

## SCHEDULE G

### Project Completion Report

#### Introduction

Project completion reports are intended to provide a plain-language summary of the projects funded by FCM's Green Municipal Fund (GMF). While project completion reports fulfill a reporting requirement for FCM, the information they contain can be useful to other municipalities. As such, FCM may share these reports with those in other municipalities interested in addressing similar issues. For this reason, when writing the report, please assume a low to moderate level of technical knowledge and a preference for clear, direct and focused writing. Use simple language, and explain any highly technical terms or acronyms that are used.

Reports are expected to be between 8 and 15 pages in length, single-spaced, but may be longer or shorter depending upon the complexity of the Project. While there are no maximum word counts for each section, the two most pertinent sections of the report should be given more weight, namely:

- Section 5 – Environmental benefits of the Project, and
- Section 7 – Lessons learned.

For simplicity, the lead municipality or municipal partner is referred to throughout as the "Municipality." Similarly, the term "project" is used to describe all types of projects, including new infrastructure, programs, and others.

**Note: The Municipality may contact the GMF Project Officer for an electronic fillable form version of this report.**

#### 1. Project and Community Context

- a. What was the objective(s) of the Project (i.e., what factors led to the Project being undertaken, and what problem(s) did the Project hope to solve)?

**The Village of St. Louis, a community of 431 residents (as per Census 2006 information) was challenged with the need for essential upgrades to our sewage treatment and collection system, resulting in a financial burden to the community. The sewage collection system within the Village of St. Louis collected all of the sewage via conventional gravity sewers converging at two separate concrete septic tanks located at East and West points within the Village. Based on average daily sewer flows these septic tanks provide an estimated retention time of 0.39 days. Both the septic tanks discharged the sewage effluent directly into the South Saskatchewan River via a 150mm drain line. The sewage treatment system did not provide adequate secondary treatment to meet the requirements as set out in Section 16 of The Water Regulations 2002, that require all wastewater treatment facilities in a sewage works must include:**

- (a) a secondary treatment process that produces effluent with no more than:**
  - (i) 30 milligrams per litre of BOD5 or CBOD5; and**
  - (ii) 30 milligrams per litre of total suspended solids; or**

**(b) facultative lagoons designed in accordance with subsection (4).**

**As well section 35(1)(a) of The Environmental Management And Protection Act, 2002 states that no person shall: (a) cause or allow the discharge of any substance that may cause or is causing an adverse effect to the quality of any water.**

**The possibility that the Village could be prosecuted under the above mentioned Regulations and Act and also under The Fisheries Act remained a concern if these essential upgrades were not addressed.**

**Any proposed residential development and economic development that could foster the growth and sustainability of our community was directly related to addressing the sewage treatment and collection system issues that faced the Village of St. Louis, as any growth or development could only occur once an upgrade had been completed to the current system.**

**With pressure from regulatory authorities (Saskatchewan Environment) and the potential for growth and development, this sewage treatment and collection system issue had to be addressed.**

**The proposed activities of this project involved a complete change to the sewage treatment and collection system for the Village of St. Louis. The Project consisted of the complete design, construction and installation of a facultative sewage treatment lagoon, new forcemain lines and two sewage pumping stations (one on the East side of the community and one on the West side of the community). The design phase considered any future growth opportunities for the Village and incorporated them into the proposed handling capacity of the new system. With our current population set at 431, preliminary designs would indicate growth potential to approximately 550 – 600 person capacity.**

**The design, construction and installation of these proposed facilities would upgrade the sewage treatment and collection system to point of being compliant with any regulatory standards which certainly is within the goals, objectives and priorities of the Building Canada Fund – Communities Component Program and the Federation of Canadian Municipalities – Green Municipal Fund.**

**Due to the size of the community, options other than waste stabilization ponds (lagoons) are not feasible and /or practical due to capital costs, operation costs and maintenance and operation requirements of these mechanical treatment facilities. Current bio-filtration methods have not produced required effluent qualities.**

**The Facultative Lagoon advantages included minimized force main length, minimized outfall length, downwind of community, minimized access road length and positioned well outside the 600 m zone of influence allowing for potential growth. This option also had more economical operation and maintenance costs throughout its life cycle when compared to all other options.**

**Based on treatment capabilities, operating considerations, land requirements and estimated capital costs, the Village of St. Louis endorsed the recommendation to implement a Facultative Lagoon to collect and treat wastewater created in the municipality.**

**The objective of this project is to construct municipal wastewater infrastructure that contributes to reducing the negative impact of wastewater effluent on human health and the environment.**

**By constructing a facultative wastewater lagoon, forcemain and pumping stations the Village of St. Louis will be able to produce wastewater effluent that meets the requirements as set out in Section 16 of The Water Regulations 2002 and will allow the Village to operate a compliant wastewater system that is expandable and able to meet any potential growth and future sustainability concerns.**

**The objective to maintain the economic and financial stability of the municipality and its entire waterworks operation system remains a direct goal of St. Louis Village Council in seeing this project provide long-term sustainability for the community.**

- b. How is the Project related to existing sustainability plans, practices, policies or programs within the municipality (or as adopted by the Municipality)?

**The municipality does not have an official sustainability plan for future development but in order for future sewer main extensions into residential development to be approved by Saskatchewan Environment and the potential to add new users onto the municipal sewer system it was imperative that this Project be completed.**

**The goal of residential expansion and remaining a viable and vibrant community, while complying with existing legislated environmental requirements, lead to the development of this Project.**

- c. If the borrower/recipient is not a municipality, briefly describe or profile the borrower/recipient. Describe the factors that led to the borrower's/recipient's involvement in the Project.

**The borrower/recipient is a municipality.**

- d. Provide a brief (three- to four-sentence) description of the community in which the Project took place. Include such factors as population, major economic drivers, and other significant aspects that help to understand the community context (e.g. a tourism-based economy). (Note: This information can be readily obtained from the Community Profiles section of the Statistics Canada website at <www.statcan.ca>.)

**The community of St. Louis is a small central Saskatchewan Village, with a population of 431 and is located approximately 30 kms south of the city of Prince Albert and approximately 100 kms northeast of the city of Saskatoon.**

**St. Louis is a rural agricultural community situated on the scenic and historic South Saskatchewan River just a few kilometers east of the famous Northwest Metis Rebellion at Batoche.**

**St. Louis offers quiet small town charm and peaceful living, with the modern conveniences of the larger cities only minutes away.**

## **2. Project Team**

- a. Identify the principal contact for the Project and provide his or her contact information (title, email, phone number, and full address).

**Mr. Robin Boyer, Administrator  
Village of St. Louis, Box 40, St. Louis, Sask. S0J 2C0  
Phone: (306) 422-8471 Fax: (306) 422-8450  
e-mail: villageofstlouis@sasktel.net**

- b. Briefly describe the implementation team: who was on the team, and what was their involvement?

**In order to complete a project of this nature, a number of equal partners were required and the implementation team consisted of various municipal members, government agencies and professional partners, each of whom provided significant contributions to the project.**

**The implementation team and their specific contributions to the project were:**

**Municipal Council for the Village of St. Louis – provided leadership, guidance, final decision making, consultations with various professional and government partners and overall direction to the Project.**

**Municipal Administrator for the Village of St. Louis – provided overall project management including all aspects of municipal borrowing, bylaw creation, consultation with engineers, contractors, surveyors and government agencies, budgeting, financial management, record keeping, Provincial and Federal Grant management.**

**Government Agencies – provided regulatory advice and guidance, environmental permit and construction approvals, municipal borrowing and Bylaw creation consultation and approval.**

**Municipal Consulting Engineers – provided total Project management preliminary reports and recommendations, budgeting, design & tendering services, on-site follow-up and inspections with contractors and general advice and consultation services with the Municipal Administrator and Council.**

**Municipal Surveyors – provided professional services respecting surveying, sub-divisions and parcel and easement registration.**

**Municipal Solicitors – provided professional services respecting legal, contractual and land easement issues.**

**Project Contractors – provided professional services in construction and installation of lagoon, forcemain lines, drain line and sewage pumping stations.**

- c. If there was a Project champion, please identify that person and briefly describe how his or her input helped the Project. (Note: A Project champion is someone such as a senior manager or elected official whose support is critical to the success of the Project.)

**This Project did not necessarily have a Project Champion as it was a collaboration of people and resources that allowed this Project to come to fruition.**

**The Municipal engineering firm was key to the success of the overall Project with their constant attention to detail and diligence in returning calls and providing answers and solutions to all areas of concern as they happened. Their overall expertise in project management was a valuable resource for the Municipality, as they worked through this Project as first time participants in a venture of this magnitude. The guidance and reference that the engineers were able to provide in keeping the Project on task and under budget would make them the overall Project champion.**

- d. If members of the community were involved in the Project (e.g., through a public participation exercise), explain how and the impact of this involvement on the Project.

**The public was involved throughout the process of this Project with an initial pre-project public meeting informing the public of the current situation the Municipality was in with regards to the wastewater collection and treatment system and of the options and costs to remedy. Although, this public meeting was not overwhelmingly attended, the feedback and commentary received allowed Council to make a decision that supported the views of the residents that did offer input.**

**Public Notice and a Public Hearing were required in respect of some of the borrowing and land acquisition requirements and these were all handled as per the legislated requirements that the Municipality operates under.**

**As the Project moved through the stages of completion, the public was kept up to date through monthly mail outs, updating the status of the Project. As the public are major stakeholders in this Project their input and comments were always openly received by the Municipality.**

### **3. Project Implementation**

- a. Approximately how long did it take to complete the whole Project, from the time it began (initial planning) to the time it was completed (Project completion or commissioning)?

**The municipality has been working on this Project over a number of years in cooperation with Saskatchewan Environment and various engineering firms, with various studies, tests and reports completed, but a lack of funding had always stalled the project. The present Project was begun in November of 2006 with initial planning and the appointment of an experienced consulting engineering firm. With funding available from the Building Canada Fund – Communities Component and the Federation of Canadian Municipalities – Green Municipal Fund the Project began in earnest in March of 2008 after Council accepted a proposal report from the engineers outlining a workable solution for the municipality’s sewage collection and treatment system. This solution involved the construction of a 2 cell facultative lagoon, forcemain extensions, drain line and two sewage pumping stations to replace the Village’s existing gravity flow septic holding storage system.**

**The Project was commissioned in early May of 2011 with the final construction completed in August of 2011.**

- b. Describe any new technology or new approach (e.g. full-cost accounting) used in the Project. Were there any benefits or drawbacks in using this new technology or approach? If so, please describe briefly.

**The Project did not use any specific new technology as the premise of the construction and operation of a facultative lagoon has been one that has provided effective treatment of raw sewage using natural processes for many, many years. It is a simplistic and basic design with a 2 cell lagoon and 2 sewage pumping stations. There is a more modern manhole and valve system that connects the 2 cells in the lagoon and allows for an efficient transfer of wastewater from the primary to secondary cell once water levels reach the point that a transfer is required.**

**Also, due to unfavorable soil conditions at the lagoon site location, with not enough of a clay base for construction, a synthetic poly liner was required to ensure that no wastewater seepage into ground water was possible. This is not new technology, but the quality and strength of the liner has improved so much over last few years that it could be considered as an improvement over standard lagoon liners that have previously been in operation.**

**With abundant ground water in the area of the lagoon site a new approach was required to ensure that the synthetic liner that was going to be used as a base would not be affected by water pressure from the ground level water table, which could possibly affect the integrity of the liner material or cause the liner to lift.**

**The engineers and contractors for the Project suggested that a weeping tile system be constructed around the berm of the lagoon allowing for the ground water present in the existing water table to channel away from the actual lagoon site. An extra manhole was installed that will collect and move the excess water before it can become an issue for the lagoon liner.**

- c. Was the Project implemented as outlined in the GMF funding proposal? If there were substantial changes to the implementation plan, identify them and explain why they happened (e.g. bad weather delays, labour strife, challenges getting the new system to operate correctly, etc.). Describe the effects of any changes on the Project (e.g. higher overall costs, less time allotted for a particular stage of the Project, more staff training required, etc.).

**The Project was implemented in the order as outlined in the GMF funding proposal but was not able to maintain the original anticipated timeline due to a variety of factors. The Project was separated into four phases, each having their own timeline. Due to some delays in sub-division, land surveys and land purchase the initial phase was set back a few months. Once construction was to begin, an unusually wet spring of 2010 and extremely high water table forced further delays in construction and resulted in a change to that phase of the project, as a weeping tile system was required to be installed to drain ground water away from the lagoon site. This added an extra cost to the original contract price and pushed the construction phase back further into the summer of 2010. The Project was ready for completion in the fall of 2010 but due to the close proximity to winter and not enough time to have enough wastewater transferred into the lagoon's primary cell before December 2010 and the risk of frozen lines, it was decided to push back the commissioning of the new lagoon until April or May of 2011.**

#### **4. Project Budget and Financial Savings**

- a. Indicate the cost of the Project, and briefly explain in general terms how it is being financed (through municipal tax increases, via user fees, in the municipal capital budget, through a partnership arrangement, etc.).

**The original budget for this Project was estimated at 2.7 million dollars but due to favorable construction contracts awarded, the final Project cost is about 1.877 million dollars in eligible expenses. This total includes approximately \$207,000 in Professional Services expenses (engineering, geo-technical, audit and legal) and \$1,670,000 in Construction expenses (forcemain, drain line, sewage pumping stations, lagoon & site fencing, utilities and protective bollards.**

**The Project is financed on a 1/3, 1/3, 1/3 basis between the Federal, Provincial and Municipal governments for the eligible expenses. The Federal and Provincial portions were received as conditional grants through the Building Canada Fund – Communities Component and the municipal portion will be received from the Federation of Canadian Municipalities – Green Municipal Fund loan and grant program. To provide re-payment of the GMF loan, the municipality has implemented a monthly levy fee to all sewage system users that is invoiced quarterly with utility invoices and will generate enough revenue to re-pay the required financing. This infrastructure levy will be collected for a 10 year period which began in the last quarter of 2009 and will be levied until September 2019.**

**This Project also had some capital and professional services expense that were not eligible under the grant and financing programs and were paid directly with municipal reserve and operating funds. These expenses included land purchase, surveyors and sub-division application and registrations. These expenses were \$35,634 making the total Project costs at \$1,912,522.**

- b. Are there any financial savings to the community (or Municipality) in having undertaken the Project (e.g., reduction in energy use or water use that results in lower operating costs)? If known, please describe.

**Unfortunately, there are not any immediate and direct financial savings to the community. With the construction of two sewage pumping stations, there are actually increased monthly operational costs for the system. The former wastewater treatment system was a gravity fed system into two septic holding tanks that drained via another gravity fed drain lines to the South Saskatchewan River. There are now monthly gas and power utility costs for these units.**

**The only annual savings that the community will be able to realize, which will nearly offset the increased utility costs, is in the fact that septic removal services were required bi-annually and will no longer be needed, as we no longer use the septic holding tanks.**

## **5. The Environmental Benefits of the Project**

- a. Describe, in plain language, the environmental benefits associated with the completed Project. Note: If the benefits cannot be identified when the Project is completed and this report is submitted, the Municipality must report on the environmental benefits after the Project has been in operation, in accordance with the contractual agreement. (For more information, see the Environmental Results Report requirements as per Schedule H.)

**The direct environmental impact of this wastewater / lagoon project for the Village of St. Louis is clearly measurable in the quality of wastewater effluent that will be produced by this newly constructed lagoon. However, any actual measure of the quality of effluent cannot be completed until the holding cells have reached their capacity and discharge is required. As per our Permit to Operate, we will then submit samples for testing and will have measurable results at that time, which is anticipated to be in the late fall of 2011 or the early spring of 2012. (A further report will be supplied to the FCM – GMF at such a time as further results are available.)**

**Prior levels of effluent being discharged from the septic holding tank drain lines was at approximately 76 mg/L for Total Suspended Solids (TSS) and at 108 mg/L for 5 day Carbonaceous Oxygen Demand (CBOD5). This new lagoon is expected to consistently produce effluent levels at or below 25 mg/L for both TSS and CBOD5. This is well under the 30 mg/L required by local legislation and meets the 25 mg/L criteria of the Green Municipal Fund Program. So, for the time from May 3, 2011 when the lagoon was commissioned, to the time when we are required to discharge from the Lagoon cells, the Village will not be adding any waste water into the environment at all. As our old system constantly drained into the South Saskatchewan River from the septic holding tanks we will have this 8 – 12 month window where we will have a direct positive impact on our surrounding environment.**

**There still needs to be some effluent discharge directly back into the environment, however this discharge is minimized to a couple of times a year and the quality of effluent being discharged will be substantially better (up to 77%) than what the old wastewater system produced.**

**Additional environmental impacts that will occur as a result of this proposed wastewater / lagoon project include:**

**- The need to have 2 septic tanks emptied and the contents disposed of back into the environment 2 - 3 times annually has been removed completely from the sewage treatment process. This results in a quantitative reduction in raw sewage being deposited directly back into the environment. The use of these heavy trucks on our Village streets and the emissions that they produce will be reduced, also adding to the overall environmental impact of this wastewater project.**

- The drain line from the lagoon site will discharge into a smaller creek that runs into the South Saskatchewan River. This discharged effluent will travel approximately 1500 meters in the creek before it joins the River. This discharge will probably only have to occur once a year, in the spring, but at the most twice a year.

- Facultative lagoons are a natural process and require no mechanical processes (power), other than at the Sewage Pumping Stations, to treat sewage.

## **6. The Social and Economic Benefits of the Project**

- a. If known, describe the social benefits that have resulted from the Project thus far. If the social benefits are not yet known, briefly describe any social benefits that are anticipated to emerge from the Project. Examples of social benefits include improved health, community revitalization, heritage conservation, quality of life improvements, enhanced public safety, and so forth.

**The social benefits of this project have not all been reached at this time but the possibility exists for many benefits in future years including improved health, community revitalization, quality of life improvements, enhanced public safety, etc.**

**The immediate health benefits will come from improved effluent discharge into the environment, affecting anyone who currently use the adjacent South Saskatchewan River for any type of recreation.**

**With this new, compliant wastewater infrastructure the re-vitalization of the community will be a key benefit that will be realized. Two new residential subdivisions have been created allowing for more users onto our new waste system, which could create the construction of 20 – 30 new homes in the coming years. This ultimately will lead to a population increase that will ensure that the community will remain viable and sustainable. Our previous wastewater infrastructure did not allow the community to promote or foster business opportunities as no new connections were allowed onto our system. Business and commercial entities will now be able to expand or consider St. Louis as a future option.**

**The community will benefit from an improvement in the quality of life enjoyed by all residents as the long-term stability and potential for growth and development from the new wastewater lagoon system will lead to an environment where citizens will now have no concerns with the overall utility infrastructure. More residents in the community means more active participation and growth in service clubs and the continued growth and viability of all recreation activities including all minor sporting programs. It**

**means the continued success of the community school as the need for quality education for all young people in the community remains a priority. The use and need for recreation and leisure facilities, historical items and parks and green spaces continues to foster with growth. The quality of these facilities can be better sustained with a strong population base.**

**With this project moving forward, the community as a whole becomes more aware of environmental issues, infrastructure concerns and issues surrounding wastewater management. It lends to increased support of the municipal government for any short-term or long-term goals with respect to infrastructure needs.**

- b. If known, describe the economic benefits that have resulted from the Project thus far. If the economic benefits are not yet known, briefly describe any economic benefits that are anticipated to emerge from the Project. Examples of economic benefits include financial savings expected as a result of the Project (such as reduced energy or water use leading to lower operating costs), or benefits to the community such as job retention or creation, employment income, increases or decreases in property taxes due to the Project, and so forth. (Note: If financial savings are already known and explained in Section 4b, they do not need to be repeated in this section, but any other economic benefits that are known should be described here.)

**Further to the limited, but direct, financial savings this Project will help the community realize, as described in Question 4. b., this wastewater lagoon Project brings some other indirect economic benefits to the community as well.**

**A huge economic benefit of this project and the support of the Green Municipal Fund is the continued sustainability of the Waterworks Rate Policy, capital budgets and tax revenue allocations. By creating a special levy to cover the debt created by this project all current revenue sources will be used to maintain existing services and reserve for potential future upgrades or replacements, as these revenues were intended. Current revenue flows will not be affected. Without the support of GMF for this project the municipality would have been forced to create a much larger debt, that the current user base would not have been able to support and debt re-payment would have to be made from existing revenue sources. This would ultimately affect all other services provided by the municipality.**

**This project has led to the adoption of more cost effective controls with respect to overall operation of the waterworks utility. A stronger effort to a self sustaining utility has been made.**

**An increased partnership with our local financial institution with a proposed line of credit for the project has contributed to a strong credit rating for the municipality and shown a commitment to the overall financial well being of the community.**

**Finally, with new residential construction and a population increase comes an increase in tax revenues and further government per capita funding grants, allowing the community to maintain existing services and programs and possibly create new ones.**

## **7. Lessons Learned**

Lessons learned refer to knowledge gained from the Project that can be applied to other situations. Knowledge can be acquired through positive experiences (i.e. what worked or went well, and could serve as a model for future projects) or negative experiences (i.e. what didn't work, or went poorly, and so could try to be avoided in future projects). Lessons learned can help those in other municipalities interested in addressing similar issues in their own communities.

- a. Describe what the Municipality would do again in the same way (and why), if it were to launch a similar project in the future. Please consider and reflect on all aspects of the Project thus far in answering this question.

**As with any project of this scope and magnitude the process taking you to your finished product generally leaves you with items that you have found worked very well and could be transferred over to other similar projects that you may undertake in the future. This Project had a few such items and processes that could be incorporated into a future project of this nature.**

**The first item that worked very well was having done our homework in contracting with a proper engineering firm who had experience in completing a wastewater lagoon project, something that our Council and Administration did not have any experience with. The consulting engineers had just recently completed a lagoon construction in a neighbouring community and were familiar with the soil in the area, construction materials and costs, timelines for completion of this type of project, tendering contracts, maintaining budgets and overall project management. They were able to quickly foresee any areas of concern and provide options to rectify before they became costly burdens.**

**Another item that we would be sure to incorporate into a future project would be to maintain the constant flow of information between the engineers, the municipality and the Government Regulatory Agency (Saskatchewan Environment). As this Project was required through legislation enforced by Saskatchewan Environment (SE), the constant communication between the Municipal Administration and the SE Environment Protection Officer ensured that all permits and Government approvals were extremely easy to obtain. By showing a willingness to bring this Project to fruition we were able to incorporate the SE endorsement of this Project to help in obtaining Federal and Provincial funding, as well as the Federation of Canadian Municipalities – Green Municipal Fund loan and grant funding for this Project.**

**A strong and courteous rapport with all partners in this Project was also a key item that ensured the ease of the Project moving along. Quick and timely transfer of information between the municipality and our grant and financing partners, all government regulatory agencies (Saskatchewan Municipal Board, Sask Watershed Authority, Saskatchewan Environment, Saskatchewan Ministry of Highways, the Rural Municipality of St. Louis), all Project contractors (McIntyre Construction, Nemanishen Constructing, P. Machibroda Engineering, Acadia Constracution, Halcro Metals, Sask Power, Sask Energy), municipal engineers (Catterall & Wright Consulting Engineers) municipal surveyors (Meridian Surveys), municipal rate payers and all land owners requiring easements and land transfers allowed for all aspects of this project to be handled in a very professional and efficient manner.**

**The final item that worked well for our Project and would be maintained in future projects was the fact that contracts were tendered and awarded with cost effectiveness and construction season being of utmost priority to ensure that the Project could remain on budget. The municipal engineers ensured that all construction contracts were tendered and considered with timelines and cost effectiveness. For this reason this project, although delayed due to inclimate weather, was completed under budget.**

- b. Describe what the Municipality would do differently (and why), if it were to launch a similar project in the future. Please consider and reflect on all aspects of the Project thus far in answering this question.

**In retrospect, it can always be concluded that some things in a project of this nature could have been handled in a more efficient manner. This project was not any different.**

**Although, this project was well planned, budgeted and financed there were a couple areas that could have been handled differently. The initial surveying, sub-division and easement agreements could have possibly been started at an earlier time to ensure that most transfers were in order prior to construction.**

**As this Project was a first time experience for the Administration and Council, a more detailed list of the process and timeline would be created prior to undertaking the Project to ensure that all approvals, bylaws, requests, etc. could be implemented into the correct phase of the Project timeline. This would ensure that every phase would flow as anticipated.**

**Finally, if this type of project were to be undertaken again, we would ensure that a more detailed review of building construction plans was completed by municipal and engineering staff. This would have ensured that an issue with an erected sewage pumping building would have conformed to distance requirements as outlined in municipal bylaws.**

- c. Describe any barriers the Municipality encountered during the Project thus far, and how they were overcome.

**As with any project of this magnitude there are always challenges that affect the overall costs, timeline, scope of work, etc. that are encountered and have to be dealt with as the project moves along. Our project was no different as we faced challenges that were technical, financial and weather related in nature.**

**A technical challenge was encountered from the on-set while trying to determine the best location for the Wastewater lagoon site as it had to be located outside of municipal limits and beyond the required environmental buffer zone. All of the initial locations had soil restrictions and groundwater issues. In order to settle on the ideal location it was decided that a synthetic liner had to be used and budgeted for and this would allow for lower construction costs associated with force main and drain lines.**

**Another technical challenge was correlating the initial lagoon land site survey and sub-division process. There was some minor confusion as to when and how this was going to be completed which lasted a lot longer than anticipated. Therefore a majority of the actual lagoon site construction was completed prior to the municipality having title to the required property. To account for this the land owner and municipality had an authorization and approval agreement for the municipality's contractors and engineers to have access to construct on the property as the sub-division process moved forward. Once the sub-division was completed the property owner signed off on a pre-determined sale agreement for the required parcel.**

**The final technical challenge was encountered as the final construction site of a lift station building was found to be encroaching on the abutting property by a few inches. As a result, administration and engineers worked out an agreement whereby the Engineers would cover the cost of a sub-division application for a portion of land to be purchased at the Municipality's cost from the abutting property owner. This issue was quickly resolved and did not affect the final budget or timeline of the project.**

**This project had financial challenges as the municipality was responsible to cover 1/3 of the expense costs for the project while Federal and Provincial grant funding covered the balance. The municipality applied to the GMF for loan and grant financing to cover the municipal share and were granted approval. However, this portion was not to be disbursed until project completion. This created some challenge in ensuring the project could be paid for as it was constructed. The Provincial portion was provided up front and Federal portions were disbursed as expensed. The municipality secured interim short-term financing to cover the municipal share until the GMF**

**financing could be realized. This interim financing has the interest paid monthly and the principal will be paid in full once GMF financing is disbursed to the municipality.**

**The final challenge to the project was the weather, as the construction timelines were set back due to a very wet and rainy spring and summer in 2010. Construction permits and timelines were adjusted to conform to a new schedule created by the untimely weather and a new plan to deal with the higher water table was set by the Engineers and approved by the Municipal Council. This delay in construction did not affect the budget except for the installation of weeping tile to address the volumes of water in the area directly around the lagoon site.**

- d. Describe any other advice the Municipality might give to other communities interested in undertaking this or a similar type of Project.

**This type of project has been faced and handled by nearly every municipality at one point or another over the past number of years in response to the on-going changes in Environmental regulations regarding wastewater effluent.**

**The advice that we can pass on from our recent experience with this project would be to ensure that you are working with a qualified and experienced engineering firm. Their expertise in this area can prevent a lot of unwarranted issues from coming up as they will have had the foresight to account for most circumstances.**

**Also, ensure that a proper and realistic budget is developed and that some contingencies be in place for sudden issues (weeping tile installation, as in our case). Ensure that all contracts awarded on the project stay within this budget and are awarded to reputable contractors who have had working experience with your engineering firm.**

**Finally, try to ensure that your financing, approvals, authorizations, bylaws and permits pertaining to the project are done as required in advance of the point where they are needed in the project timeline. You certainly do not want to be held up on a construction portion waiting for an approval. This type of error leads to higher costs and lost time.**

- e. Did the Project result in any products or materials that could be shared with other communities? (For example, a water metering Project might have resulted in a new municipal water use by-law and/or a series of householder information brochures on ways to reduce water use.) If so, identify them in this report and include a copy when submitting the Project Completion Report.

**The Project was not unique in the sense that many communities are faced with the same issues and have undertaken similar wastewater projects at various times over the past several years. Therefore, there was not any type of products or materials that could be shared with other communities in a best practice or informational way that were produced as a result of this Project being undertaken.**

**There were, however, Project Manuals and Specification Reports produced for each major construction phase of the Project including the Force main and Drainlines, the Sewage Lagoon and the Sewage Pumping Stations. These documents along with the initial geo-technical reports, municipal case study report and internal budgeting, timeline and project chequebook spreadsheets could be useful tools of information that could be shared with future municipalities that are exploring this type of wastewater project.**

## **8. Publicity and Photos**

- a. Briefly describe any recognition, media coverage, awards, or public support the Project has received.

**Upon the on-set of preliminary discussions with Saskatchewan Environment and municipal engineering consultants regarding the options for the Village with respect to municipal wastewater collection and treatment, a public hearing was held in the community to inform residents of the current issue and the reasons that upgrades were required. This meeting outlined the different options, costs and financing available and allowed concerned rate payers the opportunity to voice their concerns or questions. Council then made their decision to proceed with the option that made the most sense both logistically and financially.**

**Following the initial approval from the Green Municipal Fund and with the beginning of initial construction, an official sod-turning, cheque presentation was made to the community with representatives from the Federation of Canadian Municipalities and the Federal Government. This was held in May of 2010 and was attended by local media and dignitaries.**

**The municipality is hoping to have some permanent signage erected at the sewage pumping station site located within the Village to acknowledge the generous contributions of both the Building Canada Fund – Communities Component and the Federation of Canadian Municipalities – Green Municipal Fund.**

**Finally, the Village will have an official grand opening of the lagoon site and sewage pumping stations in the fall of 2011, once all project final reports have been completed and all funding has been expensed and disbursed.**

- b. Provide at least five photographs that depict different aspects of the completed Project. Additional photos are welcome. The photos must be in jpeg or tiff format, at least 300 dpi, and a minimum of two inches square (larger photographs are acceptable).

**The following pictures depict the phases of the project; Force main and drain line, sewage pumping stations and lagoon site:**



**(initial drain line site from lagoon to discharge point)**



**(force main enters into sewage pumping station)**



**(early earth moving work at lagoon site)**



**(completed sewage pumping station # 1)**



**(completed sewage pumping station # 2)**



**(lagoon construction – poly liner completed)**



**(completed primary cell of lagoon with initial wastewater fill)**

Report Completed August 16, 2011.

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