



PennState Extension

# Assessing Homeowner Perspectives & Barriers to Maintenance of On-Lot Systems in PA

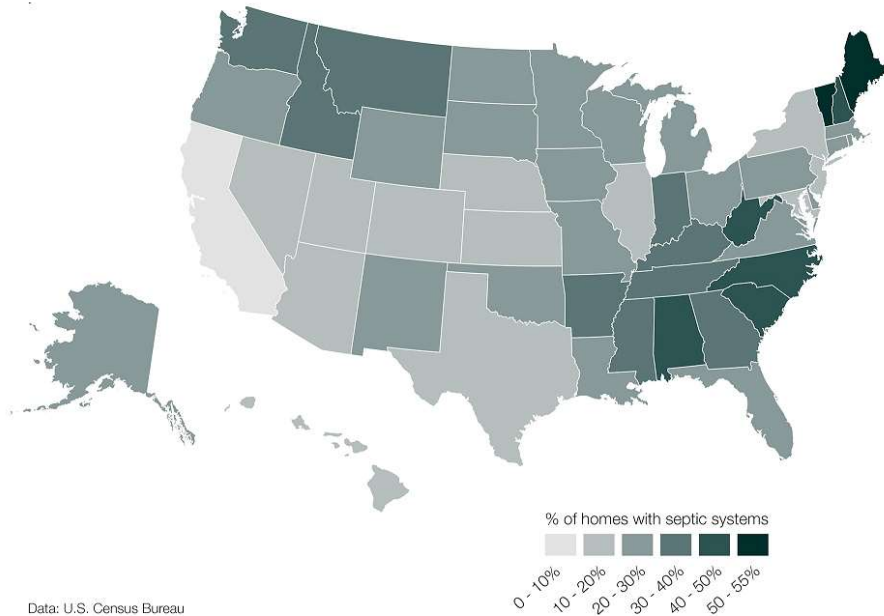
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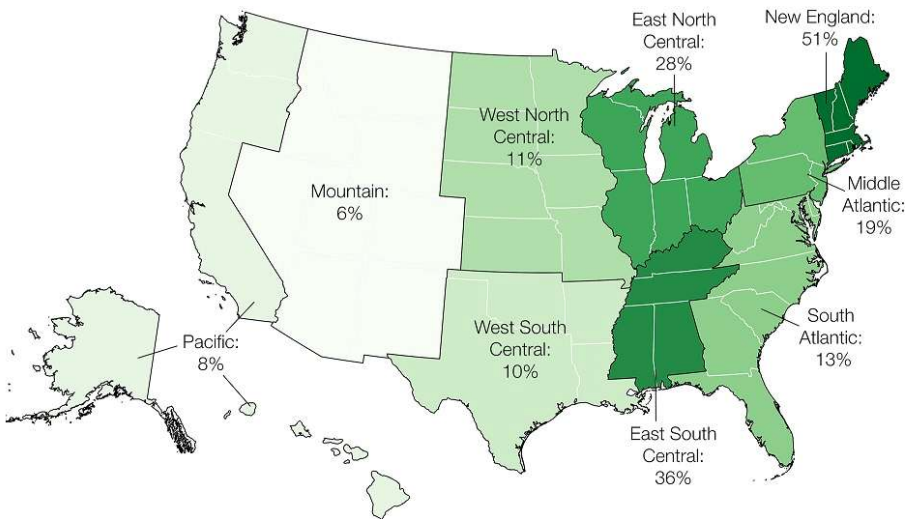
Portion of homes relying on a septic system or cesspool by state, 1990.



# 1 in 5 US homes use on-lot systems

~ 20% of US population use

Share of new homes built with septic systems by region, 2013.



Data: National Association of Home Builders



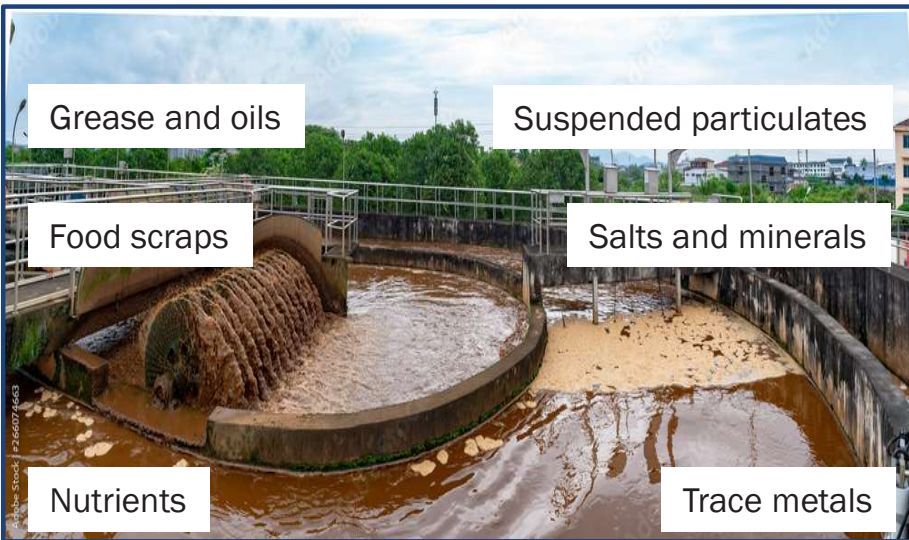
## Many homes are still being built with on-lot systems

# Many septic users do not follow recommended system care and maintenance

- Pollution is dispersed and overall impact can go unnoticed
- It is challenging to trace pollution back to individual households or communities
- Why are users not motivated?

# Domestic wastewater contain a mixture of contaminants

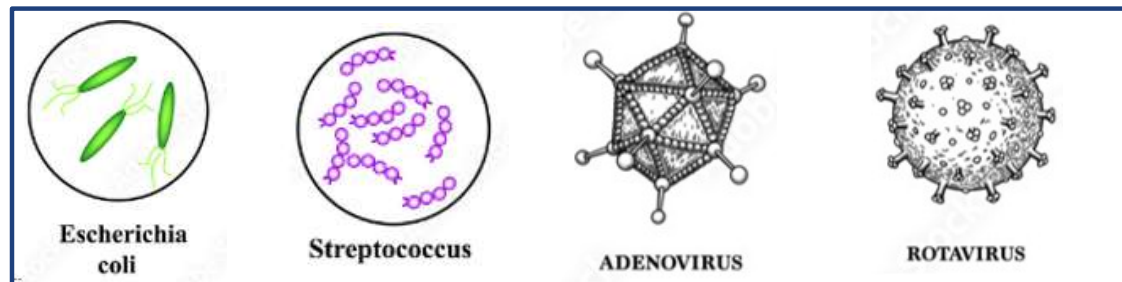
## Organic & in-organic constituents



## Chemicals & by-products



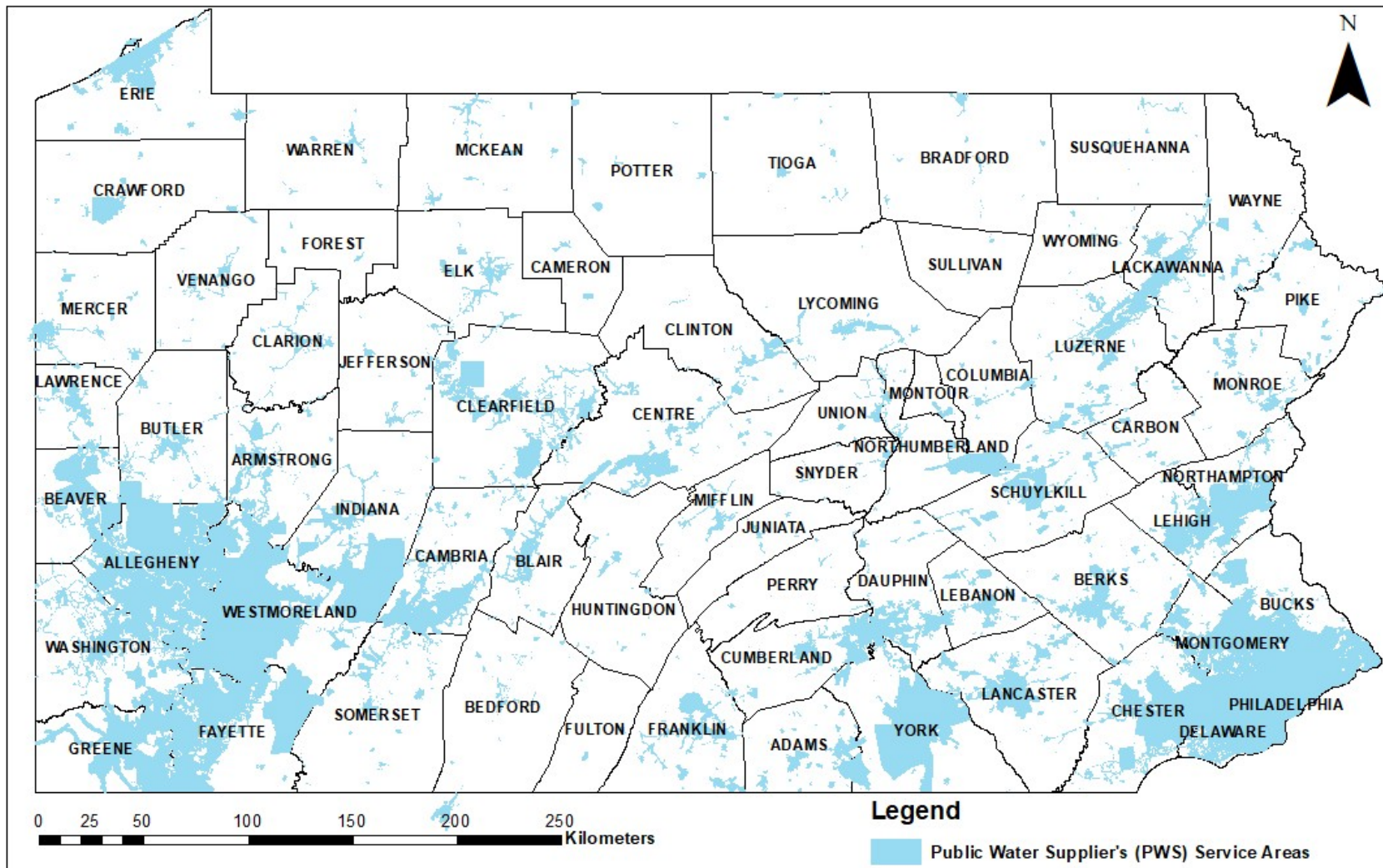
## Pathogens





# On-lot system users also rely private water systems

## Public water supplier service areas in PA



State Extension

# Project Goals

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Characterize homeowner practices, perceptions, preferences, and factors influencing decision making processes related to private well and septic system operation and maintenance.

## **Objective 1: Conduct a Survey of PA Rural Residents**

Practices, Perspectives, and Needs with Regards to Septic System and Maintenance in Pennsylvania.

## **Objective 2: Private well testing**

Characterize the Links Between Septic Maintenance Practices and Well Water Quality.

# ~15 minute survey

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- **Section 1 – Household Characteristics**

In this section we would like to learn about the home where your on-lot waste management system (septic system) is located.

- **Section 2 – Septic System Type**

In this section we would like to learn more about the type and characteristics of your septic system.

- **Section 3 – Septic System Management**

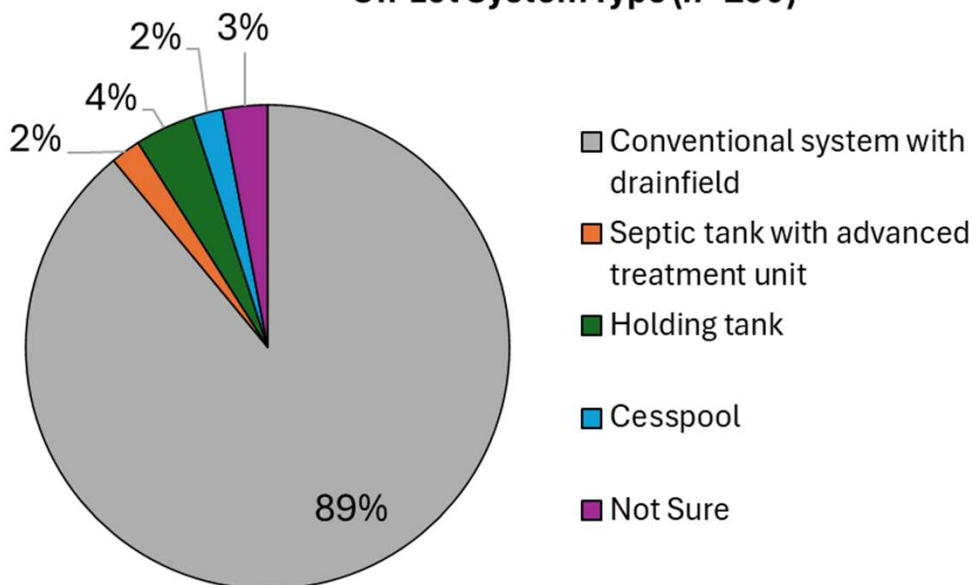
In this section we would like to learn about how you manage your septic system, including any problems or challenges you may have faced in the past.

- **Section 4 – Drinking Water**

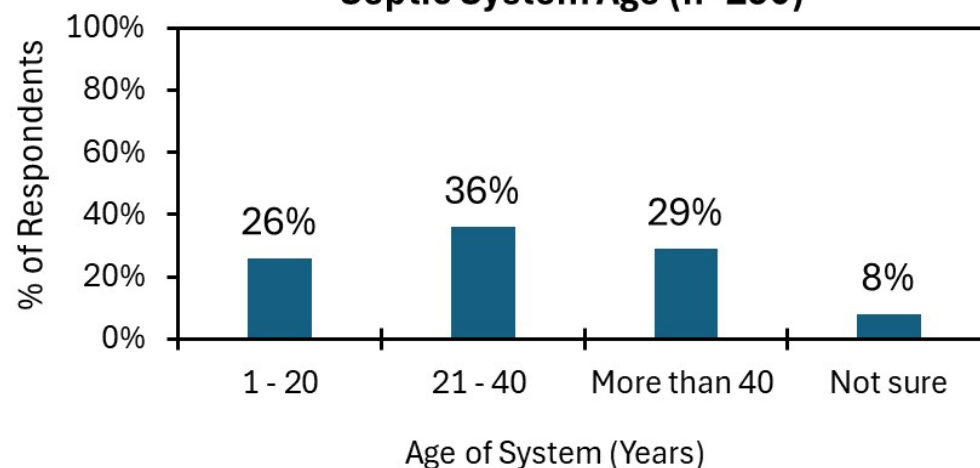
In this section we want to learn about your domestic household water supply and how you manage your water system.

# Knowledge of system components and characteristics

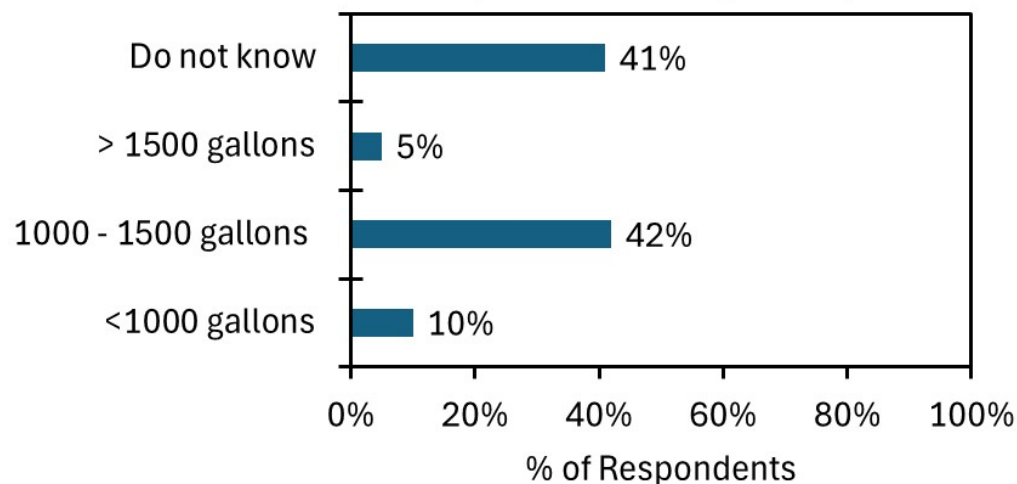
**On-Lot System Type (n=290)**



**Septic System Age (n=290)**



**Septic Tank Size (n=290)**

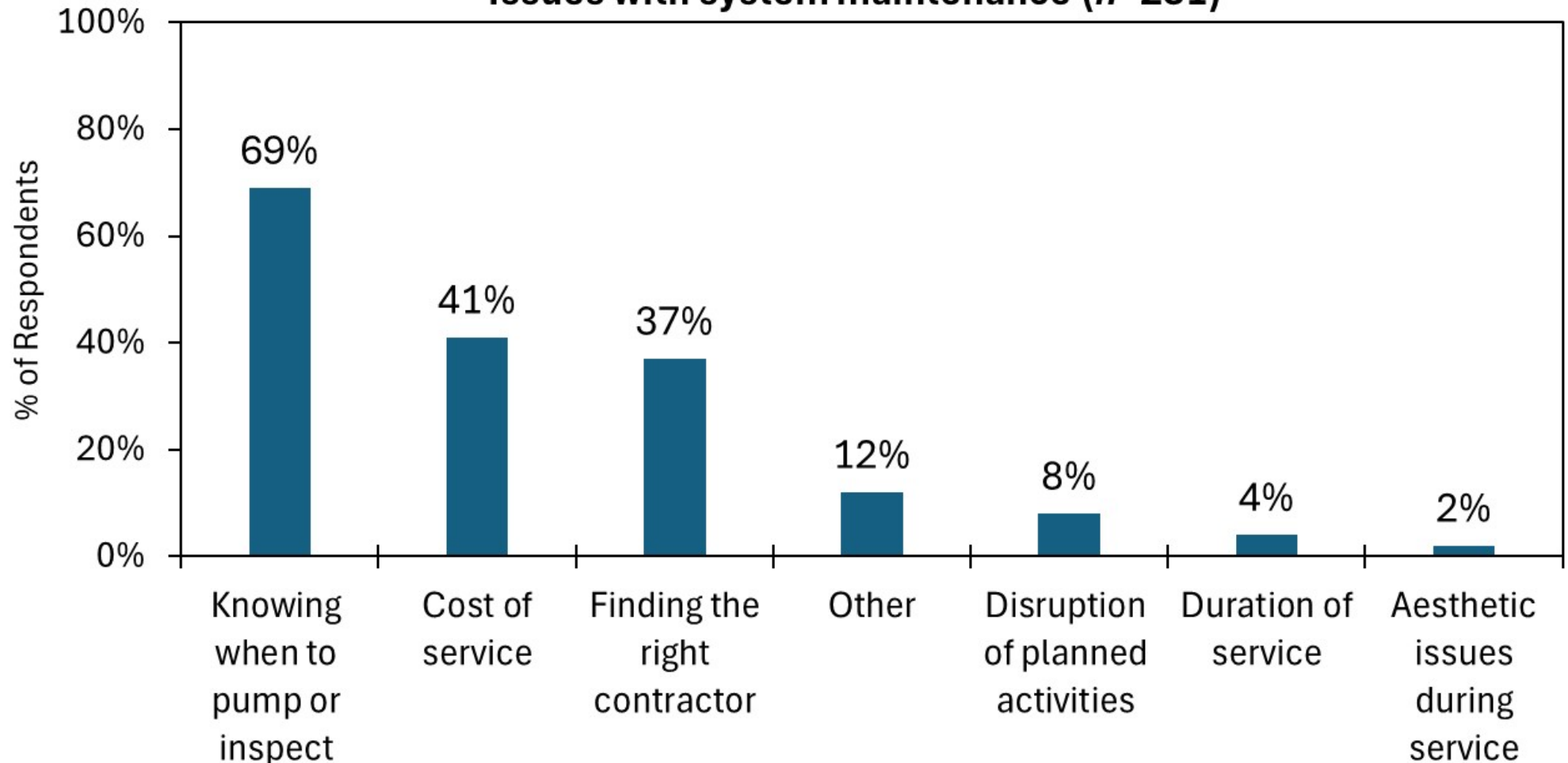




# Timing of system maintenance is a main issue

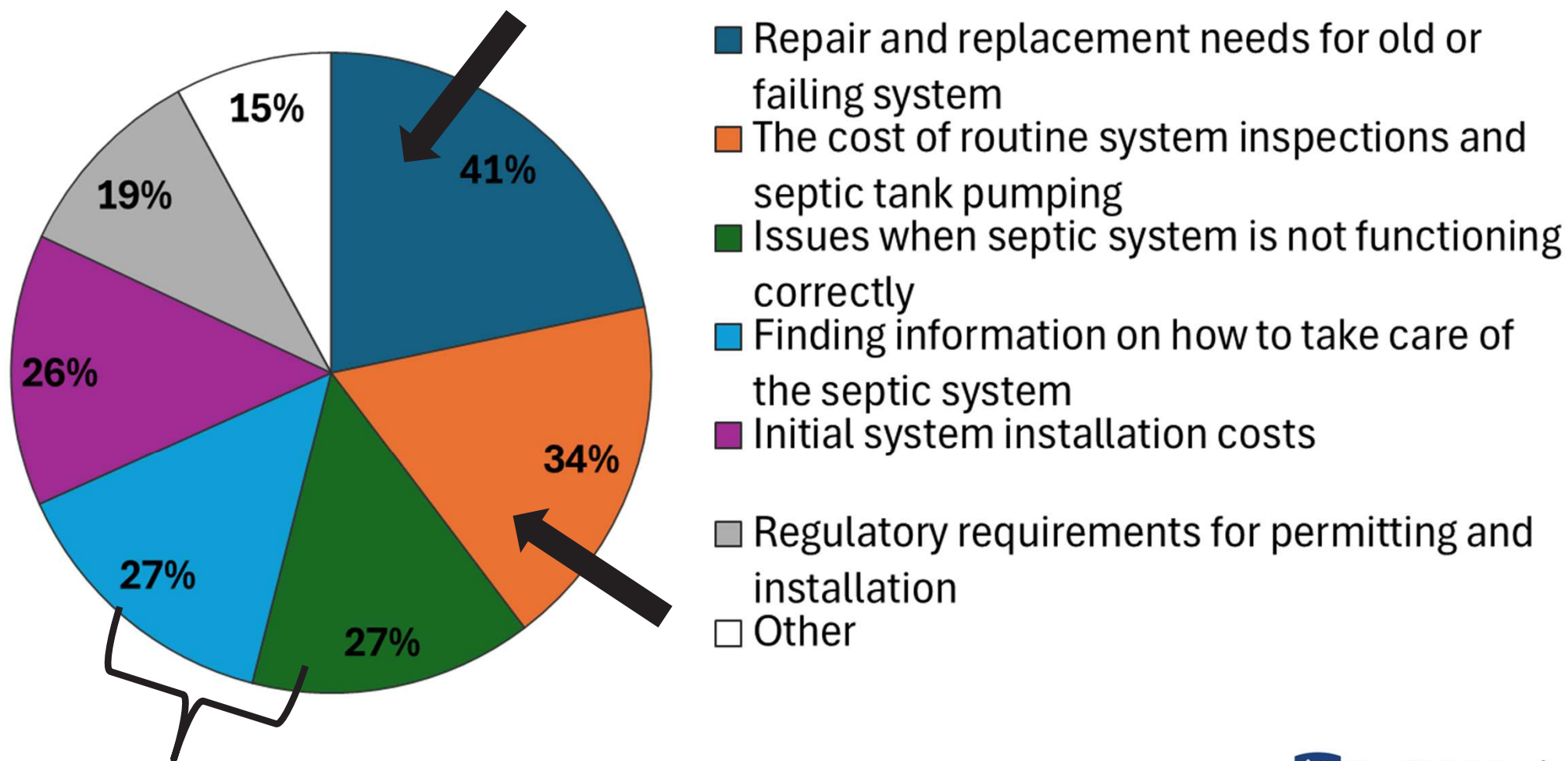
- ~75 % pump tanks and ~30% have system inspections 1 – 5 years

**Issues with system maintenance (n=281)**

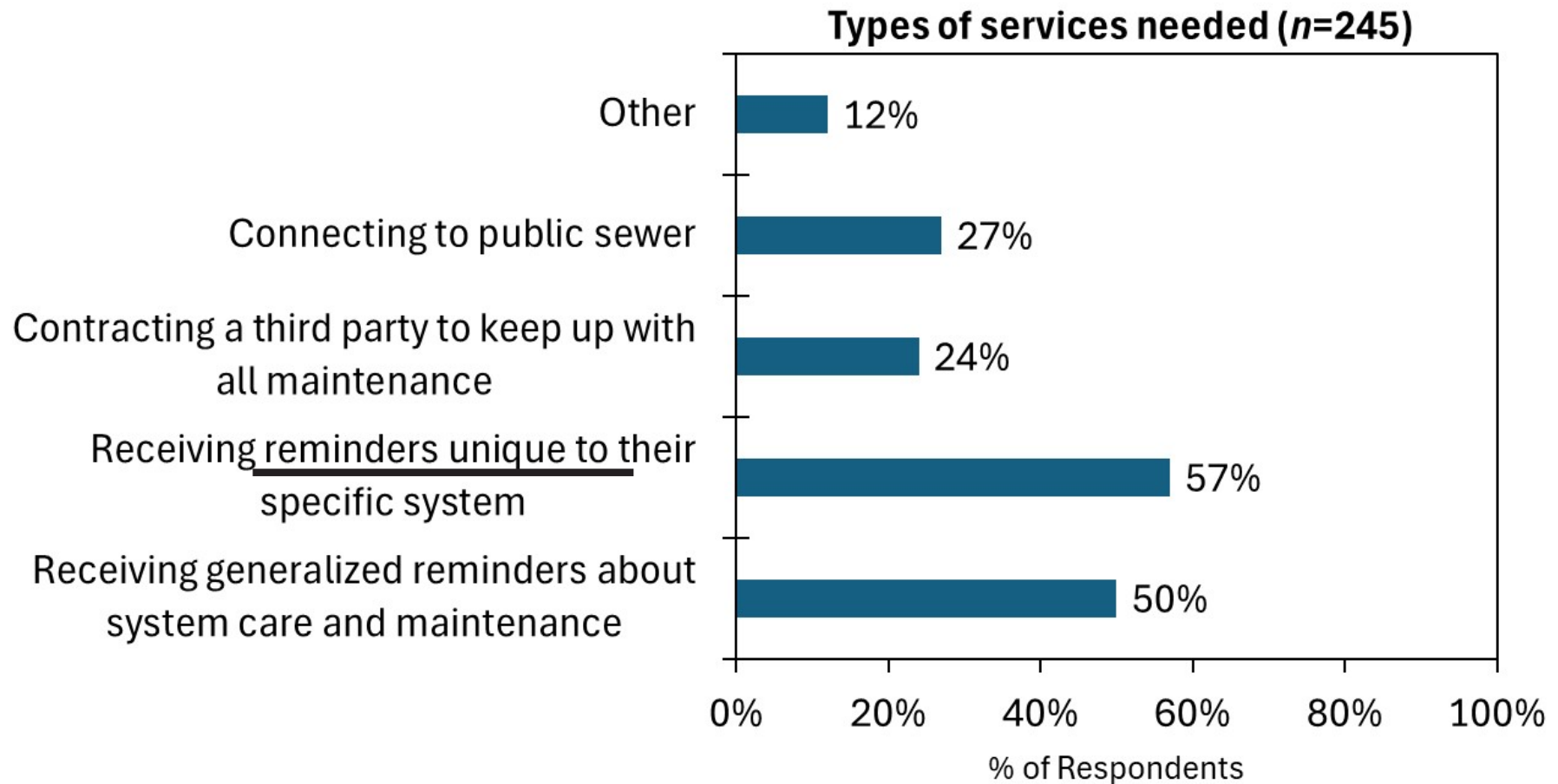


# Repairs and maintenance costs are the top challenges

**Biggest Challenges with On-Lot Systems ( $n=273$ )**



# Types of services users need



# Ongoing work

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- Data synthesis
- Private water system testing
- Survey still ongoing – **additional participation from rural counties needed**

# Participate in the septic system survey

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[extension.psu.edu/septic-system-survey](https://extension.psu.edu/septic-system-survey)

Call: 814-863-4622

**ATTENTION PENNSYLVANIA  
SEPTIC SYSTEM USERS**

Take Our Survey

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# Participate in the septic system survey

## ATTENTION PENNSYLVANIA SEPTIC SYSTEM USERS

### Take Our Survey

Penn State Extension seeks Pennsylvania residents with on-lot septic systems to take part in a study of how users care for and maintain these systems. The study will help identify needs for treating domestic wastewater.

If you own or use a septic system, visit the link or use the QR code to see if you qualify to participate in the study.

To take the survey,  
call 814-863-4622 or visit  
[extension.psu.edu/septic-system-survey](https://extension.psu.edu/septic-system-survey)



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  - Roger Lehman, Pennsylvania Association of Sewage Enforcement Officers
  - Mark S. Mitman, Pennsylvania Septage Management Association

# Thank you!



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# Questions?

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Phone: (814)-863-4622



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# Septic system component isolation distances in PA

Item	Septic tanks, Dosing tanks, Lift pumps	Drain fields
Private drinking water supply	50 ft	100 ft
Cistern used as water supply	25 ft	25 ft
Streams, lakes, ponds or other surface water	25 ft	50 ft
Occupied building, swimming pools and driveways	10 ft	10 ft
Property lines, easement or right of way	10 ft	10 ft