CHAPTER 7
CONSTRUCTION SITE RUNOFF CONTROL

The objective of the Construction Site Runoff Control Program (Construction Program) is to ensure that no construction will be allowed to commence or proceed on any contract, in-house, maintenance, or encroachment project until it has been verified that the project has NPDES coverage, if applicable. In addition, the Construction Program includes the review and inspection of site specific BMPs for projects that require NPDES coverage.

The construction program covers four primary types of construction projects: contract, in-house, maintenance, and encroachment projects.

Contract projects are construction projects that use outside contractors through a competitive bid process. The plans, specifications and estimates (PS&E) of contract projects are prepared by either HDOT Highways personnel or engineering consultants. The construction of contract projects is managed by HWY-OC. Contract projects can vary in complexity and size from simple resurfacing to construction of new freeways.

In-house construction projects are those projects that are performed by HDOT Highways Oahu District's Maintenance Section (HWY-OM). These projects are typically small and maintenance-related. Some maintenance projects are performed by outside contractors and are overseen by HWY-OM.

Encroachment construction projects are non-HDOT Highways construction activities (activities conducted by others) that include work within the HDOT Highway rights-of-way and/or require permits or approvals from HDOT Highways. Examples of HDOT Highways permits include the *Permit to Perform Work Upon State Highways* (Appendix E.1), as well as connection and discharge permits described in Section 6.1. Encroachment projects typically include the following:

- Construction of temporary or permanent vehicular access to the highway rights-of-way;
- Construction of a connection to the Oahu MS4, which also requires a connection permit (see Section 6.1);
- Construction that will result in discharges into the Oahu MS4, which also requires a discharge permit (see Section 6.1); and
- Installation or repair work of utility lines or connections within highway rights-of-way.

The Construction Program includes the following elements:

- NPDES review and approval process, which also includes review of site-specific construction BMP plans;
- Development of a Construction BMP Field Manual, and construction specifications and notes relating to storm water discharges during construction;
- An inspection program to ensure that construction BMPs are properly installed for contract, in-house, maintenance, and encroachment permit projects; and
- A program to provide annual training on elements of the Construction Program to HDOT Highways staff with construction responsibilities.

7.1 NPDES Review and Approval Process

As required by the Clean Water Act (see Section 1.1.1), any individual, agency, business or organization, including HDOT Highways, is required to obtain NPDES coverage for construction activities that disturb one (1) acre or more of land area, or result in the discharge of dewatering or hydrotesting fluids into State waters. HDOH administers the NPDES Program for the State, and requires submittal to HDOH of a Notice of Intent (NOI) to obtain a Notice of General Permit Coverage (NGPC), or an individual permit application includes a site-specific BMP plan that complies with State and federal standards.

Under the Construction Program's NPDES review and approval process, no applicable contract, in-house, maintenance, or encroachment project will be allowed to proceed to construction unless the project sponsor or representative (e.g., an HDOT Highways project manager or contractors hired by HDOT Highways) provides proof that the project has received from HDOH a NGPC, or other applicable NPDES Permit (e.g., individual NPDES Permit, NGPC authorizing discharges associated with dewatering or hydrotesting, etc.). The following procedures will be used to verify that applicable projects have NPDES coverage:

- For contract, in-house, and maintenance projects, HDOT Highways project managers will be instructed to use a construction BMP checklist during PS&E development (or the environmental review process) to verify whether or not their projects require NPDES coverage, regardless of whether the design is done by HDOT Highways personnel or by engineering consultants.
- For encroachment projects, the applicant must provide proof that a NOI or NPDES permit application was submitted and approved by HDOH before the application can be processed. For example, the *Permit to Perform Work Upon State Highways* (see Appendix E.1) requires that the applicant disclose NPDES applicability. The connection and discharge permit applications also have similar provisions.

The NPDES applications (including the NOI) ensure that project designs include site-specific BMP plans, or that the contractor provides appropriate site-specific BMP plans. Therefore, the Construction Program will also include review and approval of site-specific BMP plans if the project requires NPDES coverage. The review and approval process will be conducted in the following manner:

- For contract, in-house, and maintenance projects, HDOT Highways project managers direct staff, engineering consultants, or contractors shall prepare the site-specific BMP plan. Site-specific BMP plans are reviewed and approved by HWY-O prior to submission to HDOH.
- For encroachment projects, the applicable permit applications are being revised to require the applicant provide a site-specific BMP plan if the project requires NPDES coverage. The applicant will be required to possess the latest version of the City's *Best Management Practices Manual for Construction Sites in Honolulu* (City BMP Manual), until the HDOT Highways manual is available (see Section 7.2), as well as the Rules for Soil Erosion Standards and Guidelines.

The *Site-Specific Best Management Practices (BMP) Plan Review Guidelines* (Checklist) (see Appendix E.2) will be used as a guide in developing and reviewing site-specific BMP plans. It will be made available to HDOT Highways staff, engineering consultants, contractors and encroachment project applicants on-line once the public website is available (see Section

4.2.1.5). In general, the size, scope and type of project are important considerations that factor into the level of detail required for developing a site-specific BMP plan. Common elements of a site-specific BMP plan include:

- Identify potential pollutants that could affect the quality of storm water, dewatering effluent, or hydrotesting discharges from the construction site;
- BMPs that will need to be implemented during construction, including their precise locations, to control the quality of storm water runoff from construction activities, or discharges from hydrotesting or dewatering activities;
- Construction notes addressing erosion control and storm water pollution prevention requirements, which become part of the construction contract documents; and
- Copy of Water Pollution and Erosion Control Notes (see Appendix E.3).

The review of site-specific BMP plans involves determining whether the construction BMPs identified in the plan are appropriate and reasonable for the specific project. The review will verify that the site-specific BMP plan fully meets the requirements of:

- The following HDOT Highways publications (see Section 7.3):
  - Water Pollution and Erosion Control Notes (see Appendix E.3);
  - *Hawaii 2005 Standard Specifications for Road and Bridge Construction (2005)* including Subsection 107.13 and Section 209 (see Appendix E.4); and
  - National Pollutant Discharge Elimination System Requirements (NPDES) for Permit Projects Within State Highway Right-of-Way Notes (see Appendix E.5); and
  - Construction Best Management Practices Field Manual (see Section 7.2);
- Stipulations contained in General Construction Activities Storm Water NPDES Permit, or any other applicable requirements of the Hawaii NPDES permit program where applicable; and
- Checklist described above.

7.2 Construction BMP Field Manual

HDOT Highways has prepared a *Construction Best Management Practices Field Manual* (September 2006) (Construction BMP Field Manual), and was submitted to HDOH for approval. A copy is provided in Appendix E.6. The purpose of the manual is to provide guidance on the installation and maintenance of BMPs that address construction activities. The manual includes all BMPs listed in the Construction BMP Program Plan component of the December 2003 Oahu SWMP Plan and all BMPs contained and described in the City BMP Manual. It does not include an exhaustive list of all possible BMPs.

The BMPs contained in the *Construction BMP Field Manual* focus on site management; erosion control and stabilization; and sediment control and containment. Site management includes preventative measures to control potential pollutants at their source. Erosion control and stabilization are used on disturbed or exposed soil to protect it from erosion due to wind, rain, or runoff. Sediment control and containment are used to intercept and detain sediment-laden runoff prior to off-site discharge.

Each BMP identified in the manual contains the following information:

- General description;
- Applications;

- Installation and implementation requirements;
- Limitations; and
- Maintenance and inspections.

To aid in the selection of appropriate BMPs during construction, the manual contains a *Site-Specific Best Management Practices (BMP) Plan Review Guidelines Checklist*. BMP selection is determined by an evaluation of existing site conditions of the project area.

Prior to the completion of this manual, HDOT Highways provided copies of the City BMP Manual to its field staff and made copies available to contractors involved in HDOT Highways construction projects. Due to distribution of this Oahu SWMP Plan and other distribution activities, copies of the Construction BMP Field Manual will be provided to all HDOT Highways staff involved in contract, in-house, maintenance, encroachment, or construction and erosion control projects. It would also be available on-line in the public website (see Section 4.2.1.5), thus making it accessible to private consultants and contractors.

7.3 Specifications, Provisions and Notes

HDOT Highways revised its Standard Specifications in 2005, following the guidelines of the current editions of the City BMP Manual in developing, installing and maintaining BMPs for projects, and following the City and County of Honolulu's *Rules for Soil Erosion Standards and Guidelines*. As noted above, the *2005 Standard Specifications* is one of the documents that will be used to evaluate site-specific BMP plans prepared for contract, in-house, maintenance, and encroachment construction projects on Oahu if the project requires NPDES permit coverage.

The *Water Pollution and Erosion Control Notes* (Pollution Notes), and the *NPDES Requirements for Permit Projects within State Highway Right-of-Way Notes* (NPDES Notes) have been revised to specify that the use of the City BMP Manual is required for all contract, in-house, maintenance, and encroachment construction projects on Oahu. These notes will be revised to specify the Construction BMP Field Manual when it is approved by HDOH (see Section 7.2).

Copies of the *2005 Standard Specifications*, Subsection 107.13 and Section 209, *Water Pollution and Erosion Control Notes* and *NPDES Requirements for Permit Projects within State Right-of-Way Notes* are provided in Appendix E.3. In addition, copies of these documents will be provided to all HDOT Highways staff involved in contract, in-house, maintenance, and encroachment projects. These documents will be placed on-line once the public website is developed (see Section 4.2.1.5). HDOT Highways staff managing contract projects shall emphasize the importance of storm water pollution prevention to contractors during pre-construction or other project meetings.

7.4 Inspections

This section describes the procedures for inspections of contract, in-house, maintenance, and encroachment project sites to verify and document whether the construction BMPs have been

installed properly. Two types of inspections will be conducted under the Construction Program:

- Initial inspections will be conducted on projects that require NPDES coverage, to verify that the construction BMPs identified in the site-specific BMP plan are properly installed and in the correct locations prior to the commencement of ground-disturbing activity; and
- Periodic inspections to monitor the construction BMPs of all construction projects, regardless of whether they require NPDES coverage, to ensure that their construction BMPs are working properly throughout the life of the construction period.

A list of active construction projects and inspection data will be maintained in the AMS system (see Section 3.3.3).

7.4.1 Initial Construction BMP Inspections

For contract, in-house, maintenance, and encroachment projects that require NPDES coverage, a qualified engineer or inspector will inspect the construction BMPs to verify that they were installed in accordance with the approved site-specific BMP plan prior to approving the initiation of ground-disturbing activities that the BMPs are designed to address. The initial inspections are conducted by HDOT Highways staff. The following general procedures for conducting the initial inspections at construction sites are provided below:

1. The individual responsible for the construction activity shall provide the HDOT project manager or inspector (for encroachment projects) advance notice as to when the installation of the construction BMPs is anticipated to be completed.
2. Prior to the inspection, the inspector shall review and become familiar with the project's site-specific BMP plan. Depending on the size of the project, more than one inspector may be used.
3. Prior to the initiation of any ground disturbing activities, the inspector shall inspect the site(s) to determine whether the construction BMPs identified in the site-specific BMP plan have been properly installed in the correct locations..
4. The inspector shall then document or record whether or not the construction BMPs as specified in the site-specific BMP plan were properly installed using a standardized inspection form (see Appendix E.7).
5. If the inspector finds that the BMPs are properly installed in accordance with the site-specific BMP plans, ground-disturbing activities can proceed.
6. If the inspector finds that the BMPs are not properly installed in accordance with the site-specific BMP plans, ground-disturbing activities will not be allowed to start, and the inspector will re-schedule another inspection to allow the construction activity contact person to fix the problem.

If the site-specific BMP plan specifies that construction BMPs are to be installed in phases, the start of each phase will be treated as an initial inspection.

7.4.2 Periodic Inspections and Enforcement

Both NPDES and non-NPDES projects will be subject to periodic inspections of BMPs. HDOT Highways requires that construction projects, regardless of whether they require NPDES

coverage, include construction BMPs. Unlike the initial inspections, which are conducted by HDOT Highways staff, the objective of the periodic inspections is to have an independent (third party) inspector who is tasked to only inspect the projects BMPs. Therefore, the periodic inspections will be conducted by personnel not involved in other aspects of construction for the subject project. Initially, the inspections will be conducted by the master consultant.

Notwithstanding the requirements of an NGPC or other NPDES permit, if applicable, the schedule for periodic inspections of contract, in-house, and maintenance projects is as follows:

- After the initial inspection of a project (for projects that require NPDES coverage) that results in the approval of ground-disturbing activities, the project's construction BMPs will be inspected at least monthly.
- For projects that do not require NPDES coverage, the project's construction BMPs will also be inspected at least monthly.
- If the inspector finds no critical or major deficiencies or less than six minor deficiencies with no more than three minor deficiencies per month during three successive monthly inspections, the frequency of inspections will drop to quarterly (four times a year). Definitions of critical, major and minor deficiencies are provided in the Definition of Key Terms in the Table of Contents.
- If an inspection identifies at least one critical or major deficiency, or a total of three or more minor deficiencies, the inspection frequency will immediately return to no less than monthly.

Notwithstanding the requirements of an NGPC or other NPDES permit, if applicable, an encroachment project will be subject to a periodic inspection at least once during the life of the project. For any project of the types listed below, the site will be inspected at least annually if the duration of construction is longer than one year:

- Housing or commercial development improvements that include a large roadway and utility improvements or any grading within HDOT Highways rights-of-way;
- Utility main installation, such as water lines, sewer lines, and underground electrical lines within HDOT Highways rights-of-way;
- Landscaping and irrigation installation (e.g. median beautification projects) within HDOT rights-of-way; and
- Drain line connections to the Oahu MS4.

The inspectors will use a checklist, which is provided in Appendix E.8. Inspectors will immediately inform the contractor or project contact person if any illicit discharge, deficiency, or violations of the NGPC or other NPDES permit is found so that the problem can be corrected or addressed in accordance with the following time frames:

- Any illicit discharge or critical deficiency must be corrected or addressed before the close of business on the day of the inspection at which the deficiency was identified.
- Any major deficiency must be corrected or addressed no later than five business days after the inspection at which the deficiency was identified or before the next forecasted precipitation, whichever is sooner.
- Any minor deficiency must also be corrected or addressed before the next forecasted precipitation or within five business days, whichever is sooner.

The inspector will report illicit discharges or deficiencies to the MS4 Task Force manager who will, if applicable, inform HDOH.

If the inspector finds non-compliance with any of these requirements, the inspector will refer the case to HWY-OC if the project is conducted through a contract or to HWY-OM if the project is an in-house, maintenance, or encroachment project. After reviewing the information and reports from the inspector, HWY-OC or HWY-OM have the capability to start proceedings to suspend construction, including suspending or revoking street usage or the permits obtained from Oahu District for encroachment projects in accordance with the Enforcement Policy described in Section 2.4.

The AMS will be used for scheduling inspections, while assuring that regulatory requirements are met (see Section 3.3.3). It will also be used to track inspections and findings for each active construction project. Once fully operational, the AMS will assist the inspection teams by providing inspection histories and verifying the inspection frequency for each project.

7.5 Training

The Construction Program's training component focuses on providing instruction about the proper installation and maintenance of approved construction BMPs, and on the NPDES program administered by the HDOH for storm water discharges at construction sites, and discharges resulting from dewatering and hydrotesting. The Construction Program training was implemented in December 2005, and initially used the City BMP Manual, a *Construction and Maintenance Activities Best Management Practice (BMP) Training Handbook* (see Appendix E.9). A video of the Construction Program training was made and could be shown to staff who were not able to attend the annual training sessions, and to new employees. In addition to the training regimen described below, all inspectors working under the Construction Program will receive formalized on-the-job training.

Training Recipients

The training will be made available to the following HDOT Highways personnel:

- Designers and project managers of construction projects;
- Construction engineers and construction inspectors;
- Maintenance staff;
- Plan reviewers;
- Inspectors; and
- Other HDOT Highways personnel with the following responsibilities:
  - Erosion and Sediment Control,
  - Material Delivery and Storage,
  - Waste Management,
  - Spill Prevention and Control,
  - Vehicle Equipment Maintenance,
  - Paving Operations,
  - Structure Construction and Painting, and
  - BMP installation.

Training Method

The method of training will involve both PowerPoint presentations and handout materials, which include the following documents:

- Presentation's PowerPoint slides that allow for the taking of notes;
- Construction BMP Field Manual (City BMP Manual was distributed in the interim); and
- Descriptions of sample construction BMPs.

Trainer Qualifications

The trainer must meet the following qualifications:

- Professional experience in designing, installing, and/or inspecting erosion and sediment control BMPs;
- Knowledge of the effectiveness of various construction BMPs under local weather conditions; and
- Knowledge of the Oahu MS4 NPDES Permit requirements and related regulatory requirements.

Topics

Topics will include the following:

- Environmental background and regulatory requirements, particularly the Clean Water Act and the NPDES permit program;
- Information and awareness of the Oahu MS4 NPDES Permit, and the overall Oahu SWMP;
- Informing staff that they serve an important role in protecting the water quality in the State;
- Responsibilities of HDOT Highways regarding storm water management and erosion and sediment control at construction sites;
- Typical, common of preferred BMPs related to:
  - HDOT Highways operation and maintenance activities, and
  - HDOT Highways or third-party construction activities;
- Erosion and sediment control practices; and
- Inspection and monitoring requirements, procedures and methods.

Training Schedule and Reporting

Training will be held annually. The Mid-Year and End-of-Year Reports (See Chapter Thirteen) will contain information on the number and dates of training sessions, types of training, and recipients of the training.

Additional Training Activities

Prior to the issuance of a Notice to Proceed for any contract construction project, a pre-construction meeting with the project's prime contractor will be held during which the requirements of the NGPC or other NPDES permit, if any, will be discussed, as well as discussion of the 2005 Standard Specifications, Pollution Notes and NPDES Notes.

7.6 Organizational Structure

As shown on Figure 7-1, the Construction Program is overseen by HWY-O. HWY-OC manages the construction of contract projects, and performs NPDES verifications and review of site-specific BMP plans. HWY-OM performs the work for the construction of in-house projects and oversees the construction of maintenance projects. HWY-OM performs the NPDES verifications and review of site-specific BMP Plans for these projects. HWY-OM also oversees encroachment projects, and is therefore responsible for verifying NPDES applicability and reviewing site-specific BMP plans, if applicable, for these types of projects.

The initial inspections of contract projects will be conducted by HWY-OC personnel. HWY-OM personnel will be responsible for conducting the initial inspections of in-house, maintenance and encroachment projects.

The master consultant will conduct periodic inspections of contract, in-house, maintenance, and encroachment projects. The master consultant is also assisting HDOT Highways in developing the construction BMP checklist, the Construction BMP Field Manual, coordinating with HWY-OC and HWY-OM regarding the documentation of construction BMP inspections, and construction BMP training.

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Highways Division Storm Water Management Program Organizational Structure - Construction Site Runoff Control 2006-2009