

# 12 | Monitoring Program



State of Hawaii, Department of Transportation  
Highways Division, Oahu District  
SWMPP, February 2022



*Inspectors collect grab samples from a water polisher along Kaneohe Bay Drive, Kaneohe, Hawaii.*

The Monitoring Program is designed to assess compliance with the MS4 NPDES Permit, measure the effectiveness of the SWMP, characterize storm water discharges from the MS4, and assess the water quality issues in the watershed resulting from storm water discharges to receiving waters.

The Monitoring Program includes the following control measures:

1. Submit the Annual Monitoring Plan by June 1<sup>st</sup> and implement in the next fiscal year.
2. Submit the Annual Monitoring Report by October 31<sup>st</sup> for monitoring activities in the previous fiscal year.

The Monitoring Program is administered in accordance with the MS4 NPDES Permit requirements referenced in Table 12-1.

**Table 12-1. MS4 NPDES Permit Requirements for the Monitoring Program.**

MS4 NPDES Permit Reference	SWMPP Section
<p><b>Part F.1.a</b> – The Permittee shall submit the Annual Monitoring Plan to the Director by June 1<sup>st</sup> of each year for review and acceptance. The Annual Monitoring Plan shall be implemented over the coming fiscal year.</p> <p>The monitoring program must be designed and implemented to meet the following objectives:</p>	Section 12.1
<p><b>Part F.1.a.(1)</b> – Assess compliance with this permit (including TMDL I&amp;M Plans and demonstrating consistency with WLAs);</p>	Section 12.1
<p><b>Part F.1.a.(2)</b> – Measure the effectiveness of the Permittee's storm water management program;</p>	Section 12.1
<p><b>Part F.1.a.(3)</b> – Assess the overall health of the receiving waters based on the chemical, physical, and biological impacts resulting from storm water discharges and an evaluation of the long-term trends;</p>	Section 12.1
<p><b>Part F.1.a.(4)</b> – Characterize storm water discharges from the MS4;</p>	Section 12.1
<p><b>Part F.1.a.(5)</b> – Identify sources of specific pollutants;</p>	Section 12.1
<p><b>Part F.1.a.(6)</b> – Detect and eliminate illicit discharges and illegal connections to the MS4; and</p>	Section 12.1
<p><b>Part F.1.a.(7)</b> – Assess the water quality issues in watershed resulting from storm water discharges to receiving waters.</p>	Section 12.1
<p><b>Part F.1.b</b> – The Annual Monitoring Plan shall, at a minimum, include the following items:</p>	Section 12.1
<p><b>Part F.1.b.(1)</b> – Written narrative of the proposed monitoring plan's objectives, including but not limited to the objectives identified in Part F.1.a., and description of activities;</p>	Section 12.1
<p><b>Part F.1.b.(2)</b> – For each activity, a description of how the results will be used to determine compliance with this permit.</p>	Section 12.1
<p><b>Part F.1.b.(3)</b> – Identification of management measures proven to be effective and/or ineffective at reducing pollutants and flow.</p>	Section 12.1
<p><b>Part F.1.b.(4)</b> – Written documentation of the following:</p> <ul style="list-style-type: none"> <li>(i) Characteristics (timing, duration, intensity, total rainfall) of the storm event(s);</li> <li>(ii) Parameters for measured pollutant loads; and</li> <li>(iii) Range of discharge volumes to be monitored, as well as the timing, frequency, and duration at which they are identified;</li> </ul>	Section 12.1

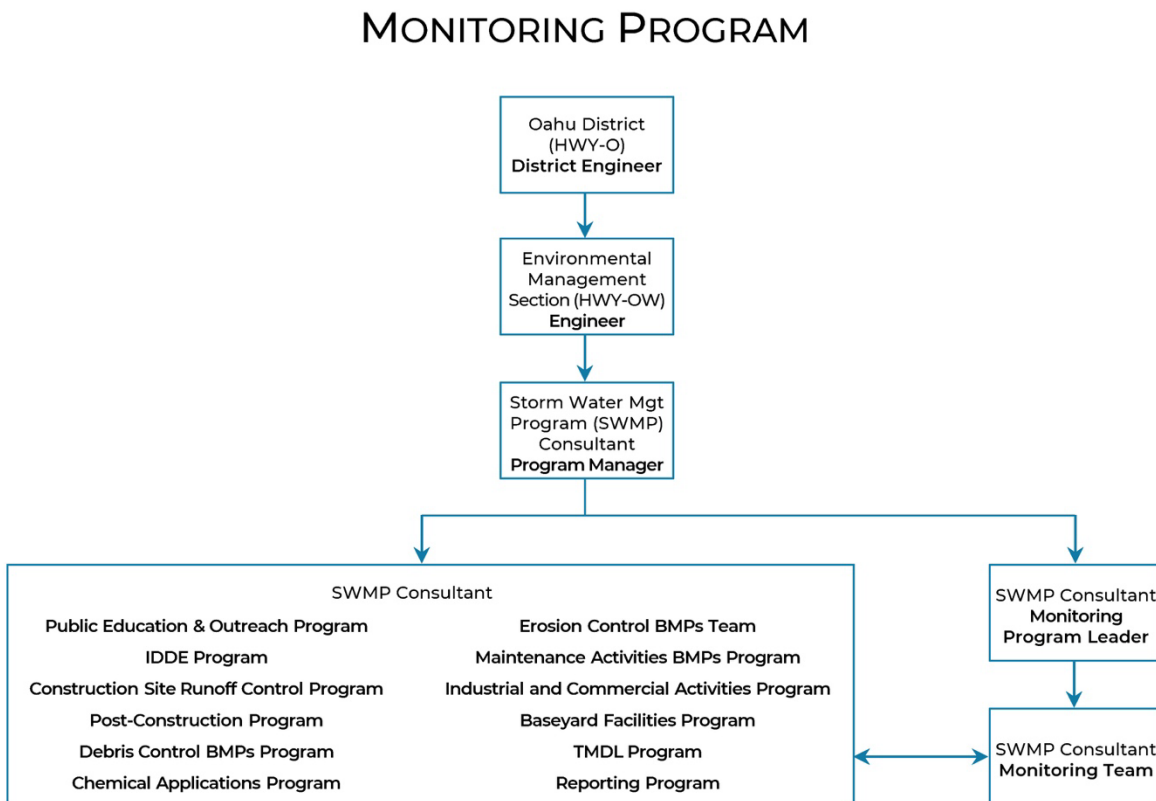
MS4 NPDES Permit Reference	SWMPP Section
<b>Part F.1.b.(5)</b> – Written documentation of the analytical methods to be used;	Section 12.1
<b>Part F.1.b.(6)</b> – Written documentation of the Quality Assurance/Quality Control procedures to be used; and	Section 12.1
<b>Part F.1.b.(7)</b> – Estimated budget to be implemented over the coming fiscal year.	Section 12.1
<b>Part G.2.a</b> – The Permittee shall submit the Annual Monitoring Report by October 31 <sup>st</sup> of each year in pdf format (minimum 300 dpi) in accordance with Part A.7. The Annual Monitoring Report shall cover the past fiscal year.	Section 12.2
<b>Part G.2.b</b> – The monitoring report shall at a minimum, include the following items:	Section 12.2
<b>Part G.2.b.(1)</b> – Discussion on the activities/work implemented to meet each objective, as outlined in Part F.1.a., including any additional objectives identified by the Permittee, and the results [e.g., assessment of the water quality issues in each watershed resulting from storm water discharges, refer to Part F.1.a.(7)] and conclusions.	Section 12.2
<b>Part G.2.b.(2)</b> – Written narrative of the past fiscal year’s activities, including those coordinated with other agencies, objectives of activities, results and conclusions.	Section 12.2
<b>Part G.2.b.(3)</b> – Data gathered on levels of pollutants in non-storm water discharges to the MS4; and	Section 12.2
<b>Part G.2.b.(4)</b> – Using rainfall data collected by the Permittee and other agencies, the Permittee shall relate rainfall events, measured pollutant loads, and discharge volumes from the watershed and other watersheds that may be identified from time to time by the Director or Permittee.	Section 12.2

*A volumetric weir is installed for flow monitoring at University Avenue interchange, Honolulu, Hawaii.*



## 12.0 Program Organization

To fulfill the MS4 NPDES Permit requirements of the Monitoring Program, the following organizational structure has been established, as shown in Figure 12-1.



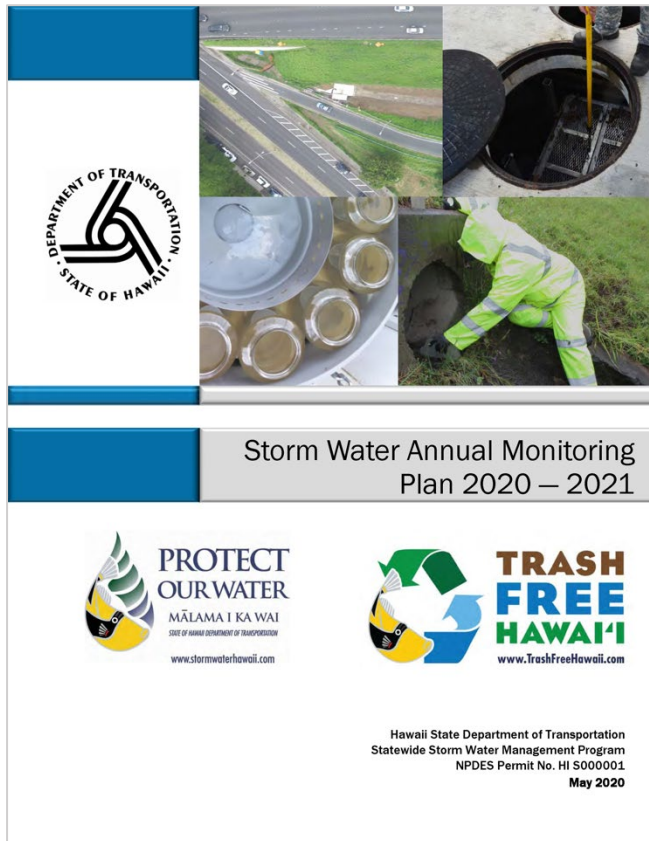
**Figure 12-1. Monitoring Program Organizational Chart.**

## 12.1 Annual Monitoring Plan | MS4 NPDES Permit Parts F.1.a. and F.1.b.

The Monitoring Program activities are designed and implemented to meet the objectives outlined in MS4 NPDES Permit Parts F.1.a.(1) through F.1.a.(7). DOT-HWYS utilizes a watershed level strategy for its Monitoring Program by monitoring runoff within high priority watersheds. Monitoring efforts are concentrated in watersheds where TMDL studies have been established or identified, or that have approved TMDLs in place.

Sampling locations are selected based on the water quality issues that result from discharges to the receiving water to evaluate watershed health and characterize storm water discharges from the MS4. Water quality samples are analyzed over a range of storm intensities for pollutant loads, rainfall volume and intensity, and runoff volume.

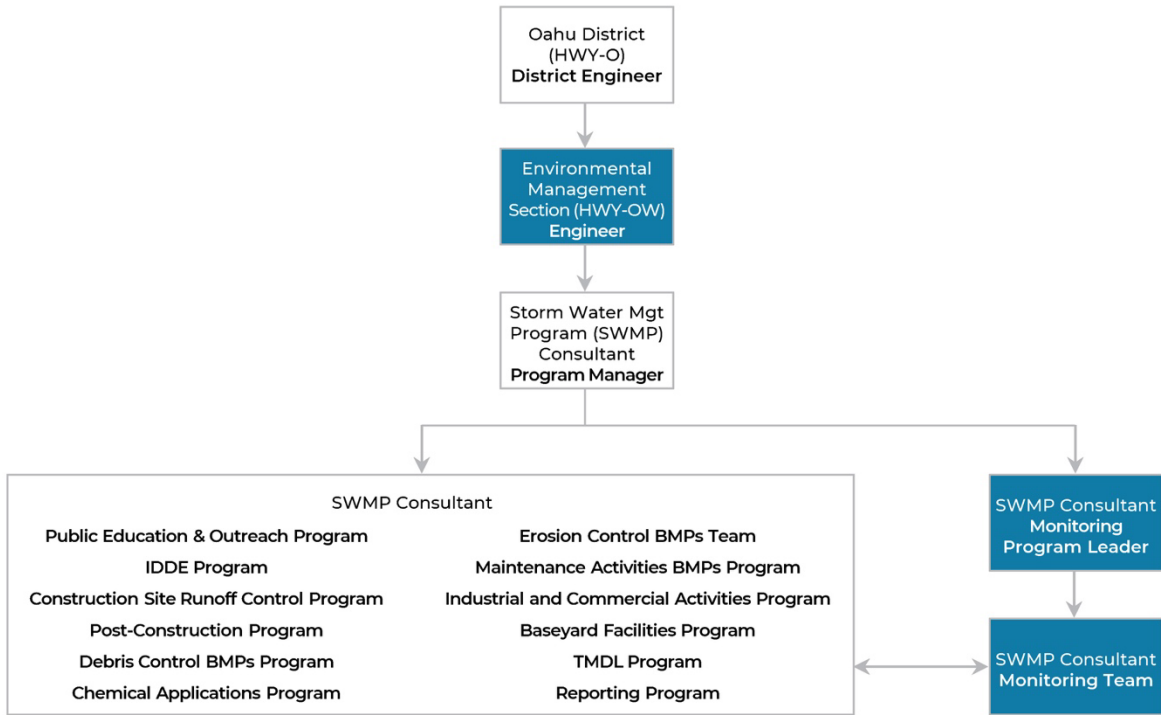
DOT-HWYS submits the Annual Monitoring Plan to the DOH Director by June 1<sup>st</sup> of each year for review and acceptance, and implements the plan in the next fiscal year.



*The Annual Monitoring Plan helps to assess the effectiveness of the SWMP and achieve goals required in the Annual Monitoring Report.*

The individuals and team highlighted in Figure 12-2 are responsible for implementing the control measures described in this section.

## MONITORING PROGRAM



**Figure 12-2. Monitoring Program Organizational Chart for Roles and Responsibilities Related to the Annual Monitoring Plan.**

## 12.2 Annual Monitoring Report | MS4 NPDES Permit Parts G.2.a and G.2.b

DOT-HWYS submits an Annual Monitoring Report, which details the monitoring activities conducted during the past fiscal year, by October 31<sup>st</sup> of each year. In addition to the items required by MS4 NPDES Permit Part G.2.b, the Annual Monitoring Report describes the sampling activities conducted during the previous monitoring period and an analysis of the laboratory results.

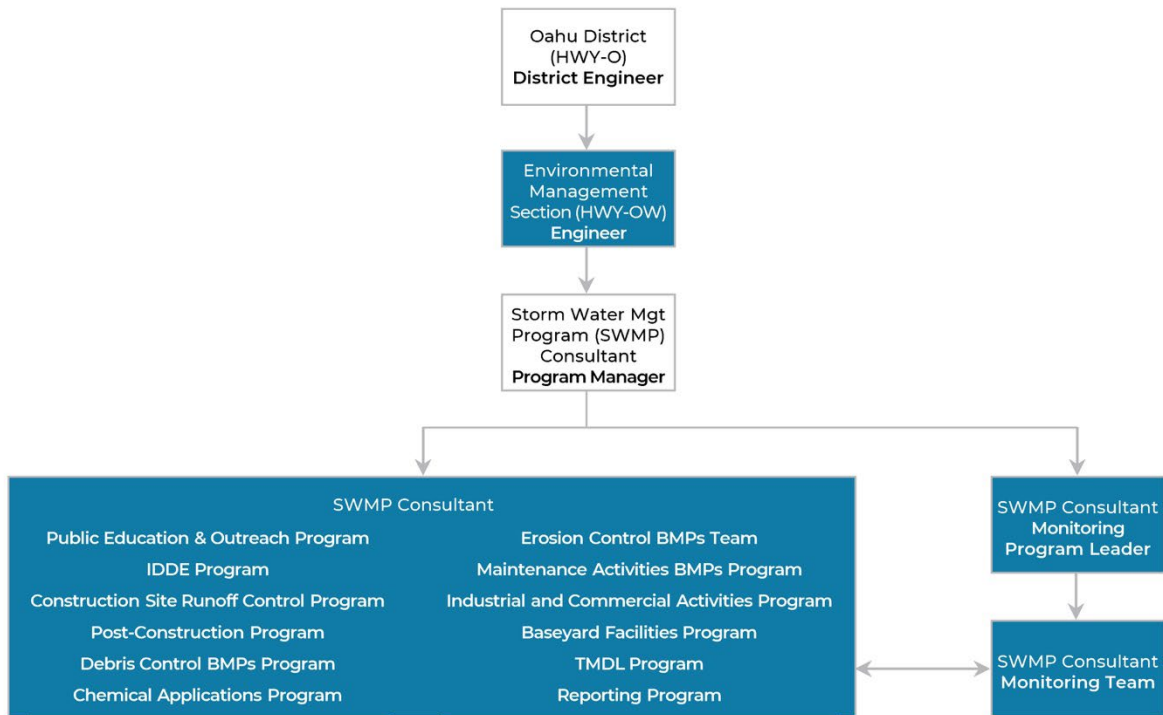
The Annual Monitoring Report is submitted to DOH through the e-Permitting Portal website. DOT-HWYS utilizes the Electronic Signature Subscriber Agreement Form which allows the Permittee to electronically certify forms and reports using the e-Permitting Portal website and no longer requires the submission of a CD or DVD.

*An inspector collects water quality samples from H-1 Freeway, Honolulu, Hawaii.*



The individuals and teams highlighted in Figure 12-3 are responsible for implementing the control measures described in this section.

## MONITORING PROGRAM



**Figure 12-3. Monitoring Program Organizational Chart for Roles and Responsibilities Related to the Annual Monitoring Report.**

### 12.3 Monitoring Program Effectiveness

The *Program Effectiveness Strategy* (Appendix A.3, Table 15) provides the measurable standards and/or milestones for each Program BMP, including the outcome level, data collection method, and assessment parameter.