

United Voice

A Grass Roots Effort
to Solve the Septic
Issue at Silver Lake

Intent

- We endeavor to make changes that are positive, not punitive or burdensome for citizens, businesses and local government

Purpose

- Improve the environmental health of Silver Lake
- Maintain human health
- Keep costs to a minimum while we do the above

Goal

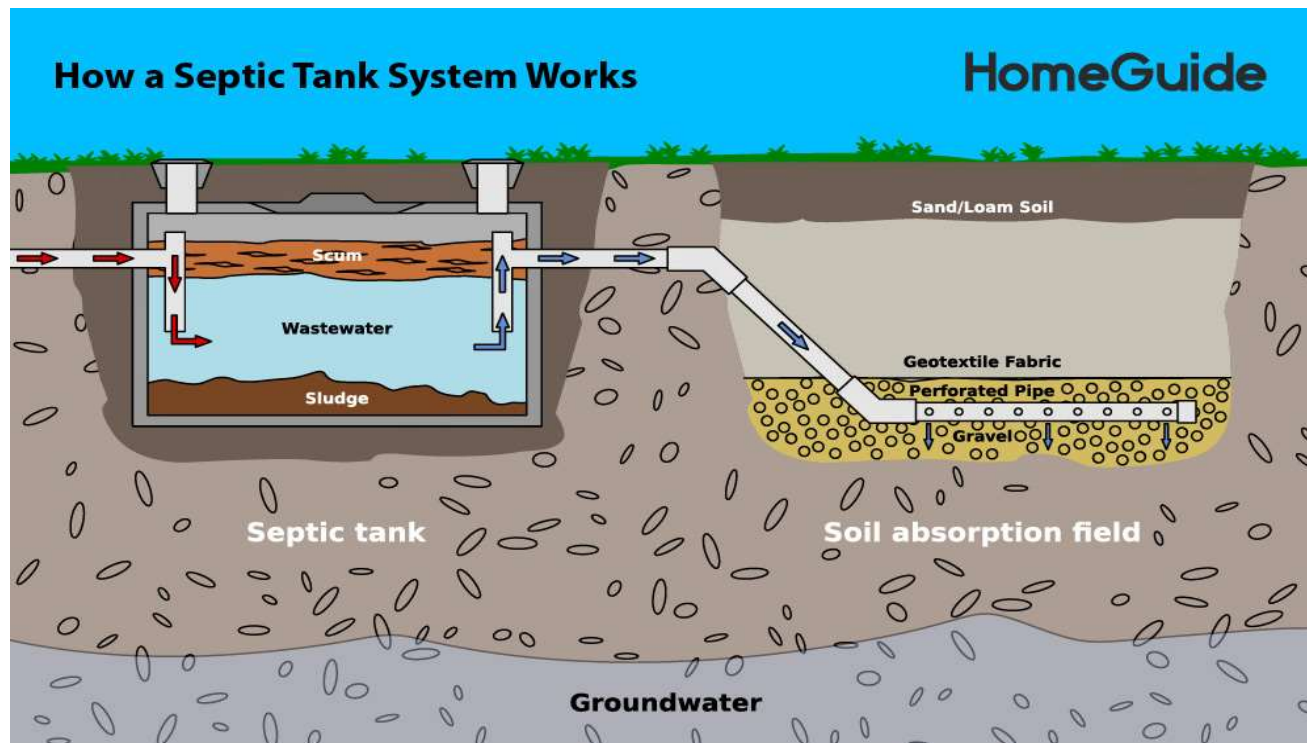
- To closely examine septic system policies for the area of Silver Lake, identifying any problems, and examine potential methods to solve them.
- Present Findings to GT Planning Commission

Problem Statement

- In Michigan septic systems are never inspected once initially installed
- This lack of oversight has caused 100% of our rivers to contain human fecal contamination
- Phosphate and orthophosphate when combined with nitrogen causes algae blooms in Silver Lake

Explanation

- How your septic system works:

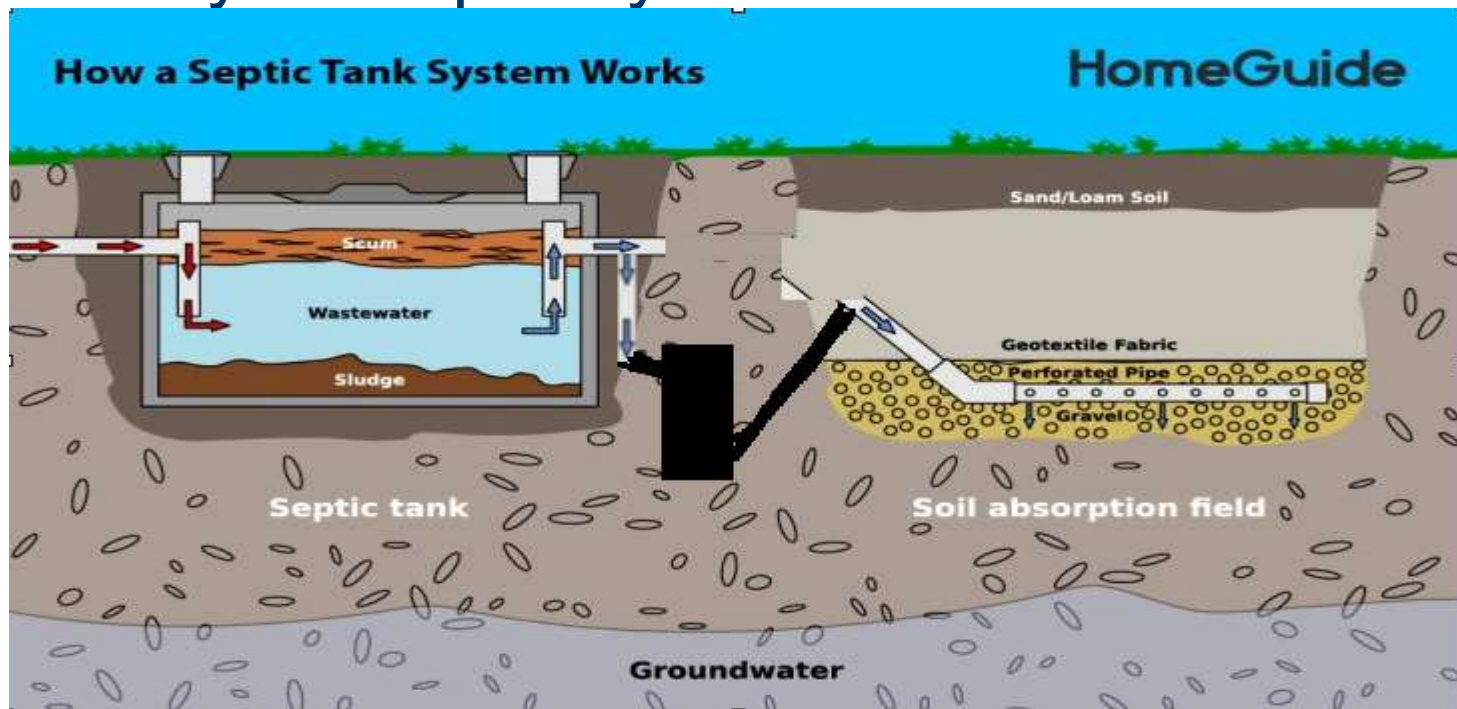


More Explanation

- The septic tank breaks down fecal waste
- The leech field disperses the liquid effluent
- **No where** is phosphorus or nitrogen eliminated, except in the soil
- Our sandy soil allows effluent to pass too quickly for P or N₂ to react with the soil
- Hence we have a high nutrient load going into Silver Lake causing algae blooms and an anaerobic lake

Explanation for P & N₂ Removal

- How your septic system works:



Definitions to Help our Discussions

- Biochemical Oxygen Demand - **BOD** indicates the amount of putrescible organic matter present in **water**. Therefore, a low **BOD** is an indicator of good **quality water**, while a high **BOD** indicates polluted **water**.

Definitions to Help our Discussions

- **Dissolved oxygen** (DO) refers to microscopic bubbles of gaseous **oxygen** (O₂) that are mixed in water and available to aquatic organisms for respiration—a critical process for almost all organisms. ... ☒ Aquatic plants release **oxygen** into the water as a byproduct of photosynthesis.
- Dissolved oxygen (DO) is consumed by bacteria when large amounts of organic matter from sewage or other discharges are present in the **water**.

Definitions to Help our Discussions

- Just as we need air to breathe, aquatic organisms need **dissolved oxygen** to respire. It is **necessary** for the survival of fish, invertebrates, bacteria, and underwater plants. DO is also **needed** for the decomposition of organic matter.

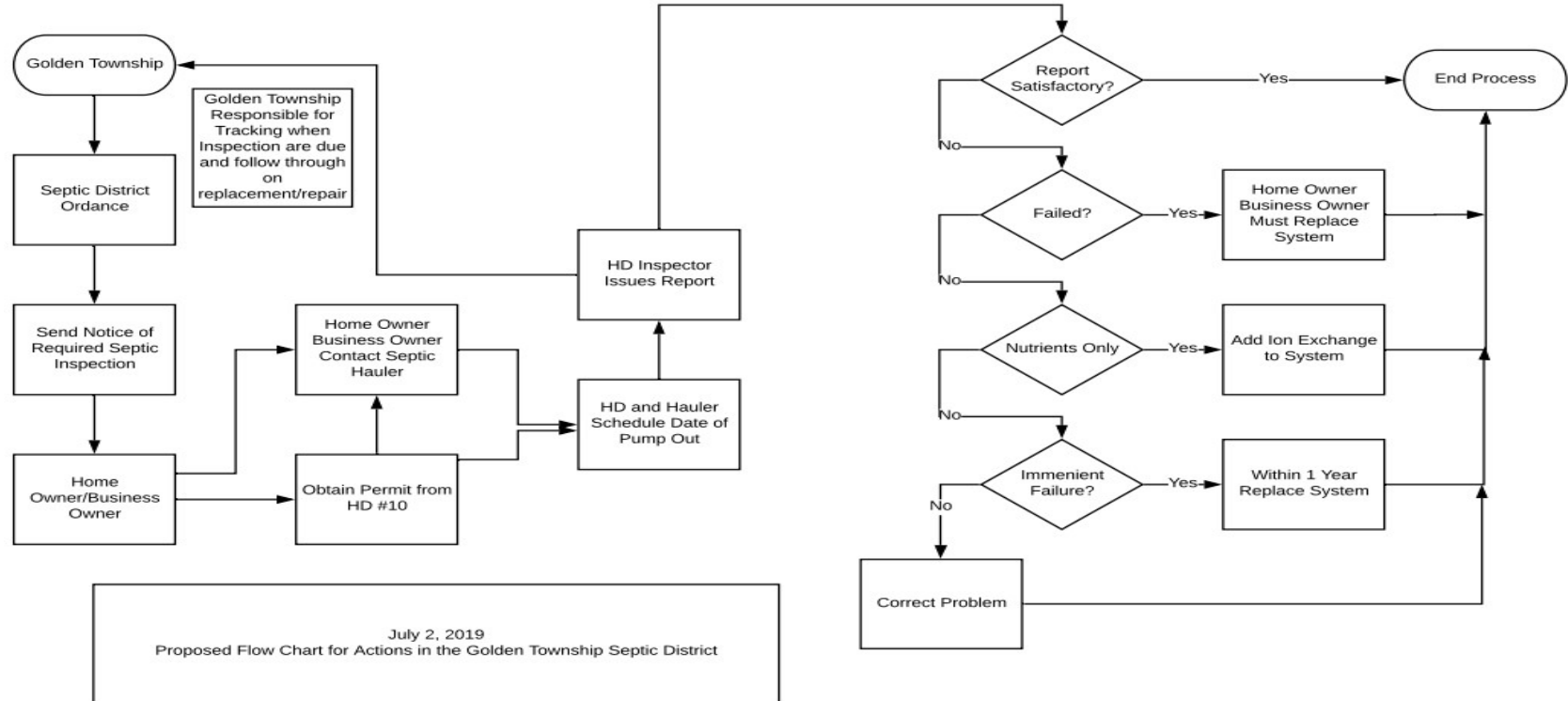
Definitions to Help our Discussions

- PPM - This is an abbreviation for "parts per million" and it also can be expressed as milligrams per liter (mg/L). This measurement is the mass of a chemical or contaminate per unit volume of **water**. Seeing ppm or mg/L on a lab report means the same thing.

Definitions to Help our Discussions

- **Aerobic** respiration, a **process** that uses oxygen,
- **anaerobic** respiration, a **process** that doesn't use oxygen, are two forms of cellular respiration. ...
- In general, respiration is used to eliminate waste products and generate energy for plants and animals.

Flow Chart – One Possibility



Sub-Committees – Monitoring and Sampling

- How to continuously monitor the groundwater and lake water for the Silver Lake Water Shed Area that can identify specific septic offenders and pollution sources.
- Consistent Monitoring Points

Sub-Committees – Performance & Enforcement

- Septic system performance requirements and enforceable actions for those systems not meeting the proposed levels. These levels must be more stringent than what the state requires.

Sub-Committees – Define Boundaries?

- We need to determine which properties are included in our "Silver Lake Septic District".

Sub-Committees - Funding

- The largest concern for our proposal is how to fund these activities. The task before us will require cooperation, collaboration and compromise.

Sub-Committee Sign Up

- Please take a moment and sign up for a sub-committee you have an interest in helping
- At the back of the room you will find sheets to volunteer
- This is your chance to have a say in how we are going to improve the health of Silver Lake

Thank You

- Thank you for:
 - Listening
 - Being Concerned
 - Volunteering your time and expertise
 - Being a Good Citizen