

# 8 | Pollution Prevention/Good Housekeeping Erosion Control BMPs Program



State of Hawaii, Department of Transportation  
Highways Division, Oahu District  
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*High performance erosion control mulch is used to stabilize significant erosional areas along Kalanianaʻole Highway, Kailua.*

The Pollution Prevention/Good Housekeeping (PP/GH) Program is designed to develop and maintain a system maintenance program to reduce, to the MEP, the discharge of pollutants from facilities, roads, parking lots, baseyards, and maintenance facilities, and the MS4.

The PP/GH Erosion Control BMPs Program (Erosion Control Program) is designed to ensure that erosional areas with the potential for significant water quality impact are addressed through permanent and/or temporary erosion control improvements.

Erosional areas with the potential for significant water quality impacts (hereinafter significant erosional areas) are identified by evidence of rilling, gullyng, and/or other evidence of significant sediment transport, as well as erosional areas in close proximity to receiving waters listed as impaired for total suspended solids (TSS) and/or turbidity.

The Erosion Control Program includes the following control measures:

1. Implement permanent erosion control improvements at significant erosional areas located within the DOT-HWYS ROW.
2. Install temporary erosion control measures at significant erosional areas within the DOT-HWYS ROW, if a permanent solution is not immediately possible.
3. Implement the maintenance plan for vegetated portions of the drainage system used for erosion and sediment control, and LID features.
4. Annually update the *Action Plan to Address Erosional Outfalls*.
5. Update the list of significant erosional areas and implementation schedule for permanent erosion control improvements.

The Erosion Control Program is administered in accordance with the MS4 NPDES Permit requirements referenced in Table 8-1.

**Table 8-1. MS4 NPDES Permit Requirements for the Erosion Control Program.**

MS4 NPDES Permit Reference	SWMPP Section
<b>Part D.1.f</b> – The Permittee shall further develop and maintain a system maintenance program to reduce to the MEP the discharge of pollutants from all Permittee-owned facilities, roads, parking lots, baseyards, maintenance facilities, and the MS4. The program shall include:	
<b>Part D.1.f.(3)(i)</b> – Implement permanent erosion control improvements, ensuring that erosional areas with the potential for significant water quality impact, but with limited public safety concerns, are also considered a high priority for remediation. Identification of erosional areas with the potential for significant water quality impact shall include areas where there is evidence of rilling, gulying, and/or other evidence of significant sediment transport, and areas close to receiving waters listed as impaired by either sediment, siltation and/or turbidity. The Permittee shall include procedures to identify and implement erosion control projects based on water quality concerns while continuing to address high profile public safety projects.	Section 8.1
<b>Part D.1.f.(3)(ii)</b> – As erosional areas within DOT-HWYS right-of-ways with the potential for significant water quality impact are identified, require the implementation of temporary erosion control measures (e.g., erosion control blankets and/or fabrics, gravel bag placement and silt fencing/fiber rolls) if a permanent solution is not immediately possible.	Section 8.2
<b>Part D.1.f.(3)(iii)</b> – Continue implementing its maintenance plan for vegetated portions of the drainage system used for erosion and sediment control, and LID features, including controlling any excessive clearing/removal, cutting of vegetation, and application of herbicide which affects its usefulness.	Section 8.3
<b>Part D.1.f.(3)(iv)</b> – Continue to update the Action Plan to Address Erosional Outfalls yearly to include additional outfalls with significant potential for water quality impacts. The annual updates to the implementation schedule shall be included in the Annual Report with a description of the project’s status.	Section 8.4
<b>Part D.1.f.(3)(v)</b> – As erosional areas within DOT-HWYS right-of-ways with the potential for significant water quality impact are identified, add the project to the implementation schedule for permanent erosion control improvements as described in Part D.1.f.(3)(i) of this permit. The annual updates to the implementation schedule shall be included in the Annual Report with a description of the project’s status.	Section 8.5

## 8.0 Program Organization

To fulfill the MS4 NPDES Permit requirements of the Erosion Control Program, the following organizational structure has been established, as shown in Figure 8-1.

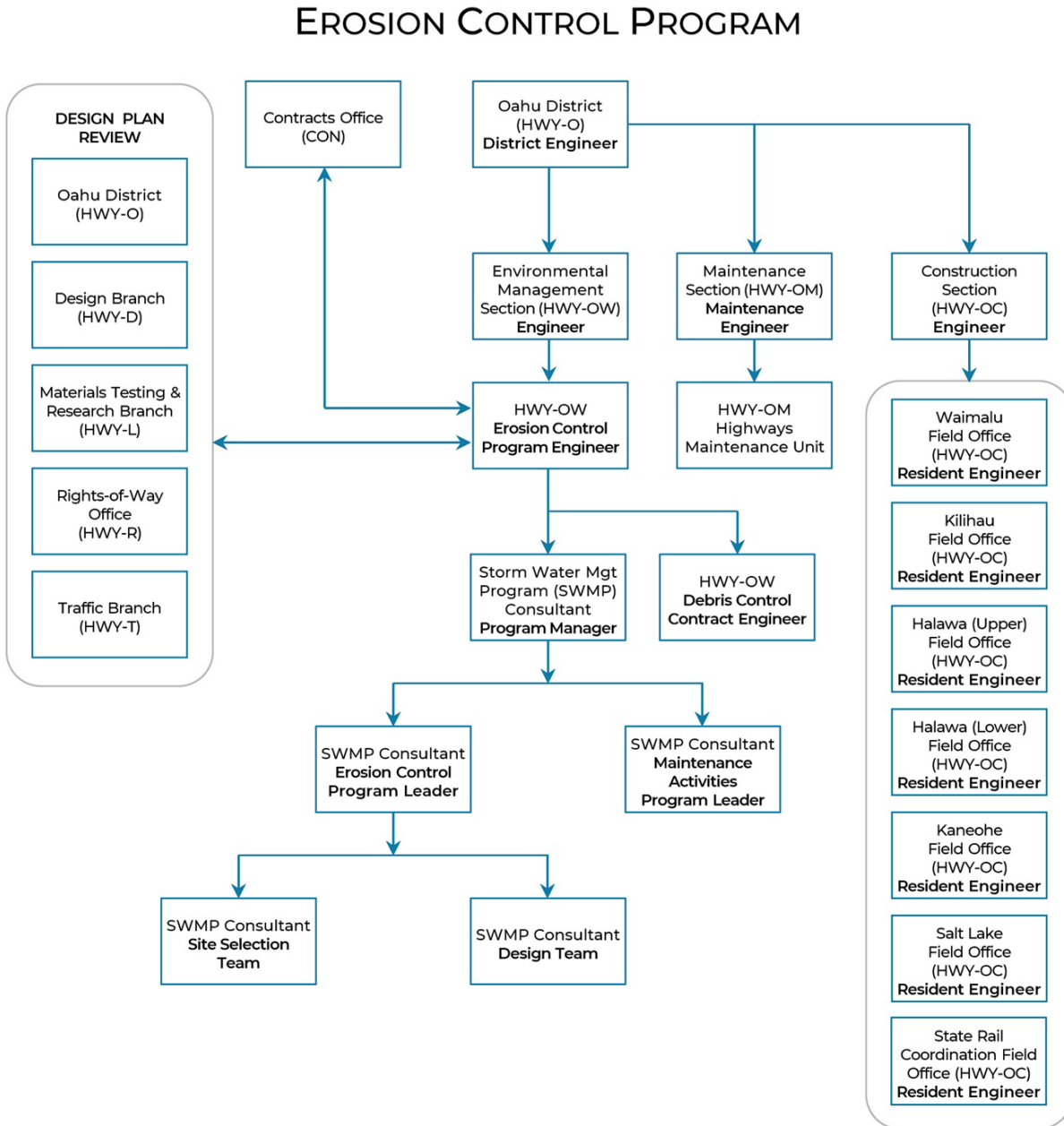


Figure 8-1. Erosion Control Program Organizational Chart.

## 8.1 Permanent Erosion Control Improvements | MS4 NPDES Permit Part D.1.f.(3)(i)

In addition to remediating erosional areas related to public safety concerns, DOT-HWYS implements permanent erosion control improvements at significant erosional areas. The CWA Section 303(d) list and Total Maximum Daily Load (TMDL) waterbodies with WLA reductions assigned to DOT-HWYS are used to determine the inventory of waterbodies listed as impaired for total suspended solids (TSS) and/or turbidity when evaluating whether a site meets the criteria of a significant erosional area.

Following the determination of being in close proximity of an impaired receiving waterbody, erosional areas are then evaluated to determine if they have an effective vegetated buffer to mitigate potential sediment transport to the nearest receiving waterbody. Vegetated buffers slow the velocity of storm water runoff, allowing sediment and other pollutants to settle out. DOT-HWYS has developed criteria for evaluating the effectiveness of vegetative buffers based on typical construction and post-construction BMP design standards. If it is determined that there is not an effective vegetative buffer between an erosional area and the nearest receiving waterbody, it will be classified as a significant erosional area and added to the list of permanent erosion control projects.

*Geotextile and earth anchors are installed for permanent erosion control in the Kawainui Watershed.*



Figure 8.2 shows the criteria used to define significant erosional areas.

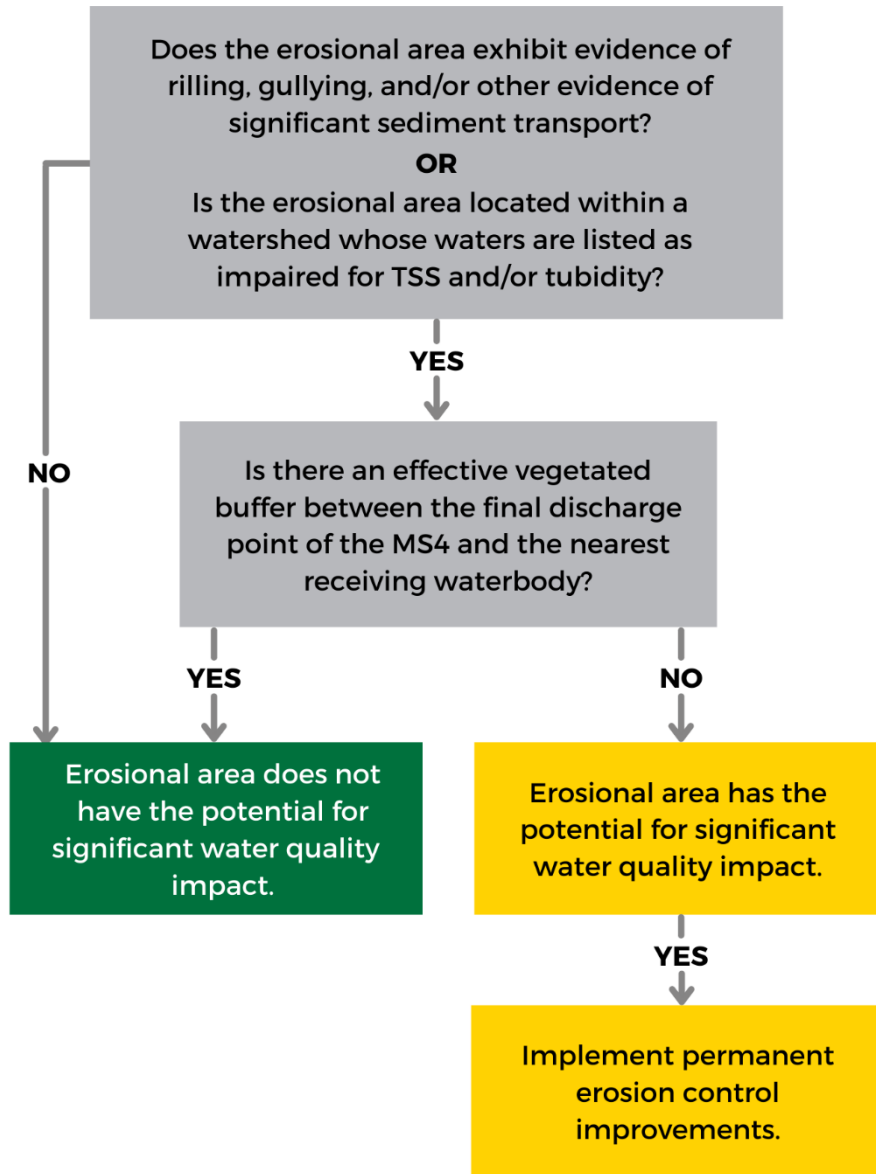
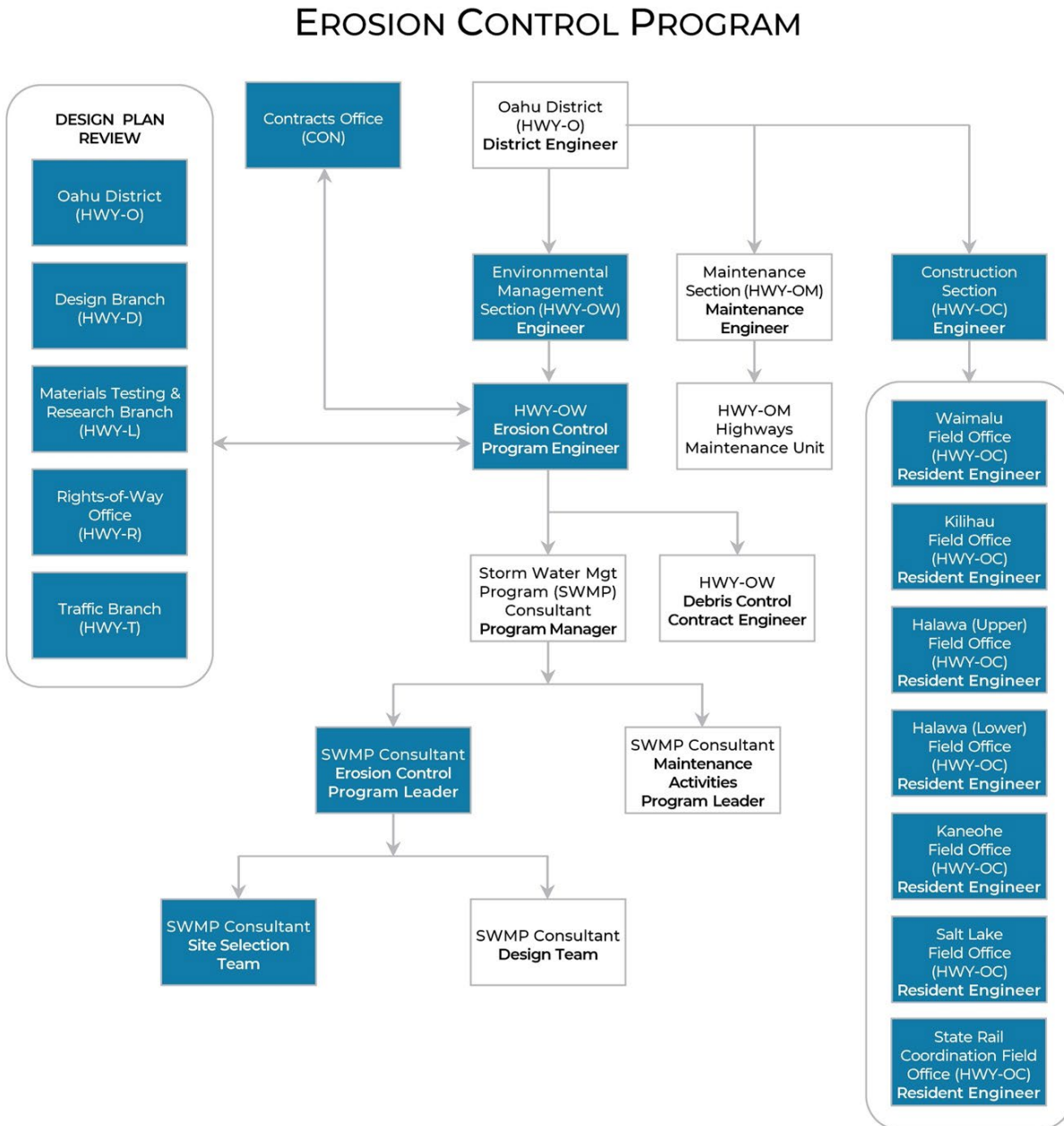


Figure 8-2. Criteria Used to Designate Sites with the Potential for Significant Water Quality Impact.

The list of permanent erosion control projects and the implementation schedule for the current permit term are included in the Implementation Schedule for Significant Erosional Areas (Appendix H.1). The list initially consists of 10 sites, 2 of which have been completed since permit issuance. Erosional areas within the DOT-HWYS ROW are evaluated and the implementation schedule is updated annually as described in Section 8.5.

The individuals and teams highlighted in Figure 8-3 are responsible for implementing the control measures described in this section.



**Figure 8-3. Erosion Control Program Organizational Chart for Roles and Responsibilities Related to Permanent Erosion Control Improvements.**

## 8.2 Temporary Erosion Control Measures | MS4 NPDES Permit Part D.1.f.(3)(ii)

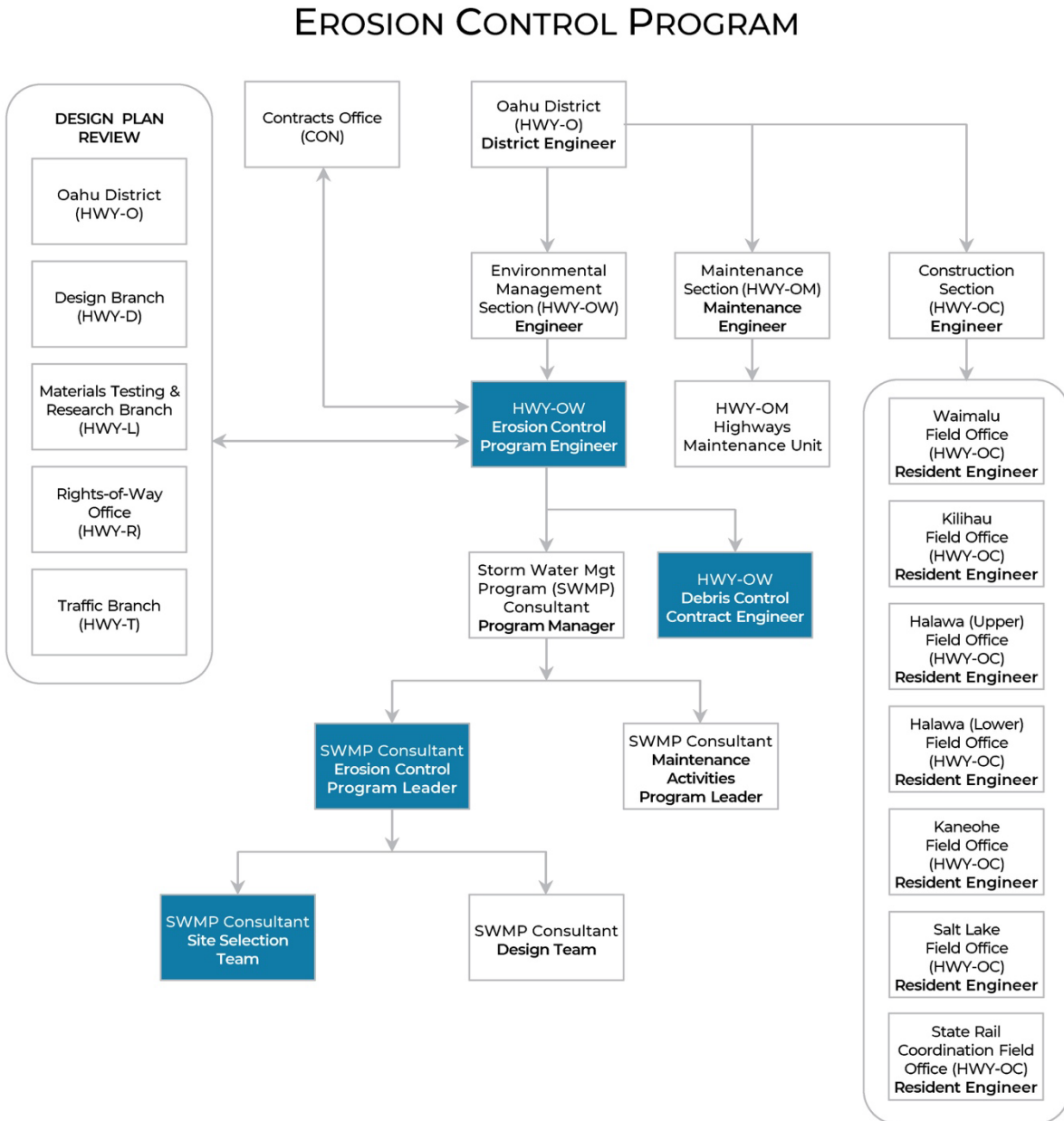
As significant erosional areas are identified, DOT-HWYS implements temporary erosion control measures (e.g., erosion control blankets and/or fabrics, gravel bag placement and silt fencing/fiber rolls) if a permanent solution is not immediately possible. All significant erosional areas that are included in the Implementation Schedule for Significant Erosional Areas are identified as either having temporary erosion control BMPs installed, or a permanent remediation project completed. The status of each significant erosional area is included in the Implementation Schedule for Significant Erosional Areas, which is updated and provided as an appendix in the Annual Report.

During the temporary BMP selection process, DOT-HWYS assesses the conditions of each significant erosional area that may require temporary BMPs to determine the most appropriate BMP type for each site. Erosion and sediment control BMPs are selected from the *Construction Best Management Practices Field Manual* (Appendix D.1). The Implementation Schedule for Significant Erosional Areas indicates the significant erosional areas where temporary erosion control BMPs are implemented until permanent erosion control is established. Temporary erosion control BMPs are inspected annually, and after significant storm events, and are maintained as needed to ensure that they are functioning properly.

*Temporary erosion control BMPs are implemented on significant erosional areas if a permanent solution is not immediately possible.*



The individuals and team highlighted in Figure 8-4 are responsible for implementing the control measures described in this section.



**Figure 8-4. Erosion Control Program Organizational Chart for Roles and Responsibilities Related to Temporary Erosion Control Measures.**

### 8.3 Maintenance Plan for Vegetated Portions of the MS4 | MS4 NPDES Permit Part D.1.f.(3)(iii)

DOT-HWYS continues to implement a maintenance plan for vegetated portions of the drainage system used for erosion and sediment control, and LID features. The previous document that used to satisfy this permit requirement, the *Maintenance Plan for Vegetated Portions of the MS4*, has been replaced by Chapters 1, 5, 7, and 10 of the *Highway Manual for Sustainable Landscape Maintenance*, as this document includes a more comprehensive guidance regarding vegetation maintenance.

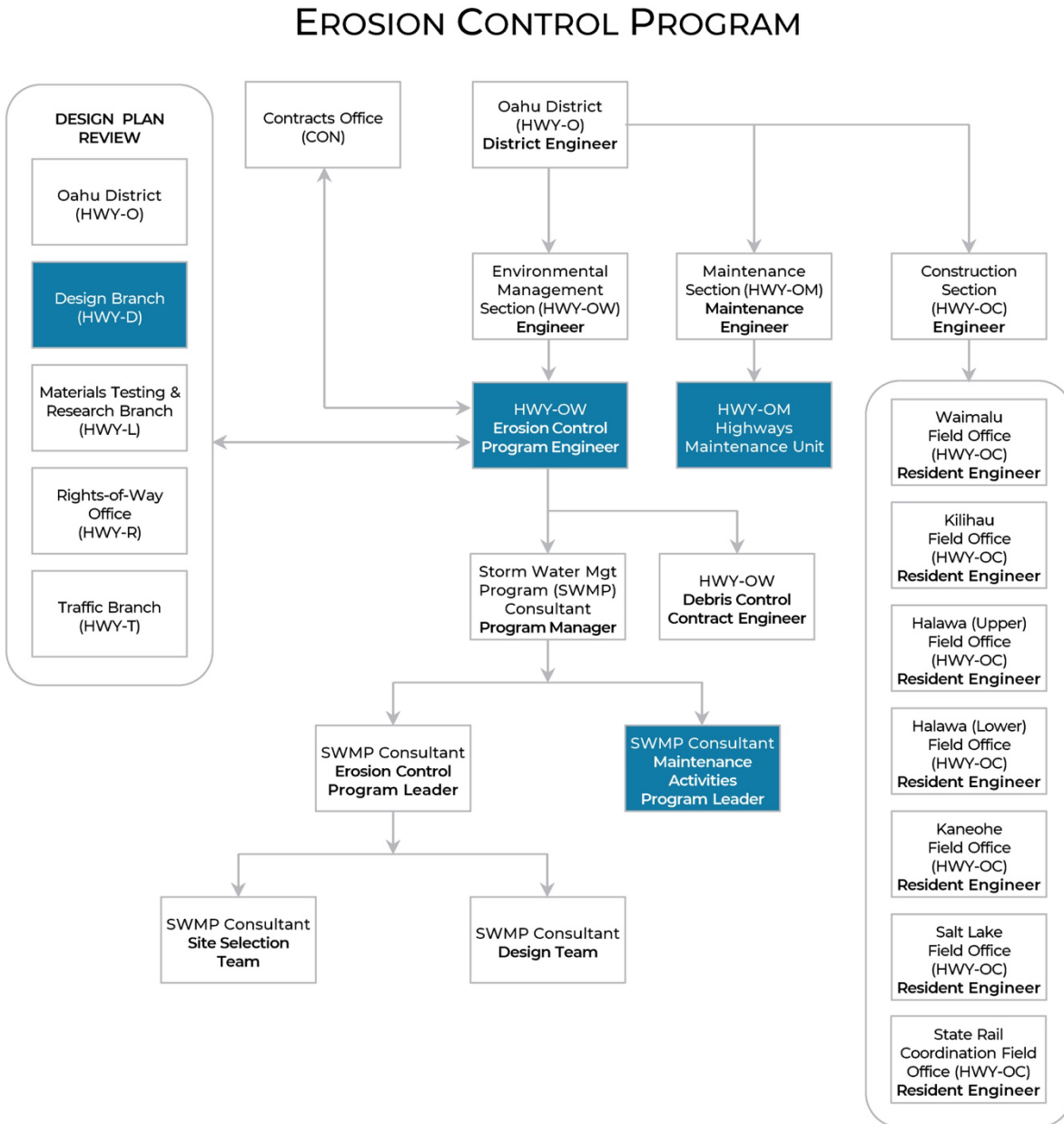
The *Highway Manual for Sustainable Landscape Maintenance* provides guidance on proper landscape maintenance practices and explains the importance of maintaining vegetation in and along the MS4, including ditches, open channels, vegetated swales, bioretention basins, rain gardens, and other vegetated post-construction BMPs. The manual also includes guidance on how to minimize excessive removal of vegetation and avoid over-application of herbicides. DOT-HWYS provides annual training to HWY-OM staff and service contractors regarding proper maintenance techniques for vegetated portions of the MS4 (Appendix G.2).

The *Highway Manual for Sustainable Landscape Maintenance* is available on the website, [www.hidot.hawaii.gov/highways/landscape-architecture-program/](http://www.hidot.hawaii.gov/highways/landscape-architecture-program/).

*Landscape maintenance of native erosion control plantings is conducted in accordance with the Highway Manual for Sustainable Landscape Maintenance.*



The individuals and team highlighted in Figure 8-5 are responsible for implementing the control measures described in this section.

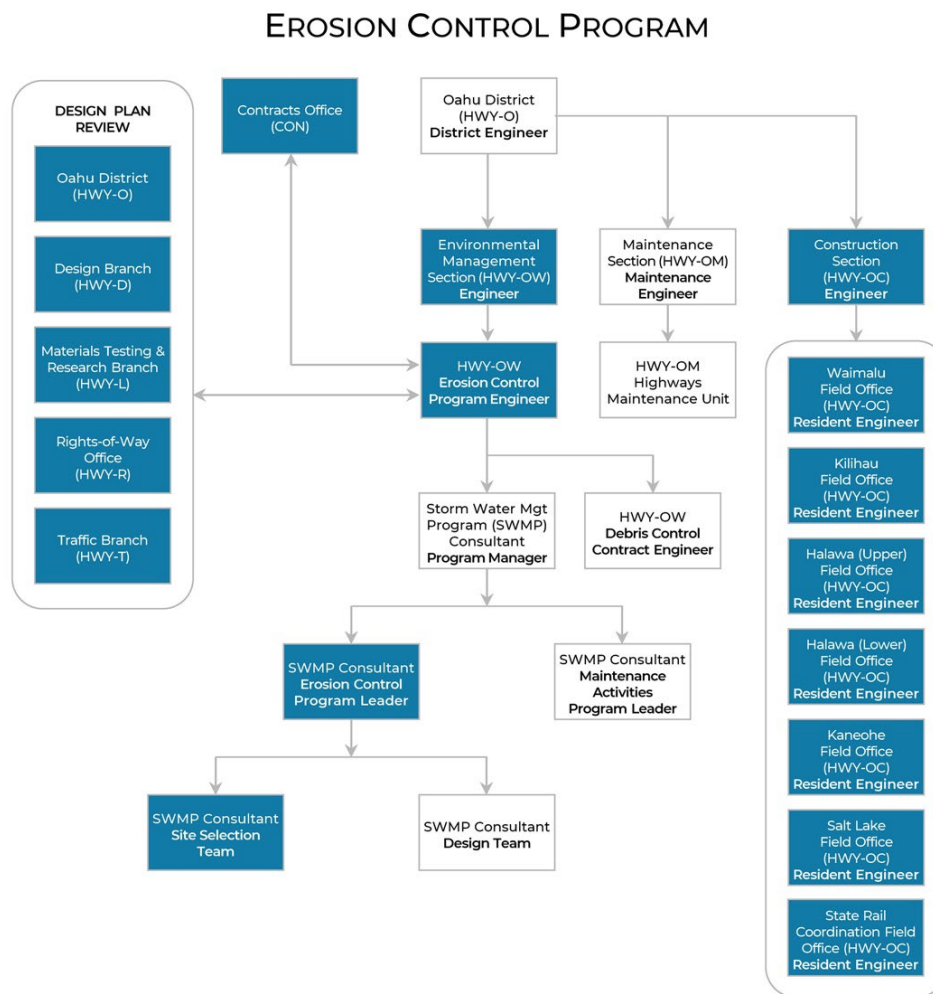


**Figure 8-5. Erosion Control Program Organizational Chart for Roles and Responsibilities Related to the Maintenance Plan for Vegetated Portions of the MS4.**

## 8.4 Action Plan to Address Erosional Outfalls | MS4 NPDES Permit Part D.1.f.(3)(iv)

The *Action Plan to Address Erosional Outfalls* (Appendix H.2) provides the evaluation criteria for the selection of erosional outfall repair sites and an implementation schedule for completing remediation projects. The implementation schedule is provided in the Annual Report to include additional erosional outfall repair sites and to provide updates on the status of sites that were previously identified on the list.

The individuals and teams highlighted in Figure 8-6 are responsible for implementing the control measures described in this section.



**Figure 8-6. Erosion Control Program Organizational Chart for Roles and Responsibilities Related to the *Action Plan to Address Erosional Outfalls*.**

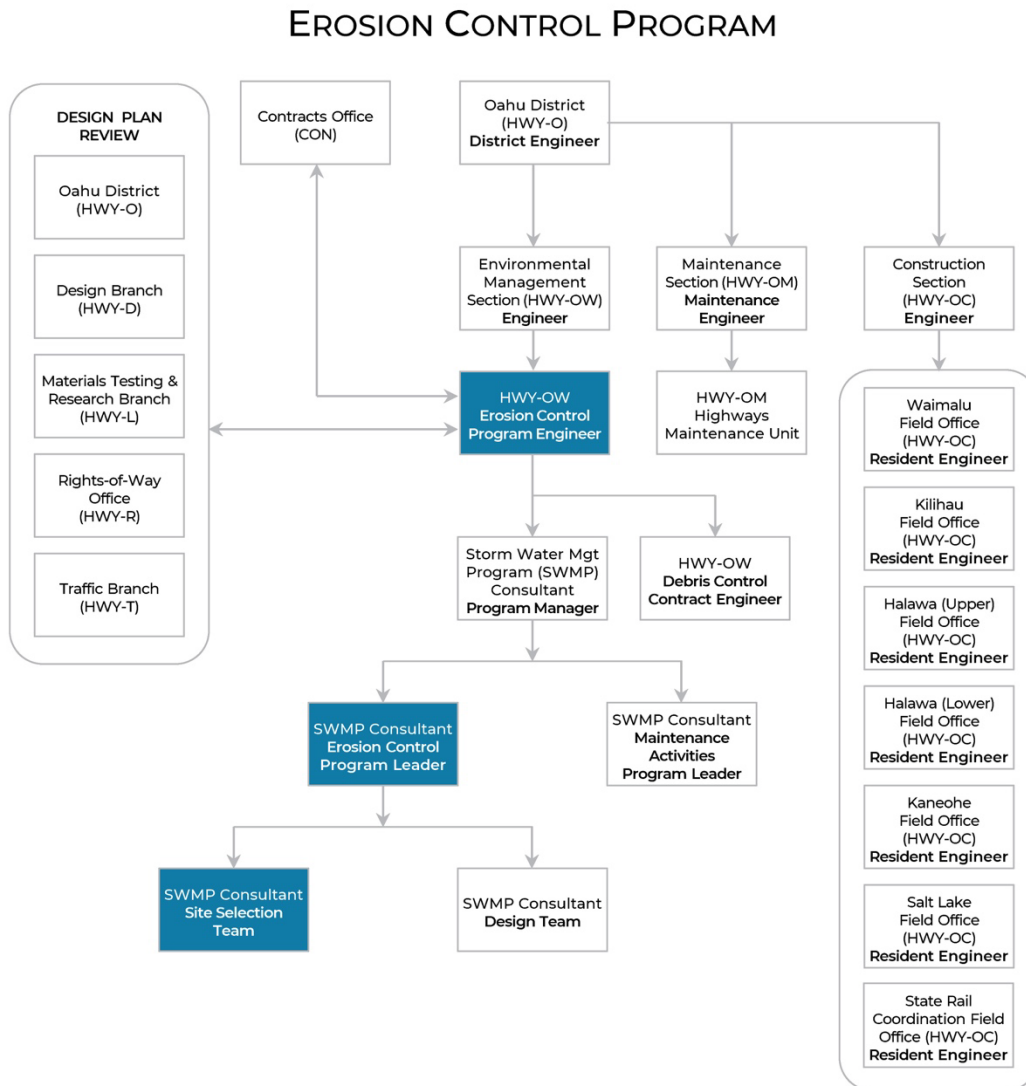
## 8.5 Identification of Significant Erosional Areas | MS4 NPDES Permit Part D.1.f.(3)(v)

DOT-HWYS continually updates the Implementation Schedule for Significant Erosional Areas as significant erosional areas are identified. DOT-HWYS maintains a database of erosional areas that have historically met the classification of significant erosional areas but were subsequently included in a permanent repair project or remediated through improved vegetative maintenance practices. Sites included in the erosional areas database are evaluated to determine whether repairs and/or stabilization are needed due to changes in site conditions. These routine inspections are recorded in the AMS Maximo Erosion Control Module. New erosional areas are also identified by DOT-HWYS and through public complaints. Erosional areas that meet the criteria of a significant erosional area are added to the Implementation Schedule for Significant Erosional Areas, which is updated annually and provided in the Annual Report.

*Significant erosional areas are determined by assessing sites against a set of criteria.*



The individuals and team highlighted in Figure 8-7 are responsible for implementing the control measures described in this section.



**Figure 8-7. Erosion Control Program Organizational Chart for Roles and Responsibilities Related to Identification of Significant Erosional Areas.**

## 8.6 Monitoring Program Effectiveness

The *Program Effectiveness Strategy* (Appendix A.3, Table 11) provides the measurable standards and/or milestones for each Program BMP, including the outcome level, data collection method, and assessment parameter.