NEEGAN BURNSIDE

Summary of Septic Fields Evaluation & Sewage System Feasibility Study

What is the Project?

Nigigoonsiminikaaning First Nation has retained Neegan Burnside Ltd. (Neegan Burnside) to complete a Septic Fields Evaluation & Sewage System Feasibility Study (Study). The goal of the Study is to determine a cost-effective solution for a sewage (wastewater) collection, treatment, and disposal system to serve the community for the next 20 years. The Study will ensure that the community is able to grow in a manner that improves the quality of life for residents while minimizing harm to the environment and is cost effective. The Study will also identify suitable locations to build future homes and potential community buildings.

Where Are We Now?

Neegan Burnside is currently completing the Draft Final Report submission after receiving feedback on the Interim Report and input from a community meeting held on January 16, 2017.

What is the Study About?

To prepare the long-term sewage servicing plan, population projections are used to determine the size and type of sewage system components required to service the community as it grows over the next 20 years. The projection is based on the 2016 On-Reserve population of approximately 176 people living in 44 housing units. Based on an annual growth rate of 2.3%, the number of people living in the community in 2036 is expected to be 356 people. A total of 45 new homes will be required to be built over the next 20 years.

Three potential areas are identified for the future development (building) based on location of bedrock, swamps, open water, hills and initial discussions with the community members. There is limited land available for future development based on poor soil conditions, bedrock near ground surface and steep slopes.

Currently, the existing houses and community buildings are serviced by a communal water system and individual septic systems. An evaluation was completed last summer on each septic system to determine its condition. Based on the results, approximately half of the residential septic systems were found to have functional problems. Most of the problems were associated with the peat moss treatment units situated in locations with space constraints, shallow bedrock and/or poor drainage conditions.

Based on the system evaluation, a series of sewage collection and treatment options are compared for the new development.

In addition to the future residential lots, other new facilities proposed for construction within the next 20 years include an eight-lot industrial development, Cultural Center, restaurant, community center, Senior's Facility and business rental spaces comprised of a garage for heavy equipment and storage units.

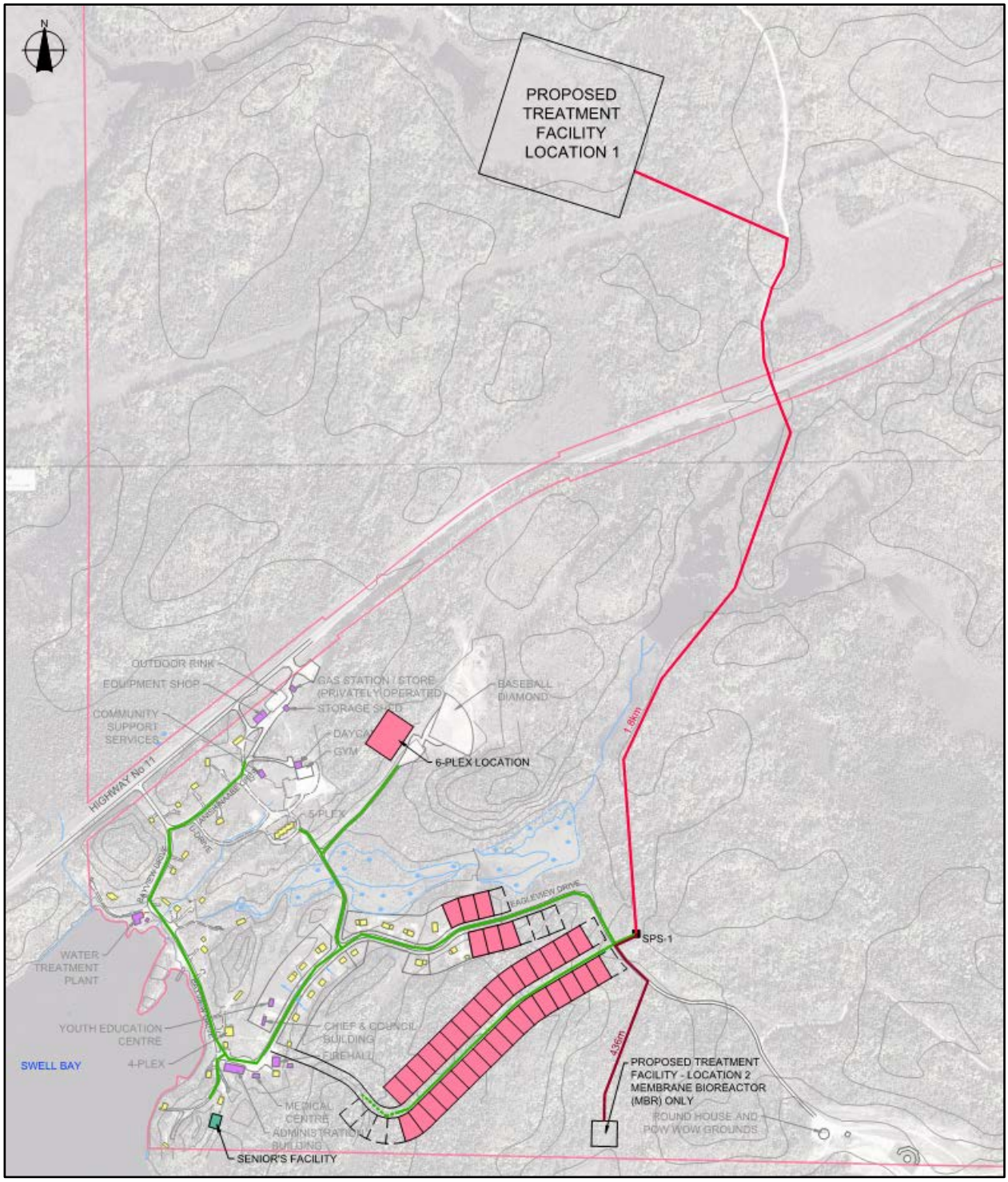
The sewage collection and treatment options include communal gravity or low pressure sewers for collection and a facultative lagoon or a membrane bioreactor for sewage treatment. Gravity sewers and facultative lagoons require less maintenance due to a reduced reliance on mechanical parts; however, there is a considerable amount of rock excavation required to install them. Low pressure sewers have an increased reliance on mechanics due to the operation of grinder pumps at each residence. However, the grinder pumps allow for the installation of a smaller diameter pipe, reducing the amount of rock excavation required. The membrane bioreactor (MBR) technology is a more technical treatment approach compared to a lagoon, but the space (i.e., amount of land) required for the MBR is substantially smaller. This allows the system to be placed within the community while still maintaining a safe distance away from homes. A drawing showing the proposed locations for the lagoon or MBR, the potential low pressure sewer layout and new housing lots are provided.

What is the Recommended Future Plan?

It is recommended that the entire community use low pressure sewer collection system with MBR sewage treatment technology. The capital cost estimate for construction of services for the 20 year recommended option is $11,969,000. The total cost estimate includes construction, miscellaneous First Nation administration, engineering and contingencies.

Would you like more Information?

For more information, please speak to the Chief or a member of Council. You could also call, our Engineers, Matt Paznar, P.Eng., EP or Julie Darlow, P.Eng. at Neegan Burnside at 1-800-595-9149.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PROPOSED TREATMENT FACILITY LOCATION 1
OUTDOOR RINK
EQUIPMENT SHOP
COMMUNITY SUPPORT SERVICES
GAS STATION / STORE (PRIVATELY OPERATED)
STORAGE SHED
DAYCARE
GYM
BASEBALL DIAMOND
6-PLEX LOCATION
HIGHWAY No 11
5-PLEX
1.9km
EAGLEVIEW DRIVE
SPS-1
WATER TREATMENT PLANT
YOUTH EDUCATION CENTRE
SWELL BAY
4-PLEX
CHIEF & COUNCIL BUILDING
FIREHALL
MEDICAL CENTRE
ADMINISTRATION BUILDING
SENIOR'S FACILITY
4.36km
PROPOSED TREATMENT FACILITY - LOCATION 2 MEMBRANE BIOREACTOR (MBR) ONLY
ROUND HOUSE AND POW WOW GROUNDS