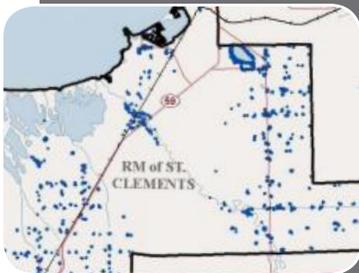


COMMUNITIES

TRANSPORTATION

BUILDINGS

INFRASTRUCTURE



ST. CLEMENTS

WASTEWATER MANAGEMENT PLAN

JULY 2012

| 5511160.111

PREPARED BY:



MMM GROUP

R.M. OF ST. CLEMENTS

WASTEWATER MANAGEMENT PLAN

Prepared for:

The Province of Manitoba

Submitted by:

MMM Group Limited

July 2012

5511160.111

STANDARD LIMITATIONS

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1.0 INTRODUCTION

This Wastewater Management Plan (WWMP) has been prepared for the Rural Municipality (R.M.) of St. Clements. A WWMP identifies existing wastewater infrastructure and services, explores options for addressing any issues or concerns regarding current wastewater treatment, and proactively plans for future development in terms of sustainable wastewater management. The purpose of this particular WWMP is to assist the R.M. of St. Clements in providing and maintaining a healthy wastewater system in the midst of a growing population and existing environmental issues.

1.1 Methodology

MMM Group Limited (MMM) prepared this WWMP for the R.M. of St. Clements as part of a Beta Test of the Provincial Wastewater Management Guide (Guide). The R.M. of St. Clements WWMP is one of three plans prepared by MMM as part of the Beta Test. MMM was also tasked with providing an assessment of the Guide as a means to ensure its' ability to assist planning authorities and qualified professionals in the process of producing a WWMP.

As part of the data collection process, we consulted with:

- Mr. DJ Sigmundson, Chief Administrative Officer (CAO) for the R.M. of St. Clements.
- Mr. Andrew Sprunt, Director of Public Works for the R.M. of St. Clements.
- Mr. Lloyd Talbot, Manager of Planning with Selkirk and District Planning Area.
- Ms. Jennifer Ferguson, Planner for the Selkirk and District Planning Area.
- Mr. Gerry Lemoine, Maintenance and Operations for Lord Selkirk School Division (LSSD).
- Ms. Katy Walsh, Policy Planner, Policy and Legislation, Manitoba Local Government.
- Ms. Kristy LeBaron, Manager, Policy and Legislation, Manitoba Local Government.
- Mr. Darren Keam, Senior Soil Scientist, MMM.

These individuals were consulted to provide information and insight into the WWMP. The Selkirk and District Planning Area (SDPA) provided land use maps produced using Geographic Information System (GIS) data. These maps, as well as additional maps created by MMM using GIS data, are included throughout this document.

Engineering studies were not completed as part of the process. However, a number of planning and engineering documents, studies and reports were analyzed to supplement the WWMP, including:

- *Canada Census 2006 and 2011, Statistics Canada*, retrieved April 16, 2012 www12.statcan.gc.ca.
- *Environment Act Licence No. 1210*, Province of Manitoba, 1988.
- *Environment Act Licence No. 2241*, Province of Manitoba, 1997.
- *Environment Act Licence No. 2170R*, Province of Manitoba, 2010.
- *Ownership Tax Incentive Applications*, R.M. of St. Clements, 2011.
- *Red River Infrastructure Committee (RRIC) Draft Report on the Public Sector Comparator*, MMM Group, 2008.
- *Selkirk and District Planning Area Development Plan By-law 190/08*, Selkirk and District Planning Area Board (SDPA), 2011.
- *Selkirk and District Planning Area Development Plan – Five Year Review Background Report*, Selkirk and District Planning Area Board (SDPA), 2007.
- *Selkirk and District Planning Area Wastewater Servicing Plan*, Selkirk and District Planning Area Board (SDPA), 2010.
- *The Save Lake Winnipeg Act*, Province of Manitoba, 2011.
- *Water Conservation – Every Drop Counts*, Environment Canada, 2009.

1.2 Context

In 2011, the Province of Manitoba adopted Bill 46 - The Save Lake Winnipeg Act as a means to reduce the harmful amounts of phosphorus and other nutrients entering into Lake Winnipeg and to improve the quality of local drinking water. The Save Lake Winnipeg Act amends provincial acts, including The Planning Act. Legislation now states that planning authorities subject to The Planning Act within the capital region must prepare drinking water and wastewater management plans. Consequently, the adoption of The Save Lake Winnipeg Act provides a basis for the creation of this WWMP. According to the Act:

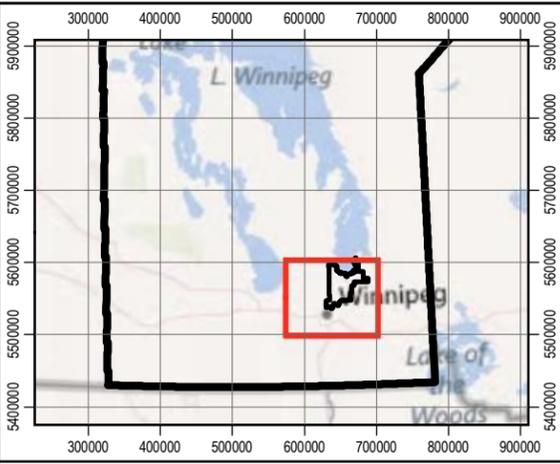
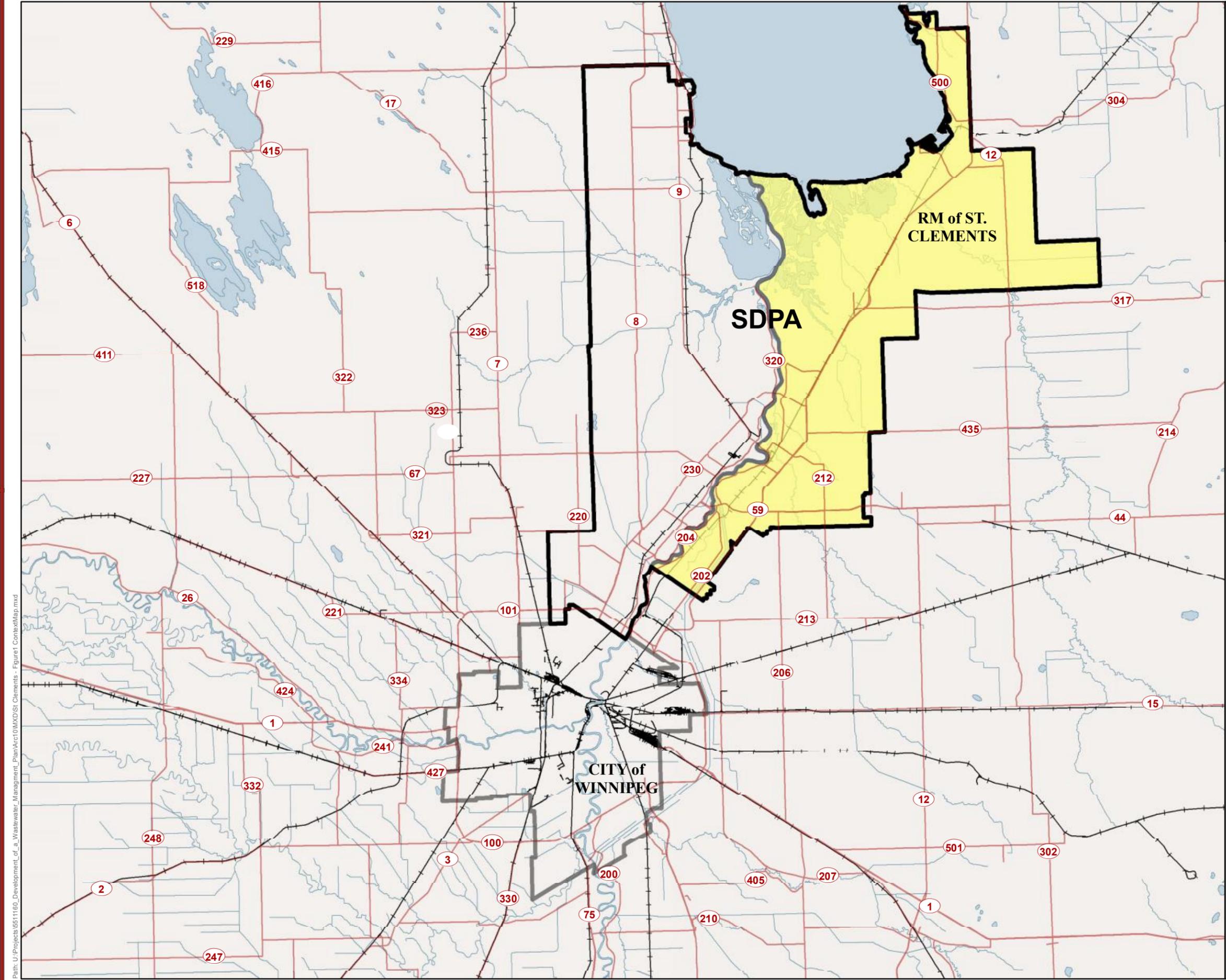
These plans are to confirm if projected development can be serviced by existing drinking water and wastewater services, and the measure that will be taken to ensure that those services are provided in an appropriate and responsible manner (Province of Manitoba, 2011).

There are failing on-site septic systems located throughout the Red River Corridor, including areas within the R.M. of St. Clements. A failing septic system is primarily due to siting of a system on unsuitable soil, poorly installed systems and systems that have reached life expectancy. A failed on-site system can result in serious environmental and health concerns including contaminated wells, discharge to streams or ditches and ponding around disposal fields. Approximately 60 residences in the East Selkirk and Henderson Highway/Lockport areas have received public health orders as a result of contaminated water from failing septic systems. Like other WWMPs across the capital region, the objective of this WWMP is to ensure wastewater management issues such as failing septic systems are brought to the forefront of infrastructure planning and dealt with in a timely and sustainable manner.

1.3 Location, Communities and Economy

The R.M. of St. Clements is located at the south end of Lake Winnipeg and east of the Red River, spanning an area of approximately 777 square kilometres (300 square miles) within the Selkirk and District Planning Area (**Figure 1**). Over the past 20 years, significant residential development has occurred within the municipality, specifically along the Red River. Grand Beach Provincial Park borders the municipality to the north while Birds Hill Provincial Park borders the municipality to the south. Due to its' close proximity to these parks, there is a substantial amount of cottage development, particularly in the northern portion of the R.M. of St. Clements. Agriculture is the major land use throughout, accounting for approximately 67,233 hectares (166,136 acres). However, a significant 4,650 hectares (11,490 acres) of annual crop land was converted for residential, commercial, industrial and recreational purposes between 1994 and 2001 (SDPA, 2011). Settlement areas of the R.M. of St. Clements are best characterized by dividing the municipality into three distinct regions (**Figure 2 and corresponding Figures 2A, 2B and 2C**):

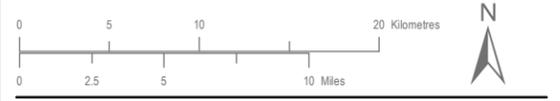
- Northern Region
- Central/Eastern Region
- Southern Region



**Wastewater Management Plan
Guide Beta Test**

- Land Base**
- Provincial Highway
 - Rail Line
 - St. Clements
 - Winnipeg
 - Selkirk and District Planning Area (SDPA)
 - Watercourse
 - Waterbody

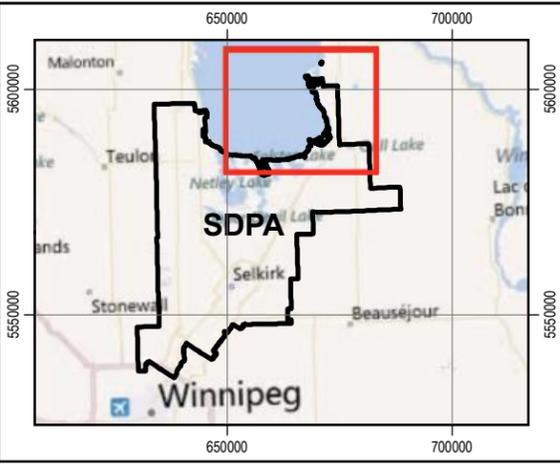
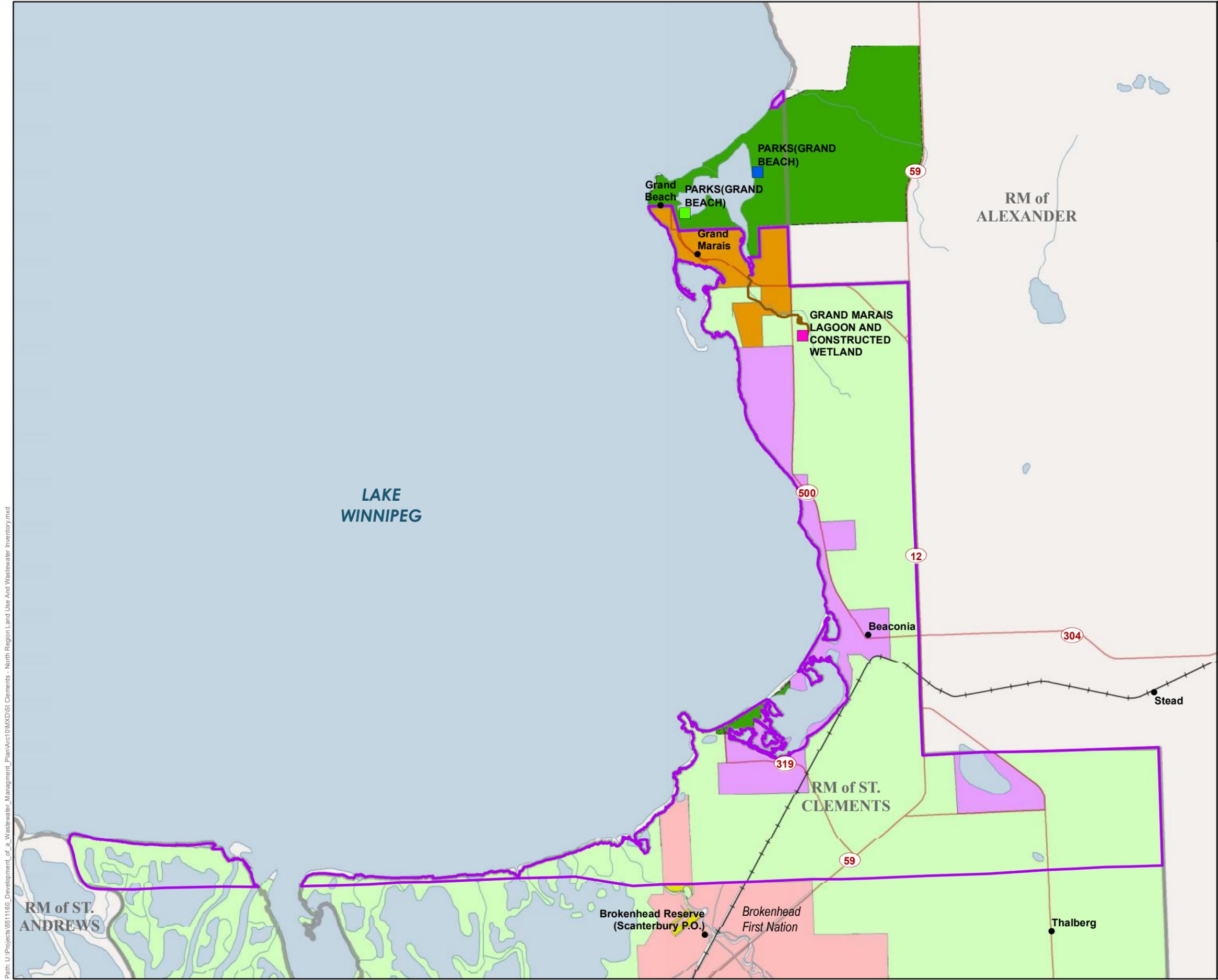
Coordinate System: NAD 83, UTM Zone 14 N
 Data Source: CanVec, ESRI, Prov MB, MMM Group
 Date Created: January 6, 2012
 Revision Date: May 23, 2012



**Figure 1:
R.M. of St. Clements Context Map**
 DRAFT: For Discussion Purposes Only



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Wastewater Management Plan Guide Beta Test

Legend

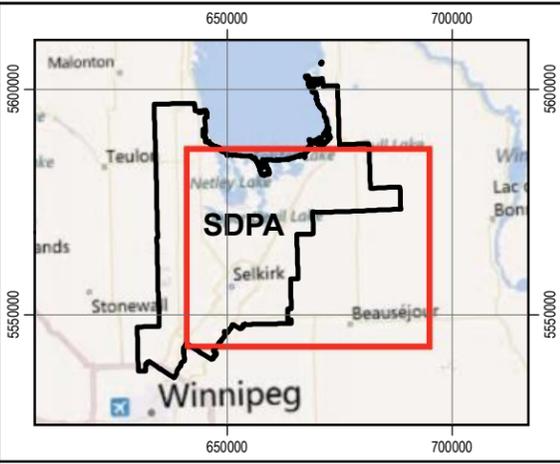
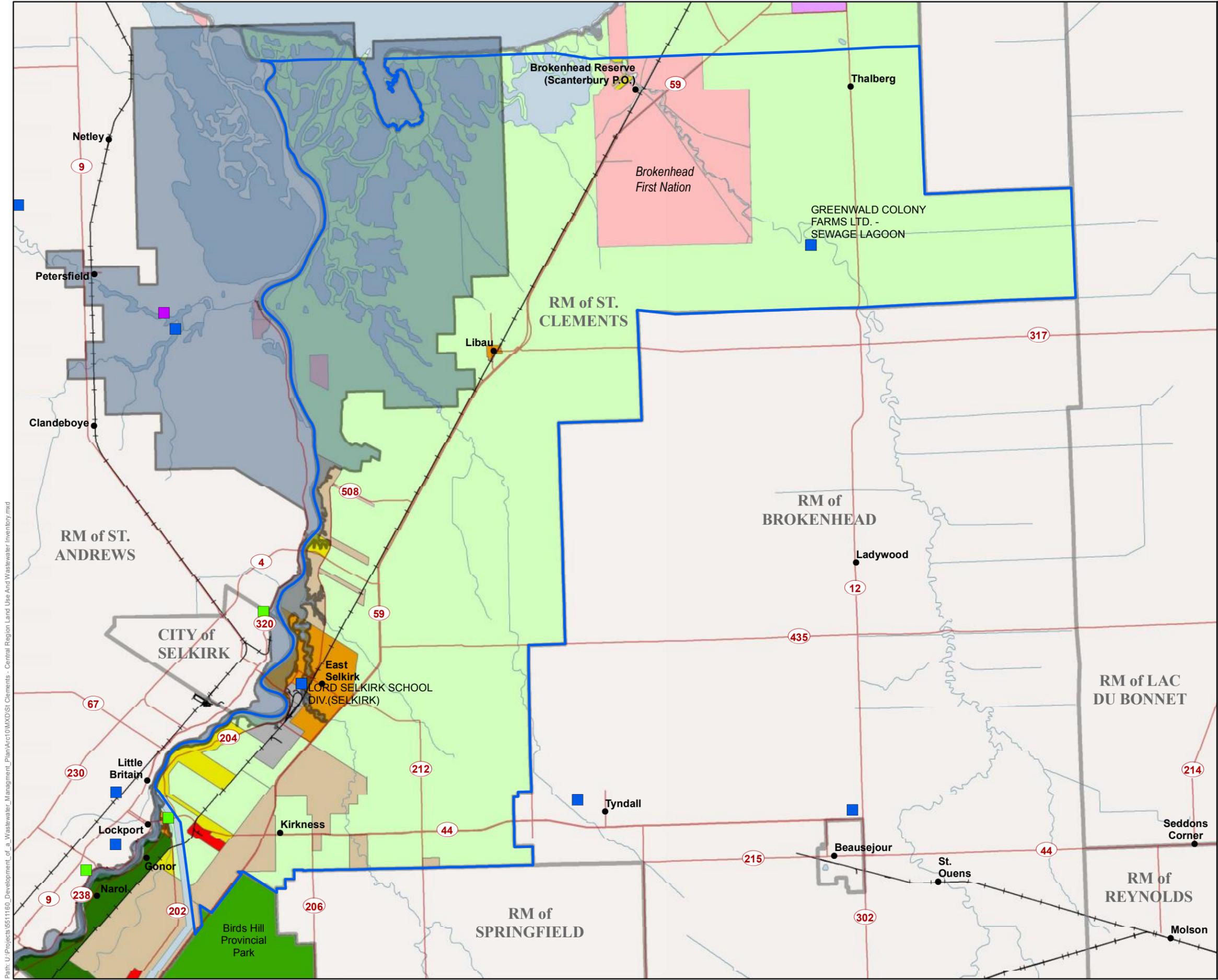
- Discharge Route
- Wastewater Treatment Systems
 - Lagoon and Constructed Wetland
 - Wastewater Treatment Plant (WWTP)
 - Lagoon
- Northern Region
- Rural Municipality
- Provincial Park
- First Nations
- Land Use Designations
 - Rural Residential
 - Business Park
 - Resort
 - Industrial
 - Resource & Agriculture
 - Agriculture Restricted
 - Settlement Centre
 - General Development
- Land Base
 - Provincial Highway
 - Rail Line
 - Watercourse
 - Waterbody

Coordinate System: NAD 83, UTM Zone 14 N
 Data Source: CanVec, ESRI, Prov MB, MMM Group
 Date Created: January 9, 2012
 Revision Date: May 23, 2012

**Figure 2A: R.M. of St. Clements
Land Use Designations and
Wastewater Infrastructure Inventory
Northern Region**
 DRAFT: For Discussion Purposes Only



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Wastewater Management Plan Guide Beta Test

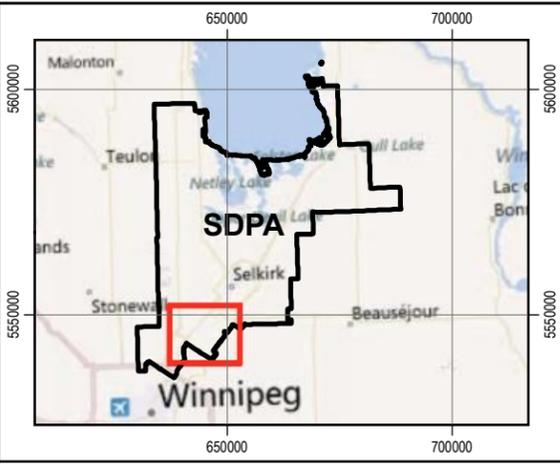
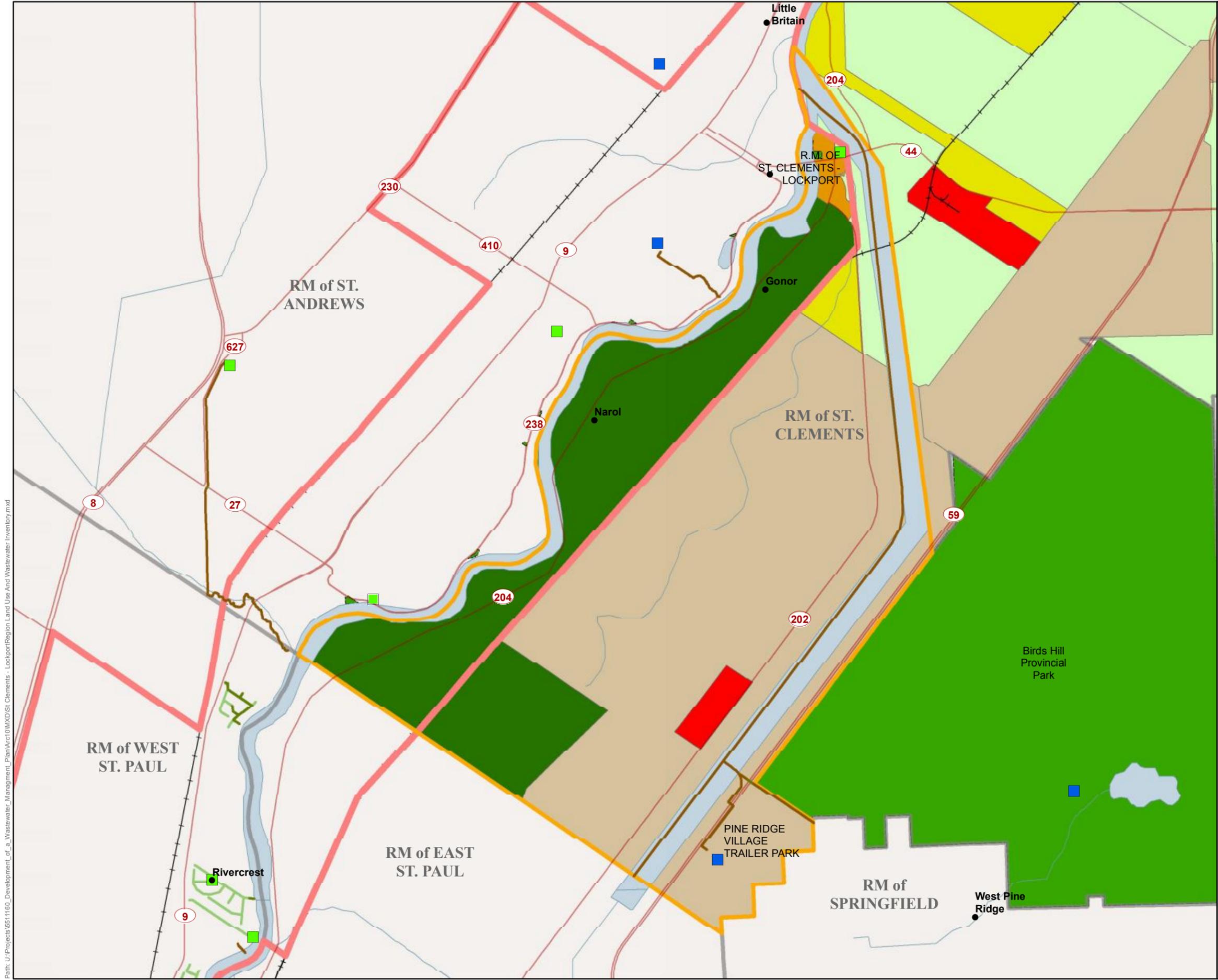
- Legend**
- Wastewater Treatment Systems**
- Wastewater Treatment Plant (WWTP)
 - Lagoon
 - Aerated Lagoon
 - Central/Eastern Region
- Other Features**
- Rural Municipality
 - Designated Flood Area
 - First Nations
 - Provincial Park
- Land Use Designations**
- Rural Residential
 - Business Park
 - Resort
 - Industrial
 - Resource & Agriculture
 - Agriculture Restricted
 - Settlement Centre
 - General Development
- Land Base**
- Provincial Highway
 - Rail Line
 - Watercourse
 - Waterbody

Coordinate System: NAD 83, UTM Zone 14 N
 Data Source: CanVec, ESRI, Prov MB, MMM Group
 Date Created: January 9, 2012
 Revision Date: May 23, 2012

Figure 2B: R.M. of St. Clements Land Use Designations and Wastewater Infrastructure Inventory Central/Eastern Region
 DRAFT: For Discussion Purposes Only



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Wastewater Management Plan Guide Beta Test

- Legend**
- Sewer Line
 - Discharge Route
- Wastewater Treatment Systems**
- Wastewater Treatment Plant (WWTP)
 - Lagoon
- Infrastructure**
- Southern Region
 - Rural Municipality
 - Red River Corridor Designated Area
- Land Use Designations**
- Rural Residential
 - Business Park
 - Resort
 - Industrial
 - Resource & Agriculture
 - Agriculture Restricted
 - Settlement Centre
 - General Development
- Land Base**
- Provincial Highway
 - Rail Line
 - Watercourse
 - River/Floodway

Coordinate System: NAD 83, UTM Zone 14 N
 Data Source: CanVec, ESRI, Prov MB, MMM Group
 Date Created: January 9, 2012
 Revision Date: May 23, 2012

0 0.5 1 2 Kilometres
 0 0.25 0.5 1 Miles

Figure 2C: R.M. of St. Clements Land Use Designations and Wastewater Infrastructure Inventory Southern Region
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2.0 EXISTING AND PROPOSED WASTEWATER MANAGEMENT SYSTEMS

Developments in the R.M. of St. Clements incorporate one of two types of wastewater management and treatment; on-site wastewater management systems (individual home residents) or centralized wastewater management systems and treatment plants. Centralized systems transfer waste from dwellings and buildings to a centralized treatment facility where it is treated before being released into the Red River.

In rural and agricultural areas, dwellings and buildings have on-site wastewater treatment systems including septic systems, holding tanks, ejector fields and grey-water fields. Septage from septic systems and holding tanks is pumped and truck-hauled to a nearby lagoon or treatment plant for disposal (SDPA, 2011). The majority of this waste is hauled to facilities within the R.M. of St. Clements, with an estimated 90 percent hauled specifically to the Grand Marais Wastewater Treatment Lagoon and Constructed Wetland. A small portion of waste is transported to facilities in neighbouring municipalities including the City of Winnipeg, the R.M. of St. Andrews (Lester Beach) and the R.M. of Alexander (Petersfield). According to representatives from the R.M. of St. Clements, the volume of sewage that is hauled out of the municipality is unclear.

A significant amount of sewage waste used to be hauled to the City of Selkirk. The City of Selkirk no longer accepts sewage from outside of its municipal boundaries. This has resulted in residents paying more to have their septage hauled a further distance to the North End Treatment Plant in Winnipeg. The R.M. of St. Clements has not been directly affected by the City of Selkirk's decision to not accept sewage waste. However, it does raise the issue of the municipality being heavily dependent on the City of Winnipeg to treat a portion of their sewage. If, for some reason, the City of Winnipeg is no longer able to treat sewage from outside city limits, the R.M. of St. Clements will need to find an alternative wastewater treatment facility with available capacity or construct a new one.

There are five wastewater treatment facilities in the municipality, including:

- Grand Marais Wastewater Treatment Lagoon and Constructed Wetland – *Environment Act Licence No. 2170 R.*
- Lockport Sewage Collection System and Sewage Treatment Plant – *Environment Act Licence No. 2241.*
- Lord Selkirk School Division's Private Lagoon and System.
- Pineridge Village Trailer Park's Private Lagoon and System – *Environment Act Licence No. 1210.*
- Greenwald Colony Farms Ltd. Sewage Lagoon.

2.1 Grand Marais Wastewater Treatment Lagoon and Constructed Wetland

According to *Environment Act Licence No. 2170 R*:

The Grand Marais Wastewater Treatment Lagoon and Constructed Wetland is located in SW 9-18-7 EPM in the Rural Municipality of St. Clements, with discharge of treated effluent into Marais Creek which drains into a natural lagoon before entering Lake Winnipeg, in accordance with the Proposal filed under The Environment Act on October 3, 1995, and additional information dated January 5, 2010.

Constructed wetlands are designed to emulate the features of a natural wetland. Engineered wetlands perform a tertiary treatment of wastewater, stormwater runoff and/or sewage treatment, and also provide habitat for terrestrial, aquatic organisms and migratory birds. Just as in a natural wetland, the vegetation in a constructed wetland acts as a biofilter, removing sediments, pollutants and significant amounts of phosphorous and other nutrients from the water. Extensive root systems, such as those of sedges, reed grass and cattail, help to create an environment where bacteria can grow and help break down these unwanted organic materials.

At the Grand Marais Wastewater Treatment Lagoon and Constructed Wetland, wastewater is exclusively hauled to a septage receiving station. From here it is transferred to a primary lagoon for treatment and eventually drained into the facility's constructed wetland for tertiary treatment. Treatment in a constructed wetland is cost-effective and natural, making it a sustainable option for wastewater management. The septage receiving station, primary lagoon and constructed wetland are all located on the same site.

Waste produced in the settlement area of Grand Marais and the surrounding resort area is treated at the Grand Marais Wastewater Treatment Lagoon and Constructed Wetland. This lagoon also treats septage from other areas in the municipality with on-site systems, including East Selkirk and areas along the Red River Corridor, an area in which septic fields are no longer permitted (**Figure 2 and 2C**). The lagoon's existing capacity is for 262 permanent residences and 2,489 seasonal residences. Maximum annual volume is 37,382 m³ while estimated annual volume is 16,000 m³. According to representatives from the R.M. of St. Clements, this facility meets current demand and has capacity for at least an additional 166-lot subdivision that was approved in 2009.

The R.M. of St. Clements would like to see a collection system (likely a low-pressure collection system) constructed prior to development of the approved 166-lot subdivision. This would be a proactive rather than reactive wastewater management strategy. It would also be cost-effective and sustainable from an environmental perspective. The subdivision will likely consist of single-

family residential development (permanent and seasonal), multi-family residential development (a two or three-storey building with an estimated 30 units), and potentially a hotel. To date, nothing has been finalized regarding development within the subdivision. However, constructing the collection system as soon as possible will help ensure the Northern Region can accommodate additional development in terms of wastewater servicing.

Figure 2A identifies wastewater infrastructure in the Grand Marais area (also referred to as the Northern Region of the R.M. of St. Clements), including the Grand Marais Wastewater Treatment Lagoon and Constructed Wetland.

2.2 Lockport Sewage Collection System and Sewage Treatment Plant

According to *Environment Act Licence No. 2241*:

The Lockport Sewage Collection System and Sewage Treatment Plant are located on a portion of the Winnipeg Floodway P. 13006, North and East of the junction of Provincial Trunk Highway 44 and Henderson Highway and in accordance with the Proposal filed under The Environment Act on February 28, 1996.

The Lockport Sewage Collection System and Sewage Treatment Plant service 250 residences and various commercial businesses within the community of Lockport. All waste treated at the Lockport Treatment Plant is initially piped to a pumping station. Waste is then pumped to the sewage treatment plant, which has a maximum annual volume of 70,000 m³ and an estimated annual volume of 56,000 m³. The treatment plant is currently near capacity, but could potentially be upgraded to support future development (SDPA, 2010).

Figure 2C identifies wastewater infrastructure in the Southern Region of the R.M. of St. Clements, including the Lockport Sewage Collection System and Sewage Treatment Plant.

2.3 Lord Selkirk School Division Sewage Treatment Plant and Holding Pond

East Selkirk Middle School and Happy Thought School (Lord Selkirk School Division) share a private wastewater treatment plant and holding pond. Located near the two schools in East Selkirk, the wastewater treatment plant has a maximum volume of 189 m³ per day and an estimated volume of 57 m³ per day. The wastewater treatment plant was originally oversized for future considerations. The holding pond is located several miles away, at Cooks Creek, and is used to store treated water before it can be released into the Red River. Treated water can only be released at designated times throughout the year, as per the treatment plant's *Environment Act Licence*.

The treatment plant and holding pond will be closed once the new East Selkirk Wastewater Collection System and Treatment Lagoon are fully functional. In 2009, the R.M. of St. Clements passed a by-law mandating all residents and businesses in the East Selkirk area to hook up to the new system. According to a representative from Lord Selkirk School Division, the School Division would have likely kept the treatment plant running as is, if permitted.

Figure 2B identifies wastewater infrastructure in the Central/Eastern Region of the R.M. of St. Clements, including the Lord Selkirk School Division Sewage Treatment Plant and Holding Pond.

2.4 East Selkirk Future Wastewater Collection System and Treatment Lagoon

A new low-pressure wastewater collection system and treatment lagoon is expected to be initiated in East Selkirk within the year (2012-2013). Plans for the lagoon are currently in the design stage and will soon be moving through the environmental review process. The future lagoon will service 260 existing dwellings (including institutional facilities such as East Selkirk Middle School and Happy Thought School) with the capacity for an additional 300 dwellings through a network of new low-pressure pipes. Infill development and expansion into existing areas is expected to consume excess capacity over the next 20 years.

All buildings located in the East Selkirk Settlement Centre are required to hook up to the new sewer and water service system. This area has been identified as a priority area within the R.M. of St. Clements. In 2001, approximately 60 residences in the East Selkirk area received public health orders from the Province of Manitoba as a result of contaminated water due to failing septic systems. The Health Officer stated that these health orders would not be lifted until East Selkirk established a municipal water and waste treatment system. The *Onsite Wastewater Management Systems Regulations of the Environment Act* (Province of Manitoba) requires that all properties in the East Selkirk area hook up to the system within five years.

Approximately 200 dwellings in East Selkirk will not be required to hook up to the new sewer and water service line as they do not have failing septic systems. These dwellings will continue with on-site wastewater systems. Due to the capital expense of the infrastructure project, the low-pressure sewer system is only designed for a portion of the community. The majority of septage from the remaining on-site systems will continue to be transported to the Grand Marais Wastewater Treatment Lagoon, located approximately 60 km away.

2.5 Pineridge Village Trailer Park's Private Lagoon

At this point in time, minimal information has been obtained regarding the Pineridge Village Trailer Park's Lagoon. The lagoon has an *Environment Act Licence No. 1210*, issued on August 2, 1988. It is estimated that the lagoon was constructed between 1970 and 1977 and services the residences within the trailer park.

2.6 Greenwald Colony Farms Limited Sewage Lagoon

At this point in time, minimal information has been obtained regarding the Greenwald Colony Farms Limited Sewage Lagoon.

2.7 Observations

According to representatives from the R.M. of St. Clements, the Grand Marais Wastewater Treatment Lagoon and Constructed Wetland and the Lockport Sewage Collection System and Sewage Treatment Plant (the two municipal facilities) are in good condition and functioning adequately. However, according to their respective *Environment Act Licences*, both treatment facilities, particularly the Lockport Sewage Treatment Plant, are quickly nearing capacity based on approved subdivisions and vacant lots becoming occupied. In order to support future development within the municipality, existing facilities will need to be upgraded and expanded or a new facility may need to be constructed.

Municipal representatives have expressed concerns with the way in which *Environment Act Licences* include a maximum capacity for a wastewater treatment facility based on the total number of dwellings in a particular area. This is especially a concern in the Grand Marais area where a significant percentage of dwellings are seasonal. It may appear as though the Grand Marais Treatment Lagoon is nearing capacity, but in fact, it is far below its maximum volume, due to the seasonal nature of the majority of its residents. However, it is also important to note that there is a trend in Manitoba, and potentially within the R.M. of St. Clements, of seasonal cottages becoming year-round residences. If this trend continues, the Grand Marais Treatment Lagoon may soon be nearing its maximum volume.

Municipal representatives recommend that lagoons be monitored by their "freeboard" rather than their capacity. In a lagoon, "freeboard" is the vertical distance that must be maintained above water level to the top of the berm. When the depth of wastewater approaches the freeboard reserve, it is nearing maximum volume. Municipal representatives suggest that creating a system to monitor freeboard would be more cost-effective than unnecessarily expanding existing facilities or building a new facility to accommodate future growth.

3.0 SOURCES OF WASTEWATER AND ANNUAL PRODUCTION

According to Census Canada (2011), there are currently a total of 5,191 private dwellings in the R.M. of St. Clements, with 3,992 occupied by permanent residents and 1,199 occupied by seasonal residents (see: **Section 5.2 below**). There is very little commercial or industrial activity, representing only five percent of the municipality's assessment base. There are no large commercial or industrial water users within the municipality. Therefore, the main water users and sources of wastewater are local residents.

In the Northern Region, the majority of dwellings are serviced by holding tanks while only one percent of property owners have septic fields. For the purposes of this report, it can be assumed that the holding tanks range in size from 4 to 6 m³ and are assumed to be emptied by truck haul twice a year. Waste is transported to the Grand Marais Wastewater Treatment Lagoon and Constructed Wetland.

In the Central/Eastern Region, it is estimated that 90 percent of the dwellings use on-site septic systems or ejectors while the remaining 10 percent use holding tanks. The majority of this waste is collected by truck annually and transported to the Grand Marais Lagoon and Constructed Wetland. It has been suggested by municipal representatives that a portion of this waste is currently being transported to the Lester Beach Lagoon in the R.M. of Alexander or the Petersfield Lagoon in the R.M. of St. Andrews. However, at this point in time, the volume of waste transported out of the municipality is unclear.

In the Southern Region, dwellings and buildings, excluding those in Lockport, are serviced by on-site treatment systems. Waste from these systems is hauled by truck to the City of Winnipeg North End Treatment Plant. Dwellings and buildings located in Lockport are serviced by a low-pressure sewer system that flows to the Lockport Sewage Treatment Plant.

The 500 dwellings located along Old Henderson Highway (within the Southern Region) use septic fields for wastewater treatment. A small percentage of these homes are under a health order (issued by the Province of Manitoba in 2001) due to contamination of well water from failing septic systems. Local soil conditions do not support septic systems, which has resulted in serious environmental and health conditions for the area. As a result, in 2009, the Province of Manitoba created the "Red River Corridor" (**Figure 2 and 2C**). This is an area surrounding the Red River, including a portion of the R.M. of St. Clements, in which no new on-site septic fields are permitted. Since 2009, no new septic fields have been permitted, but many of the existing failing systems have yet to be decommissioned. This is a serious concern for the R.M. of St. Clements and must be dealt with immediately. Over time, as new dwellings are developed along Henderson Highway, the majority of wastewater is stored in holding tanks and transported to the Grand Marais Treatment Lagoon and Constructed Wetland, while some may be transported to the City of Winnipeg North End Treatment Plant.

3.1 Observations

Although new septic fields are no longer permitted within the Red River Corridor, this does not entirely solve the area's wastewater treatment issues. As mentioned previously, several septic fields have yet to be decommissioned. These fields cannot be decommissioned until an alternative solution has been identified. Addressing the issues outlined in the 2001 health order is one of the municipality's primary concerns in terms of wastewater management. In addition, if new development is permitted, wastewater service will be needed by holding tanks which will exponentially increase the amount of waste being hauled and treated at nearby wastewater treatment facilities. The R.M. of St. Clements needs to carefully analyze and determine how new development will be serviced, in terms of sewer and water servicing, before any new development is constructed.

4.0 EXISTING LAND USE PATTERNS AND DEMOGRAPHICS

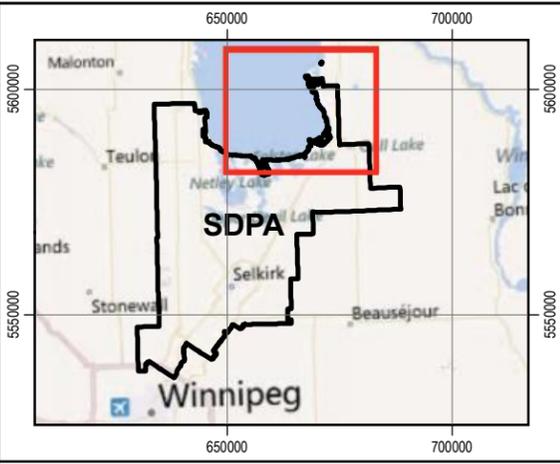
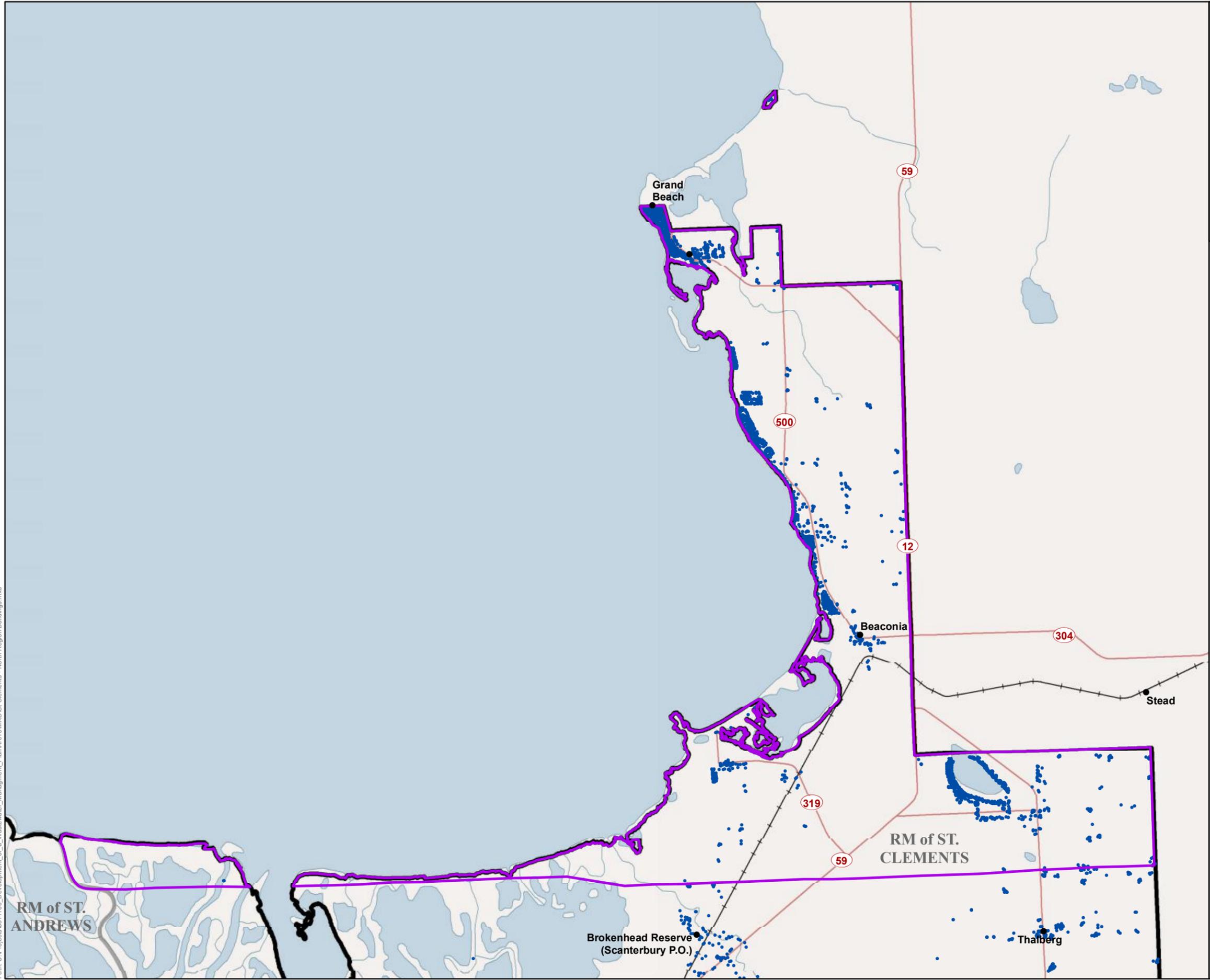
4.1 Northern Region – Existing Land Use

The Northern Region (**Figure 3A**), to a large extent, is seasonal in nature. The community of Grand Marais is the primary Settlement Centre, with numerous cottage subdivisions located along the shores of Lake Winnipeg in designated "Resort" areas. Gull Lake is a "Resort" area with significant seasonal cottage development, together accounting for an estimated 2200 dwellings. According to data obtained from the municipality's tax roll and Ownership Tax Incentive applications, 12 percent of the dwellings in Grand Marais and Gull Lake are permanent, while the remainder are seasonal. Therefore, the majority of wastewater in this area is only generated over three seasons (spring, summer and fall). A heritage centre was also recently constructed in this area and an approximate 40-site RV park is presently under construction.

4.2 Central/Eastern Region – Existing Land Use

In the Central/Eastern Region (**Figure 3B**), there is a significant amount of scattered residential development across the Resource and Agriculture designations and greater density in areas designated Rural Residential, Settlement Centre and Agriculture Restricted. East Selkirk is the largest Settlement Centre in the R.M. of St. Clements with 443 dwellings. Libau is a small Settlement Centre with 45 dwellings. Old Henderson Highway has approximately 500 dwellings. Pineridge Village Trailer Park has 506 mobile homes. There are other areas, particularly east of PTH 59, near the intersection of PTH 44, where single-family dwellings are clustered along roadways.

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Wastewater Management Plan Guide Beta Test

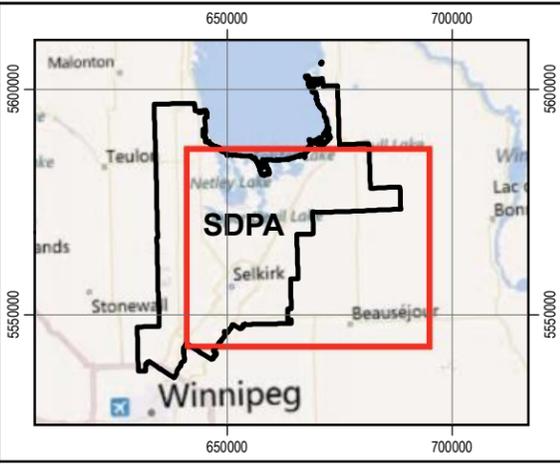
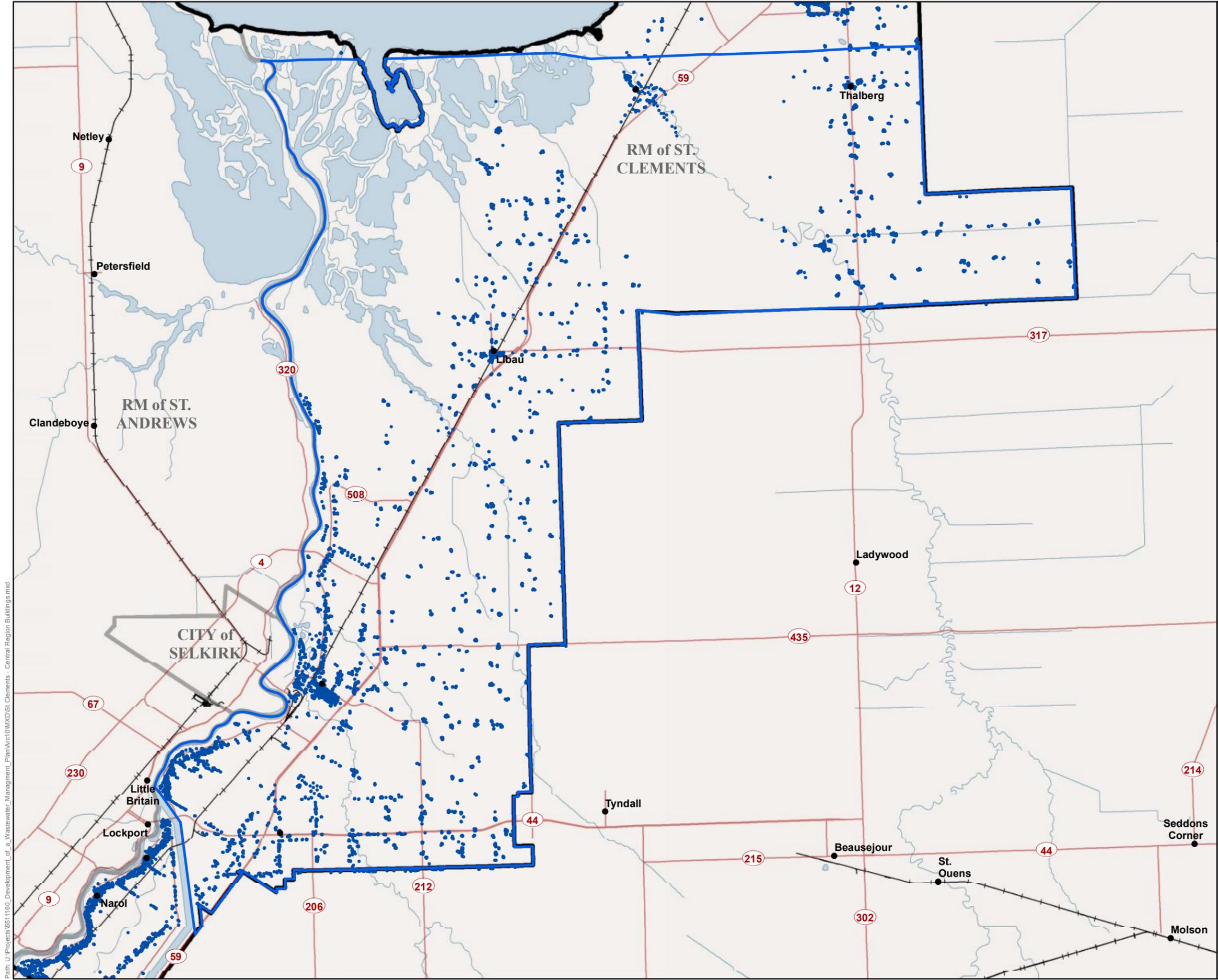
- Legend**
- Building
 - Northern Region
 - Rural Municipality
 - Selkirk and District Planning Area
- Land Base**
- Road
 - Rail Line
 - Watercourse
 - Lake

Coordinate System: NAD 83, UTM Zone 14 N
 Data Source: CanVec, ESRI, Prov MB, MMM Group
 Date Created: January 9, 2012
 Revision Date: May 8, 2012

0 1 2 4 Kilometres
 0 0.5 1 2 Miles

**Figure 3A: R.M. of St. Clements
Buildings
Northern Region**
 DRAFT: For Discussion Purposes Only





**Wastewater Management Plan
Guide Beta Test**

- Legend**
- Building
 - ▭ Central/Eastern Region
 - ▭ Rural Municipality
 - ▭ Selkirk and District Planning Area
- Land Base**
- Road
 - Rail Line
 - Watercourse
 - ▭ Lake

Coordinate System: NAD 83, UTM Zone 14 N
 Data Source: CanVec, ESRI, Prov MB, MMM Group
 Date Created: January 9, 2012
 Revision Date: May 8, 2012

0 1.5 3 6 Kilometres
 0 0.75 1.5 3 Miles

N

**Figure 3B: R.M. of St. Clements
Buildings
Central/Eastern Region**
 DRAFT: For Discussion Purposes Only



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4.3 Southern Region – Existing Land Use

The Southern Region (**Figure 3C**), described as the area south of PTH 44 to the St. Clements/East St. Paul boundary, is one of the most densely populated areas in the municipality, with an average lot size of approximately one acre. The area consists of 1113 dwellings, including those located within the community of Lockport. The highest density areas are located just off of Henderson Highway, along the Red River and along a few rural roads. River Creek Estates is a multi-family condominium development in Lockport, comprised of four five-storey buildings with 32 units per building and a fifth building that is currently under construction. This is a significant development for the area as it is of a much higher density than the rest of the community. Lockport is a commercial centre for the area. The community has two small hotels, a dozen restaurants and the Lockport Industrial Park.

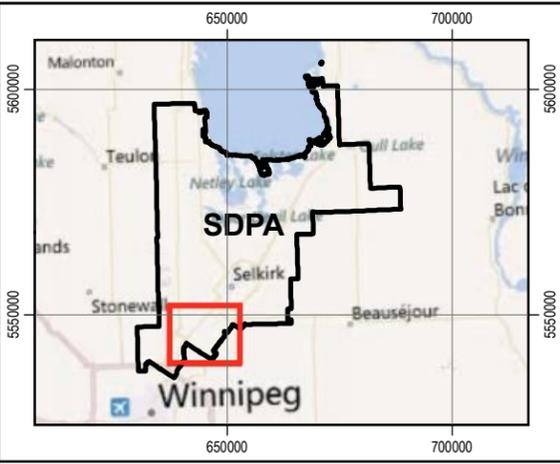
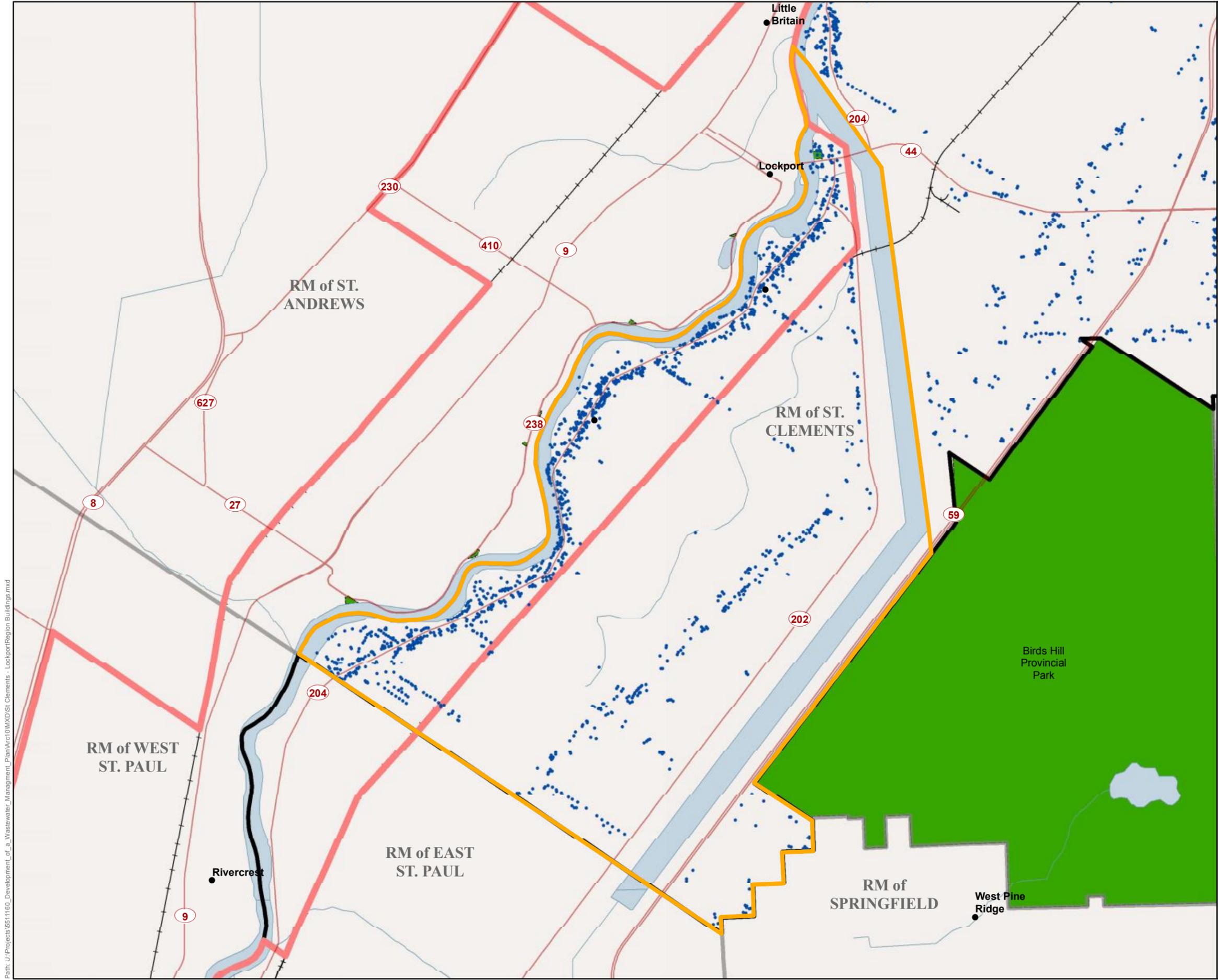
4.4 Population Growth

The R.M. of St. Clements, similar to the other municipalities within the SDPA (City of Selkirk, R.M. of St. Andrews and R.M. of West St. Paul), has a growing population. The municipality has experienced positive population growth over the past 20 years and is projected to continue to grow (see: **Section 5.2**) at a constant rate in upcoming years (SDPA, 2011).

4.5 Demographics

The SDPA Development Plan (2011) provides an age analysis for the Planning District, including residents living within the R.M. of St. Clements. The analysis indicates that baby boomers (individuals born between 1946 and 1964) dominate the population throughout the District. In terms of wastewater management, this suggests there may be an influx of dwellings with only one or two persons per dwelling in the near future. Many dependents move out to attend university and/or purchase their own homes, while parents may choose to remain in their homes well into their retirement years. This could equate to lower than average wastewater flows per dwelling than in communities where the majority of households consist of families with one or more children.

According to the SDPA Development Plan, there are more baby boomers in the R.M. of St. Clements than in any other municipality in the SDPA. This could potentially be due to the development of multi-family condominiums in Lockport. These condominiums enable residents to remain in their community, even though they may no longer have the desire or ability to maintain a single-family residence. As baby boomers continue to retire, there could be an increased demand for multi-family condominiums throughout the R.M. of St. Clements. The municipality may need to proactively plan (in terms of wastewater infrastructure and treatment) for a potential shift in demand, however slightly, towards the incorporation of more higher-density, multi-family dwellings in Settlement Centres and General Development areas.



**Wastewater Management Plan
Guide Beta Test**

- Legend**
- Building
 - ▭ Southern Region
 - ▭ Rural Municipality
 - ▭ Selkirk and District Planning Area
 - ▭ Red River Corridor Designated Area
 - ▭ Provincial Park
- Land Base**
- Road
 - Rail Line
 - Watercourse
 - ▭ Lake

Coordinate System: NAD 83, UTM Zone 14 N
 Data Source: CanVec, ESRI, Prov MB, MMM Group
 Date Created: January 9, 2012
 Revision Date: May 8, 2012



**Figure 3C: R.M. of St. Clements
Buildings
Southern Region**
 DRAFT: For Discussion Purposes Only



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4.6 Observations

The R.M. of St. Clements is a prosperous area comprised of predominantly single-family residential dwellings, providing homes for both permanent and seasonal residents. A few higher-density multi-family condominiums have been developed in Lockport, providing a diversity of housing options for residents. The area is desirable for individuals who prefer larger lots, outside of an urban centre. The southern portion of the municipality is particularly desirable for those preferring to live outside of an urban centre, but within a commutable distance from the City of Winnipeg. There is currently limited commercial and industrial development in the municipality. Any form of future development will need to ensure that the municipality's nearest wastewater system has capacity to accommodate additional development.

5.0 ANTICIPATED POPULATION GROWTH AND FUTURE LAND USE

5.1 Regulatory Framework

The Selkirk and District Planning Area Development Plan (Development Plan) guides land use and future development throughout the Planning District, including the R.M. of St. Clements. The Development Plan (Part 4) outlines objectives and policies to address various land use issues. The following policies pertain specifically to wastewater servicing and treatment for the R.M. of St. Clements and to the Planning District as a whole.

- Densification of residential development in Settlement Centres and General Development Areas where appropriate services can be provided will be encouraged to make the provision of sewer and water services increasingly fiscally feasible.
- Large development proposals shall be guided by secondary or concept plans to consider phasing of infrastructure and in order to determine service provision requirements for the subject property as well as adjoining lands.
- Options for effective waste management and treatment shall be considered to ensure cost effectiveness and sustainability.
- New or expanded development, including proposed subdivisions, shall be limited so as to ensure that there are facilities and the capacity in place to adequately manage the waste that will be generated. This includes solid, liquid and septage waste.
- No new zoning for new development will be permitted within the General Development, Settlement Centre and adjoining Rural Residential areas until secondary plans and plans for improved municipal infrastructure and services, including sewer and/or water, have been prepared.

These policies play an essential role in wastewater management planning. For, if a proposed development does not align with the wastewater servicing and treatment policies outlined in the Development Plan, it will not be permitted within the Planning District.

5.1.1 Secondary Plans

In accordance with the Development Plan, the R.M. of St. Clements is currently in the process of creating secondary plans to help guide future development, infrastructure and servicing throughout the municipality. A secondary plan has been adopted for the community of Lockport and plans are underway for the Grand Marais, East Selkirk and South St. Clements areas. These planning processes have included extensive background research, stakeholder consultation and policy development.

5.1.2 Servicing Plans

Genivar has been retained to create a 20-year servicing plan for the Grand Marais area. This plan will outline subdivision and servicing requirements for the approved 166-lot subdivision referred to in **Section 2.1**. The document will identify the types of upgrades and/or the size of expansion required to accommodate future population growth and development. Genivar's work will also explore the possibility of running a sewer line from Grand Beach Provincial Park to the Grand Marais treatment facility and the impact this would have on the wastewater system.

5.2 Population Projections and Residential Development Demand

The R.M. of St. Clements has a 2011 population of 10,505 (including both permanent and seasonal residents), an 8.2 percent increase from 9,706 in 2006, equating to an average increase of 1.64 percent per year over the previous five-year period (Statistics Canada, 2011). According to the *SDPA Wastewater Servicing Plan (2010)*, it is projected that a significant majority of this population growth will occur in the southern portions of the municipality and surrounding municipalities, as these are the areas located within a commutable distance (known as the commutershed) from Winnipeg. As much of this area is located within the Red River Corridor Designated Area, where new onsite septic systems are no longer permitted, the topic of improving existing and developing new centralized wastewater treatment facilities is at the forefront of municipal agendas.

In order to project the future wastewater treatment needs of the R.M. of St. Clements, three growth scenario options are presented in this document: low, moderate and high. The municipality has experienced gradual, but constant, population growth in recent years. Therefore, a 1.0 percent growth rate will be used for the low population projection. A 1.64 percent growth rate will be used for the moderate population projection, which directly reflects the growth rate over the last five years. In 2010, the Conference Board of Canada

prepared population projections for the Manitoba capital region (including the R.M. of St. Clements), using an annual growth rate of 2.42 percent (SDPA, 2011). This rate is higher than the current average annual growth rate for the municipality and will therefore be used for the high population projection.

According to the Canada Census (Statistics Canada, 2011), the average dwelling unit in the R.M. of St. Clements is occupied by an average of 2.02 residents, as there are currently 5,191 dwelling units (permanent and seasonal) and 10,505 residents ($10,505/5,191 = 2.02$) in the municipality. Using the population statistics above in conjunction with the current number of dwelling units (5,191) and the average number of residents/dwelling unit (2.02), the chart below (**Figure 4**) illustrates the anticipated rate of residential development over the short (next five years), medium (15 years) and long-term (25 years) based on low, moderate and high population projections. It is important to note that these projections are based on the total number of dwelling units in the municipality (5,191), including 3,992 permanent residences and 1,199 dwellings assumed to be seasonal residences (Statistics Canada, 2011).

Table 1: Growth Scenarios - Rate of Residential Development in the R.M. of St. Clements

Time Period	Low Growth (1.0%)			Moderate Growth (1.64%)			High Growth (2.42%)		
	Estimated Population	Dwelling Units	New Units	Estimated Population	Dwelling Units	New Units	Estimated Population	Dwelling Units	New Units
2016 (5 Years)	11,041	5466	275	11,395	5641	450	11,839	5861	670
2026 (15 Years)	12,196	6,038	847	13,408	6638	1447	15,037	7444	2253
2036 (25 Years)	13,472	6,669	1478	15,777	7810	2619	19,099	9455	4264

According to Environment Canada (2009), the average Canadian produces approximately 327 L of wastewater per capita per day. With a 2011 population of 10,505, the R.M. of St. Clements residents would produce approximately 3,435,135 litres of wastewater a day. **Figure 5** below illustrates the amount of sewage that would be produced over the short (five years), medium (15 years), and long-term (25 years) based on low, moderate and high population projections. It is important to note that the projected wastewater volumes indicated below are based on the total number of residents in the municipality (10,505), including both permanent and seasonal residents.

Table 2: Projected Wastewater Volumes for the R.M. of St. Clements

Time Period	Low Growth (1.0%)			Moderate Growth (1.64%)			High Growth (2.42%)		
	Estimated Population	Daily Volume per Capita (L)	Total Daily Volume (m ³)	Estimated Population	Daily Volume per Capita (L)	Total Daily Volume (m ³)	Estimated Population	Daily Volume per Capita (L)	Total Daily Volume (m ³)
2016 (5 Years)	11,041	327	3.6	11,395	327	3.7	11,839	327	3.9
2026 (15 Years)	12,196	327	4.0	13,408	327	4.4	15,037	327	4.9
2036 (25 Years)	13,472	327	4.4	15,777	327	5.1	19,099	327	6.2

According to a representative from the R.M. of St. Clements, the projected waste generated by the additional population growth associated with any of the growth projections could not be accommodated by the municipality’s current wastewater treatment systems. Both the Grand Marais and Lockport treatment facilities are near capacity and must be upgraded and expanded in order to support any form of significant development. The East Selkirk lagoon will be developed for 20-year growth, but for the East Selkirk area only.

5.3 Northern Region – Future Land Use (Figure 2A)

The majority of future development in the Northern Region will occur within the proposed 166-lot subdivision near the community of Grand Marias. Development will be guided by the secondary plan and servicing plan for the region. Construction may include seasonal and permanent residences, affordable multi-family housing for seniors (a two or three-storey building with an estimated 30 units), retail commercial within the existing community of Grand Marais, and a hotel.

The municipality is also in discussion with Grand Beach Provincial Park regarding the possibility of piping the park’s flows into the Grand Marais Treatment Lagoon. Grand Beach Provincial Park is currently serviced by a wastewater lagoon located three miles north on PR 500. This system is outdated and in need of repairs. Developing a sewer line between the park and the Grand Marais Treatment Lagoon would be beneficial because:

- Constructing the sewer line would allow for future servicing off of the line. This is consistent with the Development Plan as it directs that wastewater infrastructure be constructed based on service provision requirements for the subject property as well as adjoining lands.

- The Grand Marais Treatment Lagoon has a constructed wetland that is a sustainable and cost-effective method of tertiary wastewater treatment.
- Treated wastewater would no longer be an aesthetic hindrance in recreational swim areas within the park.

5.3.1 Residential Development

The Grand Marais Wastewater Lagoon licence anticipates a 166-lot subdivision connected to a low-pressure system discharging into the lagoon. There have been discussions regarding the community's desire to see both single-family and multi-family development housing constructed within this subdivision, all of which would be serviced by the low-pressure system. According to a representative from the R.M. of St. Clements, it is estimated that the 166 lots will be built out in approximately 10 to 15 years. A more accurate time estimate will be included in the servicing plan for the region, to be completed by Genivar in 2012. Future plans in the northern area could also include an additional 100-lot residential subdivision, as well as a seniors' housing project, fitness centre and pool. However, at this point in time, no details have been finalized.

5.3.2 Commercial Development

Although the area is home to only 350 permanent residents, population increases dramatically during the summer months. Grand Marais is located immediately adjacent to Grand Beach Provincial Park, a three-kilometre beach attracting an average crowd of 30,000 during summer weekends. As a result, the area has potential to attract future commercial activity that would meet the needs of permanent residents, cottagers and tourists. Although there are no plans for commercial development in the near future, there have been discussions regarding the development of a hotel. The Grand Marais Secondary Plan will direct all future commercial development to the existing commercial area in Grand Marais with the intent of creating a lively and interactive "town centre".

5.4 Central/Eastern Region – Future Land Use (Figure 2B)

There is strong interest in development in the Central/Eastern Region. As previously mentioned, East Selkirk's new wastewater treatment lagoon is currently in the design stage. Development of this lagoon was initiated as a means to meet the demands of anticipated future population growth and corresponding residential development.

5.4.1 Residential Development

Just outside of East Selkirk, residential development pressures are centered northeast of PTH 59 and north of PTH 44. A maximum of up to 200 residential lots could be developed in this area over the next ten years. The area just off of Old Henderson Highway has the potential

for an additional 100 residential lots. At this point in time, it is undetermined as to how the municipality will deal with future growth beyond the next ten years. The current secondary planning processes are expected to provide guidance.

5.4.2 Commercial Development

The region currently has undeveloped lands designated for industrial use. The bulk of these lands is located immediately south of East Selkirk. Another industrial area east of Lockport is currently filled with no lots available for future development.

5.5 Southern Region – Future Land Use (Figure 2C)

The Southern Region has potential for an additional 420 new dwellings. At this point in time, demand for future commercial development in the area is limited. As noted in previous sections, development in this part of the municipality is heavily restricted due to the fact that septic fields are no longer permitted in the Red River Corridor Designated Area and the Lockport Sewage Treatment Plant is nearing capacity. The Development Plan envisages services being extended along Henderson Highway and the establishment of mixed use development nodes.

5.6 Observations

As mentioned throughout this document, the R.M. of St. Clements is a desirable place to live with the potential for future development, particularly residential (permanent and seasonal). However, future development will only be possible if upgrades and expansions are made to existing wastewater treatment facilities or an additional treatment facility and corresponding infrastructure is constructed. Demand for residential development may be great, but the municipality's existing wastewater treatment facilities cannot presently support any additional volume. The R.M. of St. Clements will need to begin planning for future wastewater services to accommodate the municipality's projected population growth and improved development patterns.

6.0 WASTEWATER MANAGEMENT OPTIONS

Improving wastewater management and preserving local water sources throughout the province of Manitoba, particularly within the capital region, are prevalent issues warranting both research and action. The following paragraphs outline a few of the regulations and recommendations made to date to improve wastewater management and water preservation within the SDPA, specifically.

6.1 SDPA Wastewater Servicing Plan (2010)

In 2010, the SDPA developed *The SDPA Wastewater Servicing Plan*. This document includes proposed wastewater servicing strategies for each of the municipalities within the Planning District. Recommendations made specifically for the R.M. of St. Clements include:

- Upgrade the Lockport treatment facility or connect to the R.M. of East St. Paul's treatment facility.
- Develop a new treatment facility in East Selkirk.
- Upgrade the treatment facility in Grand Marais.

To date, two out of the three recommendations have been implemented. The Lockport Sewage Treatment Plant still requires upgrades and/or an alternative solution to wastewater management for this portion of the municipality. Therefore, the Southern Region should be the municipality's primary focus for wastewater management planning, as it requires immediate attention.

6.2 Red River Infrastructure Committee – Report On the Public Sector Comparator (2008)

In 2008, the Red River Infrastructure Committee (RRIC), comprised of members from the City of Selkirk and the Rural Municipalities of St. Andrews, West St. Paul, East St. Paul and St. Clements, released a report addressing regional wastewater, potable water and solid waste issues within the aforementioned municipalities. The RRIC was formed to examine what a regional wastewater system would look like if the municipalities undertook to provide water and wastewater collection and treatment themselves (RRIC, 2008). Although the RRIC no longer exists, the report includes noteworthy options for regional wastewater management and treatment based on the following principles:

- A focus on the environmental objectives of maintaining a pure aquifer and improving the quality of the surface drainage being discharged into local waterways and Lake Winnipeg.
- The need to address public health concerns regarding potential contamination of potable water.
- The need for a cooperative venture that will promote regional economies of scale making the regional wastewater system more feasible.

- The emphasis on innovation through the selection process of a private partner and the possible utilization of a public-private partnership structure to create an effective regional wastewater system.

RRIC conducted a thorough analysis of the area, including: demographic and land use analysis; population projections; determination of potential future development areas; and determination of the required sewer and water capacity to accommodate a reasonable amount of future development. The committee then established four potential business cases outlining best-practice scenarios for wastewater management and treatment within the study area, including the associated costs.

The following paragraphs describe the two business cases provided for the portion of the R.M. of St. Clements included within the RRIC study (within the Red River Corridor). It is important to note that these options were not pursued.

- Business Case #3 – It was recommended that the R.M. of East St. Paul construct a new “greenfields” plant, enabling the municipality to own and operate their own plant, providing wastewater treatment to neighbouring municipalities, including the portion of the R.M. of St. Clements that lies within the RRIC study area.
- Business Case #4 – It was recommended that a wastewater trunk sewer be provided south along Main Street (PTH 9) and Henderson Highway (PR 238) with a river crossing installed and connected a regional treatment plant located in the R.M. of West St. Paul. The trunks would span from PTH 44 south to the City of Winnipeg’s Perimeter Highway (PTH 101).

The following paragraphs have been retrieved from the RRIC report (2008). The text below describes the system that would be required in order to implement Business Case #4 (not pursued).

South System - South of PTH 44 to the City of Winnipeg Perimeter Highway (PTH 101)

This system involves the treatment of wastewater either by the City of Winnipeg or a new regional plant located in West St. Paul.

A. System Description

- Wastewater sewer trunks in Main Street (PTH 9) and Henderson Highway (PR 238) with a river crossing; installed by RRIC and connected to a regional treatment plant.
 - Capital cost for mains covered by 50 percent Federal and 50 percent Provincial Grants net of Trunk Availability Charges.

- Sewer laterals in side streets running off Main Street and Henderson Highway installed in Local Improvement Districts created by the R.M.s of West St. Paul, St. Andrews, East St. Paul and St. Clements (equal to an approximately third contribution by the R.M.s to the overall cost).
 - Residences, businesses and institutions fronting onto Main Street and Henderson Highway would connect directly to the trunk sewer with a connection charge.
 - New lots would pay a full connection charge at time of lot approval.
- Provincial Regulations and Legislation (for defined RRIC area)
 - Increased inspections and enforcement.
 - Failed fields cannot be replaced (must use holding tanks on an interim basis until the new system is available).
 - Prohibits any new septic fields (holding tanks may be used on an interim basis until the new system is available).
 - R.M.s must pass LID by-laws within one year of availability of trunks.
 - Residences, businesses and institutions must hook-up to new system within five years once available to the property.
 - Provision for appeal of exceptions for hardship cases.
- Customer base
 - Approximately 3,800 existing residences, approved lots, and other uses.
 - Provision for approximately 3,900 additional lots/other uses over a 25-year planning horizon.
 - Total: approximately 7,700 customers at full development by roughly 2035.
- Timing
 - Approvals and design – 2008.
 - Trunks (Main Street and Henderson Highway) – 2009 - 2012; local streets – 2010 – 2013.
 - All customers must connect within five years of lines being available to the property (2018).
 - Existing customer connections (3,800)
 - 464 lots as a result of decommissioning of local treatment plants – 2010 – 2012.
 - Balance: 15 percent in years one, two and three; 20 percent in year four; 35 percent in year five (all connected by 2018).

- Additional customer connections (3,900)
 - Approximately 150 lots/year starting in 2011 (full build-out by 2035)

B. Operations (PSC model)

- RRIC
 - Becomes registered as a utility corporation.
 - Assumes ownership and responsibility of the system.
 - Maintains and operates the system.
 - Either:
 - Pays the City of Winnipeg a wholesale rate for wastewater treatment.
 - Constructs and maintains a new wastewater treatment plant to be located in West St. Paul.
 - Bills customers for services (RRIC, 2008).

6.3 Observations

The portion of the R.M. of St. Clements that is included in the RRIC boundary is located solely within the Red River Corridor. Therefore, in theory, both Business Case #3 and #4 would help alleviate the issue of failing septic systems in this part of the municipality. Business Case #3 would provide nearby treatment for waste stored in holding tanks. Business Case #4 would enable residents to hook up to the proposed wastewater sewer trunk along Henderson Highway with a direct connection to a regional treatment plant in the R.M. of West St. Paul. However, these two options were not pursued.

Business Case #3 would provide for wastewater treatment within close proximity, but would require regular communication between municipalities regarding any new development and available capacity at the treatment plant. Business Case #4 is likely no longer an option as the City of Winnipeg has agreed to extend water and sewer lines into the R.M. of West St. Paul in exchange for a premium charge for delivering water and sewage treatment services. However, because the City of Winnipeg is now open to extending sewer and water services to adjacent municipalities, the proposed sewer line could potentially be extended beyond the R.M. of West St. Paul and into the R.M. of St. Clements. Moreover, variations of these business cases could be explored in further detail as they provide a foundation for exploring regional wastewater servicing options.

7.0 COSTS AND FUNDING

In the R.M. of St. Clements, capital costs for wastewater infrastructure are generally recovered through a combination of local improvement levies, provincial and federal grants, at-large financing, and the municipality's gas tax revenue. Operating and maintenance costs for existing wastewater facilities are funded by using at-large taxation. The municipality does not collect fees for dumping septage into local lagoons.

The R.M. of St. Clements' general operating budget for 2012 is \$7.9 million. The following paragraphs outline the total revenue and expenditures for wastewater management included in the R.M. of St. Clements' 2012 Financial Plan.

7.1 R.M. Of St. Clements 2012 Financial Plan

2012 RESIDENTIAL AND COMMERCIAL SEWER SERVICE CHARGES - REVENUE

Total Revenue: \$95,689

2012 SEWAGE COLLECTION AND DISPOSAL - EXPENDITURES

Administration: \$10,000

Sewage Collection System: \$3,500

Sewage Lift Station: \$4,000

Sewage Treatment and Disposal: \$39,300

Total Expenditures: \$56,800

GENERAL OPERATING FUND – DEBENTURE DEBT CHARGES

Waste Facilities Net Requirement: \$52,750.19 (at large taxation)

UTILITY OPERATING FUND – DEBENTURE DEBT CHARGES

Lockport Sewer Net Requirement: \$12,048.90 (Lockport LID)

CAPITAL EXPENDITURES

Lagoon Gates: \$15,000

Transfer Station Upgrades: \$50,000

East Selkirk Lagoon: \$3,550,000 (borrowing over 20 years)

Grand Marais Sewer Plan: \$20,000

Henderson Highway Sewer (Engineering): \$20,000

Total Capital Expenditures: \$3,655,000

FIVE-YEAR CAPITAL EXPENDITURE PROGRAM

Henderson Sewer: \$6,000,000

Total: \$6,000,000

In addition to the details included in the R.M. of St. Clements 2012 Financial Plan above, the following sections include details on the costs and funding associated with the area's municipal lagoons.

7.1.1 Grand Marais Wastewater Treatment Lagoon and Constructed Wetland

If the R.M. of St. Clements and Grand Beach Provincial Park come to an agreement in terms of constructing a sewer line between the park and the Grand Marais Wastewater Treatment Lagoon, all infrastructure costs associated with construction of the line and any required upgrades will be addressed by an inter-municipal agreement between the R.M. of St. Clements, the R.M. of Alexander, the Parks Branch and partnership with the developer. However, as of May 2012, an agreement has not yet been reached.

7.1.2 Lockport Sewage Collection System and Sewage Treatment Plant

Utility operating for the Lockport Treatment Plant is projected to be \$107,000 for 2012.

7.1.3 Future Wastewater Collection System and Treatment Lagoon in East Selkirk

In 2009, the R.M. of St. Clements passed a by-law to create a Local Improvement District to install a complete water system, including a water treatment plant, wells, water mains and private connections and a low pressure sewer system including a lift station, forcemain, sewer lines and private connections to all benefiting properties located within East Selkirk.

The total cost of the project is estimated at \$13,146,620. The R.M. of St. Clements has been approved for grants from Canada/Manitoba Infrastructure (\$3,066,666) and the Federation of Canadian Municipalities (\$1,000,000), totalling \$4,066,666. The remaining balance of \$9,079,954 will be borrowed.

The total cost for sewer and water service is \$13,421 per parcel with existing buildings and \$10,868 for vacant parcels. Once the project is complete, property owners will be notified and given 30 days to decide whether they would like to pay the total cost up front or finance the cost by having an annual payment placed on their property taxes.

The following method and rate of calculating the local improvement tax has been obtained from the Rural Municipality of St. Clements By-law No. 12-2009 – *Being a by-law of the Rural Municipality of St. Clements to authorize the expenditure and borrowing of money for the installation of a water system and low-pressure sewer system as a local improvement in the Hamlet of East Selkirk*:

“The local improvement tax to be levied under this proposal will be based on a per parcel basis for LID #2 and LID #3 and on the portioned value of assessable property for the general municipal contribution. The rates are to be calculated as follows”:

For LID #2 – Parcels with Buildings (Residential, Commercial)

- Cash option of \$2,553 per parcel or finance option of \$232 per parcel to be levied annually for 20 years for private connections costs.
- Cash option of \$10,868 per parcel or finance option of \$986 per parcel to be levied annually for 20 years for 75 percent of the cost of the sewer and water mains.
- \$139.50 quarterly surcharge (\$558 per year) to be added to the Water and Sewer Rate for 50 percent of the cost of the Water Treatment Plant, Wells, Sewer Lift Station and Forcemains.

For LID #3 – Vacant Parcels

- Cash option of \$10,868 per parcel or finance option of \$986 per parcel to be levied annually for 20 years for 75 percent of the cost of the sewer and water mains.

Annual maintenance costs for the system will be recovered in the annual operating budget of the utility. In order to establish consumer rates, a “Water and Sewer Rate Study” will be conducted by the municipality and rates must be approved by The Public Utilities Board.

8.0 CONCLUSION AND HIGHLIGHTS

The R.M. of St. Clements does not have the capacity to treat all of the wastewater it is producing. The two municipal systems, including the Grand Marais Wastewater Treatment Lagoon and Constructed Wetland and the Lockport Sewage Collection System and Sewage Treatment Plant, are in good condition and functioning adequately. However, both treatment facilities are quickly approaching capacity and cannot accommodate projected population growth over the next 20 years. New septic fields are prohibited on lands located within the Red River Corridor due to contaminated groundwater from failing on-site septic systems. As a result, all new development must be hooked up to a holding tank, placing an even greater strain on

nearby treatment facilities. A small percentage of the municipality's sewage waste is hauled to the City of Winnipeg and other surrounding municipalities. However, if, for some reason, the City of Winnipeg and surrounding municipalities are no longer able to treat sewage from outside municipal boundaries, the R.M. of St. Clements would need to seek alternative options for treatment of this waste.

The R.M. of St. Clements is aware of each of these issues and is currently in the process of identifying solutions. Genivar engineers have been retained to complete a sewer and water servicing plan for the community of Grand Marais and surrounding area. This plan will identify the types of upgrades and/or the size of expansion required to accommodate future population growth and development, including a 166-lot subdivision that was approved in 2009. The plan will also explore the possibility of running a sewer line from Grand Beach Provincial Park to the Grand Marais treatment facility and the impact this would have on the wastewater system.

A new low-pressure wastewater collection system and treatment lagoon is expected to be initiated in East Selkirk within the year (2012-2013). This wastewater system will have the capacity to support projected population growth for the area for approximately 20 years. Development of the system will help lift the 2001 health order placed by the Province of Manitoba Department of Health for homes with failing on-site systems in this portion of the municipality. However, there are several failing septic fields that have yet to be decommissioned. This is one of the municipality's prime concerns in terms of wastewater management and must be dealt with in a timely and sustainable manner.

The Lockport Sewage Collection System and Sewage Treatment Plant are approaching capacity and will require upgrading and/or an expansion of the treatment plant. This is particularly necessary for this facility as the community of Lockport is situated within close proximity to the City of Winnipeg, providing a commutable distance for individuals and families who work in Winnipeg but prefer to live outside of city boundaries. The Henderson Highway/Lockport area is desirable for future residential development, including an emerging trend towards multi-family residential development.

The R.M. of St. Clements needs to carefully analyze and determine how new development will be serviced, in terms of sewer and water servicing, before any form of development is approved. All future development in the municipality will be guided by the wastewater servicing and treatment policies included in the Development Plan and corresponding secondary plans.