

# 13 | Total Maximum Daily Load Program



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



*Eroded slope repair addresses sediment and nutrients loading along Kalanianaʻole Highway in Kailua, Hawaii.*

The Total Maximum Daily Load Program (TMDL Program) is designed to comply with waste load reductions for Ala Wai Canal, Kawa Stream, Waimanalo Stream, Kapaa Stream, Kaneohe Stream, and Waikele Stream watersheds consistent with the assumptions of the associated TMDL document effective in accordance with the Schedules of Compliance.

The TMDL Program includes the following control measures:

1. Implement BMPs as described in the Implementation and Monitoring (I&M) Plans to comply with waste load reductions.
2. Complete milestones and submit deliverables to DOH in accordance with the Schedule of Compliance for each TMDL watershed, as applicable.
3. Develop I&M Plans for future TMDLs, as applicable.

The TMDL Program is administered in accordance with the MS4 NPDES Permit requirements referenced in Table 13-1.

**Table 13-1. MS4 NPDES Permit Requirements for the TMDL Program.**

MS4 NPDES Permit Reference	SWMPP Section
<b>Part F.3</b> – TMDL Implementation and Monitoring for Ala Wai Canal, Kawa Stream, Waimanalo Stream, Kapaa Stream, Kaneohe Stream, and Waikele Stream watersheds.	
<b>Part F.3.a</b> – The Permittee shall continue to implement the TMDL I&M Plan for Ala Wai Canal and Waimanalo Stream watersheds. For Kaneohe Stream, Kawa Stream, Kapaa Stream, and Waikele Stream watersheds, the Permittee shall continue to implement the TMDL I&M Plans in accordance with the Schedules of Compliance in Part F.3.c. of this permit.	Section 13.1
<b>Part F.3.b</b> – The Permittee shall implement the TMDL I&M Plans to document compliance with the following annual or seasonal WLA reductions consistent with the assumptions of the associated TMDL document effective in accordance with the Schedules of Compliance in Part F.3.c., as applicable.	Section 13.1
<b>Part F.3.b.(1)</b> – Ala Wai Canal WLA Reductions (See Table in Permit)	Section 13.1
<b>Part F.3.b.(2)</b> – Kawa Stream WLA Reductions (See Table in Permit)	Section 13.1
<b>Part F.3.b.(3)</b> – Kapaa Stream WLA Reductions (See Table in Permit)	Section 13.1
<b>Part F.3.b.(4)</b> – Kaneohe Stream WLA Reductions (See Table in Permit)	Section 13.1
<b>Part F.3.b.(5)</b> – Waimanalo Stream WLA Reductions (See Table in Permit)	Section 13.1
<b>Part F.3.b.(6)</b> – Waikele Stream WLA Reductions (See Table in Permit)	Section 13.1
<b>Part F.3.c</b> TMDL Schedules of Compliance – The Permittee is required to provide proof of completion of each milestone and submittal of the deliverable by the date as indicated in the following tables. The Permittee shall comply with the WLA reductions consistent with the assumptions of the applicable TMDL document by the Final Compliance Date.	Section 13.2
<b>Part F.3.c.(1)</b> – Kawa Stream (See Schedule of Compliance in Permit)	Section 13.2
<b>Part F.3.c.(2)</b> – Kapaa Stream Schedule of Compliance (See Table in Permit)	Section 13.2
<b>Part F.3.c.(3)</b> – Kaneohe Stream Schedule of Compliance (See Table in Permit)	Section 13.2
<b>Part F.3.c.(4)</b> – Waikele Stream Schedule of Compliance (See Table in Permit)	Section 13.2
<b>Part F.4</b> Other TMDLs – As additional TMDLs are adopted by DOH and approved by the EPA that identify the Permittee as a source, the Permittee shall develop I&M Plans for a minimum of one (1) additional TMDL per year within one (1) year of the approval date. The plans shall include, at a minimum, the following:	Section 13.3

MS4 NPDES Permit Reference	SWMPP Section
<b>Part F.4.a.</b> – Detailed information on the activities proposed to be implemented.	Section 13.3
<b>Part F.4.b.</b> – Actual or literature documentation of the estimated effectiveness of the activities targeted to reduce the pollutants of concern such as total nitrogen, total phosphorus, total suspended solids, and turbidity in the watershed, as applicable, to demonstrate consistency with the annual or seasonal WLA reductions consistent with the assumption of the associated TMDL document.	Section 13.3
<b>Part F.4.c.</b> – A detailed and quantitative analysis which demonstrates that the proposed activities would ensure consistency with the annual or seasonal WLA reductions consistent with the assumption of the associated TMDL document.	Section 13.3
<b>Part F.4.d.</b> – Information from pre- and post-monitoring activities to quantitatively demonstrate consistency with the annual or seasonal WLA reductions consistent with the assumption of the associated TMDL document.	Section 13.3
<b>Part F.4.e.</b> – A monitoring plan which shall identify activities to demonstrate consistency with the annual or seasonal WLA reductions consistent with the assumption of the associated TMDL document.	Section 13.3
<b>Part F.4.f.</b> – A compliance schedule with a final deadline to demonstrate consistency with the WLAs consistent with the assumption of the associated TMDL document. The schedule shall provide for the implementation of the BMPs, monitoring to evaluate its performance, and time to make adjustments necessary to demonstrate consistency with the WLAs consistent with the assumption of the associated TMDL document at the earliest possible time. If the schedule extends beyond a year, interim dates and milestones shall be included in the schedule with the time between interim dates not to exceed one (1) year.	Section 13.3
<b>Part F.5.</b> Re-opener – In accordance with 40 CFR Parts 122 and 124, this permit may be modified (i.e., to include compliance schedules, permit conditions, etc.) to address additional or revised TMDLs as adopted by DOH and approved by the EPA.	Section 13.3

## 13.0 Program Organization

To fulfill the MS4 NPDES Permit requirements of the TMDL Program, the following organizational structure has been established, as shown in Figure 13-1.

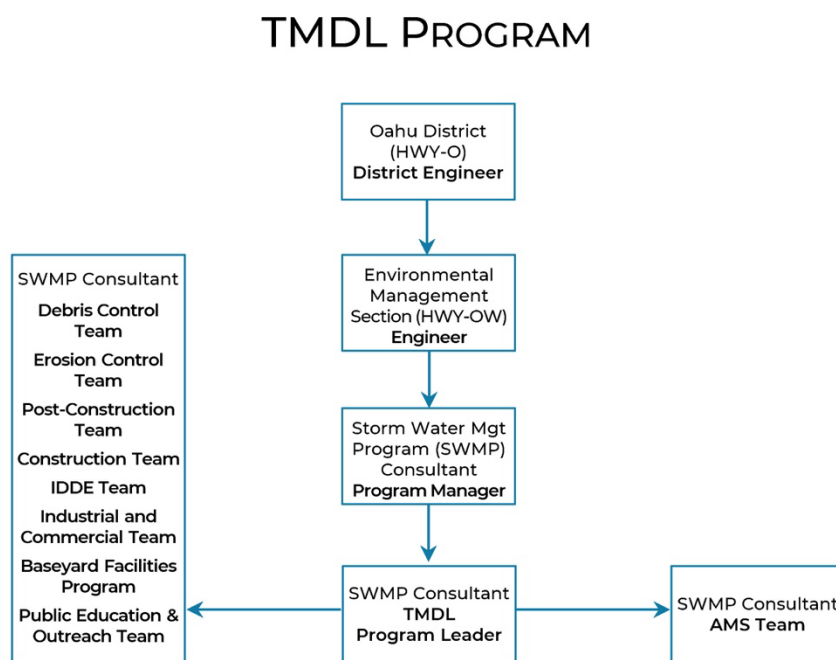


Figure 13-1. TMDL Program Organizational Chart.

### 13.1 Implementation and Monitoring Plans | MS4 NPDES Permit Parts F.3.a and F.3.b

DOT-HWYS continues to implement the I&M Plans for the Ala Wai Canal, Kawa Stream, Waimanalo Stream, Kapaa Stream, Kaneohe Stream, and Waikele Stream watersheds (Appendices L.1 to L.6). The I&M Plans detail the strategy for attaining required waste load reductions and documenting compliance. TMDL compliance is assessed on a watershed scale through quantitative analyses of the waste load reductions required for pollutants of concern identified in each TMDL. The TMDL Program relies on the effective implementation of BMPs by SWMP program elements (e.g., Debris Control Program, Erosion Control Program, etc.) to attain and demonstrate compliance with waste load reductions for TMDL watersheds.

The AMS Maximo TMDL Module facilitates compliance tracking for TMDL watersheds. The TMDL Module aggregates pollutant reduction data from other modules (e.g., Manhole/Inlet Module, Open Channels Module, Outfalls Module, and Street Sweeping Module) to calculate the reduction in units of kilograms per season for each pollutant of concern. KPIs show in real time the compliance status in each TMDL watershed in relation to the assigned waste load reduction.

For the Kaneohe and Kapaa Stream watersheds, the required waste load reductions in the 2013 MS4 NPDES Permit were calculated as event-based and included the sum of the seasonal 10% and the 2% runoff events. In the 2020 MS4 NPDES Permit, the calculations of the waste load reductions for Kaneohe and Kapaa Stream watersheds were revised to exclude the seasonal 2% runoff events as these are included in the 10% events. The revised waste load reductions required of DOT-HWYS are shown in Table 13-2.

**Table 13-2. Comparison of 2013 and 2020 MS4 NPDES Permit Waste Load Reductions for Kaneohe and Kapaa Stream Watersheds.**

#### Kaneohe Stream Watershed

MS4 NPDES Permit	Season	TSS (kg per season)	TN (kg per season)	TP (kg per season)
2013	Wet Season Reduction	0	82.59	28.04
2020		0	13.21	5.79
2013	Dry Season Reduction	0	24.86	11.39
2020		0	0.74	0.74

#### Kapaa Stream Watershed

MS4 NPDES Permit	Season	TSS (kg per season)	TN (kg per season)	TP (kg per season)
2013	Wet Season Reduction	288.60	3.25	7.21
2020		108.60	1.81	1.81
2013	Dry Season Reduction	70.30	0.74	1.85
2020		1.84	0	0

Figure 13-2 shows the locations of the six TMDL watersheds on Oahu with waste load reductions assigned to DOT-HWYS.

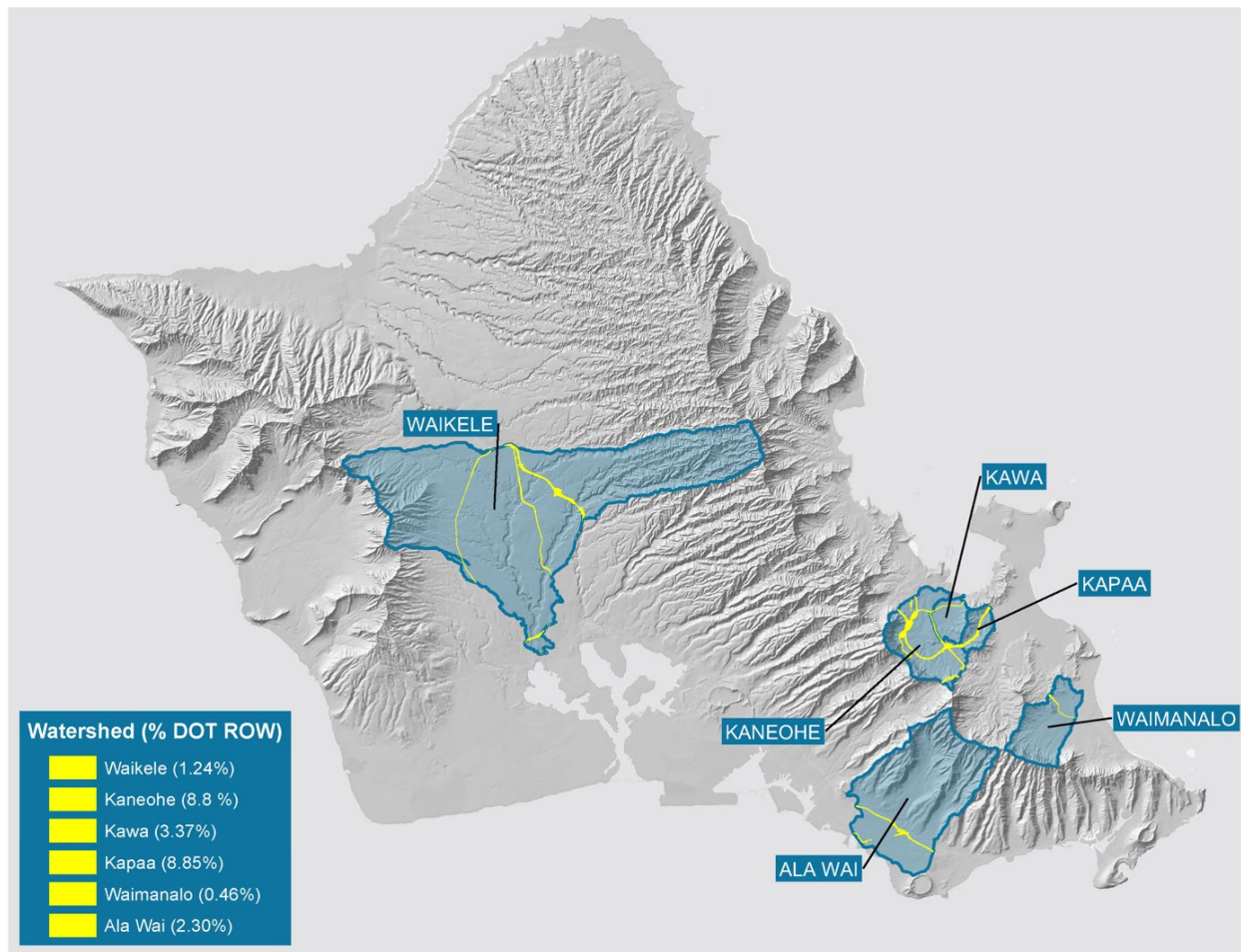
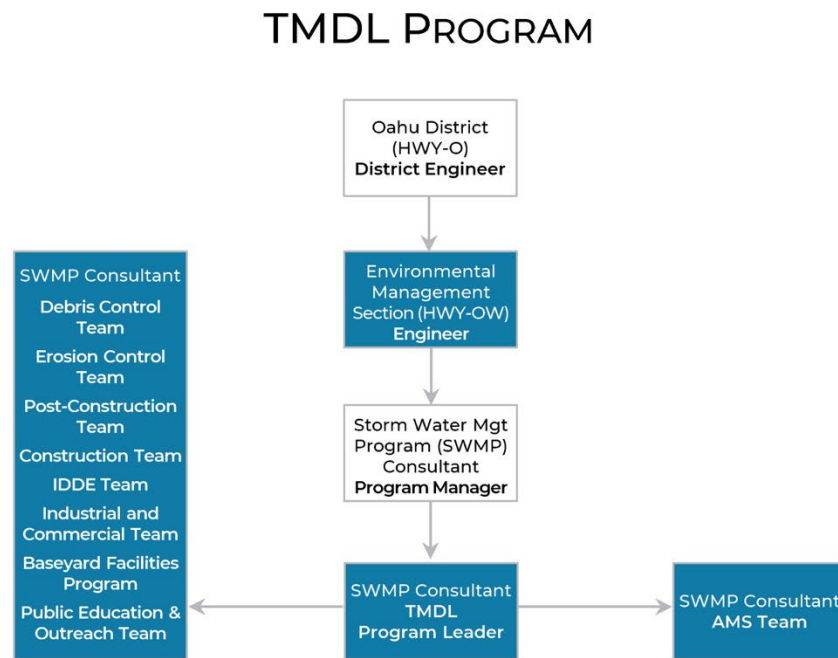


Figure 13-2. TMDL Watersheds (in blue) with Waste Load Reductions Assigned to DOT-HWYS (in yellow).

The individuals and teams highlighted in Figure 13-3 are responsible for implementing the control measures described in this section.

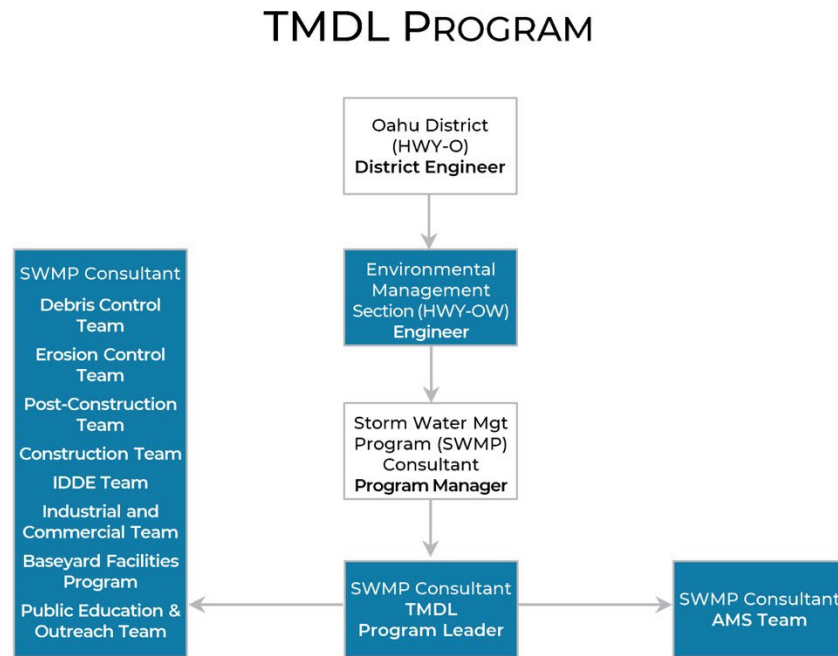


**Figure 13-3. TMDL Program Organizational Chart for Roles and Responsibilities Related to the Implementation and Monitoring Plans.**

## 13.2 Schedules of Compliance | MS4 NPDES Permit Part F.3.c

Prior to the expiration of the respective Schedules of Compliance, DOT-HWYS submitted Waste Load Allocation (WLA) Completion Reports for the Ala Wai Canal, Kawa Stream, and Waimanalo Stream watersheds, which documented BMPs and quantitatively demonstrated attainment of the associated waste load reductions. Schedules of Compliance have been established for the Kapaa Stream, Kaneohe Stream, and Waikele Stream watersheds, which are provided in MS4 NPDES Permit Part F.3.c. The Schedules of Compliance include required milestones and submittal dates for I&M Plans, enhanced debris cleaning, post-construction BMP implementation (as applicable), and Final WLA Completion Reports. Upon the milestone due date, DOT-HWYS will submit a notice of completion and will comply with the waste load reductions consistent with the assumptions of the applicable TMDL document by the final completion date.

The individuals and teams highlighted in Figure 13-4 are responsible for implementing the control measures described in this section.

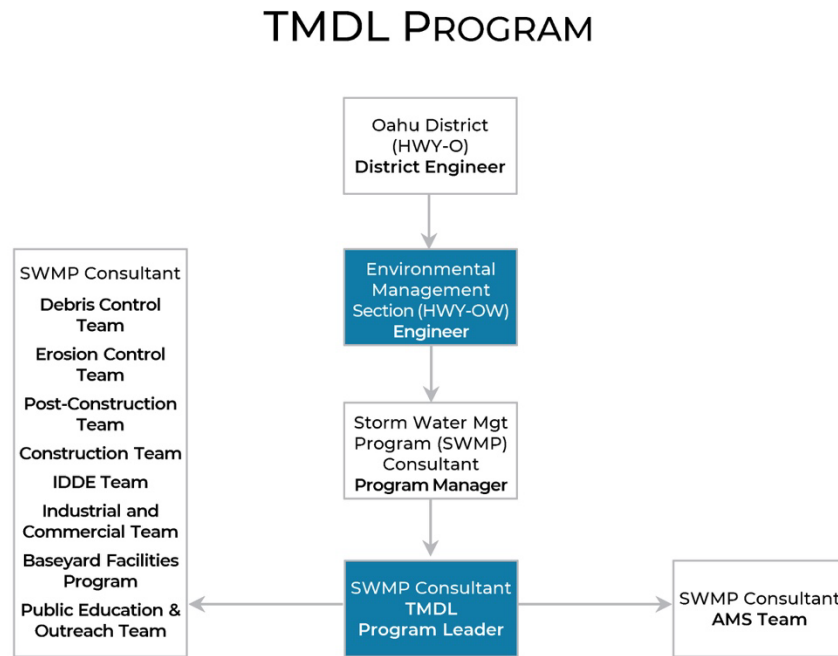


**Figure 13-4. TMDL Program Organizational Chart for Roles and Responsibilities Related to the Schedules of Compliance.**

### 13.3 I&M Plans for Future TMDLs | MS4 NPDES Permit Parts F.4 and F.5

As additional TMDLs that identify DOT-HWYS as a source are adopted by DOH and approved by the Environmental Protection Agency (EPA), DOT-HWYS will develop I&M Plans for a minimum of one additional TMDL per year, within one year of the approval date. The MS4 NPDES Permit may be modified as needed to include additional or revised TMDLs as adopted by DOH and approved by the EPA.

The individuals highlighted in Figure 13-5 are responsible for implementing the control measures described in this section.



**Figure 13-5. TMDL Program Organizational Chart for Roles and Responsibilities Related to I&M Plans for Future TMDLs.**

## 13.4 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.