Communication No. 2024-12

Cesspool Conversions in the County of Hawai‘i

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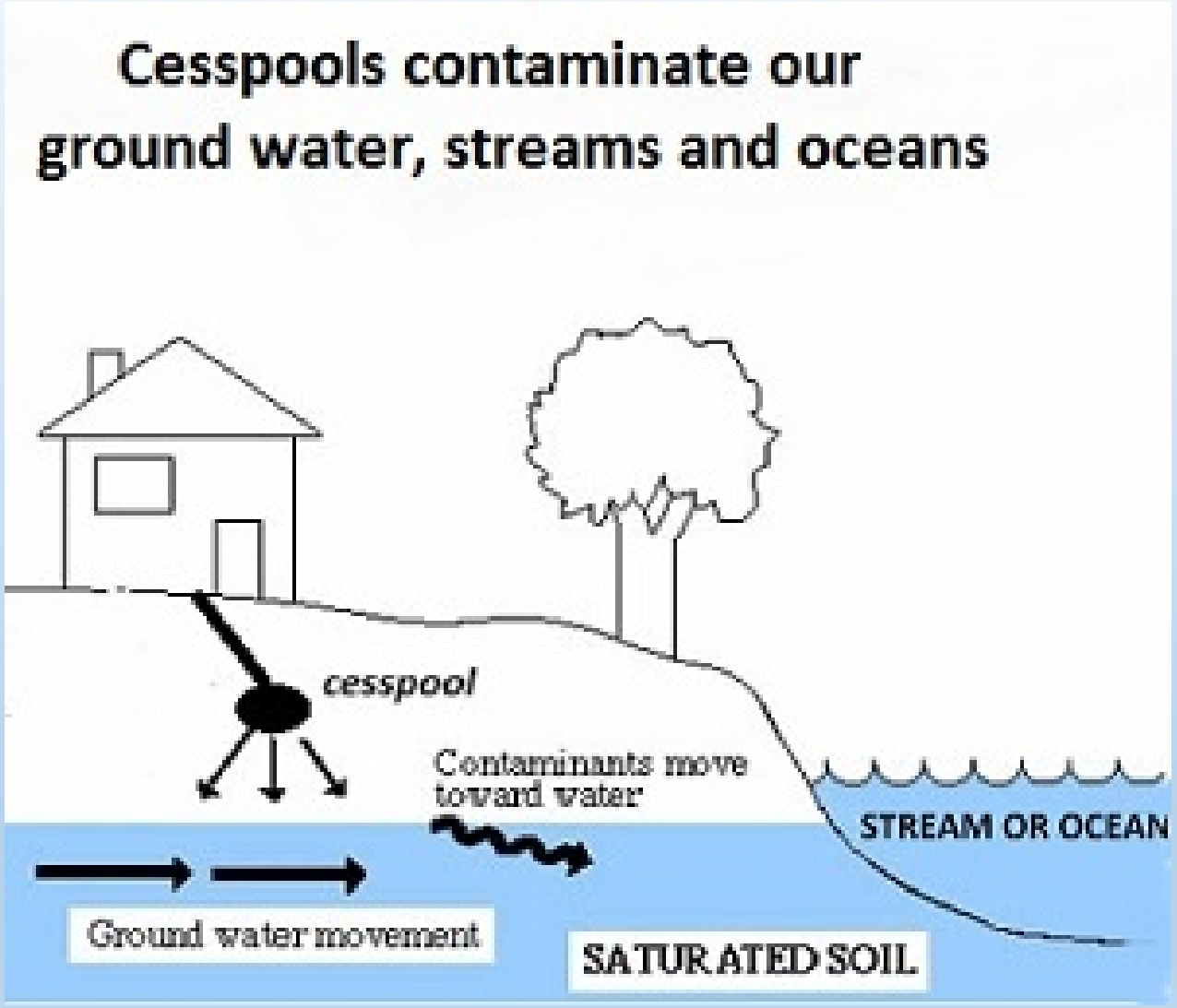
Department of Environmental Management

Agenda

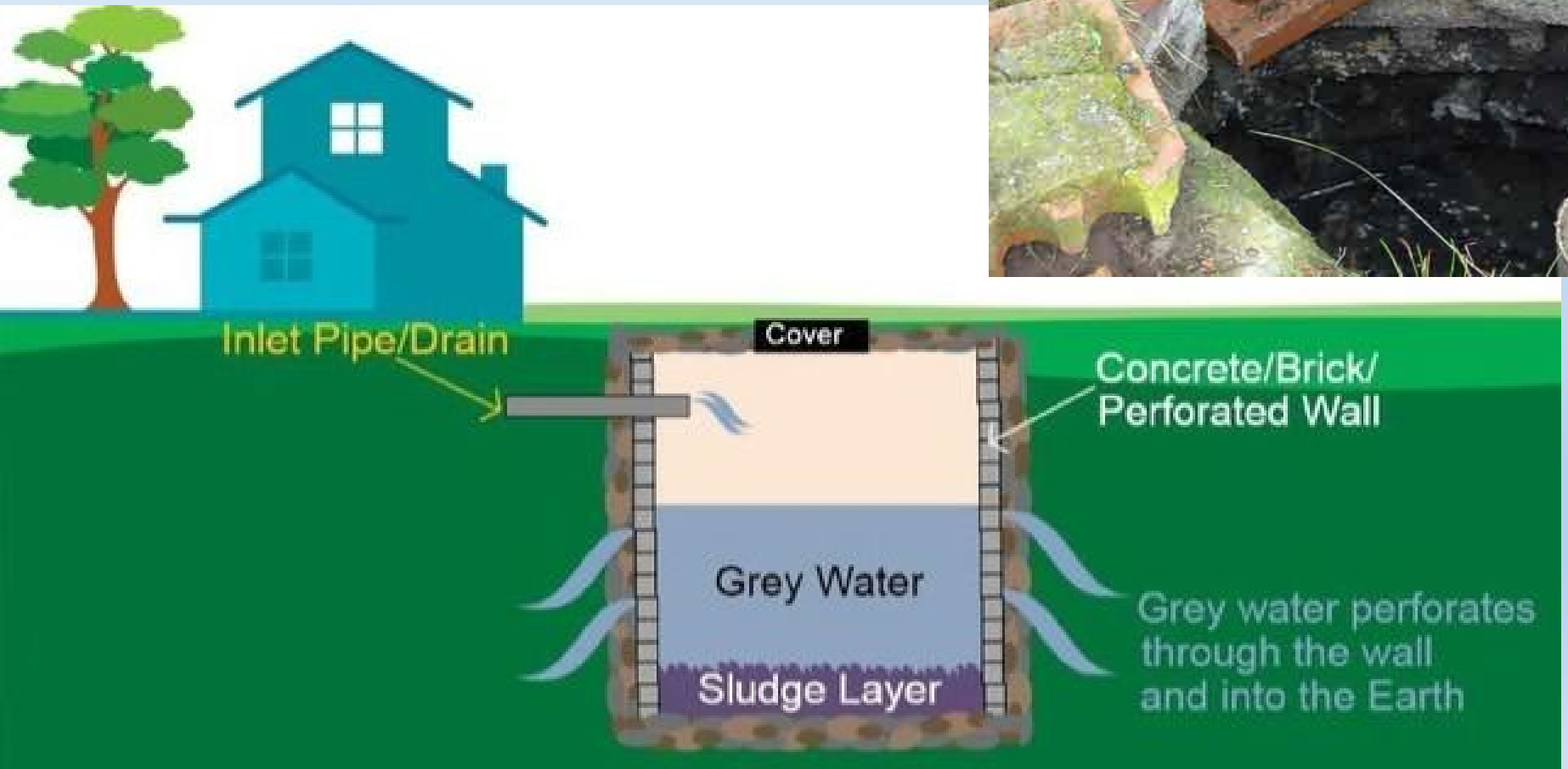
- What are cesspools and how many are within the County of Hawai‘i
- The driving legislative force
- COH public engagement meetings
- Most likely conversion options for COH
- Roles and responsibilities Owner vs. COH vs. DOH
- Cost
- Why now and How
- How to participate to shape the Wastewater vision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



Cesspools in Hawai'i

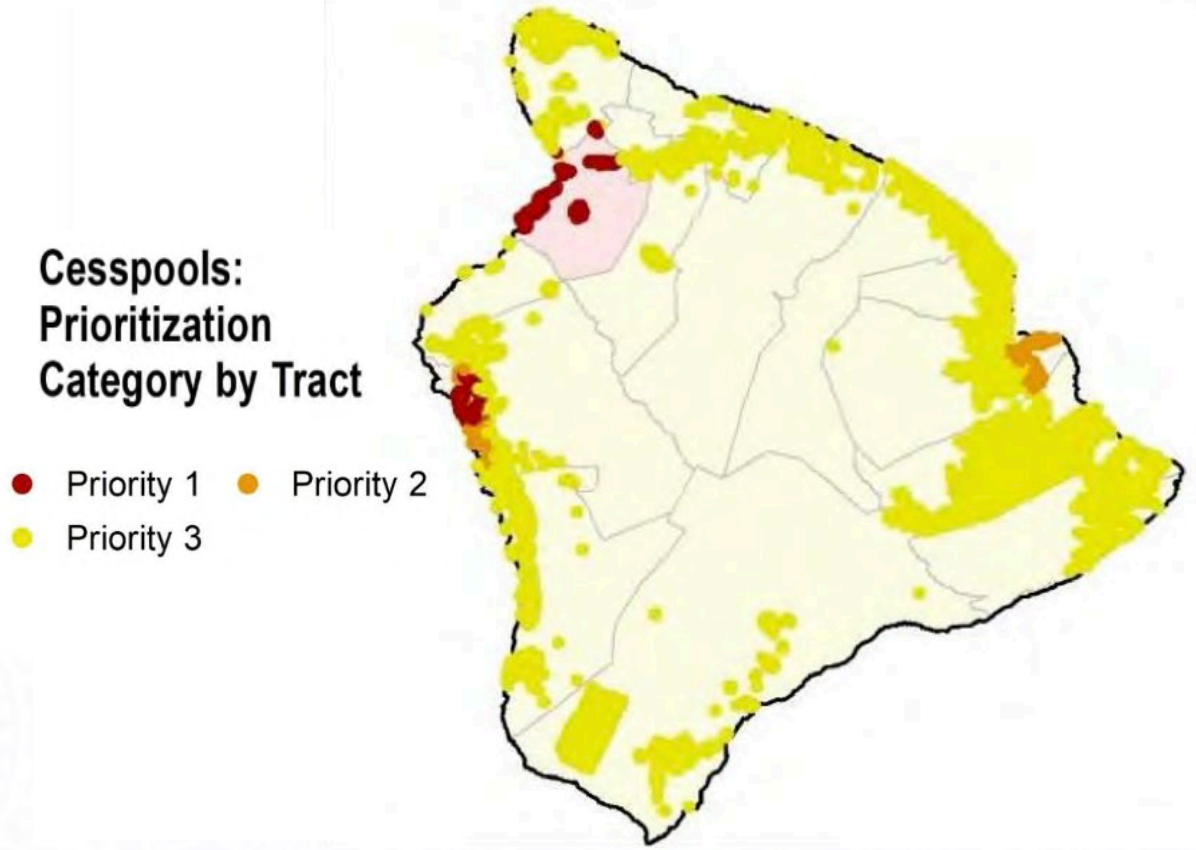
88,000

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/



53 Million

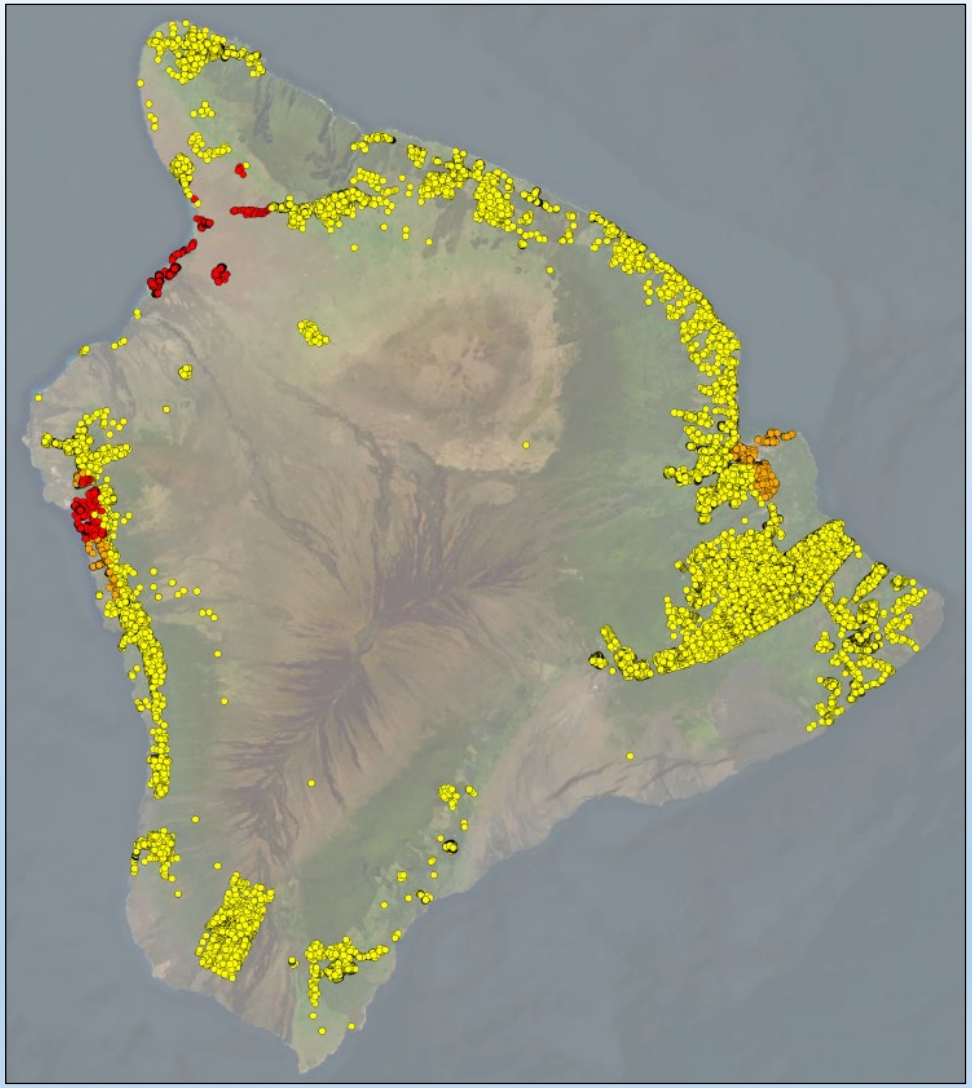
Gallons of sewage from Hawai'i cesspools that leak into the environment daily.

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

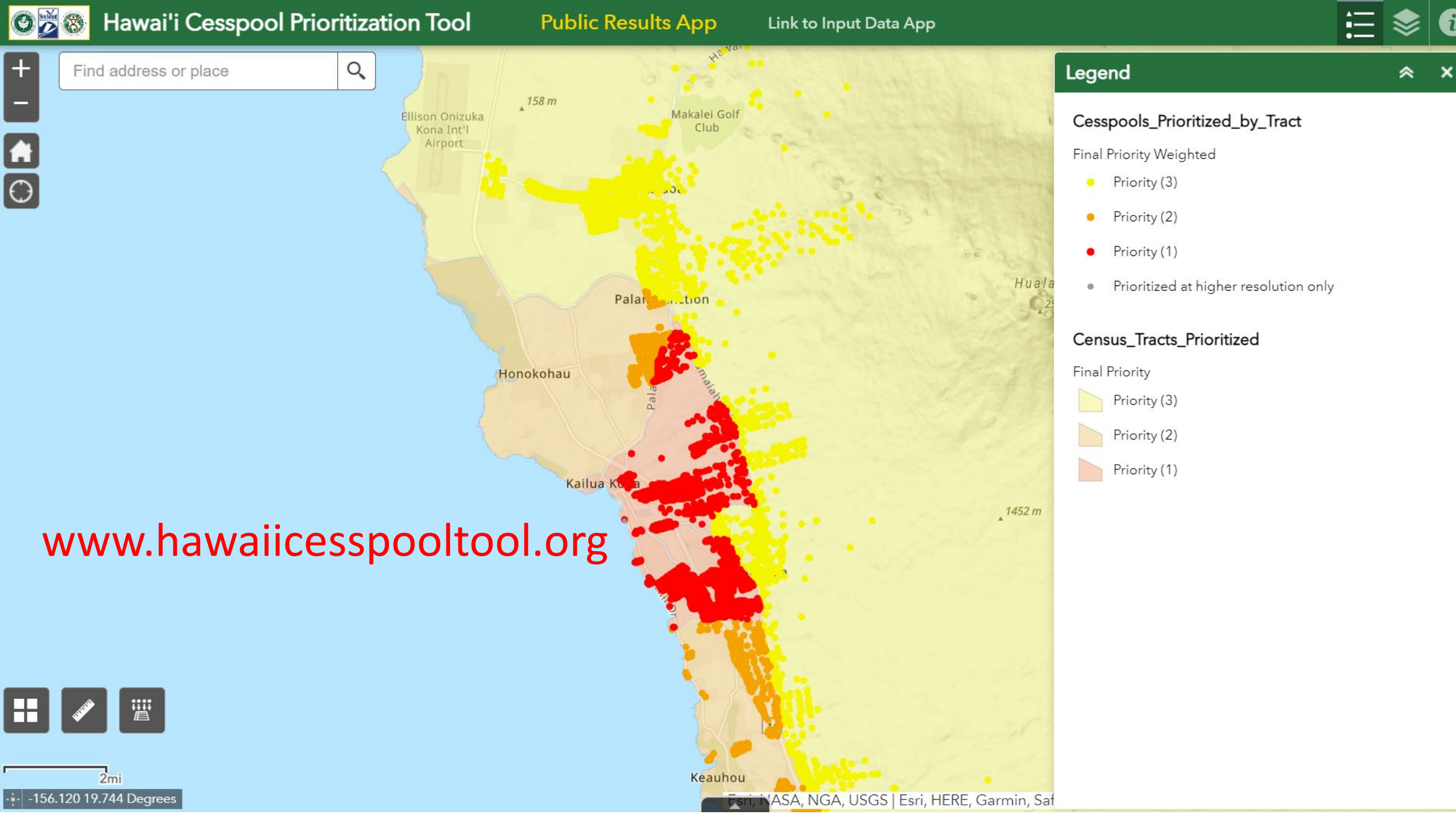
Priority Category	Number of Cesspools
1	5,119 cesspools (11%)
2	2,619 cesspools (5%)
3	40,858 cesspools (84%)
Total	48,596 cesspools



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


Hawai'i Cesspool Prioritization Tool
Public Results App
Link to Input Data App
Find address or place
158 m
Ellison Onizuka Kona Int'l Airport
Makalei Golf Club
Honokohau
Kailua Kona
1452 m
Keauhou
www.hawaiicesspooltool.org
2mi
-156.120 19.744 Degrees
Legend
Cesspools_Prioritized_by_Tract
Final Priority Weighted
Priority (3)
Priority (2)
Priority (1)
Prioritized at higher resolution only
Census_Tracts_Prioritized
Final Priority
Priority (3)
Priority (2)
Priority (1)

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**.

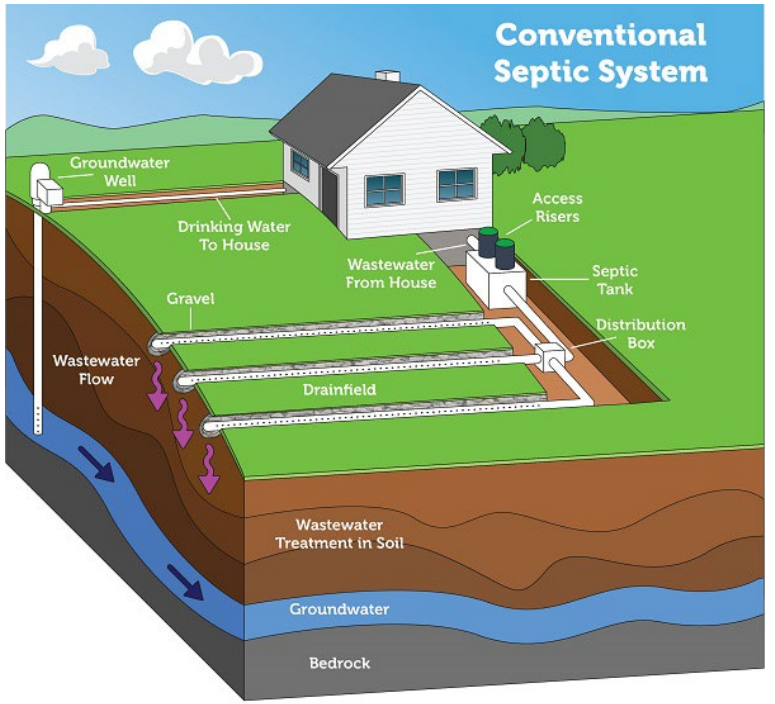
Most likely conversion options for COH

- 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

https://gis.hawaiicounty.gov/arcgisportal/apps/webappviewer/index.html?id=9517e052e2464706bfc81165e35b7fcc
https://twri.tamu.edu/publications/txh2o/2022/winter-2022/bigger-is-not-always-better-decentralizing-texas-wastewater-infrastructure/
https://www.epa.gov/septic/types-septic-systems

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

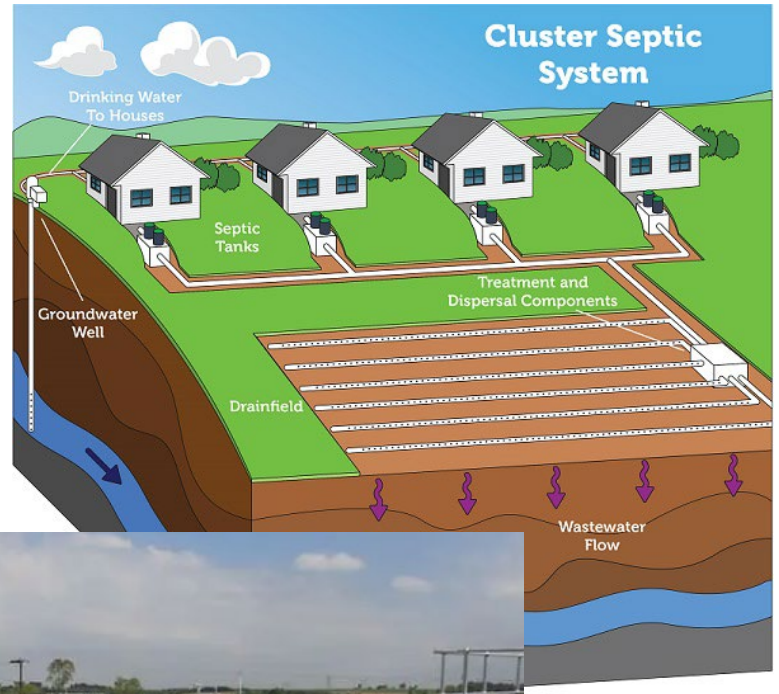
- Potential to reduce potable water use and increase recycled water use
- Excellent environmental protection
- Potential for rapid conversions
- Homeowners will not have to operate and maintain an individual system
- Potential to reduce the burden of conversions by limiting scope to sewer lateral only

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



https://www.epa.gov/septic/types-septic-systems

Connect to a new or existing Decentralized or Cluster WWTP

Benefits

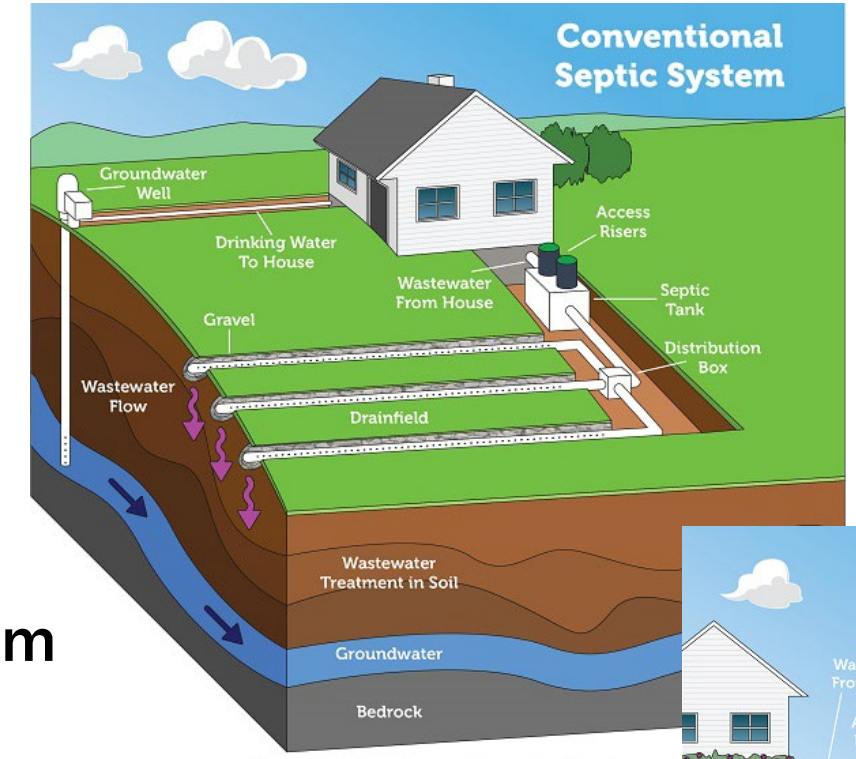
- Potential to reduce potable water use and increase recycled water use
- Excellent environmental protection
- Potential for rapid conversions
- Homeowners will not have to operate and maintain an individual system
- Potential to reduce the burden of conversions by limiting scope to sewer lateral only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

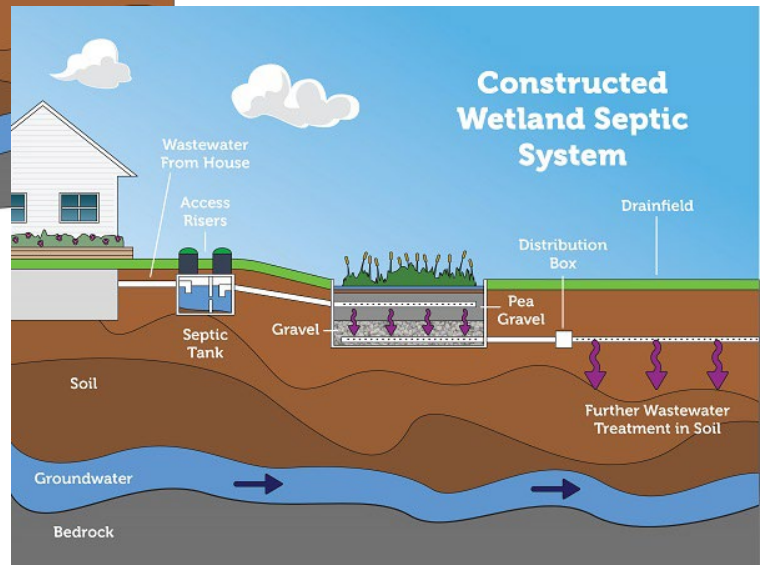
Challenges

- 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 sewering 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

Summer 2024

Second Round: Cesspool Conversion Plan Findings

- Conversion options by region
- Financing & funding concepts

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

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

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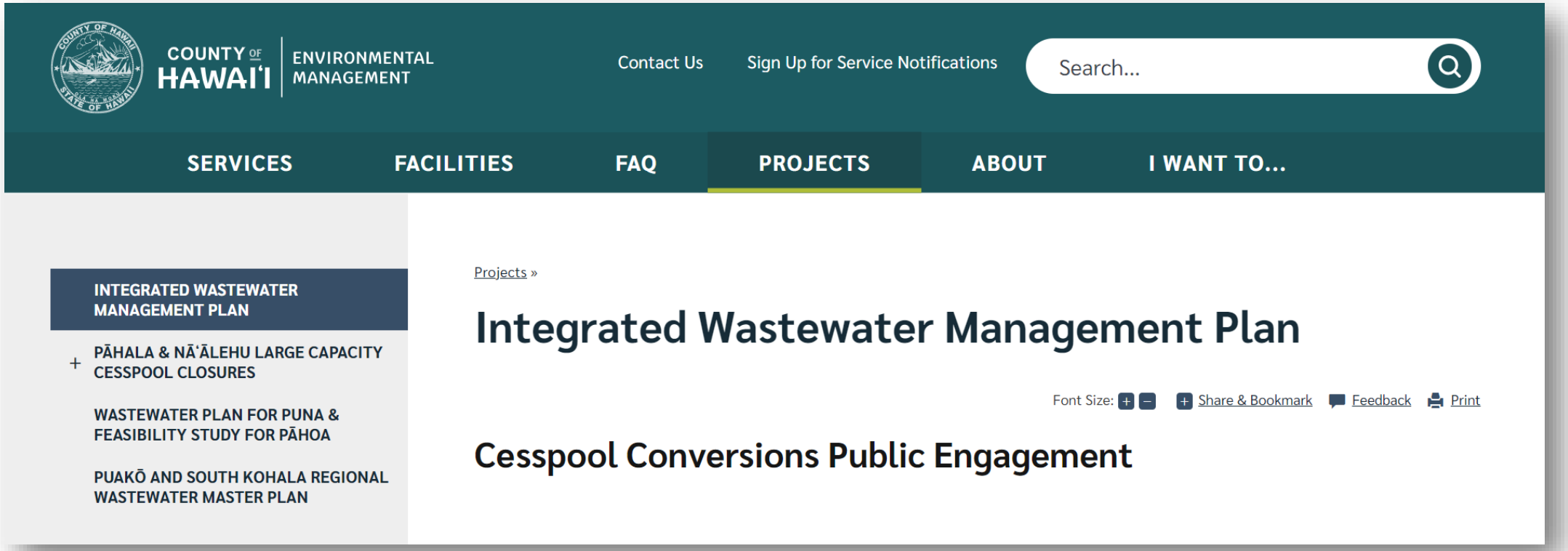

How to participate in the legislative process.

- **Tips on testimony:**
  https://lrb.hawaii.gov/par/engagement-101/tips-on-testimony/

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- ✓ 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…

- **Use your voice at the Legislature:**
  https://lrb.hawaii.gov/par/use-your-voice-at-the-legislature/

Scan me

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

Questions?