


# Cesspool Conversions in the County of Hawai'i



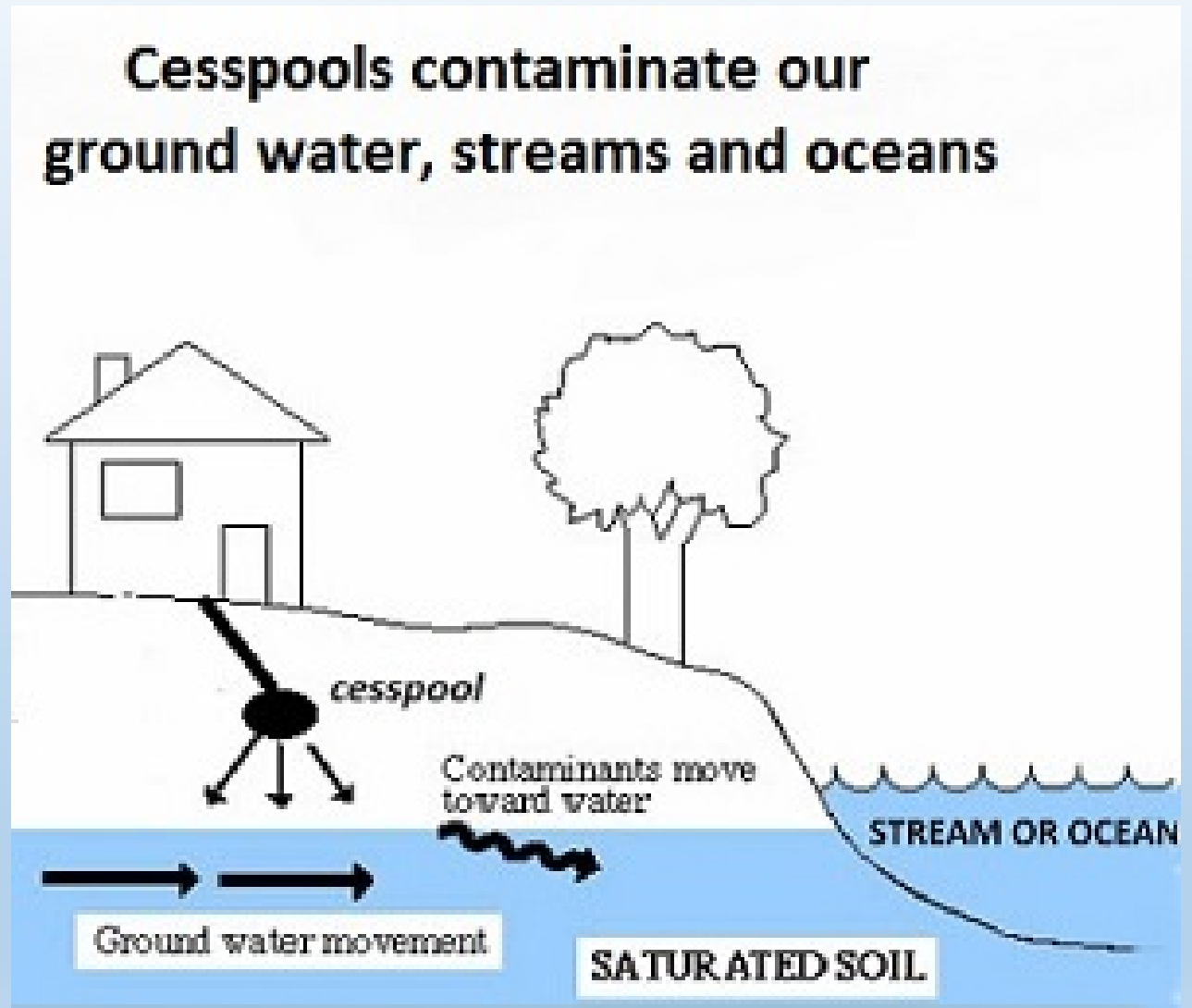
Ramzi Mansour, Director  
Department of Environmental Management

# **Agenda**

- **What are cesspools and how many are within the County of Hawai‘i**
- **The driving legislative force**
- **COH public engagement meetings**
- **Most likely conversion options for COH**
- **Roles and responsibilities Owner vs. COH vs. DOH**
- **Cost**
- **Why now and How**
- **How to participate to shape the Wastewater vision for the COH**

# Cesspools are harming our environment

- Cesspools are substandard systems. They don't treat wastewater; they merely dispose of it. Cesspools concentrate the wastewater in one location, often deep within the ground and in direct contact with groundwater, causing groundwater contamination. -- DOH

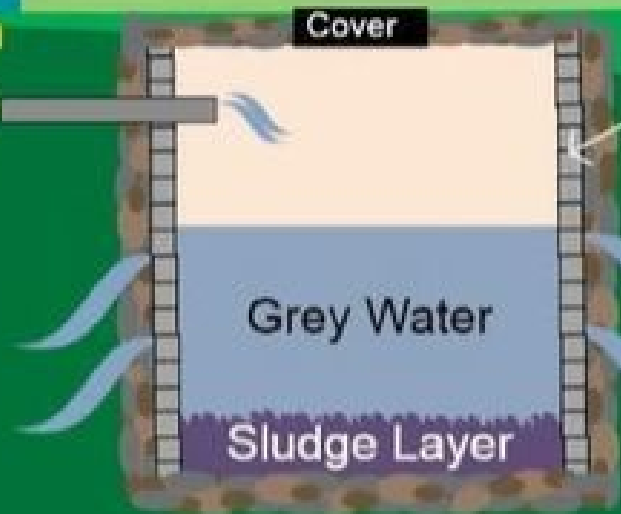




# Cesspools, continued



Inlet Pipe/Drain



Concrete/Brick/  
Perforated Wall

Grey water perforates  
through the wall  
and into the Earth

# Cesspools in Hawai'i

88,000



Number of cesspools in the State of Hawai'i & highest number of all States in the U.S.

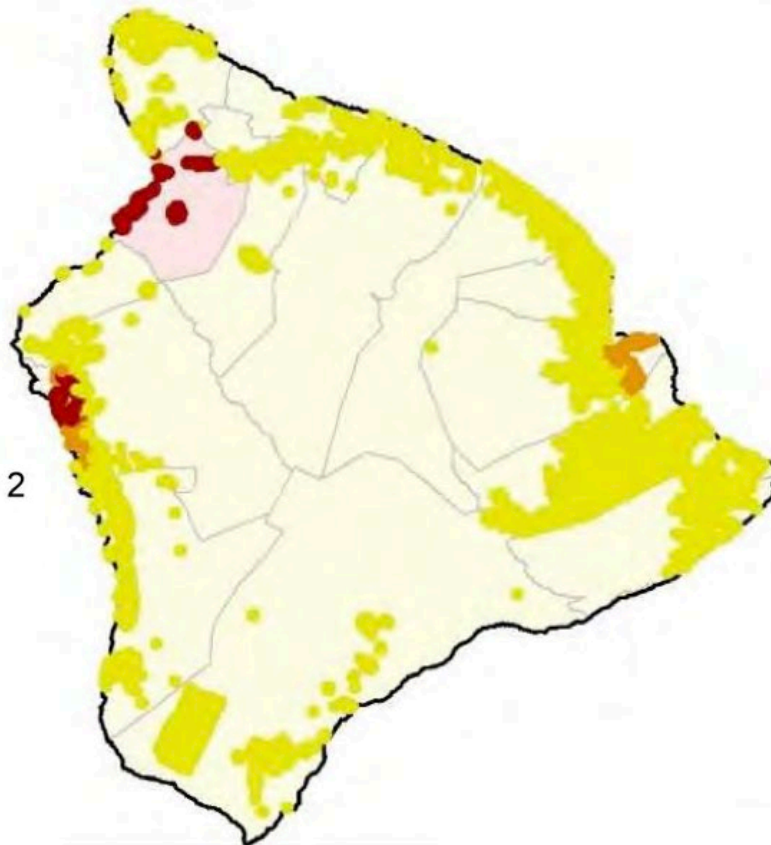
## Act 125

Passed during the 2017 Legislative Session, mandates the removal of all cesspools island wide by the year 2050.

For more information and to read the full report on cesspools by the Department of Health visit:  
<http://health.hawaii.gov/wastewater/cesspools/>

### Cesspools: Prioritization Category by Tract

- Priority 1
- Priority 2
- Priority 3



53 Million

Gallons of sewage from Hawai'i cesspools that leak into the environment daily.



90%

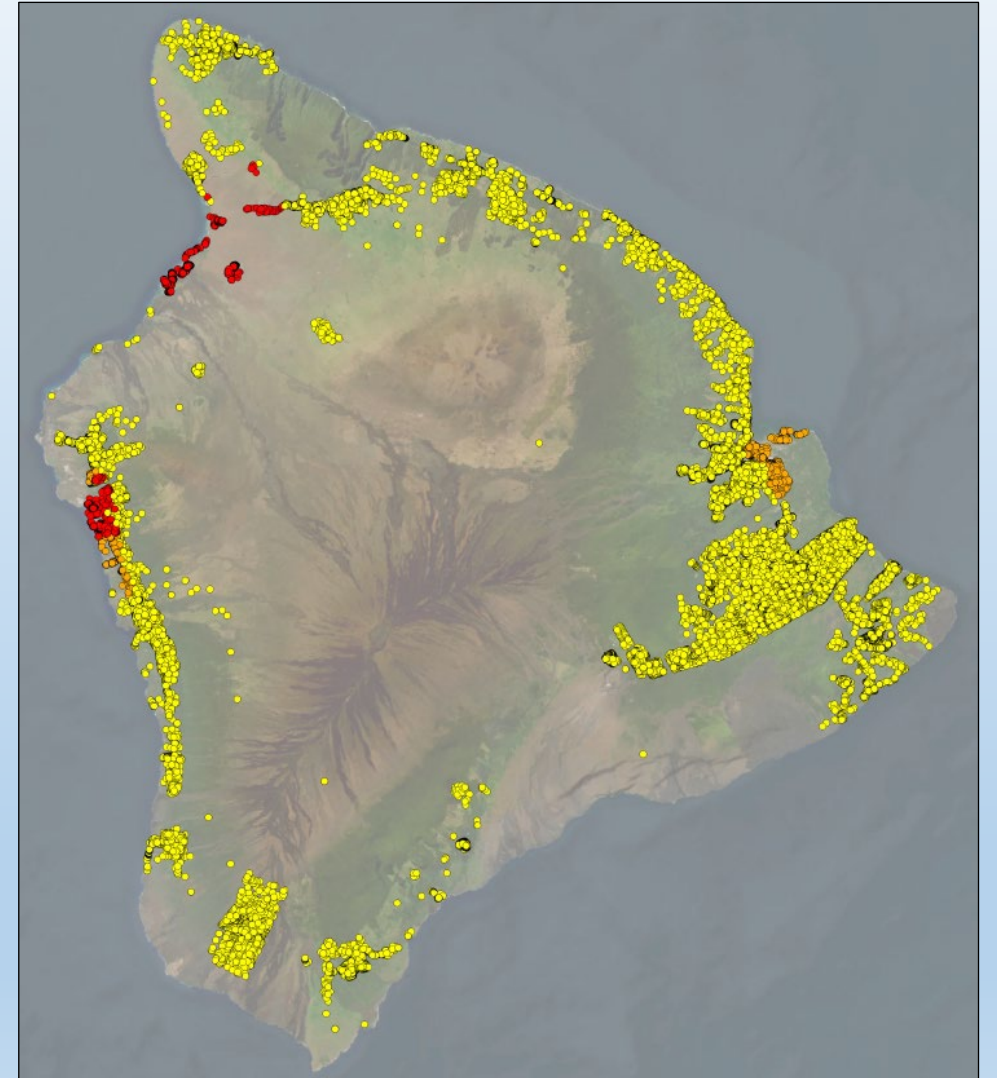
Percent of the Hawai'i's drinking water that comes from underground aquifers. Recent testing found cesspool contaminants in the drinking water of some areas of the state.





# Hawai'i County has the most cesspools in the State

Priority Category	Number of Cesspools
● 1	5,119 cesspools (11%)
● 2	2,619 cesspools (5%)
● 3	40,858 cesspools (84%)
Total	48,596 cesspools

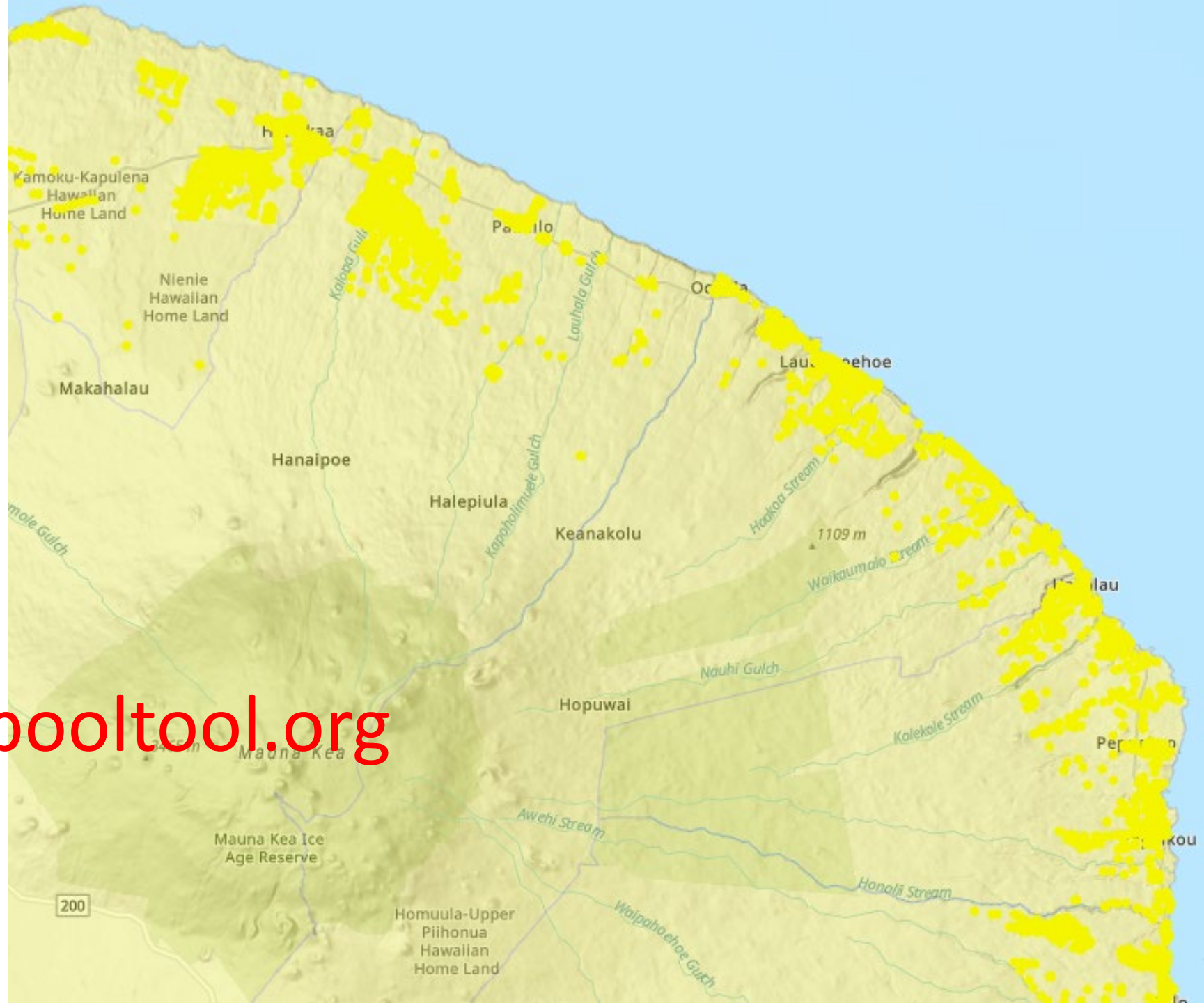


2,000 cesspools per year need to be converted to meet the 2050 deadline.

# The Driving Legislative Force

- **HRS 342D-72:** (a) Before January 1, 2050, every cesspool in the State, excluding cesspools granted exemptions by the director of health pursuant to subsection (b), shall be:
  - (1) Upgraded or converted to a director-approved wastewater system; or
  - (2) Connected to a sewerage system.(b) The director of health may grant exemptions (based on small lot size, steep topography, poor soils, or accessibility issues)
- **Act 132 (2018):** Created the Cesspool Conversion Working Group
  - Analyzed 15 objectives in the broad categories of Finance, Technology, and Data Prioritization
  - Presented findings to the 2023 Legislature

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





# Who is responsible for what?

## Hawaii Department of Health, Wastewater Branch

- Review and approve **new individual wastewater systems** (e.g., septic tanks, aerobic treatment units, or others).
- Regulate and oversee **all IWSs** state-wide, including enforcement of the cesspool ban.
- Implement **IWS financial aid** (when available).

## Homeowner

- **Comply** with the State's cesspool conversion mandate.

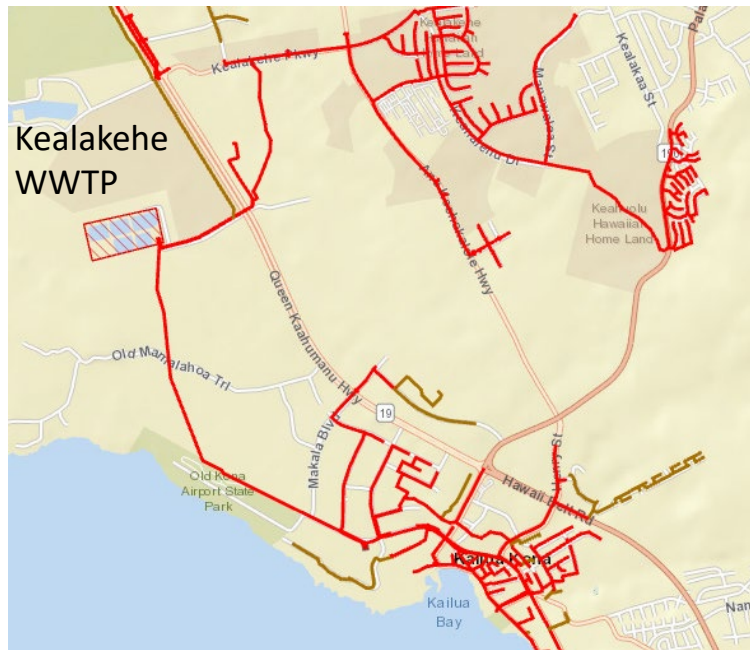
## Hawaii County

- Support constituents by developing a **roadmap** to guide the County's cesspool conversions.
- Operate and maintain **County-owned sewers**, wastewater pump stations, and wastewater treatment plants.
- Plan and build **new sewers** so that feasible homes can connect (convert cesspools).
- Review and approve **building permits**.

# **Most likely conversion options for COH**

- Expansion of centralized sewer service areas
- Decentralized systems
  - Potential conversion option for clustered systems that cannot be feasibly connected to centralized systems
- Individual wastewater systems
  - Conversion technology is dependent onsite conditions

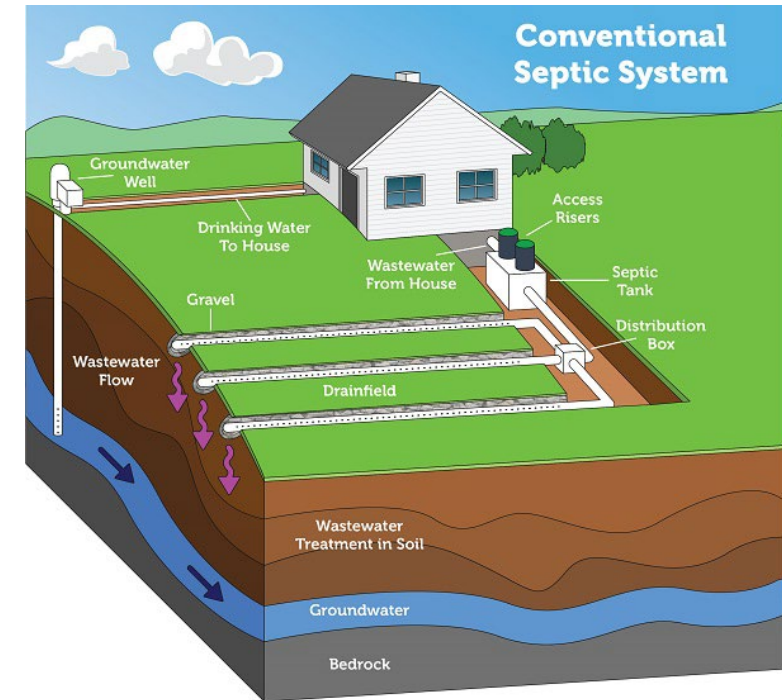
# Options to Replace Cesspools



**Connection to an Existing County Treatment Plant**



**Decentralized or Cluster System with a New Treatment Plant**



**Upgrade Cesspool to an Approved Onsite System**



## **Conversion option #1:** Connect to the County's sewer system (Centralized System)

- Proximity to existing collection system
- Feasibility of extending the collection system
- Available capacity at the wastewater treatment plant
- Cost of upgrades and sewer fees

County Wastewater Treatment Plants



## Connect to the County's sewer system

### Benefits



Potential to reduce potable water use and increase recycled water use



Excellent environmental protection



Potential for rapid conversions



Homeowners will not have to operate and maintain an individual system



Potential to reduce the burden of conversions by limiting scope to sewer lateral only

### Challenges



County will need to expand sewer system



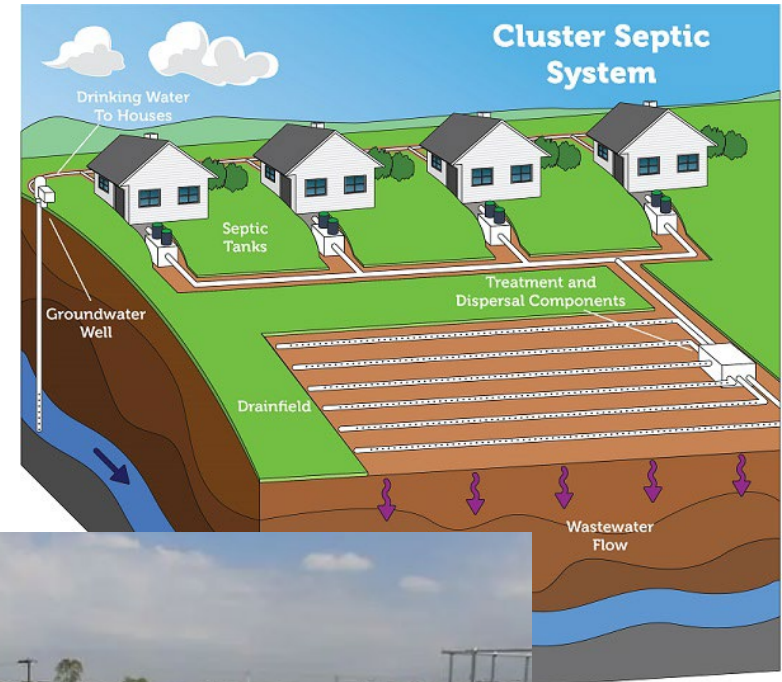
Cost to the County will be significant, but can be financed/recovered over time



County requires staff/support to implement projects

## **Conversion option #2:** Connect to a new or existing Decentralized or Cluster WWTP







- Connecting groups of homes (50 to several hundred)
- Smaller version of a centralized WWTP
- Larger version of an onsite individual wastewater system
- Cost of construction and sewer fees









## Connect to a new or existing Decentralized or Cluster WWTP

### Benefits

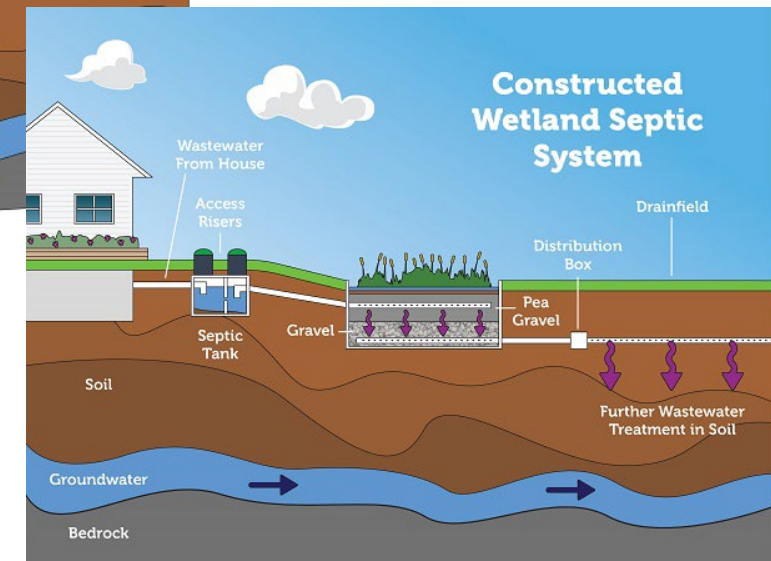
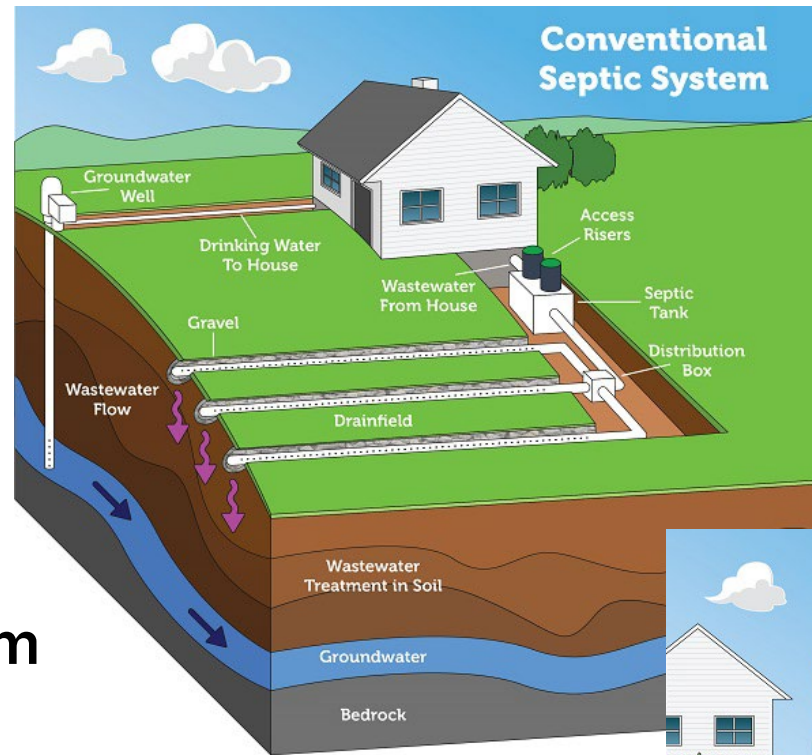
-  Potential to reduce potable water use and increase recycled water use
-  Excellent environmental protection
-  Potential for rapid conversions
-  Homeowners will not have to operate and maintain an individual system
-  Potential to reduce the burden of conversions by limiting scope to sewer lateral only
-  Broadens range of funding opportunities

### Challenges

-  Neighborhood coordination needed (e.g., Sewer Improvement District)
-  Costs for up-front planning, design, and construction
-  Need for licensed, skilled operators
-  Land/space requirements

## Conversion option #3: Convert to a DOH-Approved Onsite System

- Site evaluation by licensed engineer to determine possible system options
- Regulation (HAR 11-62): systems approved for use by DOH
- Submit application for each system to be reviewed/approved by DOH
- Typically, minimum lot size of 10,000 square feet



# Convert to an Approved Onsite System

## Benefits



Potentially lower construction costs



Better than cesspools



Additional land would not need to be acquired



Relatively fewer permitting requirements



Homeowner demonstrates environmental stewardship

## Challenges



Homeowners are responsible for operating and maintaining system



Cost must be borne by homeowner and financial support is needed by many



Owners must hire licensed engineer and contractor



Environmental risk because effluent is directly discharged into ground



# How much does a cesspool conversion **cost**?

*It depends on the conversion method...*

- **IWS:** Homeowners' costs for IWS conversions range from \$30K to \$70K (site-specific +/-)
- **Sewering:** Cost estimates from Puna Facility Plan
  - Estimated \$4B to \$11B capital cost for different sewerage alternatives (County sewers)

# Future plans for financial support



Hawaii County is exploring grant and low interest loan options for County projects.

- Federal funding opportunities.
- Prioritize high priority cesspools and financially burdened.



State financial support programs:

- Waitlist is filled for the current \$20K DOH grant program.
- Other programs are to be determined.

<https://health.hawaii.gov/wastewater/home/ccpgp/>

## – ***Why***

- To protect human health
- To manage precious groundwater sources, shorelines, beaches, reefs, and ocean activities
- To comply with Federal and State laws
- To provide a road map for future development planning
- To address solutions to current conditions
- To identify and forecast capital improvements and work on financial plans in advance
- To create a preventative maintenance program
- To tackle the top priorities and identify necessary resources



## – ***How***

- Close and ongoing collaboration with the County Council over the last three years to tackle our wastewater challenges head-on
- DEM has been working on multiple fronts to solve the wastewater problem by:
  - » Finalizing the Puna and Pāhoa wastewater master plans
  - » Undertaking a wastewater rate study to address the fiscal shortfalls
  - » Securing the services of Carollo Engineers to address the Integrated Wastewater Management Plan, the Cesspool Master Conversion Plan, the Facility Plan, the Hilo WWTP, and a revision of Operations and Maintenance manuals

# Two rounds of public engagement

## February 2024

### First Round: Basis of Cesspool Conversion Plan

- Water stewardship
- Importance of eliminating cesspools
- Overview of options to convert cesspools

### Second Round: Cesspool Conversion Plan Findings

- Conversion options by region
- Financing & funding concepts

## Summer 2024

## Ongoing Public Engagement

**First Round: February 2024**

**Second Round: Summer 2024**

- **Maps showing conversion options:**
  - **Connect to an existing wastewater treatment plant**
  - **Connect to a new cluster or decentralized wastewater treatment plant**
  - **Replace cesspool with an approved system**
- **What will it cost and how to pay?**
  - **Financing & funding concepts**



For more information, please see DEM's website or email  
**[cohdem@hawaiicounty.gov](mailto:cohdem@hawaiicounty.gov)**

❖ <https://www.dem.hawaiicounty.gov/projects/integrated-wastewater-management-plan>



**Scan me**



The screenshot displays the County of Hawaii Environmental Management website. The header includes the County of Hawaii logo, the text "COUNTY OF HAWAII ENVIRONMENTAL MANAGEMENT", and links for "Contact Us" and "Sign Up for Service Notifications". A search bar is located on the right. The main navigation menu features "SERVICES", "FACILITIES", "FAQ", "PROJECTS" (highlighted), "ABOUT", and "I WANT TO...". The left sidebar lists several projects, including the "INTEGRATED WASTEWATER MANAGEMENT PLAN", "PĀHALA & NĀ'ĀLEHU LARGE CAPACITY CESSPOOL CLOSURES", "WASTEWATER PLAN FOR PUNA & FEASIBILITY STUDY FOR PĀHOA", and "PUAKŌ AND SOUTH KOHALA REGIONAL WASTEWATER MASTER PLAN". The main content area shows the "Integrated Wastewater Management Plan" project page, with a sub-header "Projects »" and the title "Integrated Wastewater Management Plan". Below the title, it says "Cesspool Conversions Public Engagement". At the bottom right of the main content area, there are links for "Font Size", "Share & Bookmark", "Feedback", and "Print".

# How to participate in the legislative process.



## ❖ Tips on testimony:

<https://lrb.hawaii.gov/par/engagement-101/tips-on-testimony/>

**Scan me**

- ✓ Include the bill number, bill's title, your name
- ✓ Address the committee chair and members
- ✓ Clearly state whether you support or oppose the bill
- ✓ Introduce yourself and your organization (if any) that you represent
- ✓ Summarize the reason for your position; provide facts and/or tell a personal story
- ✓ Thank the committee for the opportunity to testify
- ✓ Keep it short

# How to participate in the legislative process...



**Scan me**

## ❖ Use your voice at the Legislature:

<https://lrb.hawaii.gov/par/use-your-voice-at-the-legislature/>

- ✓ Communicate with your Legislators
- ✓ Share an idea for a new law
- ✓ Ask for a public hearing
- ✓ Testify
- ✓ Repeat as necessary
- ✓ Contact the Governor



Questions?

