assessment of waste management and landfills
context report
Partnership of the Manitoba Capital Region
Assessment of the Current State of Regional Infrastructure in the MCR for Solid Waste Management

Prepared for:
Partnership of the Manitoba Capital Region

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Introduction
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1.0 INTRODUCTION

The Partnership of the Manitoba Capital Region (PMCR) is a regional organization comprising of
the City of Winnipeg and 15 other municipalities surrounding the City. The Manitoba Capital
Region (MCR) is home to over two-thirds of the provincial population and contributes to
approximately 70% of the provincial GDP. The majority of the Capital Region’s population is
concentrated in and around the City of Winnipeg which is considered the hub for the Capital
Region and also home for 87% of MCR’s total population. A strong and sustainable MCR,
therefore, is crucial to the overall growth and well-being of the participating municipalities as
well as of the province as a whole. The region is in the process of developing a Regional Growth
Strategy (RGS) which will set the stage for achieving a strong and sustainable Capital Region
over the next two decades and will allow for infrastructure investment and development
planning driven by economic opportunities and population growth.

One of the key priority areas identified in the RGS is the development of a Capital Region Waste
Management Plan (CRWMP). This plan, once implemented, will ensure protection of land and
water resources in the MCR by incorporating and encouraging leading best practices for waste
management that are creative, innovative and provide a sustainable solid waste management
within the MCR.

Stantec Consulting Ltd. (Stantec) was retained by PMCR to develop the RGS which is comprised
of three phases:

- Phase I – Determining the context for regional growth
- Phase II – Establishing strategic directions for regional growth
- Phase III – Developing an implementation plan for regional growth accommodation

One component of Phase I is the assessment of regional infrastructure and services related to
distribution and capacity of solid waste and landfill systems in the MCR. This report provides a
description of the current state of solid waste management system in the MCR.

Stantec
2.0 BACKGROUND

Manitoba’s ultimate goal is to become a zero waste society. The first step, as the government of Manitoba has envisioned, is to reach 50% waste diversion as a goal by 2020. This will reduce the amount of waste going to landfills for final disposal. The plan is to accomplish this goal by strengthening and enhancing environmental standards, while improving waste diversion and disposal practices and operations¹. While the strengthening and enhancing of the environmental standards is primarily a provincial responsibility, it is the municipalities who will need to take the lead in improving the waste diversion, waste disposal practices and waste management facility operations in their respective jurisdictions. The following paragraphs provide an overview of the current regulatory framework respecting solid waste management in the Province of Manitoba and the Capital Region.

2.1 RESPONSIBILITIES AND POLICIES AND REGULATORY FRAMEWORK

The responsibility for municipal solid waste (MSW) management in Canada is shared amongst the federal, provincial/territorial and municipal governments. The municipalities are responsible for MSW planning, collection, diversion (recycling and composting) and disposal operations; whereas, the provinces and territories are responsible for providing the regulatory framework, approvals, licensing and monitoring of waste management facility operations. The provincial regulations in Manitoba recognize two types of municipalities:

1. Chartered municipalities i.e., Winnipeg, Thompson, Brandon and Portage La Prairie, each of which is governed by its own unique provincial statute (“charter”); and
2. Rural municipalities that are governed by the Municipal Act, C.C.S.M. c. M225.

However, the power of all municipalities with respect to environmental issues and environmental protection is same.

Waste management on Aboriginal settlements is the responsibility of Federal Government.

Green Manitoba is a special operating agency who works on behalf of the provincial government in Manitoba with public and private organizations to help build a cleaner and greener Manitoba.

2.2 WASTE DISPOSAL REGULATIONS


The Ministry of Conservation and Water Stewardship is responsible for overseeing and regulating waste management in the Province. The Waste Disposal Ground Regulations (150/91) were enacted under The Environment Act. These Regulations categorized waste disposal ground into three categories:

1. Class 1 waste disposal ground - serving a population in excess of 5,000 persons;
2. Class 2 waste disposal ground - serving a population in excess of 1,000 persons; but less than or equal to 5,000 persons; and
3. Class 3 waste disposal ground - serving a population less than or equal to 1,000 persons.

Currently, the Ministry is in the process of updating the existing Waste Disposal Regulations which date back to 1991 and is expected to be implemented sometime during 2016-2017. The implementation of updated waste regulations will be through a phased approach. Some of the salient features of the new Waste Disposal Ground Regulations as noted from the provincial government’s website accessed on January 4, 2016 are:

1. **Landfill Classification** - will change from population based to tonnage based:
   i. Class 1 WDG will address large municipal, private and commercial landfills
   ii. Class 2 WDG are landfills that do not meet the requirements of a Class 1 or a Class 3 WDG
   iii. Class 3 WDG will address seasonal remote sites
2. **Operator Certification** - Class 1 and 2 WDG (in the new classification system) will require operator certification either from SWANA or any other organization authorized by the Director.
3. **Changes are also anticipated to the landfill siting guidelines.**

In accordance with Sections 3 of the current Waste Disposal Ground Regulations, an environmental License is required for any new construction and expansion of existing waste disposal ground. Further, in accordance with Section 11 of The Environment Act, an existing Class I waste disposal ground cannot operate without obtaining an operating permit from the Ministry of Conservation and Water Stewardship. Class 2 and 3 waste disposal ground requires an operating permit for their construction, expansion or operation. A site approval is always required from the Director, Ministry of Conservation and Water Stewardship for establishing a waste disposal ground.

There is no separate regulation governing environmental assessment for any development and this is governed under the Environment Act and regulated by the Ministry of Conservation and Water Stewardship.

### 2.3 Waste Reduction and Prevention Act

In 1990, the Province passed The Waste Reduction and Prevention (WRAP) Act that provided a range of options to reduce solid waste. Regulations under The WRAP Act support blue box
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recycling, tire recycling and used oil management and management of Household Hazardous Waste (HHW) and E-waste. Stewardship corporations are in place to carry out waste reduction programs for packaging and printed paper, tires, and used oil, containers and filters.

A Waste Reduction and Recycling Support Fund (WRARS) was established in 2009 under this Act which is funded from levy imposed on every tonne of waste landfilled. This fund continues to grow and is planned to be used for supporting current and future waste diversion initiatives including organic waste and C&D waste diversion. The fund provides significant opportunity for MCR municipalities to enhance their existing solid waste management.

2.4 EXISTING PROVINCIAL STEWARDSHIP PROGRAMS

There are currently 13 Extended Producer Responsibility programs (EPR) established in the Province to recycle used oil, oil filters, and oil containers, antifreeze, tires, beverage containers, packaging and printed paper, farm chemical containers, single use and rechargeable batteries, lead-acid batteries, mercury thermostats, electronic equipment, and cell phones. These programs are managed by a network of Producer Responsibility Organizations (PROs) and are intended to engage industry to pursue the most efficient and feasible waste reduction option for each material while achieving environmental standards. These programs have observed significant success since their inception and continue to grow. As a result of these programs it has been feasible to divert significant quantities of these materials which would otherwise have been landfilled.

2.5 GUIDELINE FOR CLOSURE OF WASTE DISPOSAL GROUND AND WASTE TRANSFER STATION

Conservation and Water Stewardship has prepared a guidance document dated April 2014 for closure of WDGs and WTSs. It provides details to be included in the Closure Plan and Post-closure Plan for submission to the Director.

3.0 STATE OF WASTE MANAGEMENT IN THE CAPITAL REGION

Based on the 2011 Census, the population of the MCR was 767,380 with approximately 87% of this population residing in the City of Winnipeg - the largest municipality in the MCR in terms of population followed with rural municipalities of Springfield, St. Andrews, St. Clements, and Tache. The various municipalities included in the MCR are shown in Figure 1.
Solid waste in the MCR is managed individually by respective municipalities. In general, waste collection and disposal services within the communities are provided either through municipal services or private contractors. Existence of regional waste management systems in the MCR, other than Springfield/ Steinbach regional system, was not evident. The Springfield/ Steinbach regional system serves a population of approximately 29,000. Based on information provided on respective municipalities’ websites, the majority of these rural municipalities manage only residential waste which is either collected at the curb side and/or bins placed at WDG/WTS and disposed either at their own landfill or hauled out to landfills outside their jurisdictions. Collection of Industrial, Commercial and Institutional (ICI) waste through the municipal collection system is not evident and it was assumed that this waste along with C&D waste is managed directly by private landfill operators such as Progressive Waste Solutions (previously BFI Inc.). Almost every municipality in the MCR has an established collection system for recyclables and household hazardous waste. The quantities of materials collected for recycling is not available from municipalities’ respective websites.
3.1 WASTE DISPOSAL

Historical waste disposal rates per capita in Manitoba were obtained from Statistics Canada [CANSIM 153-0041] accessed on January 5, 2015 and are shown below in Table 1. Considering this data, it is evident that the waste disposal rate of Manitobans has been quite consistent over the past decade with an average value of 806 kg/capita/year. Further, the waste disposal rate in 2013 as per the government of Manitoba was 841 kg/capita. This waste disposal rate in 2013 is not much different from the historical average waste generation rate. As per waste hierarchy, waste prevention and reduction are the top recommended steps when referred in the context of sustainable waste management. Considering the waste disposal rate in 2013, it implies that not much effort has been made at the top level of the waste hierarchy to prevent or minimize or reduce waste generation/disposal.

3.2 WASTE DIVERSION

Further, based on Statistics Canada data [CANSIM 153-0043], the waste diversion rate in Manitoba between 2002 and 2012 (except for the year 2002) has also been very consistent at an average of 17% as shown in Table 1. Since waste diversion data for MCR municipalities other than City of Winnipeg is not available, it is reasonable to assume that waste diversion and waste disposal rates in the MCR might have followed a similar general trend as for the province. The population data for the Province shown above in Table 1 were obtained from Statistics Canada (CANSIM 051-0005) and are representative of Q3 population i.e., as of July 1 of the year.

Table 1 - Historical Waste Disposal and Diversion Rates in Manitoba

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Waste Disposal</th>
<th>Waste diverted</th>
<th>Waste generation rate</th>
<th>Waste diverted</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Province #</td>
<td>MCR (tonnes)</td>
<td>(tonnes)</td>
<td>(t/capita)</td>
<td>(%) kg/capita</td>
</tr>
<tr>
<td>2002</td>
<td>1,156,636</td>
<td>896,556</td>
<td>215,815</td>
<td>0.775</td>
<td>24% 187</td>
</tr>
<tr>
<td>2004</td>
<td>1,173,223</td>
<td>928,117</td>
<td>157,490</td>
<td>0.791</td>
<td>17% 134</td>
</tr>
<tr>
<td>2006</td>
<td>1,183,524</td>
<td>904,272</td>
<td>152,799</td>
<td>0.764</td>
<td>17% 129</td>
</tr>
<tr>
<td>2008</td>
<td>1,197,774</td>
<td>945,441</td>
<td>165,667</td>
<td>0.789</td>
<td>18% 138</td>
</tr>
<tr>
<td>2010</td>
<td>1,220,930</td>
<td>1,055,612</td>
<td>178,481</td>
<td>0.865</td>
<td>17% 146</td>
</tr>
<tr>
<td>2012</td>
<td>1,250,406</td>
<td>1,067,256</td>
<td>184,859</td>
<td>0.854</td>
<td>17% 148</td>
</tr>
</tbody>
</table>

2013 Actual Waste generation rate* 0.841

* CDEM: leading the Way to Local Sustainability and a Greener Economy Forum
#- Data from Statistics Canada CANSIM 051-0005

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2 CDEM: Leading the Way to Local Sustainability and a Greener Economy Forum, by Jim Furguson, GOM dated May 20, 2014
3.3 CURRENT ACTIVE WASTE MANAGEMENT FACILITIES IN THE MCR

Table 2 provides the total number of active waste management facilities in the province as well as in the MCR. In total, there are 13 active waste disposal grounds and 13 active waste transfer stations currently operating in the MCR owned by municipalities. The geographic location of these active waste management facilities are also shown in Attachment 1 for quick reference. Additionally, there exist seven other waste management facilities that are owned and operated privately in the MCR. Given their current disposition, a regional approach to solid waste management would be a feasible and effective approach in managing solid waste in the MCR.

Table 2 – Active Waste Management Facilities in the Province and MCR

<table>
<thead>
<tr>
<th>Waste Management Facility</th>
<th>Number of Active Facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Province*</td>
</tr>
<tr>
<td>Class 1 Waste Disposal Ground</td>
<td>15</td>
</tr>
<tr>
<td>Class 2 Waste Disposal Ground</td>
<td>46</td>
</tr>
<tr>
<td>Class 3 Waste Disposal Ground</td>
<td>123</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>184</strong></td>
</tr>
<tr>
<td>Waste Transfer Station</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>Information not available</td>
</tr>
<tr>
<td>Provincial Waste Disposal Ground</td>
<td></td>
</tr>
<tr>
<td>Parks</td>
<td>9</td>
</tr>
<tr>
<td>ANA (Community Councils)</td>
<td>36</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>45</strong></td>
</tr>
</tbody>
</table>

* Data obtained from Manitoba Association of Regional Recyclers (MARR) Forum - Nov 4, 2014

As mentioned above, the MCR is also home to several privately owned and operated waste management facilities as shown in Table 3. Of the various facilities listed in Table 3, only the facility operated by Progressive Waste Solutions is a Class 1 WDG. The remaining others are primarily the material recovery facilities.
Project: Regional Growth Strategy  
Client: Partnership of the Manitoba Capital Region  
Attachment 1  
Manitoba Capital Region  
Solid Waste Disposal Sites  

Notes:  
1. Coordinate System: NAD 1983 UTM Zone 14N  
2. Base features produced by Natural Resources Canada, Manitoba Municipal Governments and Manitoba Conservation and Water Stewardship  
3. Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for any claims arising in any way from the content or provision of the data.

Prepared by Evan Rodgers, Jan 06, 2016

Manitoba Capital Region  
Province of Manitoba  
Prepared by Evan Rodgers, Jan 06, 2016

Legend:  
- Solid Waste Disposal Site  
- Active Solid Waste Disposal Site  
- Landbase  
- Community  
- Provincial Highway  
- Watercourse  
- Waterbody  
- Provincial Park  
- City  
- Rural Municipality
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Table 3 - List of Private Waste Management Facilities in the MCR

<table>
<thead>
<tr>
<th>Private Operator Description</th>
<th>Waste Management Facility Description</th>
<th>Type of facility</th>
<th>Jurisdiction in the MCR</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Forks Renewal Corporation, Winnipeg (License No. 3017 )</td>
<td>Compost Facility for food waste and yard waste</td>
<td>Compost Facility</td>
<td>City of Winnipeg</td>
</tr>
<tr>
<td>GFL Environmental West Corporation (License No. 3014R )</td>
<td>Soil Treatment Facility for PHC and metals</td>
<td>Soil Treatment Facility</td>
<td>RM of Richot</td>
</tr>
<tr>
<td>Progressive Waste Solutions Canada Inc. (License No. 2177 E R5 )</td>
<td>Integrated Waste Management Facility</td>
<td>Class I Landfill</td>
<td>RM of Rosser</td>
</tr>
<tr>
<td>Eastern Interlake Regional Recycling Co-op Ltd. (License No. 2469 )</td>
<td>Waste to energy facility (gasification of municipal and commercial solid wastes, tires, papers and plastics, and limited other wastes)</td>
<td>Waste-to-Energy facility</td>
<td>RM of St. Andrews</td>
</tr>
<tr>
<td>Gerdau Ameristeel Corporation (License No. 1202 RRR )</td>
<td>Scarap metal processing and auto wrecking facility</td>
<td>Scrap Metal Processing</td>
<td>RM of St. Andrews</td>
</tr>
<tr>
<td>National Containers and Recycling Ltd. (License No. 1206 )</td>
<td>Recycling Transfer Station for glass, metal, paper, corrugated cardboard and wood</td>
<td>Waste transfer station</td>
<td>City of Winnipeg</td>
</tr>
<tr>
<td>Emterra Environmental, Winnipeg</td>
<td>MSW recycling and waste management Centre</td>
<td>Waste Recycling facility</td>
<td>City of Winnipeg</td>
</tr>
</tbody>
</table>

3.4 INACTIVE WASTE DISPOSAL GROUND

The majority of historical landfills in the MCR have since been closed or abandoned. Their precise status as to their appropriate decommissioning or closure is not available with Stantec. Table 4 shows the list of all inactive waste management facilities in the MCR based on information obtained from City of Winnipeg and Govt. of Manitoba. As evident from Table 4, the majority of these sites were within the municipal boundaries of City of Winnipeg.
Table 4 - List of Inactive Waste Management Facilities

<table>
<thead>
<tr>
<th>Inactive Waste Disposal Grounds in the MCR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Stonewall WDG</td>
</tr>
<tr>
<td>2. Stony Mountain WDG</td>
</tr>
<tr>
<td>3. East Selkirk WDG</td>
</tr>
<tr>
<td>7. Libau (Former) - WDG</td>
</tr>
<tr>
<td>8. RM of East St.Paul (Former) WDG</td>
</tr>
<tr>
<td>9. City of Selkirk (Former) WDG</td>
</tr>
<tr>
<td>10. Redonda WDG</td>
</tr>
<tr>
<td>13. Bonner Avenue WDG</td>
</tr>
</tbody>
</table>

3.5 WASTE TYPES MANAGED

Considering the 2009 waste tonnages received at the Brady Road landfill\(^3\), the waste composition in the MCR may be assumed to be similar and comprised of waste streams as shown in Figure 2.

![Figure 2 - Waste Streams Contributing to Overall Generations of Solid Waste in Winnipeg](image-url)

\(^3\) Information obtained from Comprehensive Integrated Waste Management Plan for the City of Winnipeg prepared by Stantec Consulting Ltd. (September 2011)
3.6 WASTE MANAGEMENT IN RESPECTIVE MUNICIPALITIES

The following paragraphs provide description of waste management system currently in place in various municipalities of the MCR.

<table>
<thead>
<tr>
<th>RURAL MUNICIPALITY OF RITCHOT</th>
<th>Population : 5,478 (2011 Census)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Population: 8,132 (Projected for 2035)</td>
</tr>
<tr>
<td></td>
<td>Active Waste Disposal Ground - 1 Class 1 WDG</td>
</tr>
<tr>
<td></td>
<td>Active Waste Transfer Station - 1</td>
</tr>
</tbody>
</table>

The Rural Municipality (RM) of Ritchot is located in south central Manitoba, 27 kilometers south of Winnipeg. The towns of St-Adolphe, Ste-Agathe, and Île-des-Chênes are three of the more prominent communities, with Glenlea, Grande Pointe, and Red River Drive being other significant communities included in this rural municipality. Because of its close proximity to Winnipeg, the Rural Municipality of Ritchot is a popular place for families to locate. With most of its communities within a 30 minute drive from the city, many families appreciate the quiet country lifestyle, while commuting to work every day in the city.

The waste generated in the Municipality is managed by the RM which provides curb side pick-ups for both residential waste and recyclables. The curb side Blue Cart recycling has recently been contracted out to Emterra Environmental effective Sep 2015.

The RM currently operates a Class I WDG jointly with GFL Environmental West Corporation (formerly Mid Canada Waste Management Ltd.). The WDG is located on subdivision 4 of Section 32 - Township 8 - Range 4 EM. A revised License No. 2482R was issued to the RM in January 2001 for construction and operation of this Class 1 Landfill which replaced the then existing Class 2 landfill at this site. It is understood that the current operating Class I WDG is an engineered facility based on the License information available on Govt. website. The information about existing and potential waste footprint is not available to Stantec and therefore it is not feasible to determine the remaining lifespan of this facility. The License does not allow disposal of contaminated soil. However, a separate soil recycling/treatment facility also operates currently at this site which is licensed to GFL Environmental West Corporation.

The RM also operates a Waste Transfer Station and Recycling facility designed and built by GFL Environmental West Corporation. This facility allows residents to dispose of their household waste as well as recyclables in designated bins. The non-recyclable residential waste is collected in two roll off containers which are then transferred to the current landfill cell once filled to their capacity.
Located southwest of Winnipeg and covering approximately 1,106 square kilometers, the Rural Municipality of Macdonald extends from Fort Whyte, over the Perimeter Highway to the towns of Oak Bluff, La Salle, Domain, Osborne, Brunkild, Sanford, and Starbuck.

The RM operates two waste disposal sites, one each at Sanford and Starbuck. The information about their License and Class of these WDGs is not available to Stantec. However, based on the population base, it is assumed that these are likely Class 1 WDGs. The access to these sites is limited to residents only and a fee is charged depending on the size of the waste load. Commercial waste haulers are accepted as long as the waste generated is from within the RM. Bins are provided at the WDG for the collection of recyclables. The RM does not provide curb-side collection of garbage. However, the curb side Blue Cart recycling program is currently undertaken by Emterra Environmental effective Feb 2014.

The Rural Municipality of Headingley provides curb side pick-up for residential garbage and recyclables. Effective Jan 1, 2015 the recyclables are only accepted in clear or blue recycle bags which used to be in green boxes previously. There is a limit for 2 bags per household. Tags for extra bags may be purchased for $0.50 each. Separate program exists for Household Hazardous Waste collection. The RM doesn’t own or operate a WDG or a WTS.

The Rural Municipality of St. François Xavier is located directly north of the Assiniboine River that forms the common boundary with the RM of Cartier. The RM does not provide curb-side
collection for either garbage or recyclables. RM does operate a WDG which is located at the corner of Rosser Road and Two Mile Road. The information about the License and Class of the WDG is not available to Stantec. However, based on population base, it is assumed that this is likely Class 2 WDG. The residents of the RM are allowed to dispose of their waste for free at the WDG. Recycling bins are located within the community as well as at the waste disposal ground to facilitate recyclables collection.

The RM of Cartier is located west of the RM of Headingley, and is directly south of the Assiniboine River. The RM does not provide curb side garbage collection services. Laramee Property Services, a private operator, provides curbside garbage pick-up and residents are directly billed by the Laramee Property Services. The RM currently operates a Waste Disposal Ground located approximately 3 miles east of Elie on Trans Canada Hwy 1. The information about the License and Class of the WDG is not available to Stantec. However, based on population base, it is assumed that this is likely Class 2 WDG. The Waste Disposal Ground is for the use of resident and non-resident taxpayers only. The RM also provides recycling bins at various locations within the RM including WDG.

The Rural Municipality of Rosser operates a Waste Transfer Station located north of Rosser in section 30-12-1E on Ridge Road (Rd. No. 70). Only residents are allowed to dispose waste at the transfer station and no other waste is allowed for disposal except residential waste. Separate bins are provided at the transfer station for the disposal of recyclables. It is assumed that waste is hauled to the landfill owned and operated by Progressive Waste Solutions Canada Inc. located on Section 14 and the north half of Section 11, Township 12, Range 2 EPM, in the Rural Municipality of Rosser.
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The Rural Municipality of Rockwood provides curb side garbage and recyclables collection for select communities in the RM. There is a limit to the no. of bags of household garbage and yard waste that could be placed for curbside collection. The RM also provides collection services for recyclables.

The RM operates two waste transfer stations - Winfield road transfer station located at NE 19-13-2E and Balmoral Waste Transfer Station located at NE 5-15-2E. As per RM’s website, the RM also operates three Class 3 WDGs - Komarno waste disposal ground located on NE ¼ 21-17-2E in Stonewall; Teulon Waste disposal ground located on SW ¼ 30-16-2E at Stonewall in the RM of Rockwood and Argyl Waste Disposal Ground located at NW ¼ 25-14-1W but is located in the RM of Woodlands and used by residents of RM of Rockwood as per their website.

The RM of St. Andrews operates two Class 2 landfills - the Earl Grey Waste Disposal Ground located at SW 1/3 13-13-3E and Clandeboye Waste Disposal Ground located at SW ¼ 34-14-4E. A permit was issued by Manitoba Conservation in 1973 for the Earl Grey Waste Disposal Ground. However, no further details were available from Govt. website and neither from RM’s website as to the design and current state of these two landfills.

The RM also operates five recycling depots at various locations within the RM including Earl Grey and Clandeboye landfills.

The RM of St. Clement used to operate a number of Class 2 and Class 3 Waste Disposal Grounds. Majority of these Waste Disposal Grounds were closed between late 80’s to late 90’s and some
of them transformed into Waste Transfer Station sites subsequent to their closure. Currently, the RM operates only one Class I Waste Disposal Ground located at E ½ 29-15-7E in East Selkirk. The following waste transfer station sites are currently operational:

1. Clarke Road Waste Transfer Station, River lot 133, East Selkirk
2. Dunning Road Waste Transfer Station, River Lots 365-366, East Selkirk
3. Grand Marais Waste Transfer Station, W1/2 and SE ¼ 10-18-7E, East Selkirk
4. Gull Lake Waste Transfer Station, located at NW ¼ 26-16-7E, East Selkirk

The RM provides curb-side pick-up of household waste. Residents are directed to drop-off large items directly at the Prairie Green Landfill operated by Progressive Waste Solutions.

East St. Paul is located north east of and adjacent to the City of Winnipeg.

RM of East St. Paul provides curb-side pick-up for both garbage and recyclables using an automated cart pickup service for its residential customers. Additional garbage and recycling can be dropped off at the waste transfer station located at 4140 Birds Hill Road, East St. Paul. The RM does not have an active Waste Disposal Ground.

The RM of Tache currently operates Lorette Solid Waste Management Facility and the Monominto Transfer Station. The Class I waste disposal ground is located on lands described as portions of River Lots 19, 20 and 21. The Class I Landfill operates with License No. 2373 E RR issued by Manitoba Conservation. Currently, the collection of garbage is contracted out to private
agency ‘Pak-Man Disposals’ in the Local Urban District of Landmark and to JR Waste Haulers Ltd. in the town of Lorette. Effective Jan 2016, collection of recyclables has also been contracted out to Pak-Man Disposals. Physical coordinates of these sites is not available at RM’s website neither with the provincial government Website.

<table>
<thead>
<tr>
<th>RURAL MUNICIPALITY OF SPRINGFIELD</th>
<th>Population : 14,069 (2011 Census)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Population: 24,863 (Projected for 2035)</td>
</tr>
<tr>
<td>Active Waste Disposal Ground - None</td>
<td></td>
</tr>
<tr>
<td>Active Waste Transfer Station - 2</td>
<td></td>
</tr>
</tbody>
</table>

The Rural Municipality of Springfield has recently contracted the services of BFI Canada to manage its waste and recycling programs at the transfer stations. The curb-side pick-up of recyclables is contracted out to Emterra for all communities in the RM. The RM operates two waste transfer stations; Hillside Transfer Station located at 25 082 Hillside Road and Oakwood Transfer Station located at 40 159 Oakwood Road. Residents are charged a fee for disposal of waste at these Waste Transfer Stations. All solid waste is transported out of the municipality.

<table>
<thead>
<tr>
<th>CITY OF SELKIRK</th>
<th>Population : 9,834 (2011 Census)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Population: 12,380 (Projected for 2035)</td>
</tr>
<tr>
<td></td>
<td>Active Waste Disposal Ground - None</td>
</tr>
<tr>
<td></td>
<td>Active Waste Transfer Station - 1</td>
</tr>
</tbody>
</table>

The City of Selkirk is a quaint little city on the banks of the Red River just north of Winnipeg. The City provides curb side garbage collection for its residents. The operating Waste Transfer Station is located at Walker Avenue west of Hwy. 4. Residents are charged a fee for disposal of waste at this Waste Transfer Station. The City also offers curb-side recycling pickup, and has depots for household hazardous and electronic waste as well as used oil.

<table>
<thead>
<tr>
<th>CITY OF WINNIPEG</th>
<th>Population : 663,617 (2011 Census)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Population: 854,435 (Projected for 2035)</td>
</tr>
<tr>
<td></td>
<td>Active Waste Disposal Ground - 1 Class 1</td>
</tr>
<tr>
<td></td>
<td>Active Waste Transfer Station - None</td>
</tr>
</tbody>
</table>

The City of Winnipeg currently operates a Class 1 landfill with a License No. 3081 R dated April 23, 2014. The facility is known by the name of Brady Road Resource Management Facility which was
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initially commissioned in 1973 to accept residential and commercial waste. The City provides curb-side collection of both recyclables and garbage using automated and semi-automated collection services. The City also charge a waste Diversion Fee of $55/year/dwelling to fund new programs that provide residents with more ways to reduce, reuse and recycle e.g. curbside yard waste and organic waste collection.

<table>
<thead>
<tr>
<th>TOWN OF STONEWALL</th>
<th>Population : 4,536 (2011 Census)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Population: 6,218 (Projected for 2035)</td>
</tr>
<tr>
<td></td>
<td>Active Waste Disposal Ground - None</td>
</tr>
<tr>
<td></td>
<td>Active Waste Transfer Station - None</td>
</tr>
</tbody>
</table>

The Town of Stonewall provide curb side pick-up for both garbage and recyclables. There is a limit to the number of bags allowed for curbside pick-up. Residents are supplied with two blue boxes per household free of charge for recyclables. Besides this, the residents can use Winfield Road Waste Transfer Station located on Road 76 N which is operated by the RM of Rockwood.

Below shown in Table 5 is a summary of active waste management facilities in the MCR as discussed in the foregoing paragraphs.
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Table 5 - Summary of Waste Management Facilities in Respective Municipalities

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Waste Disposal Ground</th>
<th>Waste Transfer Station</th>
<th>Private waste management facility</th>
</tr>
</thead>
<tbody>
<tr>
<td>RM of Ritchot</td>
<td>1 - Class 1</td>
<td>1</td>
<td>Soil Treatment Facility (GFL)</td>
</tr>
<tr>
<td>RM of MacDonald</td>
<td>2 - Class 2</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>RM of Headingley</td>
<td>None</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>RM of St. Francois Xavier</td>
<td>1 - Class 2</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>RM of Cartier</td>
<td>1 - Class 2</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>RM of Rosser</td>
<td>None</td>
<td>1</td>
<td>Class 1 Landfill (Progressive)</td>
</tr>
<tr>
<td>RM of Rockwood</td>
<td>3 - Class 3</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>RM of St. Andrews</td>
<td>2 - Class 2</td>
<td>None</td>
<td>Waste to Energy facility (Eastern Interlake)</td>
</tr>
<tr>
<td>RM of St. Clements</td>
<td>1 - Class 1</td>
<td>4</td>
<td>Scrap metal/auto wrecking facility (Gerdau Ameristeel)</td>
</tr>
<tr>
<td>RM of West St. Paul</td>
<td>None</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>RM of East St. Paul</td>
<td>None</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>RM of Tache</td>
<td>1 - Class 1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>RM of Springfield</td>
<td>None</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>City of Selkirk</td>
<td>None</td>
<td>1</td>
<td>Compost facility (Forks Renewal Corp.)</td>
</tr>
<tr>
<td>City of Winnipeg</td>
<td>1 - Class 1</td>
<td>None</td>
<td>MSW recovery facility (Emterra)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Material recycling facility (National Containers and Recycling)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>13</strong></td>
<td><strong>13</strong></td>
<td><strong>7</strong></td>
</tr>
</tbody>
</table>
4.0 WASTE QUANTITY PROJECTION FOR THE MCR

The population projections for the MCR were obtained from the PMCR draft document titled “From Waste to Resource” as shown in Table 6. For providing a conservative estimate of waste disposal rates during the period considered for the RGS, it was assumed that actual waste generation rate of 2013 i.e., 0.841 tonnes/capita (shown in Table 1) will continue. It was also assumed that MCR will target to enhance the existing waste diversion rates in a phased manner to achieve waste diversion rate of 40% in the next 20-years in 2035 as shown in Table 6.

<table>
<thead>
<tr>
<th>Year</th>
<th>Population MCR</th>
<th>Waste Disposal</th>
<th>Waste diverted</th>
<th>Waste generation rate</th>
<th>Waste diverted kg/capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>1,156,636</td>
<td>896,556</td>
<td>215,815</td>
<td>0.775</td>
<td>24%</td>
</tr>
<tr>
<td>2004</td>
<td>1,173,223</td>
<td>928,117</td>
<td>157,490</td>
<td>0.791</td>
<td>17%</td>
</tr>
<tr>
<td>2006</td>
<td>1,183,524</td>
<td>904,272</td>
<td>152,799</td>
<td>0.764</td>
<td>17%</td>
</tr>
<tr>
<td>2008</td>
<td>1,197,774</td>
<td>945,441</td>
<td>165,667</td>
<td>0.789</td>
<td>18%</td>
</tr>
<tr>
<td>2010</td>
<td>1,220,930</td>
<td>1,055,612</td>
<td>178,481</td>
<td>0.865</td>
<td>17%</td>
</tr>
<tr>
<td>2012</td>
<td>1,250,406</td>
<td>1,067,256</td>
<td>184,859</td>
<td>0.854</td>
<td>17%</td>
</tr>
</tbody>
</table>

2013 Actual Waste generation rate* 0.841

<table>
<thead>
<tr>
<th>PROJECTIONS</th>
<th>Waste Disposal</th>
<th>Waste diverted</th>
<th>Waste generation rate</th>
<th>Waste diverted kg/capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>1,295,488</td>
<td>828,520</td>
<td>696,785</td>
<td>0.841</td>
</tr>
<tr>
<td>2023</td>
<td>1,340,218</td>
<td>880,050</td>
<td>740,122</td>
<td>0.841</td>
</tr>
<tr>
<td>2035</td>
<td>1,447,571</td>
<td>986,080</td>
<td>829,293</td>
<td>0.841</td>
</tr>
</tbody>
</table>

* CDEM: leading the Way to Local Sustainability and a Greener Economy Forum
#- Data from Statistics Canada CANSIM 051-0005

Further, using the projected population in the MCR and given the historical trend in waste disposal rates, projections were made for the waste quantities that will be disposed in the MCR in the years 2018 (short-term), 2023 (medium-term) and 2035 (long-term) as shown in Table 7. The projection year 2035, as noted above, represents 20 years period considered for framing the Regional Growth Strategy.

Information about each active site as to their current footprint, scope for expansion, License conditions and subsurface conditions will be required in order to determine enhancement to existing operation or additional infrastructure needed to support growth in the region and provide opportunities for growth.
Waste Quantity Projection for the MCR
April 5, 2016

Table 7 - Waste Quantities Requiring Management in the Short-, Medium- and Long-term in the MCR

<table>
<thead>
<tr>
<th>Municipalties</th>
<th>Population</th>
<th>Waste Disposal Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Winnipeg</td>
<td>663,617</td>
<td>712,620</td>
</tr>
<tr>
<td>Remaining other Municipalities</td>
<td>103,763</td>
<td>115,900</td>
</tr>
<tr>
<td>Total MCR</td>
<td>767,380</td>
<td>828,520</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>
PARTNERSHIP OF THE MANITOBA CAPITAL REGION
ASSESSMENT OF THE CURRENT STATE OF REGIONAL INFRASTRUCTURE IN THE MCR FOR SOLID WASTE
MANAGEMENT

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5.0 SUMMARY

The Manitoba Capital Region (MCR) is the home to two-thirds of the provincial population and
contributes to approximately 70% of the provincial GDP. The majority of the Capital Regions’
population is concentrated in and around the City of Winnipeg. The MCR is moving forward with
a Regional Growth Strategy (RGS) to set the stage for achieving a strong and sustainable
Capital Region over the next two decades. This strategy will also allow for infrastructure
investment and development planning driven by economic opportunities and population
growth.

One of the elements of Regional Growth Strategy is the development of a Capital Region Waste
Management Plan (CRWMP). This plan, once implemented, will ensure protection of land and
water resources in the MCR by incorporating and encouraging leading best practices for solid
waste management that are creative, innovative and provides a sustainable solid waste
management within the MCR.

A review of existing waste management infrastructure in the MCR was undertaken which
included review of regulatory framework and provincial waste management strategy as well.

Historically, waste disposal in Manitoba has been quite consistent at an average approximately
0.8 tonnes/capita/year which is similar to national average. Further, waste diversion rate as well
has been quite consistent over the past many years which points to the need to have waste
management strategies at regional level to achieve desired waste diversion goal.

Currently there are 14 active WDG in the MCR including the one Class I WDG operated by
Progressive Waste Solutions. The number of these landfill is relatively low compared to total
landfills in the province given that two-third of province’s total population resides in the MCR.
There are 41 identified inactive waste disposal grounds in the region. The current state of closure
or decommissioning is not known to Stantec. However, in order for sustainable development and
protection of groundwater resources, it would be crucial to ensure their proper
decommissioning.

The waste management in the MCR is provided by respective municipalities in their respective
jurisdictions. Some municipalities have in place their own collection system whereas other
municipalities have their collection contracted out to third party. The majority of municipalities
have their own waste management facility which adds to the waste infrastructure in the region.
The majority of municipalities provide for curb side collection of recyclables.

Population projections were made for the MCR and were used to determine waste disposal in
the region using the historical provincial waste disposal rate. Significant amount of waste will
be disposed during the 20-year period considered for the Regional Growth Strategy. For estimate

Stantec
part of the current state of regional infrastructure in the MCR for solid waste management

Summary
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purposes, it was assumed that the MCR will target for enhancing their current waste diversion rate of approximately 17% based on Statistics Canada and enhance it to 40% in the next 20 years in a phased manner. The approach for achieving waste diversion and enhancing solid waste management in the MCR will be reviewed in Phase II of the this entire project.