HAWAIʻI NONPOINT SOURCE MANAGEMENT PLAN

2026-2030

Hawaiʻi Department of Health
Surface Water Protection Branch

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Acronyms

BAV	Beach Action Value
BEACH Act	Beaches Environmental Assessment and Coastal Health Act
BWA	Brown Water Advisory
BMP	Best Management Practice
CBO	Community-Based Organizations
CCWG	Cesspool Conversion Working Group
CNPCP	Coastal Nonpoint Pollution Control Program
CSP	Conservation Stewardship Program (NRCS)
CTAHR	UH College of Tropical Agriculture and Human Resources
CWA	Clean Water Act
CWAP	Clean Water Action Plan
CWB	DOH Clean Water Branch
CWRM	Commission on Water Resource Management
CWSRF	Clean Water State Revolving Fund
CZARA	Coastal Zone Act Reauthorization Amendments
CZM	Coastal Zone Management
DAR	DLNR Division of Aquatic Resources
DBEDT	Department of Business, Economic Development, and Tourism
DLNR	Department of Land and Natural Resources
DOA	Department of Agriculture
DOFAW	DLNR Division of Forestry and Wildlife
DOH	Department of Health
DWSRF	Drinking Water State Revolving Fund
EPA	Environmental Protection Agency
EQIP	Environmental Quality Incentives Program
GRTS	EPA Grants Reporting and Tracking System
HACD	Hawaiʻi Association of Conservation Districts
HAR	Hawaiʻi Administrative Rules
HAWP	Hawaiʻi Association of Watershed Partnerships
HCPT	Hawaiʻi Cesspool Prioritization Tool
HEER	Hazard Evaluation and Emergency Response
HRS	Hawaiʻi Revised Statutes
HUC	Hydrologic Unit Code
IR	Integrated Report
KIRC	Kahoʻolawe Island Reserve Commission
MOA	Memorandum of Agreement
MS4	Municipal Separate Storm Sewer System
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPS	Nonpoint Source
NPSMP	Nonpoint Source Management Program
NWQI	National Water Quality Initiative

OCCL	DLNR Office of Conservation and Coastal Lands
OPSD	Office of Planning and Sustainable Development
ORMP	Ocean Resources Management Plan
OSDS	Onsite Disposal System
PacIOOS	Pacific Islands Ocean and Observing System
PFAS	Per- and polyfluoroalkyl substances
QAPP	Quality Assurance Program Plans
RFP	Request for Proposals
RFQ	Request for Qualifications
SAP	Sampling and Analysis Plans
SCAP	Stream Channel Alteration Permit
SDWA	Safe Drinking Water Act
SDWB	DOH Safe Drinking Water Branch
SDWIS	Safe Drinking Water Information System Viewer
SMA	Special Management Area
SOEST	School of Ocean and Earth Science and Technology
SWCD	Soil and Water Conservation Districts
SWPB	DOH Surface Water Protection Branch
TEK	Traditional Ecological Knowledge
TN	Total Nitrogen, equal to the sum of ammonium nitrogen, nitrate, and nitrite.
TP	Total Phosphorus
UH	University of Hawaiʻi
UIC	Underground Injection Control
USGS	U.S. Geological Survey
UWA	Unified Watershed Assessment
WAU	Watershed Assessment Unit
WBP	Watershed-Based Plan
WQAP	Water Quality Action Plan
WQS	Water Quality Standards
WWB	DOH Wastewater Branch

Executive Summary

The Hawaiʻi Nonpoint Source Management Plan (NPSMP) 2026–2030 outlines the State's approach over the next five years to protect and improve the quality of Hawaiʻi's waters through implementation of its Nonpoint Source Program (NPS Program). Developed in alignment with Section 319 of the Clean Water Act (CWA) and Hawaiʻi's Coastal Nonpoint Pollution Control Program (CNPCP), this NPSMP aims to guide the state's efforts to control and prevent NPS pollution while facilitating stewardship of Hawaiʻi's watersheds to support the health, resilience, and well-being of present and future generations.

Nonpoint source (NPS) pollution, or polluted runoff, occurs when stormwater or other surface flows wash pollutants from the land into streams, groundwater, and coastal waters, where it can harm ecosystems, pose risks to public health, and impact local economies. This type of pollution is considered nonpoint source because it comes from many diffuse sources rather than a single, identifiable discharge point. Throughout the state, steep watersheds directly connect upland activities with coastal waters. These conditions increase the impacts of NPS pollution from sediment, nutrients, pathogens, chemicals, and emerging contaminants. Extreme environmental conditions, invasive species, wildfires, aging wastewater systems, and land-use pressures exacerbate these risks.

According to the 2024 Integrated Report prepared by the Hawaiʻi Department of Health (DOH) Clean Water Branch (CWB), 93 percent of the marine waterbodies assessed statewide (137 of 148) did not attain water quality standards for one or more parameter. Turbidity was identified as the leading impairment for marine waters followed by chlorophyll *a* (an indicator of excess bioavailable nutrients) and nutrients (nitrogen and phosphorus). Most of the surface water quality impairments in Hawaiʻi are from nonpoint sources.

Sediment is one of the main causes of turbidity. It primarily comes from soil erosion linked to agricultural and urban land use, construction activities, vegetation loss due to feral ungulates and wildfires, invasive plant species with shallow roots, and eroding streambanks and conservation lands. Common sources of chlorophyll *a* and nutrients include fertilizers, sewage, livestock waste, manure, sludge, legumes and crop residues, irrigation water, and wildlife. Waste from feral ungulates and invasive plant species also contribute excess nutrients.

Led by the DOH Surface Water Protection Branch (SWPB) and largely supported by funding from the CWA Section 319(h) grant, the NPS Program addresses NPS pollution through development and implementation of science-based, stakeholder-driven watershed-based plans and best management practices (BMPs). The program takes a collaborative approach, integrating and leveraging federal, state, and local resources, programs, and initiatives to achieve measurable water quality improvements. It also incorporates monitoring and assessment to track progress and effectiveness, applies adaptive management to refine strategies as needed, and engages communities through education and outreach to promote long-term stewardship.

To guide the effective use of limited grant funding available for water quality restoration and protection projects, the DOH SWPB prioritizes watersheds based on five key factors: waterbody condition, availability of an approved watershed-based plan, demonstrated readiness through active partnerships and community interest, ability to track WQ trends, and synergy with protection priorities. These priorities are also informed by

previous prioritization efforts and aligned with priorities of partner agencies. Priority watersheds for restoration and protection include 1) South Kohala (Kawaihae and Waikoloa watersheds) on Hawaiʻi Island, 2) Leeward Maui (Kauaʻula, Kahoma, Wahikuli, Honokōwai, Kahana, Honokahua, Honolua, Pōhākea, Waikapū, Waiakoa, Hāpapa, Wailea, and Moʻoloa watersheds), 3) South Molokaʻi (Kawela watershed), 4) Koʻolaupoko (includes watersheds from Kualoa to Makapuʻu) on Oʻahu, and 5) Hanalei Bay (Hanalei, Waiʻoli, Waipā, and Waikoko watersheds) on Kauaʻi.

SWPB also prioritizes watersheds for watershed planning based on waterbody condition and demonstrated readiness through active partnerships, community interest, and alignment with partner agency priorities. The DOH SWPB will focus on the following priority watersheds or watershed areas for planning, subject to available resources: 1) Hilo Bay on Hawaiʻi Island, 2) Central Maui, 3) South Molokaʻi, 3) Waiʻanae on Oʻahu, and 5) West Kauaʻi (Kona Moku). As watershed conditions and program priorities evolve, additional watersheds may be added or re-prioritized to ensure planning efforts remain responsive and strategically aligned with long-term water quality goals.

In this NPSMP, the DOH SWPB establishes goals, objectives, and milestones for implementing water restoration and protection projects, building capacity for voluntary BMP implementation, strengthening data sharing and partnerships for integrated watershed management, improving water quality monitoring to support NPS management, expanding regulatory capabilities, ensuring oversight of the CNPCP, and administering the NPS Program.

Implementation of this plan will be guided by the CWA Section 319(h) State Grant Annual Workplans that outline specific actions led by the DOH SWPB. These workplans will ensure flexibility to adapt to emerging challenges and opportunities while maintaining accountability of the program goals and objectives. Progress will be tracked through measurable milestones and documented in annual reports, with long-term evaluation focused on improvements in water quality. This adaptive approach will allow the DOH SWPB and its partners to refine strategies over time and ensure that the plan remains effective and responsive to community and environmental needs.

Chapter 1: Introduction

The diversity of sources renders nonpoint source pollution a challenging and crucial issue to address. Source: DOH CWB

From the forested uplands to the vibrant coral reefs and fisheries of the sea, Hawai‘i’s watersheds are dynamic, interconnected systems that sustain both people and nature (see callout box for a definition of watersheds). For residents, the protection of limited freshwater resources and nearshore ecosystems is essential to public health and well-being.

Every part of the state lies within the coastal zone, where land-based activities directly influence water quality. The state’s more than 500 watersheds—characterized by steep slopes, high rainfall, and volcanic geology—play a critical role in the hydrologic cycle by capturing rainwater to recharge underground aquifers and directing flows into streams and coastal waters. However, when stormwater runs off the land, it can carry pollutants that threaten the very resources residents and communities depend on.

Nonpoint source (NPS) pollution, also referred to as polluted runoff, occurs when stormwater or other surface flows (e.g., irrigation runoff) carry pollutants across the landscape and into nearby waters. These pollutants—such as sediment, excess nutrients, pathogens, chemicals, oil, and trash—can end up in streams, groundwater, and coastal waters where they have the potential to harm ecosystems, pose risks to public health, and impact local economies. This type of pollution is considered nonpoint source because it comes from many diffuse sources rather than a single, identifiable discharge point. With such a wide range of sources including agriculture, forestry, urban development, and onsite wastewater systems, NPS pollution can be challenging to prevent and control.

For the past several decades, Hawai‘i has managed NPS pollution through targeted, collaborative watershed management and pollution control strategies that include a mix of voluntary measures and enforceable policies. This work has been guided by two key programs: the State’s NPS Program, led by the DOH SWPB in alignment with Section 319 of the CWA, and the Coastal Nonpoint Pollution Control Program (CNPCP), jointly administered by the DOH SWPB and the Hawai‘i Coastal Zone Management (CZM) Program as required under Section 6217 of the Coastal Zone Act Reauthorization Amendments (CZARA).

In recent years, the DOH SWPB strengthened its regulatory oversight of NPS pollution by adopting Hawai‘i Administrative Rules (HAR)

Chapter 11-56 for Nonpoint Source Pollution Control. The rules require certain landowners to register and develop a Water Pollution Prevention Plan (WPPP) to manage NPS pollution from various land-based activities. Although this regulatory program is in its early stages of implementation, it is intended to enhance existing efforts to protect and improve water quality and operate alongside the DOH CWB's National Pollutant Discharge Elimination System (NPDES) permit program, which regulates point source discharges—those from a single, identifiable source—under the CWA.

WHAT IS A WATERSHED?

A **watershed** is an area of land that collects and drains rainwater into a common outlet like a stream, lake, or ocean. Watersheds are important because the health of the water and land within them is connected, making them natural boundaries for managing water and the environment.

UNDERSTANDING WATERSHED BOUNDARIES

When planning to protect and manage our water resources, it's important to have a clear and shared understanding of watershed boundaries. This common understanding helps everyone communicate clearly, coordinate efforts, and support decision-making. While the basic concept of a watershed is straightforward, the way boundaries are drawn can vary slightly, which can lead to confusion if not clearly defined for planning purposes.

Some common boundaries used for watershed management in Hawaiʻi include:

Ahupuaʻa

A traditional Hawaiian land division and system of land use management that usually follows natural features like mountain ridges, valley walls, streams or rivers that run from the mountains (*mauka*) to the sea (*makai*). Because the topographic features closely align with those that define watersheds, ahupuaʻa and watershed boundaries sometimes overlap.

Surface Water Hydrologic Unit (SWHU)

A standardized coding system used by the State Commission on Water Resource Management (CWRM) to delineate and organize the state's surface water resources. This system was developed to improve data management, support regulatory processes like instream flow standards, and enhance coordination among agencies and stakeholders. The Department of Land and Natural Resources Division of Aquatic Resources (DLNR DAR) also follows a slightly modified version of these boundaries to support stream and watershed management.

Hydrologic Unit Code (HUC)

A detailed watershed classification developed by the USGS, where HUC-12 represents relatively small subwatersheds of about 10,000 to 40,000 acres. HUC-12 units follow natural drainage patterns and are recommended by the U.S. Environmental Protection Agency (EPA) Section 319 Nonpoint Source Program as preferred planning units for effective, targeted watershed and water quality management.

DEFINING THE WATERSHED FOR HAWAIʻI'S NPS PROGRAM

For the purposes of Hawaiʻi's NPS Program, the State-designated Surface Water Hydrologic Units are used as the primary watershed boundaries. This definition aligns with state programs and supports coordination across agencies and communities. However, watershed-based plans will also reference the HUC-12 scale to maintain consistency with the EPA's Section 319 program and support detailed, science-based water quality planning at the national level.

Understanding this context, the focus of this Nonpoint Source Management Plan (NPSMP) is to outline the State's approach over the next five years to protect and improve the quality of Hawaiʻi's waters through implementation of its NPS Program. It establishes goals, objectives, and milestones to guide the state's efforts to control and prevent NPS pollution while facilitating stewardship of Hawaiʻi's watersheds to support the health, resilience, and well-being of present and future generations.

Implemented through annual workplans, the NPSMP fulfills requirements under Section 319 of the CWA, which provides funding and guidance for states to address NPS pollution. By meeting these requirements, Hawaiʻi is eligible to receive federal funding and support for local watershed projects and water quality improvement efforts. While the CNPCP and the NPS regulatory program under HAR Chapter 11-56 also play a role in NPS pollution management, they are not the primary focus of this plan and are addressed only to the extent necessary for coordination and collaboration, without going into detailed guidance on their implementation.

This document is organized into eight chapters that together describe Hawaiʻi's approach to managing NPS pollution. It provides an overview of the legal and institutional framework that enables NPS management (Chapter 2); a detailed description of Hawaiʻi's NPS Program, including key components and implementation strategies (Chapter 3); a summary of partners whose programs and initiatives align with and strengthen the NPS Program and contribute to plan implementation (Chapter 4); and a review of the NPS Program's consistency with relevant federal and state strategic plans to demonstrate alignment and reinforce the Program's role in achieving broader environmental and public health goals (Chapter 5). Subsequent chapters assess current water quality conditions and sources of

NPS pollution of inland waters can spread contaminants into aquifers, Hawaiʻi's only natural drinking water source, and nearshore coastal waters. Source: Tara Morisato, DOH SWPB

NPS pollutants include pathogens that can harm marine species. Hawaiian Monk Seals are vulnerable to Toxoplasma gondii, a parasite from cat feces carried via waterways to the ocean. Source: Tara Morisato, DOH SWPB

NPS pollution (Chapter 6), identify priority watersheds for action (Chapter 7), and outline measurable goals and objectives over the next five years (Chapter 8). The plan concludes with a discussion on program evaluation (Chapter 9).

Table 1-1 provides a crosswalk between the elements of this NPSMP and the key components of an effective state NPSMP, as outlined in Appendix A of the *Nonpoint Source Program and Grants Guidelines for States and Territories* (EPA, 2024).

Table 1-1. Crosswalk of Hawai'i's NPSMP with Key Components of an Effective NPSMP

Appendix A Component	Location in HI NPSMP
The state program identifies water restoration and protection goals and program strategies (regulatory, nonregulatory, financial and technical assistance, as needed) to achieve and maintain water quality standards. It includes relevant, current, and trackable annual milestones that best support program implementation.	2 – Legal authorities 3 – Key NPS Program components 8 – Goals, objectives, milestones
The state program identifies the primary categories and subcategories of NPS pollution and a process for prioritizing impaired and unimpaired waters and identify how national and state priorities may align.	5 – How national/state priorities align 6 – Categories and sources of pollution and emerging contaminants, impaired waters 7 – Prioritizing impaired and unimpaired waters
The state program identifies management measures (i.e., systems of practices) that will be undertaken to reduce pollutant loadings resulting from each category, subcategory, or particular nonpoint source identified in component 2 above. The measures should also consider the impact of the BMPs on groundwater quality.	3.3 – Watershed-Based Planning 3.4 – Project Implementation and Funding
The state uses both watershed projects and well-integrated regional or statewide programs to restore and protect waters, achieve water quality benefits, and advance natural disaster resiliency goals.	3.4.2 – Implementation with partners and other sources of funding 4 – Leveraging partnerships for NPS management 7.5.2 – Coordination with other watershed planning efforts
The state identifies and enhances its collaboration with appropriate federal, state, interstate, Tribal, and regional agencies as well as local entities (including conservation districts, private sector groups, utilities, and citizen groups) that will be utilized to implement the state program. Furthermore, the state supports capacity-building in disadvantaged, underserved, or overburdened communities.	3.6 – Capacity building 3.7 – Program gaps and opportunities for enhancement 4 – Partnerships for effective NPS management 7.5.2 – Coordination with other watershed planning efforts 8, NPSMP Goal 3 – Goal to strengthen multi-stakeholder collaboration
The state manages and implements its NPSMP efficiently and effectively, including necessary financial management.	8, NPSMP Goal 7 – Efficient and effective administration; financial management 9 – Systems to meet reporting obligations
The state evaluates its NPSMP using environmental and functional measures of success and revises its NPSMP plan at least every five years.	9 – Evaluation

Chapter 2: Legal and Regulatory Framework

2.1 Constitutional Foundation and Public Trust Principles

The State's mandate to protect water quality is rooted in the Hawaiʻi State Constitution. Article XI, Section 1 requires the State to conserve and protect natural resources, including water, for the benefit of present and future generations. It guarantees the public's right to a clean and healthful environment and places responsibility on the State and its political subdivisions to uphold this right.

This constitutional foundation establishes a public trust obligation: stewardship of water resources is a duty, not a choice. This public trust doctrine serves as a guiding principle for policy, requiring management that balances human needs with ecological sustainability. It also empowers and obligates state and county agencies to take proactive measures—including regulatory enforcement, planning, and interagency coordination—to prevent pollution and degradation of water resources.

The Hawaiʻi State Constitution emphasizes humanity's dependence on, and responsibility for, the health of the environment. SOURCE: DOH SWPB

2.2 Governance Framework: Cooperative Federalism and NPS Program Coordination

While the Hawaiʻi State Constitution does not directly govern federal agencies, federal water quality programs—such as the NPS Program—operate within a framework of cooperative federalism that depends on states for implementation. Under this structure, federal requirements are carried out through state-led programs, aligning national objectives with Hawaiʻi's constitutional mandate to protect and conserve water resources. Through this governance framework, federal, state, and local roles work collaboratively to achieve water quality goals.

Government roles within this framework:

- **Federal agencies** (e.g., U.S. Environmental Protection Agency [EPA], National Oceanic and Atmospheric Administration [NOAA]) set national water quality standards, enforce federal laws such as the Clean Water Act, and provide funding and technical assistance to support state and local pollution control efforts.
- **State agencies** (e.g., Hawaiʻi Department of Health [DOH], Department of Land and Natural Resources [DLNR]) adopt and implement state water quality regulations, monitor surface and groundwater, manage watersheds and land-use practices, and lead statewide conservation and pollution prevention initiatives.
- **County agencies** (e.g., Planning and Public Works Departments) oversee land-use planning, zoning, stormwater management, and permitting for development. Through these

responsibilities, counties play a critical role in aligning local land use and infrastructure with state and federal water quality goals.

2.3 Core Legal Authorities

The core legal authorities for managing water quality and NPS pollution at the federal level are established under the CWA and CZARA. These laws provide enforceable authority for pollution control and require states to implement management measures for key NPS categories using regulatory and non-regulatory mechanisms.

At the state level, water pollution control is codified primarily in Hawai'i Revised Statutes (HRS) Chapters 342D and 342E. Chapter 342D grants DOH broad authority to establish water quality standards, regulate pollutant discharges, and enforce water pollution laws. Chapter 342E specifically authorizes a NPS pollution management and control program to administer, enforce, and carry out all laws, rules, and programs relating to NPS pollution in the state. Under this statute, DOH has the legal mandate to identify significant sources of NPS pollution, promote BMPs, and coordinate pollution control efforts with other agencies. HRS 342E-4 includes the civil penalties for anyone who violates 342E. These statutory provisions are further detailed and carried out through HAR Chapter 11-54, which sets water quality standards, and HAR Chapter 11-56, which governs nonpoint source pollution control measures in line with the CWA and CZARA.

Table 2-1 summarizes the principal laws, statutes, and regulations that provide the legal foundation for managing NPS pollution in Hawai'i. This table includes legislation that is directly tied to NPS Program implementation. It also identifies responsible agencies and briefly describes their legal authority and role in NPS management.

Table 2-1. Core Legal Authorities for NPS Management in Hawai'i

Law/Statute/ Regulation	Jurisdiction	Description	Responsible Agency/Entity	Role in NPS Management
Clean Water Act (CWA) Section 319	Federal	Establishes the national NPS program, requires states to develop NPS management plans, and authorizes grant funding.	EPA DOH SWPB	Primary authority for state NPS program.
Coastal Zone Act Reauthorization Amendments (CZARA) Section 6217	Federal	Requires coastal states to develop a coastal NPS pollution control program approved by NOAA and EPA.	NOAA EPA DOH SWPB Hawai'i CZM Program	Federal mandate and funding for NPS programs to protect and restore coastal waters and habitats.
Hawai'i Revised Statutes (HRS) Chapter 342D (Water Pollution)	State	Authorizes DOH to regulate water pollution, including NPS, and adopt water quality standards.	DOH, multiple branches	State-level enforcement and permitting authority.
HRS Chapter 342E (Nonpoint Source Pollution Management and Control)	State	Requires within DOH a NPS pollution management and control program to administer, enforce, and carry out all laws, rules, and programs relating to NPS pollution in the State.	DOH SWPB	Primary state authority enabling DOH to regulate and manage NPS pollution.

Law/Statute/ Regulation	Jurisdiction	Description	Responsible Agency/Entity	Role in NPS Management
Hawaiʻi Administrative Rules (HAR) Chapter 11-54 (Water Quality Standards)	State	Sets water quality standards including designated uses, criteria, and antidegradation policies for state surface waters.	DOH CWB	Establishes water quality goals used to assess NPS pollution impacts and determine impairments.
HAR Chapter 11-56 (Nonpoint Source Pollution Control)	State	Implements NPS pollution control through BMPs and planning requirements for contributing land uses.	DOH SWPB	Implements HRS Chapter 342E and establishes NPS pollution control standards and requirements.

2.4 Supporting and Enabling Legal Authorities

In addition to the core federal and state statutes and regulations, a range of supporting and enabling authorities expands the State's ability to manage NPS pollution. These include federal, state, and county laws and regulations that, while not always written specifically for water quality, influence land use, stormwater management, watershed planning, habitat conservation, and infrastructure development. By guiding local decision-making, providing additional enforcement mechanisms, or creating opportunities for funding and interagency coordination, these authorities complement the core statutes and advance the goals of Hawaiʻi's NPS Program.

Table 2-2 summarizes some of these supporting or enabling laws and regulations, identifying the responsible agencies and describing how each contributes to water quality protection. This list is not meant to be comprehensive; additional enforceable policies that implement the CNPCP and also support NPS management are described at: *https://planning.hawaii.gov/czm/initiatives/coastal-nonpoint-pollution-control-program/*

Table 2-2. Supporting and Enabling Legal Authorities for NPS Management in Hawaiʻi

Law/Statute/ Regulation	Jurisdiction	Description	Responsible Agency/Entity	Role in NPS Management
CWA Section 106	Federal	Authorizes EPA to provide financial assistance for state and tribe water pollution control programs.	EPA DOH CWB DOH SDWB	Supports DOH's capacity to monitor and enforce water pollution, including NPS pollution.
CWA Sections 303(d) & 305(b)	Federal	Requires states to identify impaired waters (303[d]) and report on water quality (305[b])	EPA DOH CWB	Informs prioritization of watersheds and implementation of NPS pollution control strategies.
CWA Sections 205(j) & 604(b)	Federal	Funds water quality management planning performed by states and regions.	EPA DOH CWB Counties	Supports TMDL development and watershed-based planning efforts to address NPS pollution.
Beaches Environmental Assessment and Coastal Health (BEACH) Act	Federal	Amends CWA to require monitoring and public notification for coastal recreation waters.	EPA DOH CWB	Supports pathogen monitoring from NPS runoff at recreational beaches.

Law/Statute/ Regulation	Jurisdiction	Description	Responsible Agency/Entity	Role in NPS Management
Safe Drinking Water Act (SDWA)	Federal	Establishes drinking water standards and protects public water systems, including source water protection through the Source Water Assessment Program (SWAP) and the Wellhead Protection-Financial Assistance Program (WHP-FAP).	EPA DOH Safe Drinking Water Branch (SDWB)	Identifies and prioritizes protection of drinking water sources from surface and subsurface runoff pollution.
Farm Bill (Various Titles)	Federal	Authorizes the Environmental Quality Incentives Program (EQIP), the Conservation Stewardship Program (CSP), and other conservation programs to improve agricultural water quality.	USDA NRCS	Provides technical and financial assistance for implementation of NPS-reducing BMPs on ag lands.
HRS 149A (Hawaiʻi Pesticides Law)	State	Regulates the use, sale, and disposal of pesticides to protect health and the environment.	Department of Agriculture & Biosecurity (DAB)	Controls pesticide runoff and contamination, reducing NPS pollution in water and soil.
HRS Chapter 174C (State Water Code)	State	State law governing water use and resource protection.	Department of Land and Natural Resources (DLNR) Commission on Water Resource Management (CWRM)	Supports watershed and groundwater recharge protection from NPS impacts.
HRS Chapter 180 (Soil and Water Conservation Districts)	State	Authorizes DLNR to establish conservation districts to promote soil and water resource conservation through technical assistance and conservation plans.	DLNR, Soil and Water Conservation Districts (SWCD)	Supports agricultural BMPs and watershed protection practices that reduce erosion and runoff on public and private lands.
HRS Chapter 180C (Soil Erosion and Sediment Control)	State / County	Authorizes county governments to enact ordinances to control soil erosion and sediment. It also grants DOH the authority to establish statewide soil erosion and sediment control standards.	DOH Counties	Controls soil erosion and sediment runoff by requiring implementation of BMPs during land disturbing activities.
HRS Chapter 183C (Conservation District)	State	Regulates land use in conservation districts.	DLNR Office of Conservation and Coastal Lands (OCCL)	Supports resource protection and oversees development that may cause erosion or sedimentation.
HRS Chapter 195F (Forest Stewardship)	State	Promotes sustainable forest management and restoration.	DLNR Division of Forestry and Wildlife (DOFAW)	Supports forest health to reduce erosion and runoff, mitigating NPS pollution.
HRS Chapter 205 (Land Use Commission)	State	Establishes land use districts and controls development.	State Land Use Commission	Influences land uses that may contribute to NPS pollution.

Law/Statute/ Regulation	Jurisdiction	Description	Responsible Agency/Entity	Role in NPS Management
Coastal Zone Management Act and HRS Chapter 205A (Coastal Zone Management)	State	Provides framework for land use and resource protection in the coastal zone, including Special Management Areas (SMA).	Office of Planning and Sustainable Development (OPSD)	CZM and SMA rules influence development practices that affect NPS pollution near coastlines.
HAR 4-66 (Pesticides)	State	Implements rules for the licensing, use, handling, and storage of pesticides in Hawaiʻi.	DAB	Regulates pesticide application to reduce runoff and leaching into soil and water, minimizing NPS pollution.
HAR 11-23 (Underground Injection Control)	State	Regulates underground injection wells to protect underground sources of drinking water.	DOH SDWB	Prevents contamination of groundwater from injection wells, helping control NPS pollution from stormwater and wastewater systems.
HAR Chapter 11-62 (Wastewater Systems)	State	Regulates individual wastewater systems (IWS) including design, siting, and operations.	DOH Wastewater Branch (WWB)	Reduces nutrient and pathogen pollution from decentralized wastewater.
HAR Chapter 13-5 (Conservation District)	State	Governs land use in Conservation Districts to protect natural and cultural resources.	DLNR OCCL	Controls development and land use in sensitive areas to reduce erosion, runoff, and water quality impacts.
HAR Chapter 13-104 (Rules Regulating Activities within Forest Reserves)	State	Regulates activities on state forest reserves.	DLNR DOFAW	Limits activities like off-road vehicle use, logging, and development that may contribute to erosion.
HAR 13-169 (Protection of Instream Uses of Water)	State	Regulates stream channel alterations and protects instream uses.	DLNR CWRM	Helps preserve stream integrity and flow, supporting watershed health and reducing pollutant transport via altered hydrology.
County Land Use and Zoning Codes	County	Regulates local development, stormwater, and land use	County Planning and Public Works Departments	Local implementation affecting NPS pollution.
County Grading, Drainage, and Erosion Control Ordinances	County	Regulates grading and construction to prevent erosion and runoff.	County Departments of Public Works or Planning	Requires construction BMPs to prevent sediment and pollutant discharge.
Special Management Area Rules	County	Regulates development within coastal SMA zones to protect coastal resources and ensure environmental safeguards.	County Planning Departments	Mitigates NPS pollution by controlling development in coastal areas.
Subdivision and Development Codes	County	Governs development site design, drainage, and stormwater infrastructure	County Planning Departments	Influences design and infrastructure that mitigate NPS runoff from new development.
General Plans / Community Plans (County Ordinances)	County	Long-range plans that guide land use, development, and infrastructure planning.	County Planning Departments	Incorporate water resource protection policies and growth management that influence NPS sources.

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Chapter 3: Hawaiʻi's Nonpoint Source Program

3.1 Key Components of Hawaiʻi's NPS Program

While the legal framework described in Chapter 2 establishes the authority to protect water quality and manage NPS pollution, it is through coordinated programs, on-the-ground projects, and strong partnerships that these protections are realized. Led by the DOH SWPB under the authorities set forth by CWA Section 319 and HRS 342E, the State's NPS Program relies on collaboration with state and county agencies, federal partners, local organizations, and community groups to reduce polluted runoff. Through efforts like water quality monitoring, watershed-based planning, project implementation, and community engagement, the NPS Program blends science, stewardship, and regulatory action together with a holistic, mauka-to-makai approach to protect and improve water quality. This mauka-to-makai approach is briefly described in the callout box.

Pollution prevention starts up mauka, through proactive measures such as supporting stewardship projects and building partnerships across communities. Source: DOH SWPB

Honoring the *Ahupuaʻa*: Traditional Knowledge Inspiring Modern Watershed Management

Native Hawaiian communities organized land and water management by *ahupuaʻa*—wedge-shaped, socio-economic land divisions running from the mountain peaks (*mauka*) to the nearshore ocean (*makai*). This system recognized that upland activities affect downstream resources—forests protect streams, streams feed *loʻi kalo* (taro patches), and healthy estuaries support fisheries and coral reefs.

Connecting Tradition to Today's NPS Program

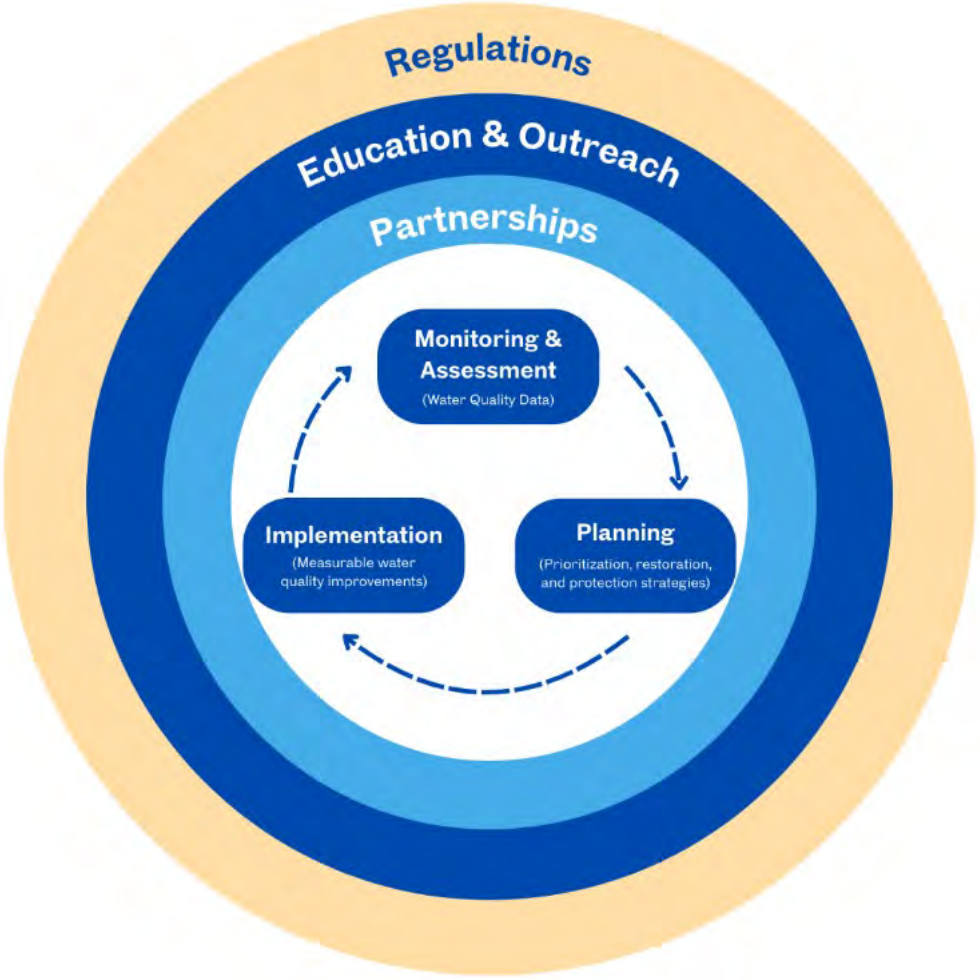
Hawaiʻi's NPS Program operates within a contemporary regulatory framework, but its goals align with the interconnected, place-based approach reflected in the *ahupuaʻa* system. While it is not framed as a traditional model, the NPS Program strives to reflect these values by promoting stewardship across the entire watershed—from mauka to makai.

- **Mountains (*Uka*):** Forest conservation, invasive species control, and erosion prevention protect headwater quality and reduce downstream impacts.
- **Midlands (*Kula*):** Agricultural conservation practices, urban stormwater management, and other management measures reduce sediment and nutrient runoff.
- **Coastal Areas (*Kai*):** Healthy wetlands and riparian buffers filter runoff, protecting coral reefs and nearshore ecosystems.

Consistent with the CWA Section 319 Guidelines (EPA, 2024), Hawai'i's NPS Program incorporates the following key components:

1. *Water quality monitoring and assessment* to identify priority watersheds and track progress;
2. *Watershed-based planning* to target management actions where they will have the greatest impact;
3. *Project implementation and funding mechanisms* to support pollution control measures and restoration projects;
4. *Partnerships and interagency coordination* to align efforts among state, federal, and local entities;
5. *Education, outreach, and capacity building* to foster stewardship and strengthen local partnerships; and
6. *Regulatory tools and compliance mechanisms* to support reductions in NPS pollution.

Figure 3-1. Key Components of Hawai'i's NPS Program



At the core of the program is a dynamic, adaptive cycle that integrates water quality monitoring, watershed-based planning, and the implementation of BMPs. The NPS Program is further supported by partnerships and sustained through education and outreach efforts, which foster community involvement and long-term stewardship. Regulatory tools and compliance mechanisms reinforce these efforts by providing the authority to address violations and ensure adherence to water quality standards. Together, these interconnected functions ensure that Hawai'i's planning and implementation efforts to reduce NPS pollution build a foundation for lasting impact while maintaining compliance with federal guidance for state water quality programs. Figure 3-1 illustrates the relationship of these program components.

The following sections in this chapter describe the key components of Hawai'i's NPS Program in greater detail.

3.2 Monitoring and Assessment

Monitoring and assessment provide the scientific basis for identifying nonpoint sources of water pollution, targeting priority watersheds, and evaluating the progress and success of management actions in meeting water quality goals. The NPS Program leverages routine and targeted monitoring efforts that span coastal and inland waters statewide, including CWA Section 319 project-specific monitoring, DOH CWB beach monitoring, and collaborative studies and initiatives with academic and community partners. These collective efforts inform water quality assessments, watershed-based planning, regulatory decisions, and adaptive watershed management.

3.2.1 Monitoring under CWA Section 319

3.2.1.1 Section 319 Project Monitoring

CWA Section 319-funded projects may include stream and/or coastal water quality monitoring to assess effectiveness of on-the-ground restoration activities and implementation of BMPs. The DOH SWPB provides technical assistance by reviewing monitoring plans, providing data management support, and advising on study design as resources allow.

All project-related monitoring activities are coordinated with the DOH CWB's Monitoring Section to avoid duplication of effort and ensure that acceptable data is collected to inform the State's Integrated Report, contributing to a more complete picture of watershed conditions and restoration progress. Even when projects will not be generating monitoring data acceptable for inclusion in the Integrated Report, the DOH SWPB reviews their monitoring plans to ensure the data still provides valuable insights into local water quality conditions and help demonstrate the benefits of watershed restoration efforts.

Effectiveness monitoring for projects may also include erosion pin monitoring, vegetation assessments, and photo-point documentation to estimate pollutant load reductions and water quality improvements. Additional monitoring strategies may also be considered on a case-by-case basis.

3.2.1.2 Section 319 Program Monitoring

The DOH SWPB may conduct water quality monitoring directly to support eligible CWA Section 319 activities. This type of monitoring is typically undertaken as needed to support NPS Program priorities rather than as a continuous effort. Program-level monitoring can serve multiple purposes, including identifying nonpoint sources of pollution and evaluating water quality to support protection goals. These efforts also provide the technical foundation for watershed-based planning, including the development of Watershed-Based Plans (WBPs), NPS or mixed-source TMDLs, or other alternative plans, consistent with EPA guidelines. Section 319 funds may also support monitoring in National Water Quality Initiative

(NWQI) watersheds in the planning or implementation phases, even in cases where a WBP has not yet been fully developed.

3.2.2 Partner-Led Monitoring

The DOH SWPB leverages monitoring and assessment efforts of its partners to identify waters not meeting water quality standards (impaired waters), inform prioritization for watershed planning, and guide NPS management actions.

3.2.2.1 DOH CWB Water Quality Monitoring

The DOH CWB aims to achieve the following six CWA monitoring objectives:

1) Assess recreational beaches statewide to protect public health;
2) Establish, review, and revise the State's WQS;
3) Assess State waters and determine WQS attainment;
4) Identify impaired waters and develop plans to restore their designated uses;
5) Identify causes and sources of water impairments through targeted monitoring strategies; and
6) Support implementation and evaluation of water quality management programs.

It currently prioritizes routine coastal monitoring efforts at recreational beaches in compliance with the BEACH Act, which requires the State to develop performance criteria for testing, monitoring, and notifying public users of possible coastal recreation water problems. The DOH CWB also collects data on a range of other water quality parameters—such as temperature, nutrients, and turbidity—to support a statewide water quality assessment.

Data on inland water quality collected by the DOH CWB is limited to specific areas of interest, such as waterbodies slated for Total Maximum Daily Load (TMDL) development, which is a "pollution budget" for a specific waterbody and is often referenced in permitting requirements and enforcement actions. The DOH CWB, however, is in the process of developing a strategy for a statewide watershed monitoring program that proposes expanding capacity for monitoring of inland surface waters. Long-term goals of the program include:

A strategy for a statewide watershed monitoring program is being tested within Kahoma Stream on Maui. SOURCE: DOH SWPB

- Develop a robust and sustainable monitoring framework.
- Assess water quality through physical, chemical, and biological parameters, including trend analyses.
- Enhance coordination among regulatory agencies, permittees, and stakeholders.

- Improve data collection, accessibility, and reporting to inform decision-making.
- Address emerging contaminants, including per- and polyfluoroakyl substances (PFAS) and heavy metals.
- Support TMDL development and ensure compliance with antidegradation requirements.
- Track ongoing watershed improvement and compliance efforts for both point and nonpoint sources.
- Identify waterbodies that may not meet State water quality standards and prioritize areas for additional collection.

Once the strategy is finalized, resources will need to be secured for implementation. The DOH SWPB plans to collaborate with the DOH CWB and other agencies on the development and implementation of the monitoring program over the next five years.

Additional details on the DOH CWB's coastal water quality monitoring and relevant program activities are provided in Chapter 4, Section 4.2.2.1.

3.2.2.2 Special Studies

Collaborations with federal, state, and nonprofit organizations on special studies help to enhance understanding of ongoing water quality issues across the state. The NPS Program recognizes the growing need to proactively address emerging and complex water quality concerns that may fall outside routine monitoring parameters. To that end, the NPS Program seeks to expand partnerships and collaborate with academic institutions and government research entities who conduct targeted monitoring and special studies focused on issues such as harmful algal blooms, nutrient loading from cesspools, PFAS, microplastics, and other contaminants of emerging concern (CECs). These issues often present complex ecological and public health risks that require multidisciplinary approaches and specialized expertise.

3.2.2.3 Community-Based Monitoring

Local nonprofits and community groups across Hawaiʻi play an important role in expanding water quality monitoring capacity through localized, volunteer-driven efforts. These groups often collect data on parameters such as turbidity, nutrients, and fecal indicator bacteria in areas of concern or interest to local stakeholders. While not all community-generated data meet the rigorous quality assurance and control standards required for regulatory use, some datasets may be considered for inclusion in the State's Integrated Report if they follow established monitoring protocols and are accompanied by appropriate documentation. These efforts not only supplement State-led monitoring but also foster public engagement, stewardship, and a deeper understanding of local water quality issues.

3.2.3 Water Quality Reporting and Assessment

Data collected through various monitoring efforts serve as the foundation for evaluating the condition of Hawaiʻi's surface waters and identifying sources of NPS pollution. The following subsections outline how monitoring data are translated into formal assessments and used to satisfy reporting requirements under Section 319 of the CWA.

3.2.3.1 Water Quality Monitoring and Assessment Report (Integrated Report)

Every two years, the DOH CWB's Monitoring and Analysis Section conducts comprehensive water quality assessments and publishes its findings in the Integrated Report. Both current and previous reports are available on the DOH CWB's website. These assessments are used by the NPS Program to identify impaired waters and coordinate water quality management efforts with the DOH CWB.

The Integrated Report, in accordance with CWA Section 305(b), documents the status of the State's water quality and, under CWA Section 303(d), includes a list of impaired water bodies along with their associated pollutants and pollutant indicators. The Integrated Report reflects water quality assessment decisions based on the analysis of monitoring data in relation to the State's WQS.

WQS are essential benchmarks for assessing the health of water bodies and guiding water quality management. They define the allowable levels of pollutants, physical conditions, and biological parameters necessary to support designated uses, such as recreation, drinking water, or aquatic life. By establishing clear thresholds, these standards enable consistent monitoring, reporting, and assessment of water quality conditions over time. They also provide a basis for evaluating whether water bodies meet the required criteria for ecological and public health protection. When a waterbody fails to meet these standards, it is classified as an impaired water indicating that it does not support one or more of its designated uses.

Decisions for listing or delisting water bodies are based on the quality and quantity of data, as well as water body type and applicable numeric criteria. The DOH CWB is the primary source of data for the Integrated Report, with additional data provided by NPDES-permitted facilities, private contractors, and non-governmental organizations. For data to be included in the report, it must meet specific criteria outlined in the DOH-CWB's Data Acceptance Criteria. Common parameters assessed in the Integrated Report include enterococci, turbidity, TSS, chlorophyll *a*, total nitrogen, nitrate + nitrite nitrogen, ammonium nitrogen, and total phosphorus.

The Integrated Report not only carries over results from previous assessments to track trends and changes in water quality but also serves as a baseline for measuring the success of the State's water quality improvement efforts. It highlights areas needing restoration and can support the de-listing of water bodies that have been restored. Impaired waters identified in the report may be prioritized for further monitoring to develop TMDLs, plan and evaluate Section 319 projects, and inform NPDES permit requirements and CWA Section 401 Water Quality Certifications.

3.2.3.2 CWA Section 319 Reporting

Monitoring results from 319-funded projects are reported annually in the EPA's Grants Reporting and Tracking System (GRTS) and summarized in the DOH SWPB's end of year report (Section 319 Annual Report).

The DOH SWPB also submits documentation of water quality improvements, including attainment of WQS for targeted water bodies, to the EPA. Upon approval, these improvements may be published as Nonpoint Source Success Stories. The most recent success story, published in 2025, highlights Waipā Stream's attainment of turbidity standards, as well as attainment of nutrient standards in the estuary portion, following two phases of restoration and outreach activities funded in part by Section 319(h) grant funding. DOH SWPB anticipates publishing at least one additional success story by 2030.

3.3 Watershed-Based Planning

Another key component of Hawai'i's NPS Program is watershed-based planning. Like TMDLs, WBPs serve as a critical tool for bridging the gap between water quality assessment and on-the-ground implementation by translating monitoring and assessment data into targeted, actionable strategies for reducing NPS pollution.

WBPs provide a framework for prioritizing and implementing restoration projects that are most likely to produce measurable water quality improvements, such as invasive species

removal, native plant restoration, green stormwater infrastructure installation, riparian corridor rehabilitation, and runoff control. By focusing on high-impact, place-based solutions, WBPs help ensure that limited resources are directed toward the most effective interventions.

In addition to guiding project selection, WBPs play a vital role in coordinating the efforts of agencies, landowners, and jurisdictions with authority over water resources, helping to integrate technical, regulatory, and community-based approaches. The planning process is informed by ongoing monitoring and supports adaptive management, allowing the NPS Program to refine priorities and track progress over time.

3.3.1 EPA 9-Element Watershed-Based Plans

The DOH SWPB relies on approved WBPs to guide investments in watershed restoration and identify projects with the highest potential to restore and protect water quality.

Section 319(h) grant funds for watershed restoration projects (also referred to as Watershed Project Funds) can only be used in watersheds with State-approved WBPs. As of 2025, Hawai'i has 21 approved WBPs covering 51 watersheds across five islands (see Table 3-1 and Figure 3-2). These plans are publicly accessible on the Surface Water Protection System Viewer.

To receive approval, WBPs must adequately address the nine required elements established by the EPA to ensure that implementation actions are grounded in sound science and lead to water quality improvement:

a. Identification of pollutant sources and causes of impairment;
b. Estimates of pollutant loadings and expected load reductions;
c. Description of management measures that will achieve load reductions and identification of targeted critical areas;
d. Estimated amounts of technical and financial assistance and the relevant authorities needed to implement the plan;
e. An education and outreach component;
f. A project implementation schedule;
g. Interim, measurable milestones;
h. Indicators to track progress toward goals; and
i. A plan for monitoring to evaluate effectiveness.

Available resources that support development of WBPs include:

- EPA's Handbook for Developing Watershed Plans to Restore and Protect Our Waters, which offers national guidance on the nine elements;
- EPA's Critical Source Area Identification and BMP Selection guide, which helps define critical source areas for BMP implementation;
- EPA's Nutrient and Sediment Estimation Tools for Watershed Protection summary, which outlines different models that can be used for pollutant load estimation; and
- The Hawai'i Watershed Guidance (2010), developed by the Hawai'i CZM Program, which adapts EPA's framework to state-specific conditions and incorporates CNPCP management measures.

WBPs are often developed by local watershed groups, nonprofits, or government. These groups can receive some financial or technical assistance from the DOH SWPB if available. Funding is often a limiting factor for developing

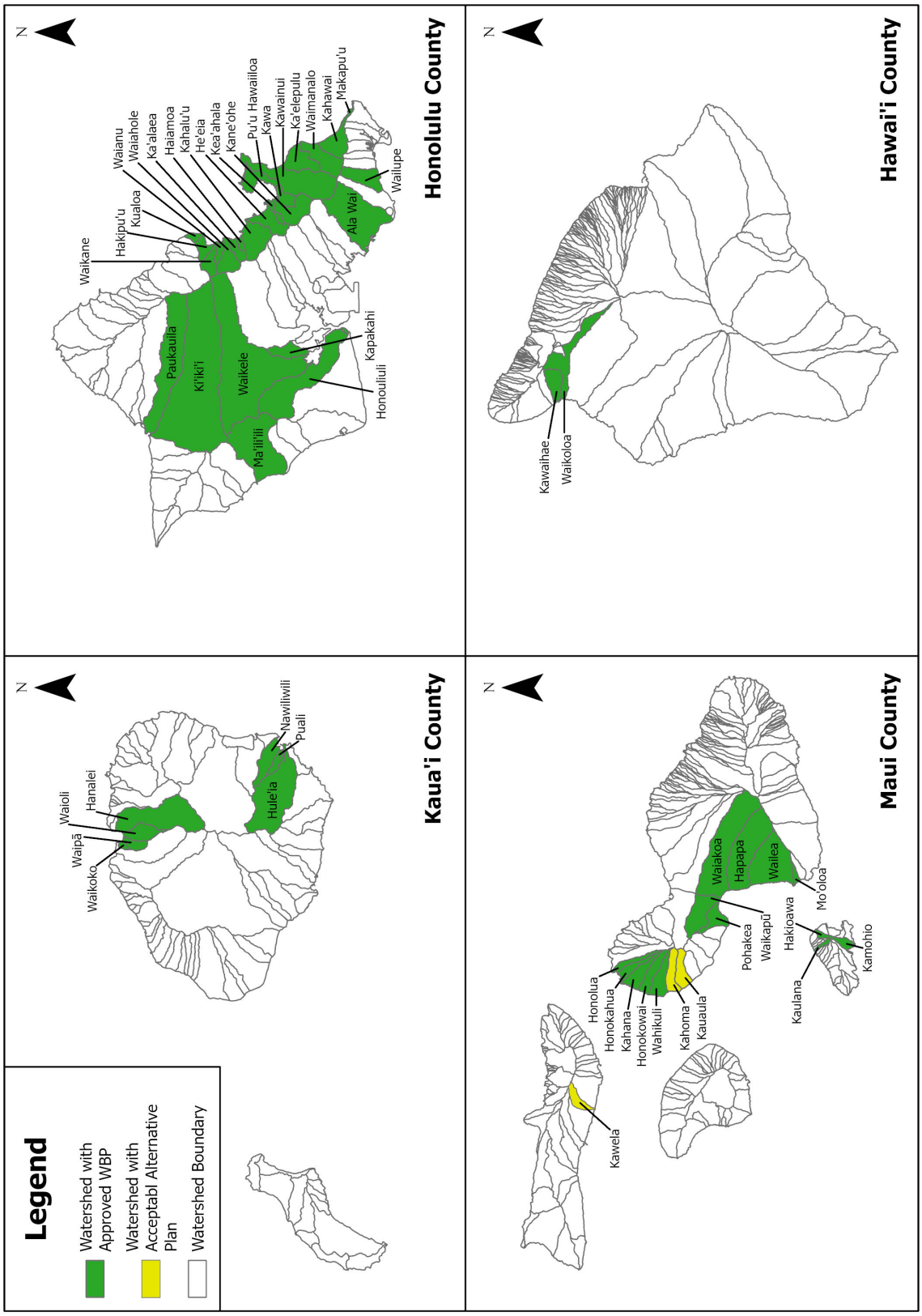
Table 3-1. Watersheds Eligible for CWA Section 319(h) Grant Funds

Kauaʻi	
Hanalei Bay	Nāwiliwili Bay
Hanalei	Nāwiliwili
Waiʻoli	Puali
Waipā	Hulēʻia
Waikoko	
Oʻahu	
Ala Wai (Makiki*, Mānoa*, Palolo*)	Kaneʻohe
Honouliuli	Keaʻahala
Kaiaka Bay	Heʻeia
Kiʻikiʻi (Kaukonahua*, Poamoho*)	Kahaluʻu (ʻAhuimanu*, Waiheʻe*)
Paukauila (Helemano*, ʻOpaeʻula*)	Haiamoa
Kapakahi	Kaʻalaea
Koʻolaupoko	Waiahole
Makapuʻu	Waianu
Kahawai	Waikane
Waimanalo	Hakipuʻu
Kaʻelepulu	Kualoa
Kawainui	Maʻiliʻili
Puʻu Hawaiiloa	Waikele
Kawa	Wailupe
Molokaʻi	
Kawela (alternative plan)	
Maui	
West Maui	Southwest Maui
Wahikuli	Hāpapa
Honokōwai	Moʻoloa
Kahana	Wailea
Honokahua	Maʻalaea Bay
Honolua	Waikapū
Kahoma (alternative plan)	Waiakoa
Kauaʻula (alternative plan)	Pōhākea
Kahoʻolawe	
Hakioawa	
Kaulana	
Kamōhio	
Big Island	
Kawaihae (Pelekane Bay*)	
Waikoloa (Waiʻulaʻula*)	

Note: Watersheds are based on State Commission on Water Resources Management (CWRM) watershed names and delineations.

* Watersheds identified in watershed-based plans whose names are not recognized by the CWRM.

Figure 3-2 Map of Watersheds Eligible for CWA Section 319(h) Grant Funds



a WBP. Plans that meet EPA's nine-element criteria often cost over $150,000 due to the need for technical analysis such as pollutant loading estimates, siting BMPs, and modeling load reductions. To help address these challenges, DOH SWPB aims to work with partners to explore opportunities for leveraging funding and identifying planning approaches that may reduce the costs of and time needed for plan development—such as improving the availability of existing data, providing guidance on integrating related management plans, or streamlining technical analysis. Section 319 funding is allocated for WBP development on a three- to four-year cycle, or when adequate funding is available.

To improve stakeholder engagement and project readiness, the DOH SWPB will prioritize implementation of projects identified in newly approved WBPs, particularly within the two years after plan approval. This early focus on implementation is intended to build stakeholder confidence and encourage active participation during the planning process. Depending on funding availability and alignment with program goals, projects may be advanced through existing procurement mechanisms—such as Requests for Proposals (RFPs), Requests for Qualifications (RFQs), or direct awards to government agencies—based on the project schedule (Element f) outlined in the WBP.

In addition to developing new WBPs, the DOH SWPB may update existing plans that predate EPA's nine-element requirement or need revision to address emerging NPS concerns, implement additional BMPs, or better align with updated water quality standards. For instance, DOH SWPB recently approved an amendment to the existing WBPs through the development of an addendum focused on managing invasive species impacts within the watershed, allowing the plan to remain relevant and responsive to current conditions.

3.3.2 Alternative Plans

Under certain circumstances, EPA and DOH SWPB recognize that alternatives to a full nine-element WBP may also provide an effective roadmap for achieving the water quality goals of Section 319-funded restoration or protection projects. These alternative plans may be approved for use of Section 319 funds under specific conditions, including:

- When the impairment is caused by a change in physical conditions or is otherwise not pollutant-specific;
- Responding to an NPS pollution emergency or an urgent NPS-related public health risk;
- When protecting priority healthy waters;
- When addressing an isolated, small-scale water quality problem resulting from one or a few sources of pollution;
- When addressing only agricultural NPS sources in an NRCS NWQI watershed;
- When implementing an EPA-approved Tribal NPSMP plan; or
- Other circumstances as deemed appropriate by the EPA.

Although less comprehensive than nine-element WBPs, alternative plans must still meet specific criteria and receive approval from both DOH and EPA before Section 319 funding can be used for implementation. These plans must clearly define restoration or protection goals, identify the causes or sources of water quality problems, propose management measures, establish a schedule with milestones to guide project implementation and describe how progress will be measured and reported.

There are currently only two approved alternative plans in Hawaiʻi: one developed by The Nature Conservancy and the East Molokaʻi

Watershed Partnership for the Kawela watershed on Molokaʻi and one developed by DOH SWPB for the Kauaʻula and Kahoma (Lahaina) watersheds on Maui. For more details on the use and approval of alternative plans, refer to Section 4.6 of the EPA's Nonpoint Source Program and Grants Guidelines for States and Territories (2024).

3.3.3 Integration with TMDL Implementation Plans

TMDLs are the maximum amount of a specific pollutant that a waterbody can receive while still meeting WQS. TMDL implementation plans are sometimes developed to detail the specific actions, schedule and monitoring needed to reduce pollutant loads in an impaired water body according to the calculated TMDL, thereby restoring it to meet WQS. These implementation plans can be integrated with WBPs to align pollution control efforts and reach pollutant reductions quantified in the TMDL.

For example, Section 319 funds were used to develop a combined TMDL Implementation Plan and WBP for the Waikele Watershed, utilizing pollutant loading data from the 2019 Waikele Stream TMDL. This combined approach facilitates a seamless transition from pollutant load identification to on-the-ground implementation of BMPs, with monitoring and adaptive management integral to the process.

The DOH SWPB is advancing a combined TMDL Implementation Plan / WBP approach for watersheds with newly developed TMDLs developed by the DOH CWB Monitoring Section. Since TMDLs include several of EPA's nine elements, such as pollutant source identification and stakeholder involvement, they provide a strong foundation for full watershed-based planning. The DOH SWPB will continue to coordinate with the DOH CWB to ensure continued stakeholder engagement and alignment of implementation strategies as new TMDLs are completed.

Additional details about TMDLs as it relates to NPS management are discussed in Chapter 4, Section 4.2.2.1.

3.3.4 Integration with Advance Restoration Plans (ARPs)

ARPs are near-term, action-focused plans designed to achieve water quality standards more quickly or practically than traditional TMDLs. While impaired waters with ARPs remain on the 303(d) list and still require TMDLs, ARPs provide a roadmap for timely restoration activities with clear schedules and milestones.

EPA's Clean Water Act Vision encourages using ARPs when they offer a more immediate path to improving water quality. States periodically review ARPs to decide whether continuing the ARP or shifting focus to TMDL development is best. Though EPA does not formally approve ARPs, it tracks them under a special subcategory to increase transparency.

In Hawaiʻi, while there are currently no approved ARPs, this approach could offer a practical way to address NPS pollution more efficiently, especially in situations where full TMDL development may be limited by data or resources. ARPs could be integrated with WBPs to coordinate restoration efforts, help meet both Section 319 and Section 303(d) requirements, and support adaptive management and stakeholder collaboration.

3.4 Project Implementation and Funding

3.4.1 CWA Section 319(h) Grant

The DOH SWPB administers CWA Section 319(h) grant funding to support implementation of WBPs through watershed restoration projects aimed at reducing NPS pollution and restoring water quality. These projects are typically undertaken by government agencies, watershed partners, and community-based organizations. While the primary focus is to

restore NPS-impaired waters, funding is also provided for projects that protect high-quality waters that may be threatened by NPS pollution.

Funding to administer the NPS Program and implement the NPSMP is also funded by the Section 319(h) grant. Contingent upon federal budget approvals, the DOH SWPB typically receives approximately $1.2 million annually, which is divided between Watershed Project Funds and NPS Program Funds (Table 3-2). At least 50% of the Section 319(h) grant must be used as Watershed Project Funds. As required by grant guidelines from EPA, the State also contributes approximately $800,000 (40% of the total budget) in non-federal matching funds. These matching funds are generally provided in-kind through watershed projects or from the state-funded salaries of staff that support implementation of the NPSMP. The DOH SWPB is also exploring other sources of non-federal match that may help reduce the match requirement for projects, including some of the sources discussed in Section 3.4.2.

As a condition of the Section 319(h) grant, the DOH SWPB develops annual workplans detailing how it will implement the NPSMP. These workplans include specific strategies, tasks, outputs, and milestones and are submitted to the EPA for approval along with mid-year and end-of-year status reports.

Watershed Project Funds are directed toward on-the-ground efforts that reduce or prevent NPS pollution in watersheds with DOH-approved WBPs or alternative plans. These funds are made available through a public RFP or direct subaward to state and county agencies. All Section 319(h) grant recipients are required to provide at least 25% to 30% in non-federal matching funds.

Project selection through the RFP process is based on criteria such as measurable water quality improvements, cost effectiveness, and stakeholder support. The DOH SWPB conducts an annual RFP to ensure timely encumbrance of the anticipated Section 319(h) grant award within the federal fiscal year it is awarded, which starts in October.

The DOH SWPB also partners directly with state and county agencies to implement NPS pollution control projects. Section 319(h) grant conditions allow for subawards to these entities, enabling the DOH SWPB to increase coordination and flexibility in developing and financing NPS control projects over a five-year period.

Recipients of Section 319(h) grant funds are tasked with implementing projects aimed at restoring impaired waters or protecting high-quality waters by preventing or reducing NPS pollution. Typical on-the-ground projects or BMPs include:

- Agricultural BMPs;
- Streambank and riparian restoration;
- Feral ungulate management;
- Invasive species control;
- Native plant restoration;
- Wildfire mitigation; and
- Stormwater runoff BMPs (e.g. green stormwater infrastructure).

The DOH SWPB further achieves on-the-ground implementation through Supplemental Environmental Projects (SEPs), which are funded through settlement agreements with entities violating the CWA or NPDES permits. SEP funding supported the development of a WBP and identification of restoration projects in the Maʻiliʻili watershed on Oʻahu.

To ensure accountability and measure progress, the DOH SWPB monitors projects through site visits, project effectiveness monitoring, water quality sampling, and review of quarterly reports submitted by grant recipients.

Table 3-2. Clean Water Act Section 319(h) Nonpoint Source Grant appropriation for the State of Hawaiʻi and approved uses

Allocation	Approximate Amount (Annual)	Approved Uses
Watershed Project Funds	$600,000	Restore and protect waters through implementation of watershed-based plans or acceptable alternative plans, which may include: ➢ NPS pollution control projects ➢ Education and outreach that lead to pollution prevention behaviors resulting in water quality improvement ➢ BMP effectiveness monitoring ➢ Technical assistance for BMP prioritization and implementation ➢ Watershed coordinators ➢ Source water protection ➢ TMDL implementation ➢ All eligible Watershed Project activities listed under Sections 6.3, 6.4, and 6.5 in the Nonpoint Source Program and Grants Guidelines for States and Territories
Nonpoint Source Program Funds	$600,000	➢ Watershed-based plan development ➢ TMDL development (must include load allocations for NPS) ➢ Eligible water quality monitoring activities, including monitoring of National Water Quality Initiative waters ➢ CNPCP development and implementation ➢ Implementing State level regulatory programs for enforcing HAR 11-56 ➢ Personnel and the development of guidance materials ➢ All activities approved for Watershed Project Funding

Comprehensive project information, including descriptions, locations, and grant award details, is available through the State's Environmental Health Portal Surface Water Protection System viewer. Current Section 319 projects (as of 2025) are listed in Appendix B. Additional information about DOH SWPB, including grant details, plans, and reports, can be found on the DOH Clean Water Branch website at http://health.hawaii.gov/cwb/clean-water-branch-home-page/polluted-runoff-control-program/ until a new DOH SWPB website becomes available.

3.4.2 Implementation Through Partner Projects and Other Sources of Funding

Partner agencies also implement NPS projects through their own programmatic activities and funding mechanisms, and in some cases their investments may be eligible to serve as non-federal match for Section 319(h) funding. These agencies contribute to broader water quality goals through efforts that align with or directly implement WBPs. For instance, DLNR DOFAW supports the *Watershed Partnerships Program*. This initiative brings together public and private landowners to collaboratively manage over 2 million acres of forested watershed areas across the state. Activities such as invasive species control, ungulate removal, and native forest restoration help reduce erosion and sedimentation, which in turn improves the quality of water flowing into streams and coastal areas. While not always directly targeting impaired waterbodies, these efforts contribute significantly to the protection and

restoration of water quality across entire watersheds.

Other sources of funding may also be used to support implementation of WBPs or to implement projects consistent with the goals of the WBP. For instance, state agencies as well as community-based organizations dedicated to watershed restoration can acquire funding through programs such as the Readiness and Environmental Protection Integration (REPI) Program. REPI provides funding to buy conservation land and manage watersheds in proximity to military lands. From FY 2006 through FY 2024, the Department of Defense and its partners have contributed nearly $182.2 million to REPI projects supporting six installations in Hawaiʻi. Among those is DLNR DOFAW who has utilized REPI funding to support threatened and endangered species and habitat conservation, fire prevention, invasive species control, and aquifer recharge.

The National Fish and Wildlife Foundation (NFWF) is another major grantor for restoration projects and watershed-based planning through its Hawaiʻi Conservation Program, which focuses on preventing native species extinction and building resilience in native ecosystems. In 2023, NFWF granted $2 million to the County of Hawaiʻi for the development of a Hilo Bay watershed management plan.

The DOH SWPB also applied for and received Sewer Overflow and Stormwater Reuse Municipal Grant (OSG) funds to implement the drainage master plan for Lahaina in alignment with the alternative plan for the fire-impacted watersheds of Kahoma and Kauaʻula. The funding will be directed to support the adoption of green stormwater infrastructure while the Lahaina community continues efforts to rebuild.

Projects funded through the Clean Water State Revolving Fund (CWSRF) also contribute to WBP implementation, particularly through green stormwater infrastructure and recycled water projects that reduce pollutant loads and improve watershed resilience. When recycled CWSRF funds are used for projects that align with or directly implement WBP actions, those investments may also be eligible to count as non-federal match for Section 319(h) grants, providing an additional mechanism to leverage state resources. Recycled CWSRF funds are CWSRF loan repayments that return to the revolving fund and are then re-loaned for eligible water quality projects, allowing the program to continually reinvest in new improvements.

In other cases, Section 319(h) grant funding can be used to leverage or complement partner initiatives, enhancing their scope and impact. Partner agencies and other funding sources are also discussed further in Chapter 4, Partner Collaboration and Program Coordination.

3.5 Partnerships and Interagency Coordination

The NPS Program relies on strong partnerships with federal, state, and local agencies, non-governmental organizations, academic institutions, and community-based groups to accomplish the goals and objectives of the NPSMP. Interagency coordination ensures that planning and implementation efforts are aligned with shared goals, regulatory frameworks, and funding opportunities. Key partners such as the EPA, NOAA, USDA; and state agencies including the DOH CWB, DLNR, and OPSD also contribute technical expertise, funding, and policy support. Collaborative initiatives like the West Maui Ridge to Reef Initiative exemplify how coordinated efforts can address complex watershed challenges by integrating land-based pollution control with marine resource protection. For instance, through the West Maui Ridge to Reef Initiative, the DOH SWPB collaborates with other partners on the Funding and Agency Support Team (FAST) to align watershed planning and

project implementation with state NPS management priorities.

A detailed discussion on Partner Collaboration and Program Coordination is provided in Chapter 4.

3.6 Education, Outreach, and Capacity Building

Education, outreach, and capacity-building empower local communities to actively engage in watershed stewardship. Recognizing that lasting water quality improvements and the reduction of NPS pollution cannot be achieved by any entity alone, this component emphasizes the critical need to build local capacity and encourage voluntary adoption of BMPs across diverse stakeholder groups. The NPS Program's outreach strategy is focused on the following:

1. **Increasing Public Awareness**
   Through targeted educational campaigns, workshops, community events, and multimedia materials, the NPS Program strives to elevate understanding of NPS pollution sources, impacts, and practical solutions. By communicating complex scientific concepts in accessible and relatable ways, the outreach initiative ensures that diverse audiences—from students and homeowners to local businesses and policymakers—grasp the importance of protecting water quality and their role in doing so.

2. **Supporting Behavior Change**
   While education is essential, actual water quality improvements depend on broad community participation and voluntary behavior changes. The program actively promotes sustainable practices that reduce pollutant runoff, such as proper fertilizer application, erosion control, and septic system maintenance. By highlighting the tangible benefits to community health and the environment, it encourages widespread voluntary implementation of BMPs.

3. **Building Local Capacity**
   Empowering local organizations, community leaders, and residents with the knowledge, skills, and resources needed to steward their watersheds is vital. Capacity-building activities—including training sessions, technical assistance, and development of partnerships—support communities in NPS pollution reduction efforts. This collaborative approach acknowledges that successful water quality management requires coordinated efforts across multiple sectors and jurisdictions.

These goals are supported by projects receiving 319(h) grant funding where outreach activities have included workshops for farmers, volunteer restoration and water quality monitoring days, school-led native plant restoration projects, community "talk story" gatherings, and educational guides and tools tailored to local audiences. These efforts are designed to raise awareness, build local capacity, and foster long-term stewardship. In alignment with this strategy, organizations receiving Section 319 funding through the DOH SWPB are required to issue press releases at the start and conclusion of their projects to inform the public about progress in NPS mitigation. Watershed coordinators funded by Section 319 also play a key role in implementing the outreach strategy by collaborating with stakeholders, providing education and outreach at community events, and supporting project planning and implementation.

3.7 Regulatory Tools and Compliance Mechanisms

While Hawaiʻi's NPS program mainly relies on voluntary BMP implementation and cooperative watershed restoration, the DOH SWPB is building more capacity for regulatory oversight under HAR Chapter 11-56, Nonpoint Source Pollution Control Rules. These rules establish enforceable performance standards consistent with federal requirements under CZARA Section 6217.

Under HAR 11-56, any person(s) or entity conducting activities that may contribute to NPS pollution—such as agriculture, forestry, marinas and recreational boating, development, hydromodification—must register with DOH SWPB and develop, submit, and implement a Water Pollution Prevention Plan (WPPP). According to HAR Section 11-56-6, each plan must include at a minimum:

- Facility and contact information;
- Description of activities generating NPS discharges;
- Identification of State waters potentially affected;
- Authorized management measures and practices to control NPS pollution;
- Implementation schedule;
- Operation and maintenance schedule; and
- Monitoring strategy.

WPPPs must be updated as required by the DOH Director to ensure consistency with watershed-based plans, approved TMDLs and load allocations, watershed restoration projects, or other requirements needed to protect or restore State waters. Registration is valid for five years and must be renewed thereafter. The Director may issue notices of violation, require corrective actions, and impose penalties under HAR Section 11-56-12 and HRS Chapter 342E-4 for noncompliance.

Over the next five years, a central focus of the DOH SWPB will be to develop a compliance strategy and raise awareness of the new HAR Chapter 11-56 rules and their requirements through targeted outreach. The DOH SWPB will continue its current activities under the CWA Section 319 grant program while also expanding to include new regulatory functions under HAR 11-56. Although the programmatic foundation is already in place, the branch is still in the process of becoming fully operational with new positions being described and filled to support enforcement and compliance activities. Once fully staffed, the DOH SWPB is expected to conduct routine inspections and monitoring, issue corrective actions and penalties for noncompliance, and provide technical assistance to promote voluntary compliance and the adoption of BMPs.

Additionally, the DOH SWPB will work closely with local agencies and community stakeholders to align enforcement efforts within a broader watershed-based management approach. This integration ensures regulatory actions are mutually supported by collaborative initiatives that enhance water quality protection.

3.8 Program Gaps and Opportunities for Enhancement

Looking ahead, the program also recognizes gaps and emerging priorities necessary to continuously strengthen NPS management over the next five years.

3.8.1 Responsiveness to Natural Disasters and Environmental Emergencies

A logistical concern for the NPS Program is that Section 319 funding can only support implementation of projects in areas with a DOH-approved WBP. This requirement limits the program's ability to respond quickly to NPS pollution impacts caused by extreme weather

events or natural disasters in areas without a plan. For example, following the devastating 2023 wildfires in Lahaina, Section 319 funds could not be used to support urgently needed recovery and watershed restoration efforts because no approved WBP was in place. This highlights a gap in the program's capacity to address emerging and unanticipated NPS impacts in unplanned areas, despite clear environmental and community need.

In response, the program sought technical assistance from the EPA to support the development of an alternative watershed plan for the Kahoma and Kaua'ula watersheds in Lahaina. This effort aimed to establish a flexible planning framework that could meet core elements of EPA's alternative plan requirements while adapting to rapidly changing post-disaster conditions and data limitations. The resulting plan serves as a model for future planning in other unplanned or impacted areas, particularly where urgent recovery efforts are needed but a traditional watershed-based plan is not yet in place. By piloting this approach in Lahaina, the DOH SWPB hopes to build greater responsiveness to these types of events and expand the reach of Section 319 funding to better support communities facing similar challenges in the future.

3.8.2 Increased Capacity to Support Watershed-Based Plan Implementation

Limited staff capacity has historically constrained the program's ability to facilitate meaningful, on-the-ground implementation of watershed-based plans. Without dedicated personnel to coordinate among diverse stakeholders, facilitate projects, and monitor progress, efforts to reduce NPS pollution have often faced delays or lacked cohesion. This capacity gap has made it challenging to translate watershed plans from paper into effective actions that produce measurable environmental improvements.

The necessity of a dedicated watershed coordinator role has been demonstrated through similar positions in other watershed partnerships, where such coordinators have played a critical role in advancing implementation and fostering collaboration. Recognizing this, the DOH SWPB committed funding to support a watershed coordinator position to enhance coordination, project facilitation, and stakeholder engagement in the priority watersheds of Leeward Maui. This Watershed Coordinator also helps to oversee pollution reduction projects, coordinate water quality monitoring and research, and lead public education and outreach activities. Over the next five years, the DOH SWPB seeks to collaborate with partners to increase capacity through establishment of additional Watershed Coordinators, or similar roles, for other regions of the state.

3.8.3 Integration of Traditional Ecological Knowledge

The DOH SWPB is also interested in expanding its engagement with indigenous communities and incorporating traditional ecological knowledge (TEK) into statewide NPS policy. The branch recognizes that the integrity of environmental and public health can only be maintained by fulfilling its *kuleana* (responsibility) to steward natural systems. TEK prioritizes longevity in environmental planning and resource management, a principle which the NPS program shares in its mission to protect the quality of Hawai'i's water for future generations.

To date, limited engagement and integration of TEK in program activities represents a gap the DOH SWPB is working to address by building stronger partnerships with indigenous stakeholders and exploring ways to authentically incorporate TEK into watershed planning, monitoring, and implementation efforts in a manner consistent with the program's regulatory framework.

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Chapter 4: Partner Collaboration and Program Coordination

4.1 Leveraging Partnerships for Effective NPS Management

The successful implementation of Hawaiʻi's NPSMP depends on the collective efforts of a broad network of partner agencies and organizations. Figure 4-1 illustrates the various levels of partner organizations and their overarching roles in NPS management.

As the lead state agency for implementing the NPSMP, the DOH SWPB connects diverse programs and initiatives, fosters collaboration, and coordinates resources to advance shared water quality goals. The NPS Program leverages a wide range of contributors engaged in land and water management, public education, monitoring, and the implementation of BMPs as essential contributors to the state's strategy to reduce NPS pollution.

The following sections highlight the range of partners involved in NPS management and describe how their programs, projects, and areas of expertise support the goals and implementation of the NPSMP. Table 4-2 at the end of this chapter summarizes the specific partners as well as their roles and responsibilities as discussed briefly in this chapter.

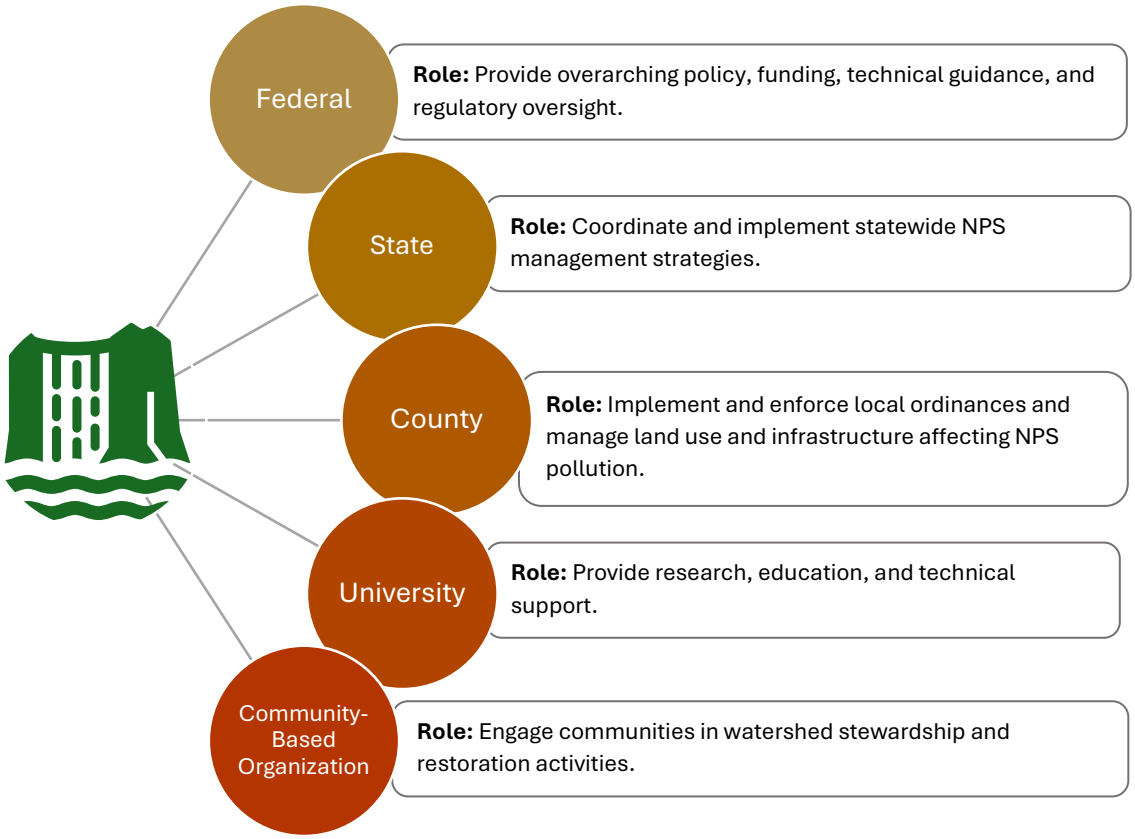


Figure 4-1. The overarching roles of partner organizations in NPS management.

4.2 Key Partner Agencies and Organizations

4.2.1 Federal Agencies

4.2.1.1 U.S. Environmental Protection Agency (EPA)

The EPA supports the implementation of Hawaiʻi's NPSMP through program delegation and funding under the CWA and the SDWA. For example, the EPA provides CWA Section 319(h) grant funding, which the DOH SWPB distributes to projects addressing NPS pollution in priority watersheds. The EPA also provides support through CWA Section 106 for water quality monitoring, NPDES permitting, and enforcement—activities that supply critical data and regulatory coordination to guide watershed-based planning and restoration.

The EPA's funding for the Clean Water and Drinking Water State Revolving Fund (CWSRF and DWSRF) programs supports infrastructure improvements that reduce pollution from wastewater systems and enhance statewide water resilience. Up to 31% of the State's DWSRF may be set-aside for technical assistance, planning, and training activities that contribute to maintaining drinking water systems.

In addition to delegated programs, the EPA retains direct authority over key efforts that complement Hawaiʻi's NPS strategy, including the federal Underground Injection Control (UIC) program and enforcement of the ban on large-capacity cesspools under the SDWA. These actions help address pollution pathways that fall outside state jurisdiction but significantly impact NPS pollution control.

4.2.1.2 National Oceanic and Atmospheric Administration (NOAA)

NOAA supports the implementation of Hawaiʻi's NPS Program through its mission to conserve and manage coastal and marine ecosystems and resources. NOAA administers the National CZM Program and, in partnership with the EPA, jointly funds and oversees the CNPCP under Section 6217 of the CZARA.

NOAA also contributes to NPS management through support for place-based coastal initiatives. This includes administration of the National Estuarine Research Reserve System (NERR). Similarly, NOAA contributes funding and technical assistance to the West Maui Ridge to Reef Initiative to support the development of watershed restoration strategies.

4.2.1.3 U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS)

NRCS provides financial and technical assistance to farmers and ranchers to support the adoption of conservation practices that protect soil and water resources. Through Farm Bill programs, such as the Environmental Quality Incentives Program (EQIP) and the Conservation Stewardship Program (CSP), NRCS helps implement on-the-ground practices that reduce NPS pollution.

In partnership with EPA, NRCS uses NWQI to strategically target EQIP funding to address agricultural pollutants such as nutrients, sediment, pesticides, and pathogens, with the goal of demonstrating measurable water quality improvements. The NPS Program aims to support these efforts by helping to monitor water quality within NWQI project areas, providing critical data to evaluate the effectiveness of conservation practices. In Hawaiʻi, NWQI is currently being implemented in the Hilo Bay and Kawaihae watersheds.

4.2.1.4 U.S. Army Corps of Engineers (USACE)

Through its administration of the CWA Section 404 permit program, USACE supports implementation of Hawaiʻi's NPS Program by regulating discharges of dredged or fill material into U.S. waters, including wetlands. These activities are also directly related to implementation of hydromodification and

wetland management measures of the CNPCP and, if left unmanaged, can contribute to erosion, sedimentation, and other NPS pollution impacts. This regulatory process involves careful review and consideration of all potential effects to water quality and the environment, ensuring project designs incorporate BMPs to mitigate risks and protect aquatic resources.

USACE also contributes to watershed-based planning and restoration efforts, such as those provided through the West Maui Ridge to Reef Initiative. USACE supported the development of a watershed-based plan for the Kahana, Honokahua, and Honolua watersheds in 2016, identifying pollutant sources and strategies for mitigation. Additionally, USACE funds and implements ecosystem restoration and flood control projects statewide, such as wetland restoration, streambank stabilization, and improved stormwater management. These actions directly support NPS pollution reduction across both inland and coastal areas.

4.2.1.5 U.S. Geological Survey (USGS)

The USGS provides nationwide data on natural resource conditions, issues, and problems. It is dedicated to collecting, monitoring, mapping, and sharing science to inform the decisions of governments and planners. The USGS Pacific Islands Water Science Center conducts hydrologic monitoring and investigative studies to assist decisionmakers in the State of Hawaiʻi and the U.S. Affiliated Pacific Islands.

The USGS supports NPS management in Hawaiʻi by working collaboratively with partners such as the West Maui Ridge to Reef Initiative, universities, and the National Park Service to monitor water quality, water resources, pesticides in surface waters, and coral reef habitats. The USGS also conducts studies on sediment transport and assists agencies and organizations with water quality data needs.

4.2.2 State Agencies

4.2.2.1 DOH, Clean Water Branch (CWB)

The mission of the Clean Water Branch is to protect the public health of residents and tourists who recreate in and on Hawaiʻi's coastal and inland water resources. This mission is accomplished through a combination of permitting, monitoring, and enforcement activities aimed at controlling point source pollution, or pollution from a single, identifiable source.

The DOH CWB administers NPDES permits for point source discharges. It also oversees the CWA Section 401 Water Quality Certification program that requires states or tribes to certify that federal permits or approvals for projects discharging into U.S. waters won't violate state water quality standards. These programs ensure compliance with state and federal water pollution laws and allow the state to oversee point source activities, including setting limits on pollutant discharges and requiring BMPs to protect streams and coastal waters from adverse impacts.

In addition to permitting and enforcement, DOH CWB conducts beach monitoring, issues notices and advisories to inform beachgoers of potential health risks, oversees the development of state WQS, and implements the State's TMDL program.

<u>Beach Monitoring</u>
DOH CWB monitors beaches across the state in compliance with the BEACH Act, which requires the State to develop performance criteria for testing, monitoring, and notifying public users of possible coastal recreation water problems. Beaches across the state are classified according to usage, accessibility, available facilities such as showers and restrooms, and potential threat of pollution. They are ranked by tiers that indicate the frequency of monitoring that the beaches receive. Tier 1 beaches are given the highest

priority and are monitored weekly on all islands as follows: 12 on Kaua'i, 25 on O'ahu, 10 on Maui, and 10 on Hawai'i. Tier 2 beaches are routinely monitored at a lower priority and frequency dictated by the resources available on each island. Tier 3 beaches are not regularly monitored but may be included at the discretion of CWB after all Tier 2 beaches have been monitored. An inventory of beach monitoring sampling sites (including maps, site coordinates, and a general description) is available on the CWB System Viewer. Monitoring data are assessed every two years in the State's Integrated Report pursuant to CWA Section 305(b).

A CWB employee collects a field sample at Magic Island. Source: DOH CWB

Public Notification and Advisory Protocols

Routine monitoring efforts under the BEACH Act focus on identifying fecal indicator bacteria (enterococci) to assess their potential public health risks. When a threshold concentration of enterococci (130 colony forming units/100mL, or Beach Action Value [BAV]) is exceeded during routine sampling, the Monitoring Section must confirm the exceedance with follow-up sampling and provide notification of the exceedance to the public on the DOH-CWB Water Quality Notification and Advisories website and through a notification email to all subscribers. Exceedance of the BAV in a confirmatory sample will immediately trigger a public advisory and follow-up sampling. An advisory consists of sign posting on the beach, advisory posting on the DOH CWB website, and emails to all subscribers informing them of the advisory. The DOH CWB does not close beaches in response to any advisory but does issue advisories to inform the public about water quality conditions so that personal decisions may be made based on individual risk tolerances.

Brown Water Advisories

The advisory most linked to NPS pollution is the Brown Water Advisory. Brown Water Advisories are preemptive advisories and provide additional protection to Hawai'i's beach users above those required by the BEACH Act. Brown Water Advisories are so named because surface water runoff often carries soil and sediment and other pollutants that can cause water at the beach to appear brown or have a turbid appearance. A Brown Water Advisory is issued when there is a strong likelihood that the BAV will be exceeded and may pose a risk to the public from elevated pathogen levels. Brown Water Advisories are often triggered in the event of heavy rain or if a Flash Flood Warning is issued by the National Weather Service, or if conditions occur that may result in surface runoff into the ocean. The public is informed of a Brown Water Advisory through DOH CWB's website and direct email notifications to subscribers. Permanent signage is also being installed at various beaches as another method to inform beach users of potential risks following heavy rain events.

Additional Coastal Monitoring Parameters

In addition to enterococci, the CWB Monitoring Section tests BEACH Act sites and other coastal sites for total nitrogen, ammonium nitrogen, nitrate + nitrite nitrogen, total phosphorus, chlorophyll *a*, total suspended solids (TSS), turbidity, pH, dissolved oxygen, temperature, and salinity. Total dissolved nitrogen, total dissolved phosphorous, and phosphate are tested for only specific marine

waters per HAR §11-54-6(d). Samples are analyzed by the DOH laboratories on Kauaʻi, Maui, Hilo, and Oʻahu. Contract laboratories are utilized in Kona and Oʻahu.

Water Quality Standards

The State's WQS (HAR Chapter 11-54) form the legal basis for controlling pollutants entering State waters. These standards align with federal requirements, specify beneficial uses for State waters, and define criteria to protect these uses, including antidegradation requirements. The triennial WQS review process includes public participation and allows for public comment on any aspect of the State WQS. This process ensures that the standards remain up to date with revisions to federal WQS made by the EPA and considers the evolving needs of the State. The most recent WQS review was conducted in 2022, with the next review anticipated in 2025. For more details on the state's WQS, visit the DOH CWB website at https://health.hawaii.gov/cwb/clean-water-branch-home-page/water-quality-standards/.

Total Maximum Daily Load Program

The DOH CWB Monitoring Section develops TMDL plans for waterbodies that do not meet WQS and are listed on the CWA Section 303(d) list of impaired waters. A TMDL is a scientifically derived calculation of the maximum amount of a specific pollutant that a waterbody can receive while still meeting WQS. The goal of the TMDL process is to estimate the pollutant loading capacity of an impaired waterbody and allocate that load among various pollutant sources. These allocations guide appropriate control actions needed to reduce pollution and ultimately achieve WQS. Most of the impairments in Hawaiʻi are due to nonpoint sources, which are broadly handled through implementation of the State's NPS Program and the CNPCP.

TMDLs are developed with data from the Integrated Report, which documents impaired waterbodies and the pollutants responsible for the impairments. Waterbodies are prioritized (low, medium, high) for TMDL development based on factors such as the number of parameters not attaining State WQS, severity of exceedances, recovery potential, community and stakeholder involvement, and available resources.

During TMDL development, the DOH CWB estimates pollutant contributions from permitted point source discharges (resulting in wasteload allocations) and nonpoint sources (resulting in load allocations). Stakeholder input—including input from landowners, local government agencies, and the general public—is integrated throughout the process. After a TMDL is completed, its wasteload allocations are incorporated into enforceable NPDES permits by the DOH CWB while load allocations are incorporated into watershed-based plans or WPPPs and used to guide the selection of various projects and BMPs that prevent and reduce NPS pollution, ensuring progress toward water quality goals.

To date, Hawaiʻi has established 60 TMDLs for 23 impaired waterbodies in nine watersheds. The majority of these TMDLs address excessive turbidity, TSS, and nutrients. Currently, DOH CWB is developing a TMDL for Kalihi Stream, Keʻehi Lagoon, and Moanalua Stream on Oʻahu. A TMDL is also being developed for Kaʻelepulu Stream on Oʻahu. Completion dates are uncertain at this time due to unforeseen delays in the development and review process.

4.2.2.2 DOH, Wastewater Branch (WWB)

It is the mission of the DOH WWB to ensure that wastewater is properly treated and disposed of without contaminating or polluting water resources or posing a risk to public health and safety. The DOH WWB administers statewide engineering and regulatory functions related to water pollution control, including programs for municipal and private wastewater treatment works, recycled water use, individual onsite

wastewater systems, and the CWSRF. The DOH WWB is divided into two sections. The Construction and Operations Section regulates existing wastewater systems under HAR Chapter 11-62, conducts annual inspections of wastewater treatment plants, and enforces compliance. The Planning and Design Section reviews and approves new wastewater systems and water reclamation facilities, issues permits for wastewater sludge reuse, assists with land use reviews, and manages the CWSRF program, which provides financial assistance for wastewater pollution control projects protecting groundwater and coastal waters.

The DOH WWB administers the Recycled Water Program that oversees permitting and regulation of recycled water uses across the State. Partially treated water can be used in place of potable water to irrigate golf courses, open spaces, and agricultural lands, reducing effluent discharges to injection wells and ocean outfalls. Recycled water can also be used for NPS pollution management projects such as native plant restoration, green break establishment, and riparian corridor rehabilitation. In this way, water recycling contributes to watershed management while reducing the expenditure of potable freshwater resources.

Also part of its NPS management efforts, the DOH WWB supports the State's initiative under Act 125 (2017) to eliminate cesspools and replace them with improved onsite systems or sewer connections by 2050. Through the Cesspool Conversion Working Group (CCWG) established under Act 132, Session Laws of Hawai'i 2018, the DOH WWB collaborated with state and county agencies and organizations to develop a long-range comprehensive cesspool conversion plan that outlines the steps and strategies necessary to achieve the 2050 deadline. Part of that effort included development of the Hawai'i Cesspool Prioritization Tool (HCPT). This tool categorizes cesspools across Hawai'i into three priority levels based on their need for conversion, helping to guide decision-making and resource allocation. A final report containing the CCWG's findings, recommendations, and any proposed legislation was completed in 2023 before the CCWG was dissolved.

Recognizing the financial challenges associated with these conversions, the state has piloted different programs to assist property owners. These programs included a tax incentive program under Act 120 (2017), offering a 25% tax credit on the costs of converting a cesspool, with a maximum credit of $10,000 per property; a cesspool grant program under Act 153 (2022), offering up to $20,000 in reimbursement to low- and moderate-income property owners for conversion or connection costs; and a pass-through funding program with the County of Kaua'i using CWSRF funds, which provided a similar reimbursement opportunity for property owners undertaking cesspool conversions.

In the 2025 legislative session, two significant bills were enacted to further support cesspool conversions. HB736 (Act 198) established a three-year pilot program at the University of Hawai'i's Water Resources Research Center (WRRC) to evaluate affordable and sustainable wastewater technologies. HB879 (Act 188) allocated additional funding for administrative support within the DOH to enhance program implementation.

The DOH WWB also supports the implementation of Hawai'i CNPCP Onsite Sewage Disposal System (OSDS) Management Measure and explores opportunities to partner on NPS management planning and projects utilizing both the CWSRF and Section 319 funds.

Cesspool conversion remains a top priority because Hawai'i has approximately 83,000 cesspools discharging about 55 million gallons of untreated wastewater daily, contaminating

groundwater, drinking water sources, streams, and the ocean with excess nutrients and pathogens. Untreated wastewater can cause illnesses such as gastroenteritis and hepatitis, while nutrient pollution contributes to harmful algal blooms and coral reef degradation. Elevated nitrogen levels also pose human health risks such as methemoglobinemia (blue baby syndrome) in infants.

Website:
https://health.hawaii.gov/wastewater/

4.2.2.3 DOH, Safe Drinking Water Branch (SDWB)

It is the mission of the DOH SDWB to safeguard public health by protecting Hawai'i's surface and groundwater sources from contamination and to ensure that public water systems provide safe drinking water to communities. DOH SDWB fulfills its mission by overseeing programs that ensure the State's drinking water supply meets both federal and state standards. Key programs include the Source Water Assessment and Protection Program, the UIC Program, and the Groundwater Protection Program. The SDWB also hosts the online Safe Drinking Water Information System (SDWIS) Viewer, which includes a groundwater contamination viewer that identifies contaminants detected and confirmed in drinking water wells, selected non-potable wells, and freshwater springs across Hawai'i.

The SDWB also administers the DWSRF, which was established under the federal SDWA to finance infrastructure improvements that protect drinking water quality. DWSRF funds can support NPS pollution control activities through wellhead or source water protection plans. In addition, the State may use DWSRF's 15% local assistance set-aside to fund watershed restoration and protection projects, aquifer recharge enhancement and protection, NPS pollution control in drinking water capture zones, public education and outreach, and source water monitoring and assessment. Additionally, it could be used to create a loan program for land acquisition and conservation easements in targeted areas to safeguard drinking water sources.

The SDWB also prepares and updates the State's Water Quality Plan, one of the five components of the Hawai'i Water Plan. The Water Quality Plan outlines a statewide strategy to protect, restore, and enhance water quality for human health and ecological integrity. It describes the DOH's various water protection programs, including the SDWB, and details their goals, priorities, current status, and recommended actions. The most recent update to the Water Quality Plan was completed in 2019.

The SDWB, along with the WWB, CWB, Hazard Evaluation and Emergency Response Office (HEER), and the Solid and Hazardous Waste Branch, collaboratively run the State's Groundwater Protection Program, which aims to protect human health and sensitive ecosystems by enhancing groundwater quality. The Hawai'i Groundwater Protection Strategy, included in the SDWB's 2018 Groundwater Status Report, outlines three primary objectives: monitoring and assessing groundwater quality, identifying and prioritizing contamination threats, and mitigating or preventing those threats. It is supported through multiple funding sources, including EPA grants, the CWSRF, and the DWSRF. The strategy was approved by EPA Region 9 in 2017 and remains the guiding document for groundwater protection in Hawai'i. Plans are also underway to develop and implement statewide groundwater quality standards.

Websites:

- Main DOH SDWB webpage
- DOH SDWB Information System Viewer
- Water Quality Plan (2019)

- 2018 Groundwater Status Report

4.2.2.4 OPSD, Coastal Zone Management (CZM) Program

The OPSD within the Department of Business, Economic Development & Tourism (DBEDT), administers Hawaiʻi's CZM Program, which was established under the federal Coastal Zone Management Act of 1972 and approved in Hawaiʻi in 1977. This federal law encourages states to develop coastal management programs that balance environmental protection with responsible development. Hawaiʻi's CZM Program provides a unifying policy framework for managing, protecting, and sustainably developing the State's coastal zone, which encompasses the entire state due to its geography. The CZM Program coordinates state and county efforts concerning land and water uses in coastal areas and collaborates with federal, state, and local agencies through stewardship, planning, permitting, outreach, and policy implementation. The CZM Program also ensures that federal actions affecting Hawaiʻi's coastal zone are consistent with the state's enforceable policies through the federal consistency review process, a key mechanism of the CZMA.

The CZM Program co-implements the CNPCP alongside the DOH SWPB. In the *Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance* document, NOAA and the EPA state that the CNPCP's purpose is "to develop and implement management measures for nonpoint source pollution to restore and protect coastal waters, working in close conjunction with other State and local authorities." The CNPCP identifies management measures for major coastal NPS pollution sources, including agriculture, forestry, urban areas, marinas, and hydromodifications. These management measures, defined in CZARA Section 6217, are economically achievable controls reflecting the best available pollution control practices, technologies, and methods. Since Hawaiʻi's coastal zone encompasses the entire state, these measures are implemented statewide. Table 4-1 outlines each of the management measures covered by Hawaiʻi's CNPCP. Figure 4-2 further illustrates the relationship between the NPS Program, the CZM Program, and the CNPCP.

Descriptions of these measures can be found in the 2010 update to the State's CNPCP and in the Hawaiʻi Watershed Guidance (https://files.hawaii.gov/dbedt/op/czm/initiative/nonpoint/hi_watershed_guidance_final.pdf).

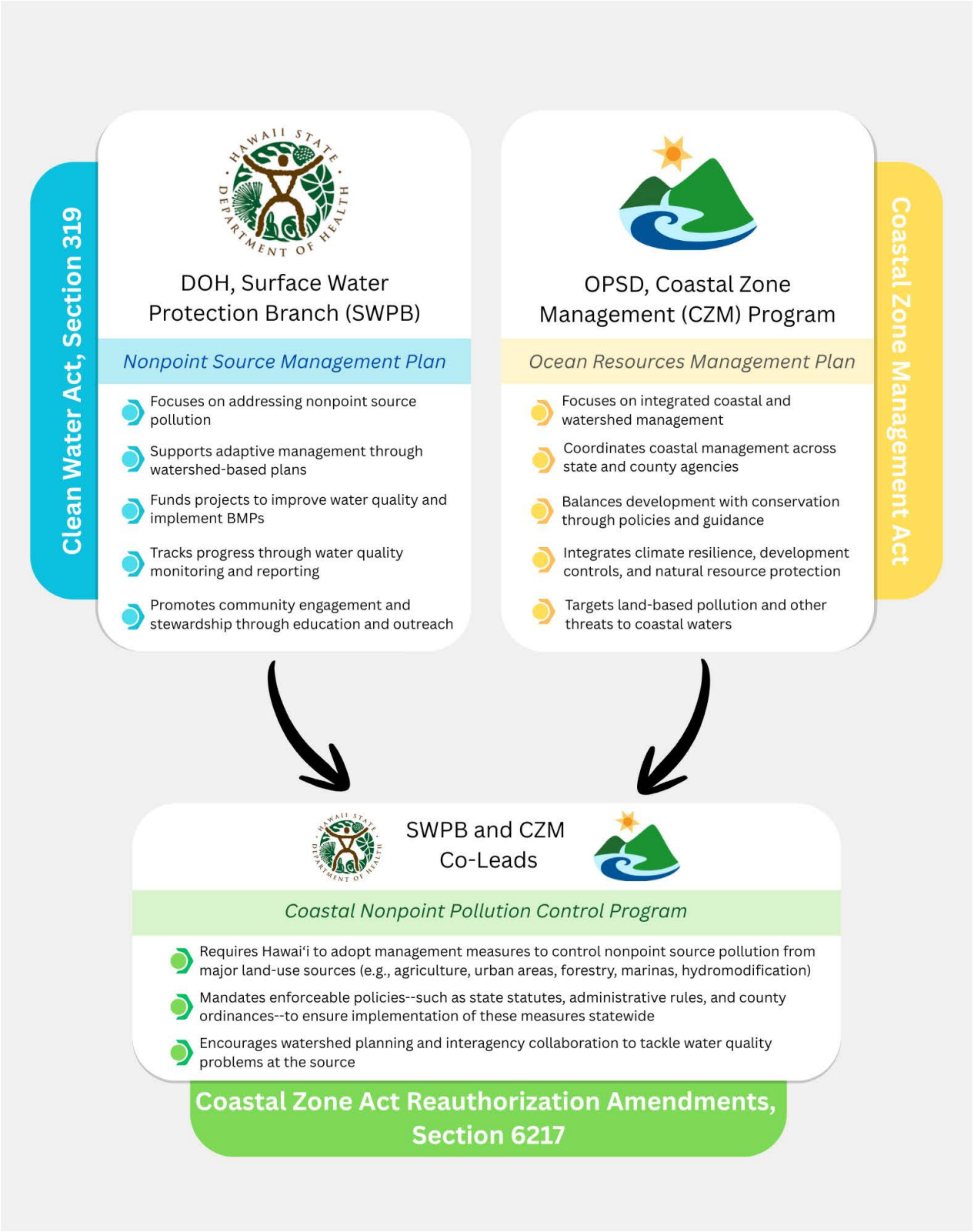
Hawaiʻi's CNPCP previously received conditional approvals from NOAA and EPA, contingent upon meeting specified requirements for various management measures. NOAA and EPA have since prepared interim decision documents confirming that the program has satisfied those conditions. Currently, both agencies are updating previous decision documents and preparing a draft updated approval package for public review and comment, which will inform the agencies' final determination for full program approval. Nevertheless, nearly all management measures outlined in the 2010 CNPCP are actively implemented statewide by various state and county agencies. In addition, the CNPCP includes administrative elements such as public participation, interagency coordination, monitoring and tracking, and enforceable policies — including DOH's authority to enforce State water quality standards.

Obtaining full program approval of the CNPCP remains a top priority for both the CZM Program and DOH SWPB, supporting the State's broader

Table 4-1. Hawaiʻi's CNPCP Management Measures

Sector	Management Measure
Agriculture	Erosion and Sediment Control
	Wastewater and Runoff from Confined Facility
	Nutrients
	Pesticide
	Grazing
	Irrigation Water
Forestry (Silviculture)	Preharvest Planning
	Streamside Management Zone
	Road Construction/Reconstruction
	Road Management
	Timber Harvesting
	Site Preparation and Forest Regeneration
	Fire management
	Re-vegetation of Disturbed Areas
	Forest Chemical Management
	Wetlands Forest Management
Urban Areas	New Development
	Watershed Protection
	Site Development
	Existing Development
	New Onsite Disposal Systems (OSDS)
	Operating OSDS
	Pollution Prevention
	Golf Course Management
	Planning, siting, and developing roads & highways
	Runoff systems for roads, highways, & bridges
Marinas and Recreational Boating	Marina Flushing
	Water Quality Assessment
	Habitat Assessment
	Shoreline Stabilization
	Storm Water Runoff
	Fueling Station Design
	Sewage Facility Management
	Solid Waste Management
	Fish Waste Management
	Liquid Material Management
	Petroleum Control
	Boat Cleaning
	Public Education
	Maintenance of Sewage Facilities
	Boat Operation
Hydromodification Activities	Physical and Chemical Characteristics of Surface Waters
	Instream and Riparian Habitat Restoration
	Protection of Surface Water Quality and Instream and Riparian Habitat
	Eroding Streambanks and Shorelines
Wetlands, Riparian Areas, and Vegetated Treatment Systems	Protection of Wetlands and Riparian Areas
	Restoration of Wetlands and Riparian Areas
	Vegetated Treatment Systems

Figure 4-2. Linkage between the NPS Program, the CZM Program, and the CNPCP



NPS Program goals. With full approval, the CNPCP will strengthen Hawaiʻi's capacity to protect coastal zone resources and water quality through a coordinated, statewide coastal zone program.

More information is available on the CNPCP website: http://planning.hawaii.gov/czm/initiatives/coastal-nonpoint-pollution-control-program/.

Additionally, the CZM Program oversees development and implementation of the Ocean Resources Management Plan (ORMP), pursuant to HRS 205A-62(1). The ORMP presents a collaborative, place-based framework that guides integrated coastal and watershed management across state and county agencies. It emphasizes ridge-to-reef strategies that support CNPCP and Section 319 goals, incorporating resilience to natural disasters, development controls, and natural resource protection. It also includes goals and metrics to reduce land-based pollution, which is directly related to NPS management. Special Management Area (SMA) rules and planning guidance are additional tools used by the CZM Program to minimize coastal water quality impacts.

Together, these programs and policies position the CZM Program as a key facilitator advancing Hawaiʻi's integrated approach to coastal and water quality management. More information is available on the ORMP Dashboard at: https://ormp-dashboard-histategis.hub.arcgis.com/pages/land-based-pollution.

4.2.2.5 Department of Land and Natural Resources (DLNR)

DLNR is Hawaiʻi's lead state agency charged with the stewardship, protection, and conservation of the State's natural, cultural, and historic resources held in public trust for current and future generations. DLNR manages a broad range of resources, including public lands, forests, streams, and coastal waters.

At ʻAkaka Falls State Park, pictured above, the DLNR protects freshwater native species habitat with an enclosed visitor walkway and educational signage. Source: DOH SWPB

Through its diverse divisions and programs across 10 divisions and offices, DLNR coordinates efforts that contribute directly and indirectly to NPS pollution control and watershed protection.

4.2.2.6 DLNR, Division of Forestry and Wildlife (DOFAW)

DLNRDOFAW manages State-owned forests, natural areas, public hunting grounds, and plant and wildlife sanctuaries. Many of DLNR DOFAW's programs focus on watershed protection and restoration to conserve Hawaiʻi's unique and fragile ecosystems. These efforts are essential to controlling NPS pollution, particularly by preventing and reducing soil erosion on conservation lands.

DLNR DOFAW also implements conservation initiatives aimed at protecting rare and endangered species and administers landowner assistance programs that safeguard forest, wildlife, and water resources. Through the Natural Area Reserve Special Fund, DLNR DOFAW supports the Watershed Partnerships Program, which provides technical and financial assistance for implementing watershed management plans focused on protecting forested watershed areas. Currently, eleven watershed partnerships comprise the Hawaiʻi Association of Watershed Partnerships (HAWP), working collaboratively to advance watershed health. More information about HAWP can be found in Section 4.2.5.

Recognizing the shared goals in watershed protection and restoration, DOH SWPB supports DLNR DOFAW through the annual Watershed Partnerships Program RFP process, helping to coordinate and strengthen these collaborative efforts.

4.2.2.7 DLNR, Division of Aquatic Resources (DAR)

Because polluted runoff directly impacts Hawaiʻi's marine and freshwater ecosystems, DLNR DAR has a strong interest in preventing and reducing NPS pollution. DLNR DAR's mission is to manage, conserve, and restore the State's aquatic resources and ecosystems. The division oversees the State's Marine Life Conservation Districts, manages Hawaiʻi's fisheries, and leads the State's coral reef management efforts.

Without healthy native forests to stabilize soil, ridges are prone to erosion scars and sediment pollution. Source: DOH SWPB

As part of their work to address major threats to sensitive resources, DLNR DAR will be developing and implementing a Water Quality Action Plan (WQAP) that integrates water quality into resource management decisions. DLNR DAR also facilitates a Mauka to Makai Water Quality Working Group and interagency sharing sessions between DOH, DLNR, and the CZM Program. These efforts support collaborative management of aquatic resources and strengthen coordination among agencies and stakeholder groups to protect aquatic ecosystems.

DLNR DAR has also collaborated closely with the DOH CWB on water quality assessments, including the 2013-2014 National Rivers and Streams Assessment on Kauaʻi and the 2012 National Lakes Assessment on Oʻahu. More recently, DLNR DAR is supporting DOH CWB's efforts to develop a watershed monitoring program for the State's inland waters.

Website:

- DLNR DAR: https://dlnr.hawaii.gov/dar/

4.2.2.8 DLNR, Division of Boating and Ocean Recreation (DOBOR)

DLNR DOBOR manages Hawaiʻi's ocean recreation and coastal programs, overseeing 21 small boat harbors, 54 launching ramps, 13 offshore mooring areas, 10 designated ocean water areas, and 108 ocean recreation management areas statewide. Recognizing that boating and recreational activities can contribute to NPS pollution and impact marine ecosystems, DLNR DOBOR implements CNPCP's management measures specifically designed for marinas and recreational boating.

Website:

- DLNR DOBOR: https://dlnr.hawaii.gov/dobor/

4.2.2.9 DLNR, Commission on Water Resource Management (CWRM)

Established under HRS Chapter 174C, DLNR CWRM is responsible for coordinated and sustainable management of the State's water resources. DLNR CWRM works alongside state agencies and counties to develop integrated programs aimed at conserving and managing water resources across each county. Central to its efforts is the Water Resource Protection Plan, which focuses on safeguarding groundwater, surface water, watersheds, and natural stream environments through controlling both point source and NPS pollution.

DLNR CWRM also contributes directly to the implementation of Hawaiʻi's CNPCP through its Stream Channel Alteration Permit (SCAP) program. This regulatory tool ensures that in-stream construction and modification projects are designed to minimize erosion, sedimentation, and hydrologic disruption—core elements of the CNPCP's hydromodification management measures.

In addition, DLNR CWRM's broader responsibilities to establish Instream Flow Standards and designate Water Management Areas support the long-term protection of stream ecosystems and watershed health. Through the ongoing implementation and enforcement of these tools, DLNR CWRM helps maintain natural flow regimes and prevent the over-extraction of water resources, reducing the risk of habitat degradation, altered sediment transport, and other impacts associated with NPS pollution.

Website:

- DLNR CWRM: https://dlnr.hawaii.gov/cwrm/

4.2.2.10 Hawaiʻi Association of Conservation Districts (HACD)

The HACD encompasses 16 Soil and Water Conservation Districts (SWCDs) dedicated to implementing conservation practices that help protect and sustain Hawaiʻi's environment. SWCDs, with the funding and administrative support of DLNR, often collaborate with federal, state, and local organizations as well as businesses.

Agricultural activities are a significant source of NPS pollution affecting surface and groundwater in Hawaiʻi. To address this, SWCDs oversee soil and water conservation planning, including the development of nutrient management, soil retention, and irrigation management plans. SWCDs also execute BMP implementation and restoration projects to reduce NPS pollution, as exemplified by recent memoranda of agreement (MOAs) between the Central Maui SWCD and DOH in the Hāpapa watershed.

Website:

- HACD: https://dlnr.hawaii.gov/swcd/

4.2.2.11 Kahoʻolawe Island Reserve Commission (KIRC)

KIRC is dedicated to the environmental and cultural restoration of Kahoʻolawe through revegetation, monitoring, BMP installation, and a robust volunteer program. Since 2004, KIRC has collaborated with DOH on several NPS pollution control and restoration projects totaling $4 million in Section 319 funds and matching State funds combined. In 2023, KIRC was awarded $395,816.61 in Section 319 funds for its Kamōhio Watershed restoration project, expected to commence in 2026 and result in the reintroduction of 30,000 native plants to Kahoʻolawe's dry hardpan soil. These projects increase sediment and water retention, mitigating NPS pollution while recharging natural resource cycles.

Website:

- KIRC: https://kahoolawe.hawaii.gov/

4.2.2.12 Department of Agriculture and Biosecurity (DAB)

Agricultural activities can contribute nutrients, sediment, pesticides, and other pollutants to Hawaiʻi's water resources. To help conserve soil and water, DOA can require farmers leasing State agricultural lands to develop and implement conservation plans. These plans promote practices that prevent and reduce NPS pollution.

With agricultural chemical use being a significant contributor to NPS pollution, DOA oversees measures related to the safe and effective use of pesticides. DOA also prepares the Agricultural Water Use and Development Plan, a component of the Hawaiʻi Water Plan that guides long-term management of agricultural water use and supply for both State and private lands.

Website:

- DAB: https://dab.hawaii.gov/

4.2.3 County Programs

The County of Kauaʻi, City and County of Honolulu, County of Maui, and County of Hawaiʻi each address point source and NPS pollution through their respective planning, permitting, public works, water supply, and environmental services departments. County general plans guide decisions on growth, development, and the protection of natural and cultural resources. Each county also prepares a County Water Use and Development Plan, as part of the Hawaiʻi Water Plan, which outlines water use and allocation within their jurisdiction.

Counties are responsible for managing municipal wastewater systems, including the operation, maintenance, and upgrading of wastewater treatment plants and sewer infrastructure. Proper management of these systems protects water quality by ensuring proper treatment and disposal of wastewater. The Counties also coordinate with DOH WWB on cesspool conversion initiatives and OSDS oversight.

Counties are also responsible managing stormwater and controlling erosion during development to protect sensitive natural features. Stormwater management is implemented through Municipal Separate Storm Sewer System (MS4) permits where applicable and/or through county codes prescribing mitigation measures. For example, grading and grubbing ordinances require permits or approved conservation plans before activities like excavation or stockpiling can begin.

Additionally, counties implement several CNPCP management measures, especially those targeting urban runoff control. Counties also administer SMA permits and shoreline setback provisions to help protect and preserve natural resources, including State waters, within coastal zones.

Websites:

- County of Kauaʻi: http://www.kauai.gov/
- City and County of Honolulu: http://www.honolulu.gov/
- County of Maui: https://www.mauicounty.gov/
- County of Hawaiʻi: https://www.hawaiicounty.gov/

4.2.4 University of Hawaiʻi (UH)

4.2.4.1 Sea Grant College Program (Hawaiʻi Sea Grant)

As part of the 34-member national Sea Grant network, Hawaiʻi Sea Grant supports an innovative program of research, education, and extension services dedicated to the improved

understanding and stewardship of coastal and marine resources of the state, region, and nation. The program partners with the UH School of Ocean and Earth Science and Technology (SOEST), NOAA, and the State to address four focus areas: healthy coastal ecosystems, sustainable fisheries and agriculture, resilient communities and economies, and environmental literacy and workforce development.

Hawaiʻi Sea Grant has implemented NPS pollution control projects, water quality monitoring, and research in Koʻoloaupoko region of O ʻahu in the Heʻeia watershed. In addition, Hawaiʻi Sea Grant and DLNR lead the Pili Nā Moku project that will focus on 'āina-based restoration and conservation efforts in five focal moku across the state.

Websites:

- Hawaiʻi Sea Grant: https://seagrant.soest.hawaii.edu/
- Pili Nā Moku: https://seagrant.soest.hawaii.edu/moku-resilience-and-stewardship/

4.2.4.2 College of Tropical Agriculture and Human Resources (CTAHR)

CTAHR's mission to strengthen food systems in Hawaiʻi and promote the stewardship of natural resources stretches beyond academia in order to serve the local agricultural community. Through its Cooperative Extension Service, CTAHR provides education, outreach, and technical assistance to farmers on soil health, water pollution control, pest management, and soil nutrient testing. These efforts support the implementation of the CNPCP agriculture and forestry management measures.

As a recent example, CTAHR collaborated with the PRC Program between 2019 and 2022 to reduce nutrient loadings across intensive vegetable farming systems in the Maʻiliʻili watershed and Kaiaka Bay watersheds by implementing soil management strategies and soil testing technologies.

Website:

- CTAHR: https://cms.ctahr.hawaii.edu/ce

4.2.4.3 Pacific Islands Ocean Observing System (PacIOOS)

PacIOOS, based within SOEST, works to collect, analyze, forecast, and share ocean and coastal data. Its partners include ten other regional associations of the national IOOS, as well as private-sector partners and regional organizations. PacIOOS develops user-friendly tools to inform decision-making in Pacific communities and boost coastal resilience.

The State can use PacIOOS' data to access water quality trends and target areas where water pollutants exceed water quality standards. PacIOOS' nearshore sensor observations in Hawaiʻi may provide reference data for use in NPS control projects and developing TMDLs on topics such as temperature, salinity, turbidity, and currents.

Website:

- PacIOOS: https://www.pacioos.hawaii.edu/

4.2.4.4 Hawaiʻi Institute of Marine Biology

The Hawaiʻi Institute of Marine Biology administers the Heʻeia National Estuarine Research Reserve (NERR). The Heʻeia NERR represents a strong partnership among federal, state, and community-based efforts toward resilient estuaries and coastal watersheds where human and natural communities thrive. Encompassing 1,385 acres of diverse upland, wetland, stream estuarine, coastal, and marine habitats, Heʻeia NERR is a valuable site for research, training, restoration, and education.

The primary research question for Heʻeia NERR is: "What are the most effective ecosystem-based management strategies that contribute

to the resilience and integrity of Pacific Island estuarine ecosystems, measured as a suite of ecosystem services, considering anthropogenic drivers in the context of sociocultural and environmental factors?"

Heʻeia NERR's restoration projects include invasive species removal in Heʻeia watershed and the reestablishment of indigenous resource management systems such as Heʻeia Fishpond, indigenous agroforestry, *loʻi kalo*, and *loko wai*. The Nature Conservancy and Hawaiʻi Sea Grant implemented two Section 319 projects to reduce turbidity and nutrient loadings in Heʻeia Stream and Heʻeia Fishpond in the last five years.

Website:

- HIMB: https://www.himb.hawaii.edu/

4.2.4.5 Water Resources Research Center (WRRC)

WRRC conducts research and outreach on water quality issues distinctive to Hawaiʻi and other Pacific Islands. WRRC is a leader in providing guidance for the State's cesspool conversion efforts, with more than a decade of experience researching OSDS conditions, treatment technologies, and management in Hawaiʻi.

WRCC's research activities related to NPS management include:

- Quantitative real-time PCR-based test for enterococci as a rapid beach management tool in Hawaiʻi;
- Stream pesticide and nutrient loads from baseflow, surface runoff, and sediment contributions; and
- OSDS technologies and management options.

WRRC is also participated in the CCWG and, in coordination with DOH WWB, conducted the Act 132 Nearshore Sewage Pollution Study, which resulted in the State-wide Assessment of Wastewater Pollution Intrusion into Coastal Regions of the Hawaiian Islands.

Website:

- WRRC: https://www.wrrc.hawaii.edu/

4.2.5 Community-Based Organizations

Community-based organizations (CBOs) and local stakeholders play a vital role in Hawaiʻi's NPS pollution management efforts and watershed restoration efforts. These groups, which often include neighborhood associations, environmental nonprofits, cultural organizations, and watershed partnerships, provide critical on-the-ground support for education, outreach, and restoration activities. Their deep local knowledge and strong community ties enable effective engagement with residents and landowners, fostering sustainable land and water use practices that reduce polluted runoff.

CBOs frequently partner with state and federal agencies to implement watershed-based plans, conduct water quality monitoring, and carry out restoration projects such as invasive species removal, native planting, and erosion control. By building community stewardship and raising public awareness, they encourage behavioral changes that help protect water quality.

Stakeholder involvement is also essential to the collaborative approach needed for successful NPS management in Hawaiʻi. It ensures diverse voices and perspectives inform planning, decision-making, and implementation at the local level.

As an example, the Hawaiʻi Association of Watershed Partnerships (HAWP) established in 2003 fosters public and private collaboration in protecting Hawaiʻi's critical mauka (upper elevation) watershed areas. Comprising eleven watershed partnerships across five islands, HAWP works with over 70 partners to safeguard more than 2.2 million acres of forested

watershed lands—essential for maintaining water quality and supply.

HAWP's mission focuses on strengthening partnership capacity, facilitating knowledge sharing, building public support, and securing sustainable funding. Some member partnerships actively control feral ungulates and invasive species while restoring native and endangered plants, thereby protecting both native ecosystems and the State's water resources.

These partnerships operate within all five of the NPS Program's priority watersheds. Specifically, the Kauaʻi Watershed Alliance covers parts of the Hanalei Bay watershed; the Koʻolau Mountains Watershed Partnership manages higher elevations of various watersheds in the Koʻolaupoko region of Oʻahu; the East Molokaʻi Watershed Partnership encompasses the Kawela watershed; the Mauna Kāhālawai Watershed Partnership covers pristine upper elevation areas in West Maui; and the Kohala Watershed Partnership manages the forested areas of the Pelekane Bay watersheds in South Kohala. The NPS Program has supported the efforts of these partnerships through Section 319 funding for projects such as ungulate fencing to reduce erosion and sedimentation.

Table 4-2. Summary of Key Partners & Roles in NPS Management

Level	Agency/Entity	NPS-related Roles and Responsibilities
Federal	EPA	Oversees Section 319 program at the federal level; approves state NPS management plans; provides funding, guidance, and oversight under CWA and SDWA; and supports NPS efforts through delegated and direct regulatory programs.
	NOAA	Co-administers coastal NPS programs under CZARA Section 6217, supports place-based watershed initiatives, and provides funding and technical assistance for coastal ecosystem restoration.
	NRCS	Provides financial and technical assistance for conservation practices that reduce ag-related NPS pollution through Farm Bill programs.
	USACE	Implements the CWA Section 404 permit program and supports watershed planning, restoration, and infrastructure projects that mitigate flooding and reduce NPS pollution.
	USGS	Collects and analyzes water quality and hydrologic data; collaborates with partners to support NPS monitoring and research statewide.
State	DOH CWB	Safeguards public health and Hawaiʻi's water quality by monitoring, permitting, and enforcing laws to prevent point source pollution in coastal and inland waters.
	DOH WWB	Oversees statewide wastewater programs, including treatment systems, recycled water use, and cesspool conversion to reduce NPS pollution.
	DOH SDWB	Implements groundwater and UIC programs, prepares the State's Water Quality Plan, and funds source water protection through the DWSRF.

Level	Agency/Entity	NPS-related Roles and Responsibilities
	OPSD CZM Program	Coordinates coastal NPS program under CZARA Section 6217 together with DOH SWPB and leads statewide efforts to protect coastal resources through planning, permitting, and interagency collaboration.
	DLNR	Manages state conservation lands, supports watershed partnerships, implements BMPs to reduce NPS pollution.
	DLNR DOFAW	Manages State-owned forests and natural areas; implements watershed protection and conservation programs that help to reduce erosion and NPS pollution.
	DLNR DAR	Manages aquatic resources and coral reefs, conducts marine monitoring, and leads interagency efforts to integrate water quality into aquatic ecosystem management.
	DLNR DOBOR	Manages marinas and boating areas; implements BMPs and CNPCP measures to reduce NPS pollution from recreational activities.
	DLNR CWRM	Oversees water use permitting, stream flow standards, the Hawaiʻi Water Plan, and other planning activities to protect water resources.
	HACD	SWCDs help landowners develop conservation plans and implement BMPs to reduce ag-related NPS pollution.
	KIRC	Facilitates revegetation efforts on Kahoʻolawe to restore watershed health and reduce NPS pollution.
	DAB	Manages State-leased agricultural lands that may require conservation plans, regulates pesticide use to reduce runoff, and prepares the Agricultural Water Use and Development Plan.
County	County Planning and Public Works Departments	Implements land use, stormwater, grading, and erosion control ordinances; supports BMP adoption.
	County Wastewater Divisions	Manages municipal wastewater systems and coordinates with DOH WWB on cesspool conversion and OSDS oversight.
University	Hawaiʻi Sea Grant	Conducts NPS research, water quality monitoring, and supports community-based coastal restoration projects.
	CTAHR	Provides technical assistance to farmers on soil health and NPS pollution through outreach, training, and applied research.
	PacIOOS	Provides real-time ocean and coastal data which can serve as reference points for NPS projects.
	WRRC	Conducts research and outreach on water quality and supports efforts in cesspool conversion, OSDS management, and coastal wastewater pollution assessment in Hawaiʻi.
CBOs	HAWP, nonprofits, community groups	Engage in watershed management restoration projects, public-private collaboration, education, outreach, and securing funding to protect critical watersheds.

Chapter 5: Consistency with Federal, State, and Local Plans

5.1 Federal and State Strategic Plans

Hawaiʻi's NPS Program supports and aligns with a range of federal and state strategic plans that guide water quality protection and natural resource management. This consistency takes two primary forms:

- *Direct implementation*—The NPS Program contributes directly to the goals, priorities, or required actions of broader federal or state strategic plans.
- *Strategic Alignment*—While not responsible for direct implementation, the NPS Program shares complementary goals or outcomes with other plans and helps advance shared objectives.

While direct implementation of key actions is critical to achieving measurable water quality improvements, strategic alignment ensures that the NPS Program supports and complements broader goals—even when it is not the primary mechanism for implementation. By aligning with state and federal plans, the NPS Program:

- *Leverages resources* by coordinating funding, technical support, and implementation efforts to avoid duplication and build synergy.
- *Enhances credibility and accountability* by demonstrating that NPS efforts contribute meaningfully to broader environmental and community goals.
- *Supports integrated planning* by aligning NPS actions within the larger context of watershed management, infrastructure resilience, and ecosystem restoration.

Strategic alignment ensures that Hawaiʻi's NPS management efforts are not working in isolation, but are part of a larger, coordinated approach to protecting natural resources and community well-being.

Table 5-1 summarizes key federal and state strategic plans and their alignment with the Hawaiʻi NPS Program's objectives.

Table 5-1. NPS Program Alignment with Federal and State Strategic Plans

Plan	Purpose	Type of Consistency	NPS Program Alignment
Federal Plans			
U.S. EPA Strategic Plan (FY 2026-2030; *under development*)	Guides EPA's national priorities, including clean air, land and water for every American.	Direct Implementation	Directly supports water quality improvement goals and Clean Water Act Section 319 implementation.
NOAA Strategic Plan (2022-2026)	Outlines NOAA's goals to enhance environmental observation, forecasting, and science-based decision support that promotes economic development while maintaining environmental stewardship.	Strategic Alignment	Addresses land-based sources of pollution that impact coastal and marine water quality, helping to protect aquatic ecosystems and support NOAA's mission to manage and conserve coastal and marine resources.
USDA Strategic Plan (2022-2026)	Outlines USDA's priorities to support sustainable agriculture,	Strategic Alignment	Supports conservation goals by reducing runoff from agricultural and forested lands through targeted

Plan	Purpose	Type of Consistency	NPS Program Alignment
	rural prosperity, and the conservation of natural resources.		practices that protect water quality and enhance natural resource stewardship.
FY24-FY26 USACE Engineering & Construction Strategic Plan	Aims to enhance resilience and reduce disaster risk through innovative engineering, quality project delivery, workforce development, and collaborative partnerships.	Strategic Alignment	Implements proactive watershed-based strategies that mitigate pollution and promote ecosystem health through collaborative partnerships and science-based approaches.
National Coral Reef Resilience Strategy (2025-2040)	Aims to protect and restore coral reefs by addressing pollution and other threats through science-based management, community collaboration, monitoring, and restoration.	Strategic Alignment	Addresses land-based sources of pollution—such as runoff and sedimentation—that negatively impact coral reef health.
State Plans			
Hawaiʻi Water Plan	Serves as a long-term framework for water resource management in Hawaiʻi, addressing water use, conservation, and water quality.	Direct Implementation	Contributes to the water quality aspects of the plan, with a focus on watershed management and reducing nonpoint source pollution.
Hawaiʻi State Water Quality Plan (2019)	A component of the Hawaiʻi Water Plan, this plan provides a statewide framework for improving water quality, including addressing nonpoint source pollution, and implementing the Clean Water Act.	Direct Implementation	Directly supports the plan's water quality goals through watershed-based planning and implementation of management actions that reduce nonpoint source pollution.
Hawaiʻi 2050 Sustainability Plan (2018 Update)	Guides statewide initiatives toward a sustainable future by balancing economic, environmental, social, and cultural priorities for current and future generations.	Strategic Alignment	Advances watershed-based strategies that protect water quality, support ecosystem health, and promote long-term environmental stewardship.
Hawaiʻi Ocean Resources Management Plan (ORMP, 2020)	Provides a statewide framework for integrated coastal and ocean resource management, emphasizing watershed-coastal linkages.	Strategic Alignment	Supports efforts to reduce land-based pollution, manage runoff, and protect coastal water quality.
Hawaiʻi Forest Action Plan (2016)	Outlines strategies to protect and restore forest ecosystems in Hawaiʻi, focusing on forest health, invasive species management, and wildfire prevention.	Strategic Alignment	Supports management goals through strategies that reduce erosion, enhance watershed health, and protect water quality in forested watersheds.
DLNR Holomua Marine Initiative	Aims to manage Hawaiʻi's nearshore marine resources through holistic management strategies and partnerships centered around community priorities, cultural practices, and local knowledge.	Strategic Alignment	Efforts reduce land-based sources of pollution that affect marine and reef health.
Hawaiʻi Coral Reef Strategy (2021)	Provides a coordinated approach to coral reef conservation, including reducing sediment and nutrient pollution.	Strategic Alignment	Efforts directly support coral reef health by addressing runoff and nonpoint source pollution threats from land-based activities.
Healthy Hawaiʻi 2030: State Health Improvement Plan	Outlines strategies to improve public health outcomes, including environmental determinants like clean water and healthy ecosystems.	Direct Implementation	Implements watershed-based strategies to protect water quality and reducing environmental exposure risks linked to polluted runoff.

5.2 Alignment with Local Planning Efforts

Local plans—such as county water use and development plans, community wildfire protection plans, and regional forest or conservation plans—are key instruments for implementing NPS pollution controls at the watershed scale. While these plans are developed at the local level, they are often designed to align with the goals, priorities, and policies established by the state NPS Program and related statewide strategies. At the same time, the NPS Program recognizes the importance of maintaining consistency with these local plans to support cohesive, place-based solutions and to ensure that state-funded efforts build on locally identified priorities and existing momentum. This reciprocal alignment strengthens the effectiveness of watershed-scale implementation, enhances community engagement, and supports the integration of NPS management into broader local planning and land use decisions. Where local plans include water quality goals or actions consistent with NPS priorities, they can also help justify the use of Section 319 funds to support watershed planning or project implementation through approved watershed-based plans or acceptable alternative plans.

Table 5-2 provides a general overview of the key types of local plans that support or complement the NPS Program's objectives.

Table 5-2. Local Planning Efforts Supporting Hawai'i's NPS Management Program

Plan	Purpose	Relevance to NPS Program
County Water Use and Development Plans	Guides water resource use and management at the county level.	Supports watershed management for water resource protection.
Community Wildfire Protection Plans	Addresses wildfire risk and mitigation strategies for communities, including land and vegetation management.	Reduces erosion and sedimentation, which can degrade water quality, and aligns with NPS goals for reducing nonpoint source pollution from wildfire-related runoff.
Forest Management Plans	Provides guidelines for managing state and private forested lands to enhance forest health and sustainability.	Supports NPS Program goals by addressing sedimentation, nutrient loading, and soil erosion, key sources of nonpoint pollution.
Agricultural Conservation Plans	Guides implementation of land management practices on agricultural lands to protect soil and water resources, reduce nonpoint source pollution, and promote sustainable agriculture.	Promotes BMPs that reduce runoff of pollutants such as sediment, nutrients, and pesticides from agricultural lands into nearby water bodies.
Conservation and Habitat Restoration Plans	Aims to protect and restore critical habitats, including riparian zones, wetlands, and coastal ecosystems.	Directly supports water quality protection by restoring natural filtration processes, reducing runoff, and protecting habitat buffers that filter out pollutants.
Regional Land Use and Community Plans	Guides development, land use, and zoning at a regional level to balance conservation and growth.	Ensures land-use decisions are consistent with NPS goals, particularly in urban and rural areas, by mitigating potential water quality impacts through smart growth and low impact development practices.
Community-Based Marine Resource Management Plans	Focuses on managing local marine resources through community-led approaches, often involving traditional ecological knowledge, stakeholder input, and science-based practices.	Engages stakeholders and promotes actions to reduce land-based pollution from nonpoint sources, aligning with NPS goals to protect coastal water quality and marine ecosystems.
Marine Managed Area Plans	Identifies conservation and protection strategies for marine areas, such as no-take zones and fishery management.	Supports the reduction of land-based pollution on marine ecosystems, aligning with NPS goals for water quality protection.

Plan	Purpose	Relevance to NPS Program
Drainage Master Plans	Provides a strategy for managing storm water runoff and its associated pollutants to protect water quality and reduce flooding.	Integrates BMPs and nature-based solutions for stormwater management into developed areas to reduce pollutants and sediments entering waterways.

Chapter 6: Water Quality in Hawaiʻi

Because clean water is vital to Hawaiʻi's residents, visitors, and the local economy, it is important to understand the condition of Hawaiʻi's waters. One of the primary responsibilities of the DOH CWB is to monitor and assess the State's marine and inland surface waters to identify and address water quality impairments. Every two years, the DOH CWB compiles available data into the Integrated Report, which includes the CWA Section 303(d) list of impaired waters. The 2024 Integrated Report provides the most recent assessment of statewide water quality conditions. This assessment plays a critical role in helping the DOH SWPB identify watersheds with water quality problems and set priorities for NPS pollution control and restoration efforts. In addition to assessing current conditions, this chapter introduces major NPS pollution concerns and highlights the potential threats they pose to Hawaiʻi's water resources, ecosystems, and communities. The majority of waterbody impairments are due to nonpoint sources of pollution thus highlighting the need for implementation of this NPSMP.

6.1 2024 Integrated Report

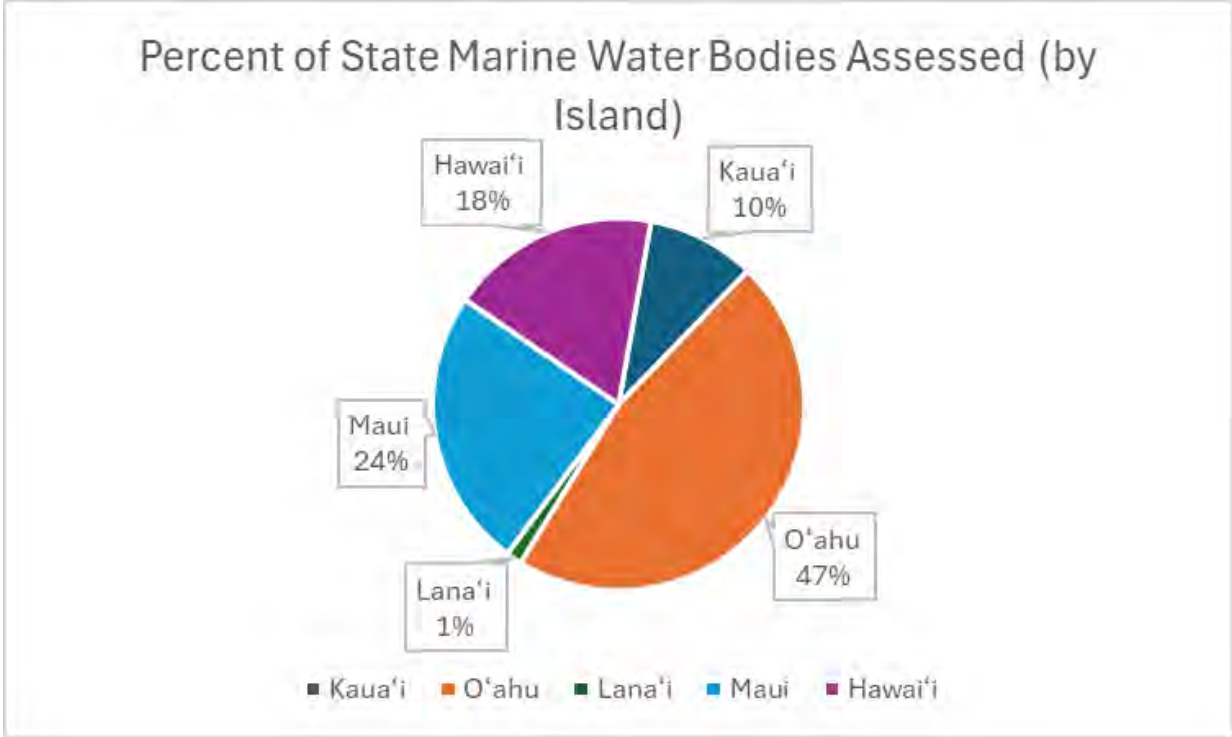
Parameters assessed in the 2024 Integrated Report include total nitrogen (TN), nitrate + nitrite-nitrogen ($NO_3 + NO_2$), ammonium-nitrogen (NH_4), total phosphorus (TP), and where applicable, total dissolved nitrogen (TDN), total dissolved phosphorus (TDP), total suspended solids (TSS), and orthophosphate (PO_4) (HAR Chapter 11-54-6[d]). Pollutant indicators assessed in the 2024 Integrated Report include enterococci (an indicator of fecal pollution), turbidity (a measure of the relative clarity of a liquid and an indicator of suspended and dissolved solids), and chlorophyll *a* (an indicator of excess, bioavailable nutrients). Water quality data were assessed if there were sufficient and acceptable data and information for these pollutants. The 2024 Integrated Report can be found on the DOH CWB website at: https://health.hawaii.gov/cwb/clean-water-branch-home-page/integrated-report-and-total-maximum-daily-loads/.

The 2024 Integrated Report divides water quality assessments into two broad categories: marine and inland. Because monitoring marine waters is a higher priority for DOH CWB (see Section 2.2.2 in Chapter 2 for information on the Statewide Coastal Monitoring program), marine waters comprise the majority of assessed waters. In the 2024 Integrated Report, 148 of the 566 marine water bodies (26%) in the state were assessed. The number of marine waterbodies assessed on each island is summarized in Table 6-1 while the percentage distribution of marine water bodies assessed across the state is shown in Figure 6-1. Sufficient shoreline data were not collected by DOH CWB on Molokaʻi for the 2024 assessment.

Table 6-1. Percent of state marine waterbodies assessed on each island in the 2024 Integrated Report.

Island	Assessed Marine Water Bodies	Total Marine Water Bodies	Percentage Assessed on Island
Kauaʻi	14	82	17%
Oʻahu	69	192	36%
Lanaʻi	2	17	12%
Maui	36	129	28%
Hawaiʻi	27	110	25%

Figure 6-1. Percentage distribution of marine water bodies assessed across the state summarized by island.



A total of seven inland water bodies were assessed. DOH CWB assessed 2 inland waterbodies on Kauaʻi, where monitoring is being conducted to demonstrate the effectiveness of Section 319-funded NPS pollution reduction projects. Turbidity and enterococci are the causes of water quality impairments for the two assessed inland waters on Kauaʻi: Waipā estuary did not attain turbidity and enterococci standards; and Waipā Stream, which was delisted in 2024 for turbidity, did not attain for enterococci. DOH CWB assessed 5 inland waterbodies on Oʻahu, where monitoring is being conducted for TMDL development. Kalihi Stream did not attain for TN, NO_3 + NO_2, and turbidity during the wet season), and for TN, NO_3 + NO_2, TP, and turbidity during the dry season. Kaupuni Stream did not attain for TN, NO_3 + NO_2, TP, and turbidity during the wet season (confirming visual assessment results), and for TN, NO_3 + NO_2, TP, turbidity, and TSS during the dry season. Kahaluʻu estuary remains impaired for enterococci. Heʻeia estuary is a new estuary assessment unit created based on data collected for the 2024 IR. Data indicates that the estuary does not meet the enterococci standard and was listed as impaired. Data for Kaʻelepulu Stream-Kailua Beach denoted impairments for TN, TP, turbidity, Chl. *a*, NO_3 + NO_2, NH_4, and enterococci.

Out of the 148 marine water bodies assessed statewide, 137 (93%) did not attain WQS for one or more parameters. It should be noted that not all parameters were assessed for every water body due to the unavailability of new data. No changes were made from the previous assessment in those cases. Based on the results of the 2024 Integrated Report, turbidity is the leading cause of impairment for marine waters, with 111 out of 120 (93%) of marine

waters assessed for turbidity failing to meet turbidity criteria (Table 6-2). Chlorophyll *a* is the second leading cause of marine waterbody impairments, with 19 out of 25 (76%) of assessed waters failing to meet water quality standards for chlorophyll *a*. Nutrients are the third leading cause of marine water quality impairments in Hawaiʻi, with 30 out of 45 (67%) of assessed waters failing to meet the criteria for at least one nutrient (total nitrogen, nitrate + nitrite nitrogen, ammonium nitrogen, and/or total phosphorus). There were 14 out of 120 (12%) assessed marine waters with impairments caused by fecal indicator bacteria (enterococci).

Some data has been placed into watershed assessment units (WAU). DOH CWB assessed 82 out of 532 WAU statewide. Approximately 15% of the WAUs on Kauaʻi, 40% of the WAU on Oʻahu, 6% of the WAU on Lanaʻi, 19% of the WAU on Maui, and 7% of the WAU on Hawaiʻi Island were assessed for at least one parameter in the 2024 Integrated Report. Sufficient new data for WAU on Molokaʻi were not available for the 2024 Integrated Report. Of the 82 WAUs assessed, 79 did not attain State WQS for at least one or more parameters (see Table 6-3). It should be noted that not all parameters are assessed for every watershed due to unavailability of new data.

Table 6-2. Assessed marine water body attainment and non-attainment of WQS summarized by island.

Island	Enterococci		Nutrients		Turbidity		Chlorophyll *a*	
	A	N	A	N	A	N	A	N
Kauaʻi	11	1	4	1	1	13	0	5
Oʻahu	54	13	4	1	5	36	0	2
Molokaʻi	--	--	--	--	--	--	--	--
Lanaʻi	--	--	2	0	0	2	0	2
Maui	18	0	2	22	0	36	1	2
Hawaiʻi	23	0	3	6	3	24	5	7
Total for 2024	**106**	**14**	**15**	**30**	**9**	**111**	**6**	**19**
Total for 2022	**118**	**11**	**22**	**44**	**6**	**139**	**21**	**32**

Attainment = (A), non-attainment = (N), not assessed = --.

Table 6-3. Assessed nearshore attainment and non-attainment of WQS summarized by island.

Island	Enterococci		Nutrients		Turbidity		Chlorophyll *a*	
	A	N	A	N	A	N	A	N
Kauaʻi	10	1	2	2	0	11	0	5
Oʻahu	30	6	0	0	0	31	0	0
Molokaʻi	--	--	--	--	--	--	--	--
Lanaʻi	--	--	2	0	0	2	0	2
Maui	13	0	2	13	0	21	0	5
Hawaiʻi	11	0	0	6	1	10	1	7
Total for 2024	**64**	**7**	**6**	**21**	**1**	**75**	**1**	**19**
Total for 2022	**75**	**3**	**6**	**50**	**0**	**91**	**10**	**37**

Attainment = (A), non-attainment = (N), not assessed = --.

The standard for turbidity was exceeded the most frequently (75 of 76 assessed WAU), followed by nutrients (21 of 27 assessed WAU). Nineteen of the 20 WAUs assessed for chlorophyll *a* do not attain the WQS. The fecal indicator bacteria (enterococci) recreational health water quality standard was not attained in 7 of 71 WAU assessed for recreational health. Detailed watershed assessment results can be found in Chapter 2 of the 2024 Integrated Report.

Through the Integrated Report, DOH CWB identifies waters that need TMDLs. A TMDL report dictates maximum levels of each pollutant that the water body can assimilate to attain WQS and pollutant load allocations for all identified point sources and non-point sources of each pollutant. DOH CWB has developed nine TMDL reports, dictating limits for various parameters in 23 distinct impaired water bodies. All but four of these waterbodies have a TMDL for sediment-based pollutants (TSS or turbidity), which is consistent with the prevalence of statewide turbidity impairments identified in the 2024 Integrated Report, previous Integrated Reports, and the 303(d) list.

The second most common TMDL parameters are nutrients (12 waterbodies, or 52%), and enterococci (12 water bodies, or 52%). All enterococci TMDLs are located on Kauaʻi, which is consistent with the 303(d) list. Chapter 4 provides more information about the State's TMDL program.

6.2 Clean Water Act Section 303(d) List of Impaired Waters

Waterbodies that do not meet the State numeric water quality criteria (as classified in Category 5 in the Integrated Report) constitute the 303(d) list of impaired waters.

A total of 427 marine waterbodies and 120 inland waterbodies are on the 303(d) list for at least one impairment; refer to Appendix C of the 2024 Integrated Report. Turbidity is the most common impairment for both marine and inland waters statewide; approximately 87% of assessed marine and inland waters have turbidity impairments. Each island's most common impairment is turbidity. For marine waters, chlorophyll *a* is the next leading impairment (41% of listed marine waters),

followed by nitrate + nitrite nitrogen, ammonium nitrogen, total nitrogen, and total phosphorus impairments (39%, 32%, 30%, and 16% of listed marine waters, respectively). Enterococci impairments characterize approximately 10% of marine waters on the 303(d) list.

In addition to turbidity, total nitrogen, nitrate + nitrite nitrogen, and total phosphorus are common impairments (54%, 52%, and 43%, respectively) of inland waters on the 303(d) list. Furthermore, 20% percent of listed inland waterbodies have enterococci/fecal indicator bacteria impairments, which are mostly found on Kauaʻi and Oʻahu. Trash and toxic pollutants are also notable impairments for inland waters on Oʻahu.

6.3 Nonpoint Sources of Pollution in Hawaiʻi

The 2024 Integrated Report identifies various sources of pollutants contributing to waterbody impairments across Hawaiʻi. These sources are broadly categorized as point sources and nonpoint sources. Point sources are regulated under federal and state programs, including the NPDES, administered locally by the DOH CWB. Through this program, the DOH CWB issues permits limiting pollutant discharges to concentrations that meet either technology or water quality-based effluent limits, whichever is more stringent.

In contrast, nonpoint sources of pollution are diffuse and primarily land-based, making them more challenging to monitor and control. According to the State's 2024 Integrated Report, major nonpoint sources in Hawaiʻi include cesspools, agricultural activities, urban runoff, and soil erosion—particularly in conservation lands, along streambanks, and in areas degraded by feral ungulates. Most of these nonpoint sources are addressed through enforceable policies and management measures outlined in the Hawaiʻi CNPCP, such as HAR 11-56 administered by the DOH SWPB that requires and regulates the implementation of BMPs to minimize pollutant runoff through Water Pollution Prevention Plans. The CNPCP encompasses six major NPS categories: agriculture, forestry, urban areas, hydromodifications, marinas and recreational boating, and wetlands and riparian areas (Figure 6-2). Pollutants typically associated with these categories are further summarized in Figure 6-3. Nonpoint sources are also address through voluntary implementation of BMPs.

Beyond the sources highlighted in the Integrated Report, there are additional ongoing and emerging NPS threats to water quality that warrant attention. Wildfires and invasive species are well-documented, ongoing threats in Hawaiʻi. They significantly alter native landscapes by degrading vegetation cover and soil structure, which increases erosion, sedimentation, and runoff into surface waters (Roberts et al., 2018; Tunison, D'Antonio, & Loh, 2001). These disturbances also impact source waters by reducing infiltration, altering groundwater recharge, and disrupting the hydrologic cycle—affecting both water quantity and quality (Giambelluca et al., 2011; Sisson et al., 2021). Pharmaceuticals and personal care products, along with heavy metals such as mercury and lead, represent established NPS pollutants with documented impacts and regulatory frameworks addressing their presence.

Figure 6-2. Illustrations of typical nonpoint and point source pollution along with elements of the hydrologic cycle. Developed by the EPA, Office of Water, Nonpoint Source Program.

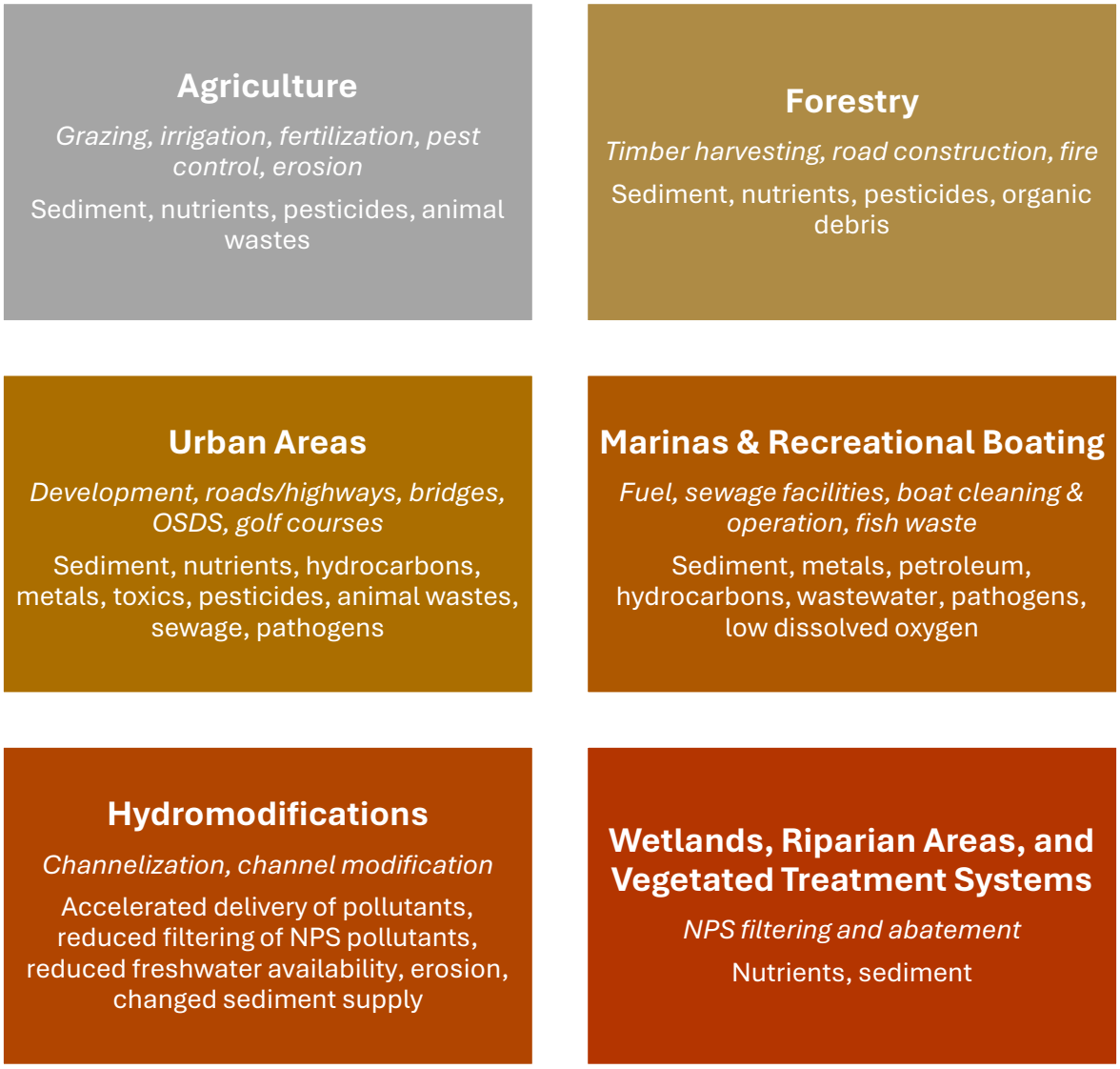


Figure 6-3. Sources of nonpoint source pollution relative to the CNPCP (U.S. Environmental Protection Agency (2003), "Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters," EPA-840-B-92-002. Office of Water: Washington, DC)

In contrast, other emerging contaminants of concern like PFAS and 6PPD-quinone, as well as potential pollutants spread through the broader application of water reuse are less understood. While evidence of their presence and transport to water bodies is growing, the full extent of their impacts and the appropriate regulatory or management responses are still under evaluation (Lindsey et al., 2022). These areas remain important priorities for research, monitoring, and precautionary planning.

Continued efforts are also needed to address data, knowledge, and management gaps that may limit effectiveness of response strategies.

Understanding the sources and land uses associated with key pollutants is critical to targeting effective management strategies. The following sections describe in greater detail the key pollutants contributing to water quality impairments in Hawaiʻi, along with the primary sources and land uses associated with each.

Table 6-4 further summarizes assessed pollutants, their sources, and the water quality standards applicability specific to Hawaiʻi.

6.3.1 Sources of Turbidity and TSS

Turbidity and TSS problems are widespread across Hawaiʻi and are most noticeable following rain events, when runoff carrying sediment and other pollutants causes coastal waters to appear brown or murky. Sediment is one of the leading contributors to turbidity and TSS impairments and also plays a role in nutrient pollution by adsorbing phosphorous and ammonium onto soil particles. Additionally, sediment can transport harmful substances such as chlorinated pesticides and heavy metals into water bodies (*Chapter 2: Pollution by Sediments*, 2024).

The primary source of sediment pollution is soil erosion, which is intensified in Hawaiʻi due to frequent, intense rainfall, steep slopes, and highly erodible volcanic soils. Wildfires further exacerbate sedimentation by removing protective vegetation cover, leaving soils vulnerable to increased erosion and runoff during storms. Sediment resuspension triggered by natural processes such as wind or tidal action, as well as human activities like dredging also contributes to turbidity and TSS levels. Streambank erosion, often worsened by altered flow regimes and degraded riparian vegetation, is another significant source of sediment entering surface waters. Excess sediment adversely affects aquatic ecosystems, especially sensitive coral reefs, and is likely the leading factor altering reef community structure in Hawaiʻi (Friedlander et al., 2008).

Several types of erosion contribute to sediment generation. On agricultural lands, common forms include sheet and rill erosion, wind erosion, streambank erosion, road bank erosion, construction site erosion, and irrigation-induced erosion (EPA, 2003). The extent of erosion depends on multiple factors such as ground cover, cultivation and conservation practices, soil erodibility, slope steepness, field layout, grazing management, and rainfall intensity—all of which influence the volume of sediment and associated pollutants that runoff into streams and coastal waters.

In urban areas, construction and development activities such as clearing and grading are major sources of sediment. High impervious surface coverage increases runoff, facilitating the transport of sediment and particulates into streams and coastal zones. Roads and highways also accumulate particulate matter, which contributes to elevated TSS and turbidity when washed into surface waters during rain events (EPA, 2005).

On conservation lands, which make up nearly half of Hawaiʻi's land area, feral ungulates such as pigs and goats are significant contributors to sediment pollution. Their uprooting of native vegetation increases soil erosion, decreases soil cover, and increases TSS in runoff (Bruland et al., 2010). Invasive plant species exacerbate these impacts by destabilizing soils, because of their shallow root systems, and disrupting native forest structure and composition.

Nutrients also influence turbidity. Nutrient-rich waters stimulate algae growth, increasing turbidity levels. High concentrations of chlorophyll *a* are often associated with an excess of bioavailable nutrients and elevated turbidity.

6.3.2 Sources of Nutrients and Chlorophyll a

Nutrients—primarily nitrate, nitrite, ammonium, and phosphorus—represent the State's second most widespread surface water quality concern. Common sources of nutrients in urban and agricultural areas include fertilizers, sewage, livestock waste, manure, sludge, legumes and crop residues, irrigation water, and wildlife. Historical use of industrial agricultural fertilizers has been linked to

elevated nitrate levels in Hawaiʻi's groundwater (DOH, 2018).

In conservation areas, invasive species also produce excess nutrients which pollute surface waters. Feral ungulate waste contributes nitrogen, phosphorous, and pathogens to surface waters. Invasive plant species, such as albizia (*Falcataria moluccana*), have also been shown to increase nitrate and nitrite concentrations in streams (Wiegner, 2013). Across all land uses, sediment can transport adsorbed phosphorus and other nutrients into waterways, further contributing to nutrient pollution.

OSDS are another source of nutrient pollution and are distributed throughout all land use types in Hawaiʻi. Each day, approximately 83,000 cesspools statewide collectively release an estimated 23,700 pounds of nitrogen and 6,000 pounds of phosphorus into the ground. While septic systems provide some treatment compared to cesspools, they often do not sufficiently reduce nutrient loads, especially when systems fail or are improperly maintained. As a result, both cesspools and septic systems contribute to elevated nitrogen and phosphorus levels in soils, groundwater, and surface waters, fueling algal blooms, eutrophication, and aquatic ecosystem degradation. Assessing and upgrading inadequate systems remains a critical priority for protecting Hawaiʻi's water quality.

Nutrient pollution poses serious human health risks, such as methemoglobinemia (blue baby syndrome), which occurs when elevated nitrogen levels in drinking water interfere with oxygen transport in the bloodstreams of young children. Furthermore, excess nutrients fuel eutrophication causing elevated chlorophyll *a*, harmful algal blooms, oxygen-depleted "dead zones", and fish kills (NOAA, 2024). These algal blooms increase turbidity and can physically smother coral reefs, leading to habitat degradation, altered food webs, and loss of biodiversity. Ultimately, nutrient pollution threatens coral reefs, fisheries, recreational activities, and tourism.

6.3.3. Sources of Fecal Indicator Bacteria (Enterococci)

Sources of fecal indicator bacteria, such as enterococci, include wild and domestic animal waste, animal manure, and soils. Large wastewater discharges can occur from broken sewer lines, while malfunctioning or improperly located OSDS can also contribute to fecal bacteria contamination. Enterococci and other fecal pathogens in surface waters pose risks to human health, potentially causing gastroenteritis, skin infections, and other illnesses.

In addition to enterococci, untreated wastewater carries a range of pathogens that can lead to diseases such as Hepatitis A, conjunctivitis, leptospirosis, salmonellosis, and cholera. Furthermore, pharmaceuticals and hormones present in wastewater may negatively impact human health and aquatic ecosystems (Ashbolt et al., 2010; Fent et al., 2006).

It is important to note that enterococci and other fecal indicator bacteria sometimes occur naturally in tropical soils and sediments, which may complicate source identification and water quality assessments in Hawaiʻi's environment (Byappanahalli et al., 2012; Whitman et al., 2006). Due to these limitations, alternative indicators such as *Clostridium perfringens* have been suggested, as they may better indicate human fecal contamination given their relative persistence and specificity (McQuaig et al., 2006; Moore et al., 2011). However, these alternative indicators are not officially adopted or included in EPA water quality criteria or standards, and their use remains supplemental to traditional fecal indicator bacteria monitoring.

6.3.4 Other Sources of NPS Pollution

In addition to sediment, nutrients, and bacteria, a variety of organic chemicals are present in Hawaiʻi's surface waters and groundwater. These include pesticides, petroleum products, paints, solvents, pharmaceuticals, disinfectants, and personal care products. Some of these chemicals are classified as toxic pollutants under HAR Chapter 11-54 due to their potential to harm human health and marine ecosystems. These pollutants originate from diverse sources but are primarily introduced into the environment through human activities in urban and agricultural areas.

Heavy metals, such as mercury and lead, are another potentially harmful group of NPS pollutants. Often linked to industrial, military, and historical land uses, these metals are also regulated as toxic pollutants under HAR Chapter 11-54. Mercury and lead can contaminate soils and water, bioaccumulate in fish, and pose serious acute and chronic health risks to humans who consume contaminated seafood (EPA, 2021).

6.3.5 Emerging Contaminants of Concern

Emerging contaminants of concern are chemicals recently identified as potentially harmful to human health and the environment but are not yet fully regulated or well understood. Three notable examples gaining increasing attention in Hawaiʻi and beyond are PFAS, 6PPD-quinone, and microplastics. Given the increasing detection of these and other emerging contaminants in Hawaiʻi's water bodies, there is a need for further research, monitoring, and development of appropriate regulatory frameworks. Understanding their sources, fate, and effects is critical to inform precautionary management strategies that protect both human health and aquatic ecosystems.

6.3.5.1 PFAS (Per- and polyfluoroalkyl substances)

PFAS, or Per- and polyfluoroalkyl substances, are a large group of synthetic chemicals widely used for their resistance to heat, oil, stains, and water. These "forever chemicals" are found in numerous everyday products, including non-stick cookware, stain-resistant fabrics, firefighting foams, and various industrial applications. Their chemical stability, largely due to the strong carbon-fluorine bonds, causes them to persist in the environment for decades without breaking down. PFAS can migrate easily through soil and water, contaminating groundwater, rivers, and lakes. Practices such as applying biosolids containing PFAS as fertilizer or irrigating crops with contaminated water further introduce these substances into the food chain and local water sources, raising concerns about long-term exposure and health effects.

Research has found the presence of PFAS in humans to be associated with diseases in the immune, digestive, and reproductive systems (Fenton et al., 2020), underscoring the need for continued research and policymaking regarding this issue. In 2024, EPA established the first enforceable drinking water standards for six PFAS compounds, marking a major step in regulating these widespread contaminants. While these actions primarily target drinking water systems, PFAS continue to enter the environment from diffuse, unregulated nonpoint sources—such as runoff from land treated with biosolids or containing industrial residues—highlighting the need for improved monitoring and source control.

6.3.5.2 6PPD-quinone (6PPD-q)

6PPD-q is a transformation product formed when 6PPD, a chemical antioxidant used in tires to prevent ozone damage, reacts with ozone in the environment. As tires wear down on road surfaces, 6PPD and its quinone byproduct wash into stormwater systems and

ultimately into nearby surface waters. While 6PPD itself is not considered harmful, 6PPD-q has been shown to be highly toxic to certain aquatic species, causing both mortality and sublethal effects. The EPA is actively evaluating the risks posed by 6PPD-q, but regulatory standards are not yet established.

6.3.5.3 Microplastics

Microplastics are particles of plastic intentionally manufactured or broken off larger items, ranging between 1 nanometer and 5 millimeters in size. Plastics are ubiquitous in household products such as food and beverage packaging, clothing, cosmetics, appliances, and packing materials. Fishing nets, fertilizer pellets, and tires are significant nonpoint sources of microplastic pollution.

When plastics degrade into microplastics (often accelerated by sunlight), they leach into surrounding materials and accumulate in the environment. Microplastics have been detected in human brains, placenta, kidneys, and livers (Nihart et al., 2025). They are present in soil, water, and animals across many ecosystems.

Due to the widespread use of plastic and increasing evidence of microplastics in and outside the home, these contaminants are a growing concern. Further research is needed to determine the risks of microplastics to human and environmental health.

Table 6-4. Assessed pollutants, sources, and State Water Quality Standards applicability

Pollutant	Sources	Water Quality Standards	
		Inland Waters	Marine Waters
Turbidity	Soil erosion, waste discharge, urban runoff, eroding stream banks, agricultural practices, excessive algal growth;[7] dredging, natural resuspension events;[8] feral ungulates, invasive plants, wildfires	All except standing waters	All
Total Suspended Solids	Construction, agricultural activities,[9] soil erosion, waste discharge, urban runoff, eroding stream banks, excessive algal growth, dredging, feral ungulates, invasive plants, wildfires	Only Streams	None
Total Nitrogen	Fertilizer, wastewater, animal waste, atmospheric deposition[2]	All except standing waters	All
Ammonium Nitrogen	Sewage effluent, runoff from land where manure has been applied or stored;[3] atmospheric deposition	Only estuaries	All
Nitrate + Nitrite Nitrogen	Fertilizers, human sewage, animal waste, invasive species, atmospheric deposition	All except standing waters	All
Total Phosphorous	Soil erosion, fertilizer applications, agricultural practices, organic wastes in sewage and industrial effluent[4], wildfires[5]	All except standing waters	All

Pollutant	Sources	Water Quality Standards	
		Inland Waters	Marine Waters
Chlorophyll *a*	Fertilizers, septic systems, sewage treatment plants, urban runoff[6]	Only estuaries	All
Bacteria (Enterococci)	Wastewater and sewage from wastewater treatment plants and systems, animal waste, stormwater runoff, improper land application of manure, soil[1]	All	All

Note:

[1] Environmental Protection Agency. (2016). National Aquatic Resource Surveys. https://www.epa.gov/national-aquatic-resource-surveys/indicators-enterococci (accessed January 31, 2021)

[2] Environmental Protection Agency. (2017). National Aquatic Resource Surveys. https://www.epa.gov/national-aquatic-resource-surveys/indicators-nitrogen (accessed January 31, 2021)

[3] U.S. Geological Survey. Water Science School: Nitrogen and Water. https://www.usgs.gov/special-topic/water-science-school/science/nitrogen-and-water?qt-science_center_objects=0#qt-science_center_objects (accessed January 31, 2021)

[4] U.S. Geological Survey. Water Science School: Phosphorous and Water. https://www.usgs.gov/special-topic/water-science-school/science/phosphorus-and-water?qt-science_center_objects=0#qt-science_center_objects (accessed January 31, 2021)

[5] Raoelison, O. D., Valenca, R., Lee, A., Karim, S., Webster, J. P., Poulin, B. A., & Mohanty, S. K. (2023). Wildfire impacts on surface water quality parameters: Cause of data variability and reporting needs. *Environmental Pollution*, *317*, 120713. https://doi.org/10.1016/j.envpol.2022.120713 (accessed November 4, 2025)

[6] Environmental Protection Agency (2016). National Aquatic Resource Surveys: https://www.epa.gov/national-aquatic-resource-surveys/indicators-chlorophyll (accessed January 31, 2021)

[7] Environmental Protection Agency (2012). Water: Monitoring and Assessment, 5.5. Turbidity. https://archive.epa.gov/water/archive/web/html/vms55.html (accessed January 31, 2021); Environmental Protection Agency (2005). Protecting water quality from agricultural runoff. EPA 841-F-05-001. https://www.epa.gov/sites/production/files/2015-09/documents/ag_runoff_fact_sheet.pdf (accessed January 31, 2021)

[8] Jones, R., N. Giofre, H.M. Luter, T.L. Neoh, R. Fisher, and A. Duckworth (2020). Responses of Corals to Chronic Turbidity. *Scientific Reports* 10:4762. https://doi.org/10.1038/s41598-020-61712-w (accessed January 31, 2021)

[9] Oki, D.S. (2003). Surface Water in Hawaii: U.S. Geological Survey Fact Sheet 045-03, 6 p.

Chapter 7: Prioritizing Waters and Watersheds for NPS Management

DOH SWPB collaborates with partners to prioritize watersheds and identify sources or potential sources of NPS pollution that may affect water quality to restore impaired waters and protect unimpaired waters. Restoration involves implementing management measures to bring waters listed on the state's CWA Section 303(d) impaired waters list into compliance with WQS and to restore their designated uses. Protection entails applying management practices to safeguard high-quality waters from NPS pollution and to ensure that unimpaired waters continue to meet WQS.

By leveraging the technical expertise and financial resources of multiple partners within priority watersheds, there is a greater potential to restore and protect water resources and the broader natural environment. Strong partnerships are therefore essential for the success of these efforts, with each agency and organization contributing to various aspects of NPS pollution management.

This chapter outlines the watershed prioritization process and criteria used to identify priority waters and watersheds. Because both the national Section 319 NPS program and the DOH SWPB's priorities continue to emphasize restoring water quality within watersheds, the prioritization process focuses primarily on identifying watersheds for restoration. However, it also considers prioritization criteria for protection.

Identification of priority watersheds will help guide project implementation, monitoring efforts, and funding allocation, ensuring that management actions address the most critical sources and impacts of NPS pollution in Hawaiʻi.

7.1 Past and Current Watershed Prioritization Efforts for NPS Management

7.1.1 Unified Watershed Assessment (1998)

In 1997, to advance the goals of the CWA, the EPA and the USDA were directed to work with other federal and state agencies and the public to develop a Clean Water Action Plan (CWAP). The CWAP introduced a cooperative approach to watershed protection known as the Unified Watershed Assessment (UWA). This UWA process aimed to identify watersheds with the most critical water quality issues and prioritize them for restoration efforts. The UWA categorizes watersheds into four groups:

- Category I watersheds require restoration due to impaired water quality or imminent threats;
- Category II watersheds require preventive actions to maintain water quality;
- Category III covers pristine or sensitive watersheds on government lands; and
- Category IV includes watersheds with insufficient data for assessment.

Due to limited funding, time constraints, and resource availability, Hawaiʻi adapted the UWA process to focus primarily on Category I watersheds where restoration was most practical based on existing efforts. The State also used a more detailed 11-digit code and grouped watersheds by regions and mountain ranges to streamline prioritization. Multiple agencies, including the DOH, USDA NRCS, DLNR and the CZM Program, convened to review existing watershed restoration efforts across the State. Through a multi-voting system involving broad agency participation, they

identified three priority watersheds. This list was later reviewed and expanded by the NRCS State Technical Committee to ensure representation from all major islands and counties.

The criteria used to prioritize watersheds included agency interest and partnerships, existing community support, a high likelihood of success with transferable results, historic and cultural significance, the presence of mixed land uses (such as agricultural, urban, residential, industrial, or military), important natural resources, inclusion on the DOH's Section 303(d) list of water quality-limited segments, and the ability to capture the unique characteristics of Hawai'i's environment.

As a result, five priority Category I watersheds were selected for the following reasons:

- **South Molokai (Molokaʻi)** – In need of erosion control for water quality improvement, coral reef protection and historic/cultural preservation. High probability of success because of current projects and partnerships.
- **Pelekane Bay-Kohala Mountains (Hawaiʻi)** – In need of erosion control and resource management for coral reef protection, enhanced recreational usage and historic/cultural preservation. Presence of important natural resources. High probability of success because of current projects and partnerships.
- **West Maui-West Maui Mountains (Maui)** – In need of sediment and nutrient reduction for water quality improvement, enhanced recreational usage along coastline and habitat improvement in a National Marine Sanctuary, and historic/cultural preservation. Presence of important natural resources. High probability of success because of current projects and partnerships.
- **Koʻolaupoko District-Windward Koʻolau Mountains (Oʻahu)** – In need of habitat restoration and protection, reduction of nonpoint source runoff for enhancement of recreational usage of streams and nearshore waters, and historic/cultural preservation. Mix of land uses. High probability of success because of current projects and partnerships.
- **Nāwiliwili (Kauaʻi)** – In need of identification and reduction of nonpoint source runoff to restore habitat and enhance recreation usage. Mix of land uses. Presence of important natural resources.

7.1.2 Hawai'i Watershed Prioritization Process (2009)

In 2008, the State submitted its *Strategy for Addressing Remaining Management Measures for the Hawai'i Coastal Nonpoint Pollution Control Program* to NOAA and EPA. This strategy outlined a comprehensive watershed-based approach to collectively address multiple outstanding management measures required under the CNPCP. Emphasizing the need to manage polluted runoff from mauka to makai, the strategy focused on using watershed planning tools and guidance to facilitate the implementation of BMPs that address NPS pollution across various land uses and landscapes.

Part of this strategy involved development of a prioritization process for watershed planning and restoration efforts. This involved identifying high-need watersheds where planning and implementation could yield the greatest environmental benefit. Although this initiative was not a direct continuation of the federal CWAP, it was strongly aligned with CWAP principles, particularly its emphasis on interagency collaboration, watershed-based planning, and targeting of limited resources to priority areas.

In operationalizing this strategy, the State conducted a more detailed and systematic watershed prioritization effort in 2009 as documented in the *Hawai'i Watershed Prioritization Process* report. This process refined earlier approaches by incorporating updated datasets and more robust criteria to rank watersheds based on their relative need for NPS pollution management. The prioritization framework evaluated a range of indicators, including sediment delivery rates, pollutant loads, habitat sensitivity, ecological significance, and the presence of threatened or endangered species.

The 2009 prioritization followed a multi-criteria decision-making process involving the following key steps:

- Compiling spatial datasets on land cover, erosion risk, sediment transport, existing water quality impairments, and ecological resources.
- Developing and applying scoring criteria to assess each watershed's vulnerability to NPS pollution and potential for environmental improvement through management interventions.
- Engaging technical experts and stakeholders to validate the data, adjust weighting factors, and ensure transparency and credibility.
- Ranking watersheds to establish a statewide list of priority areas for targeted NPS management actions.

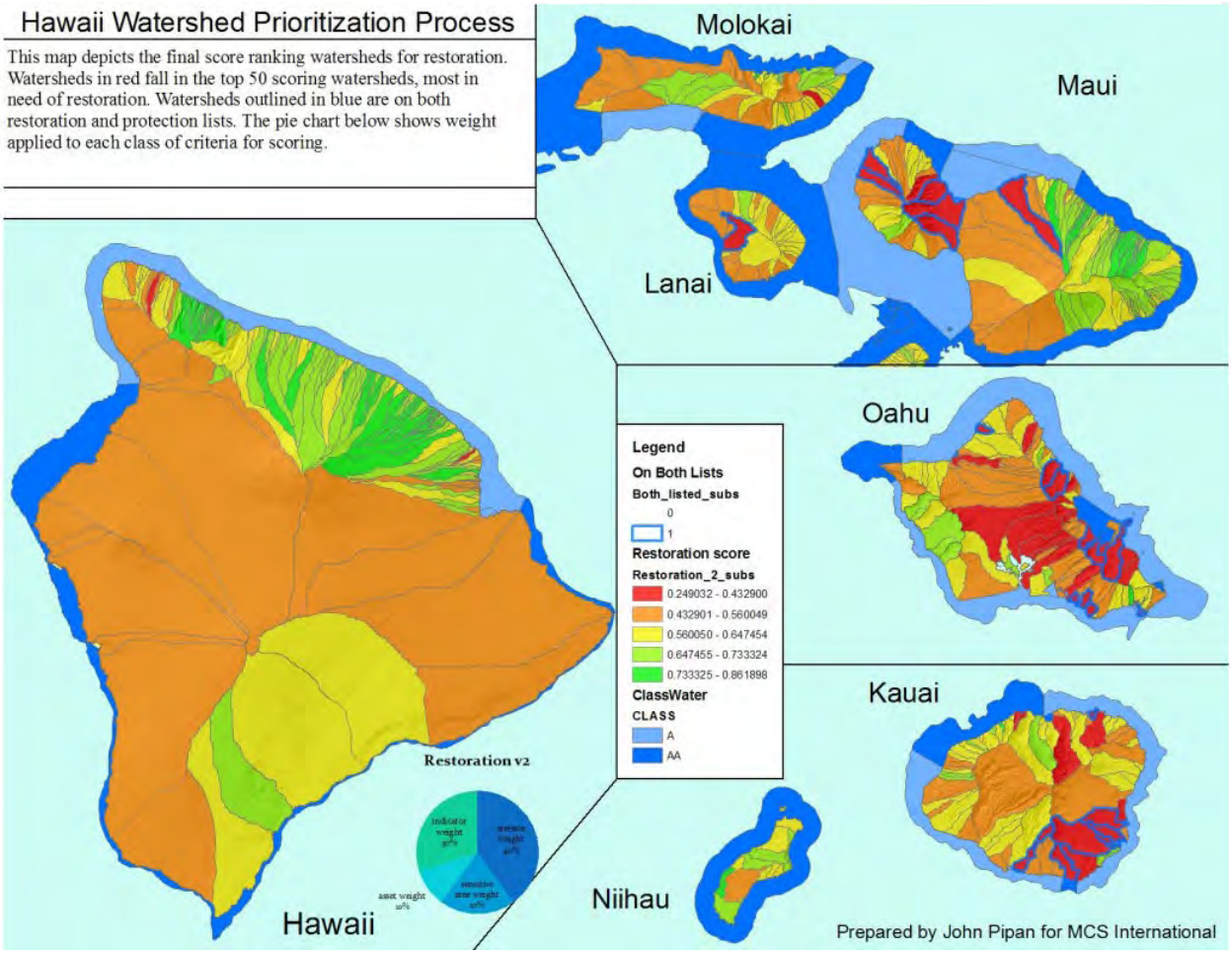
The results identified a list of the 50 highest priority watersheds for restoration and for protection (Figure 7-1). 23 watersheds identified on the restoration list were also identified on the protection list. Of the 77 listed watersheds, 52 watersheds are DOH priority watersheds and 35 belong to a watershed partnership. Priority watersheds for restoration are shown in Figure 7-2.

Figure 7-1. List of top 50 watersheds for restoration and for protection as identified through the Hawaiʻi Watershed Prioritization Process (2009).

ISLAND	WUNAME	Restoration	Protection
Oahu	Kahana	0.249	0.401
Oahu	Ala Wai	0.252	0.406
Maui	Waiehu	0.282	0.318
Oahu	Kawainui	0.285	0.442
Maui	Iao	0.286	0.349
Oahu	Heeia	0.289	0.315
Oahu	Waiahole	0.312	
Oahu	Kaneohe	0.315	0.450
Oahu	Nuuanu	0.327	
Maui	Waikapu	0.345	0.388
Kauai	Waikomo	0.345	0.458
Oahu	Keaahala	0.346	0.328
Kauai	Kawailoa	0.351	
Kauai	Mahaulepu	0.353	
Kauai	Hanamaulu	0.356	0.413
Kauai	Nawiliwili	0.358	0.384
Oahu	Anahulu	0.360	
Kauai	Manoa	0.367	
Oahu	Kawa	0.368	
Lanai	Paliamano	0.369	0.390
Oahu	Kahaluu seg	0.372	
Maui	Maliko	0.377	0.378
Kauai	Huleia	0.382	0.377
Kauai	Wahiawa	0.384	0.345
Oahu	Kaalaea	0.385	
Maui	Honokowai	0.386	0.374
Oahu	Kaelepulu	0.392	
Oahu	Waikane	0.393	
Maui	Waihee	0.395	
Oahu	Kalunawaikaala	0.396	0.430
Oahu	Portlock	0.397	0.425
Oahu	Kalauao	0.401	
Kauai	Kilauea	0.402	
Maui	Kahana	0.406	0.459
Molokai	Waialua	0.409	
Hawaii	Wainaia	0.409	
Hawaii	Kapehu	0.410	
Oahu	Kahawainui	0.410	
Kauai	Limahuli	0.411	

ISLAND	WUNAME	Restoration	Protection
Oahu	Halawa	0.411	
Oahu	Paukauila	0.411	
Kauai	Hanalei	0.415	
Oahu	Waikele	0.416	
Oahu	Punaluu	0.417	0.463
Kauai	Kauapea	0.417	0.462
Kauai	Puali	0.419	0.422
Oahu	Waiawa	0.423	
Oahu	Waimanalo	0.426	
Oahu	Kaaawa	0.428	
Oahu	Waimalu	0.432	
Maui	Wailea		0.323
Hawaii	Keahole		0.343
Maui	Pohakea		0.344
Kauai	Wailua		0.346
Hawaii	Kauna		0.350
Maui	Mooloa		0.353
Hawaii	Lapakahi		0.373
Kauai	Lihue Airport		0.378
Hawaii	Waiaha		0.386
Hawaii	Wainaku		0.391
Hawaii	Kawaihae		0.392
Maui	Waiakoa		0.395
Hawaii	Pohakuloa		0.400
Maui	Wahikuli		0.407
Hawaii	Kaahakini		0.408
Hawaii	Kiholo		0.415
Hawaii	Waikoloa/Waiulaula		0.417
Hawaii	Wailoa		0.429
Hawaii	Honokohau		0.444
Maui	Kahoma		0.452
Maui	Kanaio		0.453
Maui	Kalialinui		0.455
Lanai	Kaumalapau		0.456
Oahu	Hanauma		0.458
Oahu	Makua		0.459
Oahu	Oio		0.464
Molokai	Kamalo		0.464

Figure 7-2. Priority ranking of watersheds for restoration across Hawaiʻi as identified through the Hawaiʻi Watershed Prioritization Process (2009).



7.1.3 Prioritization under Section 303(d) of the Clean Water Act

DOH's Integrated Report identifies impaired waterbodies impacted by both point and nonpoint sources of pollution. Each impaired waterbody on the 303(d) list is assigned a priority ranking—high, medium, or low—to guide the order in which TMDLs are developed in the years following the Integrated Report. High-priority waters are targeted for TMDL development within two years; medium-priority waters are under consideration in the next cycle (within four years), and low-priority waters are not currently planned for near-term TMDL development.

The current TMDL prioritization framework prioritizes impairments linked to point sources, where regulatory mechanisms such as NPDES permits provide enforceable pollutant limits and compliance schedules to drive measurable progress toward restoration. However, the TMDL program also supports NPS management by assigning load allocations to nonpoint sources, which are then incorporated into watershed-based plans or WPPPs and used to guide identification of various projects and BMPs that prevent and reduce NPS pollution.

As described in Appendix D of the 2024 Integrated Report, DOH CWB proposes to update its TMDL prioritization framework for use in the 2026 Integrated Report. The updated

framework incorporates EPA's Restoration and Protection Screening (RPS) tool, which enables side-by-side comparison of watersheds using a consistent, multi-criteria approach. The tool evaluates the potential for successful restoration based on ecological condition, pollution stressors, and social context.

Hawaiʻi has adapted the RPS tool to evaluate watersheds using the following indicators:

Ecological Indicators:

- % Coral Coverage
- % Wetlands
- Marine Water Quality Classification
- Predicted Reef Health Score
- Watershed Health Score

Stressor Indicators:

- % Agriculture Land
- % Forestry Land
- % Urban Land
- Number of Marinas
- Number of Impaired Nutrient Parameters
- Road Density
- NPDES Permit Count
- WWTP Count

Social Indicators:

- % Hawaiian Homelands
- % Protected Lands
- Marine Protected Area Presence

Additional considerations such as data availability, site access, stakeholder interest, and professional judgment will also influence final priority rankings.

TMDLs can provide valuable technical data and pollutant load estimates to support the development of WBPs, and WBPs can serve as a vehicle for implementing the nonpoint source components of TMDLs. However, it is not always a priority to develop a TMDL if a WBP is already in place and functioning effectively.

Watershed prioritization considers both the type of pollution and the presence of existing plans. Where an approved WBP already exists, the watershed is generally ranked lower for TMDL development to avoid redundancy. By applying the right tool in the right place, the Program aligns restoration strategies with watershed-specific challenges, supports more efficient implementation, and advances water quality improvements across diverse landscapes.

7.2 Prioritizing Waters and Watersheds for Restoration

The current prioritization framework builds upon the results of the last watershed prioritization process in 2009, which identified 77 priority watersheds across the state of Hawaiʻi and results from the RPS tool.

The results were compared and further prioritized based on their ability to meet multiple key criteria, which helps ensure that limited Section 319 funding is directed where it can have the greatest impact. The four main criteria are: 1) the watershed contains at least one waterbody listed under CWA Section 303(d) as impaired; 2) the watershed has a DOH-approved WBP or acceptable alternative plan; 3) the watershed or waterbody is the focus of an active partnership or organization dedicated to improving or protecting water quality and natural resources in the watershed; and 4) water quality monitoring is being conducted within the watershed. Watersheds that meet more of these criteria are ranked higher as they are more likely to demonstrate both the need and the capacity for effective restoration.

1. **The watershed has waterbodies that are on the CWA Section 303(d) impaired waters list**

To restore a waterbody, it must first be assessed by DOH CWB and have documented impairments. The Integrated Report identifies waters listed under Section 303(d) and watershed assessment units with impairments. It also identifies specific pollutants causing those impairments. Additional consideration is

given to ongoing TMDL development to align voluntary watershed planning with regulatory targets, where appropriate, to maximize restoration outcomes and improve coordination. This integrated approach helps apply the right tools in the right places, maximizing efficiency and supporting effective water quality improvements.

2. **The watershed has an approved WBP or acceptable alternative to a WBP**

WBPs are a criterion for two reasons: 1) Section 319 Watershed Project Funds can only be used to fund NPS pollution control projects in watersheds with approved WBPs and alternative plans; and 2) WBPs provide guidance for a broad range of watershed restoration activities designed to improve water quality, from BMP implementation to education and outreach. Importantly, WBPs outline water quality goals by estimating pollutant load reductions and providing details on potential projects that can be implemented to achieve those reductions. WBPs also provide information on financial and technical resources available to implement NPS pollution control measures.

3. **The watershed has active partnerships that involve community groups, watershed groups, and/or federal, state, or local agencies**

Watersheds with active partnerships and/or watershed groups are a key criterion because they demonstrate long-term, local commitment to protecting and restoring water quality and natural resources. These groups not only lead local restoration efforts and community engagement but also help ensure that BMPs are maintained for lasting impact. Active partnerships bring together diverse expertise and resources, enabling a more coordinated and effective approach to managing NPS pollution than any single entity could achieve alone. Given limited staffing and funding, prioritizing watersheds with strong partnerships and demonstrated readiness increases the likelihood that WBPs will be implemented successfully, translating planning into measurable improvements and maximizing return on investment.

4. **The watershed has a water quality monitoring program**

A water quality monitoring program or routine water quality monitoring is necessary to determine whether BMPs and other management measures aimed at improving water quality to attain WQS are effective. DOH is charged with monitoring and assessing water quality for the State, but other agencies and institutions such as USGS, UH, and DLNR also monitor water quality, pollutants, and biological indicators of water quality. In addition, local water quality monitoring organizations provide regional water quality data that are not collected by DOH or other agencies.

7.3 Prioritizing Waters and Watersheds for Protection

The goal of protecting waters is to maintain their quality by preventing the negative impacts of NPS pollution. Pursuant to the State's antidegradation policy in HAR Chapter 11-54, protection efforts are primarily focused on pristine, high-quality waters. These are surface waters that either 1) meet the State's WQS or 2) have not been assessed but are located in healthy, functioning watersheds or watershed areas—often in higher elevation native forests. These areas frequently overlap with drinking water source areas and DLNR priority watershed areas. Some coastal waterbodies that meet WQS for all assessed parameters are also considered high quality.

Although DOH does not maintain a formal list of high-quality waters and not all WBPs explicitly identify waters for protection, the 2009 watershed prioritization assessment did include identification of priority watersheds for

protection. This assessment recognized areas with relatively intact ecological conditions and limited existing degradation. In the absence of a formal protection list, watershed protection areas are identified using the 2009 watershed prioritization assessment, DLNR priority watershed areas, and DOH SDWB drinking water protection criteria.

While DOH's primary focus has been on restoring impaired waters, the protection of high-quality waters remains a key priority, particularly in watersheds where proactive conservation efforts are already underway through partnerships. These efforts help prevent degradation and support long-term water quality and ecosystem health.

Accordingly, a fifth prioritization criterion is considered when allocating limited Section 319 funding:

5. **The Watershed is located within a key protection area.**

Protection areas include watersheds that overlap with DLNR priority watershed areas, drinking water source protection zones, or other ecologically intact areas identified for proactive conservation. Table 7-1 summarizes key watershed protection criteria.

Identifying watersheds for protection enables Section 319 funds to be used for protection activities. Protection projects generally involve ungulate fencing, invasive species removal, and planting native species to control erosion, reduce sediment and nutrient runoff, and enhance groundwater recharge. The DOH SWPB will continue to work with DOH CWB Monitoring Section and partners to explore ways to monitor and assess water quality in watershed protection areas as part of Section 319 project effectiveness monitoring.

Table 7-1. Watershed protection criteria by State department

Department	Summary of Watershed Protection Criteria
DOH SWPB	• High quality or unimpaired waters • Identified for protection in a watershed-based plan • Protection activities can be conducted in conjunction with restoration activities in the same watershed
DOH SDWB	• Susceptibility of drinking water sources to contamination based on numerical groundwater flow and transport modeling and GIS analysis
DLNR DOFAW	• Priority I and II watersheds o Intact native forests o High groundwater recharge (source water areas) o Threat of conversion to alien forests • Priority III watersheds o Enhanced groundwater recharge • Natural Area Reserves o Intact native ecosystems

7.4 Priority Waters and Watersheds

Using the criteria described in Sections 7.2 and 7.3, DOH SWPB will prioritize using Section 319 resources for restoration and protection in the following watersheds: 1) South Kohala (Kawaihae and Waikoloa watersheds) on Hawai'i Island, 2) Leeward Maui (Kaua'ula, Kahoma, Wahikuli, Honokōwai, Kahana, Honokahua, Honolua, Pōhākea, Waikapū, Waiakoa, Hāpapa, Wailea, and Mo'oloa watersheds)[1], 3) South Moloka'i (Kawela watershed), 4) Ko'olaupoko (includes watersheds from Kualoa to Makapu'u) on O'ahu, and 5) Hanalei Bay (Hanalei, Wai'oli, Waipā, Waikoko watersheds) on Kaua'i. See also Figure 7-3. While Section 319 resources will be prioritized in these watersheds, resources may also be directed to other eligible watersheds depending on changing environmental conditions or shifts in administrative priorities.

Over the next 5- years, the NPS Program will explore opportunities to establish a Watershed Coordinator, or a similar role, in these priority watersheds, or in watersheds that may be prioritized through collaborative efforts with partners. Watershed Coordinators are instrumental in coordinating and sustaining momentum in local implementation efforts. They also help monitor and assess NPS sources, build and maintain partnerships, facilitate community engagement, and identify funding opportunities.

7.5 Broader Program Approach Beyond Priority Watersheds

While the NPS Program prioritizes Section 319 resources in designated priority watersheds, it also maintains flexibility to support watershed planning and restoration efforts statewide.

7.5.1 Watershed Planning Priorities

The NPS Program supports a range of watershed planning activities aimed at preparing communities and agencies for NPS pollution control and future watershed restoration efforts (Watershed-based planning is also discussed in Section 2.3 of Chapter 2). These activities include developing or updating WBPs, conducting targeted data collection, performing watershed assessments, engaging stakeholders, increasing public awareness, and using modeling tools to identify pollutant sources and evaluate potential BMPs. The NPS Program's flexibility allows it to fund different planning activities tailored to the needs and opportunities within individual watersheds.

Planning efforts are generally directed toward watersheds that lack an approved WBP but show strong potential for future implementation. These watersheds often contain impaired waterbodies and demonstrate readiness through active partnerships, community interest, and alignment with partner agency priorities. A watershed may be prioritized for planning to build organizational capacity, fill data gaps, or lay the groundwork for meeting implementation criteria in the future. This approach enables the NPS Program to invest strategically in long-term restoration success, even where implementation funding cannot yet be directed.

While planning efforts are undertaken statewide, priority watersheds or watershed areas the DOH SWPB will focus on for watershed planning are: 1) Hilo Bay on Hawai'i Island, 2) Central Maui, 3) South Moloka'i, 3) Wai'anae on O'ahu, and 5) West Kaua'i (Kona Moku). See also Figure 7-3.

[1] Maui has a broader priority area due to the presence of an existing Watershed Coordinator project, which provides additional capacity and enables more effective leveraging of resources across multiple watersheds.

The list of priority watersheds for planning will be reviewed and may be updated periodically based on emerging data, changes in impairment status, new partnership opportunities, and local interest or capacity. As watershed conditions and program priorities evolve, additional watersheds may be added or re-prioritized to ensure planning efforts remain responsive and strategically aligned with long-term water quality goals.

In some cases, smaller-scale or targeted planning efforts (e.g., alternative plans) may be pursued where full watershed plans are not feasible, but where localized restoration can still improve water quality and advance watershed health. For example, following the Lahaina wildfires in 2023, DOH initiated the creation of an Alternative WBP for the Kahoma and Kaua‘ula watersheds through an EPA Technical Assistance opportunity. Once approved, the Alternative WBP renders watershed restoration and recovery projects near Lahaina eligible for Section 319 funding. It also serves as a stepping-stone toward a more comprehensive nine-element WBP or similar planning documents in the future. By offering technical assistance and support during a critical time, the NPS Program helped to fill capacity gaps and accelerate efforts to manage NPS pollution in the wake of an environmental emergency.

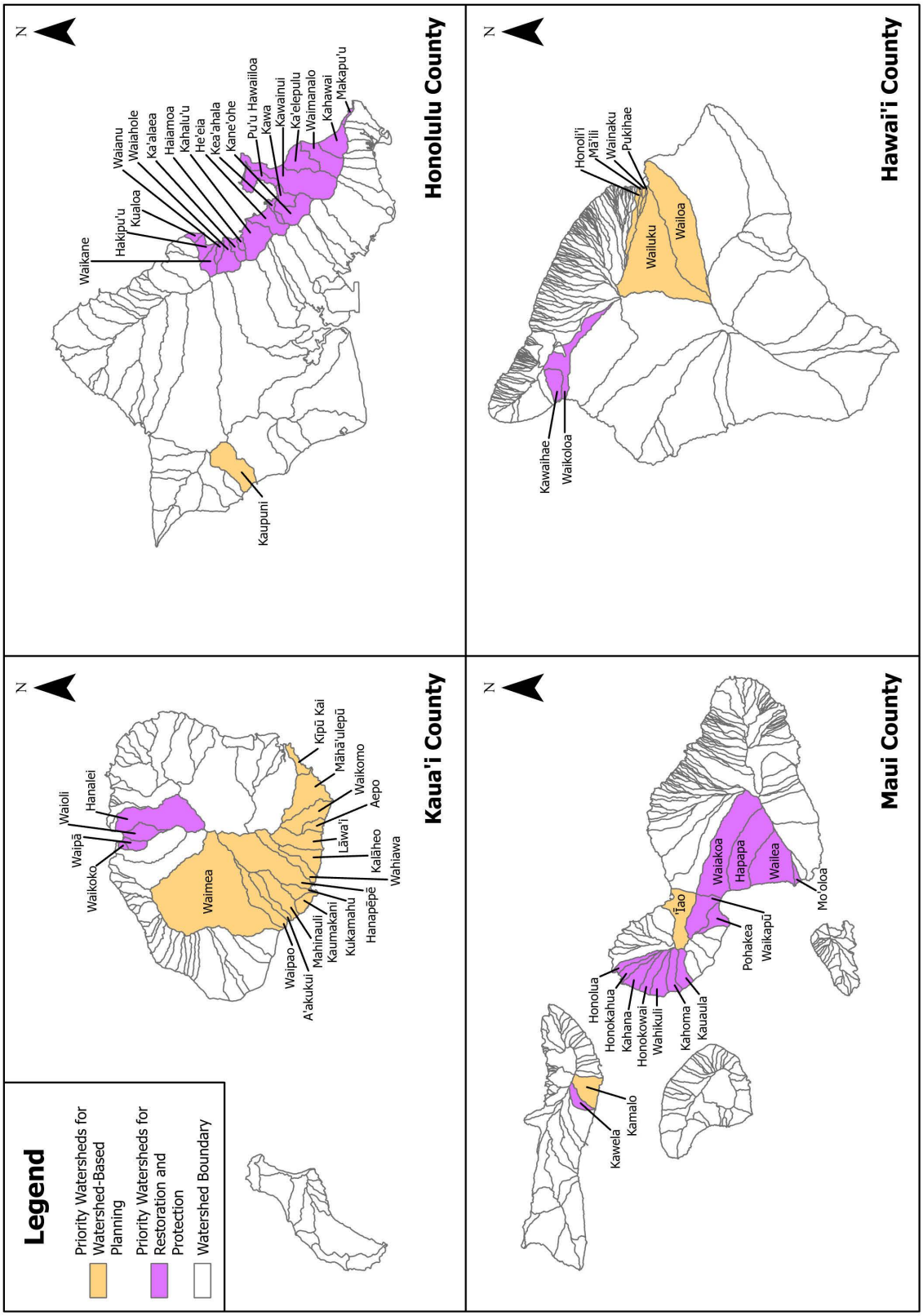
7.5.2 Coordination with Other Watershed Planning Efforts

A variety of watershed planning initiatives are supported by other federal, state, and local funding sources. These may be led by agencies such as the DLNR, the U.S. Forest Service, the USDA NRCS, County water departments, or non-governmental organizations with support from private foundations or grant programs. In many cases, these efforts address overlapping geographic areas, natural resource concerns, or stakeholder networks.

The NPS Program actively seeks to coordinate with these planning efforts to align goals, avoid duplication of work, and leverage shared data, funding, and technical expertise across programs. It also ensures that DOH-approved WBPs are consistent with other relevant planning documents and frameworks, as discussed in Chapter 4, including those focused on forest management, source water protection, coastal resilience, and wildfire mitigation.

Over the next five years, DOH will seek to improve coordination by collaborating with the CZM Program and other key partners on a prioritization tool. The goals of the tool are to strengthen interagency alignment, streamline prioritization and decision-making processes, and more effectively target resources to address nonpoint source pollution. These efforts will also support adaptive management and enhance cross-sector collaboration.

Figure 7-3 Map of CWA Section 319 Priority Watersheds for Hawaiʻi



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Chapter 8: Goals, Objectives and Milestones

8.1 From Vision to Action

The long-term vision of the State's NPS Program is to:

Restore impaired waters and protect high-quality waters from the impacts of surface runoff pollution, ensuring the long-term health and resilience of Hawaiʻi's watersheds for present and future generations.

To accomplish this vision and support program coordination, the DOH SWPB established seven goals that were informed by the priorities of partner agencies (Chapter 4) and are continuously implemented through the CWA Section 319(h) State Grant Annual Workplan. The DOH SWPB leads activities to achieve those goals with support from its major State partners, including the Hawaiʻi CZM Program and DLNR. This chapter outlines each of the seven goals, discussing expected effects on water quality in Hawaiʻi, proposed objectives to achieve those goals, and milestones for measuring progress.

NPSMP Goal 1: Restore and protect water quality by enhancing watershed health and function.

Healthy watersheds function as essential natural infrastructure, providing the baseline conditions necessary to support Hawaiʻi's water resources from mauka to makai. Through processes like filtering pollutants, regulating runoff, and sustaining ecological functions, they create the environmental foundation for clean water.

When the watershed's natural systems are degraded, water quality declines and those systems become more vulnerable to hazards like flooding, erosion, and pollution. Restorative actions are needed to recover the natural filtering and regulating functions of these systems. At the same time, implementing BMPs plays a critical role, not only supporting restoration efforts but also in preventing further degradation during the process. BMPs such as improved land use planning, erosion control, stormwater management, wildfire risk reduction, and proper OSDS maintenance work in tandem with natural processes to reduce or prevent pollution from entering waterways. By integrating the restoration and protection of watershed functions with strategically applied BMPs, the NPS Program builds a resilient, adaptive defense against nonpoint source pollution, helping to sustain cleaner and safer water for both people and ecosystems across Hawaiʻi.

Objective 1.1: Continue on-the-ground implementation of water quality restoration projects and NPS pollution reduction practices.

> *Milestone 1.1.1: At least five (5) water quality restoration projects that implement approved watershed-based plans or acceptable alternative plans.*
>
> *Milestone 1.1.2: All projects incorporate management measures consistent with Hawaiʻi's CNPCP.*
>
> *Milestone 1.1.3: Prioritize implementation of projects that deliver multiple environmental benefits to enhance or maintain watershed health and function.*
>
> *Milestone 1.1.4: Qualified water quality projects funded using the Maʻiliʻili Supplemental Environmental Project (SEP) account.*

Objective 1.2: Protect source waters and other sensitive natural resources that are critical to hydrological and ecological function of the

watershed (i.e., wetlands, coral reefs, native forests) and vulnerable to degradation.

Milestone 1.2.1: Minimum of one (1) source water protection project.

Milestone 1.2.2: Collaborate with relevant programs and government agencies to develop and align strategies for protecting state waters, especially those that fall outside the jurisdiction of Waters of the United States (WOTUS).

Objective 1.3: Ensure 319 grant funded projects are implemented efficiently and effectively.

Milestone 1.3.1: Oversee progress of all new and existing 319 grant funded projects.

Milestone 1.3.2: Water quality conditions are measurably improved in at least one priority watershed with at least one NPS Success Story by 2030.

NPSMP Goal 2: Build capacity for local communities, industries, and government agencies to voluntarily implement NPS pollution reduction practices.

Addressing the complexity and diffuse nature of NPS pollution requires long-term collaboration, shared understanding, and sustained commitment from communities, industries, and government agencies. Equipping stakeholders with the knowledge, tools, and resources needed to act fosters collective responsibility and increases the effectiveness of pollution reduction and prevention efforts. This capacity is essential not only for implementing BMPs, but also for navigating the regulatory, financial, and logistical challenges of managing watershed-scale issues. Just as importantly, it helps build the relationships and trust needed to support voluntary action and long-term program success.

Objective 2.1: Enhance the availability of and access to information about NPS pollution reduction practices to increase public awareness.

Milestone 2.1.1: Develop and distribute educational materials with information about NPS pollution and pollution reduction strategies.

Milestone 2.1.2: Update the NPS program website as an online resource.

Milestone 2.1.3: Identify NPS pollution management gaps and develop guidance and recommendations for NPS pollution control.

Objective 2.2: Foster community and stakeholder engagement through education, outreach, and partnerships.

Milestone 2.2.1: Engage local communities through an annual outreach and education event.

Milestone 2.2.2: Collaborate with at least one (1) non-governmental organization to provide a knowledge transfer, workshop, or incentive-based opportunity that encourages adoption of pollution reduction strategies.

Milestone 2.2.3: Conduct targeted outreach to communities and stakeholders to build trust and increase participation in NPS pollution reduction efforts.

Objective 2.3: Expand common knowledge and understanding of effective NPS pollution reduction practices and their feasibility for implementation in Hawai‘i.

Milestone 2.3.1: Minimum of one (1) pilot project to test feasibility, effectiveness, and potential outcomes of a NPS reduction strategy before larger-scale implementation.

Milestone 2.3.2: Widely share information about current and completed NPS projects and lessons learned through press releases, webinars, meetings, newsletters, story maps, and/or success stories.

NPSMP Goal 3: Strengthen multi-stakeholder collaboration for integrated watershed management mauka to makai.

Measurable improvements to water quality and overall watershed health depend on coordinated efforts across land uses, jurisdictions, and sectors—from upland forest conservation to coastal water quality protection. By collaborating through the watershed planning process, local communities, government agencies, researchers, landowners, and industry partners can come together to set shared goals, align resources, and implement strategies that reflect the full range of resource management responsibilities.

Objective 3.1: Encourage collaboration and partnerships amongst local government, community groups, researchers, and industries to develop and implement integrated WBPs that address water quality mauka to makai.

Milestone 3.1.1: WBP approvals in priority watersheds for planning.

Milestone 3.1.2: Identify and prioritize updates needed for existing plans and opportunities to streamline WBP development.

Milestone 3.1.3: Create updated guidance documents, tools, or training opportunities that support watershed planning.

Objective 3.2: Support collaborative relationships with resource agencies and watershed organizations to enhance coordination in watershed management.

Milestone 3.2.1: Promote alignment of watershed priorities by coordinating with lead agencies and partners, providing relevant data or planning inputs, and helping to identify collaborative watershed project opportunities.

Objective 3.3: Leverage 319 grant funding to implement watershed-scale projects consistent with DOH-approved WBPs or acceptable alternative plans.

Milestone 3.3.1: Identify and secure at least one (1) sustainable funding source that could be used to support watershed-scale project implementation or as non-federal matching funds.

Milestone 3.3.2: Identify joint funding opportunities within DOH and develop a programmatic funding strategy.

NPSMP Goal 4: Enhance water quality monitoring for improved NPS pollution control and management.

Developing a comprehensive watershed monitoring program is essential to restore impaired waters and protect high-quality waters from NPS pollution. By collaborating with partner agencies, piloting scientific monitoring approaches, clarifying protocols, and promoting stakeholder awareness DOH SWPB can begin to generate the data needed to better understand pollutant sources, assess loads, and evaluate the effectiveness of management practices.

These early efforts are intended to lay the groundwork for a coordinated monitoring program that supports informed decision-making, adaptive management, and strategic investments in water quality improvement.

Objective 4.1: Increase capacity to conduct water quality monitoring that will improve understanding of nonpoint sources of pollution,

pollutant loads, and the effectiveness of water pollution control projects.

Milestone 4.1.1: Collaborate with DOH CWB to develop and implement a statewide watershed monitoring program that identifies pollution sources and distinguishes point from nonpoint sources.

Milestone 4.1.2: Identify and pilot the use of equipment or technology that supplements staff resources and expands monitoring activities for inland water bodies.

Milestone 4.1.3: Develop program-specific criteria and protocol for the review and approval of Quality Assurance Program Plans (QAPP) and Sampling and Analysis Plans (SAP).

Milestone 4.1.4: Encourage the inclusion of a water quality monitoring component in 319 grant funded projects when appropriate.

Objective 4.2: Improve analysis and reporting to assess waterbody improvements and evaluate success of implemented NPS pollution control practices.

Milestone 4.2.1: Collaborate with DLNR to integrate biological and habitat data into the NPS Program annual report.

Milestone 4.2.2: Conduct inland water quality monitoring in watersheds in the NWQI Implementation Phase.

Milestone 4.2.3: Identify data gaps in priority watersheds and collect data.

NPSMP Goal 5: Develop a state-level regulatory program for NPS pollution control.

While voluntary measures and partnerships lay a strong foundation for NPS pollution control in Hawai‘i, a regulatory program will provide the consistency, accountability, and enforceability needed to address persistent sources of pollution. By establishing clear expectations and standards, a state-level program can help prevent further degradation and mitigate impacts before they occur.

This approach reinforces the protection of watershed functions and supports the resilience of ecosystems and communities across the islands by ensuring implementation of management measures consistent with §6217 of the CZARA. A regulatory program will also help align state policies with federal guidelines, improve coordination among agencies, and provide stronger tools for managing land use activities that contribute to NPS pollution.

Objective 5.1: Ensure SWPB is operational.

Milestone 5.1.1: Fill vacant positions within SWPB.

Milestone 5.1.2: Develop a compliance strategy outlining how HAR 11-56 will be implemented.

Milestone 5.1.3: Create a comprehensive database for HAR 11-56 registration.

Milestone 5.1.4: Initiate outreach to promote awareness of the new branch and requirements under HAR 11-56.

Milestone 5.1.5: Provide compliance assistance for HAR 11-56.

Objective 5.2: Amend policies to support NPS pollution control.

Milestone 5.2.1: Draft and amend HAR 11-56 to include requirements for development-related activities, hydromodification, and wetland/riparian areas.

Milestone 5.2.2: Provide input on rule amendments proposed by others that would help to implement the CNPCP management measures.

NPSMP Goal 6: Implement Hawaiʻi's CNPCP.

Implementing Hawaiʻi's CNPCP directly supports the State's NPS Program mission by addressing key land-based sources of pollution that affect coastal and inland water quality. The CNPCP promotes the use of enforceable policies and management measures to reduce polluted runoff from activities such as agriculture, forestry, urban development, and OSDS. It also encourages a comprehensive approach to watershed management. By advancing implementation of these measures, the CNPCP helps prevent degradation of coastal water resources, supports healthy watershed functions, and strengthens the resilience of Hawaiʻi's ecosystems.

Objective 6.1: Establish a program for septic system inspection and maintenance.

Milestone 6.1.1: Identify key gaps in the functional equivalent discharge strategy that require action by the NPS Program and document recommendations to address them.

Milestone 6.1.2: Develop and pilot a strategy to collect and manage data on septic system inspections.

Milestone 6.1.3: Identify staffing and funding needed to effectively operate DOH's septic system inspection and maintenance program.

Objective 6.2: Monitor and track program implementation.

Milestone 6.2.1: Conduct annual check-in meetings with responsible authorities.

Milestone 6.2.2: Document CNPCP implementation progress and program successes in the annual report for the NPS Program.

ʻŌhiʻa lehua trees provide crucial services such as water collection and food for native birds, but they are also highly cherished in Hawaiian culture and practices. Source: DOH SWPB

NPSMP Goal 7: Ensure efficient and effective administration of the NPS Program.

Strong program administration enables timely implementation of watershed projects, improved coordination among partners, and strategic use of resources. By improving workflows, optimizing staff capacity, and maintaining compliance with federal funding requirements, the NPS Program can deliver impactful outcomes that support the water quality goals of the state.

Objective 7.1: Enhance workflows and optimize resource allocation to maximize program impact.

Milestone 7.1.1: Identify opportunities to align NPS Program activities with

relevant programs to enhance resource efficiency and build staff capacity.

Milestone 7.1.2: Update the Surface Water Protection System viewer to facilitate project and grant management activities.

Milestone 7.1.3: Improve workflows to minimize administrative delays or backlog to the extent practicable.

Milestone 7.1.4: Staff attend trainings and conferences to stay current on the latest information and science related to watershed management and NPS pollution control.

Objective 7.2: Oversee the 319 grant and ensure compliance with federal grant guidelines and funding requirements.

Milestone 7.2.1: Obtain the annual Clean Water Act 319(h) grant.

Milestone 7.2.2: Oversee program finances to ensure efficient, effective, and compliant spending of 319 grant funds.

Milestone 7.2.3: Report on progress in implementing the NPSMP and annual workplans.

Milestone 7.2.4: Update the 5-year NPSMP.

8.2 Implementation Schedule

Implementation of the NPSMP will be guided by annual workplans that translate the plan's goals and objectives into actionable projects and activities. These workplans will outline priorities, allocate resources, and track progress each year, following the anticipated timeline provided in Appendix A.

8.3 Outcomes

As a result of implementing the NPSMP, the State hopes to achieve the following outcomes:

- ✓ Water quality conditions are measurably improved in priority watersheds, resulting in at least one Nonpoint Source Success Story.
- ✓ As a result of restoration and protection activities, no new water waterbody impairments in priority watersheds are added to the 303(d) list.
- ✓ The number of watersheds managed for NPS pollution and natural resource conservation increase, resulting in improved water quality and greater protection of aquatic and terrestrial ecosystems.
- ✓ NPS regulations and the new DOH SWPB more effectively address major sources of NPS pollution.
- ✓ Increased resource leveraging and data sharing via partnerships and statewide initiatives result in more effective NPS management and new approaches to improving water quality.
- ✓ Water quality monitoring of inland and coastal waters is expanded. Additional water quality data provide more guidance for NPS management activities and are utilized to evaluate the effectiveness of the State's NPS Program.
- ✓ The State's CNPCP is fully approved, and management measure implementation results in improved coastal water quality.
- ✓ New and updated WBPs and TMDLs more effectively target sources of NPS pollution and expand the scope of water quality improvements to groundwater and/or source waters.

Chapter 9: Evaluating Hawaiʻi's Nonpoint Source Program

The State conducts an annual review and evaluation of its NPS Program through the Annual Report. This report provides a comprehensive assessment of the State's progress toward achieving established objectives and long-term goals. It documents whether key milestones for each objective have been met and evaluates the extent to which expected outcomes have been realized. Achievement of these milestones is reviewed by the EPA as part of its satisfactory progress determinations under the Section 319(h) grant program.

The primary tools utilized in evaluating the NPS Program include the Integrated Report, GRTS, and the 319 Annual Report. To evaluate the effectiveness of funded projects and progress in implementing watershed-based plans, the NPS Program uses a combination of quantitative and qualitative measures. Water quality is assessed biennially through the Integrated Report. Project outcomes are tracked through project-specific water quality monitoring data, pollutant load reduction estimates reported in GRTS, and implementation milestones outlined in watershed-based plans. These evaluations consider whether projects achieve targeted BMPs, improve priority waterbodies, and contribute to measurable reductions in NPS pollution.

Findings are incorporated into the 319 Annual Report prepared by DOH SWPB each October. This report is submitted to EPA for review and subsequently made publicly available on DOH SWPB's website upon EPA approval. While there is no specific tool for tracking implementation of CNPCP management measures, the 319 Annual Reports will serve as a key evaluation mechanism for the CNPCP once it has been fully approved by NOAA and EPA.

To ensure continuous program improvement, the DOH SWPB employs an adaptive management approach. Based on findings from the annual evaluations, the program reviews and updates relevant components as necessary. Each year, a workplan outlining DOH SWPB's planned activities for the federal fiscal year (October–September) is developed and submitted to EPA for approval. This workplan serves as a vehicle for revising or enhancing strategies, activities, and milestones in the NPSMP to respond to evolving needs and challenges.

Adaptive management is especially vital given recent disruptions, such as the Red Hill aquifer contamination and Maui wildfires, which contribute to cascading delays and ongoing uncertainties in State and federal funding for NPS-related efforts. It also enables the DOH SWPB to address emerging or urgent water quality issues promptly and to adjust RFP timing and requirements based on funding availability and shifting priorities. All modifications to NPS Program strategies, activities, and milestones are documented in the Annual Report.

The NPSMP itself is reviewed and updated on a five-year cycle by the DOH SWPB. Looking ahead, the buildout and operationalization of the NPS Management and Control Section within the DOH SWPB is expected to broaden the scope of the NPSMP's next update. This will likely include expanded stakeholder engagement and an increased emphasis on objectives related to NPS compliance and enforcement.

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Appendix A. Timeline for the 2026-2030 NPSMP Goals, Objectives, and Milestones

			Timeline				
			2026	2027	2028	2029	2030
Goal 1: Restore and protect water quality by enhancing watershed health and function.							
	Objective 1.1: Continue on-the-ground implementation of watershed restoration projects and NPS pollution reduction practices.						
		Milestone 1.1.1: At least five (5) water quality restoration projects that implement approved watershed-based plans or acceptable alternative plans.	X	X	X	X	X
		Milestone 1.1.2: All projects incorporate management measures consistent with Hawai'i's CNPCP.	X	X	X	X	X
		Milestone 1.1.3: Prioritize implementation of projects that deliver multiple environmental benefits to enhance or maintain watershed health and function.	X	X	X	X	X
		Milestone 1.1.4: Qualified water quality projects funded using the Ma'ili'ili Supplemental Environmental Project (SEP) account.		X	X	X	
	Objective 1.2: Protect source waters and other sensitive natural resources that are critical to hydrological and ecological function of the watershed (i.e., wetlands, coral reefs, native forests) and vulnerable to degradation.						
		Milestone 1.2.1: Minimum of one (1) source water protection project.	X				
		Milestone 1.2.2: Collaborate with relevant programs and governmental agencies to develop and align strategies for protecting state waters, especially those that fall outside the jurisdiction of Waters of the United States (WOTUS).	X	X	X	X	X
	Objective 1.3: Ensure 319 grant funded projects are implemented efficiently and effectively.						
		Milestone 1.3.1: Oversee progress of all new and existing 319 grant funded projects.	X	X	X	X	X
		Milestone 1.3.2: Water quality conditions are measurably improved in at least one priority watershed with at least one NPS Success Story by 2030.					X
Goal 2: Build capacity for local communities, industries, and government agencies to voluntarily implement NPS pollution reduction practices.							
	Objective 2.1: Enhance the availability of and access to information about NPS pollution reduction practices to increase public awareness.						
		Milestone 2.1.1: Develop and distribute educational materials with information about NPS pollution and pollution reduction strategies.	X	X	X	X	X
		Milestone 2.1.2: Update the NPS program website as an online resource.	X	X	X	X	X
		Milestone 2.1.3: Identify NPS pollution management gaps and develop guidance and recommendations for NPS pollution control.				X	X
	Objective 2.2: Foster community and stakeholder engagement through education, outreach, and partnerships.						
		Milestone 2.2.1: Engage local communities through an annual outreach and educational event.	X	X	X	X	X
		Milestone 2.2.2: Collaborate with at least one (1) non-governmental organization to provide a knowledge transfer, workshop, or incentive-based opportunity that encourages adoption of pollution reduction strategies.			X		
		Milestone 2.2.3: Conduct targeted outreach to communities and stakeholders to build trust and increase participation in NPS pollution reduction efforts.	X	X	X	X	X
	Objective 2.3: Expand common knowledge and understanding of effective NPS pollution reduction practices and their feasibility for implementation in Hawai'i.						
		Milestone 2.3.1: Minimum of one (1) pilot project to test feasibility, effectiveness, and potential outcomes of a NPS reduction strategy before larger-scale implementation.				X	X
		Milestone 2.3.2: Widely share information about current and completed NPS projects and lessons learned through press releases, webinars, meetings, newsletters, story maps, and/or success stories.	X	X	X	X	X
Goal 3: Strengthen multi-stakeholder collaboration for integrated watershed management mauka to makai.							
	Objective 3.1: Encourage collaboration and partnerships amongst local government, community groups, researchers, and industries to develop and implement integrated WBPs that address water quality mauka to makai.						
		Milestone 3.1.1: WBP approvals in priority watersheds for planning.	X	X	X	X	X
		Milestone 3.1.2: Identify and prioritize updates needed for existing plans and opportunities to streamline WBP development.			X		
		Milestone 3.1.3: Create updated guidance documents, tools, or training opportunities that support watershed planning.				X	X
	Objective 3.2: Support collaborative relationships with resource agencies and watershed organizations to enhance coordination in watershed management.						
		Milestone 3.2.1: Promote alignment of watershed priorities by coordinating with lead agencies and partners, providing relevant data or planning inputs, and helping to identify collaborative watershed project opportunities.	X	X	X	X	X
	Objective 3.3: Leverage 319 grant funding to implement watershed-scale projects consistent with DOH-approved WBPs or acceptable alternative plans.						
		Milestone 3.3.1: Identify and secure at least one (1) sustainable funding source that could be used to support watershed-scale project implementation or as non-federal matching funds.	X	X	X		
		Milestone 3.3.2: Identify joint funding opportunities within DOH and develop a programmatic funding strategy.				X	X
Goal 4: Enhance water quality monitoring for improved nonpoint source pollution control and management.							
	Objective 4.1: Increase capacity to conduct water quality monitoring that will improve understanding of nonpoint sources of pollution, pollutant loads, and the effectiveness of water pollution control projects.						
		Milestone 4.1.1: Collaborate with DOH CWB to develop and implement a statewide watershed monitoring program that identifies pollution sources and distinguishes point from nonpoint sources.	X	X	X	X	X
		Milestone 4.1.2: Identify and pilot the use of equipment or technology that supplements staff resources and expands monitoring activities for inland water bodies.		X			
		Milestone 4.1.3: Develop program-specific criteria and protocol for the review and approval of Quality Assurance Program Plans (QAPP) and Sampling and Analysis Plans (SAP).	X				
		Milestone 4.1.4: Encourage the inclusion of a water quality monitoring component in 319 grant funded projects when appropriate.	X	X	X	X	X
	Objective 4.2: Improve analysis and reporting to assess waterbody improvements and evaluate success of implemented NPS pollution control practices.						
		Milestone 4.2.1: Collaborate with DLNR to integrate biological and habitat data into the NPS Program annual report.	X	X	X	X	X
		Milestone 4.2.2: Conduct inland water quality monitoring in watersheds in the NWQI Implementation Phase.	X	X	X	X	X
		Milestone 4.2.3: Identify data gaps in priority watersheds and collect data.				X	X
Goal 5: Develop a state-level regulatory program for NPS pollution control.							
	Objective 5.1: Ensure SWPB is operational.						
		Milestone 5.1.1: Fill vacant positions within SWPB.	X	X	X	X	X
		Milestone 5.1.2: Develop a compliance strategy outlining how HAR 11-56 will be implemented.		X			
		Milestone 5.1.3: Create a comprehensive database for HAR 11-56 registration.		X	X	X	
		Milestone 5.1.4: Initiate outreach to promote awareness of the new branch and requirements under HAR 11-56.				X	
		Milestone 5.1.5: Provide compliance assistance for HAR 11-56.					X
	Objective 5.2: Amend policies to support NPS pollution control.						
		Milestone 5.2.1: Draft and amend HAR 11-56 to include requirements for development-related activities, hydromodification, and wetland/riparian areas.	X	X	X		
		Milestone 5.2.2: Provide input on rule amendments proposed by others that would help to implement the CNPCP management measures.	X	X	X	X	X

Appendix A. Timeline for the 2026-2030 NPSMP Goals, Objectives, and Milestones

			Timeline				
			2026	2027	2028	2029	2030
Goal 6: Implement Hawai'i's CNPCP.							
	Objective 6.1: Establish a program for septic system inspection and maintenance.						
		Milestone 6.1.1: Identify key gaps in the functional equivalent discharge strategy that require action by the NPS Program and document recommendations to address them.	X	X	X	X	X
		Milestone 6.1.2: Develop and pilot a strategy to collect and manage data on septic system inspections.	X	X	X		
		Milestone 6.1.3: Identify staffing and funding needed to effectively operate DOH's septic system inspection and maintenance program.			X	X	X
	Objective 6.2: Monitor and track program implementation.						
		Milestone 6.2.1: Conduct annual check-in meetings with responsible authorities.	X	X	X	X	X
		Milestone 6.2.2: Document CNPCP implementation progress and program successes in the annual report for the NPS Program.	X	X	X	X	X
Goal 7: Ensure efficient and effective administration of the NPS Program.							
	Objective 7.1: Enhance workflows and optimize resource allocation to maximize program impact.						
		Milestone 7.1.1: Identify opportunities to align NPS Program acitvities with relevant programs to enhance resource efficiency and build staff capacity.	X	X	X	X	X
		Milestone 7.1.2: Update the Surface Water Protection System viewer to facilitate project and grant management activities.			X	X	X
		Milestone 7.1.3: Improve workflows to minimize administrative delays or backlog to the extent practicable.	X	X	X	X	X
		Milestone 7.1.4: Staff attends trainings and conferences to stay current on the latest information and science related to watershed management and NPS pollution control.	X	X	X	X	X
	Objective 7.2: Oversee the 319 grant and ensure compliance with federal grant guidelines and funding requirements.						
		Milestone 7.2.1: Obtain the annual Clean Water Act 319(h) grant.	X	X	X	X	X
		Milestone 7.2.2: Oversee program finances to ensure efficient, effective, and compliant spending of 319 grant funds.	X	X	X	X	X
		Milestone 7.2.3: Report on progress in implementing the NPSMP and annual workplans.	X	X	X	X	X
		Milestone 7.2.4: Update the 5-year NPSMP.				X	X

NOTE: An "X" in the timeline indicates the year(s) in which the DOH SWPB anticipates activities will take place to achieve the milestone.

Appendix B – Current and Planned 319(h) Grant Funded Projects

Project Title (Watershed) Contractor	Project Description & Status	Pollutant Load Reductions	Start-End Dates & Funding
Leeward Maui Ridge to Reef Priority Watershed Coordination for Sustained Momentum and Continuity (West Maui and Southwest Maui) DLNR DAR	DOH is funding half of a DLNR DAR full-time watershed coordinator for West Maui and Southwest Maui watersheds with approved watershed-based plans. The watershed coordinator's duties include: i) support planning via coordination with the West Maui Ridge to Reef (R2R) Initiative team & working group, ii) facilitate pollution reduction projects identified in the associated watershed management plans, iii) initiate, coordinate, & track monitoring activities, iv) share monitoring outcomes with DOH's R2R partners, v)provide leadership & strategic support to Hui O Ka Wai Ola's coastal monitoring efforts, vi) provide status updates via QSRs, vii) coordinate research efforts within the Leeward Maui watershed, & viii) implement a public education & outreach plan.	N/A	1/23/25 – 1/22/27 $155,840.00 (Award) $51,947.00 (Match)
Agricultural Stewardship and Stream Restoration in Kaukonahua (Kiʻikiʻi) Oʻahu Resource Conservation & Development Council (ORC&D)	This project will mitigate sediment and nutrient pollution in the Kaukonahua subunit of the Kiʻikiʻi Watershed by implementing a riparian buffer and other BMPs in collaboration with agricultural riparian landowners, hosting hands-on community outreach events to foster stewardship, and developing six new conservation plans. ORC&D will take a cost-share approach to support landowners' implementation of BMPs.	300 tons of sediment/yr; 600 pounds of nitrogen/yr; 200 pounds of phosphorus/yr	10/20/22 – 10/19/25 $476,794.40 (Award) $199,094.00 (Match)
Mitigating Erosion in the Pelekane Watershed Using Ungulate and Wildfire Management (Kawaihae) Queen Emma Land Company	This project seeks to implement landscape-scale strategies to: 1) restore groundcover by excluding ungulates from an existing 180-acre denuded, erosion hot spot; 2) minimize wildfires within the watershed's dry lowlands through managed grazing to reduce fuel loads, improved fire infrastructure, a network of fuel breaks established during 4.5 miles of road improvements, and increased fire-fighting access and water availability for fire suppression; and 3) maintain 6,500 goat-free acres thru monitoring and fence repairs.	1,648 tons of sediment/yr	7/11/22 – 7/10/27 $257,125.00 (Award) $64,296.64 (Match)

Project Title (Watershed) Contractor	Project Description & Status	Pollutant Load Reductions	Start-End Dates & Funding
Water Quality Monitoring & Watershed Vegetation Cover Measurement to Assess Impacts at Pelekane Bay (Kawaihae) DLNR	This project will address sediment and turbidity impairments in Pelekane Bay by implementing an ungulate removal program in the upper Kawaihae watershed, specifically within the ʻEke Unit. In partnership with The Koahala Center, DLNR will install fencing and remove feral pigs to assess impacts on vegetation ground cover and sediment loads in streams flowing into the bay. The project also includes public outreach and hands-on stewardship activities to engage the community in reducing NPS pollution.	TBD	2/11/22 – 2/10/26 $234,000.00 (Award) $58,500.00 (Match)
Restoration of Kamōhio Watershed Phase I (Kamōhio) Kahoʻolawe Island Resource Commission	This project will reduce sediment loading in Kamōhio Watershed through the implementation of the following BMPs: wattle and irrigation installation, outplanting of 22,500 native drought-tolerant plants, and the addition of soil amendments. These measures will remediate the hardpan soil, reduce turbidity in Kamōhio Bay, and increase native vegetation cover. KIRC will accomplish these goals with the help of volunteers, who receive education about the cultural and natural history of Kahoʻolawe.	22.5 tons of sediment/yr	Start-End Dates TBD $395,816.60 (Award) $420,281.14 (Match)
Reducing Excessive Sedimentation in the Upper Waiakoa Watershed of Maui (Waiakoa) Kula Community Watershed Alliance	This project seeks to restore fire-affected uplands on Maui and mitigate sediment loading in Māʻalaea Bay through invasive plant removal, ungulate fencing installation, and native species outplanting. Ungulate fencing will play a crucial role in fire recovery efforts, enabling the revegetation of native plant communities and consequently increasing the resilience of the landscape.	TBD	TBD Dates $294,840.00 (Award) $660,325.00 (Match)
Protection and Restoration of the Honokowai and Wahikuli Watersheds (Honokowai and Wahikuli) Mauna Kahālāwai Watershed Partnership	This project will conduct ungulate control and native plant revegetation efforts in order to restore watershed functions, reduce sediment pollution and turbidity, and increase native biodiversity in the Honokowai and Wahikuli watersheds of West Maui. MKWP will control ungulates within its fenced region through ground scouting and aerial surveys, followed by trapping and hunting. Revegetation efforts will consist of six volunteer trips and six staff trips resulting in the planting of 750 total native plants, seeded from existing nearby stands of native forest.	N/A	Start-End Dates TBD $209,951.00 (Award) $62,985.30 (Match)

Project Title (Watershed) Contractor	Project Description & Status	Pollutant Load Reductions	Start-End Dates & Funding
Kawela Watershed Ungulate Control to Prevent Erosion (Kawela) The Nature Conservancy	This project aims to reduce sediment loading in Kawela Watershed, which flows into Molokai's south shore, through four ungulate hunting missions over the course of 12 months. Ungulate control will allow the proliferation of native vegetation, in turn decreasing bare soil area and sediment erosion. The Nature Conservancy and its partners will distribute animal carcasses as a food source for the community when possible.	540 tons of sediment/yr	Start-End Dates TBD $119,950.04 (Award) $35,985.01 (Match)
Agricultural Stewardship and Watershed Restoration of Kaiaka Bay (Kaiaka Bay) Oʻahu Resource Conservation & Development (ORCD)	This project seeks to mitigate nutrient and sediment pollution in the Kaiaka Bay watersheds by implementing BMPs such as invasive species removal, outplanting of non-invasvie and native riparian plants to form a vegetative barrier, and streambank protection. In order to promote agricultural BMP implementation, ORCD will engage agricultural stakeholders through the following measures: cost-sharing BMP implementation contracts, training opportunities, community field days, and outreach at community meetings. Ontracts will be offered to sites assessed as most beneficial to the watershed.	300 tons of sediment/yr; 600 pounds of nitrogen /yr; 300 pounds of phosphorus/yr	Start-End Dates TBD $574,296.37 (Award) $192,118.38 (Match)
Pollutant Reduction in Wailupe Watershed for Improved Maunalua Bay Health (Wailupe) Mālama Maunalua	This project seeks to reduce sediment loading into Maunalua Bay through the following initiatives: i) restoration of the fenced upland forest area through invasive species removal and biocontrol (Tectococcus ovatus), ii) installing 200 rain barrels at households in Wailupe Watershed, and iii) educational outreach including rain barrel training sessions and the 3rd annual Smart Yard Workshop. The rain barrel program will enable rainwater reclamation while reducing runoff throughout the lower watershed, and increase homeowners' awareness of NPS pollution.	58,587.88 pounds of sediment/yr	Start-End Dates TBD $149,026.50 (Award) $58,004.20 (Match)