

Discussion Draft – Not Approved by the Moose Lake Windemere
Sanitary District Board

Sewer Service Planning Project by Kurt Soderberg and Jack Ezell

History of Sewer Service Planning for Island and Sturgeon Lakes

Sewer service for Island and Sturgeon Lakes has been a topic of discussion in the region since the passage of the Federal Water Quality Act of 1972. This Act revised earlier pollution control legislation and set the US on a path toward elimination of untreated point-source discharges of sewage.

With the advent of the grant program related to the 1972 Clean Water Act, a variety of treatment and collection systems were constructed with 75% federal and 15% state grant funding. Prior to receiving grant funds for construction communities were allowed to compete for “201 step 1” grants for planning for future sewer service needs. MLWSSD received funding for such planning in 1979 and hired an engineering firm (Consoer, Townsend and Associates – CT&A) to complete this plan. Barnum also received funding for planning for future sewer service. Based upon the results of the “201 step1” report, the Environmental Protection Agency (EPA) determined that an Environmental Impact Statement (EIS) was warranted. The EIS was warranted because one of the potential alternatives identified in the 201 plan was the construction of a collector system around Island and Sturgeon Lakes and the expansion of the Moose Lake city treatment ponds.

1983 Environmental Protection Agency EIS

The EPA completed an environmental impact statement in October 1983 that recommended, “The selected EIS alternative is the full on-site upgrade alternative which has an estimate present worth cost of \$1.01 million. In comparison, the EIS alternative of constructing collection sewers around Island and Sturgeon Lakes with treatment provided at an upgraded Moose Lake treatment plant had a present worth cost of \$4.6 million.” One of the concerns expressed by residents over lake water quality and the presence of blue-green algae blooms. The determination in the EIS was that the onsite management upgrades could protect lake water quality at a much lower cost and would not cause any adverse development impacts.

1992 and 2003 Minnesota Pollution Control Agency (MPCA) Lake Assessment Program

The Minnesota Pollution Control Agency completed a Lake Assessment Program in 2003 that included Island, Sturgeon, Sand, and Moosehead Lakes. A 1992 study had also evaluated Island and Sturgeon Lakes only. Sturgeon Lake water quality is considered comparable to other minimally impacted lakes in the northern region. Island Lake is more nutrient than minimally impacted lakes in the region. Sources of the nutrients were from various sources, including onsite systems being a potential source of phosphorus to these two lakes due to being

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highly developed and having relatively small water sheds, although no data on failing onsite systems was collected. In addition to recommending that a survey of onsite systems should be conducted, a series of other best management practices were recommended for maintaining good water quality in these two lakes.

Neither the 1992 nor 2003 MPCA lakes studies found a significant degradation of water quality or that failing onsite systems were a major contributor toward nutrient loading in the lakes. Proper management and oversight of onsite systems were important in the long-term management of water quality.

Wastewater Collection and Treatment Facility Plan – February 2007

The City of Moose Lake (with limited cooperation from MLWSSD) completed a facility plan in 2007 based upon the need to upgrade its wastewater collection system and to determine the necessity of increasing the capacity of the treatment ponds serving MLWSSD, Moose Lake, and the two state facilities nearby, the Department of Corrections and the Minnesota Sex Offender Program. Both state facilities were expecting to expand their populations and were expected to need more treatment capacity.

The cost of constructing a collection system serving Island and Sturgeon Lakes was evaluated in the 2007 Facility Plan, but one of the conclusions reached was that sufficient capacity was not available in the current or expanded treatment ponds for such a collection system.

MLWSSD August 2011 Feasibility Report – Island and Sturgeon Lakes

The MLWSSD's Engineer Bolton and Menk prepared a feasibility study during the summer of 2011 identifying the options and costs to develop a sewer collection system around both Island and Sturgeon Lakes. The report was motivated by an offer made to the MLWSSD by the City of Moose Lake to purchase more than 120,000 gallons per day of treatment capacity for the one-time price of \$400,000. This came about as a result of the state facilities reducing their potential need for greater treatment capacity. The City withdrew the offer of low-cost treatment capacity later in the summer 2011 and the Feasibility Report was amended to add another \$2.1 million in cost to provide treatment for the wastewater from a future project.

The feasibility report looked only at options for constructing a collection system around both lakes. Both gravity and "low pressure sewer" systems were evaluated, with the "lower pressure sewer" option with grinder pumps and shared forcemains being the lowest cost option.

In very rough numbers, the costs per home to construct a comprehensive sewer system around Island and Sturgeon Lakes could cost somewhere between

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\$23,000 and \$26,000. If a smaller scale project were to be recommended the costs per home would likely be higher due to the cost of the basic infrastructure to cross the freeway and connect to the current MLWSSD system.

Current recommendation and status

Based upon the previous studies and the current lack of a convincing need for immediate sewer service, we would recommend that the evaluation of needs for Island and Sturgeon Lakes be approached from a long-term rather than short-term perspective. More review is also needed before proceeding toward identifying potential funding. We recommend no further work on the Facility Plan at this time, but to continue to understand and document the needs for those lakes. This could be a phased approach for sewer service, but more likely could entail decentralized options for treatment and collection, upgrades to onsite systems, or a more comprehensive onsite management programs.

Most Recent Activities

Jack Ezell met with Windemere Township Planning commission in January and after that he has reviewed historical records of sewer permits and compliance inspections. The records and discussions show that when non-compliant systems are reported, in virtually all cases they are brought into compliance.

Windemere Township has a comprehensive plan that supports the continuation of the current development with onsite treatment systems for wastewater management.

There doesn't appear to be a clear and convincing path forward from the Planning Commission as to the potential for sewer service for both lakes. At the same time the Planning Commission recognizes that in the long-term, a sewer system is the best option, but cost is also a critical factor in determining support.

Current status:

- Meet with representatives of Lake and Landowners Association. Evaluate the needs for a sewer or enhanced onsite management from their perspective.
- Based upon information received, consider a targeted onsite inspection program for areas that were either identified as problematic by the survey or from records from the township or landowners association.
- If nothing additional is discovered then the recommendation would be for the MLWSSD Board monitor development patterns and re-visit the question of sewer service when conditions change.