

CHAPTER 9

POLLUTION PREVENTION/GOOD HOUSEKEEPING MAINTENANCE ACTIVITIES BMPS PROGRAM

The Maintenance Activities BMPs Program (Maintenance Activities Program) establishes pollution prevention strategies for maintenance activities, including routine maintenance projects, administered by DOT-HWYS. Ensuring the implementation of proper source control measures and spill response procedures can effectively reduce the discharge of pollutants associated with maintenance activities. Appropriate implementation of BMPs is required for all maintenance activities.

The Maintenance Activities Program includes the following control measures:

1. Implement BMPs in accordance with the *Maintenance Activities BMPs Field Manual, 2006 (Maintenance BMPs Field Manual)* (Appendix I.1).
2. Train staff on proper BMP implementation and pollution prevention strategies.
3. Operate a Flood Control Project at the Punahou Pump Station.

The Maintenance Activities Program is administered in accordance with the MS4 Permit and Consent Decree requirements outlined in Table 9-1 and Table 9-2, respectively.

Table 9-1. MS4 Permit Requirements for the Maintenance Activities Program

MS4 Permit Reference	SWMPP Section
<i>Part D.1.f.(4).(i) BMPs and Field Manual for municipal maintenance activities - The Permittee shall implement the BMPs as identified in the field manual titled "Maintenance Activities Best Management Practices Field Manual" (Field Manual) for all municipal maintenance activities. Examples of such activities include, but are not limited to: paving and road repairs, street cleaning, saw cutting, concrete work, curb and gutter replacement, buried utility repairs and installation, vegetation removal, painting and paving, debris and trash removal, spill cleanup, etc. The Field Manual shall be updated as necessary or at least once per permit term and include written procedures to minimize pollutant discharge for maintenance activities which have the potential to discharge pollutants to its MS4.</i>	Section 9.1
<i>Part D.1.f.(4).(ii) Training - The Permittee shall further develop and provide annual training to staff on proper municipal maintenance activities to prevent storm water pollution. The training shall cover the Field Manual, identify potential sources of pollution, general BMPs that can be used to reduce and/or eliminate such sources, and specific BMPs for their activities. The training shall incorporate components of the public education campaign and educate staff that they serve a role in protecting water quality. Staff shall be made aware of the NPDES permit, the overall SWMP, and the applicable BMPs Program(s).</i>	Section 9.2
<i>Part D.1.f.(5) Pump Station - The Permittee shall implement the flood control project activities described in its ongoing SWMP, including monthly inspection and maintenance of the Interstate H-1 Punahou Pump Station.</i>	Section 9.3

Table 9-2. Consent Decree Requirements for the Maintenance Activities Program

Consent Decree Reference	SWMPP Section
<i>Pg 25, Section V.10.i HDOT shall develop and implement a written set of maintenance BMPs for routine and emergency in-house activities. Activity-specific BMPs shall be reorganized as a manual and be created in a format that facilitates its use by field staff. It shall be distributed to all field staff and shall complement the overall goals of the BMPPP.</i>	Section 9.1

9.0 Program Organization

To fulfill the requirements of the MS4 Permit and Consent Decree, the following organizational structure has been established for the Maintenance Activities Program.

Maintenance Activities Program

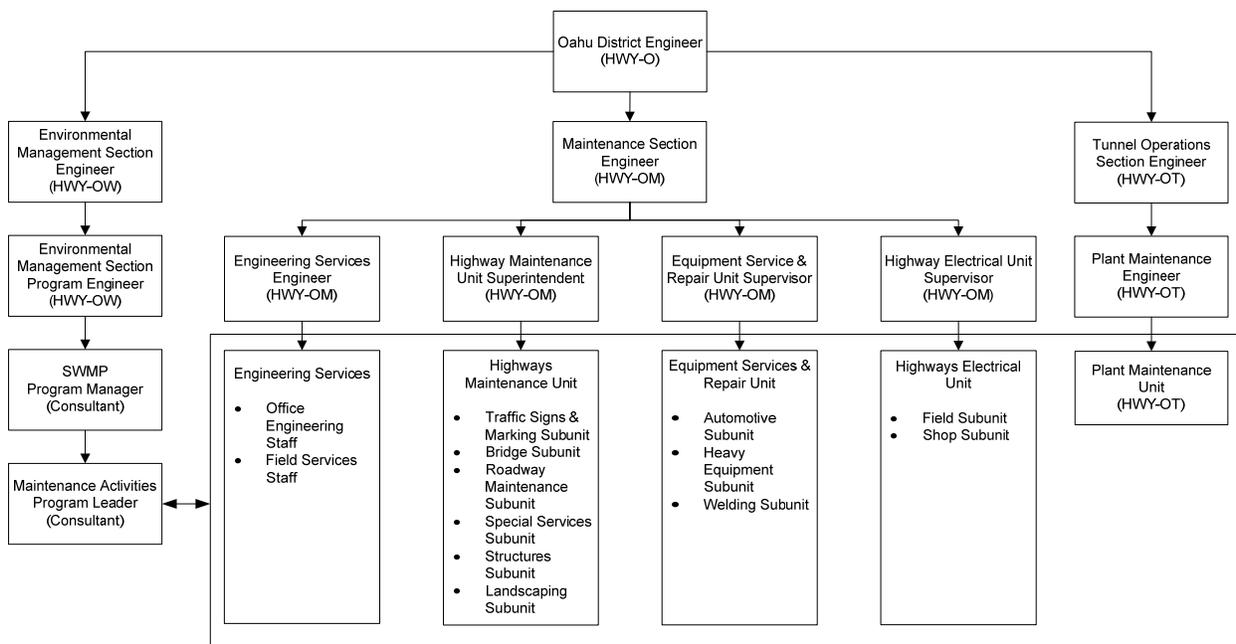


Figure 9-1. Maintenance Activities Program Organizational Chart

9.1 Maintenance Activities BMPs

All maintenance activities, routine maintenance projects, and baseyard operations should be conducted in accordance with the applicable provisions described in the *Maintenance BMPs Field Manual*. The *Maintenance BMPs Field Manual* includes BMPs to minimize pollutant discharge from maintenance activities that have the potential to release contaminants into the MS4. It is used to instruct maintenance personnel on ways in which to protect water quality during maintenance activities. *Maintenance BMPs Field Manuals* are provided to HWY-OM and HWY-OT field staff to keep in their vehicles for quick and easy reference.

The *Maintenance BMPs Field Manual* is available on DOT-HWYS' storm water website, at www.stormwaterhawaii.com, on the "Resources" page. The *Maintenance BMPs Field Manual* will be updated as necessary, or at least once during the MS4 Permit term. It is supplemental to an annual maintenance training course (Section 9.2).

**HIGHWAYS - OAHU DISTRICT MAINTENANCE ACTIVITIES
BEST MANAGEMENT PRACTICES**

vehicle cleaning tips

Prevent or reduce the discharge of pollutants to storm water from vehicle and equipment by using off-site facilities or washing only in designated contained areas.

Environmental Concerns: Oil, Grease, Dirt, Fuel, Phosphates

DO

- Wash Off Site
- Designate Wash Area
- Use Proper Sops

Wash vehicles off site when ever possible

If washing on site, designate an appropriate, bermed wash area

Use phosphorus free, low degreaser soaps

DONT

- Overuse Water
- Clean Near Streams
- Clean Clean

Don't use more water than you need

Don't clean near a stream or storm drain

Don't steam clean on site

landscaping tips

Landscape maintenance activities include vegetation removal, herbicide application, weeding and other gardening and lawn care practices.

DO

- Rinse Well
- Collect
- Use Caution

Triple rinse equipment of herbicide use

Collect and dispose of herbicide use

Use caution when handling chemicals. Wear proper clothing and respirator if necessary

DONT

- Expose Dirt
- Use In Rain
- Store

Avoid tilling the soil and exposing dirt when conducting mechanical or manual work. Control dust to avoid track to road

Do not use herbicide or other chemicals if rain is expected

Don't store excess herbicide. Rep only what you need

drain cleaning tips

Maintain catch basins, storm water inlets, and other storm water structures on a regular basis to remove pollutants, reduce high pollutant concentrations during the first flush or storm, prevent clogging of the downstream system, restore catch basins' sediment trapping capacity, and ensure the system functions properly to avoid flooding.

DO

- Keep Logs
- Report
- Use Caution

Keep logs of the number of catch basins cleaned & amount of debris removed

Report faulty or broken items to your supervisor

Use caution when working, especially if the drain is or near a major roadway

DONT

- Clean Wet
- Dump
- Stockpile

Don't clean in wet weather if possible, wait for the debris to dry

Don't dump your bucket the shoulder

Don't stockpile debris near a stream or storm drain. Dispose of debris properly

street sweeping tips

Sweep and vacuum anywhere sediment is tracked from off-road maintenance activity onto public or private paved roads.

DO

- Adjust
- Dispose
- Report

Adjust brooms to maintain the efficiency of sweeping operations

Dispose of waste from brooms to your supervisor

Report bulky or hazardous items to your supervisor

DONT

- Sweep Hazards
- Dump
- Overload

Don't sweep up any unknown substance that may be potentially hazardous

Don't bring your load to the shoulder

Don't load brooms beyond their capacity

Considerations: If your vehicle with debris or tools, consider incorporating the removed sediment back into the maintenance activity also. Visible sediment should be swept or vacuumed from the maintenance activity site.

painting tips

Painting operations apply to the painting of bridge surfaces, facilities, and highway structures.

Environmental Concerns: Liquid Paint, Flammable Solvents

DO

- Collect
- Use Taps
- Protect

Collect solid and liquid waste in containers for disposal

Use taps or cans under work areas to capture excess paint or paint drips

Protect drain covers under work areas to capture excess paint or paint drips

DONT

- Release
- Store
- Clean

Don't release paint into the storm drain

Don't store paint. Buy only what you need

Don't clean up painting equipment near streams or storm drains

paving tips

These procedures are followed where paving, surfacing, reurfacing or saw cutting may pollute storm water runoff or discharge to storm water drainage system

Environmental Concerns: Asphalt Products, Emulsions, Fuel & Other Fluids, Release Agents

DO

- Protect
- Collect
- Dispose

Protect drainage structures and structures during paving operations

Collect and dispose of excess material for disposal

Dispose of waste containers properly

DONT

- Release
- Leave Wet
- Stockpile

Don't release asphalt or other paving materials into the storm drain

Don't leave wet pavement

Don't stockpile near a stream

stream cleaning tips

When working in or near a stream, hand tools (shovels and buckets) are recommended. When mechanical equipment such as buckets or hoppers are necessary it must be well maintained and checked regularly to avoid contaminating the stream. Rubber mats or pads should be used to maintain disturbance to the channel bed or channel banks. Proper erosion and sediment (E/S) should be installed to prevent polluting the stream or receiving water.

DO

- Use Handtools
- Check
- Dispose

Use handtools when possible

If there are machines on site, check for oil leaks daily

Dispose of debris directly into dump trucks

DONT

- Stockpile
- Maintain
- Submerge

Don't stockpile debris near a stream

Don't maintain equipment near a stream. Take off site to fuel, etc.

Don't submerge a machine in a stream

Emergency and Incident Tips

what to do if there is a spill

Is the Material Spilled a Hazardous Material? Oil, Herbicides, Paint, Fuel, Gasoline, etc? Treat it as a Hazardous Material.

DO

- Stop
- Contain
- Clean

Deploy spill kits, barriers, absorbent pads

DONT

- Hose
- Bury
- Ignore

Don't hose down into storm drains

Have On Hand

- Spill Kit
- Absorbent Mats
- Spill Containers

Report to your supervisor and the Threat Agency

what to do if there is debris on the road

When excessive amounts of debris, including sand, accumulate on roadways, it can be dangerous for vehicles and must be cleaned quickly. But improper disposal of this debris can be hazardous to our roadways and the environment by clogging drains, leading to flooding and other problems.

DO

- Collect
- Dispose
- Return

Collect debris into bags or bins

Dispose of sand and debris properly. See "Sweeping Tips"

If you have a spill, it may be hazardous to the beach

DONT

- Hose
- Dump
- Stockpile

Don't hose down debris into storm drains

Don't dump sand and debris on the side of the road

Don't stockpile sand and debris for hauling

Have On Hand

- Shovel
- Brush
- Traffic Cones

what to do if there is a landslide

Landslides that block roadways are hazardous and must be cleaned quickly. But improper disposal of the debris can be hazardous to our roadways and the environment by clogging drains, leading to flooding and other problems.

DO

- Protect
- Collect
- Dispose

Protect hazardous storm drains using sandbags or other devices

Collect debris into bags or bins

Dispose of debris properly. See "Sweeping Tips"

Don't target top soil cover and impervious areas (roads, sidewalks, etc)

DONT

- Stockpile
- Hose
- Dump

Don't stockpile debris on the side of the road

Don't hose down debris into storm drains

Don't dump debris on the side of the road

Have On Hand

- Shovel
- Brush
- Traffic Cones

what to do if there is tidal sand on the road

In coastal areas when high waves wash sand onto the roadways, it can be dangerous for vehicles and must be cleaned quickly. But improper handling and cleaning of the sand can be hazardous to our roadways and the environment by clogging drains, leading to flooding and other problems.

DO

- Check
- Clean
- Return

Check for debris on the road

Clean debris into bags or bins

Dispose of debris properly. See "Sweeping Tips"

Don't target top soil cover and impervious areas (roads, sidewalks, etc)

DONT

- Dump
- Deposit Debris
- Stockpile

Don't dump debris into storm drains

Don't deposit debris on the side of the road

Don't stockpile sand

Have On Hand

- Shovel
- Brush
- Traffic Cones

Maintenance Activities BMP Poster is provided to all HWY-O Baseyards.

State of Hawaii Department of Transportation, Highways Division, Oahu District SWMPP, April 2015

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DOT-HWYS' service contractors that conduct maintenance activities (e.g., landscape maintenance, street sweeping, etc.) are expected to carry out operations in accordance with the Maintenance Activities Program's standards, training, and required BMPs.

Maintenance activities include, but are not limited to, paving and road repairs, street sweeping, saw cutting, concrete work, curb and gutter replacement, buried utility repairs and installation, removal of vegetation, painting and paving, debris and trash removal, and spill cleanup.

Routine maintenance projects are scheduled or cyclical projects performed to preserve the life of a system; to restore the original function or delay the deterioration of an existing asset without substantially increasing its structural capacity; or to maintain the original line and grade, hydraulic capacity or original purpose of a facility, system or asset, in which land disturbance does not go beyond the original footprint of the previous structure. Examples of routine maintenance projects include, but are not limited to, the replacement or repair of guard rails, sidewalks, street signs, fences, curbs, and signal poles; repaving without disturbing the base course; tunnel washing; rock fall mitigation; and landscaping maintenance.

Chapter 4 (Construction Site Runoff Control Program) describes the requirements and pollution prevention procedures for construction activities conducted by HWY-OM, which are not considered routine maintenance.

Maintenance activities and routine maintenance projects are performed and/or overseen by HWY-OM and HWY-OT, as depicted in Figure 9-2.

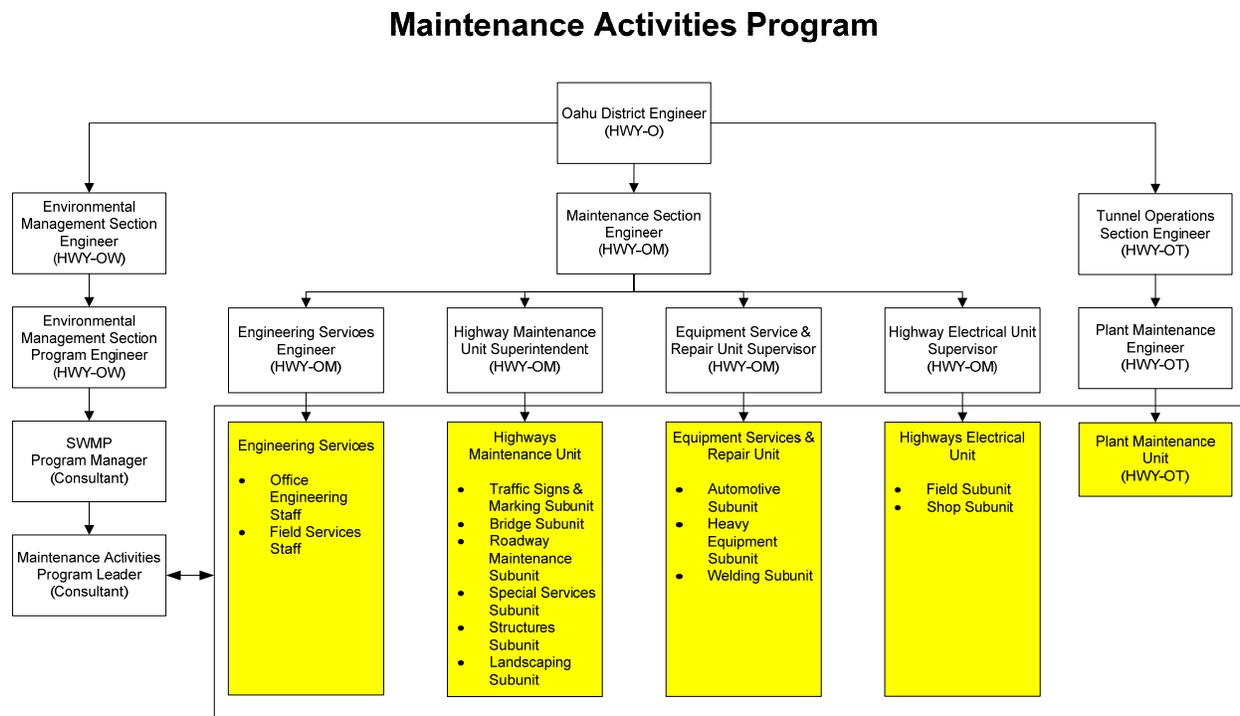


Figure 9-2. Maintenance Activities Program Organizational Chart for Roles and Responsibilities Related to BMP Implementation

9.2 Training

DOT-HWYS provides an annual Maintenance Baseyard Storm Water Training for HWY-OM and HWY-OT personnel who have responsibilities associated with maintenance activities and/or baseyard operations. The training addresses proper BMP implementation for general maintenance activities and for activities specific to each crew's responsibilities.

The Maintenance Baseyard Storm Water Training addresses the following topics:

- Content and application of the *Maintenance BMPs Field Manual*;
- Identification of potential sources of pollutants;
- BMP selection and implementation;
- Trainees' roles in protecting water quality;
- SWMP general awareness;
- Environmental policy and MS4 Permit requirements;
- Environmental Management System (EMS) overview;
- Vehicle washing;
- Fuel handling;
- Vehicle maintenance;
- Material storage;
- Erosion and sediment control;
- Debris control; and
- Chemical applications.

Staff that regularly conduct operations at maintenance baseyards are trained on the implementation of their respective baseyard's Storm Water Pollution Control Plan (SWPCP), as well.

Maintenance Baseyard Storm Water Training is conducted by the Maintenance Activities Program Leader, as depicted in Figure 9-3.

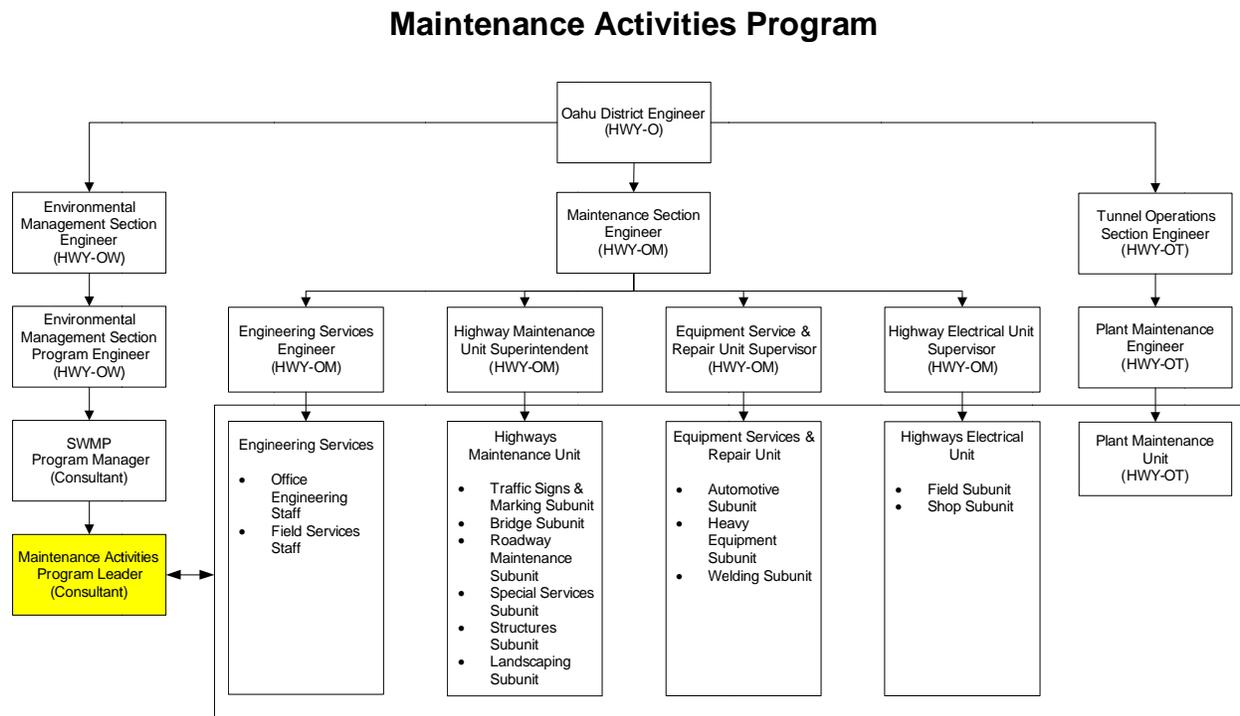


Figure 9-3. Maintenance Activities Program Organizational Chart for the Roles and Responsibilities Related to Training



DOT-HWYS maintains and cleans the Punahou Pump Station Wet Well.

9.3 Flood Control Project

DOT-HWYS operates the Punahou Pump Station, a flood control facility located on the H-1 Freeway, near the Punahou Street overpass (Figure 9-4). The pump station services a low point in the freeway where gravity drainage from a section of the roadway is not possible. The pump station is used to dewater sump areas on the roadway that collect water.

The drainage area of the pump station encompasses approximately a one half-mile section of the H-1 Freeway. Although the H-1 Freeway is swept periodically, the sweeping does not remove all debris from the roadway, and potential pollutants collect within the freeway's storm drainage system and the four inlets discharging to the pump station. Metal grates cover the drain inlets to keep out larger-sized debris. Within the wet well, there is a trash rack to further screen out debris that may be carried through the drain inlets and drain pipes. Water from the pump station is pumped to a nearby storm drain manhole and then to a covered concrete drainage canal through which Makiki Stream flows as it passes beneath the H-1 freeway.

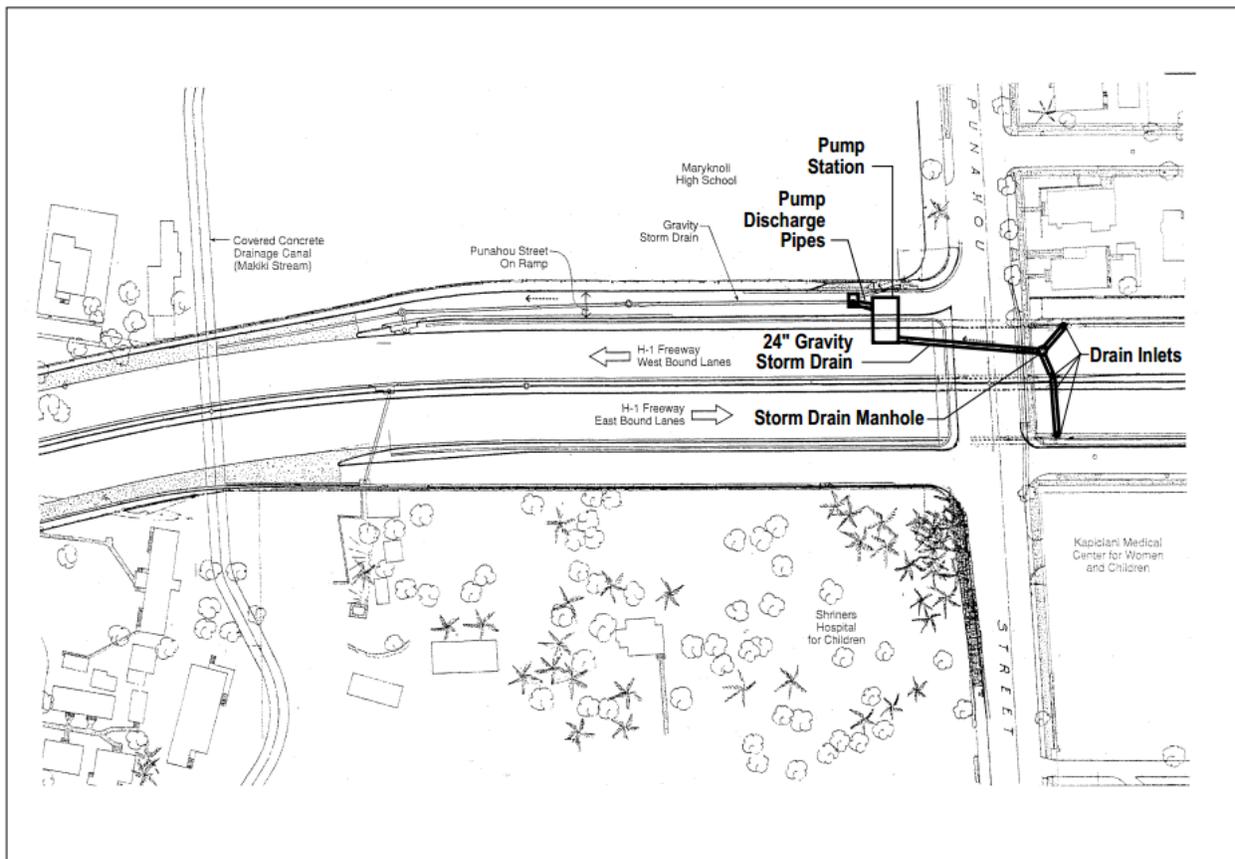


Figure 9-4. Punahou Pump Station

Inspections and pump station maintenance are performed, at least monthly, by HWY-OT's Plant Maintenance Unit. During inspections, the pump is tested to ensure that it is operating correctly.

The procedures for inspecting and maintaining the Punahou Pump Station are provided below:

- Inspections are performed to determine if cleaning or repairs are required;
- Emergency call dialer operation is tested and verified;
- Fuel supply lines and day tank for emergency back-up diesel engine are checked for leaks;
- Current fuel supply level is verified and entered into log;
- Pump station is swept and cleaned;
- Sump pump inlet is cleaned and the pump is tested for proper operation;
- Pumping equipment leaks of oil or petroleum products are contained using drip pans or absorbent material, and equipment is repaired to prevent further leaks;
- During maintenance and repair of the pump station, all waste oil is removed and placed in an approved container for disposal. Waste oil is not stored or left at the pump station; and
- Logs of pump station inspections and cleanings are maintained and included in the Annual Report.

Accumulated debris is removed from the pump station wet well, typically, once a year. All materials removed are properly disposed of. Debris removal and pump station cleaning reduces the amount of pollutants discharged to the MS4.



Accumulated debris is removed from the Punahou Pump Station Wet Well.

HWY-OT is responsible for the operation and maintenance of the Punahou Pump Station, as depicted in Figure 9-5.

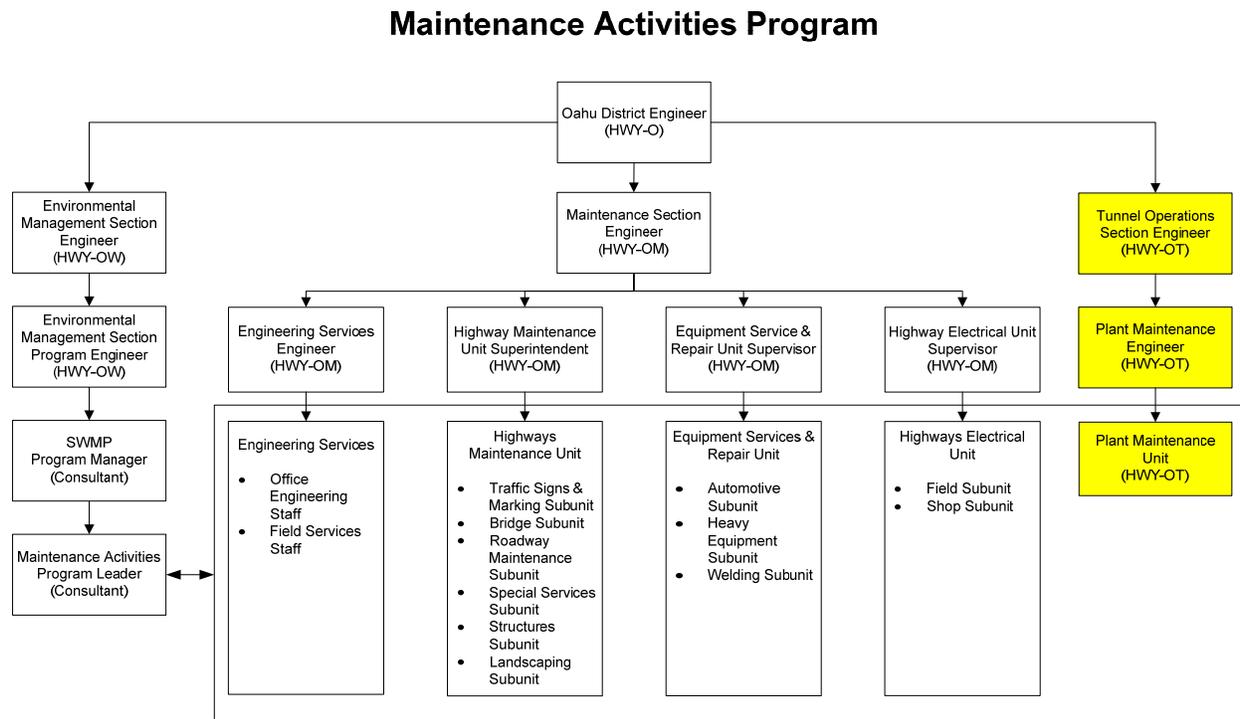


Figure 9-5. Maintenance Activities Program Organizational Chart for the Roles and Responsibilities Related to the Punahou Pump Station

9.4 Monitoring Program Effectiveness

Table 9-3 provides measurable standards/milestones for the BMPs discussed in this chapter and DOT-HWYS' strategy for monitoring the effectiveness of their implementation.

Table 9-3. Standards/Milestones for the Maintenance Activities Program

Section	BMP	Standard/Milestone	Monitoring Effectiveness
9.1	Maintenance Activities BMPs	<ul style="list-style-type: none"> • Provide <i>Maintenance BMPs Field Manuals</i> to HWY-OM and HWY-OT field staff to keep in their vehicles. • Update the <i>Maintenance BMPs Field Manual</i> as necessary, or at least once during the permit term. 	<ul style="list-style-type: none"> • Verify that HWY-OM and HWY-OT field staff have the <i>Maintenance BMPs Field Manual</i> in their vehicles during SWPCP inspections. • Verify that the <i>Maintenance BMPs Field Manual</i> is updated as necessary, or at least once during the permit term.
9.2	Training	<ul style="list-style-type: none"> • HWY-OM and HWY-OT personnel who have responsibilities associated with maintenance activities attend the Maintenance Baseyard Storm Water Training on an annual basis. 	<ul style="list-style-type: none"> • Maintain training records in the HWY-O AS400 database. • Maintain training presentations on HWY-O server.
9.3	Flood Control Project	<ul style="list-style-type: none"> • Perform monthly inspections and maintenance, as necessary, to ensure pump is operating correctly. • Remove accumulated debris from the pump station wet well, as necessary (typically once per year). 	<ul style="list-style-type: none"> • Maintain accurate logs of pump station inspections and cleanings in the HWY-OT database and include in the Annual Report.