



BUILDING A WASTEWATER TOOLBOX

HOW ONSITE WASTEWATER INFRASTRUCTURE CAN HELP CLEAN UP OUR WATER

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THREE MAJOR QUESTIONS

- Do they work?
- Can they be effectively managed?
- Are they cost effective?





QUESTION 1: DO THEY WORK?



Newer technologies are showing great results – can older technologies catch up?

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WHAT TECHNOLOGIES DID WE LOOK AT?

- ~30 technologies
- Multiple studies from across country
 - BCDHE Data
 - Suffolk County, NY (3rd Party Data)
 - Pinelands
 - Chesapeake Bay
 - Vendor Data



Disclaimer:

Inclusion of a technology on this list is not to be construed as an endorsement or recommendation of any kind by the Barnstable County Department of Health and Environment (BCDHE), or the Massachusetts Alternative Septic System Test Center (MASSTC).

Other technologies may be available that meet the needs of a particular watershed. New data may be or will become available that would lead to inclusion *or* exclusion.

Always do your homework. In two years, don't refer back to this list – the landscape will have changed.

And now, back to the drumroll.....



What Kind of Tools are we Talking About?

Less than 10 mg/L TN

- Nitroe & Santoe by Kleantu
- Nitrex by Lombardo Associates
- Layer Cake “NRBs” (Saturated)

Between 10 and 15 mg/L TN

- FujiClean
- HydroAction
- Layer Cake “NRB’s”

Others in the mix or with little to no 3rd party data

- JDL MBBR
- Advantex



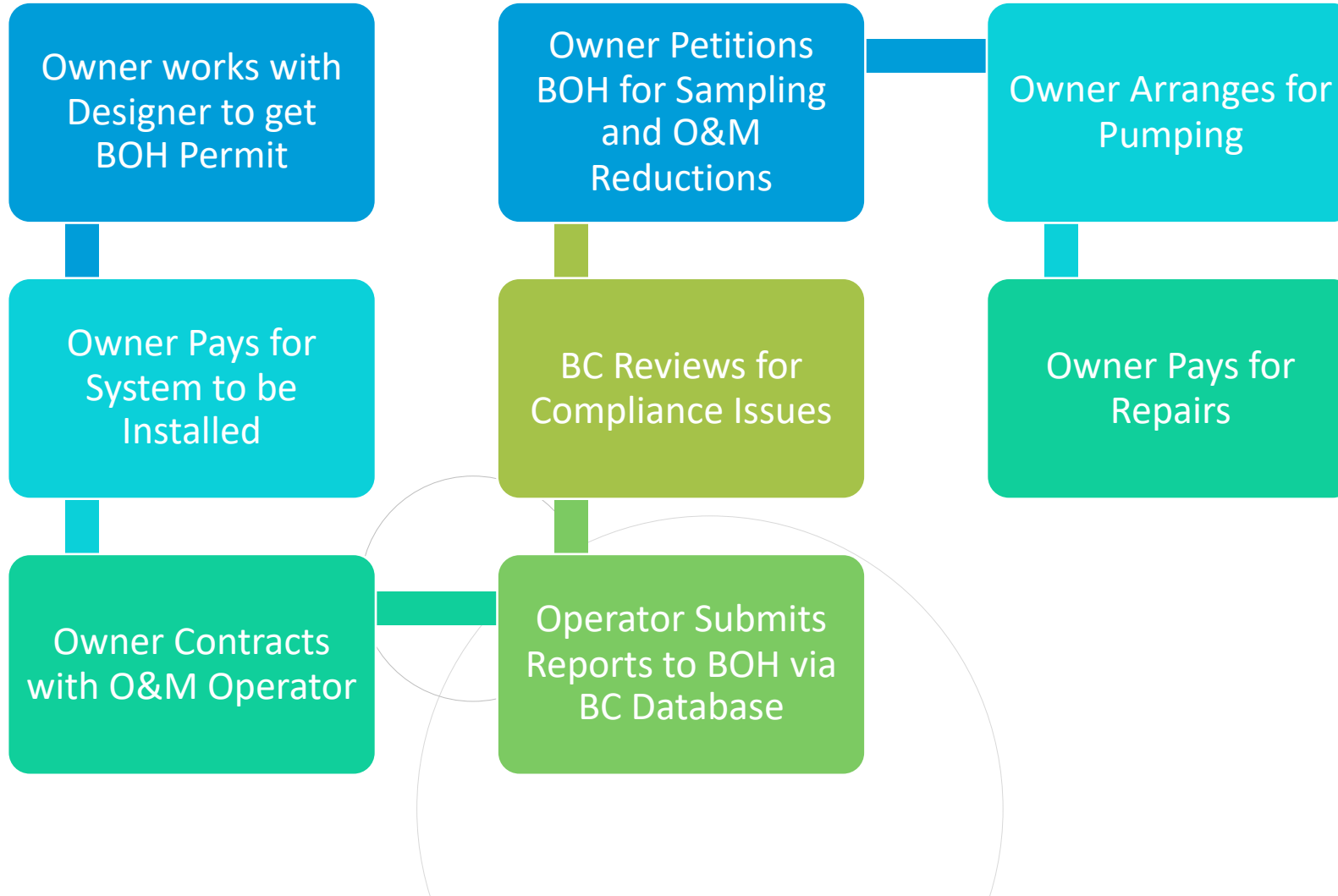
QUESTION 2: CAN THEY BE MANAGED?



Manage Onsite Systems like the Infrastructure that they are.

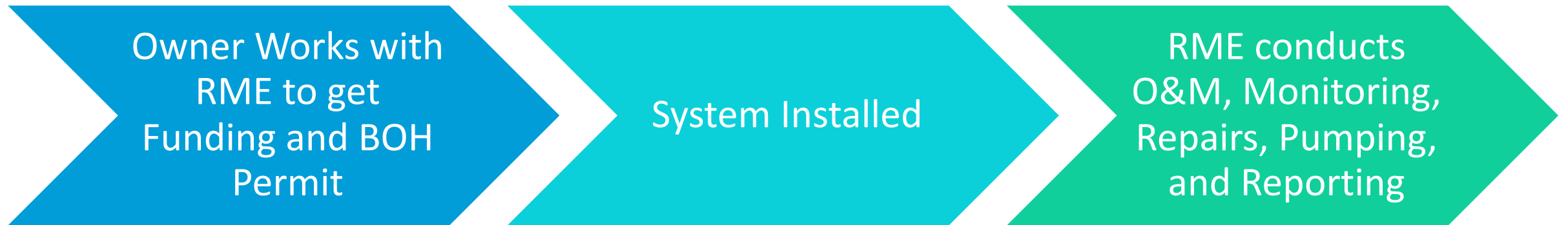


How it Works Now (In Barnstable County)





How It Could Work with an RME





QUESTION 3: ARE THEY COST EFFECTIVE?





TWO KINDS OF COSTS

Capital Construction Costs



Ongoing Operational Costs





Six Keys to Driving Down Capital Costs

Fund Onsite
Infrastructure
Like Centralized

Invest in
Innovation

Streamline
Permitting
Process

Use Cluster
Systems

Find Economies
of Scale

Invest in the
Local
Workforce



Six Keys to Driving Down Management Costs

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





Reduce Number of Operation and Maintenance Visits

- 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

- 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 marker is visible on the right side, pointing towards the word 'Simple'.

K keep
I t
S uper
S imple

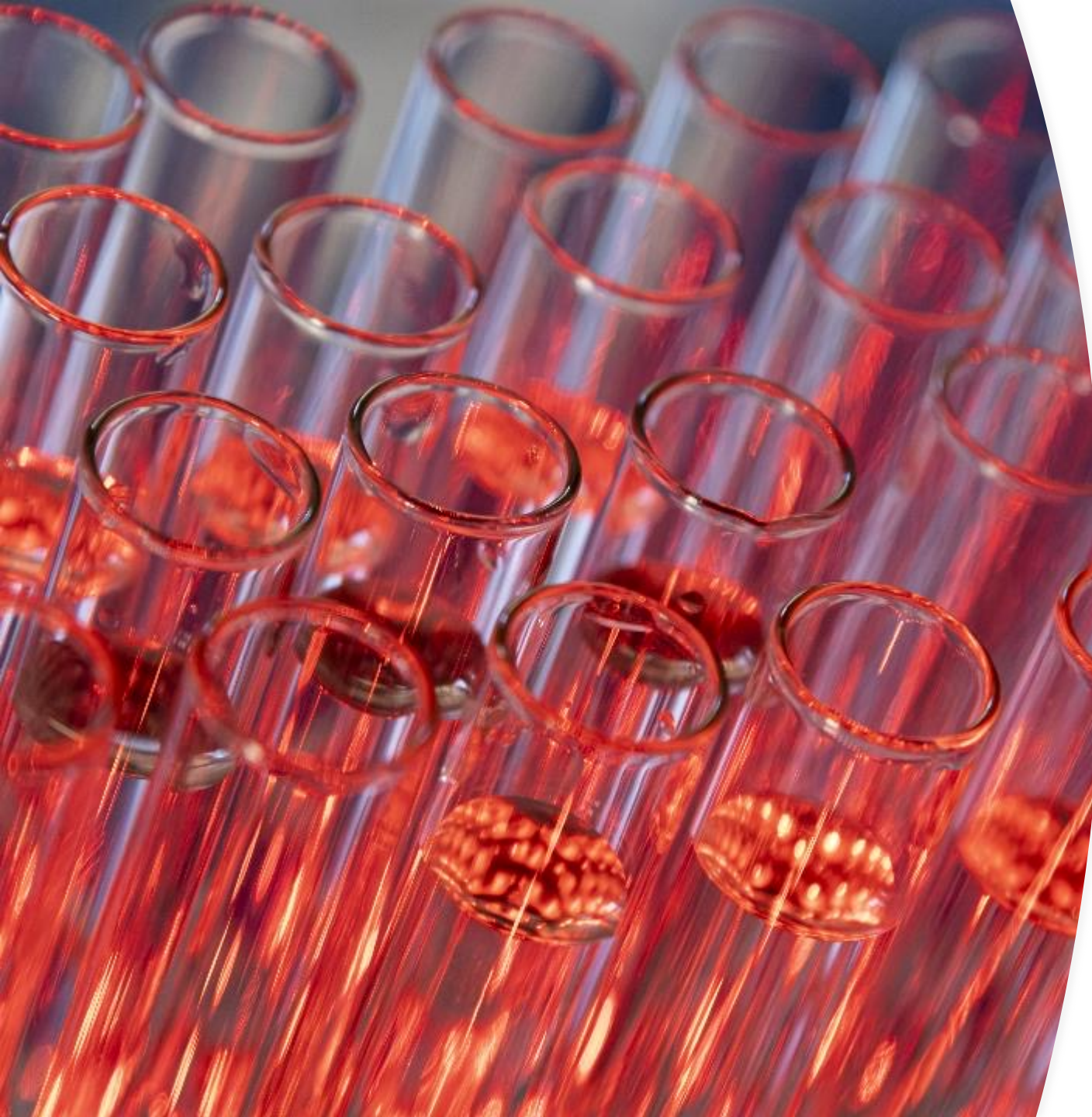
KISS Technologies

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

CONTROL PUMPING COSTS

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





Reduce Number of Samples Required for Compliance

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



THE SHORT STORY:



Capital and Ongoing Costs Equivalent or Better than Centralized Systems When Funded and Managed like Infrastructure

THREE MAJOR QUESTIONS

- Do they work?
- Can they be managed?
- Are they cost effective?

YES

***When Funded and
Managed Like Infrastructure***





THANK YOU



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