



## 5. Construction Site Runoff Control

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### 5.1 Overview

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Polluted storm water runoff from construction sites may flow to MS4s and ultimately discharge into State receiving waters. The main pollutant of concern is sediment, but other construction site pollutants may include solid and sanitary wastes, fertilizers, pesticides, oil and grease, concrete truck washout, construction chemicals, and construction debris. Studies have shown that, during a short period of time, construction sites can contribute more sediment to water bodies than can be deposited naturally over several decades<sup>4</sup>.

### 5.2 Permit Requirement

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The Permit requires an operator of a regulated small MS4 to develop, implement and enforce a program to reduce pollutants entering the permittee's regulated MS4 from construction activities disturbing one acre or more, including construction activities less than one acre that are part of a larger common plan of development or sale that would disturb one acre or more. The program must, at a minimum, include the following:

- Establishment of rules, ordinances, or other regulatory mechanism, including enforcement procedures and actions, that require erosion and sediment controls;
- Requirements for construction site operators to implement appropriate erosion and sediment control BMPs;
- Requirements for construction site operators to control construction waste, such as discarded building materials, concrete truck

washout, chemicals, litter, and sanitary waste, that may adversely affect water quality;

- Procedures for site plan review that incorporate consideration of potential water quality impacts;
- Procedures for receipt and consideration of information submitted by the public; and
- Procedures for site inspection and enforcement of control measures.

### 5.3 Existing County Construction Site Runoff Control Program

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Maui County Code 20.08, entitled "Soil Erosion and Sedimentation Control", establishes the County's requirements for construction projects. A summary of the requirements is provided in an information sheet (see Attachment D) provided by DPW Development Services Administration (DSA) Division. DSA forms, rules and guidance are all included on the County website, on a specific page for Grading and Grubbing permits:

<http://www.co.maui.hi.us/index.aspx?NID=1223>

The Code requires minimum BMPs to be utilized for ALL grading, grubbing and stockpiling activities, regardless of size and whether a grading permit is required. BMPs must be employed to prevent, to the maximum extent practicable, "damage by sedimentation to streams, watercourses, natural areas and the property of others." The Code provides the DPW Director with the authority to require additional BMPs if it is

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<sup>4</sup> EPA 833-F-00-008 (Fact Sheet 2.6), US EPA Office of Water, January 2000 (revised December 2005)

determined that the work is likely to create soil erosion problems.

The Section includes enforcement provisions, including fines up to \$1,000 per day, and imprisonment not exceeding one year. Also included are requirements for performance bonds that can be used by the County to pay for costs the County may incur in restoration action.

The County requires contractors to schedule a preconstruction meeting with DSA at least two days prior to the start of work, and prohibits work until the preconstruction meeting occurs. The meeting includes a discussion of BMPs, which must be installed prior to the start of grubbing and grading.

These regulations are administered by the DSA, who is responsible for reviewing and approving grading and grubbing permit applications (as well as building permit applications). Applications for minor permits (for projects less than one acre and height of excavation or fill less than 15 feet) must include a BMP Plan. Applications for major permits (greater area or fill height) must also include an Erosion Control Plan. These Plans are reviewed by DSA for compliance with the County Code. The DSA also requests review of the plans by other affected agencies, and routes plans to the Maui Soil and Water Conservation District for review and comment. Additionally, the Maui Redevelopment Agency (MRA) reviews applications for new development and renovation projects in the Wailuku Redevelopment Area. DSA has also requested third-party engineering review of more complicated large projects. DSA maintains a database of new construction grading permits granted, and records of violations or corrective actions related to BMPs. DSA conducts regular inspections of construction sites to check that the BMPs are properly installed and maintained. Inspections include examining erosion and sediment control BMPs, as well as general housekeeping BMPs for other non-sediment potential pollutants. DSA keeps records of inspections and correspondence with project

owners and contractors. DSA also investigates public complaints regarding contractor operations at construction sites. Calls are received through the DSA general telephone number.

#### **5.4 Minimum BMPs**

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Section 20.08.035 states that, regardless of whether a site triggers the requirement for a grading permit, all grading, grubbing and stockpiling activities must provide BMPs to the maximum extent practicable to prevent damage by sedimentation to streams, watercourses, natural areas and the property of others. It is the permittee's and the property owner's responsibility to ensure that the BMPs are satisfactorily implemented.

- Drainage. On-site drainage is to be handled in such a way to as to control erosion, prevent damage to downstream properties and to return waters to the natural drainage course in a manner which minimizes sedimentation or other pollution to the maximum extent practicable.
- Dust control. All areas disturbed by construction activities must control dust emissions to the maximum extent practicable through the application of BMPs.
- Vegetation. Whenever feasible, natural vegetation, especially grasses, should be retained. If it is necessary to be removed, the removal and disposal of such vegetation from the site must occur within three months.
- Erosion controls. All disturbed areas shall be stabilized with erosion control measures that may include: staging construction; clearing only areas essential for construction; locating potential nonpoint pollutant sources away from steep slopes, water bodies, and critical areas; routing construction traffic to avoid existing or newly planted vegetation; protecting natural vegetation with fencing, tree armoring, and retaining walls or tree wells; stockpiling topsoil, covering the

stockpile to prevent dust, and reapplying the topsoil; covering or stabilizing all soil stockpiles; using wind erosion control; intercepting runoff above disturbed slopes and conveying it to a permanent channel or storm drain; constructing benches, terraces, or ditches at regular intervals to intercept runoff on long or steep disturbed or man-made slopes; providing linings or other method to prevent erosion of storm water conveyance channels; using check dams where needed to slow flow velocities; using seeding and fertilizing, mulching, sodding, matting, blankets, bonded fiber matrices, or other effective soil erosion control technique; and providing vehicle wheel wash facilities for vehicles before they leave the site.

- Sediment control. In addition to erosion control measures, providing practices to capture sediment that is transported in runoff to minimize the sediment from leaving the site. Filtration and detention (gravitational settling) are the main processes used to remove sediment from construction site runoff. Sediment control measures include sediment basins; sediment traps; filter fabric silt fences; straw bale, sand bag, or gravel bag barriers; inlet protection; stabilized construction entrances, and other measures to minimize off site tracking of sediment by construction vehicles; and vegetated filter strips.
- Material and waste management. Measures to insure the proper storage of toxic material and prevent the discharge of pollutants associated with construction materials and wastes shall be implemented.
- Timing of control measure implementation. Timing of control measure implementation shall be in accordance with the approved erosion control plan if such plan is required. At a minimum disturbed areas of construction sites that will not be re-disturbed for twenty-

one days or more will be stabilized (grasses or graveled) by no later than the fourteenth day after last disturbance.

If a project grading exceeds one acre, an erosion control plan and a grading plan, both prepared by an engineer, are required to be submitted. Section 20.08.060 has strict requirements. The erosion control plan shall include drawings with notes and details on the BMPs to be implemented for the project, pursuant to section 20.08.035, Minimum BMPs. The erosion control plan must address the following to the extent applicable:

- Stabilization of denuded areas;
- Protection/stabilization of soil stockpiles;
- Permanent soil stabilization;
- Establishment and maintenance of permanent vegetation;
- Protection of adjacent properties and water bodies;
- Sediment trapping measures;
- Sediment basins;
- Cut and fill slopes (terracing);
- Storm water management;
- Sequence of construction operations, including phased and successive development projects;
- Stabilization of waterways and outlets;
- Storm sewer inlet protection;
- Control of access and vehicular movement;
- Vehicular control on residential lots during construction;
- Working in or crossing watercourses;
- Underground utility construction;
- Timely installation of permanent erosion and sediment control;
- Maintenance of erosion control facilities;
- Protection of existing vegetation; and
- Dust control.

## 5.5 Proposed Construction Site Runoff Control Measures

The County already has an excellent program requiring and enforcing the use of BMPs at construction sites. However, the County proposes the following additional measures focusing on compliance and training:

- Conduct training for County Inspectors and plan reviewers on Construction BMPs;

- Develop a construction inspection checklist to facilitate the County’s construction site inspection program; and
- Evaluate current ordinances and design guidance for revisions that could strengthen the County’s construction runoff control program.

The proposed implementation schedule for the County’s actions is presented in Table 5-1 (items 5-1 through 5-3). The County will also conduct training for construction industry representatives on maintaining BMPs, as previously discussed in Section 2.5.3.

**Table 5-1. Proposed Schedule and Goals – Construction Site Runoff Control**

Item No.	Proposed Activity or BMP	Proposed Development and Implementation Schedule			Quantifiable Target
		2014/15	2016	2017	
5-1	Conduct training for County plan reviewers and construction inspectors on construction BMPs.	Develop training program for County plan reviewers and construction site inspectors.	Conduct training sessions	Conduct training sessions.	<ul style="list-style-type: none"> <li>• By Year 2, conduct annual training for County employees that review construction plans and inspect construction projects.</li> </ul>
5-2	Develop a construction inspection checklist for BMP inspection.	Work with DSA to develop a useful checklist to facilitate inspection of construction BMPs.	Implement checklist during DSA inspections.	Continue to use checklist during DSA inspections.	<ul style="list-style-type: none"> <li>• By Year 2, implement the use of a checklist to facilitate DSA inspections of construction BMPs.</li> </ul>
5-3	Review ordinances and design guidance	Evaluate current County Code and design guidance, assess relevant codes used by other municipalities, and identify revisions that could strengthen the County’s construction runoff control program.	Seek ordinance revision from County Council.	Enact ordinance and conduct education campaign to inform public of the revised ordinance and requirements.	<ul style="list-style-type: none"> <li>• Ordinance revision to strengthen County’s runoff control program within 3 years.</li> <li>• Conduct education campaign to inform public of the revised ordinance within 3 years.</li> </ul>