

5.0 POST-CONSTRUCTION STORM WATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

5.1 Overview

5.1.1 Purpose

The Post-Construction Storm Water Management in New Development and Redevelopment Program (Post-Construction SWM Program) incorporates the installation of appropriate permanent BMPs for certain new development and redevelopment projects. Permanent BMPs are designed to be installed and remain in place to provide for long-term storm water quality or quantity control.

The Post-Construction SWM Program applies to new development and redevelopment projects that disturb greater than or equal to one acre, including construction sites less than one acre that are part of a larger common plan of development or sale that would disturb one acre or more.

5.1.2 Permit Requirement

Part 6.(a)(5) of Appendix K of the State of Hawaii's NPDES General Permit (HAR 11-55) requires an operator of a regulated small MS4 to:

Develop, implement, and enforce a program to reduce pollutants in storm water runoff entering the permittee's small municipal separate storm sewer system from new development and redevelopment projects that disturb greater than or equal to one acre, including construction sites less than one acre that are part of a larger common plan of development or sale that would disturb one acre or more, that, at a minimum, includes the following:

- (A) *Establishment of rules, ordinances, or other regulatory mechanisms, including enforcement procedures and actions, to address post-construction runoff from new development and redevelopment projects;*
- (B) *Structural and/or non-structural BMPs to minimize water quality impacts and attempt to maintain pre-development runoff conditions; and*
- (C) *Procedures of long-term operation and maintenance of BMPs.*

5.2 Program Activities

5.2.1 Regulatory Mechanisms and Enforcement

Maui District will follow HDOT Highways *Storm Water Permanent Best Management Practices Manual* (April 2015) (see Appendix E.1.A) and HDOT Harbors *Post-Construction Stormwater Management in New Development and Redevelopment* (see Appendix E.1.B) for the Post-Construction SWM Program. As Statewide programs, these manuals are intended to be comprehensive and in compliance with the requirements of HAR 11-55, Appendix K.

HDOT Highways' manual is available on-line on the public website at the following link: http://www.stormwaterhawaii.com/swmp_wp/wp-content/uploads/2014/10/E.1_PBMP-Manual-April-2015.pdf, which will also make it available to private consultants and contractors. The

manual contains a Storm Water Control Design Checklist Tool (see Appendix E.1.A, Figure 2-1) to facilitate Maui District project/design managers (or design consultants) and other project applicants in considering permanent BMPs as part of their projects. The Design Checklist Tool will be completed for Highways Maui District projects and encroachment projects, regardless of whether the project requires permanent BMPs. With support from HWY-DE, HWY-DH on Oahu, Highways Maui District will review project plans for the proposed BMPs.

HDOT Harbors' *Post-Construction Stormwater Management in New Development and Redevelopment* document (see Appendix E.1.B) is available on-line on the public website at the following link: <http://hidot.hawaii.gov/harbors/library/storm-water-management/>. Originally written for Honolulu and Kalaheo Barbers Point Harbors, this document also applies to new development and redevelopment at Kahului Harbor. HAR-E and Harbors Maui District will review project plans for the proposed BMPs for all projects at the Harbor.

Maui District also administers a permitting program for any individual, business (commercial or industrial), or agency that wishes to establish a permanent physical connection or to discharge construction-related storm water to the Maui District MS4 (see Section 3.2.1.1). The inclusion of permanent BMPs and their future maintenance is part of the application and permit for the connection permit (see Appendices C.1 and C.2). If permanent BMPs are not included, applicants must submit documentation demonstrating that they are not practical to qualify for an exemption or variance. With support from HWY-DE, HWY-DH and HAR-E on Oahu, Maui District reviews the proposed BMPs in the application for the connection permit.

5.2.2 Structural and Non-Structural Permanent BMPs

HDOT Highways *Storm Water Permanent Best Management Practices Manual* (see Appendix E.1.A) and HDOT Harbors *Post-Construction Stormwater Management in New Development and Redevelopment* (see Appendix E.1.B) provide guidance for selecting permanent BMPs. Selection of the appropriate BMPs for a particular project should be site specific and applicable to site conditions with the goals of minimizing water quality impacts. No single BMP would be able to achieve pollutant reduction for every given situation. Each BMP described in the manuals has its advantages and disadvantages. Therefore, the designer or project/design manager should consider the benefits, costs, pollutant removal efficiency, aesthetical acceptability, and other pertinent factors when selecting BMPs for individual projects.

5.2.3 Long-Term Operations and Maintenance

Inspections, maintenance and record keeping will be conducted as described in the *Storm Water Permanent Best Management Practices Manual* (see Appendix E.1.A) and the *Post-Construction Stormwater Management in New Development and Redevelopment* manual (see Appendix E.1.B). The manuals do not prescribe checklists for inspecting the permanent BMPs due to the varied nature of the BMP.

Maintenance of permanent BMPs will depend on their types and sizes. Depending on the BMP constructed, regular inspections, monitoring, repairs, and/or retrofits may be required. In highway rights-of-way all permanent BMPs installed as part of a new development or redevelopment by either Highways Maui District or another entity will be maintained by Highways Maui District Maintenance personnel. Those permanent BMPs outside the rights-of-way that have connection to

the Maui District MS4 will be inspected and maintained by the licensee of the connection permit. Permanent BMPs installed by Harbors tenants will be maintained by the tenant, while Harbors Maui District will maintain permanent BMPs installed by HDOT Harbors.

For each permanent BMP, a database will include information about its type and location, as well as its inspection and maintenance requirements.

The training element of the Post-Construction SWM Program will be described in more detail in the Public Outreach and Training Strategy (see Section 1.2.2). The training program relies partially on the training sessions held by HDOT Highways on Oahu as the program is required to be implemented statewide.

5.3 Measurable Goals

Table 5-1 describes the goals and activities to meet each goal, including annual targets, for the Post-Construction SWM Program.

Table 5-1: Post-Construction SWM Program Measurable Goals

Goal	Activities and Targets			
	Year 1	Year 2	Year 3	Year 4
Connection permit applications for all encroachment projects.	Initiate development of a training program for anyone who should be filing connection permit applications.	Continue to develop training program.	Conduct training sessions.	Contact businesses, landowners and others who have an unpermitted connection to the MS4 to apply for a connection permit.
Establish mechanisms to require permanent BMPs for post-construction runoff from new development and redevelopment projects.	Evaluate and identify current ordinances, policies and procedures related to post-construction runoff.	Propose changes in ordinance, policy and/or procedure language to stakeholders.	Draft changes in ordinances, policies and/or procedures for stakeholder coordination.	Continue to implement the <i>Storm Water Permanent Best Management Practices Manual</i>
Use of Permanent BMP Manual and the Design Checklist Tool	Evaluate the Draft Permanent BMP Manual and the Design Checklist Tool to identify any inconsistencies with the Maui District MS4 Permit.	Continue to evaluate the Draft Permanent BMP Manual/ Design Checklist Tool and develop training program to cover Permanent BMP Manual	Conduct training sessions.	Use the Design Checklist Tool for upcoming projects.
Checklist to facilitate inspection of permanent BMPs.	Collect and evaluate checklists from other entities.	Develop a checklist, if useful for Maui District.	Inspect permanent BMPs in highway rights-of-way.	Develop inspection checklists as Permanent BMPs are identified.
Inventory and database of permanent BMPs in highway rights-of-way.	Evaluate system to inventory permanent BMPs in highway rights-of-way.	Conduct inventory of existing permanent BMPs in highway-rights-of-way.	Database permanent BMPs in highway rights-of-way.	Continue to evaluate new development/ redevelopment on DOT property to identify any permanent BMPs being constructed.