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**DEPT. COMM. NO. 362**

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# County of Hawai'i


## DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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### MEMORANDUM

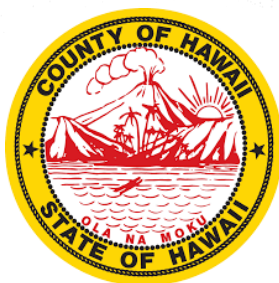
**TO:** The Hon. Ronald D. Kouchi, President of the Senate  
The Hon. Scott K. Saiki, Speaker of the House of Representatives  
Honorable Members of the Hawai'i State Legislature

**FROM:** Ramzi I. Mansour, Director   
County of Hawai'i Department of Environmental Management

**DATE:** December 28, 2023

**SUBJECT:** Response to House Concurrent Resolution No. 208, House Draft 1 (2023):  
"REQUESTING EACH COUNTY TO DEVELOP A COMPREHENSIVE  
INTEGRATED WASTEWATER MANAGEMENT PLAN AND FINANCIAL  
STRATEGY TO UPGRADE, CONVERT, OR CONNECT CESSPOOLS  
LOCATED WITHIN ITS RESPECTIVE JURISDICTION BY 2050."

The County of Hawai'i Department of Environmental Management is pleased to transmit its attached response to House Concurrent Resolution, No. 208, House Draft 1, which was adopted in the 2023 Regular Session.



COUNTY OF HAWAI'I, DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

# Response to State of Hawai'i House Concurrent Resolution No. 208, H.D. 1



December 2023

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## Introduction

In 2017, the Hawai'i State Legislature passed Acts 125 and 87, which mandates that all cesspools in the State, unless granted an extension, shall be converted to an approved wastewater system, or connected to a sewerage system by January 1, 2050. [House Concurrent Resolution No. 208, H.D. 1 \(Resolution\)](#), adopted in the 2023 session, requests that each County in the State of Hawai'i "develop a comprehensive integrated wastewater management plan and financial strategy to upgrade, convert, or connect cesspools located within its respective jurisdiction" no later than twenty days prior to the convening of the Regular Legislative Session of 2024.

The Resolution summarizes the State-wide issues, challenges, and importance of this significant undertaking. The County of Hawai'i (County) shares the concerns of the Legislature related to cesspool conversions in the State and initiated necessary planning efforts in 2022 to develop a long-term cesspool conversion strategy. This ongoing planning represents a cumulative investment of approximately \$8,000,000 toward the implementation of the most appropriate conversion approach.

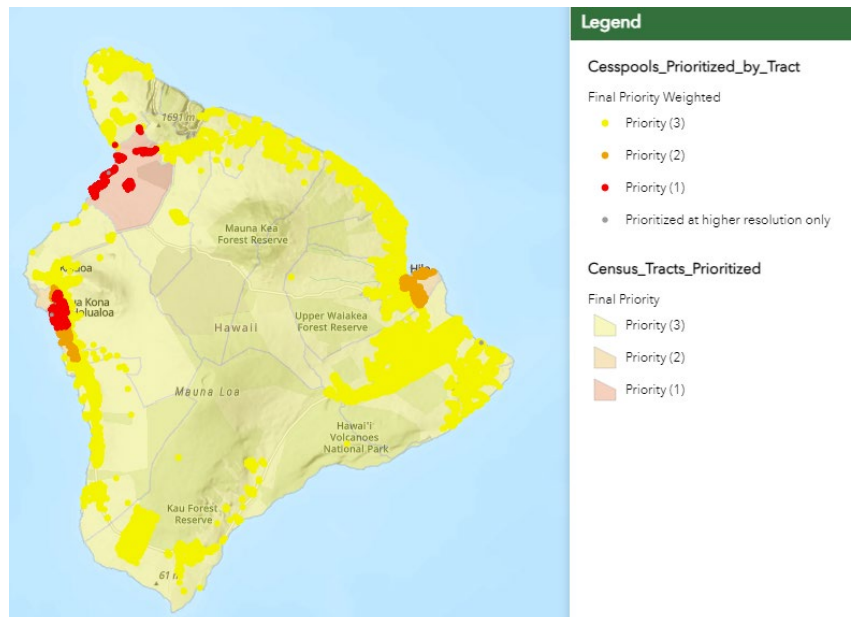
This initial work has enabled the County to quantify the considerable magnitude and complexity of the cesspool conversion issue. Although the County has been proactively conducting comprehensive planning efforts for nearly two years, the information requested by the Resolution cannot be completed prior to the start of the next Regular Legislative Session. This report documents work completed to date by the County, summarizes ongoing evaluations, presents anticipated future actions, and suggests information for legislative consideration.

## Background

The County has the most cesspools in the State. Of the approximately 83,000 cesspools State-wide, nearly 60 percent (48,596) are in the County of Hawai'i. The cost of conversion of the Puna District alone, with approximately 16,000 cesspools, is estimated to be a minimum of \$1.4 billion (AECOM, 2023). Total County-wide costs for cesspool conversions could exceed \$3 billion. A study commissioned by the Hawai'i State Department of Health (DOH) concluded that "Hawai'i County has the greatest affordability challenges, the most cesspools of all the counties, and a large proportion with potential impacts to drinking water and sensitive coastal waters" (Carollo, 2021). That same report determined that all property owners in the County will be financially burdened by cesspool conversions based on median household income data. Financial assistance will be key to a successful cesspool conversion program.



The County has the greatest affordability challenges, the most cesspools of all counties, and a large proportion with potential impacts to drinking water and sensitive coastal waters.



Cesspool conversions also face technical challenges. The County is primarily composed of rural, decentralized communities. It is estimated that 78 percent of the existing County population does not have access to a centralized sewer system, indicating that connection to an existing sewer service area is unlikely to be available for most properties. This is expected to drive a large portion of the conversions to an approved individual wastewater system (IWS) which can be costly due to the lack of topsoil on Hawai'i island to serve as an appropriate means of wastewater treatment and disposal. Most homeowners will require some form of assistance to navigate the process required to upgrade their onsite system.

Given the cost, environmental impacts, and potential neighborhood disruption associated with the overall conversion effort, public input, outreach, and education will also be key to the implementation of the program. Ideally these efforts should be consistent State-wide.

## Cesspool Conversion Planning Completed to Date

As previously discussed, the County has been proactively engaged in the development of a program for County-wide cesspool conversions for nearly two years. This work has included the following planning efforts.

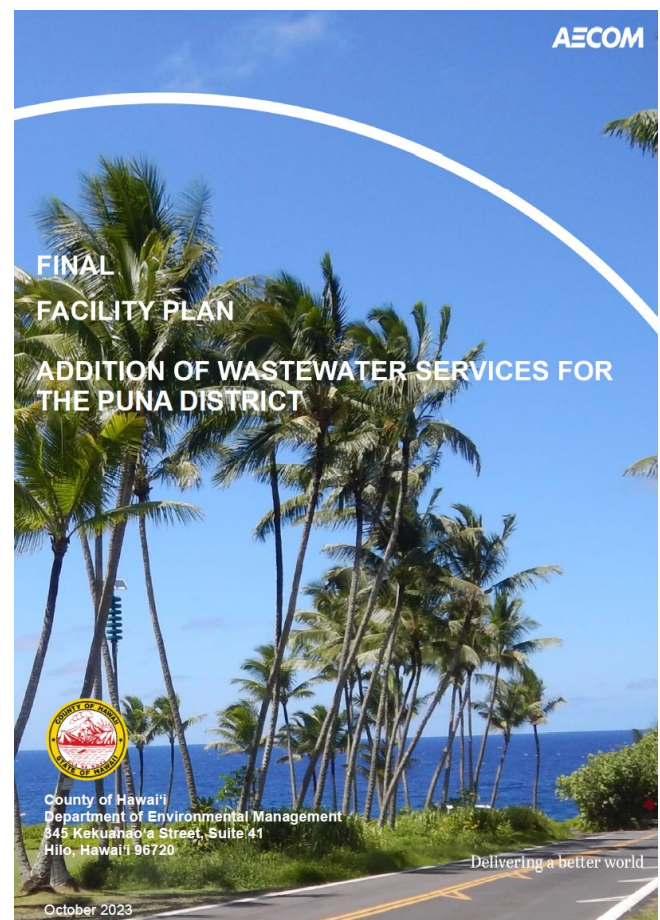
### Facility Plan and Programmatic Environmental Impact Statement, Addition of Wastewater Services for the Puna District.

This recently completed comprehensive plan evaluated alternatives for providing sewer service for an area on the windward side of the island with approximately 20,000 onsite sewage disposal systems, including 16,000 cesspools. A range of options were considered including IWS, decentralized treatment, subregional treatment, as well as urban sewer connections and conveyance of wastewater flows to the existing Hilo Wastewater Treatment Plant (WWTP). Based on cost, environmental, and technical factors, a

combination of IWS and decentralized treatment was ranked as the most favorable option. The plan identified the need for the development of appropriate institutional arrangements along with the evaluation of funding and financing approaches. Public outreach, input, and education were also key elements of the plan development.



The Puna Facility Plan evaluated options for the conversion of 16,000 cesspools within the County.



**Wastewater Feasibility Study for the Town of Pāhoā.** This feasibility study was completed in November 2023 and focused on specific sewer service needs associated with the Pāhoā area within the Puna District. There is currently no public sewer system for wastewater generated in Pāhoā. Residential wastewater is disposed of via

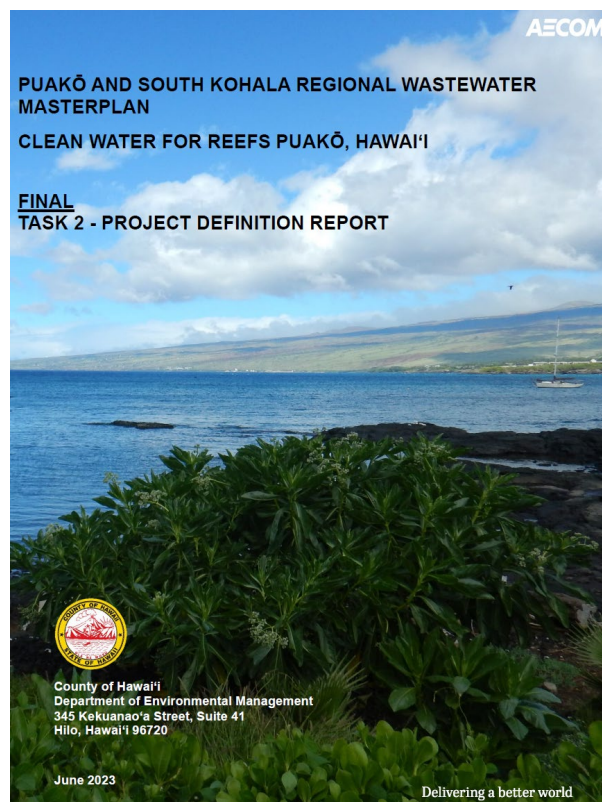
390 onsite systems, 320 of which are cesspools, and one small decentralized WWTP for flows from a shopping center. Alternatives considered included IWS, decentralized systems, and new sewers connecting to a new Pāhoa WWTP. Similar to the broader study for the Puna District, the alternative of IWS in combination with decentralized systems was determined to be most favorable.

**Project Definition Report, Regional Wastewater Master Planning for Puakō and Other Communities within South Kohala.**

The study area for this 2023 report encompasses approximately 176,000 acres, or 275 square miles. Based on the recent Hawai'i Cesspool Prioritization Tool commissioned by the Cesspool Conversion Working Group, the area contains 4,530 cesspools. The County does not currently provide wastewater collection and treatment services in the region. The Project Definition Report serves as the initial scoping document that prioritizes locations where wastewater services can be implemented in the project area, including development of potential alternative wastewater infrastructure. Data review included the summary of prior wastewater treatment evaluations for the area; private wastewater treatment plant information; zoning mapping and current development plans; cesspool location mapping; as well as physical features in the planning area such as depth to groundwater and soil type mapping. This information is currently being used for the development of options for community wastewater service as part of the wastewater master plan being developed for the South Kohala District.



The Project Definition Report for the South Kohala District establishes a baseline for further study of cesspool conversion options.



**Cesspool Conversion Planning Currently in Progress**

The County is continuing efforts to develop a comprehensive integrated wastewater management plan and financial strategy to upgrade, convert, or connect cesspools on Hawai'i Island. Cesspool conversions in compliance with Act 125 will necessitate a combination of efforts by the County and individual property owners. The following work is underway and is expected to be completed by the end of 2024.

**South Kohala Regional Wastewater Master Plan.** This master plan will conduct an analysis of wastewater infrastructure required for the conversion of the 4,530 cesspools in the South Kohala District, focused on the communities of Puakō, Kawaihae, Waimea, and Waikoloa Village. The master plan is being prepared in accordance with requirements of the Hawai'i State DOH for a wastewater system planning document. It will provide a roadmap for feasibility and

implementation for the County's sanitary sewer system in the area through the 30-year planning period (2022 to 2052). The plan will substantiate the need for the proposed facilities; identify feasible alternatives; and provide a systemic evaluation of these alternatives considering the unique demographic, geotechnical, topographic, hydrologic, and institutional characteristics of the area. The goal is for the master plan to demonstrate that the recommendations are implementable from legal, institutional, financial, physical, and management standpoints.

**County-Wide Cesspool Conversion Plan.** This comprehensive plan will evaluate the feasibility of extending sewer service from existing County-owned wastewater treatment facilities, study conversion alternatives for cesspool areas not previously evaluated, and integrate previous studies into a complete County-wide cesspool conversion plan. The scope of this effort addresses a wide range of tasks including:

- Review of previous studies, reports, and available GIS-based cesspool mapping.
- Evaluation of cesspool conversion options such as connection to existing sewer service areas, upgraded onsite wastewater treatment system, and decentralized or "satellite" collection and treatment systems.
- Site visits to confirm conversion analyses.
- Community engagement and education.
- Summary of potential funding sources.
- Preparation of a written cesspool conversion plan document with recommended options and conceptual level costs.

This work is expected to be complete in mid to late 2024.



The County-wide Cesspool Conversion Plan currently under development will establish a path for the conversion of all 48,600 cesspools within the County.

**County-Wide Wastewater Facilities Plan.** The County-wide facilities plan will focus on the evaluation and condition assessment of existing County wastewater infrastructure including collection system pump stations and treatment plants. Key to the assessment is the determination of available capacity within the existing Honoka'a, Kapehu, Kula'imano, Pāpa'ikou, Hilo, and Kealakehe service areas to accommodate additional wastewater contributions from cesspool conversions. The analysis will result in an overall wastewater capital improvement program (CIP) for existing County facilities.

**Integrated Wastewater Management Plan.** The integrated wastewater management plan will provide a summary of the County-wide Cesspool Conversion and Wastewater Facilities Plans into a single document and will establish a framework for implementation of the resulting CIP.

**Wastewater Rates and Fees Evaluation.** Based on the CIP developed as part of the County-Wide Wastewater Facilities Plan, the existing system of wastewater rates and fees will be updated to sustain operations going forward. The new rates and fees will be an important element in the County's financial strategy for selectively extending sewer service to areas with existing cesspools.

## Anticipated Future Actions

Future actions will be predicated on the results of planning activities currently under development. However, it is expected that these plans will result in a combination of feasible alternatives for cesspool conversions within the County. These alternatives may include:

- Extension of wastewater collection and treatment services from existing County-owned sewer service areas.
- Creation of new County sewer service areas and satellite or decentralized treatment facilities.

- Connection of cesspool areas to non-County owned wastewater systems.
- Property owner-initiated upgrades to an approved IWS.

Implementation of a successful cesspool conversion plan will also require the County to consider revisions to existing sewer service policies as well as adoption of the wastewater CIP and associated system of rates and fees.

## Actions for Consideration by the State Legislature

The magnitude of the program necessary to connect or convert all cesspools by 2050 requires a coordinated and cooperative effort by all levels of government, the public, and private industry. There are several areas where State legislation and resulting State-directed initiatives are needed to ensure the success of this undertaking.



Legislation is required to establish state-wide programs for workforce development, public outreach and education; technical resources for IWS conversions; and program funding.

**Workforce Development.** There may not be adequate qualified technical support and construction contractors to meet projected cesspool conversion needs. Additional resources are likely needed throughout the State to support cesspool conversions and sewer system expansions. A more formal gap analysis of workforce and training needs will be helpful to support workforce development needed for cesspool conversions.

**Public Outreach and Education.** There is currently a wide range of inconsistent communications in the public domain regarding cesspool conversions. It is imperative that a consistent and effective message be developed

and communicated to the public State-wide. Homeowners need to understand and support the environmental drivers behind the need for cesspool conversions.

### Resources for Property Owner IWS

**Conversions.** It is likely that a large percentage of the cesspool conversions in the State will consist of upgrades to approved alternate onsite systems to be implemented by property owners. Property owners will require access to informative and consistent State-wide guidance to assist them with the complete cesspool conversion process, including planning, engineering, permitting, construction, and financing.

**Funding.** The cost of the cesspool conversion program will be in the billions of dollars. A successful program of this magnitude will require financial assistance from both the State and Federal governments to expand public wastewater infrastructure and to assist property owners with conversion to an approved IWS or connect to a sewer. This is one of the most critical issues that requires attention from all levels of leadership to support the conversion program.

## References

AECOM, 2023. Final Facilities Plan, Addition of Wastewater Services for the Puna District.

Carollo, 2021. Final Cesspool Conversion Finance Research Summary Report.



