



2018 Construction Stormwater Training

November 1, 2018

8:00 am to 12:00 pm



Department of Transportation, Airports Division (DOTA) is providing this training on DOTA's construction and post-construction stormwater programs. The training includes updates to Specifications and SWMPP Construction Activities BMP Field Manual, and review of the DOTA design process.

AGENDA

- | | |
|------------------|---|
| 8:00 – 8:30 am | Registration |
| 8:30 – 8:35 am | Opening Remarks
Jeffrey Chang, PE
Engineering Program Manager, DOT-AIR E |
| 8:35 - 8:45 am | DOTA Stormwater Program Introduction by AIR-EE
Stacy Paquette
Environmental Health Specialist, DOT-AIR EE |
| 8:45 – 8:55 am | History of Federal Clean Water Act and Its Application to DOTA
Brian Lum
Senior Project Engineer, EnviroServices & Training Center LLC |
| 8:55 – 10:00 am | BMP Measures and Practices from HDOH's Point-of-View
Jamie Tanimoto
The Limtiaco Consulting Group |
| 10:00 – 10:10 am | BREAK |
| 10:10 – 10:30 am | Updates to the DOTA's Construction Activities BMP Field Manual
Brian Lum
Senior Project Engineer, EnviroServices & Training Center LLC |
| 10:30 – 10:50 am | Introduction to the New Specification Section 01561 Construction Site Runoff Program
Brian Lum
Senior Project Engineer, EnviroServices & Training Center LLC |
| 10:50 – 11:10 am | Design Review Process and Practices
Brian Lum
Senior Project Engineer, EnviroServices & Training Center LLC |
| 11:10 – 11:30 am | Permanent / Post-Construction BMPs
Vijaya Tummala, PE, CISEC, CPESC
Senior Project Manager, EnviroServices & Training Center LLC |
| 11:30 – 11:40 am | Training Survey/Quiz (Mandatory for Attendees) |
| 11:40 – 11:45 am | Closing Remarks |






Construction Stormwater Training

Department of Transportation, Airports Division


November 2018





Environmental Section

- Environmental Section (AIR-EE) manages environmental compliance at 15 Airports
 - Oahu: Daniel K. Inouye International Airport (HNL), Kalaeloa Airport (JRF), and Kawaihapai Airfield formerly known as Dillingham Airfield (HDH)
 - Maui: Kahului Airport (OGG), Hana Airport (HNM), and Kapalua Airport (JHM)
 - Molokai: Molokai Airport (MKK) and Kalaupapa Airport (LUP)
 - Lanai: Lanai Airport (LNY)
 - Kauai: Lihue Airport (LIH) and Port Allen Airport (PAK)
 - Hawaii: Hilo International Airport (ITO), Ellison Onizuka Kona International Airport at Keahole (KOA), Upolu Airport (UPP), and Waimea-Kohala Airport (MUE)

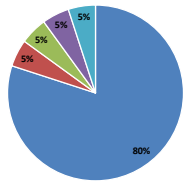


Environmental Section

- AIR-EE responsibilities include compliance with regulations for:
 - Stormwater
 - Spill Prevention, Control, and Countermeasure (SPCC) / Aboveground Storage Tanks (AST)
 - Underground Storage Tanks (UST)
 - Undergroud Injection Control (UIC)
 - Other

AIR-EE Effort



Category	Percentage
Stormwater	80%
SPCC/AST	5%
UST	5%
UIC	5%
Other	5%



Stormwater Program



•Airports has NPDES permits for MS4s at:



- HNL Permit HI S000005
- OGG Permit HI 14KE349

• Storm Water Management Program Plan (SWMPP) includes six minimum control measures. Focus on:

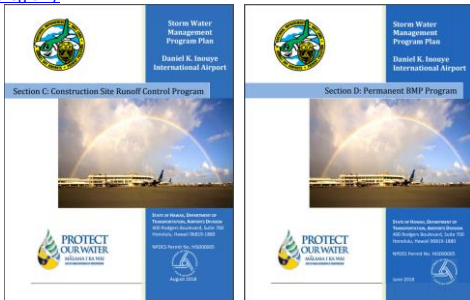
- Construction Site Run-off Control Program
- Permanent BMPs Program



HNL SWMPP



<http://hidot.hawaii.gov/airports/doing-business/engineering/environmental/construction-site-runoff-control-program/>

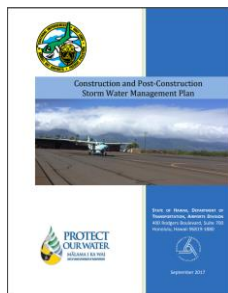




OGG SWMPP



<http://hidot.hawaii.gov/airports/files/2014/11/5.OGG-Construction-and-Post-Construction-SW-Management-Plan-v2.0-Final-201709.pdf>





Public Service Announcement





Questions

- Airports Environmental Website:
<http://hidot.hawaii.gov/airports/doing-business/engineering/environmental/>
- AIR-EE Contact - Stacy Paquette
stacy.a.paquette@hawaii.gov
(808) 838-8656
- Environmental Hotline
(808) 838-8002

Brief History of the Federal Stormwater Management Program

(CLEAN WATER ACT, CWA)

Clean Water Act, Amended 1972

Prohibited the Discharge of any Pollutant to waters of the United States from a point source unless the discharge is authorized by an National Pollutant Discharge Elimination System (NPDES) Permit.

(Industrial Process Wastewater and Municipal Sewage)

Clean Water Act, Amended 1987

A comprehensive national program to address stormwater discharges in two Phases

**Clean Water Act,
Amended 1987**

**Phase 1
Construction Activities that
disturbed 5 or more acres. (1990)**

**Clean Water Act,
Amended 1987**

**Phase 2
Small MS4 and Construction
Activities that disturbed 1 or
more acres.
(December 8, 1999)**

**EPA's Enforcement in
Hawaii**

**Department of Transportation
Highways and HNL
Consent Decree (2005)**

EPA's Enforcement in Hawaii

City and County of Honolulu,
Consent Decree (2010)

Department of Transportation,
Harbors Division, Consent Decree
2014

JAMES PFLEUGER

(March 2006)

\$7.4 Million Settlement with the EPA for Clean Water Act (CWA) Violations associated with construction activities at his 378 acre coastal property on the island of Kauai.

DOH fines project developer \$28K for environmental infractions



By Rick Gray | May 30, 2018 at 2:25 AM HST - Updated September 20 at 10:46 AM

Health Department rips city for illegal wastewater leaks from garbage trucks

Published: Tuesday, July 24th 2018, 5:59 pm HST
Updated: Tuesday, July 24th 2018, 8:34 pm HST
By Rick Dayso, Reporter CORRECT

State investigating storm water runoff on North Shore

"It covers and suffocates the coral reef."



The state Health Department is investigating how storm water runoff got into the ocean
By Rick Dayso | September 29, 2018 at 8:52 AM HST - Updated September 29 at 8:52 AM

Ewa Beach man hires cleaning crew after he was seen pouring oily liquid into storm drain



Man takes ownership after video of illegal dumping in storm drain sparks outrage
By HNN Staff | July 7, 2018 at 11:11 PM HST - Updated August 6 at 10:17 AM



DOTA's Storm Water Management Program Plan (SWMP)



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2018 Construction Stormwater Training

Presented By:
Department of Transportation, Airports
Division

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STORMWATER POLLUTION CONTROL PLAN



http://dnr.hawaii.gov/coralreefs/files/2013/04/Fish_Feb2013_089_Darla-White.jpg

<http://www.friendsofhanuamabay.org/>

<http://www.friendsofhanuamabay.org/>

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STORMWATER POLLUTION CONTROL PLAN



bleached healthy

<http://dnr.hawaii.gov/reefresponse/files/2014/04/bleachedVshealthy.jpg>

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STORMWATER POLLUTION CONTROL PLAN



"Coral Bleaching Recovery Plan", (March 2017), Hawaii DLNR

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STORMWATER POLLUTION CONTROL PLAN

- Warmer Waters
- More CO₂ = More Acidic
- Stronger Storms
- Sediment & Polluted Runoff

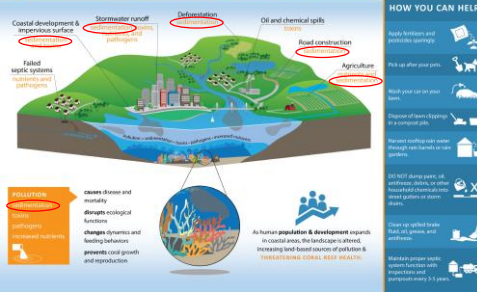


Courtney A. Couch

<http://dnr.hawaii.gov/coralreefs/south-kohala/>

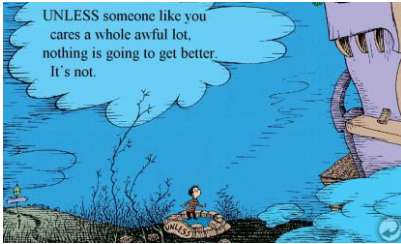
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THREATS TO CORAL REEFS LAND-BASED SOURCES OF POLLUTION





STORMWATER POLLUTION CONTROL PLAN



What we choose to do on our sites matters.
The environment doesn't stand a chance unless we choose to protect it by protecting our sites.

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2018 CONSTRUCTION STORMWATER TRAINING

Topics for Today

- Why We Do This
 - To Prevent Pollution
 - To Protect Our Waters
 - To Meet MS4 Requirements
 - To Avoid Enforcement
- BMPs for DOTA Projects
 - Various BMP Categories
 - Requirements, Things to Remember, The Good & The Bad



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2018 CONSTRUCTION STORMWATER TRAINING

Why We Do This



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2018 CONSTRUCTION STORMWATER TRAINING **Why We Do This**


To Prevent This!
Prevent pollution to DOTA's MS4 & State Waters
Prevent pollution from DOTA's construction sites



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2018 CONSTRUCTION STORMWATER TRAINING **Why We Do This**

To Protect This!



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2018 CONSTRUCTION STORMWATER TRAINING **Why We Do This**

JFK & LAX...



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2018 CONSTRUCTION STORMWATER TRAINING Why We Do This

To Meet MS4 Requirements

- 6 Minimum Control Measures (MCMs) to control urban stormwater pollution



2018 CONSTRUCTION STORMWATER TRAINING Why We Do This

To Meet MS4 Requirements

Construction Runoff Control Program: A Team Effort

Set process in design to check permits, BMP plan, opportunities to improve function



BMP Inspections: Initial, Routine, Final Utilizing inspection checklists

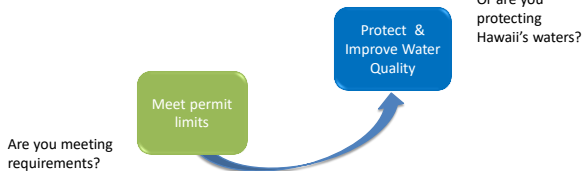


Tracking deficiencies (minor, major, critical) Enforcing when necessary

2018 CONSTRUCTION STORMWATER TRAINING Why We Do This

To Meet MS4 Requirements

- Maturity of an MS4 Program is reflected in its goal

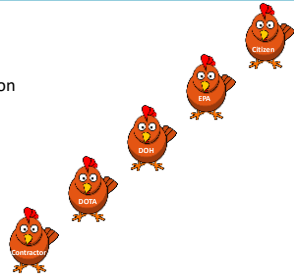


2018 CONSTRUCTION STORMWATER TRAINING Why We Do This

To Avoid Enforcement!

Enforcement Pecking Order

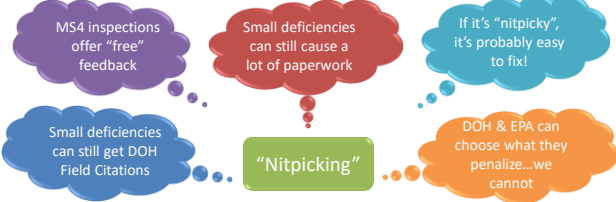
- EPA, DOH, DOTA can inspect/enforce on Contractor
- EPA and DOH can enforce on DOTA
- EPA can enforce on DOH
- Citizens can enforce against ALL



2018 CONSTRUCTION STORMWATER TRAINING Why We Do This

To Avoid Enforcement!

When we get frustrated, try to look at "nitpicking" from another angle...



2018 CONSTRUCTION STORMWATER TRAINING Why We Do This

To Avoid Enforcement!

Unpleasantness of enforcement

- Extra work!!!
- Extremely costly!!!
- Someone who probably doesn't understand your organization is gonna tell you how to run it



2018 CONSTRUCTION STORMWATER TRAINING **Why We Do This**

To Avoid Enforcement

A Former Regulator's Perspective

It's Time

- Construction runoff control – introduced in the 90's
- In Hawaii, the big push came in the 2000's
 - Training, outreach, inspections, BMP vendors, big enforcement cases (Hokulia, Pflueger)
- It's no longer time for outreach

Note: CWB enforcement is fully staffed; first time since ~2009 (RIF)



2018 CONSTRUCTION STORMWATER TRAINING **Why We Do This**

To Avoid Enforcement

A Former Regulator's Perspective: It's Time (for enforcement)

Utilization of Field Citations

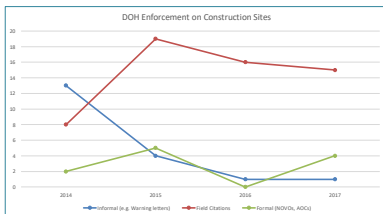
- "Slap on the wrist" reminders
- East and fast for CWB to issue
- Can be used for:
 - BMP deficiencies
 - Lack of plans or permits on site
 - Failure to make submittals (NOC, "30 days before...")
 - Polluted discharges
- Starts at \$500, up to \$3,000



2018 CONSTRUCTION STORMWATER TRAINING **Why We Do This**

To Avoid Enforcement

- Dramatic decline in use of warning letters
- Dramatic increase in Field Citations (\$500 - \$2,000)
- Big cases (NOVOs, AOCs) are steady (~2-4 per year)
 - 2014 – 2
 - 2015 – 5
 - 2016 – 0
 - 2017 - 4





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To Continue to Avoid Enforcement

- 2016 – Closure of Consent Decree
- Expect that DOH may inspect/audit at any time
 - Or utilize internal audits
- Last major MS4 audit was in 2014 (CCH)
- Resulted in push for program changes
 - Utilization of AMS
 - Rules Relating to Water Quality
 - More aggressive Permanent BMP Program
 - Working smarter



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2018 CONSTRUCTION STORMWATER TRAINING Why We Do This

To Continue to Avoid Enforcement

What DOH wants to see in DOTA's Construction Program

- Progress during Consent Decree is continued
- Meeting permit requirements
- Understanding of construction issues
- Feedback Loops – what is seen on site is funneled back for project management
- Clear & strong stance: Acceptable, Not Acceptable
- DOTA's ability to hold contractors accountable



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2018 CONSTRUCTION STORMWATER TRAINING Why We Do This

To Avoid Enforcement!

When we get frustrated, remember...

- Public expectation of water pollution prevention has increased over time (and will continue to)
- Remember who and what we're protecting



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BMPs for DOTA Projects



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BMPs for DOTA

Unique Characteristics of DOTA Construction Sites

Site characteristics dictate BMPs

- DOTA's construction sites likely...
- Don't have large slopes
- Aren't going to be sprawling (like a 20+ acre subdivision site)
- Have space limitations
 - Materials handling & stockpiling become issues
- Must consider FAA constraints



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BMPs for DOTA

Perimeter Controls

DOH Requirement (App C, 5.1.2.2)

Install perimeter controls

- Install sediment controls along perimeters that receive storm water from site
- Linear projects: if use of perimeter controls is limited, maximize what you can and document in SWPPP
- Maintain perimeter controls
 - Remove sediment before it hits 1/3 above ground height

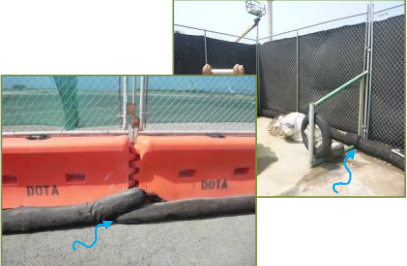


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2018 CONSTRUCTION STORMWATER TRAINING BMPs for DOTA

Perimeter Controls
Remember...Contain and Maintain!

- The purpose of a perimeter is to **hold** something in (or out)
- Can't do that with gaps




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Perimeter Controls
Remember...Contain and Maintain!

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Perimeter Controls
Remember...Contain and Maintain!

- Your capacity and ability to contain is decreased if you don't maintain your BMPs



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Perimeter Controls
Innovative Solution!



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Natural Buffers and Sediment Controls

DOH Requirement (App C, 5.1.2.1)
When within 50' of state water...

Options:

1. Maintain 50' of natural buffer + Line of Sediment control
2. Maintain natural buffer (less than 50') + double line of sediment control
3. Double sediment control (minimum 5' apart) + stabilize within 7 days



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Inlet Protection

DOH Requirement (App C, 5.1.2.9)
The Last Line of Defense?

- Install IPD prior to inlet to remove sediment
- *Can be removed if flooding occurs, where safety or property loss is of concern, or to prevent erosion
- Maintain IPD as sediment accumulates or performance is compromised (same day as found, next day at latest)



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Inlet Protection: The Last Line of Defense?

Proper installation = containment



Remember the purpose & watch for gaps

Inlet Protection: Getting Creative!

Work that needed to be done doubled as inlet protection!



Inlet Protection: The Last Line of Defense?



Ingress/Egress

DOH Requirement (App C, 5.1.2.2.3)

Minimize track out by using:

- Designated exit(s)
- Appropriate stabilization so sediment removal occurs before exit
- Tire cleaning (if needed)
- Track out clean up by end of day
- Do not wash off track out into storm drains or state waters

Note: The department recognizes that some fine grains may remain visible on the surfaces of off-site streets, other paved areas, and sidewalks even after the implementation of sediment removal practices. Such "staining" is not a violation of this section



Ingress/Egress

- Needs maintenance (bare spots in gravel)
- Will it be effective?
- Has the ingress/egress become the pollutant source?
- Are there other options that require less maintenance?



Ingress/Egress

Alternative options exist...

How do we collect feedback on what works?





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BMPs for DOTA

Stockpiles & Materials Management

DOH Appendix C Requirements (App C, 5.1.2.4)

- Locate piles outside of natural buffers
- Protect from contact with storm water using a temporary perimeter sediment barrier
- Where practicable, provide cover or appropriate temporary stabilization
- Unless infeasible, contain and securely protect from wind



For most stockpiles, it's safer to just cover
How would you explain why a plastic sheet is infeasible?!?
(unless that stockpile is gigantic...then DOH will have other concerns with it)



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BMPs for DOTA

Stockpiles & Materials Management

The push for cover is growing

- Still need to remind contractors
- Can cite the many visible covered stockpiles along highways

Pile in back is covered

- Try to give credit for good practice, as it can make pointing out deficiencies more acceptable



OK: If stockpile is in use for day and cover/perimeter will be replaced by day's end



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BMPs for DOTA

Materials Management – Construction Waste

DOH Requirements (App C, 5.3.3.3)

- Minimize the exposure to storm water of products, materials, or wastes
- For construction and domestic waste:
 - Provide waste containers of sufficient size and number
 - Clean up and dispose of waste is designated waste containers
 - Clean up immediately if containers overflow




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Concrete Washout (Pollution Prevention)

- Many creative options have been utilized at sites
- When an issue is understood, contractors will take the time to execute
- Probably helps that concrete recycling exists




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Spills and Leaks (Materials Management)

DOH Requirements (App C, 5.3.3.3)

- Provide effective means of preventing the discharge of spilled or leaked chemicals
- Clean up spills immediately (dry methods when possible)
- Have adequate supplies
- Do not hose down to clean
- Use drip pans and absorbents under or around leaky vehicles or equipment



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Spills and Leaks (Materials Management)

Catching leaks and spills is easier than cleaning them up



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Spills and Leaks (Materials Management)

Catching leaks and spills is easier than cleaning them up



Materials Management

DOH Requirements (App C, Section 5.3.3.3)

- Provide cover (e.g. plastic sheeting or temporary roofs) to prevent contact with rainwater
- Or something similarly effective
- NOT apply to products/materials that are NOT a source of storm water contamination or are designed to be exposed to storm water



Materials Management

Innovative Solutions!



Materials Management

DOH Requirements (App C, Section 5.3.3.3)

- Provide cover (e.g. plastic sheeting or temporary roofs) to prevent contact with rainwater
- Or something similarly effective
- NOT apply to products/materials that are NOT a source of storm water contamination or are designed to be exposed to storm water



Materials Management

- Protect investments – don't let products become damaged before they are installed
- Keep them in original wrapping
- Plastic sheeting is cheap and easy to install



Exposed Soils

DOH Requirements (App C, Section 5)

- Minimize amount of exposed soils
- BMPs design considers flow, rainfall, soil type
- Utilize natural buffers
- Install BMPs before disturbance
- Install per specs and maintain
- Install in areas where storm water flows

Requirements are prescriptive – use judgment to identify major or critical issues and utilize regulations to remedy those situations



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Exposed Soils



- Slopes require aggressive stabilization (hydromulch fails)
- Small exposed areas can still cause problems


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Dewatering

DOH Requirements (App C, Section 5.)

- App C does not authorize dewatering discharges to state waters
- Need App G to discharge to state waters
- App G will require sampling and monitoring and DMRs



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2018 CONSTRUCTION STORMWATER TRAINING

**DOTA's Construction Program:
Always Improving**

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2018 CONSTRUCTION STORMWATER TRAINING

Always Improving

Everyone has their role to play

“Third party inspections have been great, because they play the bad cop, and we don’t have to. We can save up our credit for other, bigger fights.”

-Contracted CM

- We can balance being both the good cop and the bad
- The contractor and the inspectors/PMs don’t have to be adversaries...don’t make it so
- Be open to discussion, don’t be afraid to be wrong, listen to others’ POVs



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STORMWATER POLLUTION CONTROL PLAN

We are operating a construction runoff control program

- What can we learn from each other?
- How can we improve our processes?
- What do we need to revise, clarify or add to allow us to better protect state waters?
- How can we make sure there is follow through and enforcement on problems?

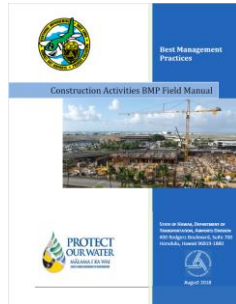


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Construction Activities BMP Field Manual

<http://hidot.hawaii.gov/airports/doing-business/engineering/environmental/construction-site-runoff-control-program/>

(Revised August 2018)



NEW SECTIONS

- 1) Concrete Curing Water and Compound Management.
- 2) Hydro-Testing Effluent Management.
- 3) Water-Jet Wash and Hydro-Demolition Water Management.
- 4) Management of Materials Associated with Paint.

Concrete Curing Water and Compounds Management

Concerns:

- Water exposed to concrete during curing may have a high pH and may contain chemicals, metals, and fines.
- Curing compounds are chemicals that are pollutants.

Concrete Curing Water and Compounds Management

Practices:

- Direct cure water away from inlets and watercourses to collection areas for infiltration, evaporation, or removal. Consider using wet blankets with the water cure.
- Avoid overspray of curing compound.

Hydro-Testing Effluent Management

Concerns:

- Water-flushing of the pipes clears them of all debris, sediment, and other pollutants that may have entered the pipe during manufacture, transport, and installation.
- Chlorinated waters are harmful to aquatic life and plants.

Hydro-Testing Effluent Management

Practices:

- Provide Drain Inlet Protection and Perimeter Controls.
- Direct waters, especially chlorinated waters, away from inlets and watercourses.
- Collect and dechlorinate-treat chlorinated waters.

Hydro-Testing Effluent Management

Permits:

If discharging to the drainage system, surface waters, and/or State waters, the following permits shall be obtained by the contractor.

- Prepare and obtain DOTA's acceptance of a NOI/NDPES Permit Form F. Submit completed application to DOH.
- Submit for DOTA's approval the DOTA Discharge Permit for Construction Activities.

Water-Jet Wash and Hydro-Demolition Water Management

Concern:

Discharge of contaminants released from concrete or impervious surfaces during cleaning and demolition into the drainage system or surface waters.

Water-Jet Wash and Hydro-Demolition Water Management

Practices:

- Direct waters away from inlets and watercourses to collection areas for infiltration, evaporation, or removal.
- Prior to operation, check and clean any spills
- Consider using other means of cleaning or demolition.

Management of Materials Associated with Paint

Concerns:

- Prevent the discharge of pollutants to both water and land from materials associated with paint through proper handling, storage, and disposal.
- Oil-based paints and residue are hazardous waste.

Management of Materials Associated with Paint

Practices:

- Store in water-tight containers, secondary containment, and with proper labeling.
- Mix and clean paint in covered and contained area, over secondary containment, when possible to minimize adverse impact from spill.
- When spraying paint onto surfaces, avoid over-spraying. Avoid or minimize applying paint in windy or rainy conditions. Maintain proper distance between sprayer tip and surface. Apply paint with brush or roller, if possible.

Management of Materials Associated with Paint

Practices:

- When completed, clean brushes and other instruments by "painting out" brush as much as possible or scraping off the excess paint. Do not clean out brushes or rinse paint containers into the dirt, street, gutter, storm drain or surface water.
- Properly dispose of all waste and wash water/liquids. Filter and re-use thinners and solvents, if possible.

AMENDED SECTIONS

- 1)Section C.6 – Dust Control.
- 2)Section C.7 – Topsoil Management.
- 3)Section C.9 – Seeding and Planting.
- 4)Section C.15 – Stabilized Construction Entrance / Exit.
- 5)Section C.17 – Dewatering Operations.
- 6)Section C.22 – Vehicle and Equipment Operation and Maintenance. (Formerly, Vehicle and Equipment Maintenance)
- 7)Section C.26 – Material Delivery and Storage.
- 8)Section C.28 – Protection of Stockpiles.

QUESTIONS?

**NEW
SPECIFICATION
SECTION 01561**

**CONSTRUCTION SITE RUNOFF CONTROL
PROGRAM**

Background

HDOT, Highways Division, Standard Specifications for Road and Bridge Construction, Section 209, Temporary Water Pollution, Dust, and Erosion Control.

- Specifications designed for Highways.
- Airports has requirements and restrictions that are unique to Airports.
 - ✓ Aircraft Safety and Performance.
 - ✓ TSA Security

Background

- **DOTA's Stormwater Management Program Plan (SWMPP)**
 - Construction Activities BMP Field Manual
 - BMP Inspections (Contractor's, Initial, DOTA's Third-Party, and Final)
- **HAR Chapter 11-54 and Chapter 11-55, Appendix C**

OVERVIEW

GENERAL:

- Replaces, Updates, and/or Combines the Following Specification Sections
 - Section 01500 Temporary Water Pollution, Dust, and Erosion Control
 - Section 01560 Environmental Controls
 - Section 01561 Construction Site Runoff Control Program
- Direct reference to the DOTA's SWMPPs (HNL and OGG)
- Includes a hardcopy of the DOTA's Construction Activities BMP Field Manual (Appendix A)

OVERVIEW

GENERAL:

- Identifies and Maintains Normal Chain of Communication
 - “...submit to Engineer for review/acceptance/approval by DOTA Environmental Section”
- Identifies that “Disturbed Area” include the Contractor’s Construction Support Areas, such as storage yards outside and inside of Airport Property.
- Includes Enforcement Procedures and Requirements

PRODUCTS

GRASS

- Grass Seeds and Mowing of Grass can attract wildlife, such as birds, that are hazardous to aircrafts.
- FAA and USDA Recommendation
 - ‘No Mow’ Bermudagrass (Green Velvet)
 - Seashore Paspalum
- Recommends stolons, sprigs, or plugs, in lieu of seeds.
- Irrigation should be done during the hours of darkness to avoid attracting wildlife.

PRECONSTRUCTION REQUIREMENTS

- Water Pollution, Dust, and Erosion Control Meeting.
- Contractor’s Site-Specific BMP Plan
- NPDES Permits
 - Stormwater Associated with Construction Activities, NOI-C
 - Waters Associated with Hydrotesting Activities, NOI-F
 - Waters Associated with Dewatering Activities, NOI-G

PRECONSTRUCTION REQUIREMENTS

- Solid Waste Disclosure.
- Construction BMP Training Requirements.
- Site-Specific Health and Safety Plan for Known or Suspected Areas of Contamination.
 - Certified Industrial Hygienist (CIH)

CONSTRUCTION REQUIREMENTS

BMP Measures, Controls, Practices, and Requirements.

- For example, Completed or Temporary Inactive Disturbed Area
- Initial Stabilization IMMEDIATELY.
 - Complete Stabilization with 7 or 14 days, depending on Permit conditions.
 - Defines Initiation and Completion of Stabilization.

CONSTRUCTION REQUIREMENTS

BMP Deficiencies observed by the DOTA Construction Manager (CM) or CM Inspector.

- Reported to the Contractor's Designed BMP Representative.
- Provides Time Frame for Initiation and Completion for the Contractor's Corrective Action
 - Immediate Threat of Discharge, Completion of Corrective Actions is the close of business the same day. (Critical – Same Day)
 - Significant Threat of Discharge, Complete Corrective Actions within Five (5) Calendar Days or before the next forecasted rain, whichever is sooner. (Major – Five Days or sooner.)
 - For All Others, Complete Corrective Actions within Ten (10) Calendar Days or within the time specified by the Engineer (CM). (Minor – Ten Days or sooner.)

CONSTRUCTION REQUIREMENTS

REQUIRED BMP INSPECTIONS

- CONTRACTOR'S INSPECTION OF BMPS
 - Weekly
 - Within 24 hours of any rainfall of 0.25-inch or greater which occurs in a 24-hour period.
 - When Existing BMP Measures are damaged or not operating properly as required by the Site-Specific BMP Plan.

CONSTRUCTION REQUIREMENTS

- INITIAL INSPECTION OF BMPS
 - Conducted by DOTA Environmental Section Inspector)
 - Prior to the Start of Construction activities, after installation of Initial BMP measures, such as
 - ✓ Drain Inlet Protection.
 - ✓ Stabilized Construction Entrance
 - ✓ Perimeter Controls - Sediment and Dust
 - ✓ Designated BMP Facilities – Concrete Washout, Portable Toilets, Stockpiles, etc.

CONSTRUCTION REQUIREMENTS

- INITIAL INSPECTION OF BMPS, continue
 - Deficiencies must be corrected before Construction Activities are allowed to start.
 - New Work Areas / Phase During Construction.

CONSTRUCTION REQUIREMENTS

- Final Inspection / Post-Construction BMP (PBMP) Initial Inspection
 - Completion of Construction, including installation of permanent BMPs.
 - ✓ Landscaping has completed the Plant Establishment Period.
 - Deficiencies must be corrected before the Temporary BMP Measures can be removed, before Project Final Acceptance, and before Final Payment to the Contractor.

CONSTRUCTION REQUIREMENTS

SPECIAL BMP INSPECTIONS:

- DOTA's SWMPP BMP INSPECTIONS, aka Third-Party BMP Inspections
 - For Projects Located at the Daniel K. Inouye International Airport (HNL) or the Kahului Airport (OGG) that have an NGPC or NDPES Permit or disturbing one acre or more, including the Contractor's Construction Support Activity Areas

PAYMENT AND ENFORCEMENT

ITEM NO. 01561.1 Construction Site Runoff Control Program,
(LUMP SUM)

- 20% - Satisfactory Completion of Initial Inspection of the BMPs.
- 60% - Monthly Payments over the Duration of the Project.
 - No progress payment will be authorized when the Contractor fails to maintain the project site in accordance with the accepted Site-Specific BMP Plan.
 - For Projects at HNL and OGG with a NGPC/NDPES Permit, Satisfactory Completion of the Monthly Third-Party Inspections.

PAYMENT AND ENFORCEMENT

ITEM NO. 01561.1 Construction Site Runoff Control Program,
(LUMP SUM)

- 20% - Satisfactory Completion of the Final Inspection / Post-Construction BMP Initial Inspection.

PAYMENT AND ENFORCEMENT

Additional Enforcement

1. Suspend Work.
2. Assess Liquidated Damages (Appendix B), up to \$25,000 per day.
3. Termination of the Contract, depending on the severity of the deficiencies.

Liquidated Damages may be assessed for the following:

- Non-compliances have the potential to cause a discharge.
- Corrective actions are not completed by the end of the work-day for non-compliances that have the potential to discharge pollutants during a rainfall event. (Critical Deficiency)
- A polluted discharge has occurred.

QUESTIONS?

CONSTRUCTION PLAN DESIGN AND REVIEW

Environmental Review of Construction Documents

- Performed During the Design Stages of the Construction Project and Design-Build Project for Both DOTA and Tenant Improvement Projects.

Environmental Review of Construction Documents

Compliance with Applicable Storm Water Regulations:

- DOTA SWMPP Construction and Post-Construction Sections for HNL and OGG
 - Construction Activities BMP Field Manual
 - Storm Water Permanent BMP Manual
- HAR Chapter 11-54, 11-55, 11-60
- NGPC / NPDES Permit Requirements



EXEMPTED PROJECTS

Projects consisting of Less Than One (1) Acre of Disturbed Land, including All Construction Support Activity Areas and Staging Yards.

- Interior Renovations, provided the Staging Area is under One (1) Acre.
- Minor Land Disturbance, Less Than 1/4 Acre Disturbed, on a single lot, such as Landscaping.
- Milling and Replacing Pavement Surfaces that do not expose the underlying base course or subgrade.

EXEMPTED PROJECTS

Projects consisting of Less Than One (1) Acre of Disturbed Land, including All Construction Support Activity Areas and Staging Yards.

- Parking Lot and Driveway Repair, Less Than 1/4 Acre Disturbed.
- Post or Pole Installation.
- Utility Repair Work.
- Maintenance and Repair Activities.

Environmental Review of Construction Documents

- Construction Best Management Practices
- Permanent/Post-Construction Best Management Practices, PBMP
- Training Requirements
- Permitting

REVIEW DOCUMENTS BY DESIGNERS

- DOTA's Design Review Checklist Form or Notification Form for Sites Disturbing Less Than One Acre
- Construction Plans and Specifications
- NPDES Notice of Intent (NOI), NPDES Permit Application, or Other Permit Applications. (Include Construction Support Activity Areas)

REVIEW DOCUMENTS BY DESIGNERS

- Storm Water Pollution Prevention Plan (SWPPP).
- DOTA's Permit to Discharge into the State Airport Drainage System Application.

DESIGN REVIEW CHECKLIST FORM

- Submitted to SPM for Review and Approval by AIR-EE.
- Updated August 2018
- <https://hidot.hawaii.gov/airport/files/2018/04/Construction-Inspection-Checklist-Version-9.0.pdf>

The image shows a thumbnail of the 'Design Review Checklist' form. It includes a header with the Department of Transportation logo and the title 'Design Review Checklist'. Below the header, there are several sections of checkboxes for different types of reviews, such as 'Design Review Checklist', 'Storm Water Pollution Prevention Plan (SWPPP)', 'NPDES Permit Application', and 'Other Permit Applications'. The form is designed to be filled out by reviewers to track the status of various design and permit documents.

TRAINING REQUIREMENTS

DOTA requires that the Contractor's Staff with Construction Program responsibilities be trained. The training is specific to DOTA activities, including the proper installation and maintenance of accepted BMPs, rules, and procedures.

The pertinent training video is available on the DOTA website:

<http://hidot.hawaii.gov/airports/doing-business/engineering/environmental/construction-site-runoff-control-program/>

Record completion of the training and retain records on site. With ground disturbing activities about to commence, the training record should be up to date. Also submit completed training rosters and Construction Training Quizzes to the DOTA Environmental Section (fax: 808-838-8017) or email to dot.air.environmental@hawaii.gov.

PERMITTING

State of Hawaii, Department of Health (DOH)

- NOI-C: NPDES Permit for Discharges of Storm Water Associated with Construction Activities.
- NOI-F: NPDES Permit for Discharges of Hydrotesting Waters.
- NOI-G: NPDES Permit for Discharges Associated with Construction Activity Dewatering.
- Storm Water Pollution Prevention Plan, SWPPP (HAR Chapter 11-55, Appendix C, Section 7.

PERMITTING

State of Hawaii, Department of Transportation, Airport Division (DOTA)

- DOTA's Permit to Discharge into the State Airport Drainage System
 - Storm Water from Construction Site.
 - Construction Dewatering
 - Hydro-Testing
 - Connection to the DOTA's MS4
 - For Tenant Improvement Project, Stormwater Sheet Flow Discharges


OTHER DOCUMENTS FOR AIR-EE'S REVIEW

Contractor-Furnished Documents:

- Contractor's Site-Specific Best Management Practice Plan (SSBMP, aka. SWPPP)
 - Including all Updates and Revisions during Construction.
- Contractor's NOI-C, NOI-F, and NOI-G, as applicable.
 - NOI-C includes any additional Construction Support Activity Areas that were not included in the Initial NOI-C for the Project.

Questions?

2018 CONSTRUCTION STORMWATER TRAINING

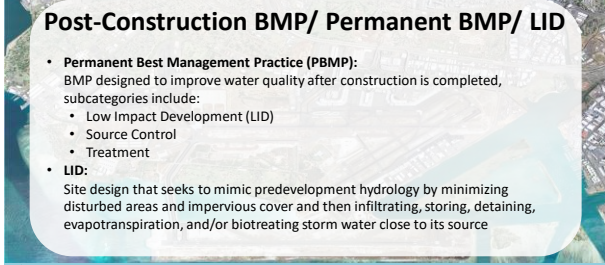


Post-Construction BMPs

Presented By:
Department of Transportation, Airports Division

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2018 CONSTRUCTION STORMWATER TRAINING

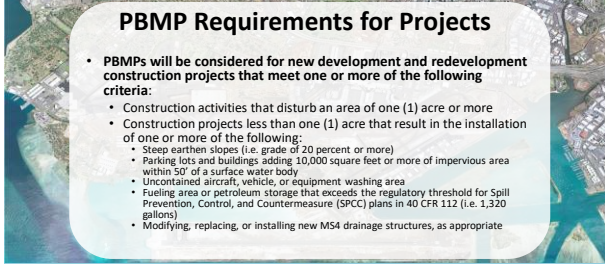


Post-Construction BMP/ Permanent BMP/ LID

- **Permanent Best Management Practice (PBMP):**
BMP designed to improve water quality after construction is completed, subcategories include:
 - Low Impact Development (LID)
 - Source Control
 - Treatment
- **LID:**
Site design that seeks to mimic predevelopment hydrology by minimizing disturbed areas and impervious cover and then infiltrating, storing, detaining, evapotranspiration, and/or biotreating storm water close to its source

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2018 CONSTRUCTION STORMWATER TRAINING



PBMP Requirements for Projects

- **PBMPs will be considered for new development and redevelopment construction projects that meet one or more of the following criteria:**
 - Construction activities that disturb an area of one (1) acre or more
 - Construction projects less than one (1) acre that result in the installation of one or more of the following:
 - Steep earthen slopes (i.e. grade of 20 percent or more)
 - Parking lots and buildings adding 10,000 square feet or more of impervious area within 50' of a surface water body
 - Uncontained aircraft, vehicle, or equipment washing area
 - Fueling area or petroleum storage that exceeds the regulatory threshold for Spill Prevention, Control, and Countermeasure (SPCC) plans in 40 CFR 112 (i.e. 1,320 gallons)
 - Modifying, replacing, or installing new MS4 drainage structures, as appropriate

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Exemptions from PBMP Requirements for Projects

The following projects are exempt from submittal requirements and oversight under the PBMP Program, but may still be observed by DOTA as a part of the construction program (Section C) and/or industrial and commercial activities program (Section F)

- Trenching and resurfacing associated with utility work
- Resurfacing or replacement of damaged pavement
- Discontinuous sites
- Sites where stormwater runoff does not ultimately discharge to a receiving water
- Projects which return the area to pre-development runoff conditions
- Sites where PBMPs may be prohibited due to aircraft safety concerns
- Projects that do not meet the DOTA SWMPP definition of construction or are excluded under Section C, 1.1.1

PROJECT OF AIRWATER DEPARTMENT OF TRANSPORTATION AIRPORTS DIVISION

2018 CONSTRUCTION STORMWATER TRAINING

PBMP Design Criteria

Identify Pollutants of Concern

Identify Candidate PBMPs

Determine PBMP size and/or capacity

Develop O&M Plan, as necessary

PROJECT OF AIRWATER DEPARTMENT OF TRANSPORTATION AIRPORTS DIVISION

2018 CONSTRUCTION STORMWATER TRAINING

How to identify Pollutants of Concerns?

Designers should identify/anticipate pollutants of concern based on:

- Land use type of the development project and associated pollutants
- Historical pollutants expected to be present on-site
- Planned Activities
- Planned Site Design
- MS4 NPDES Requirements
 - SWMPP Section E, Trash Reduction Plan for HNL
- Receiving water quality and CWA Section 303(d) List of Impairments
 - Keehi Lagoon, Mamala Bay, Ahua Pond, Kaloaloe Canal, and Manuwai Canal
- Typical pollutants of concern are sediment, trash, nutrients, oil & grease, metals, pesticides etc.

PROJECT OF AIRWATER DEPARTMENT OF TRANSPORTATION AIRPORTS DIVISION

2018 CONSTRUCTION STORMWATER TRAINING

PBMP Sizing Criteria

- Volume-Based Design
 - The design must hold 1 inch of runoff and shall be sized based on the following equations:
 $WQV = PCA \times 3630$
 - Where: WQV = water quality volume (cubic feet)
 P = design storm runoff depth (inches) = 1 inch; C = volumetric runoff coefficient; & A = total drainage area (acres)
 $C = 0.05 + 0.009(I)$
 - Where: C = volumetric runoff coefficient & I = percent of impervious cover, expressed as a percentage

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2018 CONSTRUCTION STORMWATER TRAINING

PBMP Sizing Criteria

- Flow-Based Design
 - The design must be able to accommodate a peak rainfall intensity of 0.4 inches per hour, based on the following equations:
 $WQF = CIA$
 - Where: WQF = water quality flow rate (cubic feet per second); C = runoff coefficient (Table 1); I = peak rainfall intensity (inches per hour) = 0.4; & A = total drainage area (acres)

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2018 CONSTRUCTION STORMWATER TRAINING

PBMP Types for Airports

- Treatment PBMPs:
 - Oil Water Separators
 - Hydrodynamic Separators (includes CDS Units)
 - Catch Basin Inserts
- LID & Source Control PBMPs:
 - Permeable Pavement
 - Bioswales
 - Grassed Swales
 - Infiltration Beds
 - Evaporation Ponds

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2018 CONSTRUCTION STORMWATER TRAINING

PBMP Implementation

- DOTA Environmental Section encourages pre-design consultation for PBMPs
- Design Phase
 - Incorporate PBMPs in the project design
 - Submit Plans, Design Review Checklist, and O&M plan (if applicable) to DOTA Environmental Section
 - Address comments from DOTA Environmental Section
 - Finalize Plans

PROJECT ORIGINATOR DEPARTMENT OF TRANSPORTATION AIRPORTS DIVISION

2018 CONSTRUCTION STORMWATER TRAINING

PBMP Implementation

- Construction Phase
 - Submit Shop Drawings and any PBMP design changes (if applicable) to DOTA Environmental Section
 - For PBMP design change, re-submit entire package (Plans, Design Review Checklist, and O&M plan (if applicable)) to DOTA Environmental Section
 - Address comments from DOTA Environmental Section
 - Finalize and submit O&M Plan (if applicable)

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2018 CONSTRUCTION STORMWATER TRAINING

PBMP Implementation

- Post-Construction Phase
 - Request Environmental Identification number (if applicable) from DOTA Environmental Section to paint the numbers for PBMPs
 - Complete the PBMP turnover to DOTA and make sure DOTA Environmental Section is notified
 - DOTA Environmental Section will field-verify installation of PBMPs
 - Address comments from DOTA (if applicable)
 - Provide as-built drawings to DOTA for PBMP installation so they can start tracking and maintaining PBMP

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2018 CONSTRUCTION STORMWATER TRAINING

HNL Resources

<http://hidot.hawaii.gov/airports/doing-business/engineering/environmental/construction-site-runoff-control-program/>

PROTECT OUR WATER DEPARTMENT OF TRANSPORTATION AIRPORTS DIVISION

2018 CONSTRUCTION STORMWATER TRAINING

OGG Resources

<http://hidot.hawaii.gov/airports/files/2014/11/5.OGG-Construction-and-Post-Construction-SW-Management-Plan-v2.0-Final-201709.pdf>

PROTECT OUR WATER DEPARTMENT OF TRANSPORTATION AIRPORTS DIVISION

2018 CONSTRUCTION STORMWATER TRAINING

Mahalo

Questions?

PROTECT OUR WATER DEPARTMENT OF TRANSPORTATION AIRPORTS DIVISION
