

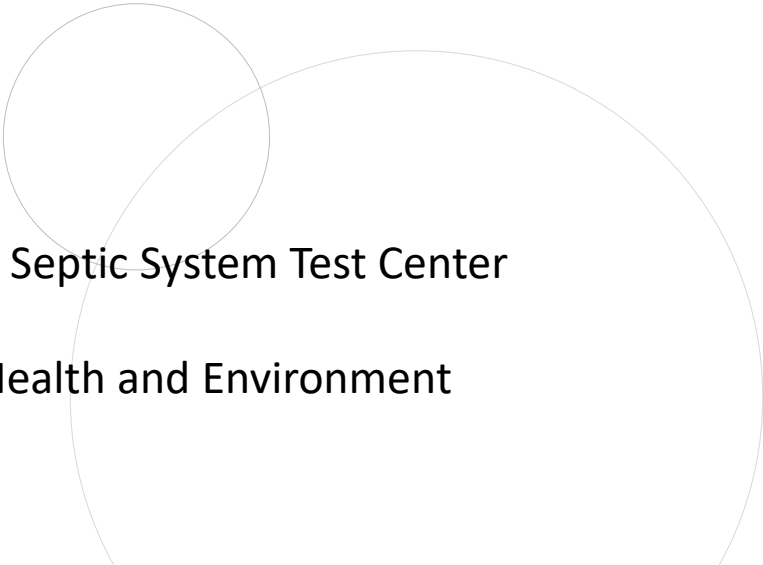


# FUNDING OPTIONS FOR DECENTRALIZED INFRASTRUCTURE

FINDING THE CASH TO GET THE JOB DONE

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Director, Massachusetts Alternative Septic System Test Center  
Senior Environmental Specialist  
Barnstable County Department of Health and Environment



**THINGS THAT ARE ABOUT AS  
EXCITING AS WHAT I AM  
GOING TO BE TALKING ABOUT**











Form **1040** Department of the Treasury - Internal Revenue Service  
**U.S. Individual Income Tax Return** (99)

Filing status:  Single  Married filing jointly

Your first name and initial \_\_\_\_\_

Your standard deduction:  Standard deduction  Self-employed health insurance deduction

If joint return, spouse's first name \_\_\_\_\_

Spouse standard deduction:  Spouse's standard deduction  Spouse's self-employed health insurance deduction

Spouse is blind  Spouse is a resident alien

Home address (number and street) \_\_\_\_\_

City, town or village, state and ZIP code \_\_\_\_\_

**Dependent:**  
 (1) First name \_\_\_\_\_

**Sign Here**  
 Joint return? See instructions. Keep a copy for your records.

**Paid Preparer Use Only**  
 For Disclosure of Preparer's Information

Form **1040** Department of the Treasury - Internal Revenue Service  
**U.S. Individual Income Tax Return** (99)

Filing Status:  Single  Married filing jointly

Check only one box. If you checked the MFS box, enter a child but not your dependent.

Your first name and middle initial \_\_\_\_\_

If joint return, spouse's first name \_\_\_\_\_

Home address (number and street) \_\_\_\_\_

Form **1040** Department of the Treasury - Internal Revenue Service  
**U.S. Individual Income Tax Return** (99)

Filing status:  Single  Married filing jointly  Married filing separately

Your first name and initial \_\_\_\_\_

Your standard deduction:  Standard deduction  Self-employed health insurance deduction

If joint return, spouse's first name \_\_\_\_\_

Form **W-4** Department of the Treasury Internal Revenue Service  
 Complete Steps 1-4

**Step 1: Enter Personal Information**

(a) First name and last initial \_\_\_\_\_

Address \_\_\_\_\_

City or town, state and ZIP code \_\_\_\_\_

(c)  I am a U.S. citizen or resident alien  I am a nonresident alien

Complete Steps 2-4 to claim exemption from withholding

Form **W-9** (Rev. October 2018) Department of the Treasury Internal Revenue Service

1 Name (print or type) \_\_\_\_\_

2 Business name (if different from name) \_\_\_\_\_







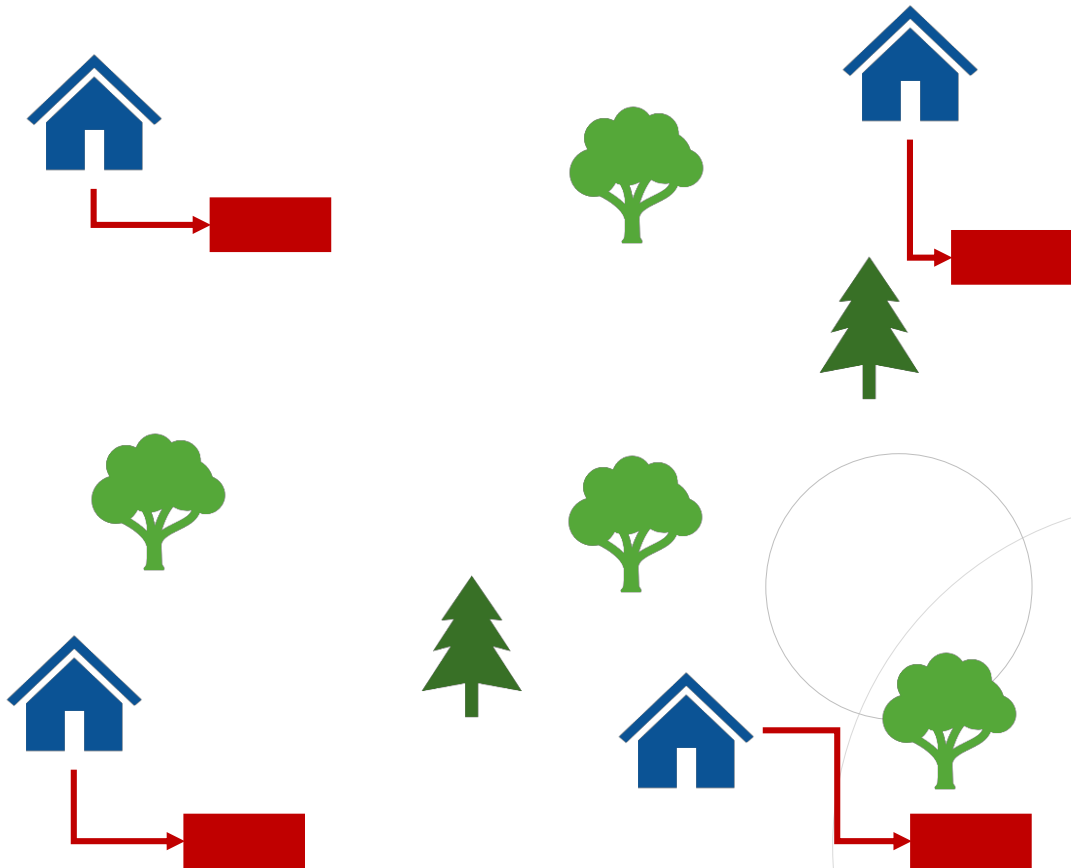


# **WHAT IS DECENTRALIZED INFRASTRUCTURE?**

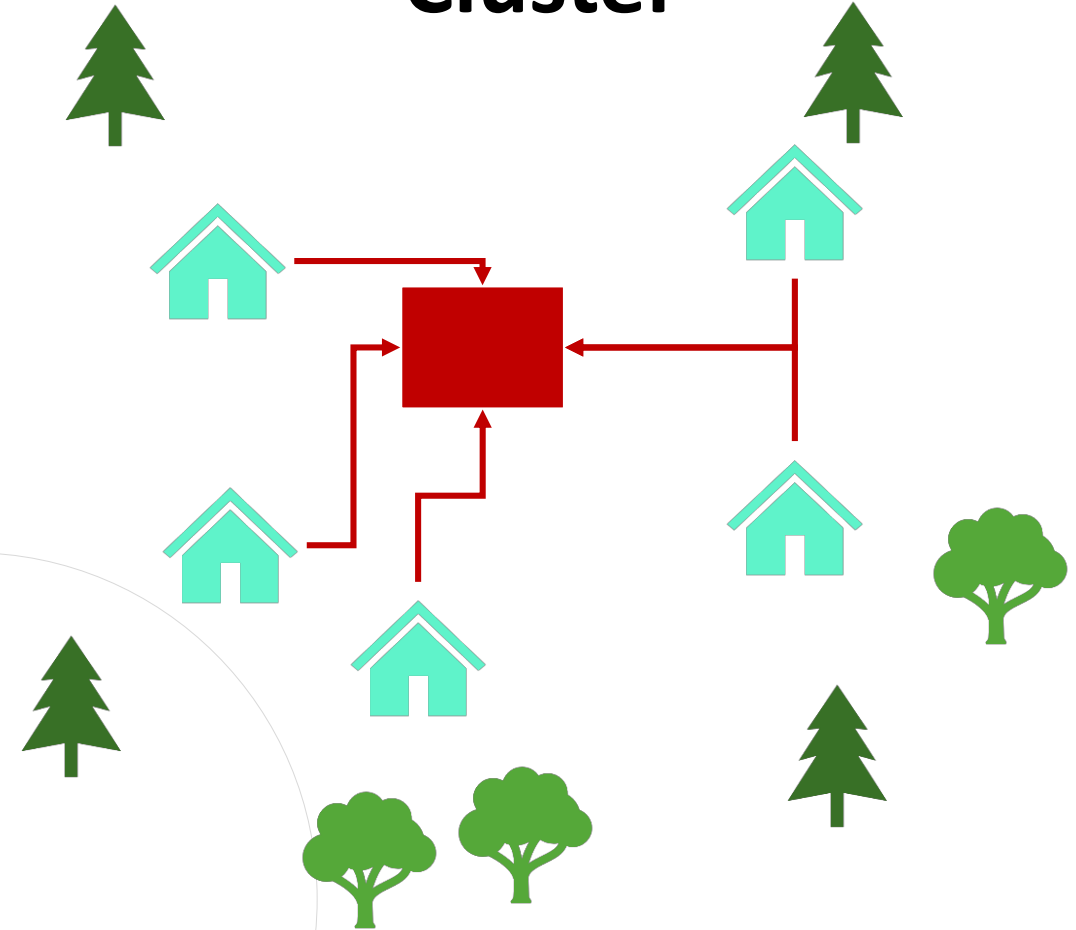


# TYPES OF DECENTRALIZED INFRASTRUCTURE

## Onsite

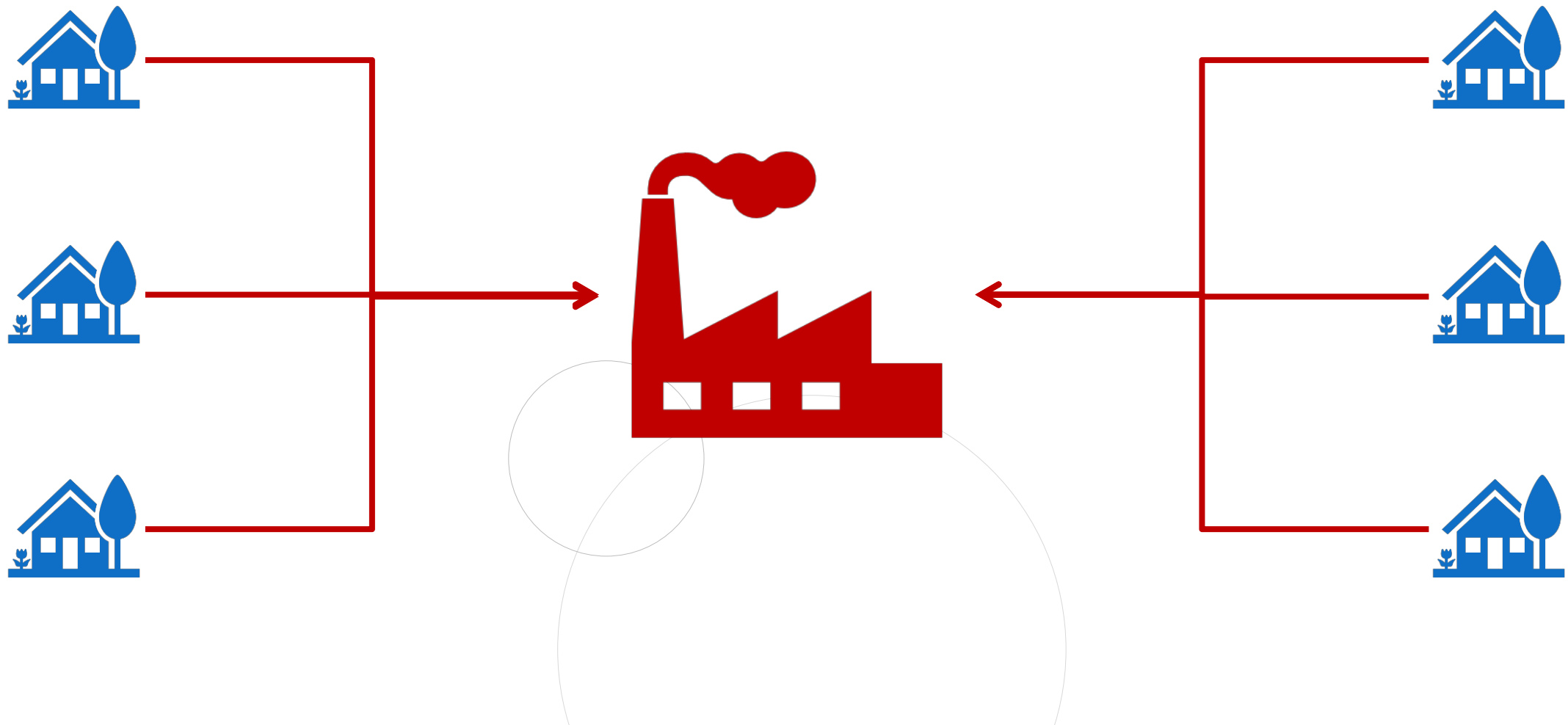


## Cluster





# CENTRALIZED WASTEWATER TREATMENT





**CAN DECENTRALIZED  
INFRASTRUCTURE BE  
COST EFFECTIVE?**



# TWO KINDS OF COSTS

## Capital Construction Costs



## Ongoing Operational Costs





## Six Keys to Driving Down Capital Costs for Decentralized

Fund Onsite  
Infrastructure  
Like Centralized

Invest in  
Innovation

Streamline  
Permitting  
Process

Use Cluster  
Systems

Find Economies  
of Scale

Invest in the  
Local  
Workforce



# CAPITAL COST COMPARISON

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## Centralized Treatment

- Cape Cod Town - \$55M phase 1 project
  - 75% Collection system
  - ~400 parcels
  - \$103,000 per parcel
- Sewer hookup
  - \$8,000-12,000 average

## Decentralized Treatment

- Retrofit I/A - \$27,000
- Full Replacement I/A - \$38,000
- Data courtesy Buzzards Bay Coalition and Barnstable Clean Water Coalition





## Six Keys to Driving Down Management Costs

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Use an RME

Reduce  
Number of  
O&M Visits

Control  
Pumping  
Costs

Bid Out O&M  
to Private  
Sector

KISS  
Technologies

Reduce  
Number of  
Samples



# RESPONSIBLE MANAGEMENT ENTITIES (RME'S)

- An organization of collection of organizations tasked with overseeing the cradle-to-grave lifecycle of onsite wastewater treatment infrastructure





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## Reduce Number of Operation and Maintenance Visits

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- Monthly O&M may be required.
- Remote monitoring can be used in place of O&M visits.
- Need to identify sensors that provide biggest offset at lowest cost.

# CONTRACT WITH EXISTING PRIVATE SECTOR COMPANIES FOR O&M

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- Bid process to get lower cost rather than homeowner going it alone.
- Utilizes existing O&M industry, keeping jobs intact.
- Better quality control.





A hand-drawn acronym 'KISS' is shown on a white background. The letters 'K', 'I', 'S', and 'S' are each circled in red. To the right of each letter is a word: 'Keep', 'It', 'Super', and 'Simple'. A hand holding a black pen is visible on the right side, pointing towards the word 'Simple'.

**K** keep  
**I** t  
**S** uper  
**S** imple

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## KISS Technologies

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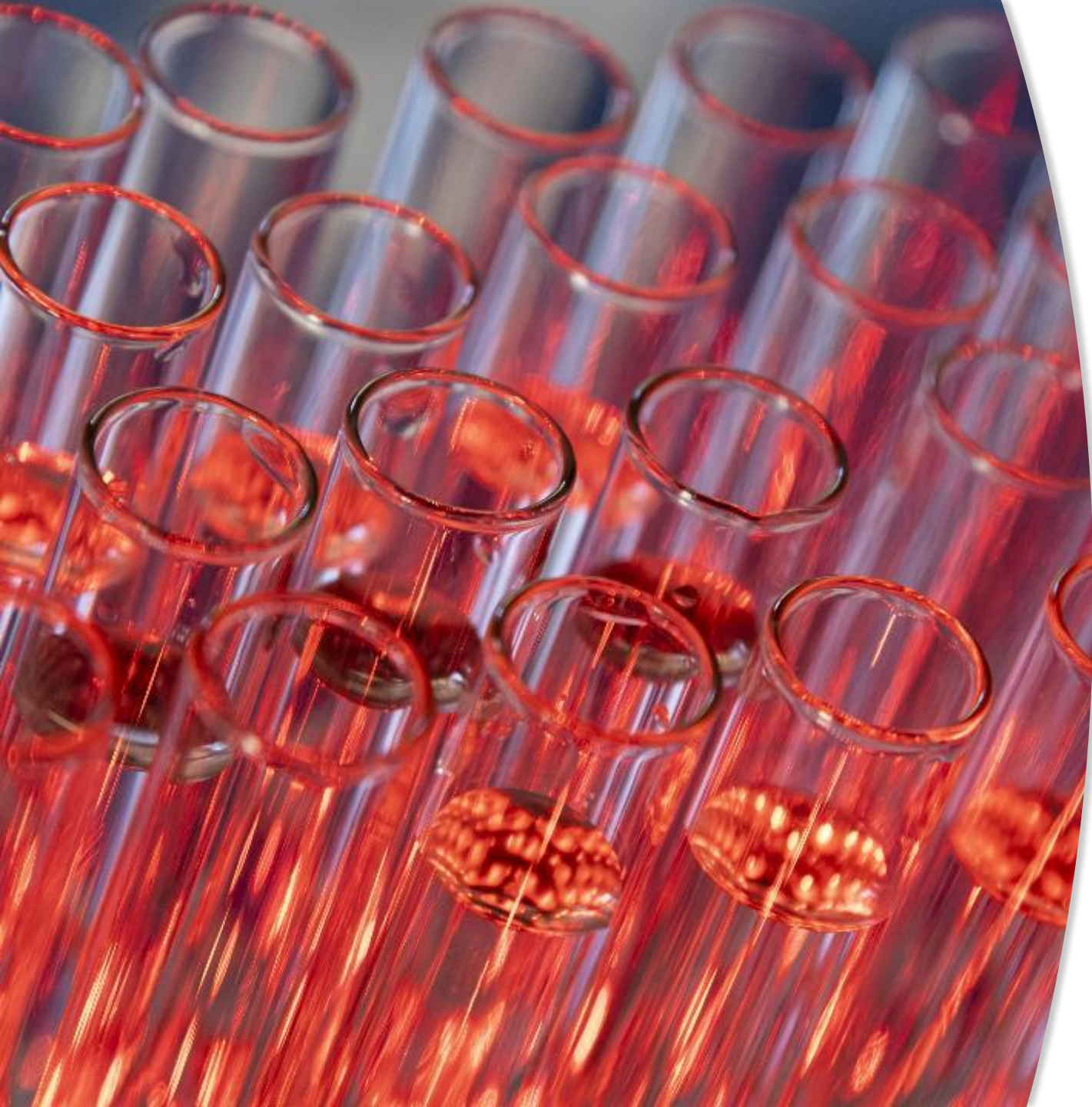
- Lower per-unit repair cost.
- Shorter O&M visits -> Lower O&M costs.

# CONTROL PUMPING COSTS

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- Bid process to get lower cost rather than homeowner going it alone.
- Identify or develop facilities to accept and treat septage and WRRF sludge.





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## Reduce Number of Samples Required for Compliance

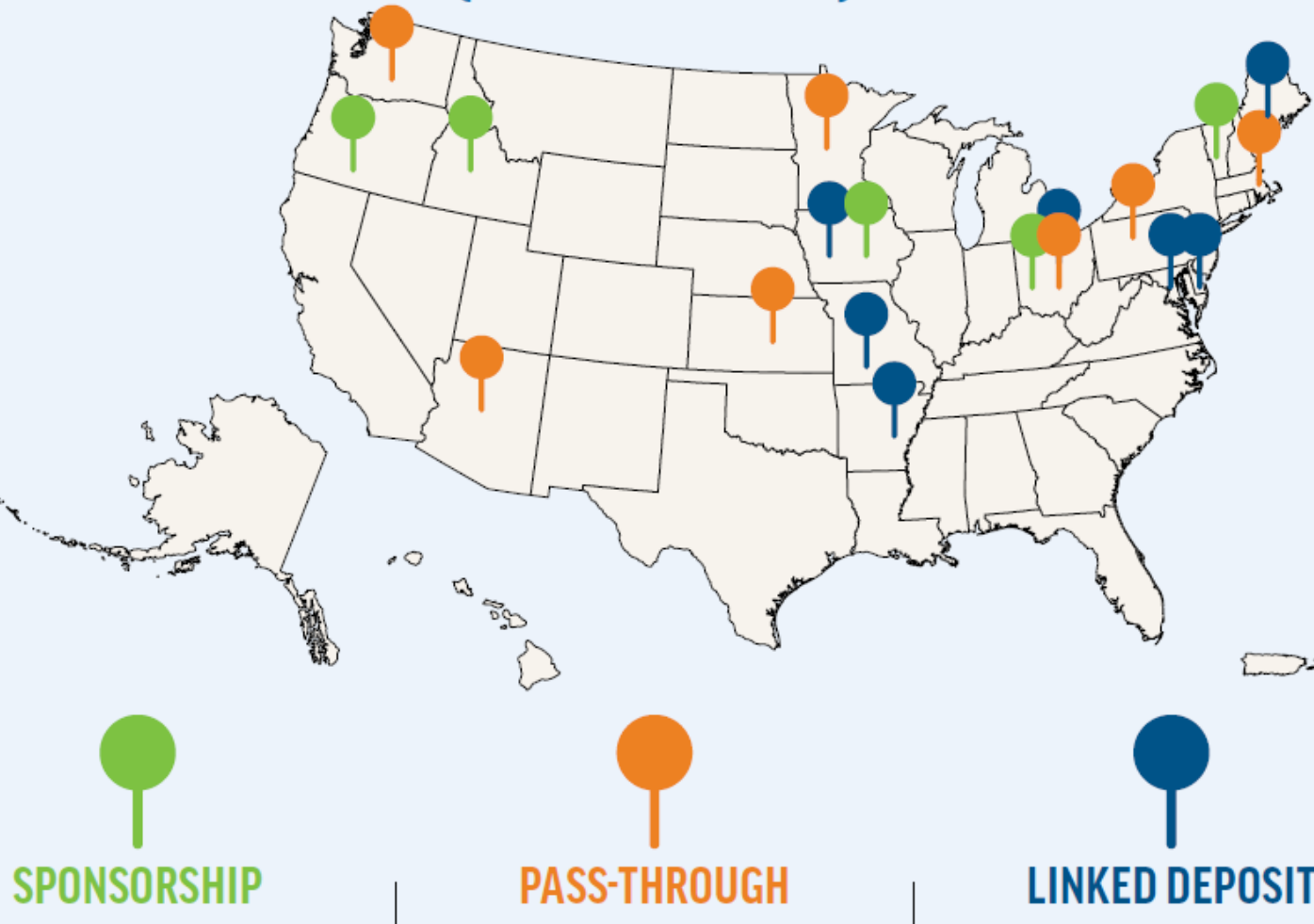
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- Low-cost sensor technology that can be deployed on individual systems.



**HOW CAN  
DECENTRALIZED  
INFRASTRUCTURE BE  
FUNDED?**

## A National Picture of Conduit Lending and Sponsorship in the CWSRF Program (as of October 2020)



## Clean Water State Revolving Funds (CWSRF)

- Massachusetts - Community Septic Management Program
- Rhode Island - Community Septic System Loan Program



# EPA DECENTRALIZED FUNDING REPORT

Lending Structure	Who is the partner?	How does it work?	Who is doing it?*
Direct homeowner loan	None	The state CWSRF signs a loan directly with the property owner.	DE
Linked deposit loan	Local bank	The borrower applies for funding at a participating bank. The CWSRF buys down the interest rate that the bank charges the borrower.	IA, MD, OH
Pass-through loan	State or local government unit	The CWSRF makes a loan to a state or local government unit (agency, county, or special district), which uses the funds to make loans for decentralized projects. The government unit ensures repayment of the CWSRF loan.	CT, MA, MN, NJ, OH, PA, WV
CDFI pass-through	Community Development Financial Institution	Same as above, but through a CDFI or other financial institution.	ID, OR, WA, WV
Sub-state revolving fund	State or local government agency, non-profit, other eligible borrower	The CWSRF makes a loan to the partner to capitalize another revolving fund. Returns on the sub-state revolving fund are used to repay the CWSRF and to make new loans.	MO, OH, RI, VA, WA
Sponsorship	Utility, local government	A utility increases the size of its loan to sponsor a NPS project. In exchange, the CWSRF reduces the interest rate on the loan to cancel out the cost of the NPS project.	DE, IA, OH, OR all have sponsorship programs, but they have not yet been used for decentralized projects.
Co-funding	Other funding programs	The CWSRF co-finances projects with another funding entity.	Every state does this, but may not have used this approach for financing decentralized projects.

\*May not be a complete list. Septic-to-sewer conversions are not included.

# USDA WATER & WASTE DISPOSAL LOAN AND GRANT PROGRAM

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- Rural Areas <10,000 population





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## Private Equity Funding

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# PERSONAL/HOME EQUITY LOANS

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# RESPONSIBLE MANAGEMENT ENTITIES (RME'S)

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# THANK YOU



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[www.masstc.org](http://www.masstc.org)

