



**Lake George
Park Commission**

Wastewater Regulations & Septic Inspections

One Season In...

NYCAC on Lake Champlain 2024

Photo courtesy of Carl Heilman

Septic Systems: Let's get into it!



- ▶ General Background
- ▶ Planning Process
- ▶ Standards for Inspections
- ▶ Inspection Results
- ▶ Next Steps

Septic Systems and Public Health

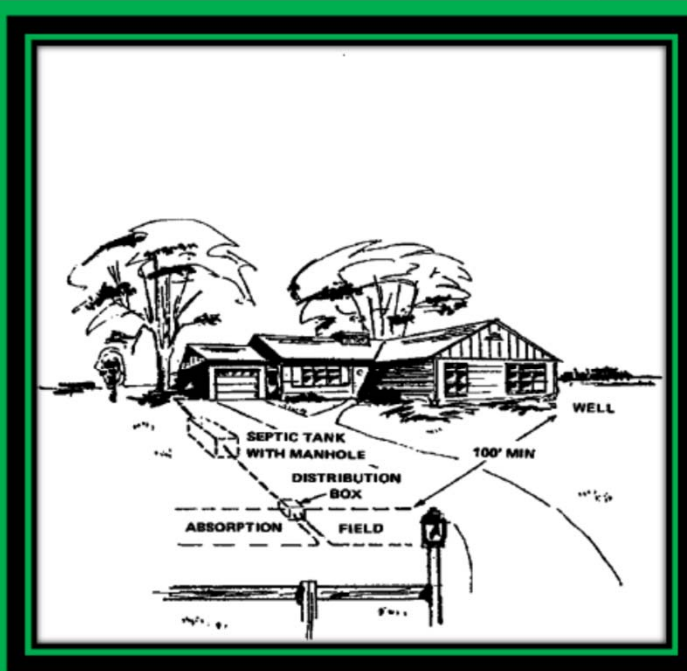
UNOFFICIAL COMPILED OF CODES, RULES AND REGULATIONS OF THE STATE OF NEW YORK TITLE 10. DEPARTMENT OF HEALTH. CHAPTER II. PART 75. STANDARDS FOR INDIVIDUAL ONSITE WATER SUPPLY AND INDIVIDUAL ONSITE WASTEWATER TREATMENT SYSTEMS. APPENDIX 75-A.

APPENDIX 75-A

WASTEWATER TREATMENT STANDARDS - RESIDENTIAL ONSITE SYSTEMS
(Statutory Authority: Public Health Law, 201(1)(l))

SECTION

- 75-A.1 Introduction
- 75-A.2 Regulation by other
- 75-A.3 Sewage flows
- 75-A.4 Soil and site apprais
- 75-A.5 House or building se
- 75-A.6 Septic tanks and En
- 75-A.7 Distribution devices
- 75-A.8 Conventional substa
- 75-A.9 Alternative subsurfa
- 75-A.10 Other systems
- 75-A.11 Specific Waivers



- ▶ Concept of septic systems originated in France ca. 1860
- ▶ Common in suburban and rural areas throughout US
 - ▶ 25% US Households
- ▶ 1970's regulations standardized design and install
 - ▶ Tank Size
 - ▶ Leach Field Size
 - ▶ Site Characteristics
- ▶ Protective of public health
 - ▶ Pathogens including bacteria and viruses

LGPC Regulatory Authority (ECL 43)

*‘In consultation with DEC, DOH and each municipality within the park, the commission shall... **adopt rules and regulations for the discharge of wastewater to ensure optimum protection of ground and surface waters within the Park.**’ (43-0112)*

And to...

“Study, monitor and inspect for pollution from any source within the park and to enforce the provisions of this article and any regulations promulgated pursuant thereto” (43-0107)

Partners and Expertise

Ad-Hoc Committee

- 5 LGPC Board Members

Panel of Regional Experts:

- DEC, DOH, Planners, CEOs, PE's, Elected Officials, Business Leaders

Monthly Meetings: July 2021-Feb 2022

- Public meetings with Regional Experts

1. LGPC Committee members:

1. Ken Parker, Chair
2. Bill Mason
3. Cathy LaBombard
4. Dave Floyd
5. Joe Stanek

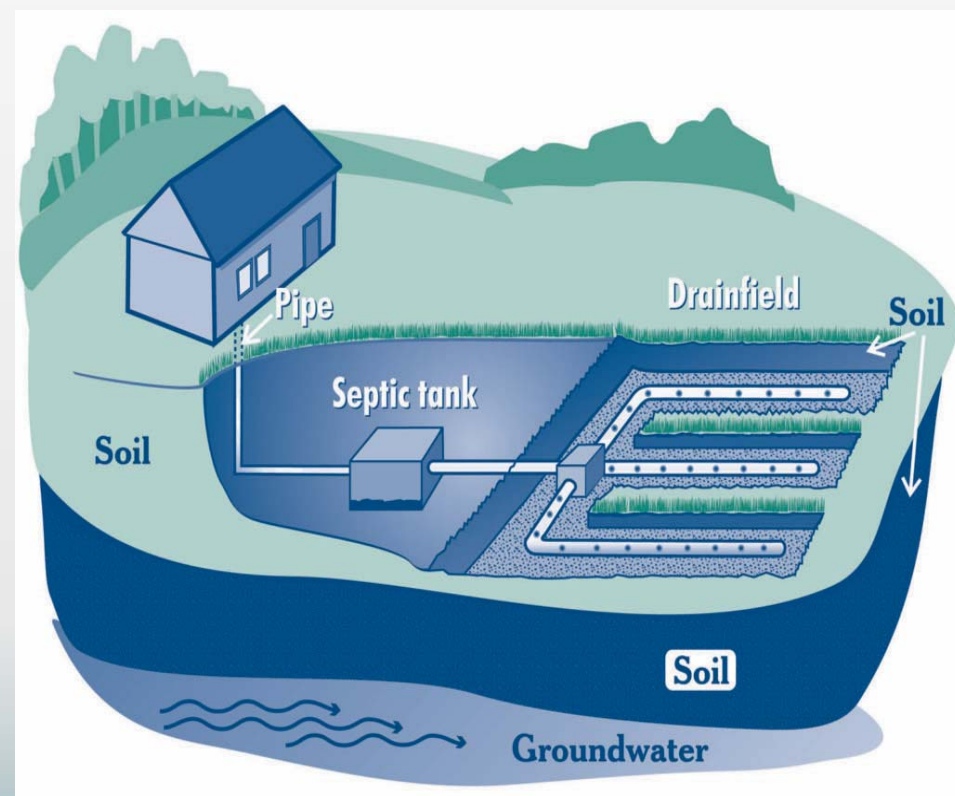
2. Advisory members to the Committee:

1. Tom Snow, NYS Department of Environmental Conservation, Director of NYC Watershed Program
2. Kevin Kenyon, Professional Engineer, NYS Department of Health Glens Falls Office
3. Tom Jarrett, Professional Engineer, Jarrett Engineering
4. Kathy Flacke Muncil, Proprietor of Fort William Henry Resort, business leader
5. Susan Wilson, Deputy Supervisor, Town of Bolton
6. Walt Lender, Executive Director, Lake George Association
7. Chris Navitsky, Professional Engineer, Lake George Waterkeeper
8. Dan Barusch, Director of Planning and Zoning, Town of Lake George
9. Claudia Braymer, Warren County Supervisor from Glens Falls Ward 3
10. Ethan Gaddy, Planner, Warren County Planning
11. Samuel Hall, Chairman, Washington County Board of Supervisors
12. John Graham, Code Enforcement Administrator, Washington County
13. Tom Cunningham, Ticonderoga Town Board
14. Hannah Neilly, Project Coordinator, Essex County Office of Community Resources

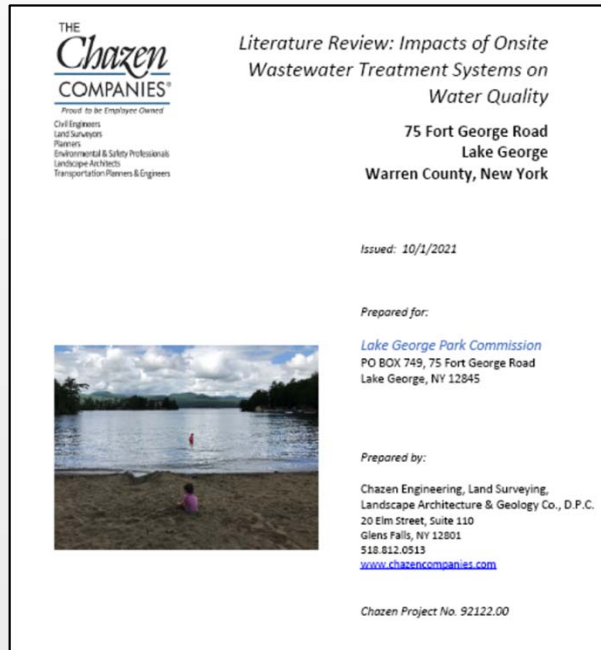


Learning about the Issue

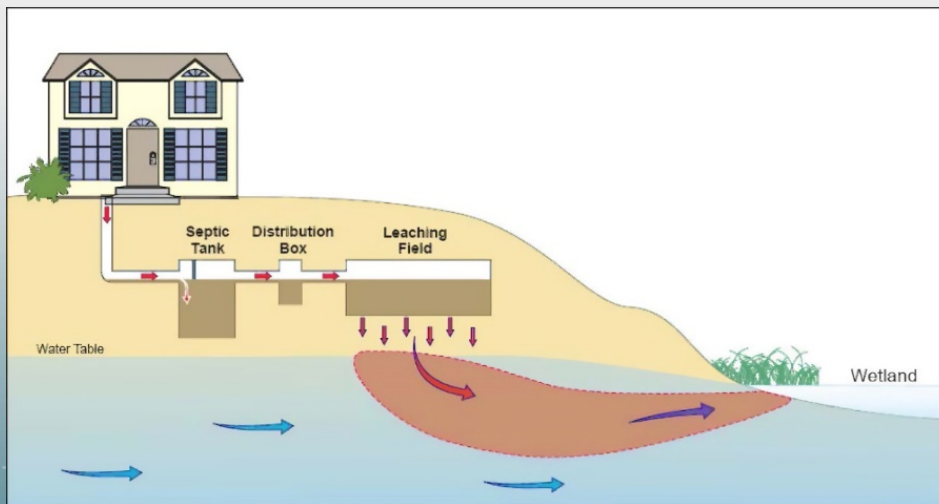
- ▶ **Ad-Hoc Committee, 18 months**
 - ▶ July 2021 First Ad-Hoc Meeting
- ▶ **Literature Review**
 - ▶ What do we know about septic system impacts to lakes
- ▶ **Data Analyses**
 - ▶ Status of septic systems around Lake George
- ▶ **Management Options**
 - ▶ Research other lake communities that have implemented septic system inspection programs, and why



Literature: Septic Systems and Water Quality



- ▶ Improper design, construction, or maintenance can impact water quality:
 - ▶ Bacteria, nutrients, etc.
 - ▶ EPA estimates 10-20% fail/malfunction
- ▶ Contributing Factors:
 - ▶ Density of systems, system age, soil type, depth to bedrock and water table
 - ▶ EPA: Potential for regional groundwater contamination when >1 system / 16 acres
- ▶ More Dirt Means More Treatment
 - ▶ Phosphorus retention largely occurs in unsaturated soils beneath the drain field
 - ▶ Increased depth, is increased retention
 - ▶ Examples in Practice
 - ▶ APA: 4' to SHGW for conventional systems
 - ▶ Queensbury: 3' separation in waterfront zone

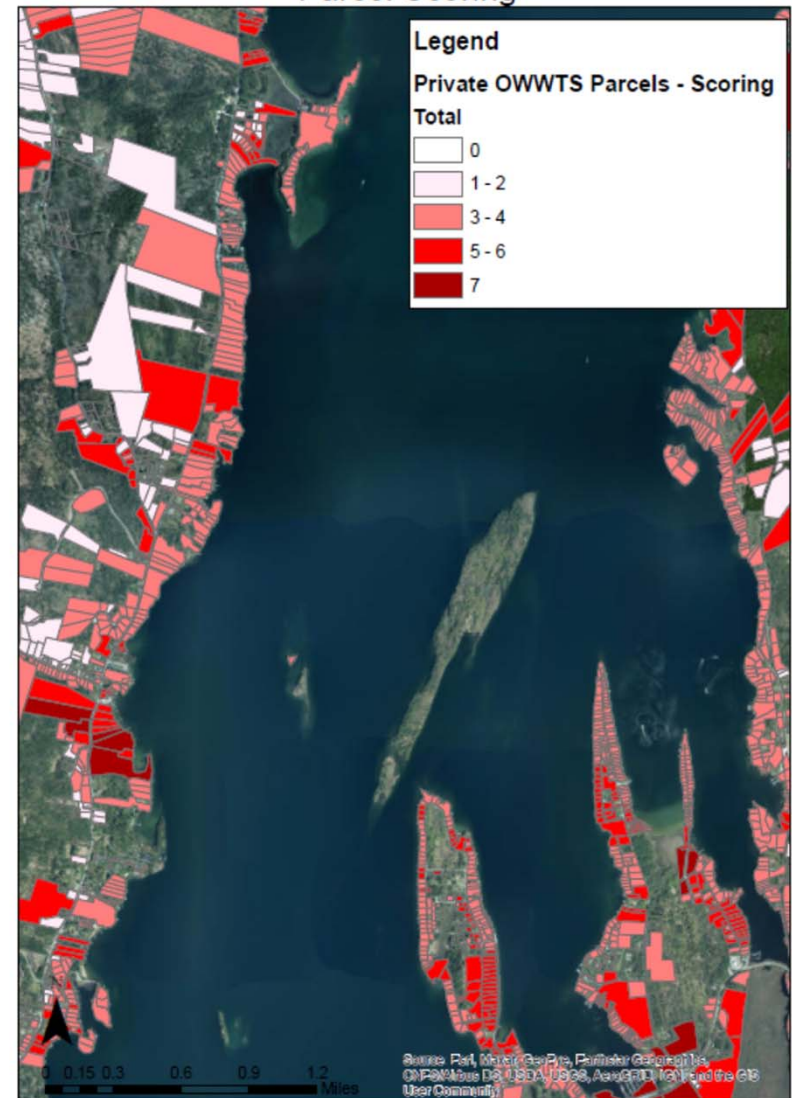


Analysis:

Septic Systems in the Lake George Park

- ▶ 5,950 (69%) of occupied parcels in the LG Park use septic systems
- ▶ 2,450 (41%) of septic systems are within 500' of the Lake or 100' of streams
- ▶ 84% of septic systems are located in areas that have physical 'limiting factors'
- ▶ Median parcel size with septic is 0.8 ac
- ▶ System density 3X higher near shore
- ▶ Average age of a home is 50 years old

Lake George Park Private OWWTS
Parcel Scoring



Management Options: Other Septic Programs

- ▶ Routine Pump-out and Septic Inspection
 - ▶ Locate System
 - ▶ Review for Discharges
 - ▶ Inspect Integrity of the Parts: Tank, Piping, etc.
 - ▶ Leachfield Function

- ▶ 13 Septic Inspection Systems Programs Researched

- ▶ Several other lakes in NYS have been inspecting septic systems for upwards of 20 years

- ▶ Local Examples: Queensbury and Bolton

- ▶ Programs vary in costs and logistics, but the intent and outcomes are the same: protecting public health and water quality through routine septic inspection



Program	Program Manager/Contact Information	Program Description	How Funded?	Why Created?	Inspection Fee?
Keuka, NY	Colby Petersen, Manager (315) 536-5188 colby@ycsolwater.com	The law provides local authority for both new and replacement construction of septic systems, as well as the Zone 2 (200 feet of lake or waterbody) and Real Property Transfer Inspection Program. Watershed Manager oversee the program and provide technical expertise on the designs/ approvals of systems. Expert knowledge in engineering, soils, regulatory procedures, program management and municipal affairs.	Fees and Dedicated Funds from Each Town	Tourism and tax base. The municipalities also recognized that there was no uniformity in regulations and enforcement.	\$50
Canandaigua, NY	Tyler Ohle, Title: Canandaigua Lake Watershed Inspector (585) 396-9716 Tyler.Ohle@ontswcd.com	Canandaigua Lake Watershed Inspection Program - Administered through Ontario SWCD. Built on a model law that has been passed by all towns. Paid by water purveyors beginning in 1950s. Inspector reviews and approves systems. Assists with soil and erosion inspection. Ensures no failure based on DOH definition Within 200 ft of lake, inspection every 5 years.	Fees and Water Purveyors	2014 Canandaigua Lake Watershed Management Plan recognized untreated wastewater as a source of nutrient. Regulatory boards created in response to outbreaks of waterborne diseases.	\$175
Cayuga, NY	Cayuga SWCD (315) 252-4171, x4 cayugaswcd@cayugaswcd.org	Cayuga County Code - Inspection at Property Transfer and Regular Intervals Based on Distance from Lake and Town	Fees	To eliminate potential health hazards and protect surface and ground water by ensuring that septic systems located within Cayuga County operate satisfactorily.	\$150
Otsego, NY	Amy Wyant, OCCA Executive Director: (607)-547-4488 director@occainfo.org	Village of Cooperstown Law Beginning in 2005 - Require 5 Year Inspections in proximity to Aquatic resources.	Initial Funding by OCCA and the Clark Foundation Fees	SUNY Oneonta began monitoring nutrient levels near septic systems in the lake and noticed it could be substantial in 2004.	\$50
Honeoye (Ontario County), NY	Tad Gerace (585) 396-1450 tad.gerace@ontswcd.com	All Ontario outside of Canandaigua Watershed. Non regulatory - towns adopt if they choose. Most inspections done for deed transfer, sometimes from change of use or capacity. SWCD or OTN inspector on-site. Some towns have continued regulations as needed (e.g. Rental Properties inspected every 3 Years in Geneva). SWCD inspection provides the homeowner with an unbiased, neutral assessment of their septic system	Fees, Other SWCD OH	To protect the water quality of Honeoye Lake and surrounding ecological resources.	\$175



Septic System Program Resources

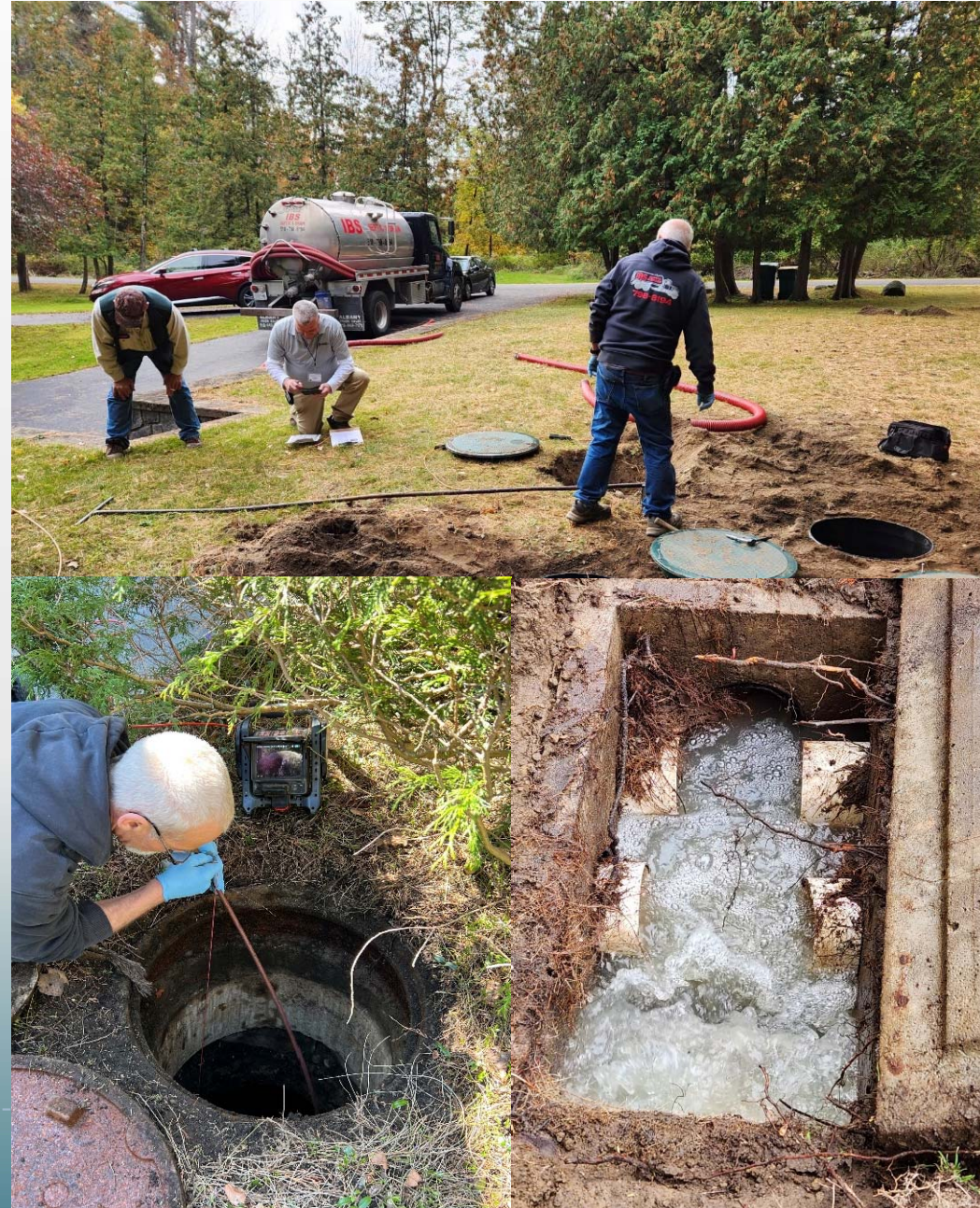
The documents below are being used to help inform the discussions and decisions of the Septic System Review Committee.

	LGPC Septic Inspection Programs Review 9.2.21	 DOWNLOAD
	Private OWWTS Inspection Research Update 9.2.21 - Presentation	 DOWNLOAD
	Septic Literature Review Matrix - 7.30.21	 DOWNLOAD
	Town of Lake George Septic Initiative Program	 DOWNLOAD
	Report: Contaminants of Emerging Concern & Public Perception of the Issues - 2018	 DOWNLOAD



Septic Inspections LGPC Regulations NYCRR 646-3

- ▶ April 2023, New Regulations Established for the Lake George watershed
- ▶ Routine 5-yr Septic Inspections: 1/5th of the 2,450 properties will be inspected each year for five years
- ▶ Each year, letter to those ~500 landowners to arrange septic pumpout and inform the Commission
- ▶ Landowner coordinates with a hauler & has all tanks and distribution box uncovered
- ▶ LGPC Inspector is on-site for pumpout to conduct inspection



Funding Inspections LGPC Regulations NYCRR 646-3

Residential System

Annual Fee \$50

Commercial System

Annual Fee \$100

Holding Tanks for Res/Com

Annual Fee \$25 / \$50

Septic Tank Pumpout Fee to Hauler

Variable \$200-400 every five years



What are we looking for?

Function, Size, & Location

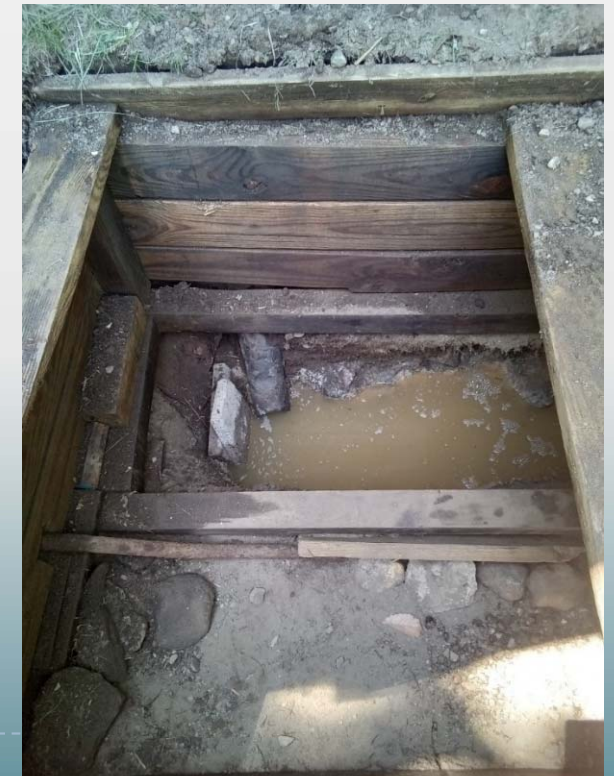
▶ **Failing** Wastewater Treatment System:

- ▶ 1) Discharge wastewater to surface waters or the ground surface
- ▶ 2) Lack of a soil absorption system
- ▶ 3) Metal tanks
- ▶ 4) Cesspools
- ▶ 5) A backup of sewage into the dwelling, septic tank, or distribution box
- ▶ 6) Septic Tank < 50 % required size



▶ **Substandard** Wastewater Treatment System:

- ▶ 1) Septic tank that has less than 100% of the required capacity
- ▶ 2) Absorption area that has less than 75% of the required capacity
- ▶ 3) Absorption area < 50 feet to Lake George or a regulated stream
- ▶ Substandard “Other” = Repairs: d-boxes, baffles, pump alarms



- ▶ Exempt from “Substandard” are systems that received a construction permit from the appropriate Review Authority



Inspection Outcomes & Timeframes

1. Pass:
 1. See you in five years
 2. Repairs Needed:
 1. Fix quick and either re-inspect or landowner sends documentation
 3. Failed Systems:
 1. Corrected within 6 months
 4. Substandard Systems:
 1. Upgrade within 5 years (e.g. tank size)
- ▶ All upgrades/replacements permitted by current review authority (e.g. Town)



2023 Program Activity



Staffing:

- 2 full-time, seasonal inspectors
- Existing staff (5) cross-trained



Field Work:

- 330 inspections
- Busiest in Autumn



Administrative Processing:

- ETUs: ~60
- Local Permit/Inspection: ~75
- Scheduling, DataMngmt, QA/QC

2023 Inspections/Month



2023 Inspection Results

Passed: 46%



Everyone is Happy:

- Septic Size, Location, & Function are all good



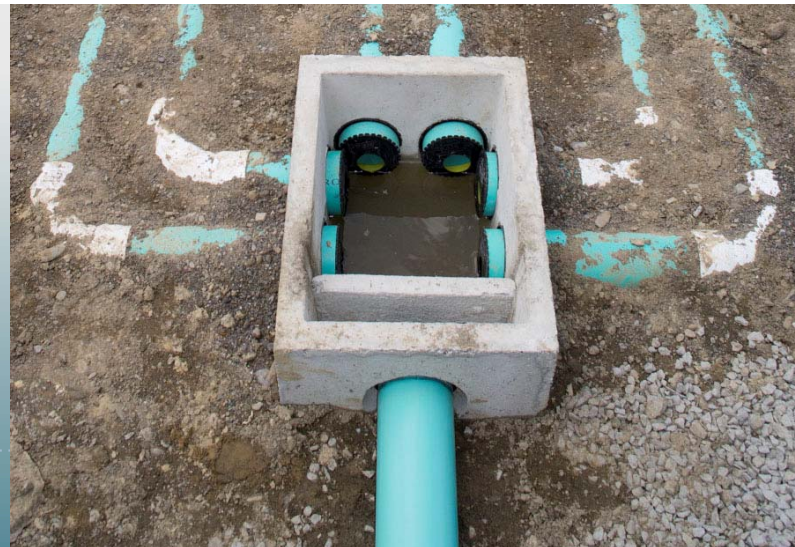
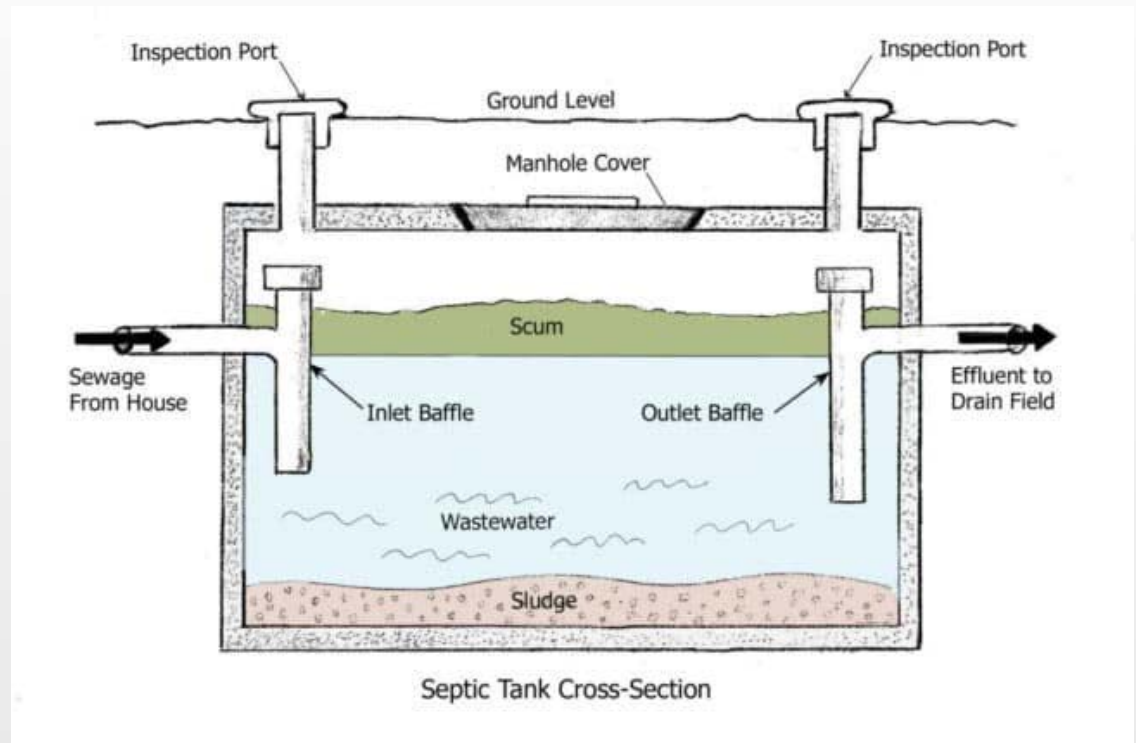
2023 Inspection Results

Passed: 46%

Need Repair: 16%

Repair Examples:

- Inlet or Outlet Baffles
- Distribution Box out of level



2023 Inspection Results

Passed: 46%
Need Repair: 16%
Substandard: 15%

Substandard Examples:

- Undersized Absorption Area
 - Commonly seepage pits
- Undersized Septic Tanks



TABLE 3
MINIMUM SEPTIC TANK CAPACITIES

Number of Bedrooms	Minimum Tank Capacity (gallons)	Minimum Liquid Surface Area (sq. ft.)
1, 2, 3	1,000	27
4	1,250	34
5	1,500	40
6	1,750	47

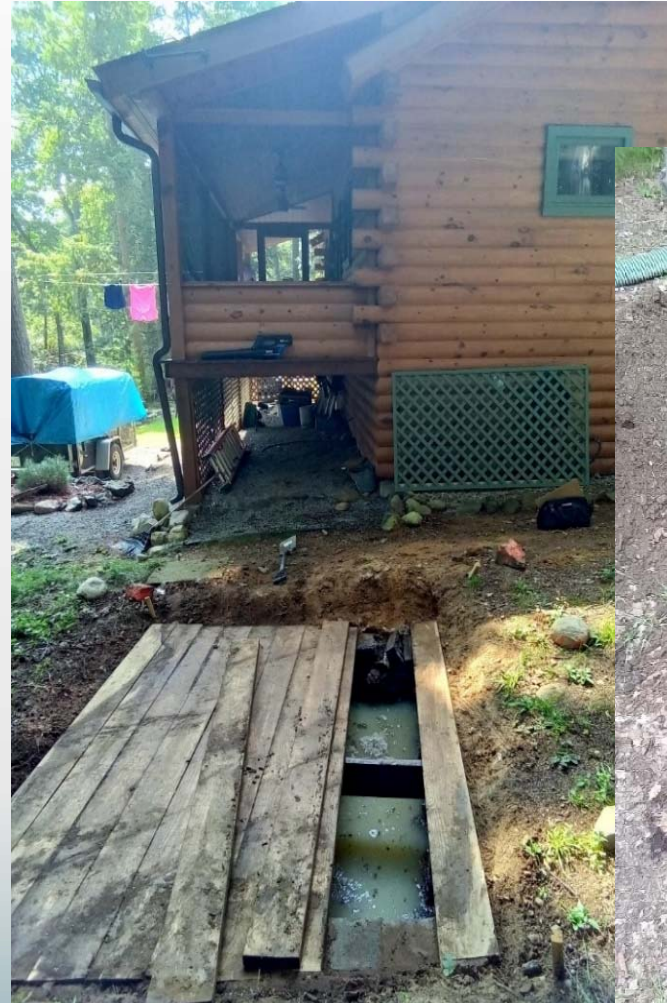
NOTE: Tank size requirements for more than six bedrooms shall be calculated by adding 250 gallons and seven square feet of surface area for each additional bedroom. A garbage grinder shall be considered equivalent to an additional bedroom for determining tank size.

2023 Inspection Results

Passed: 46%
Need Repair: 16%
Substandard: 15%
Failed: 23%

Failed System Examples:

- Cesspools
- Old Metal Tanks
- Sewage Backup

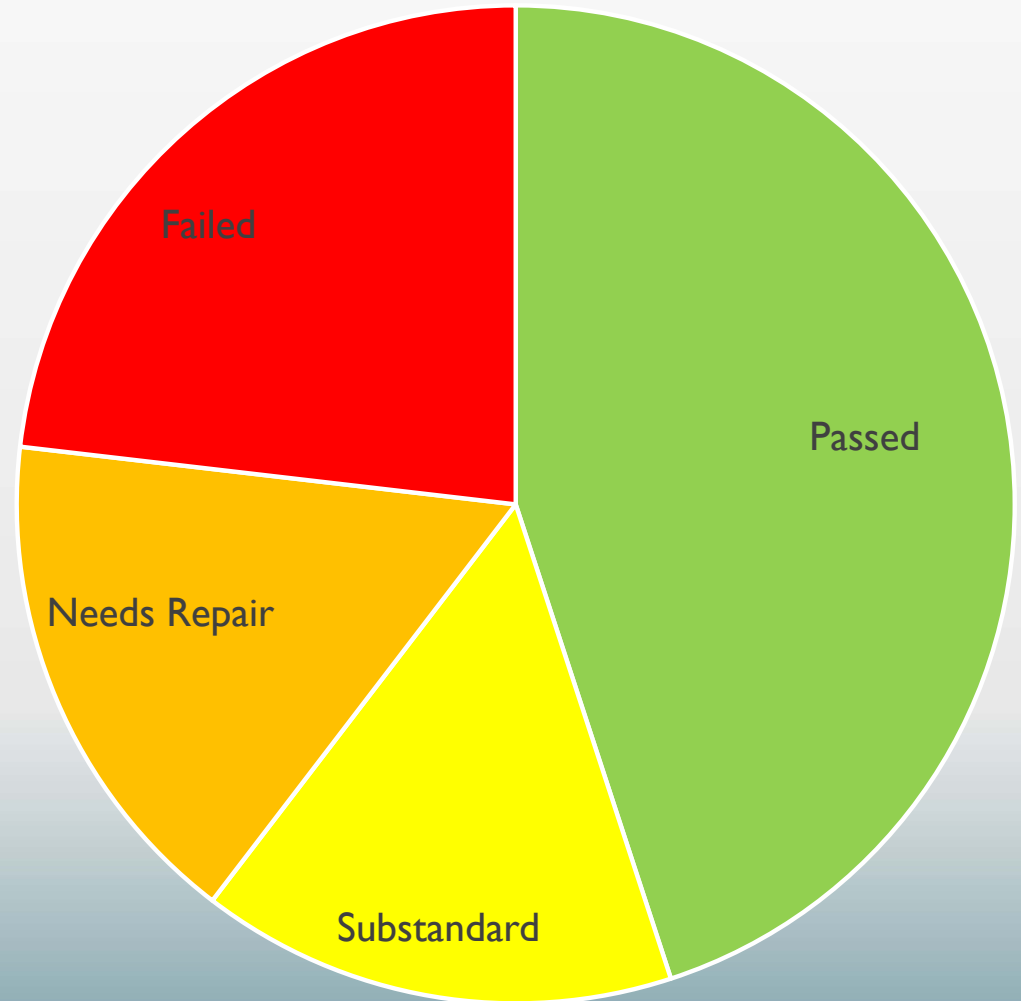


2023 Inspection Results

Passed: 46%
Need Repair: 16%
Substandard: 15%
Failed: 23%

High Level Summary:

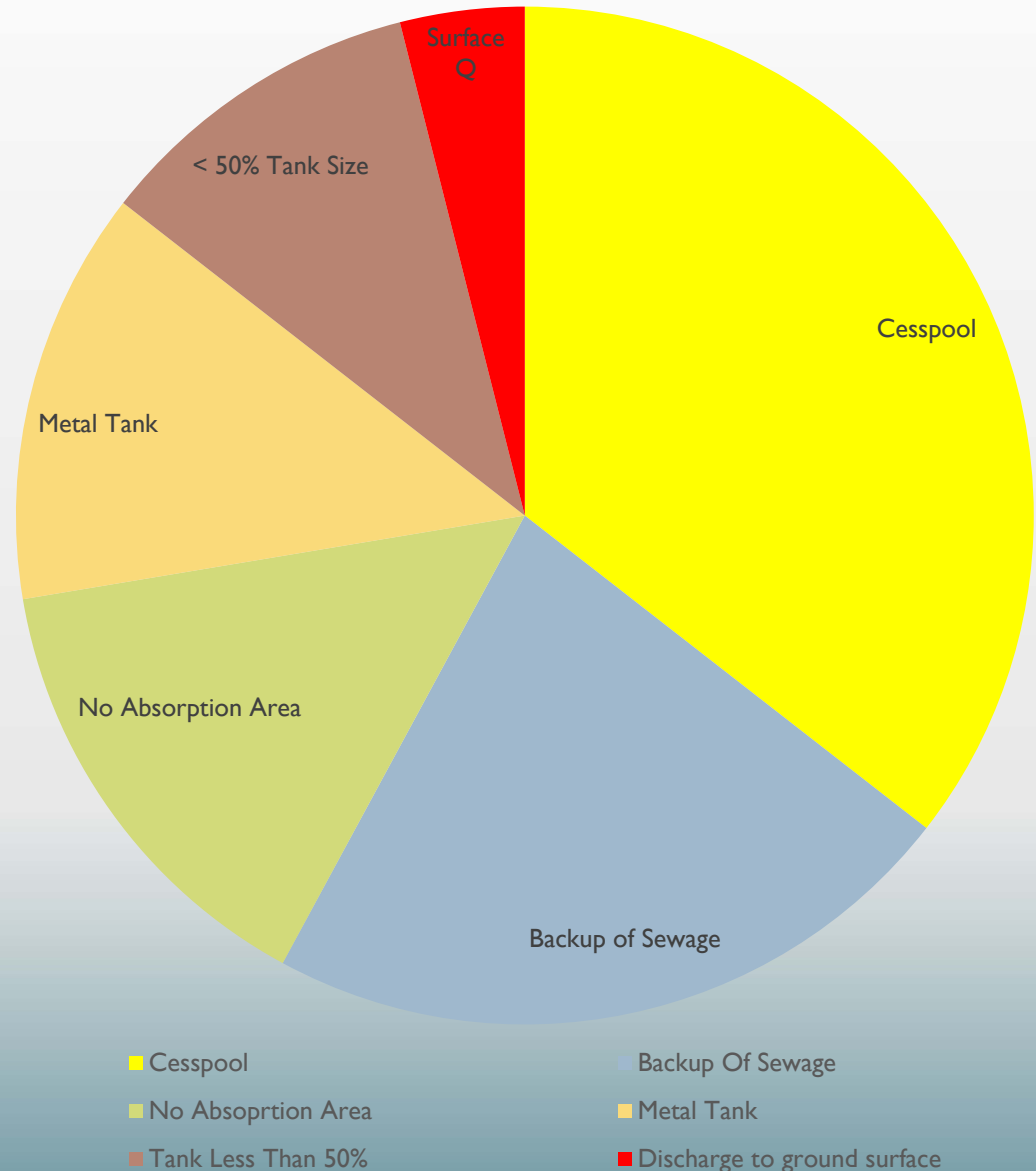
- About half pass
- About half need repair or replacement



2023 Inspection Results

Failed Systems

Cesspools:	27
Backup of Sewage:	17
No Absorption Area:	11
Metal Tank:	10
Tank Size < 1/2 :	8
Discharge to Surface:	3



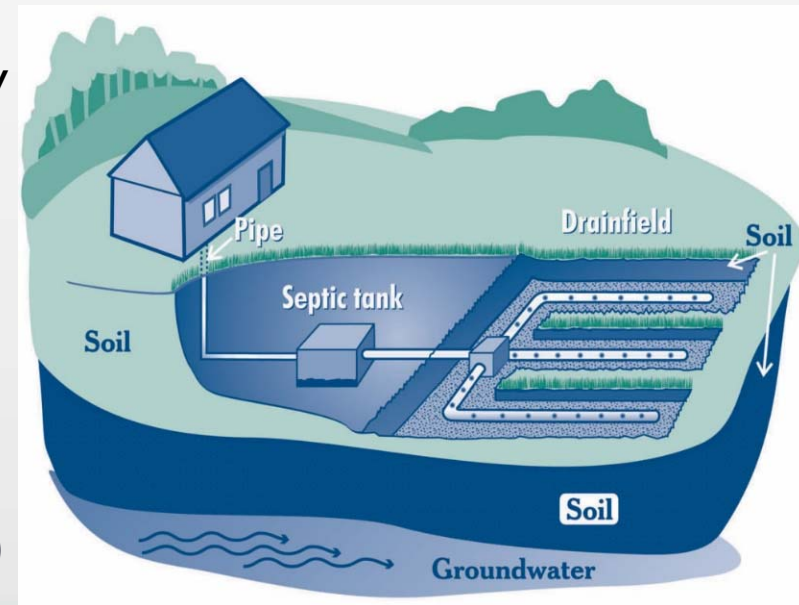
Administration After Inspection

- ▶ LGPC provides a letter to landowner advising them of the system status and next steps
- ▶ Review authority Cc'd
 - ▶ Begin permit process
- ▶ LGPC has no permit jurisdiction
 - ▶ Remains with Review Authority



Design Standards for New and Replacement Systems in LG Basin

1. Three-foot vertical separation to bedrock/seasonal high groundwater
2. The soil absorption area a minimum of 100 feet from any regulated stream, lake, or APA wetland;
3. No trench length reduction for ETU's or Open-Bottom Gravelless Chambers
 1. Trench length reduction remains for gravelless media-wrapped corrugated pipe sand-lined systems and gravelless geotextile sand filters (e.g. Presby, Eljen, etc.)
4. Upon Redevelopment, wastewater system shall be brought into compliance with applicable design standards



Variances from Design Standards for Systems in LG Basin

- ▶ Systems require a variance/waiver when they can't meet:
 - ▶ LGPC, DOH 75-A or DEC sizing standards
- ▶ Variances/waivers come from Review Authority, not LGPC
- ▶ “Do Better” Clause for Variances:
 - ▶ *Phosphorus reduction measures primarily*
 - ▶ *Examples: ETU's, absorption area dosing, phosphorus filters, filtration media, soil depth*
 - ▶ *Industry accepted standards*



Following Permit and Construction

- ▶ Landowner Provides Permit, As-Built Approvals/Plans to LGPC
- ▶ LGPC Septic inspection is scheduled for 5 years-out
- ▶ And we start all over...



Just Getting Started...

- ▶ 330 systems inspected, 465 accounted for
 - ▶ 13-19% done!...
- ▶ 23% failure rate is a significant challenge for engineers, contractors, and property owners.
 - ▶ Timeframes for remediation can be extended as needed
- ▶ Was this program the right thing to do to protect Lake George?
 - ▶ **Absolutely**



Thank you!



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Photo courtesy of Carl Heilman