HAWAIIAN HOME LANDS

HAWAIIAN HOMES COMMISSION · DEPARTMENT OF HAWAIIAN HOME LANDS

Wai‘anae Valley Homestead Cesspool Conversion Pilot Project Information Meeting

June 26, 2025

6:00 p.m. to 8:00 p.m.

Virtual Attendees: Please sign in by providing your first & last name, street address and/or lot number in the chat

Purpose of This Meeting

To assist Wai‘anae Valley Homestead & DHHL prepare for mandated cesspool conversion/closure & facilitate community involvement by:

- Introducing the pilot project and project team
- Discussing how we’ll determine cesspool alternatives
- Identifying the timeframe of the project
- Provide an opportunity for community comments and questions

*If you are already on sewer, you do not need to worry about cesspool conversion

Meeting Kuleana

- Please let us get through the presentation. If you have questions, write them down and we can answer your questions after the information has been presented.
- Be respectful of the person talking — please do not interrupt.
- Wait for the facilitator to call on you, or you can write your question on the green comment sheets or in the chat.
- When addressing other participants, please be respectful, show aloha, and treat others how you would like to be treated.
- Agree to disagree — accept that others may have different perspectives and opinions.
- Have an open mind — take home new ideas and information.
- Let everyone get a chance to ask/speak/comment, before speaking again.

Meeting Agenda

- Welcome and Introductions; Housekeeping & Meeting Kuleana
- Overview of Agenda
- Summary of Feb. 3, 2025, DHHL & WVHCA Community Updates Meeting
- Introduce the Project
- Q & A on the Project
- Next Steps

The Big Picture

1. Wai‘anae Valley Homestead Pilot Project will be the first DHHL Cesspool Conversion project, so we need to get it right!
   - Will be a template to replicate in other homestead areas
   - Helps DHHL & DOH figure out how to make conversions happen quickly and affordably
2. This project is helping DHHL formulate a strategic, interagency, systems approach to solve the problem of cesspools
3. Assistance from County, State and Federal agencies will be needed – it’s a kākou thing
4. Contractors are here to explain the “Closing America’s Wastewater Access Gap (CAWAG)” Technical Assistance and the Wai‘anae Valley Pilot Project

Summary of Feb. 3 Meeting

I. **Informational Presentation, Wastewater Systems in Hawai‘i**
   1) Types of wastewater systems; centralized (municipal sewer) vs. decentralized (Onsite Sewer Disposal System, or OSDS)
   2) The Problem with Cesspools – contaminate drinking water, streams, groundwater, and the environment by releasing pathogens and nitrates.

II. **Act 125** (2017)—New law, new requirements. All cesspools to be converted by 2050; DHHL working with DOH on prioritization & funding options

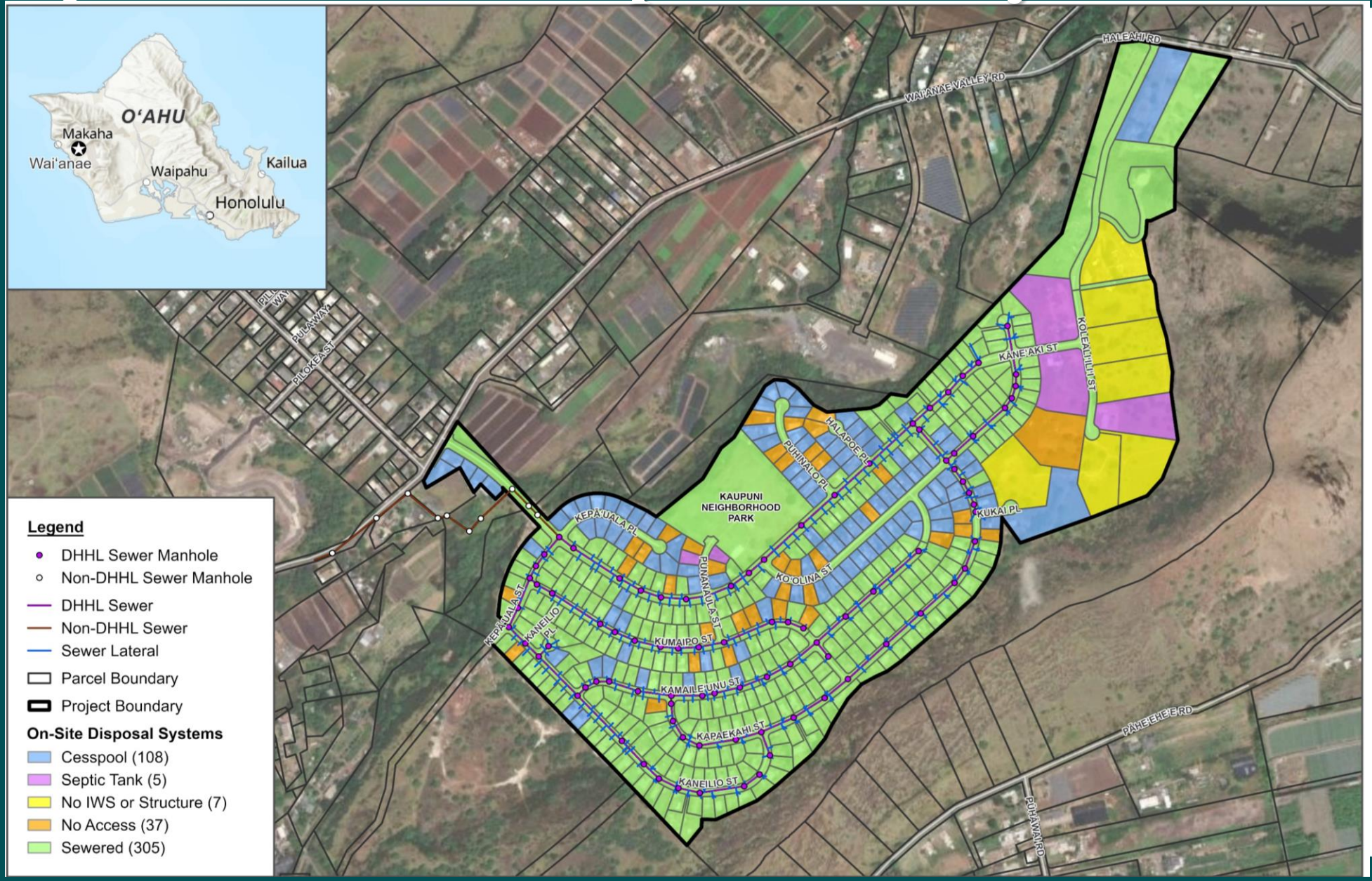
III. **DHHL’s O‘ahu Cesspool Assessment**: Findings, Data and Maps, Preliminary Recommendations for connecting to sewer wherever feasible

IV. **DHHL Assistance and Support**
   1) Introduce EPA Technical Assistance for Wai‘anae Valley Homestead as a pilot project
   2) DHHL to research and apply for other programs and other funding support

V. **Community Issues, Questions & Concerns & DHHL Responses**

VI. **Next steps**

Cesspool Survey Results



Cesspools: 108 lots
Septic: 5 lots
Vacant: 7 lots
No Access: 37 lots
Sewer: 305 lots

Total: 462 lots

*If your lot was not accessed for this survey, please email dhhl.planning@hawaii.gov

Summary of Feb. 3 Homesteader Questions and DHHL Responses

- **If someone were to install a septic system, can the effluent (liquids) go into the existing cesspool as a seepage pit?**
  DHHL: *DOH used to issue variances under certain conditions but no longer does so.*
- **We know that cesspools are pilau, but it was not our choice to install them on our homestead lot, which cost us $4,000. Why did DHHL install cesspools instead of sewer?**
  DHHL: *The laws have changed related to cesspools, and we have to comply with the new requirements. DHHL is looking at funding sources to help lessees cover the cost to convert.*
- **Will notifications of grant applications / funding assistance be posted on DHHL's website?**
  DHHL: *Yes -- information on any funding opportunities will be provided -- directly by mail, by holding more informational meetings, via WVHCA, and on the DHHL website.*
- **What's the timeframe to convert? When is this all going to start?**
  DHHL: *Waianae will have until 2050 to convert. However, DHHL is starting now to identify conversion options and funding sources, as well as upgrading existing sewer lines.*
- **What's the timeframe to backfill (decommission) the cesspool after hooking up?**
  DHHL: *Decommissioning cesspools and conversion to another wastewater solution need to happen together.*

Summary of Feb. 3 Homesteader Questions and DHHL Responses (cont.)

- **For lots at lower elevation than the sewer line, is IWS (septic) still an option?**
  DHHL: *It depends on multiple factors, which will be worked out during this project.*
- **It would help to have a list of the steps a lessee would take to get through the cesspool conversion process.**
  DHHL: *That's a good suggestion, however, DHHL is looking to manage the entire process so the lessees don't have to.*
- **Is there a fine if a lessee can't convert, or legal action like a lien on our property?**
  DHHL: *No -- the City can't put liens on DHHL property because the land is inalienable and cannot be auctioned off or repossessed by a bank. This project will ensure that all lessees meet the required deadline.*
- **Who will pay to extend sewer lines to unserved areas, like down Ko'olina Street? Who will pay for installation of laterals to connect the houses to the sewer lines? Who will maintain them?**
  DHHL: *DHHL will pay to extend new sewer lines to unserved areas. DHHL is seeking funds from DOH to pay for laterals to connect the house to the sewer line. The sewer lines will be built to meet City standards to be conveyed to the City for operation and maintenance. Maintenance of laterals from the property line to the house will be the responsibility of the lessee.*

Summary of Feb. 3 Homesteader Questions and DHHL Responses (cont.)

- **For the 37 lessees that did not participate in the DHHL Cesspool Assessment, is there still an opportunity to participate?**
  DHHL: *Yes – if you have a cesspool, you need to participate in this project because all the technical and financial assistance is being provided, at no cost to the lessee. When the consultants reach out to you in the next 6 weeks, please respond.*
- **"Assistance" may mean paying some portion out of pocket. Is that going to vary person to person once a source has been found? Will it be first come, first served?**
  DHHL: *We hope that the conversion will not require lessees to pay anything out of pocket. This pilot project is a kakou thing – no homesteader will be left behind!*
- **What is the lifespan of a Low Pressure Sewer System (LPSS)? A grinder pump?**
  DHHL: *The lifespan of a grinder pump is typically 7 to 10 years but can vary significantly based on factors like pump quality, usage, and maintenance. Some pumps, with proper care, may last up to 20 years or even longer.*
- **Does the Waiʻanae WWTP have the capacity to handle the additional hookups needed?**
  DHHL: *Yes, DHHL has confirmed available capacity with the City's Environmental Services.*

Summary of Feb. 3 Homesteader Questions and DHHL Responses (cont.)

- **What happens if the conversion causes the lessee to have to make changes to improvements the lessee has already made on the property?** ***DHHL:*** *Options will be designed for your specific lot and will take into consideration any existing improvements.*
- **Is there proof about the pollution that cesspools cause?**
  DHHL: *Yes, there's lots of proof. We can provide more information and links to sources of information later in the presentation.*
- **What is the average water bill in Wai'anae? The wastewater bill is about the same as for the water bill. Why is that?**
  DHHL: *The City combines the water and wastewater fees on the same bill, but the wastewater fee is always more than the water fee. The wastewater fee is a combination of a base charge, which is the cost to operate and maintain the sewer system, and the sewer volume charge, which is based on how much water your household uses. The recently approved rate structure will include funding to subsidize sewer bills for eligible lower-income households. For more information, go to www.honolulu.gov/env/sewer-fee-rates/*

Activities since Feb. 3 Meeting

- Rescheduled Technical Assistance Provider Site Visit (4/3), Interagency Meeting (3/13), and Homestead Community Meeting (today)
- Created a project webpage on DHHL's website
- Ongoing meetings with EPA and their consultants to move the project forward
- DHHL continues to work with EPA, DOH, and City and County of Honolulu, Department of Environmental Services to pursue funding and technical assistance for homestead lessees
- DHHL continues to work with WVHCA leadership to coordinate community engagement

Waianae Valley Hawaiian Homestead
Closing America's Wastewater Access Gap

Jordan Fahmie, P.E.

Project Purpose and Objectives

- Provide technical assistance to the community for planning adequate sewer infrastructure improvements and options for converting cesspools

- Objectives
  - Observe existing infrastructure (cesspools, City sewer connections, neighborhood layout, topography, features)
  - Listen to community input, concepts, preferences
  - Evaluate viable options, including cost estimates and schedule
  - Provide report to support funding application for improvements

Introductions

- Jordan Fahmie, Destin Takenaka-Amodo, AECOM
- Theresa Connor, Sydney Diamond, ERG
- Michael Mezzacapo, EPA

Project History

- Community meeting February 3, 2025
- Conversations mapping January 2024
- Conversations mapping May 2025

- Many questions unanswered
  - Costs
  - Technology
  - Process
  - Environmental impacts

Closing America's Wastewater Access Gap Initiative

- No-cost technical assistance to communities with failing septic/cesspools.
- Began as a pilot for 11 communities in 2022 funded by the Infrastructure Investment and Jobs Act.
- In 2024, EPA expanded the initiative to serve 150 communities across the U.S. and territories.

https://www.hawaii.edu/news/2023/03/22/cesspool-conversion-tool/

Available Technical Assistance

- EPA contractors and/or technical assistance providers with relevant expertise are positioned to assist.
- Examples:
  - Assess wastewater needs.
  - Evaluate the feasibility of wastewater solutions.
  - Identify funding options, such as grants and financing.
  - Help with completing the preliminary engineering and paperwork requirements for funding applications.
  - Assist with establishing an ordinance for wastewater management.

Project Team

EPA
- Project Leadership.
- Point of Contacts to Community.

ERG
- Overall project management and tracking.
- Provide engineering, management, and funding support where it is needed.

AECOM
- Lead project engineers investigating wastewater alternatives for WVCH.

DHHL
- Project partner working with ERG, AECOM, WVCH, and DOH to assess wastewater solutions and apply for funding.

Expectations

- This is not a construction project
- This planning study allows funding to be obtained
- A future project would design and construct a recommended alternative

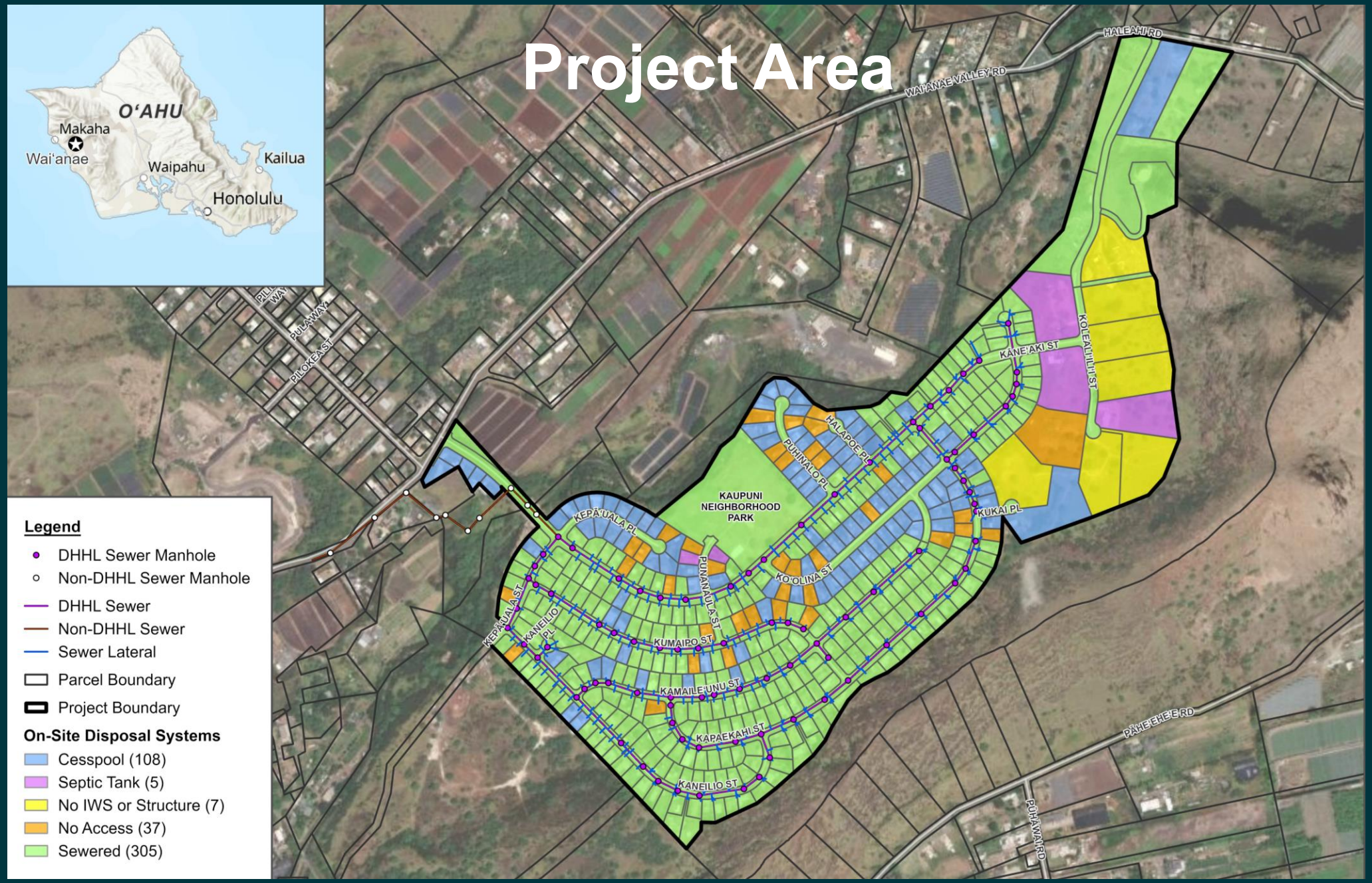
Expectations - Timeline

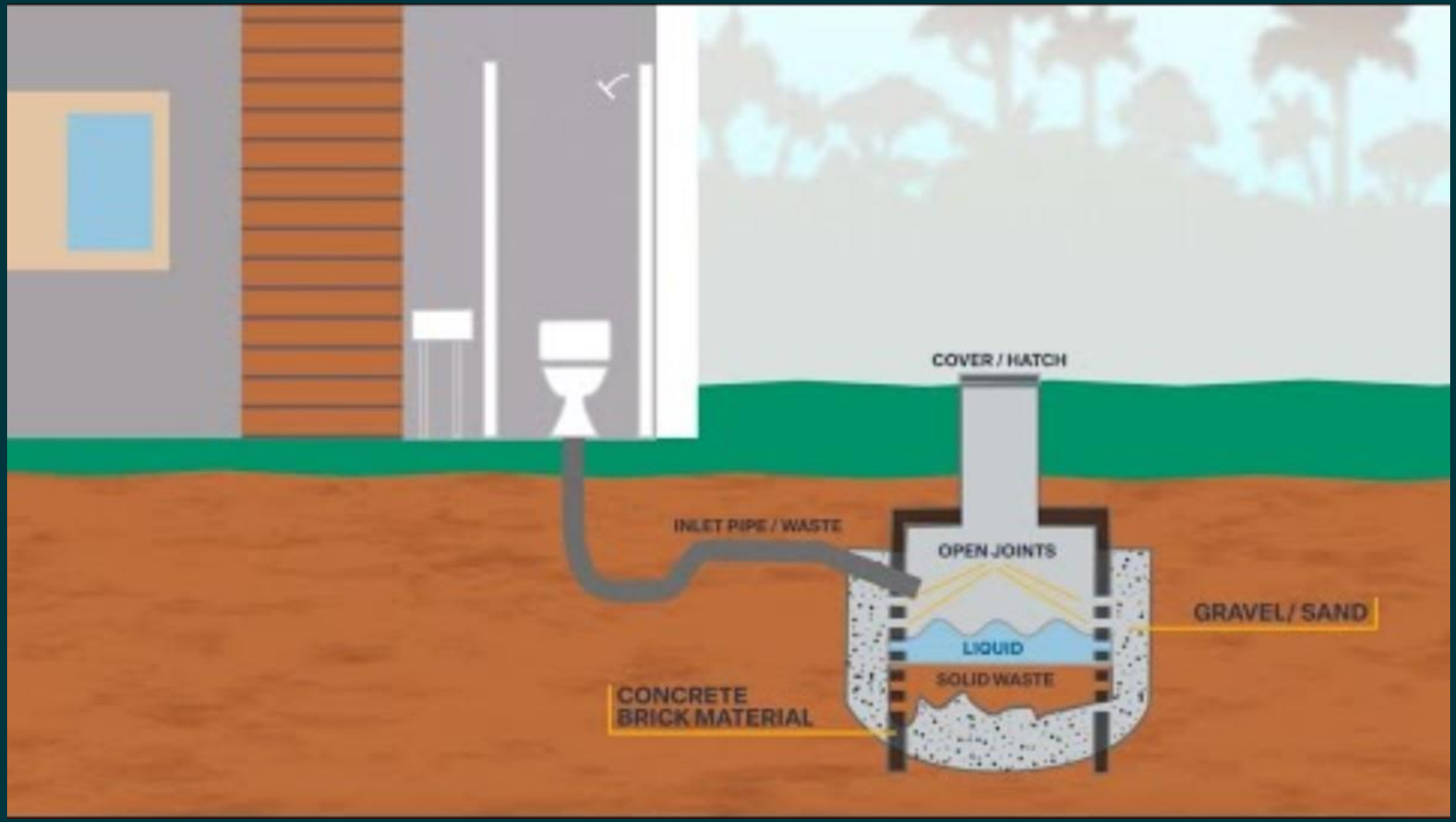
- Site Visit 4/3/2025
- Community Meeting #1 6/26/2025
- Alternatives Analysis and PER Draft 8/15/2025
- Workshop/Community Engagement #2 8/2025
  - Community input on Draft Alternatives Analysis and PER
- Final Preliminary Engineering Report 10/15/2026
- Community Engagement #3
  - Community input on Final PER
- DHHL to Submit Concept Project to DOH 2/2026
- DHHL and DOH to submit funding application 2/2026

Pathways to Funding Cesspool Conversions

- The project team is evaluating how funding sources can be identified, applied for, and secured for this project
- For funding application submission, there is currently ongoing coordination between DOH, EPA, City and County of Honolulu
- Clean Water State Revolving Fund (CWSRF), USDA, other sources
- Creative ways to use funds, maybe different from typical capital projects

Project Area

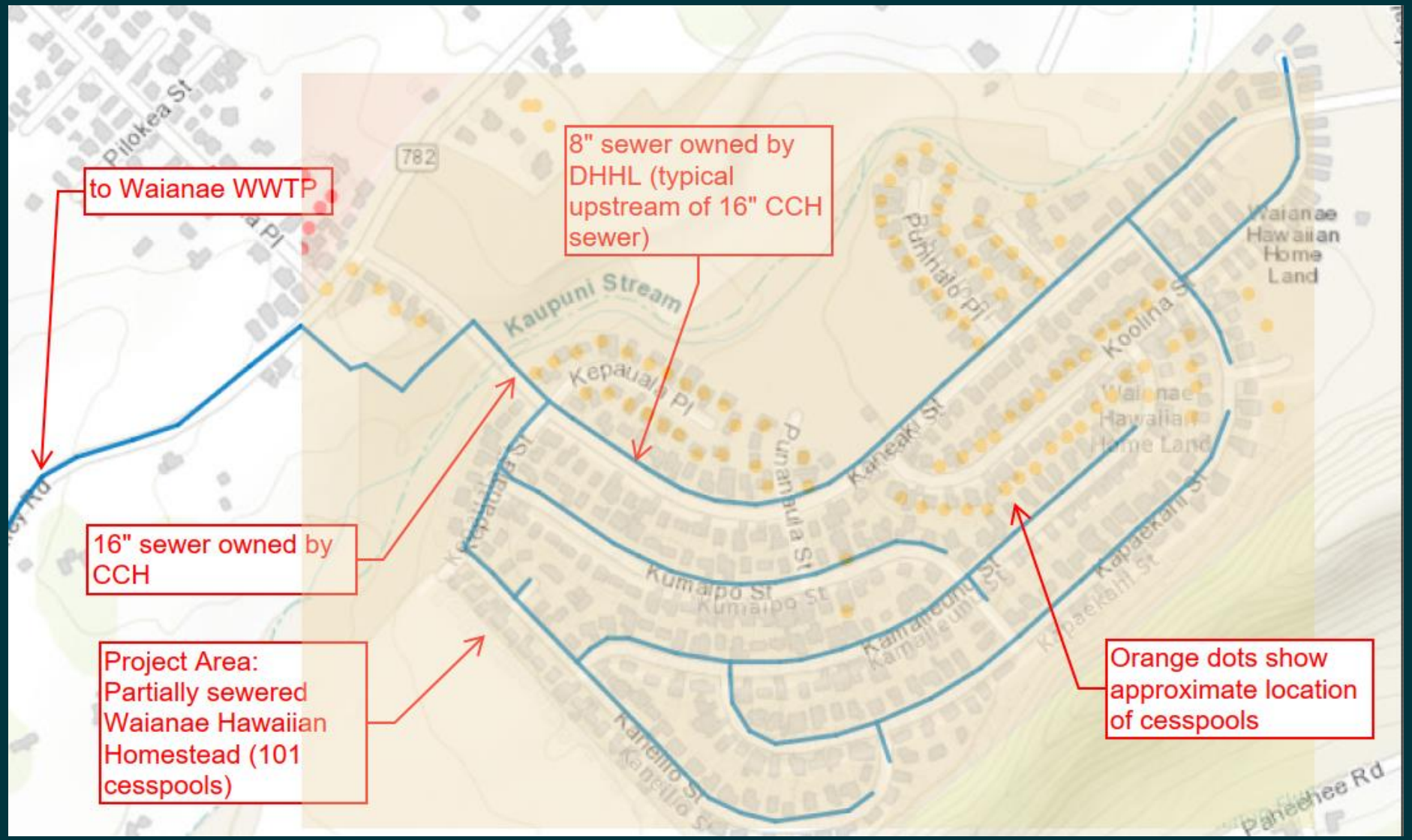



COVER / HATCH
INLET PIPE / WASTE
OPEN JOINTS
GRAVEL/ SAND
LIQUID
SOLID WASTE
CONCRETE
BRICK MATERIAL

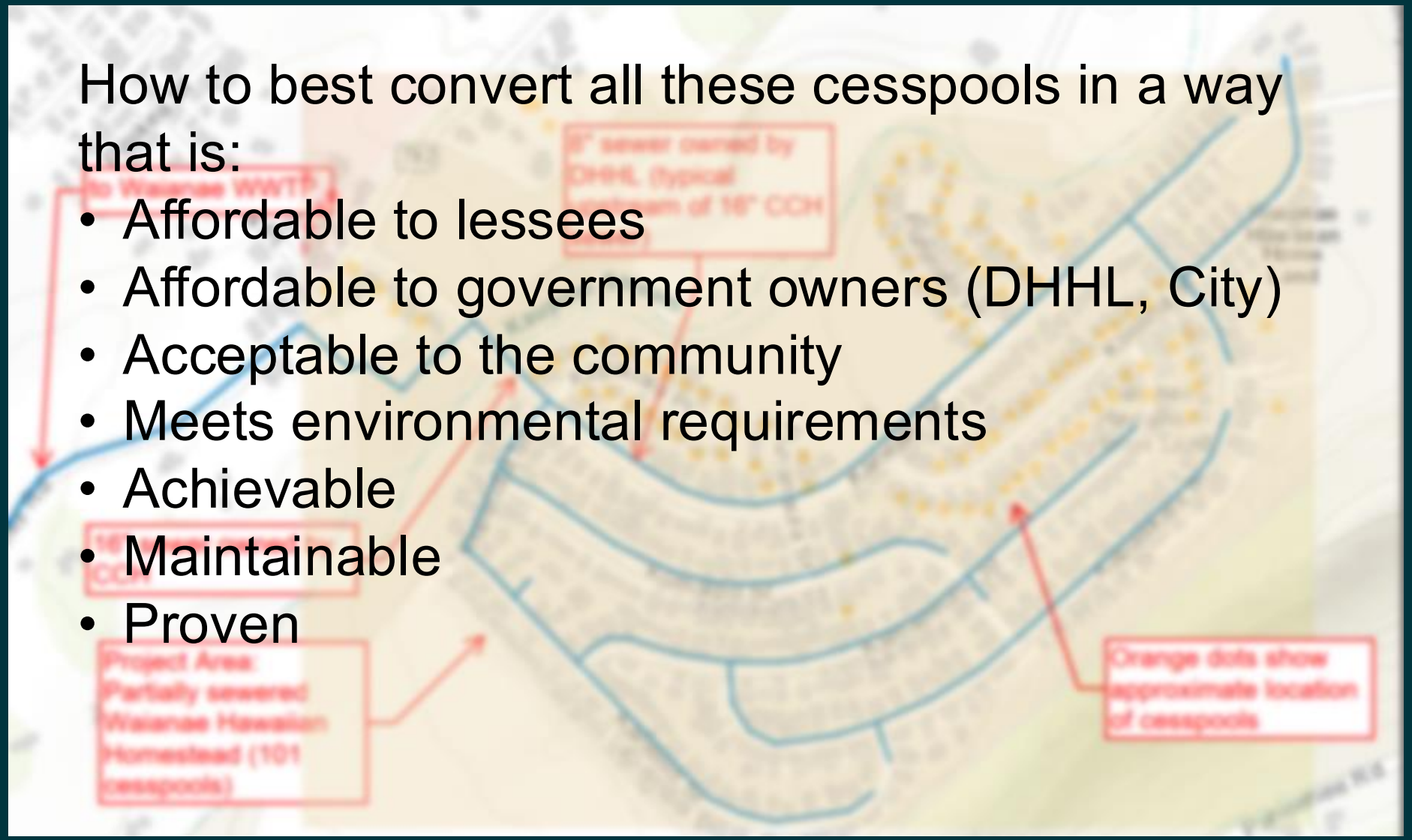
Existing Situation

- ~100 cesspools that need to be converted
- City sewer nearby, connects to Waianae WWTP
- Dense housing = limited space for onsite IWS or cluster systems

Existing Situation – Nearby Sewer



Existing Situation – Nearby Sewer



How to best convert all these cesspools in a way that is:

- Affordable to lessees
- Affordable to government owners (DHHL, City)
- Acceptable to the community
- Meets environmental requirements
- Achievable
- Maintainable
- Proven

Cesspool Conversion Options

A. Sewer
B. Low Pressure Sewer System
C. Individual Wastewater System
C. Cluster System

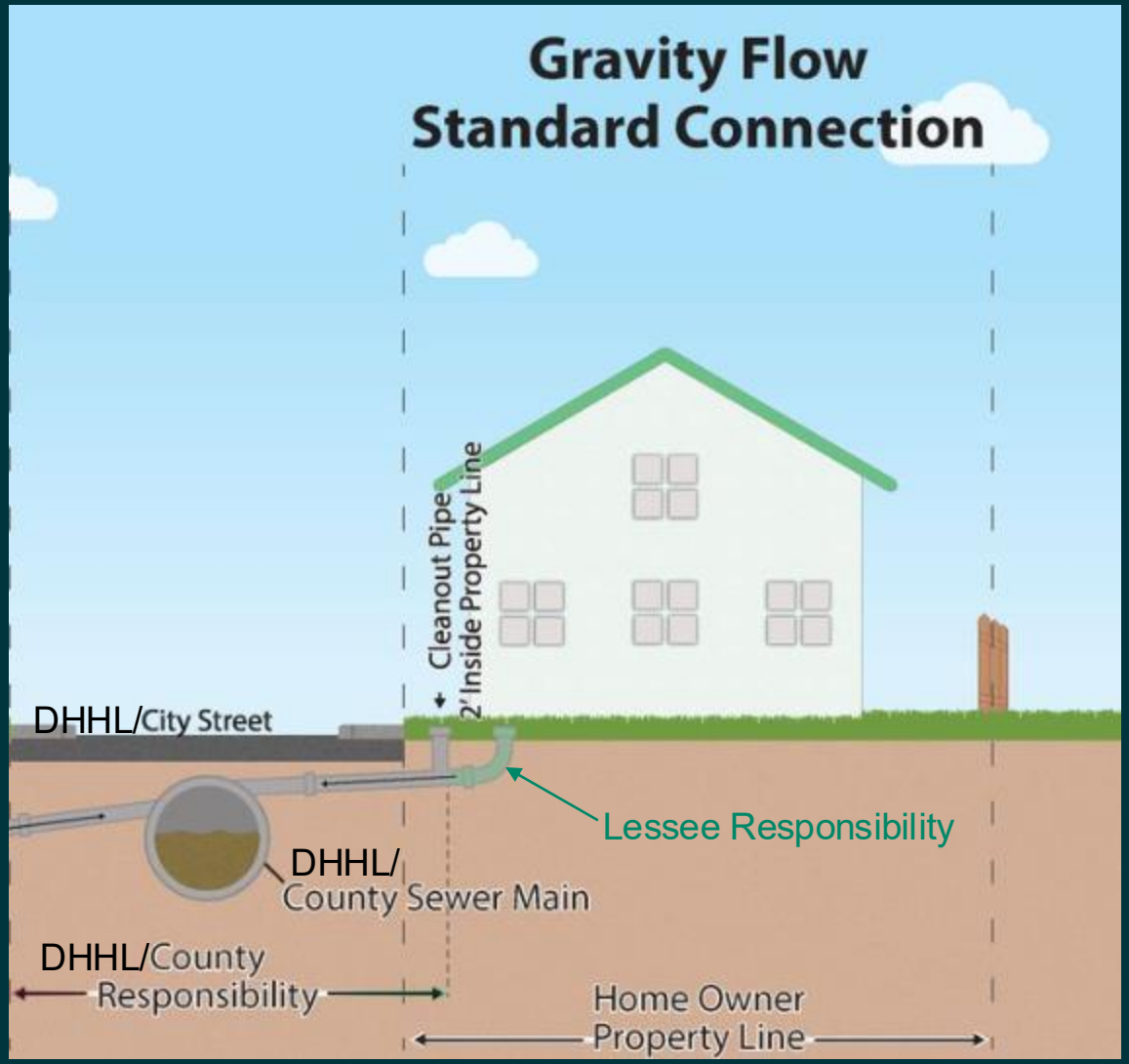
Options for Cesspool Conversion – Sewer

- Lateral connection to home (lessee)
- Sewer main, pump stations (DHHL/City)

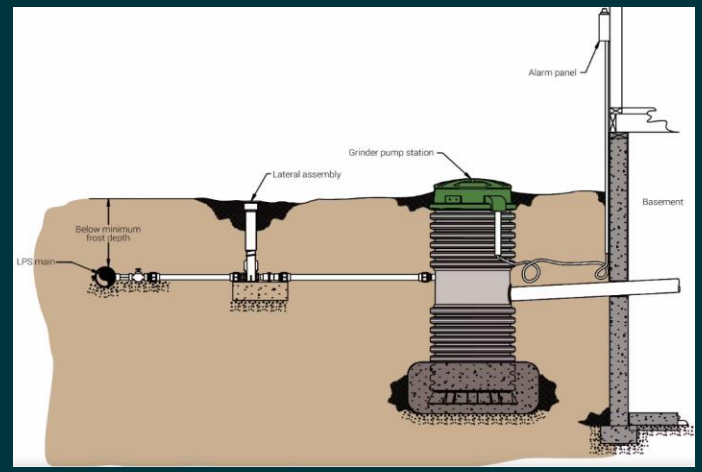
- Lateral maintained by lessee
- Sewer bill (who here pays a sewer bill?)
- Mains, PS maintained by DHHL/City
- Treated at Waianae WWTP

Options for Cesspool Conversion - Sewer

It flows downhill
Take advantage of gravity, where possible



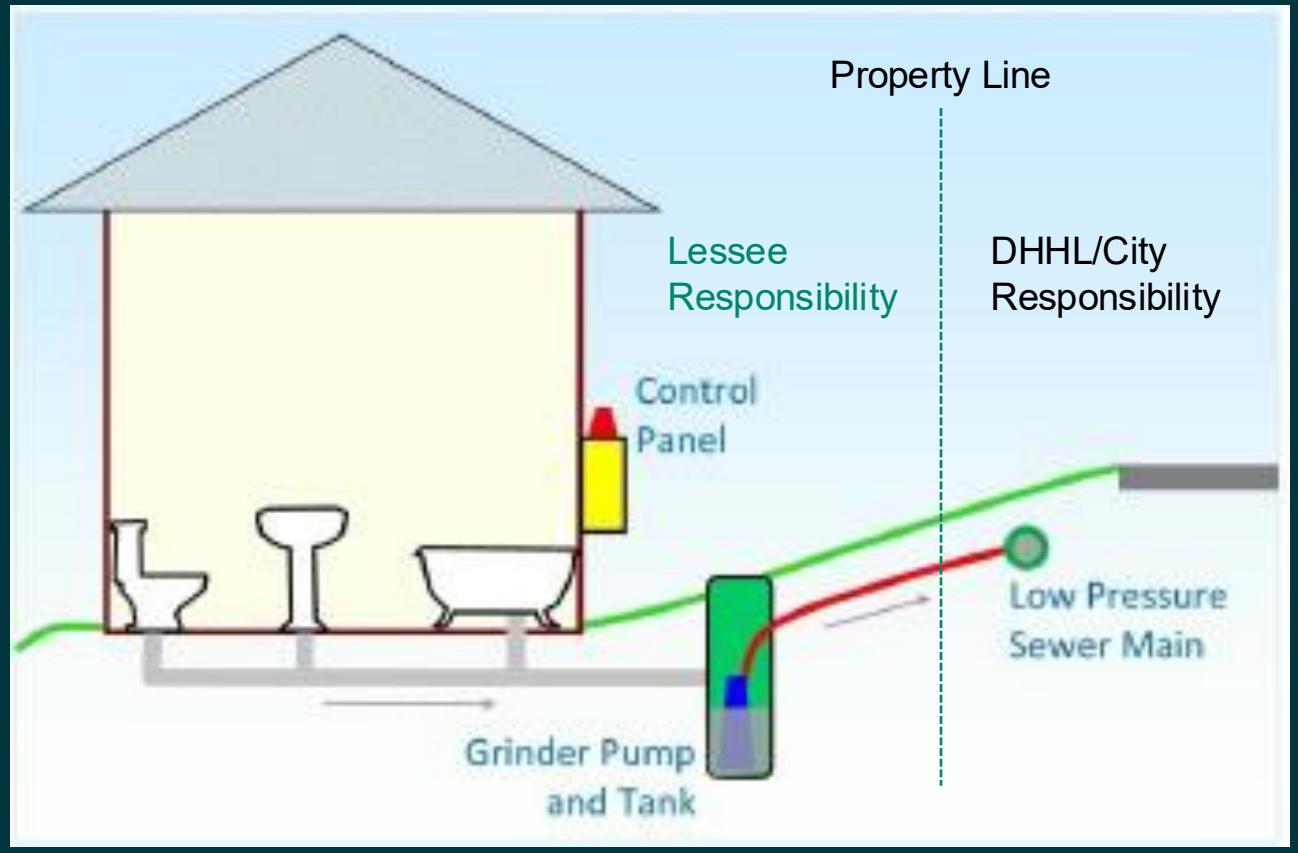
Options for Cesspool Conversion – Low Pressure Sewer System (LPSS)



- Lateral connection to home (lessee/DHHL)
- Grinder pump (lessee/DHHL)
- LPSS main, sewer mains, PS (DHHL/City)

- Lateral maintained by lessee
- Grinder pump maintained by owner/contract operator/DHHL
- Sewer bill
- Pressure Mains, sewer mains maintained by DHHL/City
- Treated at Waianae WWTP

Options for Cesspool Conversion - LPSS



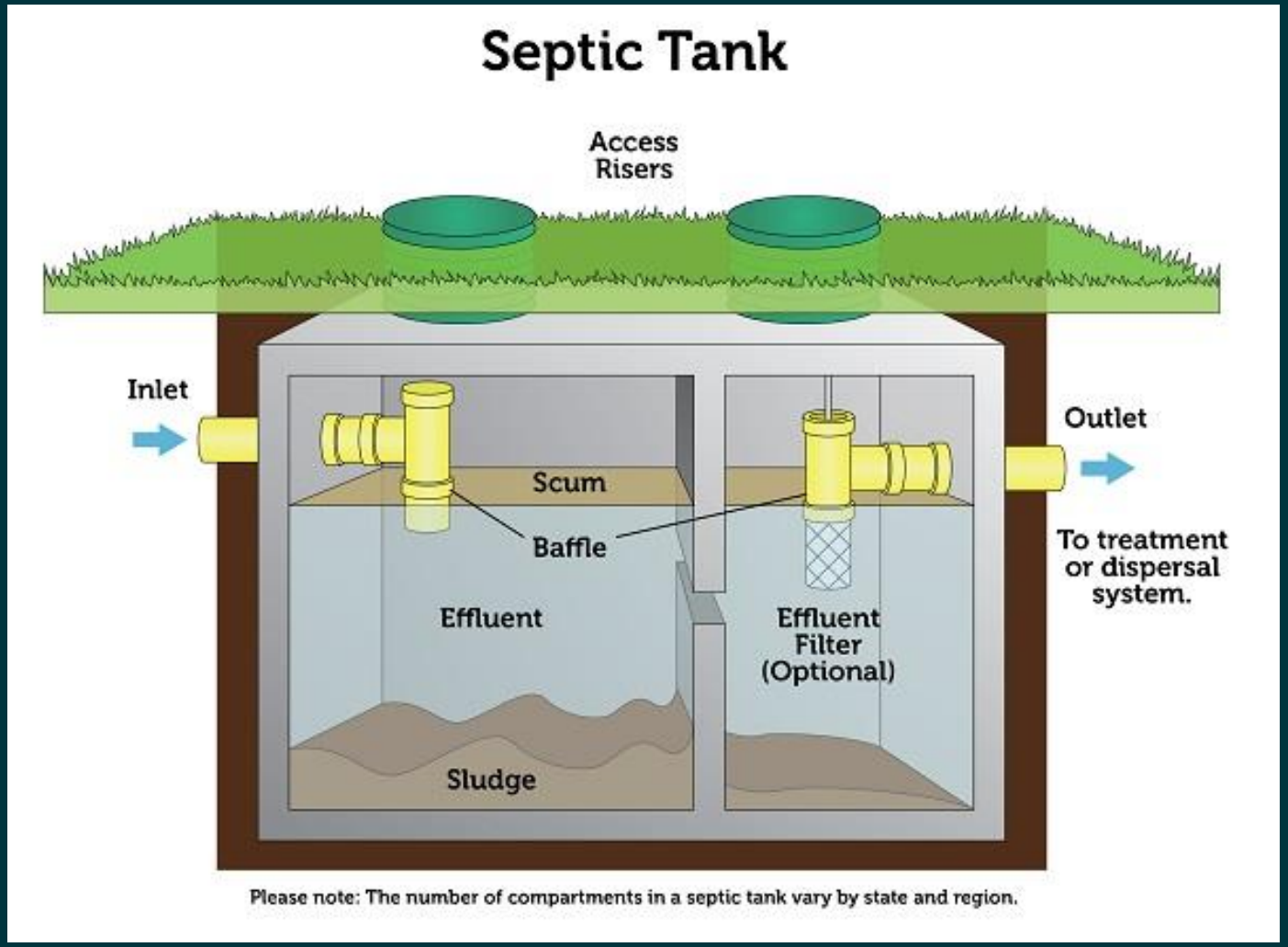
Options for Cesspool Conversion - LPSS

Options for Cesspool Conversion – Individual Wastewater System (IWS)

- Lateral connection to home (lessee/DHHL)
- Septic tank/aerobic treatment unit and leach field (lessee/DHHL)
  - Individually, $30,000-$70,000 (lessee/DHHL)
  - Group conversions may be possible, but limited examples

- No sewer bill
- Pump out sludge every 1-5 years (lessee/DHHL)
- Lateral, tank, equipment, leach field maintained by lessee
- May only be acceptable to DOH if sewer is not readily available
- Site specific constraints – soil percolation, leach field space, etc.
- Effluent quality varies, discharges to soil at your home

Options for Cesspool Conversion - IWS



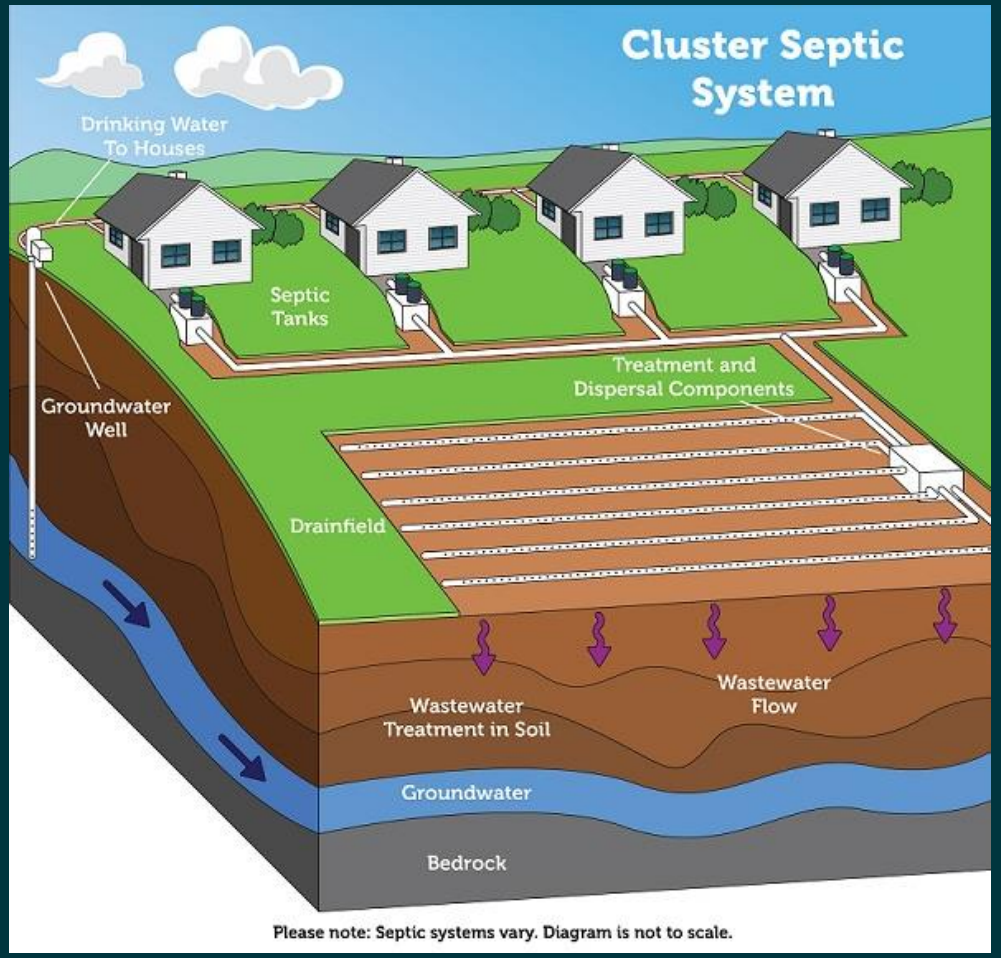
Options for Cesspool Conversion - IWS

Options for Cesspool Conversion - Cluster

- Lateral connection to home (lessee)
- Septic tank (lessee)
- Sewers or low-pressure sewer system (DHHL)
- Package wastewater treatment plant or ATU or nature-based plant (DHHL)
- Leach field for disposal (DHHL) Opportunity for water reuse

- Sewer bill - Separate from City system (to DHHL/contract operator)
- Lateral maintained by lessee
- Sewer, treatment, disposal, reuse system maintenance (DHHL, contract operator)
- Space constraints –
  - Obtain land for treatment and disposal system
  - Two sets of sewers in the road (DHHL/City and Cluster)
- Effluent quality varies, system discharges to public soil (irrigation, subsurface, injection well)

Options for Cesspool Conversion - Cluster



Key Considerations

- Project Owner (DHHL, CCH, Individual lessees)
- Maintenance Costs (Lessees, DHHL, CCH)
- System Operator (CCH, Contractor)
- Is there space?
- Is it allowed by law?
- What does the community want?

Next Steps

- AECOM is developing an Alternatives Analysis and Preliminary Engineering Report (PER).
- ERG is working with DHHL and Hawaii Department of Health (DOH) on a funding application.
- Community Meeting #2 (August 2025) to discuss alternatives.

Thank you.

Jordan Fahmie – Jordan.Fahmie@aecom.com

Q&A

Nīnau?

Assistance and Support

- Project website at https://dhhl.hawaii.gov/po/waianae-valley-cesspool-conversion-project/
- State Dept. of Health website: https://health.hawaii.gov/wastewater/ , https://health.hawaii.gov/wastewater/home/cesspools/
- Jan Makepa, Waianae Valley Homestead Community Association, WVHCABOD@gmail.com
- Department of Hawaiian Home Lands, dhhl.planning@hawaii.gov
- Jordan Fahmie, Technical Lead - AECOM, jordan.fahmie@aecom.com

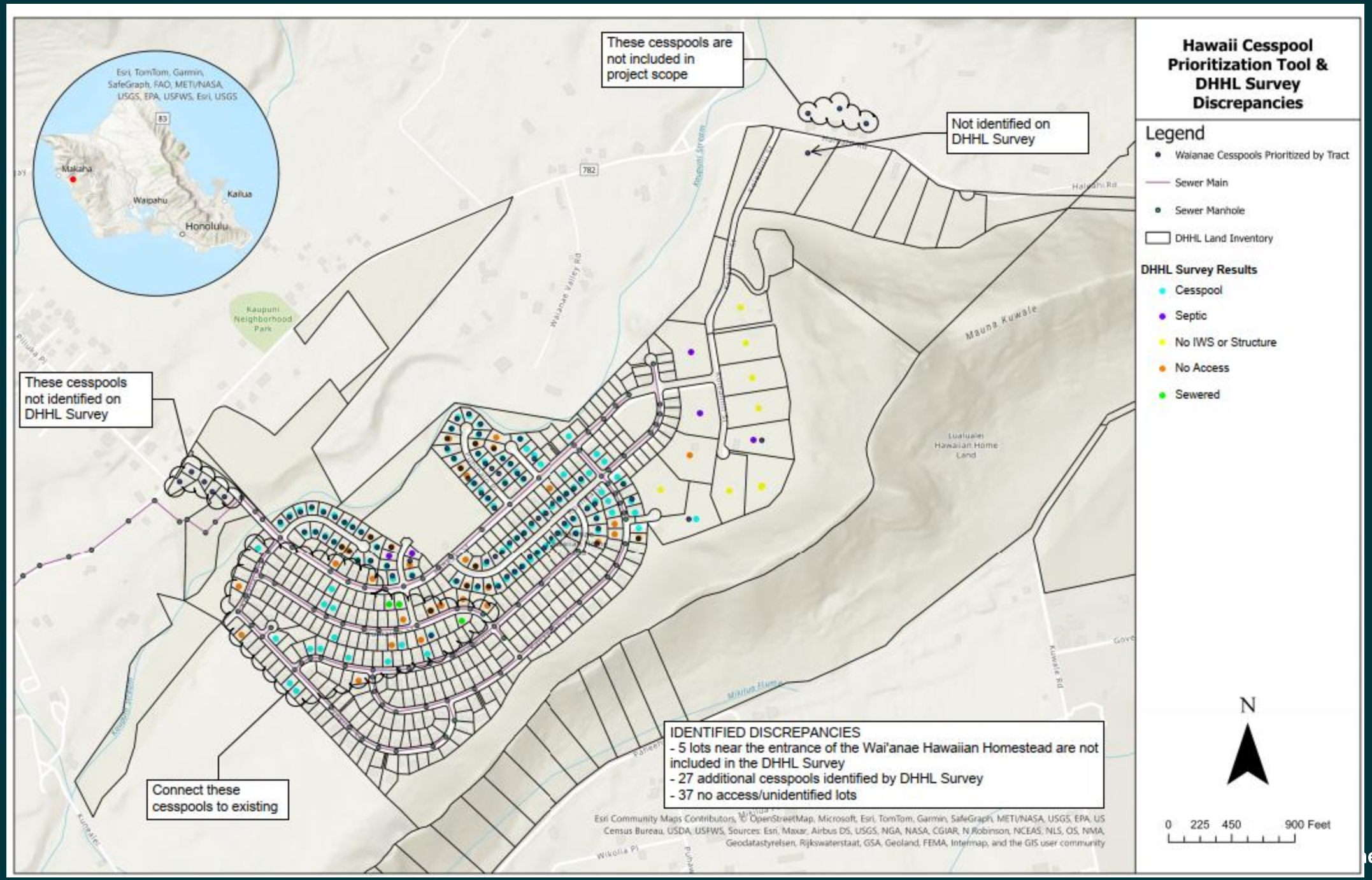
Bonus Slides -- Additional Information

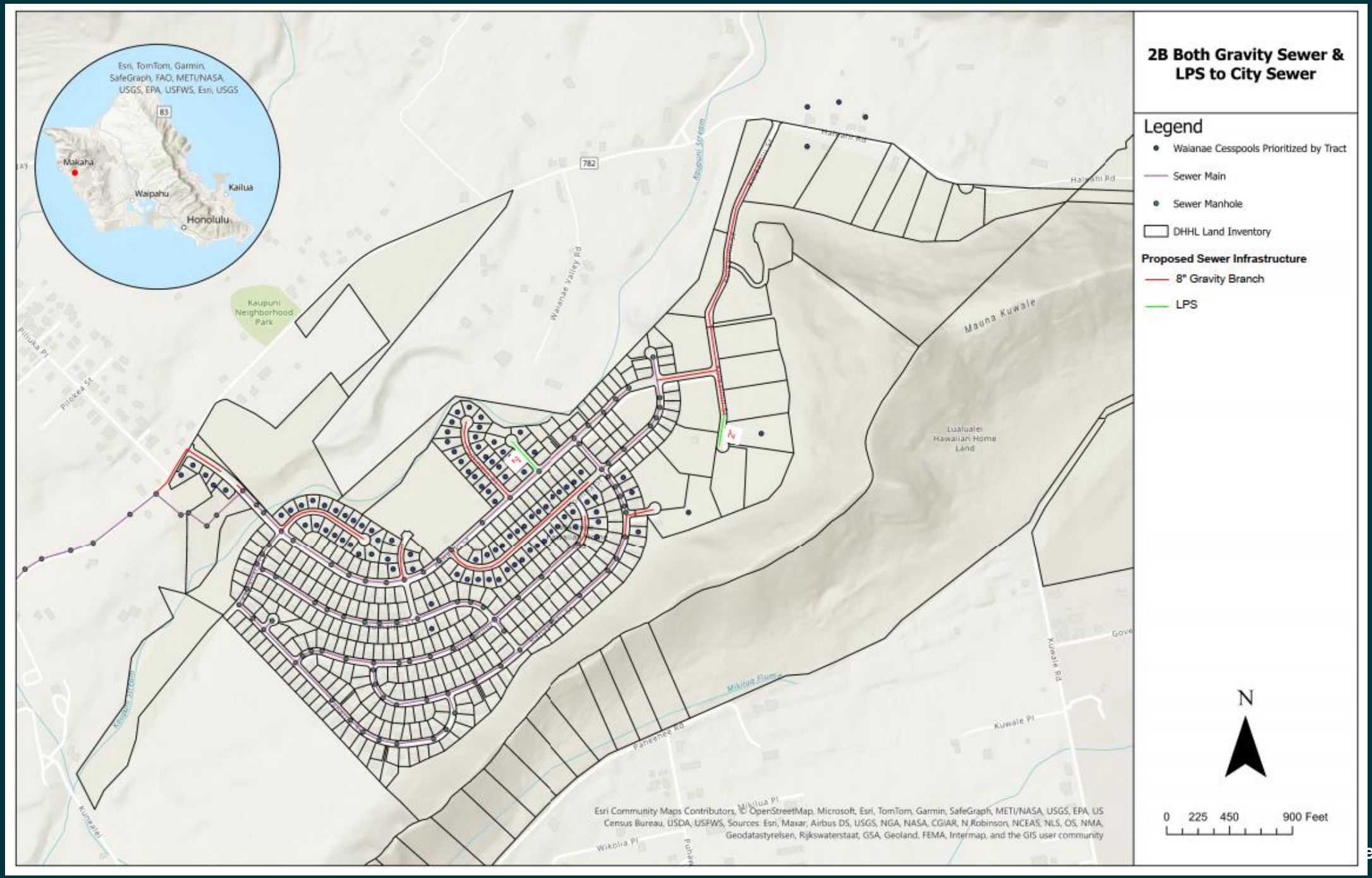
Sewer Fee

Median Single-Family Residential Sewer Bill over the 10-year duration of fee increases

Year	Fixed	Volumetric	Total Bill
Current	$77.55	$22.22	**$99.77**
July 1, 2025	$77.83	$29.48	**$107.31**
July 1,2026	$77.52	$37.86	**$115.39**
July 1,2027	$76.53	$47.52	**$124.05**
July 1,2028	$74.74	$58.60	**$133.34**
July 1,2029	$81.47	$63.87	**$145.34**
July 1,2030	$88.80	$69.62	**$158.42**
July 1,2031	$95.90	$75.19	**$171.09**
July 1,2032	$102.62	$80.46	**$183.07**
July 1,2033	$108.77	$85.28	**$194.06**
July 1,2034	$114.21	$89.55	**$203.76**

(Fixed Fee + Volumetric Fee = Sewer Fee)


Hawaii Cesspool Prioritization Tool & DHHL Survey Discrepancies
Legend
Waianae Cesspools Prioritized by Tract
Sewer Main
Sewer Manhole
DHHL Land Inventory
DHHL Survey Results
Cesspool
Septic
No IWS or Structure
No Access
Sewered
These cesspools are not included in project scope
Not identified on DHHL Survey
These cesspools not identified on DHHL Survey
Connect these cesspools to existing
IDENTIFIED DISCREPANCIES
- 5 lots near the entrance of the Wai'anae Hawaiian Homestead are not included in the DHHL Survey
- 27 additional cesspools identified by DHHL Survey
- 37 no access/unidentified lots
Makaha
Waipahu
Kailua
Honolulu
Kaupuni Neighborhood Park
Mauna Kuwale
Lualualei Hawaiian Home Land
N
0 225 450 900 Feet
Esri Community Maps Contributors, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, US Census Bureau, USDA, USFWS, Sources: Esri, Maxar, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap, and the GIS user community


2B Both Gravity Sewer & LPS to City Sewer
Legend
Waianae Cesspools Prioritized by Tract
Sewer Main
Sewer Manhole
DHHL Land Inventory
Proposed Sewer Infrastructure
8" Gravity Branch
LPS
N
0 225 450 900 Feet
Esri, TomTom, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, USFWS, Esri, USGS
Makaha
Waipahu
Kailua
Honolulu
83
782
Kaupuni Neighborhood Park
Waianae Valley Rd
Anuenue Stream
Mauna Kuwale
Lualualei Hawaiian Home Land
Kuwale Rd
Kuwale Pl
Paheehee Rd
Mikiua Pl
Wikolia Pl
Kumaiai
Esri Community Maps Contributors, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, US Census Bureau, USDA, USFWS, Sources: Esri, Maxar, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap, and the GIS user community

The Problem and How We Know its a Problem:

Early Research and Regulatory Interest

1960's - Experiments show cesspool effluent is not treated well by soils (Koizumi et al. 1966)

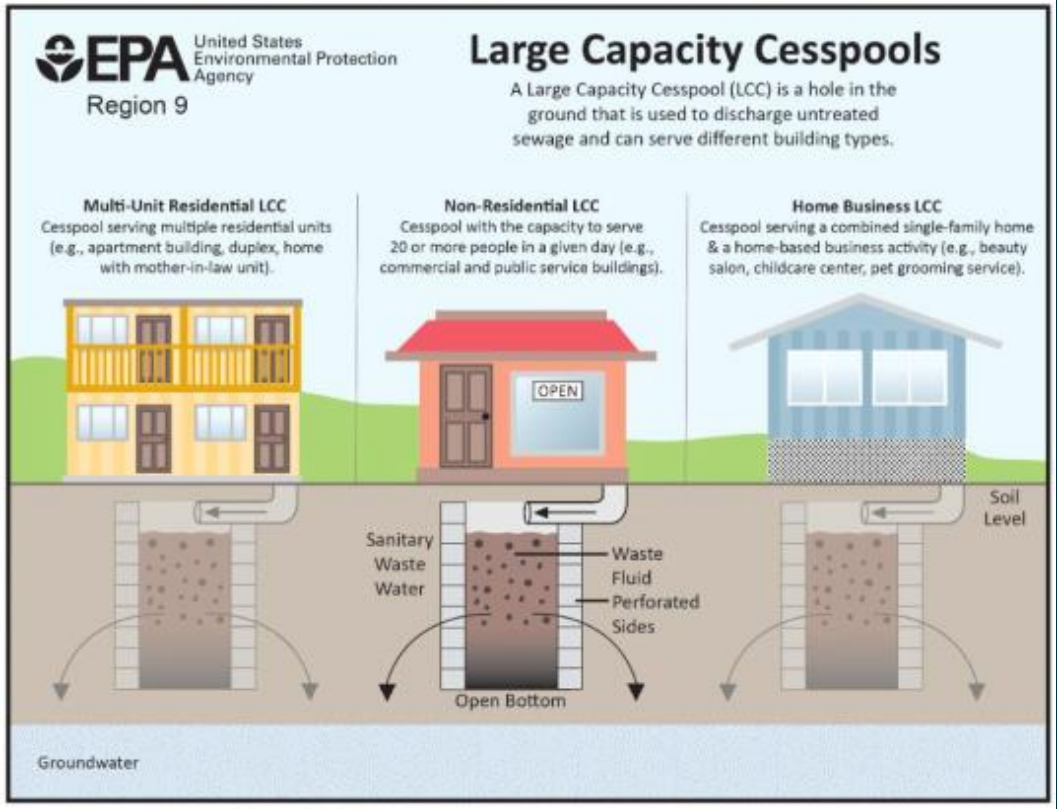
1970's - Impacts of WW on reef ecosystems is well documented in Kaneohe Bay (Banner, 1970)

1980's - Improved understanding of bacteriological characteristics of CP effluent and identification of impacts to streams (Fujioka, 1982)

1980's -Focus on impacts of injection wells.

1990's - NOAA coastal and EPA programs focus on Non-point pollution from cesspools

2005 - US-EPA bans Large Capacity Cesspools



*Slide by Chris Schuler, UH WRRC and Sea Grant

The Problem and How We Know its a Problem

Wastewater nutrients contribute to eutrophication and algal overgrowth in coastal waters. (Dailer et al. 2010)

High cesspool density causes significant decrease in coral cover and declines in biodiversity (Minton et al. 2012; Amato et al. 2016).

Cesspools impact sensitive species and are associated with human Bacteroides and polyomaviruses in streams (Kirs et al. 2017)

Increased risk of infections in coastal waters linked to cesspool effluent (Economy et al. 2019)

Cesspools linked to nitrate contamination in GW, exceeding drinking water standards in areas with high density (Whittier & El-Kadi 2009)

*Slide by Chris Schuler, UH WRRC and Sea Grant

Prior Water Quality Studies

- Hawaii's Cesspool Problem (Mezzacapo, 2020)
- Parallels Between Stream and Coastal Water Quality Associated with Groundwater Discharge (McKenzie, 2019)
- Hydrology of Contaminant Flow Regimes to Groundwater, Streams, and the Ocean Waters of Kāneʻohe Bay, Oʻahu (Mathioudakis, 2018)
- Stable Isotope and Geochemical Source-Tracking of Groundwater and Surface Water Pollution to Kāneʻohe Bay, Hawaiʻi (2018)
- Report on the State-wide Assessment of Wastewater Pollution Intrusion into Coastal Regions of the Hawaiian Islands (Smith, et al, 2021)

Legislative Timeline

1965 Cesspools a known but unregulated problem: Planning depts. require developer funded sewage treatment plants for larger projects.

1988 State health officials called for a ban on new cesspool construction. Effectively fails

2017 (Act 125): Mandated statewide cesspool conversion by 2050

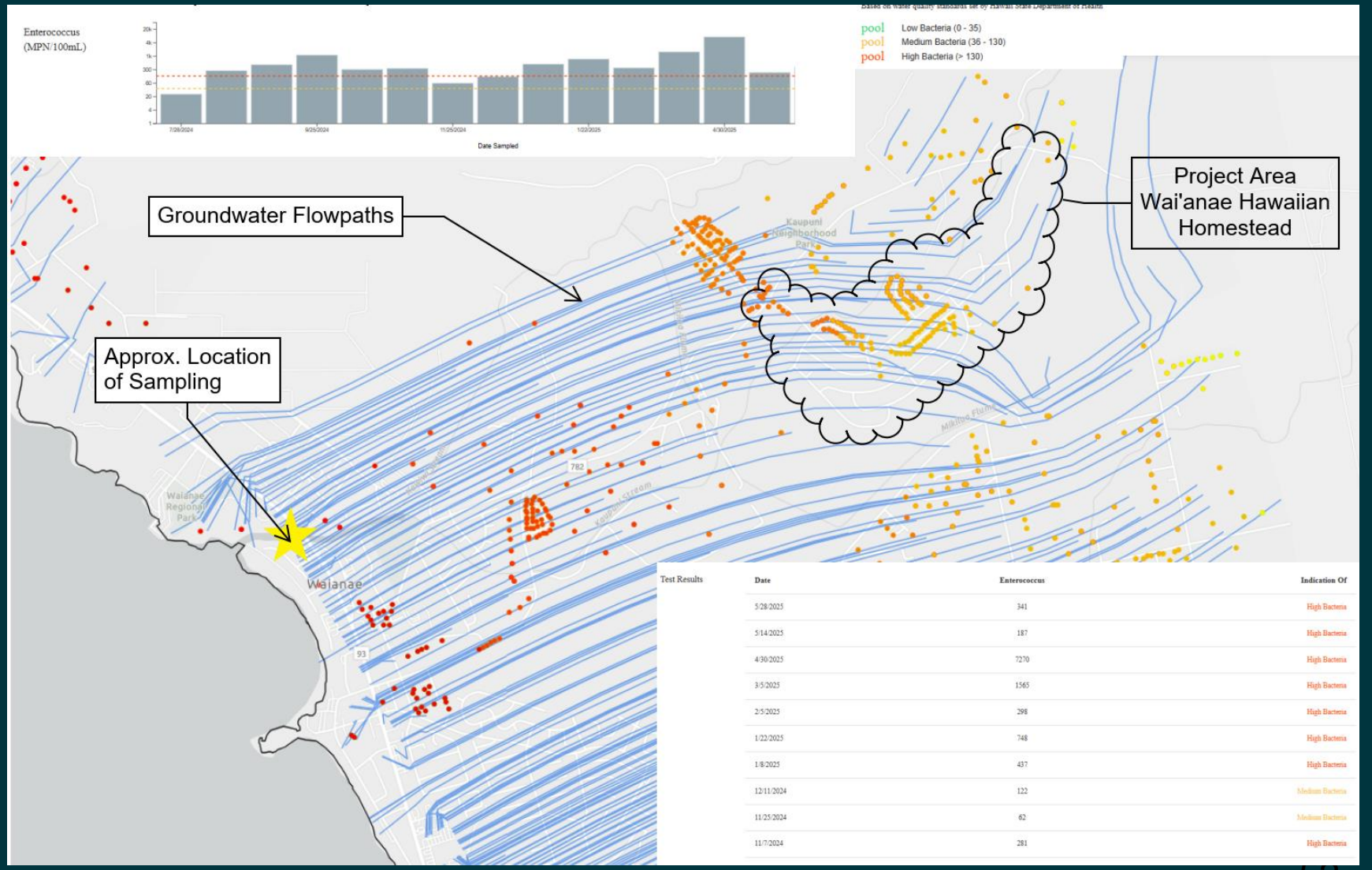
2018 (Act 132): Created Cesspool Working Group to study and address the issue.

2020 (HB 2175): Appropriated $5M for cesspool pilot programs.

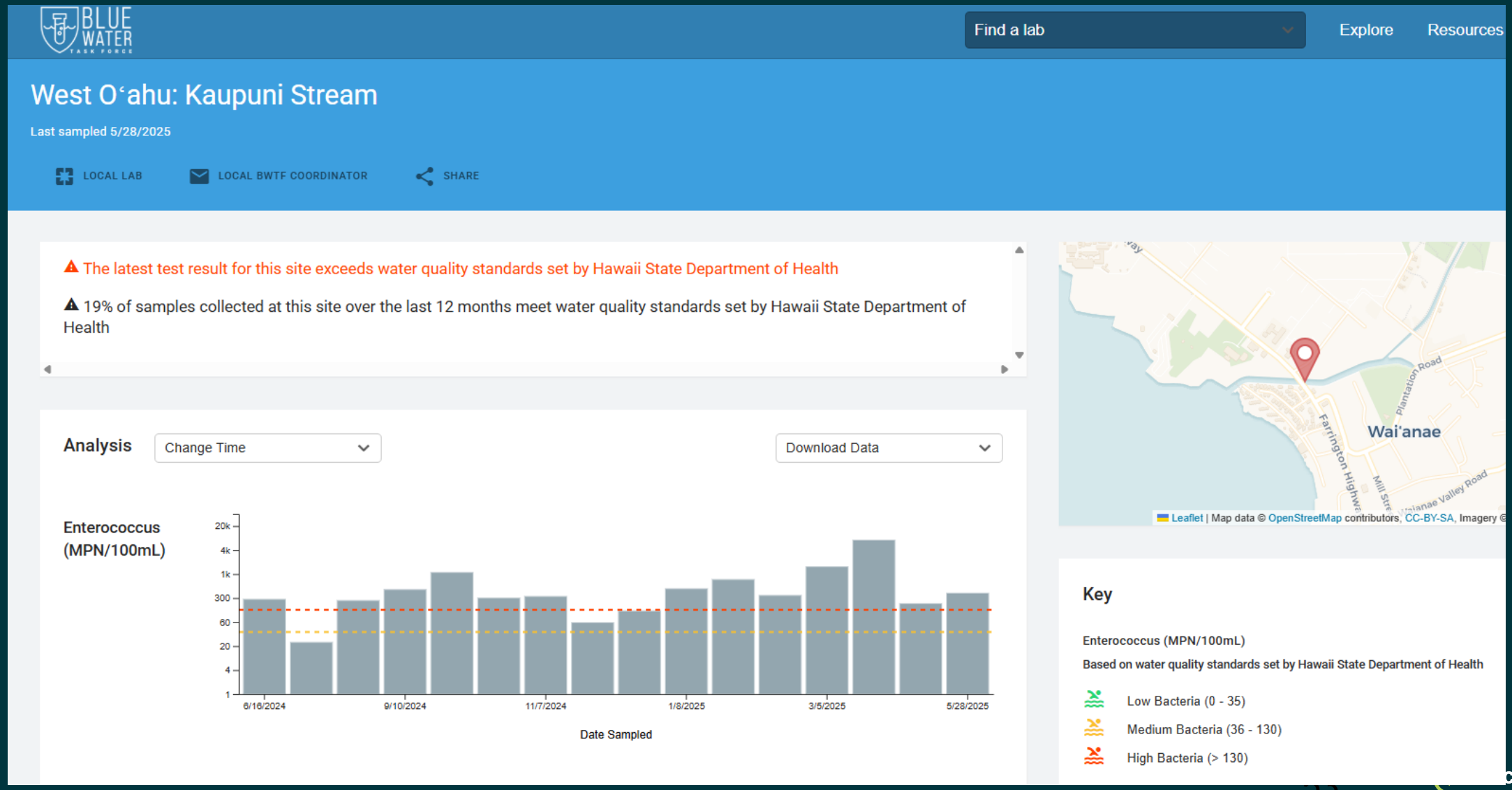
2024 (Act 217): UH to refine the Cesspool Prioritization Tool for sewer expansion planning.

*Slide by Chris Schuler, UH WRRC and Sea Grant

Groundwater Flowpaths – Mauka a Makai



Kaupuni Stream - Water Quality Test Results



Test Results - Zoomed

Find a

Date Sampled

Test Results

Date	Enterococcus	Indication Of
5/28/2025	341	High Bacteria
5/14/2025	187	High Bacteria
4/30/2025	7270	High Bacteria
3/5/2025	1565	High Bacteria
2/5/2025	298	High Bacteria
1/22/2025	748	High Bacteria
1/8/2025	437	High Bacteria
12/11/2024	122	Medium Bacteria
11/25/2024	62	Medium Bacteria
11/7/2024	281	High Bacteria
10/14/2024	256	High Bacteria
9/25/2024	1119	High Bacteria
9/10/2024	417	High Bacteria
8/26/2024	223	High Bacteria