Selkirk and District Planning Area

Wastewater Servicing Plan

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October, 2010

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Introduction

This document examines the planned implementation of centralized wastewater treatment infrastructure across the more densely populated areas of the Selkirk and District Planning Area (SDPA). The current situation for Municipalities in the planning district will be detailed followed by a discussion of the environmental need for upgraded systems in anticipation of future population growth. An overview of options for servicing different areas of the planning district will be provided along with the development plan policies intended to shape implementation. The basis for this report is the analysis undertaken by the Red River Infrastructure Committee, the Planning Board's development plan review, and current initiatives to address existing deficiencies and future needs.

1.0 Current Situation

Development within the SDPA utilizes several different methods of wastewater treatment. The main type of wastewater management system for urban and settlement centers is piped collections systems with centralized treatment. These are typically a gravity sewer system that flow to a sewage treatment plant where it is treated before being released into the Red River.

Beyond the urban and settlement centre areas, onsite treatment systems are utilized for wastewater disposal. There are four on-site wastewater systems used in the Planning District: septic systems, holding tanks, ejector fields, and grey-water fields. Septage from septic systems and holding tanks is pumped and truck-hauled to the City of Winnipeg's North-End Treatment Plant for disposal. In many cases treatment systems are inadequate due to age, capacity limits, and suitability for local conditions.

1.1 City of Selkirk

The City of Selkirk has an urban standard sewer system and wastewater treatment plant. Approximately 40 percent of the system is combined sanitary and storm sewers resulting in overloading during major storm events.

The Selkirk wastewater treatment plant has a dry weather treatment capacity of 11.4 mL/day. The design wet weather capacity is three times greater at 34.1 mL/day with a hydraulic capacity of 40.4 mL/d. Assuming a usage of 327 litres/person/day[1] this equates to a current usage of 31.1 mL/day.

1.2 RM of West St. Paul

The RM of West St. Paul utilizes a series of wastewater treatment plants to service small pockets of development. The existing central treatment plants are:

- River Crest: service capacity of 178 m^3 (142 homes)
- River Dale: service capacity of 192 m^3 (52 homes)
- Lister Rapids: service capacity of 87 m^3 (69 homes)

[1] Environment Canada estimates the average Canadian to produce 327 litres/person/day

- River Springs: service capacity of 59 m^3 (44 homes)
- Rivers Edge: service capacity of 122 m^3 (97 homes)

In addition, Middlechurch Senior's Home and St. Benedict's Centre have their own, non-municipally operated sewage treatment plants. The remainder of the municipality utilizes onsite wastewater disposal methods.

1.3 RM of St. Andrews

The RM of St. Andrews does not currently have any municipally operated systems. However, there are non-municipal systems in Lower Fort Garry National Historic Site (Parks Canada), Larter's Golf Course and St. Andrews School. Highway Gardens Mobile Home Park, Lockport School and St. Andrews Airport are also serviced by small, independent wastewater facilities.

1.4 RM of St. Clements

The RM of St. Clements contains two wastewater treatment facilities located in Lockport and Grand Marais. The Lockport facility is located near the intersection of Henderson Hwy. and Hwy. 44 and services 250 residences in addition to local commercial businesses. The facility is currently near capacity but could potentially be upgraded to accommodate additional development.

The wastewater facility at Grand Marais services the resort area. The existing capacity is for 262 permanent residences and 2489 seasonal residences. The facilities are currently being upgraded in response to planned development.

2.0 Need for Improved Wastewater Treatment

The need for improved wastewater treatment across the SDPA can be attributed to two primary aspects: anticipated population growth and existing environmental issues. These two factors constitute the rational for upgrading, expanding, and/or establishing new wastewater facilities.

2.1 Projected Growth

Recent population projections have estimated the population of the SDPA to increase by almost 20,000 people by 2030. However, population growth will not be uniformly dispersed. Given the proximity of much of the district to the City of Winnipeg, it has been assumed that areas within a commutable distance (the commutershed) of the City of Winnipeg will grow more rapidly then the rest of the SDPA.

The commutershed is geographically defined as the area south of the northern limits of the City of Selkirk and includes the City of Selkirk, the RM of West St. Paul and the southern portions of the RMs of St. Andrews and St. Clements. This area is projected to grow by 15,486 people by 2030 (or 2.42%[2] per year).

[2] Conference Board of Canada, 2009

In contrast, the area beyond the commutershed will have much more modest levels of growth. The population is projected to grow at a rate of 1.42% resulting in population growth of 3636 people by 2030.

Consequently, the total population of the SDPA is projected to grow from 41,904[3] (as of September 2010) to 61,016 people by 2030[4][5]. Such growth will be at a higher density and concentrated in the Winnipeg to Selkirk Corridor where onsite systems are not permitted and the focus of efforts to introduce/improve centralized wastewater treatment has occurred.

2.2 Environmental Issues

From an environmental perspective, current onsite and centralized treatment practices require change. Septic systems in the Red River Corridor are failing primarily due to unsuitable soil resulting in serious environmental concerns. In addition, centralized treatment plants in West St, Paul are operating without Environment Act Licenses.

Failing septic systems have also resulted in health concerns: the East Selkirk and Henderson/Lockport areas are currently under health orders due to contamination of well water from failing septic systems. In addition, existing centralized treatment facilities are failing and in some cases untreated sewage is entering the Red River.

As a result of such environmental concerns, in 2009 the Provincial Government placed a moratorium on new septic systems within the Red River Corridor. This was followed by the updated *MR 83/2003- On-site Wastewater Management Systems Regulation* which further restricted the area (minimum of two acres) and lot width (198 feet) for new septic systems or where subdivision would create such a situation.

Consequently, there is an urgent environmental need for centralized sewage treatment in many areas of the SDPA to correct the current situation and facilitate anticipated demand due to population growth in an environmental responsible manner.

3.0 Potential Servicing Options and Phasing

In order to accommodate the projected population in an environmentally friendly manner, and correct the current situation, changes to the way wastewater is handled in the SDPA are essential. The following section outlines the options and potential phasing for centralized wastewater services in different areas of each municipality (see Appendix A - Proposed Wastewater Servicing Strategy Table for summary of the various initiatives and options).

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[3] To calculate the population of the commertershed, a GIS exercise was devised which calculated the total number of dwellings within the commertershed. The commutershed was defined by PTH 4 and Road 80N in St. Clements and Bowser Rd. in St. Andrews and is depicted on the attached map. As a result, the entire area south of this boundary was determined to be the SDPA commutershed. This includes all of the City of Selkirk, RM of West St. Paul, and the southern portions of The RMs of St. Andrews and St. Clements.

[4] 3.0 people per dwelling was used as the average people per dwelling in the proposed Development Plan

[5] Annual percent growth calculated using the following formula: Percent change = [Value present - Value past)/Value past*100]/period or [(103,200-67,300)/67,300*100]/22 years = 2.42%

3.1 City of Selkirk

Future growth within the City of Selkirk will be serviced by the existing central wastewater treatment facility. There are planned upgrades to the existing system to eliminate 1/3 of the combined sewers.

3.2 RM of West St. Paul

The RM of West St. Paul and the RM St. Andrews have partnered to build a $14.7 million regional wastewater treatment plant designed to service a population of approximately 9,000 people. There is also the potential for wastewater treatment services to be extended from the City of Winnipeg. All options will result in the decommissioning of existing treatments plants (see Appendix B - RM of West St. Paul Phasing).

South West St. Paul: This area is defined as the area of the RM between the City of Winnipeg and Perimeter Hwy. There are two options for servicing this area. The first option is to utilize the planned regional wastewater treatment plant. The second option is to connect to the City of Winnipeg wastewater treatment service. Both options are anticipated to take approximately 1 to 3 years to implement.

North West St. Paul: This area is defined as the area of the RM between the Perimeter Hwy. and the RM of St. Andrews. The option for this area is to be serviced by the regional wastewater treatment plant. The anticipated timeframe for this is 3 to 5 years.

3.3 RM of St. Andrews

As discussed above, West St. Paul and St. Andrews have partnered to build a $14.7 million regional wastewater treatment plant. This plant will service the southern areas of the RM of St. Andrews from the RM of West St. Paul to Hwy. 44. The area to the north, between Hwy. 44 and the City of Selkirk can be serviced either by the regional treatment facility or through extension of the City of Selkirk services (see Appendix C - RM of St. Andrews Phasing).

South St. Andrews: This area is defined as the area of the RM between West St. Paul and Hwy. 44. The only option for this area is to be serviced by the regional wastewater treatment plant. This will occur in two phases: from the RM of West St. Paul north to Parkton Rd. and then from Parkton Rd. north to Hwy. 44. There is also potential to extend the services to the St. Andrews Airport business park area. The anticipated timeframe for both phases is 3 to 5 years.

North St. Andrews: This area is defined as the area between Hwy. 44 north to the City of Selkirk. There are two options for this area. The first is extending the City of Selkirk service south to service this area. The second is to extend the regional wastewater treatment facility north to service this area. To date services have been extended to Mapleton Lane Life Lease condominiums from the City of Selkirk. Both options are anticipated to take between 3 and 5 years to implement.

3.4 RM of St. Clements

The RM of St Clements has three areas which are currently, or are in need of centralized wastewater services. In the case of East Selkirk and the Lockport/Henderson Highway corridor the need is driven by public health orders from failing septic systems. In contrast, Grand Marais and the Grand Beach Provincial Park have existing systems servicing the resort area which are currently being expanded to accommodate planned development (see Appendix D - RM of St. Clements Phasing).

Lockport/ Henderson Highway: This area is defined as the area between the RM of East St. Paul north to Lockport on the west side of the floodway. There are two potential options: the first option involves upgrading the existing Lockport wastewater treatment facility to service the entire area. The second option is to connect to the East St. Paul treatment facility. Both options have two phases with the first phase servicing the southern limits of the area between East St. Paul and Dunning Rd within 1 to 3 years and the second phase servicing the rest of the area within 3 to 5 years.

East Selkirk: The Municipal Board has approved a new treatment facility for East Selkirk. The plant is planned to service 300 homes in the Settlement Centre with capacity for 300 more. Implementation of this facility is anticipated to take 1 to 3 years.

Grand Marais: The existing Grand Marais treatment plant is currently being expanded to include a constructed wetlands as the method of wastewater treatment and will service the existing Settlement Centre as well as planned development in the area. In addition there may be an opportunity to partner with Manitoba Conservation – Parks Branch to provide service to the Grand Beach Provincial Park.

4.0 Implementation

The Development Plan breaks objectives and policies into several sections to address a broad array of issues within the Planning District pertaining to wastewater treatment. It should be noted that although the Development Plan designates lands, there is still the requirement for the completion of Secondary Plans and Zoning By-law amendments. As indicated in the policies below, such plans include sewer and/or water provisions.

Below are the existing policies within the proposed Development Plan pertaining to wastewater treatment:

Part 4 - Resources, Services and Infrastructure- Municipal Services and Infrastructure-Waste Water Management.
B. Policies

1. Densification of residential development in the City of Selkirk, 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.

2. Large development proposals shall be guided by secondary or concept plans to consider phasing of infrastructure and in order to determine service provisions requirements for the subject property as well as adjoining lands.

9. Options for effective waste management and treatment shall be considered to ensure cost effectiveness and sustainability.

10. 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.

11. 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.

Part 5-Land Use Designation

Rural Residential, Subdivision Policies
B. Policies

10. Development shall be guided by Secondary plans which shall outline future servicing options including phasing, time lines and where on-site services shall continue to operate.

12. Rural residential developments shall be sited to minimize conflict with adjacent uses and shall adhere to the following siting criteria:

    c. All services can be provided with reasonable efficiency and without undue cost to the municipality and that the configuration of the lots does not increase the difficultly for the municipality to provide wastewater sewer services in the future;
    d. Lot sizes be no less than 2.0 acres if domestic effluent is disposed of on-site and to accommodate future proper functioning of a septic field or other approved method of on-site disposal;
    e. Lot configurations are not wasteful of land and facilitate the expansion of wastewater sewer services in the future;

13. Concept or secondary plans that include servicing and phasing components shall be required for the creation of large multi-lot residential subdivisions.

14. Development proposals within areas which are currently zoned to allow for subdivision will be reviewed and considered on the basis of the anticipated outcome of secondary plans within the vicinity.

Resort
B. Policies

21. Holding tank or other approved systems such as low pressure systems of sewage waste disposal shall be required for all future developments and must be consistent with Provincial environment regulations. Only on large lots with no soil or drainage problems may septic fields be permitted. Liquid waste disposal sites should be available for holding tank effluent.

Settlement Centre
B. Policies

9. Design of development should facilitate the economical provision of public utilities and municipal services. These will include services, such as, among others, piped water, sewers, paved roads, street lighting and the like. Before approving any subdivision application, feasibility of providing municipal services should be established through the preparation of secondary plans.

10. Where large undeveloped areas are being considered for future development, an overall secondary plan shall be prepared for the area, in order to provide for an efficient, well-planned development.

11. Development proposals within areas which are currently zoned to allow for subdivision will be reviewed and considered on the basis of the anticipated outcome of secondary plans within the vicinity.

12. As a condition of approving a subdivision in a settlement centre where a central sewage disposal system does not exist, the building lots shall be of adequate size to permit the effective functioning of an on-site sewage disposal system in accordance with Provincial regulations.

General Development
B. Policies

4. Minimum lot sizes shall be established in the respective Zoning By-laws to permit effective on-site disposal of sewage and to minimize the risk of groundwater pollution. Where lot sizes and soil conditions can not support the effective operation of a septic field, holding tanks shall be used.

5. Subdivision and higher density residential development may be considered to enable improved municipal services such as piped sewer and water.

7. Proposals involving large multi-lot subdivisions shall require the preparation of secondary plans.

8. Development proposals within areas which are currently zoned to allow for subdivision will be reviewed and considered on the basis of the anticipated outcome of secondary plans within the vicinity.

Part 7 Implementation
B. Secondary Plans

Division 2 of the Act provides for the adoption of Secondary Plans, which under the Selkirk and Area District Plan set the stage for the development of designated growth areas, to stimulate and guide development in keeping with the District Development Plan's objectives and include opportunities for public and government agency input and validation of the Secondary Plan's implementation strategies.

1. Secondary Plans are to be prepared under the District's Growth Management Strategy for designated centers within the Planning District. The areas demonstrating one or more of the following characteristics:

a) Locations which under the District Plan will be guided through the transition from reliance upon private services to public services and require comprehensive planning, to identify and guide suitable development or redevelopment options;
b) Areas targeted for major public or private investment; and
c) Areas where development is occurring, or proposed at a scale intensity or character, which necessitates reconsideration or reconfiguration of local streets, block plans, public works, open space or other public services or facilities.

2. Secondary Plans are intended to identify and promote the desired type and form of physical development. Their objective is to achieve highly functional and attractive communities and plan for development which displays the appropriate fit, scale and relationships among land uses.

3. Implementation strategies under Secondary Plans will identify or indicate the following:

a) Overall capacity for development in the area;
b) Opportunities or constraints posed by unique environmental, economic, heritage, cultural and other features or characteristics;
c) Policies for development, redevelopment, intensification and/or infilling;
d) Urban design objectives, guidelines and parameters; and
e) Necessary infrastructure investment with respect to any aspect of transportation services, environmental services, community and social facilities, cultural, entertainment and tourism facilities, pedestrian systems, parks and recreational services, or other local or municipal services;
f) Impacts on traffic along municipal and provincial roads and provincial trunk highways.

Conclusion

The existing wastewater treatment situation in the SDPA is limited and is resulting in severe environmental problems. To address such problems and adequately accommodate a projected population increase, centralized wastewater treatment options must be explored and implemented. The discussion in this document provides proposed options for centralized servicing of the SDPA and how such options will be phased.

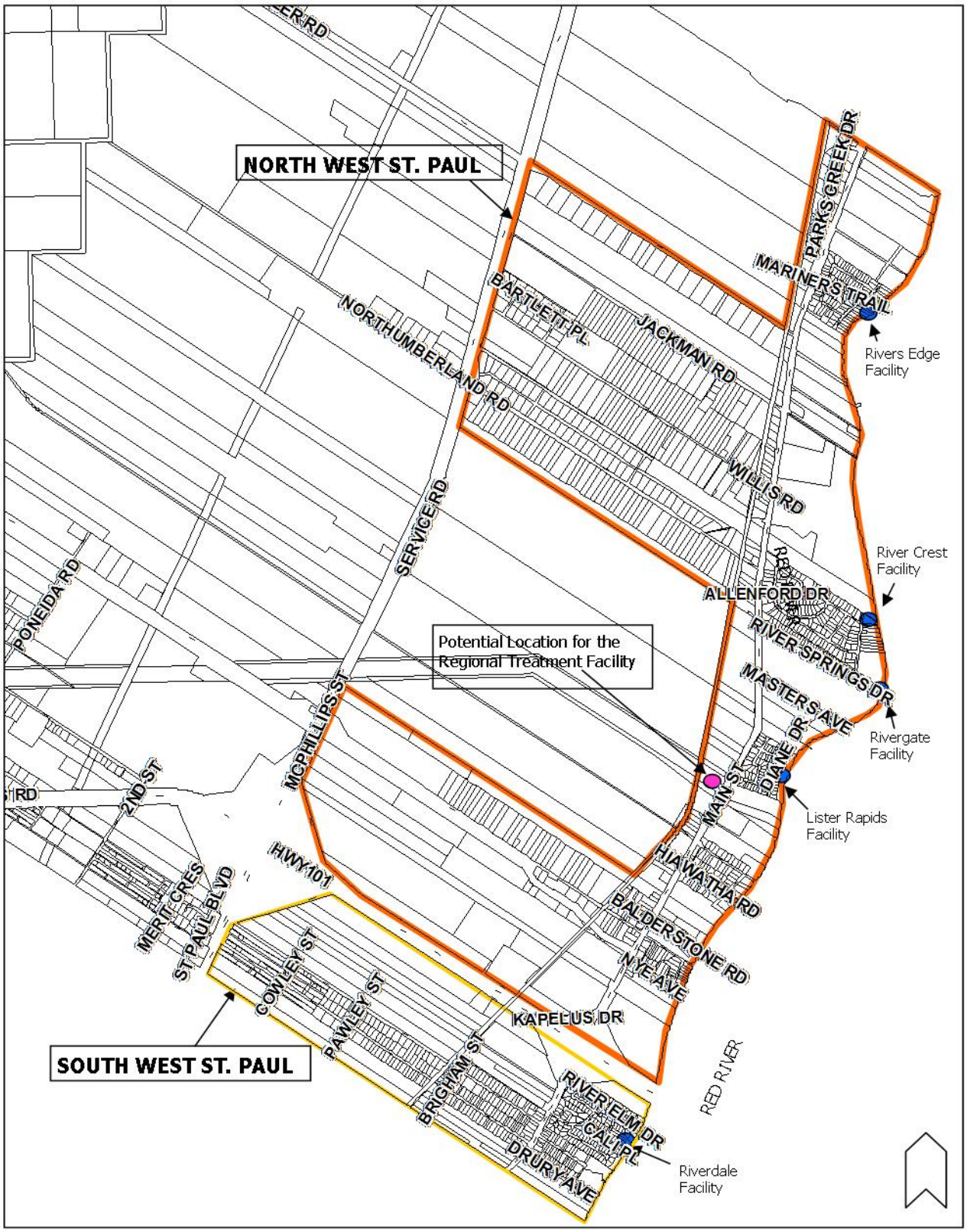
The existing policies in the proposed development plan provide a policy context for implementing centralized wastewater services in Settlement Centre and General Development policy areas. Further detail concerning the wastewater treatment is being provided through secondary planning initiatives which will examine the location and phasing of wastewater services. Ultimately, these policies will frame the development approval process and dictate the order, density, and phasing of development.

Proposed Wastewater Servicing Strategy Table

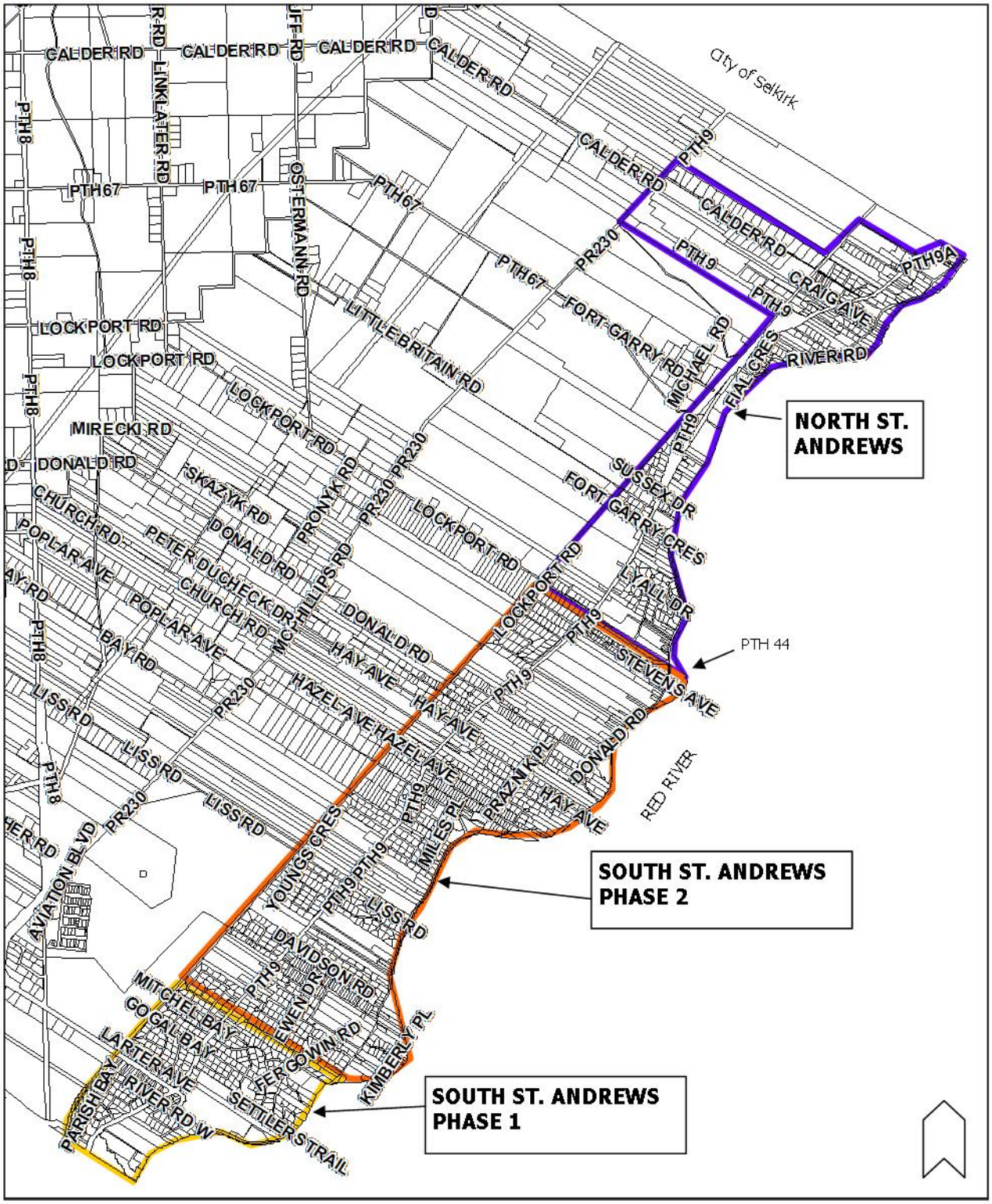
Municipality	Location	Current Situation		Proposed/Planned Servicing Strategy			
		Facilities (service capacity)	Existing Capacity	Future Servicing Options	Phasing	Timeframe	Funding
RM West St. Paul	South West St. Paul	River Dale (152 homes) Non-municipal school, and Care home facilities	At capacity	A. Regional treatment facility[1] B. Connection to the City of Winnipeg[2]	1. City of Winnipeg boundary to Perimeter Hwy.	1-3 years	$14.7 Million
	North West St. Paul	River Crest (142 homes) Lister Rapids (69 homes) River Springs (44 homes) Rivers Edge (97 homes)	All facilities are at capacity	A. Regional treatment facility	1. Perimeter Hwy. Rd. to RM of St. Andrews[3]	3-5 years	
RM St. Andrews	South St. Andrews	No municipal facilities		A. Regional treatment facility	1. RM of West St. Paul to Parkton Rd.	3-5 years	
					2. Parkton Rd. to PTH 44	3-5 years	
	North St. Andrews	No municipal facilities Non-municipal school and Parks Canada facilities	Parks Canada facility requires upgrading	A. Connection to the City of Selkirk B. Connection to the regional treatment facility	1. City of Selkirk boundary south to PTH 44	3-5 years	Potential partnership with Parks Canada - Lower Fort Garry
RM St. Clements	Lockport/ Henderson Highway	Lockport (250 homes plus commercial/recreational development)	Limited additional capacity	A. Upgraded Lockport facility B. Connection to the RM East St. Paul treatment facility	1. Southern area between East St. Paul and Donald Rd.	1-3 years	$4 Million
					2. Area between Dunning Rd. and Lockport	3-5 years	
	East Selkirk	No municipal facility Non-municipal school facility		A. New treatment facility[4]	1. 300 homes in the East Selkirk settlement centre	1-3 years	FCM and Water Services Board Funding
	Grand Marais	Grand Marais (262 permanent homes and 2489 seasonal residences)	Capacity is currently being upgraded	A. Upgraded treatment facilities	1. Planned growth within the Grand Marais settlement centre	Facilities are currently being upgraded	Inter-municipal agreement with the RM of Alexander, Parks Branch, and partnership with developer

[1] The Regional treatment facility will have capacity for 9,000 people
[2] Connection to the City of Winnipeg would likely only include the area of the RM on the south side of Hwy.
[3] North West St. Paul phase 1 and St. Andrews phase 1 will occur concurrently
[4] East Selkirk facility will connect to 300 home and have capacity for 300 more

MAP 1: PROPOSED RM OF WEST ST PAUL WASTE WATER SERVICING STRATEGY



MAP 2: PROPOSED RM OF ST ANDREWS WASTE WATER SERVICING STRATEGY



MAP 3: PROPOSED SOUTH RM ST CLEMENTS WASTE WATER SERVICING STRATEGY