Joint Planning Area replaces this former urban/rural fringe and identifies those lands in the RM that are in close proximity to either existing Town development or to the future short term growth areas of the Town.

The Growth Management Principles and Policies outlined in Section 6 will guide all growth within this Urban/Rural Joint Planning Area. Residential development within this Area shall be in conformity with the residential densities of the RM's Low, Medium and High Density Country Residential Districts. The High Density Mixed Use District will be restricted from this planning area as it is not complementary to the Town's development.

8.6 RURAL COUNTRY RESIDENTIAL GROWTH

Figure 8-1 indicates the areas along the designated transportation corridors that could be considered for future country residential growth. These areas, with the exception of those in the Urban/Rural Joint Planning Area, would be developed in accordance with the RM's OCP and Zoning Bylaw and would not be part of the inter-municipal partnership.

8.7 FUTURE COMMERCIAL/INDUSTRIAL GROWTH

The lands identified in blue in Figure 8-1 are designated to be considered for industrial/commercial growth. The Town's annexation boundary proposal, as shown in Figure 33-2, indicates that the Town is proposing to annex the lands east of the Town that encompass the present lagoon site and the landfill site. However, it is not the Town's intention as outlined in its OCP to encourage industrial growth within the Town. They have indicated that large commercial and industrial development should be encouraged in the RM.

The proposed areas for this growth are along the major transportation corridor – Highway No. 11. As this highway has restricted access points, service roads to these access points would be required to accommodate either industrial or commercial development.



REPORT

Closure

This report was prepared for the Town of Lumsden and RM of Lumsden No. 189 to establish a joint growth strategy for the two communities.

The services provided by Associated Engineering (Sask.) Ltd. in the preparation of this report were conducted in a manner consistent with the level of skill ordinarily exercised by members of the profession currently practicing under similar conditions. No other warranty expressed or implied is made.

Respectfully submitted, Associated Engineering (Sask.) Ltd.	
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