



JLET

Johnson Lake Engineering Team

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Johnson Lake Wastewater System: Project Update

October 2005: Post-meeting Flyer

Public Meeting Presents Results of Phase 1

The new Johnson Lake wastewater management system will belong to every leaseholder at the Lake. To honor this, the Engineering Team (JLET) and SID Board have made a commitment to keep each interested person well-informed about the project progress.

SID Board hosted a public meeting on Saturday, September 24 to present the results of Phase I of the project. This included an analysis of the various alternatives, a description of the team's recommendations, and details of the costs and financing.



Jeff Forney, project engineer, explains the first draft alignment for the sewer lines.

In keeping with this, JLET and the

The day began informally as those attending signed in and placed a pin on the map of the lake showing their cabin/home's location. People then visited various stations around the room that were organized around the topics covered in this newsletter.

session following the presentation, people indicated support for the project along with a desire to understand in more detail aspects of financing the project.



More than 200 people attended the September 24 public meeting.

At 10:30 a.m., the project managers and senior project engineer gave a more formal presentation to the full group. At the question and answer

This newsletter contains the information given to the attendees as a meeting handout along with answers to some of the questions that arose during the meeting.

Key Issues from the Public Meeting Q & A Session

Question: We're concerned about finding the most fair way to share the costs of this project. Why are some cost to be specially assessed against each lot and other costs to be a general obligation of the SID and paid by a tax levy on property values?

Why can't the annual operating costs be allocated according to use?

Answer: The method used to allocate costs between special assessments and general obligation is required by law. This is the customary way that SIDs handle those costs throughout the state. The SID Board and the JLET team are continuing to look at this issue.

Unfortunately, there is no practical or economical way to meter sewer lines. Therefore, we have two choices: 1) a sewer use fee that is charged equally to all lots or 2) a property tax levy. When the project is complete, the Board will decide which method to use.

Q: Will Central help pay for the new system?

A: Central will be assessed for those properties that they own that are considered developable and are not

currently leased. They have no legal obligation to contribute beyond that. However, the JLDI will be talking to Central about the possibility of a voluntary contribution or adjustment of the proposed lease fees.

Q: The location of the sewer lines look like they are going through some front yards. Why are you putting them there?

A: The location of the sewer lines shown on the maps at the public meeting were very preliminary. Final locations will be determined during the next design phase. JLET will hold meetings with each area association to help determine the best location of the sewer lines.

Q: Will the lagoon have a bad smell?

A: For most of the year, no. There will be friendly plants and bacteria treating the sewage. But twice a year, for a week or so each spring and fall, the lagoon will "turn over" and there will be a slightly unpleasant odor. A favorable distance from the lake is being sought.

Project Background

When Johnson Lake was initially built, no one could have imagined that the lake would one day become one of the most popular recreational sites in Nebraska. But soon there was a large community of private homes and businesses around its perimeter.

Individual homeowners and businesses have been responsible for their own water supply and sanitary sewer facilities. However, as the community has grown, pressures on the lake have increased.

Routine sampling and testing by the Nebraska Department of Environmental Quality (NDEQ), started in 2001, has shown that Johnson Lake contains significant quantities of pathogenic bacteria. Although the

source of this has not been determined, human indicators were identified.

In March of 2000, NDEQ representatives met with JLDI officers and area presidents to explain septic system requirements and how these would impact many of the properties. It is estimated that 75 percent of the lots around Johnson Lake would not be able to obtain a permit to replace, repair, or expand their septic systems.



December 2003 aerial view of Johnson Lake

Lake residents realized that they needed to take positive action. In 2002 they voted to form an SID, and in February 2005, SID#1 of Gosper County (and Dawson County), Nebraska, was legally created, with the authority to finance the design and construction of a new, lakeside sanitary sewer system.

Alternatives and Analyses

This station has detailed information about all the alternatives we examined for both collection and treatment systems. The two tables below present major aspects of each. **These are estimates based upon this stage of design.**

ALTERNATIVE SANITARY SEWER SYSTEMS

Item	Gravity with Lift Stations	Low Pressure Grinder	Vacuum Sewer
Description	Conventional gravity sewers from each lot, flowing into main sewer lines. Includes 12 pump stations to raise the flowline when depths exceed 15 feet.	Grinder pump stations on lots; sewage flows by gravity to the grinder basin. When basin full, contents pumped into main sewer system.	Vacuum valve pits on lots, individually or shared, sewage flows by gravity to the valve pit. When pit full, contents pumped into regional vacuum station, then to treatment.
Capital Cost	\$13,300,000	\$12,000,000	\$15,300,000
Annual O & M*	\$125,000	\$197,000	\$243,000
40-Year Present Worth*	\$20,700,000	\$24,500,000	\$30,000,000
Average Annual Cost	\$500,000	\$600,000	\$750,000
Additional Considerations	<ul style="list-style-type: none"> Average depths 3-15 feet Individual connections 	<ul style="list-style-type: none"> Pump stations either on individual lots or shared by two or three 	<ul style="list-style-type: none"> Valve pits either on individual lots or shared by two or three

ALTERNATIVE WASTEWATER TREATMENT SYSTEMS

Item	Complete Retention Lagoon	Controlled Discharge Lagoon	Mechanical Facility
Description	All water and materials are retained and treated.	Provides needed volume and storage for 270 days. Effluent discharged once a year.	Wastewater treatment facilities using two Sequencing Batch Reactors and sludge storage basins and tanks.
Capital Cost	\$2,400,000	\$2,000,000	\$5,000,000
Annual O & M	\$11,000	\$19,000	\$127,000
40-Year Present Worth	\$3,100,000	\$2,800,000	\$8,000,000
Average Annual Cost	\$78,000	\$70,000	\$199,000
Additional Considerations	<ul style="list-style-type: none"> No permits required Needs 75 acres of lagoon water surface 	<ul style="list-style-type: none"> Permit required Needs 61 acres of lagoon water surface 	<ul style="list-style-type: none"> Permit required Needs several buildings, computerized control system

* O & M = Operating and Maintenance Costs
Present Worth = the total cost of an alternative in terms of today's dollars.

Team's Recommendations

The JLET team evaluated each alternative using a broad range of criteria, including:

- Capital construction costs
- Life-cycle costs
- System reliability
- Implementation capability
- Operational issues
- Regulatory compliance
- Environmental effects
- Future considerations
- Contribution to water quality objectives
- Energy and resource use
- Public acceptability

JLET's recommendations:

1. A gravity sanitary sewer collection system
2. A complete retention lagoon, which can be converted to a controlled discharge lagoon with future growth.

Reasons for recommendations:

- Proven reliability
- Most cost-effective
- No permit or regulatory compliance needed
- Minimal training requirements
- Lowest life-cycle costs
- Ease of operation

Financing the Project: Initial Estimates

The total projected cost for the new sewer collection and treatment system at Johnson Lake is estimated to be **\$15.7 million**. In order to finance these costs, and to operate the system when complete, SID #1 has three areas of financial responsibility that it must follow:

Responsibility No. 1. - SID #1 will have to borrow the money to build the project. SID #1 has no cash, but has the ability to borrow all the money necessary to build the project. There are two sources to borrow from:

- a. The Clean Water-State Revolving Fund (CW-SRF), administrated by the Nebraska Dept. of Environmental Quality. This is a low interest construction loan that will have to be paid back within 20 years. This is the major source of borrowed money that SID #1 will use to build the project.
- b. Private Bond Market - General Obligation Bonds. This is the secondary source of borrowed money that SID #1 will use to finance portions of the project; primarily those costs not covered by the SRF, i.e. land procurement, legal and fiscal costs, administrative functions, operations, and maintenance.

Responsibility No. 2 - SID #1 will have to repay the \$15.7 million borrowed to build the project. After the project is built, SID #1 will have to collect money to repay the loans. The money will have to come from the home/cabin owners and businesses within the boundary. SID #1 is authorized by state statutes to collect money through special assessments and general obligation taxes. Of the estimated \$15.7 million debt, it is currently estimated that \$10.1 million will be specially assessed to the benefited properties, and \$5.6 million will become general obligation debt of the SID. However, this cannot be determined with certainty until the project is completed and final costs are known.

Whether the cost of the sewer project should be taxed as a general obligation or specially assessed against the

adjacent lots depends on whether individual lots are "specially benefited" by the particular improvement. If the benefit is to the SID in general, or if the benefit to the general public (lake community as a whole) exceeds the benefit to the "adjacent" property owner, the expense will be taxed as a general obligation as specified by state statutes. The determination of whether or not a lot has been "specially benefited" by an improvement is to be made by the Board of Trustees and project engineer, subject to certain statutory and constitutional guidelines.

For illustration purposes, the estimated \$10.1 million in special assessments would equate to an average special assessment of \$10,650 per lot. This special assessment may be paid off over a 10-year period with interest.

Also for illustration purposes, the estimated \$5.6 million in general obligation costs would equate to an annual general obligation tax of \$0.51 per \$100 of property valuation (i.e. \$510 on a \$100,000 valued property).

Responsibility No. 3 - SID #1 will have to pay for ongoing operating, maintenance, and repair costs of the sewer system, after it is built. Annual operating costs are estimated at \$136,000 per year. This can be paid for through revenue that the SID will generate from annual taxes. The estimated tax rate to generate the required revenue would be \$0.16 per \$100 of valuation (i.e. \$160 per year on a \$100,000 property).

The financing responsibilities discussed above outline the obligations that must be met to build, repay loans, and operate a sewer collection and treatment system. The Board of Trustees for SID #1, along with assistance from its attorney, fiscal agent, accountant, and engineer, will carefully consider all financing options and repayment obligations, to ensure that all state statutes and laws are followed.

Construction Process and Proposed Schedule



Once the JLET team is ready to begin final design, we will open an office at the lake in order to have someone on site during design and construction. At that point, we'll meet with the area associations and individual homeowners to make sure we understand each lot's specific situation and needs. The chart at the right shows the estimated schedule.

IMPLEMENTATION PLAN

Event	Date
Approve Report	October 2005
Begin Final Design	November 2005
Secure Project Funding	January 2006
Advertise for Construction Bids	Spring 2006
Begin Construction	Late Spring 2006
Complete Construction	Late Fall 2007*

* Contractor dependent