

Outfall Field Screening Plan



**PROTECT
OUR WATER**

MĀLAMA I KA WAI

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION

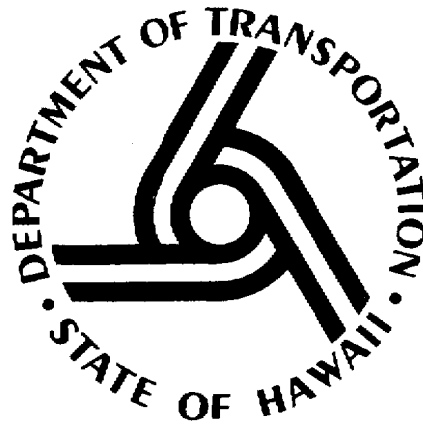
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Hawaii State Department of Transportation
Highways Division, Oahu District
Storm Water Management Program
NPDES Permit No. HI S000001
April 2015

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**State of Hawaii Department of Transportation
Highways Division, Oahu District**



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ACRONYMS AND ABBREVIATIONS

AMS	Asset Management System
BMP	Best Management Practice
CWA	Clean Water Act
DOH	State of Hawaii Department of Health
DOT-HWYS	State of Hawaii Department of Transportation, Highways Division, Oahu District
GIS	Geographic Information System
GPS	Global Positioning System
IC Program	Industrial and Commercial Activities Discharge Management Program
IDDE Program	Illicit Discharge Detection and Elimination Program
MS4	DOT-HWYS' Municipal Separate Storm Sewer System
MS4 Permit	DOT-HWYS' NPDES Permit No. HI S000001
NPDES	National Pollutant Discharge Elimination System
PID	Point Identification Number
SWMP	Storm Water Management Program
SWMPP	Storm Water Management Program Plan
TMK	Tax Map Key
WLA	Waste Load Allocation

EXECUTIVE SUMMARY

As required by Part D.1.c.(2) of the State of Hawaii Department of Transportation, Highways Division, Oahu District's (DOT-HWYS') National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit No. HI S000001 (hereinafter referred to as "MS4 Permit"), DOT-HWYS implements this Outfall Field Screening Plan for observing major and minor outfalls to screen for illicit discharges from its MS4.

MS4 Permit Requirement – Part D.1.c.(2)

“Field Screening – The Permittee shall implement its Outfall Field Screening Plan for observing major and minor outfalls to screen for improper discharges. The plan shall designate priority areas for screening, specify the frequency for screening, and identify the procedures to be followed if a discharge is observed. At a minimum, outfalls in priority areas shall be screened once per permit term.”

This Outfall Field Screening Plan (hereinafter referred to as “Plan”) provides guidance for the Illicit Discharge Detection and Elimination (IDDE) Program, as indicated in Section 3.3 of the 2015 Oahu Storm Water Management Program Plan (SWMPP). The primary function of the IDDE Program is to detect and eliminate illegal connections and illicit discharges to or from its MS4 to protect State Water quality. The IDDE Program is administered in conjunction with the Industrial and Commercial Activities Discharge Management Program (IC Program), with which it shares a common purpose, policies, and personnel.

DOT-HWYS inspects outfalls for improper discharges in accordance with the priority areas, frequencies, and inspection procedures specified in this Plan. Dedicated outfall inspectors are annually trained to evaluate the quality of storm water from outfalls and conveyance systems during dry weather in order to identify and eliminate illicit discharges and illicit connections to the MS4 and receiving surface waters.

The following is a brief summary of each section included in this Outfall Field Screening Plan:

- Section 1 provides a brief description of the outfall inventory and the Geographic Information System (GIS) database.
- Section 2 designates the priority areas and inspection frequency for outfall field screening.
- Section 3 describes the outfall field screening process and identifies the procedures to be followed if an illegal connection or illicit discharge is observed.

1. OUTFALL INVENTORY AND GIS DATABASE

The outfall inventory is maintained as part of DOT-HWYS' Asset Management System (AMS). DOT-HWYS implements the comprehensive GIS-based AMS as the primary mechanism to inventory and monitor Storm Water Management Program (SWMP) activities, which includes outfall field screening.

The AMS supports the IDDE Program by providing the comprehensive MS4 map, electronic inspection and cleaning forms, and a database to monitor all MS4 assets, including outfalls. Inspection priorities are assigned to individual outfalls to capture each structure's inspection frequency requirement as described in section 2 of this Plan. A unique point identification (PID) number is assigned to each outfall to allow for real time inspection and inventory tracking within the AMS.

There are approximately 1,400 outfalls in the DOT-HWYS' outfall inventory. The outfall inspectors are provided with the outfall inventory and inspection frequency requirements for use in the field via a hardcopy or digital map, as well as the AMS outfall database accessible through the web-based application. The hardcopy and digital maps are created using GIS software and the outfall inventory data maintained in the AMS database. The outfall inspectors use this information to guide their tasks including inspections and cleaning of the MS4. Inspectors have the ability to enter their inspections into the AMS daily. As outfall inspections are completed and entered into the AMS, the outfall inspectors can use the AMS to track their progress, and the SWMP managers can monitor inspection compliance. As a result, DOT-HWYS is able to ensure that all outfalls are inspected at the required frequencies based on the outfall's priority, as described in the next section.

2. PRIORITY AREAS FOR OUTFALL FIELD SCREENING

Outfall screening is conducted for the purpose of reducing the potential of polluted runoff discharging from the MS4, in order to protect the quality of the receiving water body. The priority areas for outfall field screening are selected based on the relative risk that a discharge might be contaminated with pollutants and the potential that the outfall could discharge to State Waters with existing water quality impairments (i.e., streams containing Waste Load Allocation (WLA) reductions for DOT-HWYS and streams listed in the Clean Water Act (CWA) Section 303(d) impaired water bodies).

Table 1 shows the three categories of watersheds used to determine outfall field screening priority areas below.

Category 1. Waste Load Allocations (WLAs) – Watersheds that contain WLA reductions for DOT-HWYS.

Category 2. Consent Decree or CWA Section 303(d) impaired water bodies – Watersheds identified as “high priority” in Appendix A of the Consent Decree (Civil Action No. CV05-00636), and any additional watersheds that contain a stream listed as a 303(d) impaired water body in the State of Hawaii Department of Health's (DOH) 2012 State of Hawaii Water Quality Monitoring and Assessment Report that is required by the CWA.

Category 3. Other – Watersheds that do not fit the WLA for DOT-HWYS, or “high priority” Consent Decree or CWA Section 303(d) impaired water bodies categories, but do contain industrial and commercial facilities and activities adjacent to State highways.

Table 1. Outfall Field Screening Priority Areas

Watershed	Category	Priority
Ala Wai	1	High
Kaneohe	1	High
Waimanalo	1	High
Kawa	1	High
Kapaa	1	High
Waikele	2	High
Nuuanu	2	High
Waimalu	2	High
Kapalama	2	High
Kaukonahua	2	High
Kalihi	2	High
Kaupuni	2	High
Moanalua	2	High
Kapakahi	2	High
Waiawa	2	High
Halawa	2	High
Kalauao	2	High
Kawainui	2	High
Kahawai	2	High
Wailele	2	High
Kaelepulu	2	High
Aiea	2	High
Kaipapau	2	High
Honouliuli	2	High
Manoa-Palolo	2	High
Makiki	2	High
Poamoho	2	High
Ahuimanu	2	High
Kahaluu segment	2	High
Kawela	2	High
Kiikii	2	High
Kaalaea	2	High
Waikane	2	High
Kahawainui	2	High

Table 1. Outfall Field Screening Priority Areas (*continued*)

Watershed	Category	Priority
Helemano	2	High
Kahaluu	2	High
Punaluu	2	High
Waianu	2	High
Kaaawa	2	High
Kaloi	3	Non
Mailiili	3	Non
Keehi	3	Non
Waialaenui	3	Non
Ulehawa	3	Non
Kalunawaikaala	3	Non
Manuwai	3	Non
Oio	3	Non
Kamiloiki	3	Non
Paumalu	3	Non
Makaiwa	3	Non
Koko Crater	3	Non
Makaua	3	Non
Haiamoa	3	Non
Kamilonui	3	Non
Kamaileunu	3	Non
Malaekahana	3	Non
Waimea	3	Non
Waipuhi	3	Non
Hakipuu	3	Non
Halehaa	3	Non
Kuliouou	3	Non
Niu	3	Non
Maakua	3	Non
Pahole	3	Non
Waipio	3	Non
Makaha	3	Non

Category 1 (WLA) and Category 2 (Consent Decree or CWA Section 303(d) impaired water body) watersheds are considered the high priority areas for outfall screening. There are approximately 700 outfalls located within high priority watersheds. Category 3 (Other) watersheds are considered non-priority areas for outfall screening. There are approximately 700 outfalls located within non-priority watersheds.

A watershed's priority determines the frequency at which DOT-HWYS screens outfalls for illegal connections and illicit discharges. At a minimum, outfalls located within the high priority watershed areas will be inspected at least twice per permit term. At a minimum, outfalls located within the non-priority watershed areas will be inspected at least once every per permit term. Figure 1 shows a map of the priority areas for outfall field screening.

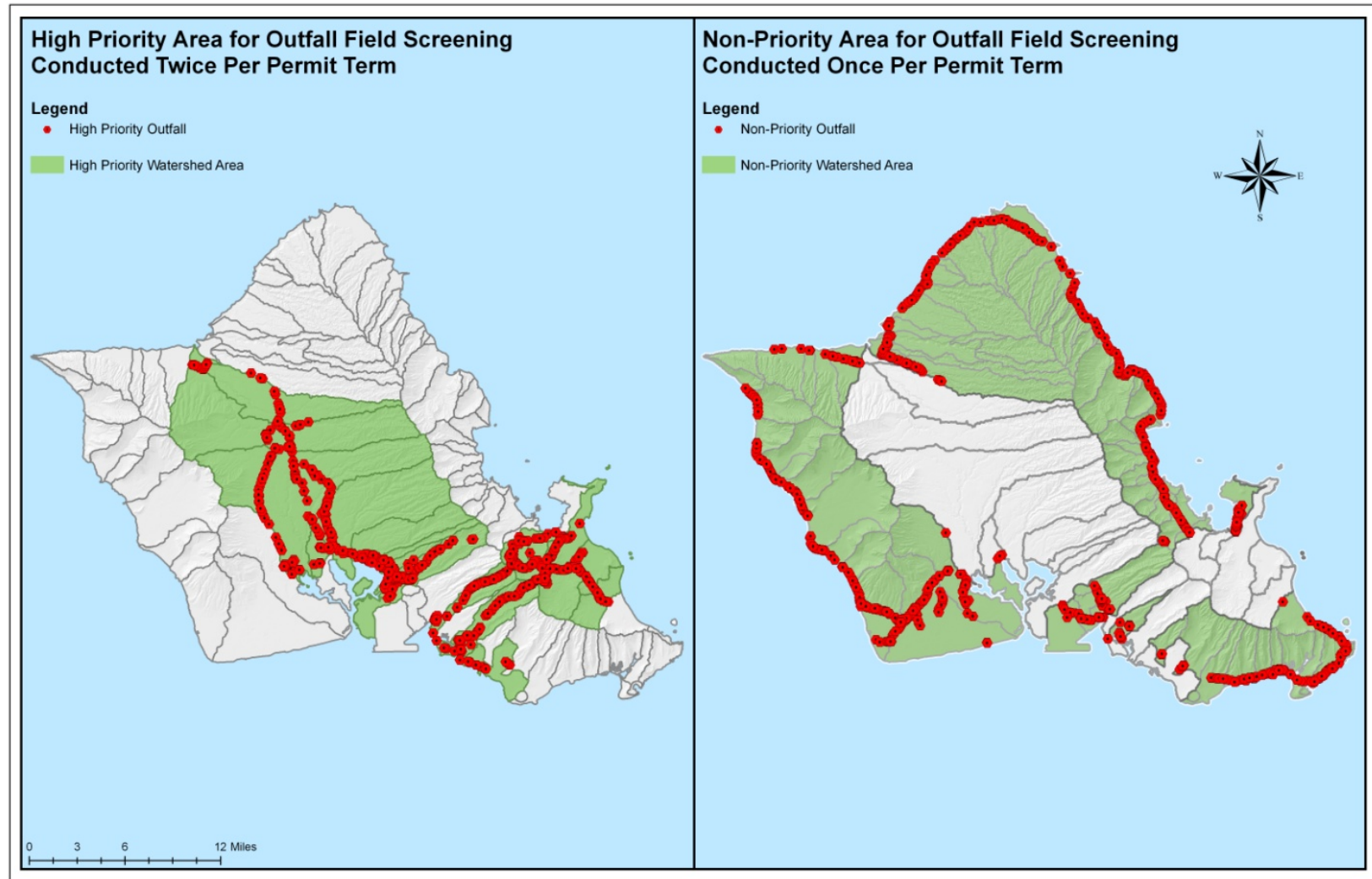


Figure 1. Priority Areas for Outfall Field Screening

The outfall field screening schedules and priority areas will be modified, as necessary, to account for inspection findings and updates to water quality impairments. In addition to conducting scheduled outfall screenings, inspectors may investigate potential illegal connections and illicit discharges at outfalls in response to public complaints (SWMPP Section 3.4).

When an outfall is deemed inaccessible due to extreme slopes or dangerous terrain, the screening for illegal connections and improper discharges is conducted at the upstream drainage structures. When an outfall is deemed inaccessible due to its location on private property, the outfall inspector will request access from the property owner. If access to the outfall location is not granted by the property owner, the inspector will screen for illegal connections and improper discharges at the upstream drainage structures.

Additional outfall inspections may be conducted to support other SWMP goals, including outfall structural condition assessments as part of the Erosion Control Best Management Practices (BMPs) Program, or outfall debris accumulation assessments and removal as part of the Debris Control BMPs Program.

3. OUTFALL FIELD SCREENING PROCEDURES

The Outfall Field Screening Team inspects outfalls for illegal connections and illicit discharges in accordance with the frequencies and priority areas described in section 2 of this Plan. Inspectors use a digital inspection form on the AMS to input observations about inspected outfalls, such as the pollution condition, and whether or not an illegal connection or dry weather flow was present. Figure 2 shows a screenshot of the outfall inspection form and the data entry requirements that are captured during the outfall field screening process.

Outfall Field Screening Plan

List	Inspection	Related Work	Map
Inspection:	<input type="text"/>	<input type="text"/>	Work Type: <input type="text"/>
Watershed:	<input type="text"/>	<input type="text"/>	Priority: <input type="text"/>
Asset:	<input type="text"/>	<input type="text"/>	Inspection Date: <input type="text"/>
Track #:	<input type="text"/>		Cycle: <input type="text"/>
Structure Type:	<input type="text"/>		Cycle Year: <input type="text"/>
Parent Inspect.:	<input type="text"/>		Route ID: <input type="text"/>
			Attachments
			Status: <input type="text"/>
			Status Change Date: <input type="text"/>
			Changed By: <input type="text"/>
			Has Placard? <input type="checkbox"/>
			Placard ID: <input type="text"/>
Inspection Data			
Contractor:	<input type="text"/>	Structure Condition: <input type="text"/>	Comments: <input type="text"/>
Inspector:	<input type="text"/>	Debris Accumulation: <input type="text"/>	Comments: <input type="text"/>
Inspector2:	<input type="text"/>	Flow Condition: <input type="text"/>	Comments: <input type="text"/>
Inspection Status:	<input type="text"/>	Illicit Connection?: <input type="text"/>	Comments: <input type="text"/>
Weather:	<input type="text"/>	Pollution Condition: <input type="text"/>	Comments: <input type="text"/>
Illicit Discharge?:	<input type="text"/>		Odor Comments: <input type="text"/>
Cleaning Required?:	<input type="text"/>		Color Comments: <input type="text"/>
			Notes: <input type="text"/>

Figure 2. Outfall Screening Inspection Form

During an inspection, the Outfall Field Screening Team surveys the outfall area for signs of any discharge that is not composed entirely of storm water, with a few exceptions. The allowable non-storm water discharges are as follows:

- a. Water line flushing;
- b. Landscape Irrigation;
- c. Diverted stream flows;
- d. Rising ground waters;
- e. Uncontaminated ground water infiltration;
- f. Uncontaminated pumped ground water;
- g. Discharges from potable water sources and foundation drains;
- h. Air-conditioning condensate;
- i. Irrigation water;
- j. Springs;
- k. Water from crawl space pumps and footing drains;
- l. Lawn watering runoff;
- m. Water from individual residential car washing;
- n. Water from charity car washes;
- o. Flows from riparian habitats and wetlands;
- p. Dechlorinated swimming pool discharges;
- q. Exterior building wash water (water only);
- r. Residual street wash water (water only), including wash water from sidewalks, plazas, and driveways, but excluding parking lots; and
- s. Discharges or flows from firefighting activities.

These allowable non-storm water discharges listed above must not contain pollutants in amounts that will cause or contribute to a violation of an applicable water quality standard. All discharges other than storm water and the allowable exceptions are not permitted.

The signs for non-allowable discharges may include pollutants, the presence of flowing water under dry weather conditions, or illegal connections to the MS4. Other evidence of contamination can include the following:

- a. Materials that will settle to form objectionable sludge or bottom deposits;
- b. Floating debris, oil, grease, scum, or other floating materials;
- c. Substances in amounts sufficient to produce taste in the water or detectable off-flavor in the flesh of fish, or in amounts sufficient to produce objectionable color, turbidity or other conditions in receiving waters;
- d. High or low temperatures; biocides; pathogenic organisms; toxic, radioactive, corrosive, or other deleterious substances at levels or in combinations sufficient to be toxic or harmful to human, animal, plant, or aquatic life, or in amounts sufficient to interfere with any beneficial use of the water;

- e. Substances or conditions or combinations thereof in concentrations which produce undesirable aquatic life;
- f. Soil particles resulting from erosion on land involved in earthwork, such as the construction of public works, highways, subdivisions, recreational, commercial, or industrial developments; or the cultivation and management of agricultural lands.

Outfall inspectors are trained annually to identify physical indicators of storm water contamination during their routine inspections. Flows and outfalls should be observed during dry periods in order to determine the presence of any stains, sludge, odors, and other abnormal conditions.

The specific physical indicators of potential storm water contamination that outfall inspectors screen for when conduction inspections may include odor, color, turbidity, floatable matter, deposits and stains, vegetation, and structural damage.

The IDDE Program's response plan for investigating observed, suspected, or reported illegal connections and illicit discharges associated with outfall field screening activities is described below. An investigation will be initiated within 24 hours of receiving a complaint or on the next business day.

When the outfall field screening team identifies evidence of an improper discharge at an outfall, they implement the following procedures:

1. Investigate upstream MS4 structures and adjacent properties to locate the source of the discharge. If the source of an improper discharge is identified, the outfall inspector will issue a verbal order to cease the activity causing the discharge.
2. Photograph findings.
3. Fill out the outfall inspection form located in the AMS.
4. Notify the IDDE Program's Inspection Team of the discharge and findings within 24 hours of the initial screening. (Note: The IDDE Inspection Team is responsible for conducting a follow-up investigation and ensuring the improper discharge is addressed.)

IDDE Program inspectors implement procedures for conducting investigations of potential illegal connections and illicit discharges in accordance with Section 3.4 of the SWMPP.

If the illegal connection and/or the source of the discharge are identified, inspectors initiate DOT-HWYS escalating enforcement procedures policy, which is administered by the IC Program. The Enforcement Policy is described in Section 10.8 of the SWMPP.