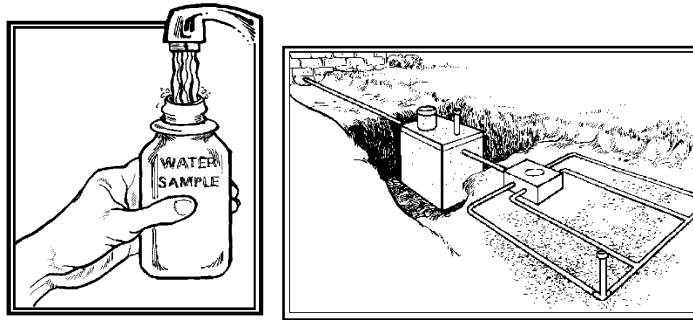


LINN SANITARY DISTRICT

P.O. Box 454, Lake Geneva, WI 53147
262-275-6300 ex.53

<https://townoflinn.com/sanitary-district/>

*-FOR OUR HEALTH-
-AND GENEVA LAKE'S PROTECTION-*



GENEVA LAKE SANITARY WASTE MANAGEMENT

AN OVERVIEW – 2024

PREPARED BY THEODORE W. PETERS, PRESIDENT, LSD

Sanitary waste management is a vital component of any water management efforts. Poorly managed sanitary waste can be a major pollutant source causing degradation of both surface and groundwater. When groundwater is a source of drinking water, as in the case of the Linn Sanitary District, that contamination is a threat to the health of its residents.

Whether addressed on-site or collected and treated at a centralized plant, the best sanitary wastewater management can be different for each watershed. Different soils, site conditions, civil subdivision, different political environment, and different codes all are involved in identifying the best sanitary waste management. There are advantages and disadvantages with both methods.

Whatever type of treatment option is used, a comprehensive assessment of the planning area needs to be conducted. This includes looking at existing and future conditions, environmental impacts, regional plans, engineering possibilities, cost assessment, and resident's preferences. The assessment of treatment options and variables is called a Facilities Plan. The Linn Sanitary District conducted its first Facility Planning Report in 2000 with amendments and updates in 2001, 2007 and 2010.

Sanitary waste management within the Linn Sanitary District is addressed by Private On-Site Wastewater treatment systems (POWTS). To evaluate the existing wastewater management in the District, a comprehensive Facilities Planning process was initiated in the early 2000's.

Two major alternatives were studied, Alternative **Type I**, decentralized private on-site systems, and Alternative **Type II**, centralized treatment. The Linn Sanitary District has committed to the **Type 1** option, which addresses sanitary waste management on a house-by-house basis.

GENEVA LAKE AND THE LINN SANITARY DISTRICT.

Approximately 69% of the watershed is served by private on-site wastewater treatment systems (POWTS). Of that, approximately 60% are in the Linn Sanitary District. The incorporated municipalities of Fontana, Williams Bay and the City of Lake Geneva all collect their residents' wastewater and pump it to wastewater treatment plants. Once there, the wastewater is treated and discharged out of the Geneva Lake watershed to ground or surface waters. Within the remainder of the watershed, excluding a few small area and individual residents that are serviced by neighboring municipalities, the rest of the watershed uses on site holding tanks or POWTS.

LINN SANITARY DISTRICT'S PLANNING PROCESS.

In the late 1990's the Linn Sanitary District hired Baxter & Woodman Inc. to conduct our first Facilities Plan. The purpose of a facilities plan is to evaluate current sanitary waste management and to determine if it has sufficient ability to meet existing and future needs. If not, then options to do so are evaluated. This includes six major tasks

- Assessment of current condition
- The effectiveness of current conditions
- Assessment of future needs
- Development and assessment of alternatives
- Financial considerations
- Select a plan

The initial inventory work told us things were changing and we needed to plan for those changes. Two types of improvement to sanitary wastewater management were closely studied.

Type I – *On individual house by house bases, POWTS or holding tanks*

Type II – *District-wide or neighborhood bases.*

IIA – *Treatment at existing neighboring plants.*

IIB – *Treatment at a new, small, decentralized plants*

IIC – *Treatment at new Regional Plant*

IID – *Community Holding Tanks*

Each type has its advantages and disadvantages. Our planning goal was to find the best fit for the Linn Sanitary District, its residents and Geneva Lake. Efforts to explore these options led to the **Type 1** options being the most likely. This was especially true when cost, environmental and political consideration were included.

In their quarterly publication titled "Pipeline" the National Small Flows Clearing House lists some general advantages of POWTS (septic systems).

- Simple, effective yet engineered wastewater treatment
- Less disruptive to the environment to install and maintain
- Less expensive to operate
- Provides wastewater treatment in areas where it would not be available.
- Can recharge the groundwater at or near the site of withdrawal.

With most residents in the District being seasonal, the cost of constructing any of the **Type II** options will be incurred by the homeowners 12 month a year, whether they were being used or not (paying off high construction and operation/maintenance costs). **Type I** options put those cost to the individual and would be relative to the amount of system use.

Walworth County zoning allows for higher density of housing in centralized sewer area vs on-site systems. We would experience more construction, construction site erosion, more impervious areas, more runoff, and more congestion. Digging for sewer lines and lift stations along the shoreline would be a serious threat to the lake and to many of the large trees along the shoreline. All of this would result in a significant change to what we now know as the Geneva Lake area.

ON-SITE WASTEWATER TREATMENT, HOW WE GOT HERE

Between 1997 and 2007 numerous studies and reports have looked at the sanitary management options in the planning area. These include Facilities Plan and Sewer Service areas identification for the adjacent communities, as well as the Linn Sanitary District. All these studies identified existing wastewater management in areas that either included the District's residents or in areas adjacent to the District.

Sanitary Waste Management Needs Assessment.

The initial step in the facilities planning process was to define the district boundaries and to evaluate whether there was a need to do anything beyond existing management. This involved identifying existing conditions, assessing future conditions, evaluating alternatives, financial considerations and selecting the best alternative.

To evaluate current conditions, data, and information about existing sanitary waste management within the District were collected from numerous sources:

- Time of Sale Inspection Reports
- County Sanitarian Records
- Sanitary Needs Questionnaire
- Random Inspections
- Opinion of the Walworth County Sanitarian

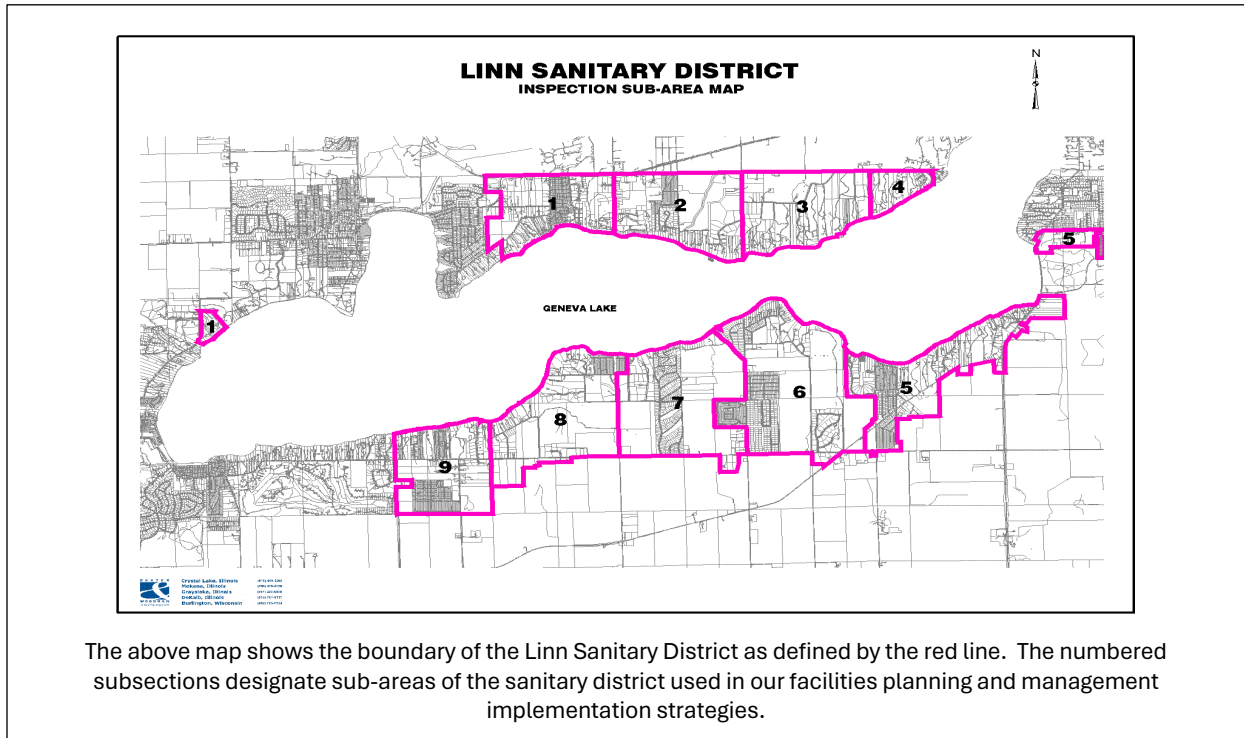
Considerations in evaluating final wastewater management needs involved looking at the existing on-site systems for:

- Density of existing development
- Limitations on area available for replacement systems
- Steep slopes
- Conditions of existing on-site systems
- Soil type and evaluations.

Due to variable conditions and needs within the District, the District was divided into nine subsections for planning purposes. The facilities plan recommended the following by subsection:

Area 1, 2, 5, 6, 9 – Improvements and alternatives needed (see below map).

Area 3, 4, 7, 8 – Use of existing systems could continue (see below map).



It was doubtful whether building a new wastewater treatment plant for the needed areas was going to get State approval. The State felt that there are already several existing, near-by plants that could be used. Attempts to buy access to existing collection and treatment systems were unsuccessful unless those area were annexed into the specific community.

As an addendum to the original facilities plan in 2007, the District attempted to work with the Town of Geneva on the District's north shore for access into the Walworth County Metropolitan Sewerage District's (WALCOMET) system. This was unsuccessful for several reasons linked more to the idea not being popular in the Town of Geneva than access to WALCOMET. Going alone without the Town of Geneva was extremely costly and not popular with the District's residents.

Attempts to construct the District's own collection and delivery system for the south shore area, to the Walworth - Fontana Pollution Control Plant got us to the plant but not into the plant.

Finally.

In addition to preparing a detail wastewater facilities plan, the District wanted to know what its residents preferred for future wastewater management. During the summer of 2000 the District implemented a public awareness and hearing process to solicit public opinion regarding

alternatives. This involved attending numerous Homeowners Association meetings, public information meetings, four newsletters specifically addressing the various options and a mailed-out survey to 1,940 owners of land within the District. With a 61% response, 78% of the respondents favored staying with on-site systems with repairs, replacements and up-grades as needed. With most of the District residents being part-time residents, this made sense from a cost perspective. A second survey conducted in 2016 again found a majority of resident surveyed still preferred staying with on-site systems (**Type 1**).

Responding to the recommendation of the facilities plan and its residents wishes, the District made the commitment to the **Type 1** alternative. With the **Type 1** option the District committed to implementing and enforcing a rigorous inspection, upgrading, education and maintenance program.

During the summers of 2001-2005 over 1,320 POWTS within the District were inspected by professional, State licensed inspectors. This survey found:

- 403 systems---Functioning, all is good.
- 495 systems---minor repairs but functioning.
- 156 systems--- some component not functioning properly.
- 278 systems--- unknown, some components could not be found.

The District worked with many of the property owners and Walworth County Sanitation Department to upgrade those system that needed work. Many of the “problem” systems have been upgraded or repaired. As of the spring of 2024, we have inspected or reinspected over 1,360 systems, completing our inspection goals.

Once a system has been upgraded to County approval, they are placed on a State mandated, County administered, 3-year pumping/inspection program (blaze orange card program). The District feels comfortable in saying that over 90% of the systems within the District are participating in the pumping/inspection program. As the initial facilities plan approaches 25 years old, the District is considering revisiting and updating portions of the original wastewater facilities plan.

For a more comprehensive reports and information, visit the Linn Sanitary District’s webpage, <https://townoflinn.wi.gov/sanitary-district>.