

## **SUMMARY OF COMMENTS/RECOMMENDATIONS**

**PROPONENT:** Village of Riverton  
**PROPOSAL NAME:** Village of Riverton Wastewater Treatment Lagoon Expansion  
**CLASS OF DEVELOPMENT:** 2  
**TYPE OF DEVELOPMENT:** Waste/Scrap Wastewater Treatment Lagoons  
**CLIENT FILE NO.:** 5475.00

### **OVERVIEW:**

On July 6, 2010, the Department received a Proposal from J. R. Cousin Consultants Ltd on behalf of the Village of Riverton for a Wastewater Treatment Lagoon Expansion on the NE 21-23-4 EPM in the Municipality of Bifrost. The proposed development consists of the expansion of the secondary cell of the wastewater treatment lagoon. The treated wastewater from the wastewater treatment lagoon will be discharged from the northside of the secondary cell into the Icelandic River which drains into the Riverton Harbour of Lake Winnipeg.

The Department, on July 23, 2010 placed copies of the Proposal in the Public Registries located at 123 Main St. (Union Station) Main Floor, Winnipeg, the Millennium Public Library, 4<sup>th</sup> Floor, 251 Donald St., Winnipeg; The Manitoba Eco-Network, 3<sup>rd</sup> Floor, 3030 Portage Ave., Winnipeg; and the Village of Riverton Office, 56 Laura Ave., Riverton. Copies of the Proposal were also provided to the Canadian Environmental Assessment Agency and to the Technical Advisory Committee (TAC) members. The Department placed a public notification of the Proposal in the Interlake Spectator on July 23, 2010. The newspaper and TAC notifications invited responses until August 30, 2010.

### **COMMENTS FROM THE PUBLIC:**

Nelson Gerrard – August 8, 2010 (via e-mail)

- *In response to an ad placed in the Interlake Spectator regarding the expansion of the Riverton wastewater lagoon, I own the adjacent Riverlot 2 immediately to the south of the lagoon site and have some concerns both about the current and future situation. As owner of the adjacent mile-long property, I am the most affected of anyone in the area by the presence of the lagoon.*
- *First I would like to point out the necessity for a new survey of the property line between Riverlot 1 (site of sewage lagoon) and my property (Riverlot 2). Aerial photographs suggest that a least one cell (possibly the borrow pit) of the current lagoon crosses the boundary line, and the access road/dike to the lagoon site also appears to be on Riverlot 2 (my property).*
- *Secondly, I am concerned about the flow of surface water from around the lagoon site through an unmaintained culvert through the dike/road and onto Riverlot 2 (my property). While there is a swinging lid that is supposed to prevent back-up*

*of water from Riverlot 1 to Riverlot 2, this mechanism is rusted open and allows unrestricted flow back as well as forth. A windmill mechanism to maintain the natural flow of water would be more secure.*

- *With the proximity of pastureland on Riverlot 2 to the lagoon site and the unrestricted flow of water from the lagoon site into the ditch and surface water on Riverlot 2, surface drinking water cannot safely be used for livestock. As a consequence, a well must be drilled on Riverlot 2 to provide safe drinking water for livestock.*
- *The sewage line servicing the current lagoon, which runs across Riverlot 2 (my property) is subject to a caveat. With changes to the infrastructure the terms of this caveat must be revisited and clarified.*
- *With concerns about water quality and the safety of the Icelandic River and Lake Winnipeg for fishing, recreation, etc., the discharge of water into the Icelandic River is not an environmentally acceptable option. The count of bacteria is not the only concern, as wastewater from household use contains numerous chemicals, medications, and toxins that affect fish and other wildlife and make the water chemically hazardous. An alternate overflow/discharge route into the marshes to the north would be somewhat less deleterious.*
- *Odours from the lagoon pose a significant problem for occupants/users of Riverlot 2. Aeration of lagoon wastewater would reduce this problem.*
- *Tree planting and site enhancement are needed for the site of the lagoons. The area between the lagoons and the riverbank includes not only a portion of Riverlot 2 (my property), but also a cemetery site and the proposed site of a heritage/wildlife area. Compatibility of the lagoon with the proposed future use of the riverbank property should be considered. Please refer to the website of Icelandic River Heritage Sites: [www.icelandicriver.com](http://www.icelandicriver.com)*

#### Proponent Response (September 22, 2010)

- During planning of the lagoon expansion, legal plans of the lagoon site and surrounding area (including Riverlot 2) were obtained from the village office and reviewed. According to these plans, the lagoons, access road and borrow pit are all within their crown land property.

As well, plans with aerial photographs and legal lines were examined. These also indicated the lagoon cells, access road and borrow pit are all within the Riverlot 1 and do not cross into Riverlot 2.

Legal plans are available from the village office and any further concerns with property lines should be discussed directly with the Village of Riverton.

- Although there may be existing concerns with the culvert, drainage of the access road and surrounding site is not part of the current project.

As part of the lagoon expansion the perimeter ditches of the lagoon will be improved, directing some of the surface water from Riverlot 1 north of the existing lagoon. This will most likely reduce the amount of surface water flowing from Riverlot 1 to 2.

However, concerns regarding the culvert and the drainage of the access road should be discussed with the Village of Riverton and a solution should be reached with the village.

- The expanded lagoon will be operated with a minimum freeboard of 1 m and have a clay liner of minimum 1 m thick with a hydraulic conductivity of  $1 \times 10^{-7}$  cm/s or less (as per Manitoba Conservation standards). The top of dike will also be constructed at an elevation of 220.25 m above sea level, which is 0.15 m higher than the 1 in 100 year flood elevation of the area of 220.10m.

Therefore, the only drainage occurring from the lagoon will be when it is discharged. This will occur through the already established drainage route to the north of the lagoon which runs directly to the Icelandic River. The lagoon will not be discharged if water levels are high enough to prevent drainage to the River. This will ensure no water from the lagoon will enter Riverlot 2 or any other lands around the lagoon site.

- The sewage line running to the lagoon will not be altered during the course of the project. The only works associated with the project are the construction of a lagoon cell.

Review of the caveat wording could be completed with the Village of Riverton, however the wording is usually self explanatory and will likely not be affected by the lagoon expansion.

- While alternative routes are available for discharge of lagoon effluent, Manitoba Conservation does allow direct discharge of treated lagoon effluent into Rivers.

Before discharge, the treated wastewater will be tested for Manitoba Conservation effluent discharge criteria which are based on the Tier I Water Quality Standards of the current Manitoba Water Quality Standards, Objectives and Guidelines. Discharge of the lagoon effluent will only occur if all criteria are met.

- Facultative lagoons typically emit odours for a short time during spring thaw conditions when the lagoon shifts between anaerobic and aerobic processes. For this reason, Manitoba conservation enforces a minimum setback distance of 300 m from a facultative lagoon to the nearest residence and 460 m to the edge of a

community. From aerial plans of the area, the distance to the nearest residence is approximately 454 m to the southwest and the distance to the edge of the community is approximately 676 m to the southwest. These distances are shown on plan L1 of the environmental act proposal. Prevailing winds are from the northwest and are not expected to cause significant drift of odours to the resident or the community.

Both of these setbacks are greater than the Manitoba Conservation standards and therefore meet Manitoba Conservation requirements for mitigation of odours.

- Future use of the riverbank property will be considered during lagoon expansion works. Erosion and sediment control measures will be implemented as necessary to prevent siltation of the River

Disposition:

- Limits, terms and conditions of the draft Environment Act Licence provide construction requirements and operating criteria regarding organic load, odours, containment and quality of treated wastewater that are conventional for wastewater treatment lagoons in Manitoba. As well, the draft Licence includes effluent quality discharge criteria in accordance with the draft Manitoba Water Quality Standards, Objectives and Guidelines.
- The draft Licence includes specifications for the construction and maintenance of the clay liner. The draft Licence also includes conditions related to the discharge period.

**COMMENTS FROM THE TECHNICAL ADVISORY COMMITTEE:**

**Conservation – Wildlife**

- *No concerns.*

**Conservation – Aboriginal Relations**

- *No concerns.*

**Industry, Trade and Mines - Mines**

- *No concerns.*

**MIT – Environmental Services**

- *No concerns.*

**Conservation – Environmental Services**

- *No comments.*

**Conservation – Parks and Natural Areas**

- *No comments.*

### **Conservation – Air Quality Section**

- *No concerns. However, it is suggested that the “odour nuisance” clause be included in the EA Licence.*

### **Disposition:**

- The draft Environment Act Licence includes an odour nuisance clause.

### **Conservation - Sustainable Resource Management**

- *Is there an opportunity to consider methods to address nutrient content of the discharged effluent as part of the proposed new construction?*
- *The proposal will utilize Crown land that has not been coded for this type of land use. The Crown land is currently coded for hay and grazing. In order for the proposed activity to occur and be compatible with operational coding protocols an immediate code change is required.*
- *The Icelandic River discharges into the south basin of Lake Winnipeg, and may flow to the north basin through Hecla Grindstone Provincial Park, parts of which are protected. Before the River reaches Lake Winnipeg, it also flows through Crown lands under consideration for protection by the Protected Areas Initiative. Manitoba Conservation is working with Manitoba Agriculture and Agri-Food and Rural Initiative (MAFRI) on an agreement to protect lands that are coded for haying and/or grazing. Haying and Grazing are not prohibited in a protected area as they mimic the natural forces that have shaped grassland ecosystems.*
- *Recommend that annual studies be conducted to ensure that water quality effects from effluent discharge remains at levels that do not adversely affect the protected lands in Hecla-Grindstone Provincial Park, and any future protected lands that may be established along the Icelandic River downstream of the lagoon discharge outlet.*
- *Recommend that the advice of Manitoba Water Stewardship be applied to ensure water quality is maintained within these areas on Lake Winnipeg at the proposed discharge rates over the lifetime of this treatment facility.*
- *Recommend that effluent discharges from the proposed lagoon expansion be maintained within provincial guidelines, and that the licence include requirements that prevent adverse impacts on the existing protected lands or those being targeted for future protection over the lifetime of this treatment facility (i.e. preventing algae blooms in the south basin of Lake Winnipeg).*

- *Protected areas are land, freshwater or marine areas, where logging, mining, hydroelectric development, oil and gas development, and other activities that significantly and adversely affect habitat are prohibited by law.*

Proponent's Response (September 22, 2010)

- Effluent from the lagoon will be discharged according to Manitoba Conservation effluent discharge criteria which are based on the Tier I Water Quality Standards of the current Manitoba Water Quality Standards, Objectives and Guidelines. Currently, these standards do not include a regulation on the nutrient content of the lagoon effluent. Therefore, nutrient removal of the effluent will not be addressed as part of the new construction.

However, the required surface area for organic treatment of the wastewater is approximately 11,474 m<sup>2</sup>. The lagoon, after expansion, will have an effective surface area of approximately 13,976 m<sup>2</sup>, which is 2,502 m<sup>2</sup> greater than the required surface area to treat organic loading from the population projected to year 20. The lagoon will be well over the required organic size, thereby providing ample organic treatment of the wastewater.

- The crown land permit No. 60466 held by the Village of Riverton for the Icelandic River 23-4E township Lot 1E, valid from January 1, 2010 to December 31, 2010 was included in Appendix A of the environmental Act proposal. This permit clearly states the specific use of the land is a sewage lagoon and under the heading disposition particulars "a 3<sup>rd</sup> cell to existing lagoon to increase hydraulic capacity", is listed.
- This Environmental Act Submission is based on Manitoba Conservation standards which do not require annual studies of the receiving water body. Therefore, this work is not included as part of the current project. This work could be completed if extra budget was obtained from the Village of Riverton. At this time additional budget is not available from the Village for such works.
- The advice of Manitoba Water Stewardship will be applied to the project, both in the construction stage and for the lifetime of the lagoon.
- The lagoon will be operated under Manitoba Conservation guidelines and the treated effluent will be tested to ensure all of the current Manitoba Water Quality Standards, Objectives and Guidelines are met before discharge of the lagoon.

Disposition:

- Limits, terms and conditions of the draft Environment Act Licence provide construction requirements and operating criteria regarding organic load, odours, containment and quality of treated wastewater that are conventional for wastewater treatment lagoons in Manitoba. As well, the draft Licence includes effluent quality discharge criteria in accordance with the draft Manitoba Water Quality Standards, Objectives and Guidelines.

- The draft Licence requires the proponent to discharge the wastewater treatment lagoon at a rate that optimizes the opportunity for nutrients in the effluent to be assimilated in the discharge route prior to reaching the Icelandic River while not challenging the normal operation of the wastewater treatment lagoon.
- The attached draft Licence requires the proponent to actively participate in any future watershed management plan or nutrient reduction program, approved by the Director, for the Icelandic River and associated waterways and watersheds.

### **Water Stewardship Department**

- *Manitoba Water Stewardship requires an Environment Act Licence to include the following:*
  - *A Licencee shall achieve a limit of 1 mg/L Phosphorus in the discharged effluent.*
    - *Note: The proponent plans an approximate 350 meter discharge path into the Icelandic River and ultimately Lake Winnipeg. Lake Winnipeg is vulnerable to algal blooms due to increased nutrients. Nutrient reduction strategies such as trickle discharge and constructed wetlands do not seem feasible in this location.*
  - *A Licencee shall actively participate in any future watershed based management study, plan/or nutrient reduction program, approved by the Director, Water Science and Management Branch, Manitoba Water Stewardship.*
    - *Note: Manitoba Water Stewardship is concerned with any discharges that have the potential to impact the aquatic environment and/or restrict present and future uses of the water.*
- *Manitoba Water Stewardship submits the following comments:*
  - *Manitoba Water Stewardship does not object to this proposal, at this time.*
  - *The Manitoba Department of Water Stewardship is mandated to ensure the sustainable development of Manitoba's water resources. Manitoba Water Stewardship is committed to the goals of: protecting aquatic ecosystem health; ensuring drinking water is safe and clean for human health; managing water-related risks for human security; and stewarding the societal and economic values of our waterways, lakes and wetlands; for the best water for all life and lasting prosperity. Manitoba Water Stewardship achieves these goals, in part, through administering legislation, including The Water Protection Act, The Water Rights Act, and The Water Power Act.*
  - *The proponent needs to be informed that erosion and sediment control measures should be implemented until all of the sites have stabilized.*

- *The Icelandic River was historically considered one of the most significant spawning tributaries on the western side of the south basin of Lake Winnipeg. There has been a lot of land use activity (agriculture and drainage) that has degraded this system. Fisheries investigations by Dave Milani in 2006 combined with what has been documented through the Fisheries Inventory and Habitat Classification System indicates that 35 species of the fish have utilized the Icelandic River and tributaries. A 2007 report by P. Graveline and J. Larter for the East Interlake Conservation District found white sucker, walleye and yellow perch larval fish indicating successful spawning. Young of the year stages of white sucker and northern pike were also captured throughout the field investigations as well as adult species of these and walleye, black bullhead, rock bass, brook stickleback and longnose dace.*
- *The Lake Winnipeg Stewardship Board has recommended that all small wastewater treatment facilities, should meet a phosphorus limit of 1.0 mg/L. The proposed phosphorus limit of 1.0 mg/L is consistent with efforts underway across Manitoba and in upstream jurisdictions to reduce nutrient loads to Lake Winnipeg and its watershed. In the Lake Winnipeg Stewardship Board's December 2006 report to the Minister of Water Stewardship, the Board provides several strategies on how nutrient reduction could be achieved for small wastewater treatment facilities (see recommendations 14-20) including trickle discharge.*

Proponent's Response (September 27, 2010)

- The required surface area for organic treatment of the wastewater is approximately 11,474 m<sup>2</sup>. The lagoon, after expansion, will have an effective surface area of approximately 13,976 m<sup>2</sup>, which is 2,502 m<sup>2</sup> greater than the required surface area to treat organic loading from the population projected to year 20. The lagoon will be well over the required organic size, thereby providing ample organic treatment of the wastewater.

However, the phosphorus level in the treated effluent could be tested prior to discharge and alum could be spread in the lagoon to reduce the level of phosphorus in the treated effluent to 1.0 mg/L, if required.

- The proponent would be willing to participate in any future watershed-based management study, plan/or nutrient reduction program, approved by the director, Water Science and Management Branch, and Manitoba Water Stewardship for the protection for the aquatic environment and water resources for present and future use.
- Erosion and sediment control measures will be implemented as necessary. As indicated in Section 4.3 of the Environmental Act proposal (EAP), the specifications would state that the contractor is responsible for erosion control. At

the time of preparing the specification, more detailed description of the procedures to be followed by the contractor would be provided.

- To protect fish species along the Icelandic River, discharge of the lagoon effluent will only occur after the fish spawning period, and only when all provincial effluent guidelines are met.

Disposition:

- The draft Licence includes a clause requiring the proponent to comply with the provisions of the Department of Fisheries and Oceans Canada/Manitoba Natural Resources publication, “*Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat*” (May, 1996).
- The draft Licence includes specifications for the construction and maintenance of the clay liner. As well, the draft Licence includes effluent quality discharge criteria in accordance with the draft Manitoba Water Quality Standards, Objectives and Guidelines.
- The draft Licence includes a clause that requires the proponent not discharge effluent from the wastewater treatment lagoon where the phosphorus content is in excess of 1.0 mg/L.
- The draft Licence contains specifications, limits, terms, and conditions specifying that all cells of the wastewater treatment lagoon must be constructed and maintained with continuous soil liners that meet specifications under all interior surfaces.
- The draft Licence includes a clause that requires the proponent to actively participate in any current or future watershed-based management study, plan and/or nutrient reduction program, approved by the Director, for the Icelandic River, and associated waterways and watersheds.
- The draft Licence contains a clause that requires that the Licencee to implement effective erosion and sediment control measures during construction and until vegetation is established.
- The draft Licence includes a clause that requires the proponent to conduct all ditch related work activities during no flow or dry conditions and not during the April 1 to June 15 fish spawning and incubation period.

**Canadian Environmental Assessment Agency**

- *I have undertaken a survey of federal departments with respect to determining interest in the project (noted above). I can confirm that the project information provided has been distributed to all federal departments with potential interest. Based on the responses to the survey the application of the Canadian Environmental Assessment Act (CEAA) by a federal authority may be required for this project. I have enclosed copies of the received responses for (your) file.*

- *I can confirm that the project information was shared with the Department of Fisheries and Oceans Canada (DFO), the Department of Indian and Northern Affairs (INAC), Health Canada (HC), Environment Canada and Infrastructure Canada as part of the federal coordination process.*

#### **Indian and Northern Affairs Canada**

- *From our view it appears that the proposed project is planned to be built on some of the Provincial Crown land selected by Peguis First Nation as partial fulfillment of their Treaty Land Entitlement Agreement. This selection is identified by the Province as Site No. 2-10.*
- *Manitoba Conservation should please confirm that the project will not be built on this Treaty Land Entitlement selection.*

#### **Disposition:**

- After receiving additional information from the concerned agencies (CON-Land Branch Management and CON-Treaty Land Entitlement), the comments are satisfied and the Department has no further concerns.

#### **Department of Fisheries and Oceans**

- *DFO was not able to review the project description as of September 1, 2010. DFO has requested the proponent review the information provided on the DFO website pertaining to proponent responsibilities under the Fisheries Act, available at <http://www.dfo-mpo.gc.ca/habitat/habitat-eng.htm>. DFO has also provided a link to information pertaining to species at risk: <http://www.sararegistry.gc.ca/>.*

#### **Health Canada**

- *Health Canada has determined it can provide expert advice related to human health if a written request is submitted to HC.*

#### **Environment Canada**

- *No federal interest.*

#### **Infrastructure Canada**

- *No federal interest.*

#### **PUBLIC HEARING:**

A public hearing is not recommended.

#### **RECOMMENDATION:**

All comments received on the Proposal that required follow-up have been addressed through additional information or as licence conditions. Therefore, it is recommended that the Development be licensed under The Environment Act subject to the limits, terms and conditions as described in the attached Draft Environment Act Licence. It is further

recommended that the enforcement of the Licence be assigned to Environmental Assessment and Licensing Branch until construction is completed. Once the facility is commissioned, enforcement should be assigned to the Central Region.

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September 27, 2010

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