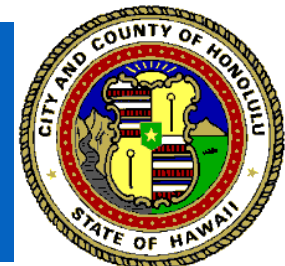




REVISIONS TO THE CITY'S WATER QUALITY RULES

American Council of Engineering Companies of
Hawaii (ACECH) Symposium
April 6, 2017
Hale Koa Hotel

DEPARTMENT OF FACILITY MAINTENANCE
STORM WATER QUALITY BRANCH
RANDALL WAKUMOTO, BRANCH HEAD



WHY STORM WATER MATTERS?



POTENTIAL CONSEQUENCES

DRAINAGE AND FLOODING



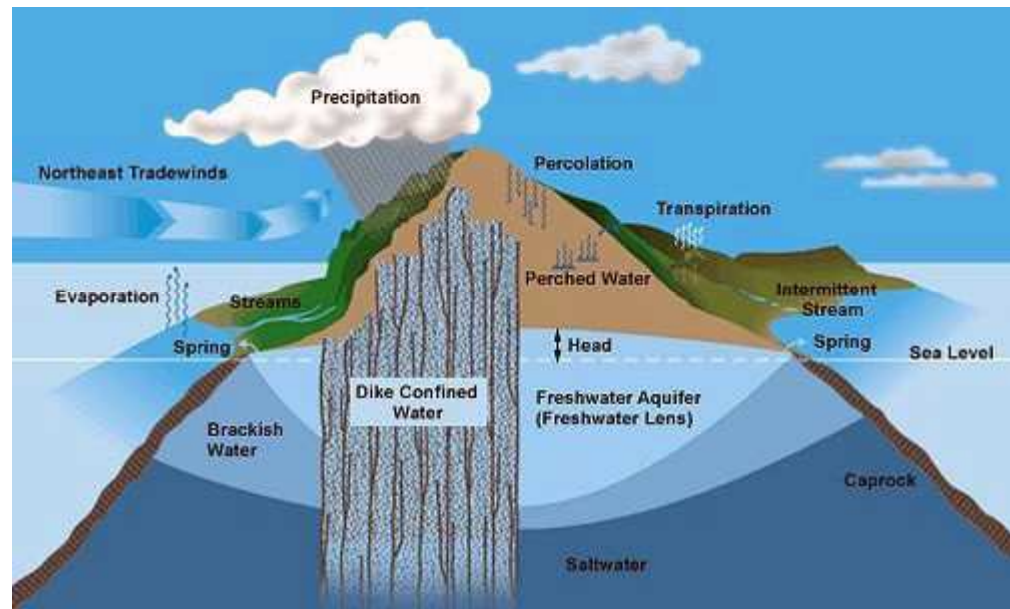
POTENTIAL CONSEQUENCES

SEA LEVEL RISE EFFECTS COMPOUNDED



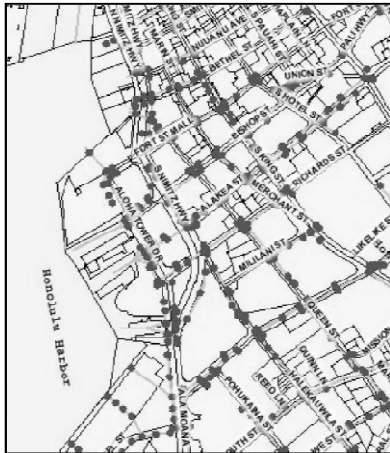
POTENTIAL CONSEQUENCES

GROUND WATER RECHARGE



BACKGROUND

MUNICIPAL SEPARATE STORM SEWER SYSTEM

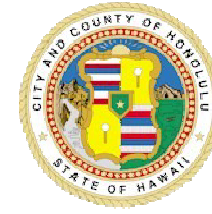


(MS4)

discharge



RECEIVING
WATERS



MS4 PERMIT

Reissued JAN 15, 2015

Permit Became
Effective on FEB. 16,
2015

Permit Expires on
JAN 15, 2020

STORM WATER MANAGEMENT PROGRAM REQUIRED ELEMENTS

Public Participation &
Outreach



Pollution Prevention
and Good Housekeeping



Construction
Site Runoff
Control



Post Construction
Storm Water
Management



Illicit Discharge
Detection &
Elimination



Monitoring &
Implementation
Plans

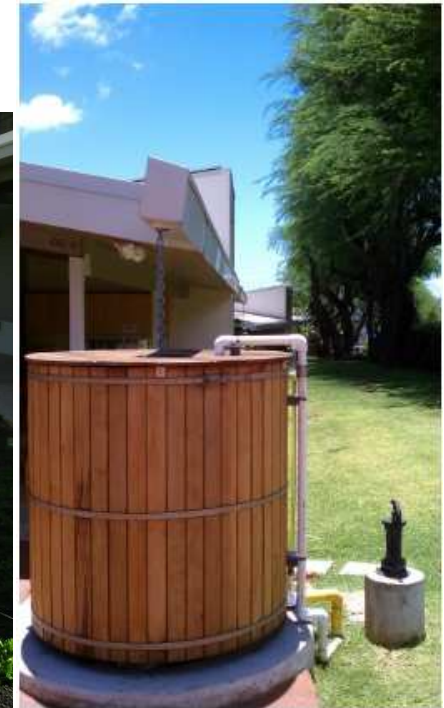


Industrial & Commercial
Discharge

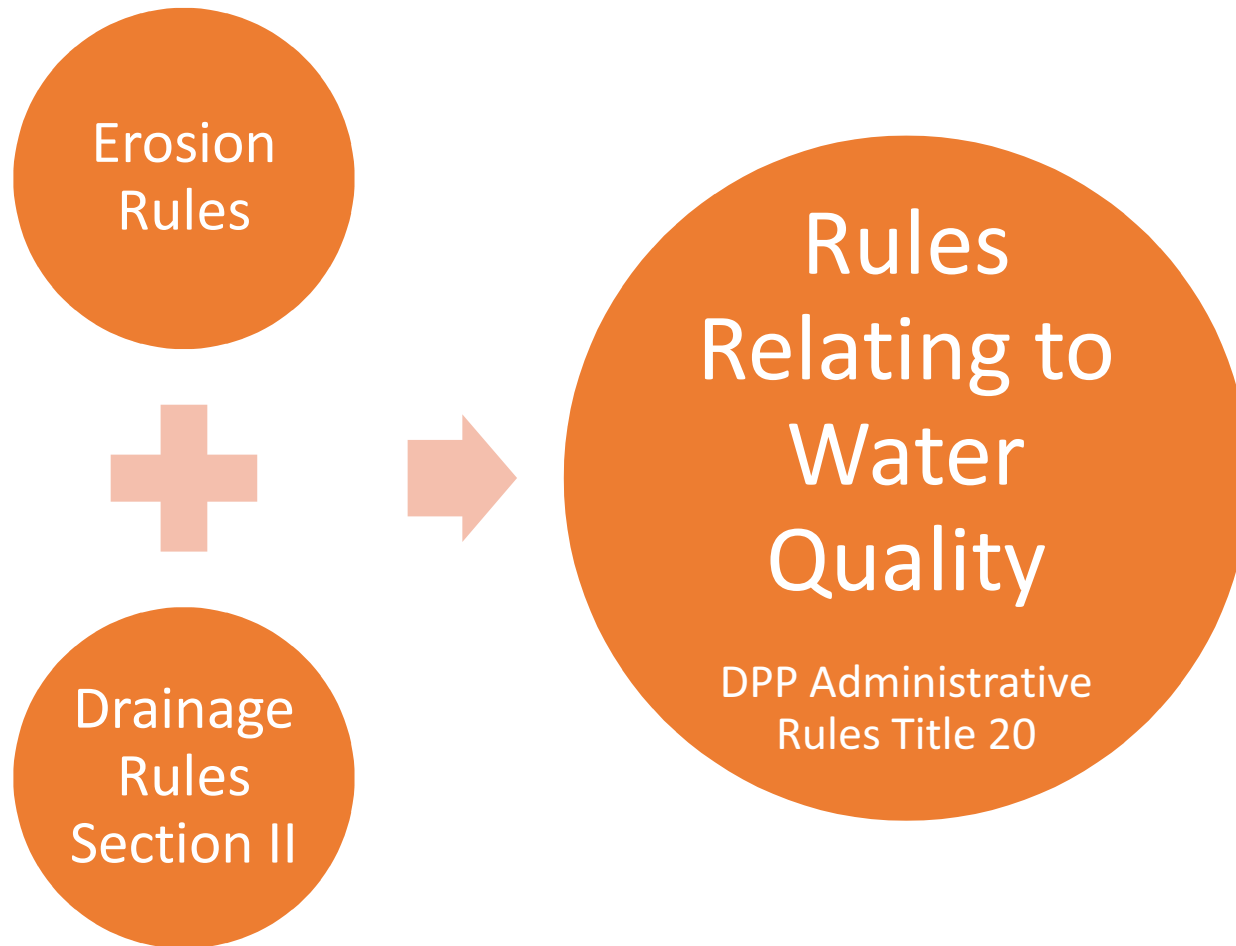


Water Quality Rules

- Public Notice published on July 1, 2016
- Public Hearing hearing held on August 4, 2016
- Rules adopted on October 10, 2016
- Effective on August 16, 2017



One DPP Rule for Water Quality



Drainage and Flood control requirements will be separate

DURING CONSTRUCTION

**Plan Review and Implementation of BMPs
before and during Construction**

Major Revisions from 1999 Rules Relating to Soil Erosion Standards

- ☐ No requirement for Soil Loss Calculations
- ☐ No minimum BMP checklists
- ☐ Updated minimum BMPs
- ☐ Updated BMP standards
- ☐ ALL categories must submit Erosion and Sediment Control Plan (ESCP)
- ☐ ESCP templates for small projects
- ☐ Applicants must designate an ESCP coordinator to implement the ESCP and perform inspections
- ☐ New requirements for Self-Inspection

Land Disturbing Activity

“Land Disturbing Activity” include, but are not limited to actions that result in the turning, penetration, or moving of soil, the resurfacing of pavement that involves the exposure of the base course or subsurface soils, and the use of portions of a Project Site as staging areas or base yards.

ESCP Coordinator

“ESCP Coordinator” means the designee responsible for the implementation of an ESCP approved by the Director. The designation of an ESCP Coordinator does not relieve the property owner or other responsible parties from compliance with these Rules or liability for violations of the same.

Regulated Projects

Any Development or Redevelopment project that involves land disturbing activity that requires a building, electric, plumbing, grading, grubbing, stockpiling, or trenching permit is considered a regulated project under the City's Revised Water Quality Rules.



Existing DPP Categories for Regulated Projects

Category 1	Projects not required to get a grading permit but which require a building permit and where grading, stockpiling or grubbing is to occur.
Category 2	Projects which require a grading permit where the area of the zoning lot or portion thereof subject to the permit is less than 15,000 square feet for single-family or two-family dwelling uses and less than 7,500 square feet for other uses.
Category 3	Projects which require a grading permit where the area of the zoning lot or portion thereof subject to the permit is 15,000 square feet or more for single-family or two-family dwelling uses, or 7,500 square feet or more for other uses.
Category 4	Projects which require a grading permit where the total area including any areas developed incrementally that is to be graded is 15,000 square feet or more for single-family or two-family dwelling uses, or 7,500 square feet or more for other uses, or in the event a proposed cut or fill is greater than 15 feet in height for single-family or two-family dwelling uses, or 7.5 feet in height for other uses.
Category 5	Projects where the total area that is to be graded, grubbed or stockpiled upon is one (1) acre or greater , including any areas developed as part of a larger common plan of development or sale if the larger common plan will ultimately disturb one (1) acre or more of total land, and which require a NPDES General Permit Authorizing Discharges of Storm Water Associated with Construction Activity issued by the DOH.

New Sub-Project Categories (§20-3-14)

Category 1: Development that requires a building permit but does not require a grading, grubbing, or stockpiling permit.

Category 1a	Must meet ALL of the following criteria: 1. Residential single-family or two-family detached residential Development; 2. The total Disturbed Area for the Project is less than 1,000 square feet; and 3. Land Disturbing activities will not occur on slopes equal to or greater than 15 percent at the Site.
Category 1b	Must meet ANY of the following criteria: 1. Commercial Development with less than one acre of Disturbed Area; 2. Residential single-family and two-family detached Development between 1,000 square feet and less than one acre of Disturbed Area; or 3. Residential single-family and two-family detached Development less than 1,000 square feet of Disturbed Area if work will be performed on slopes equal to or greater than 15 percent at the Site.
Category 1c	Development that involves a Disturbed Area of one acre or more or requires a NPDES General/Individual Permit Authorizing Discharges of Storm Water Associated with Construction Activity, issued by the DOH.

Trenching Only: Development that requires a trenching permit but does not require a building, grading, grubbing or stockpiling permit.

Erosion and Sediment Control Plans (ESCP)

Regardless of the project size, location or schedule, the new Rules require:

- 1) Erosion Prevention BMPs**
- 2) Sediment Control BMPs**
- 3) Good Housekeeping BMPs**

****No requirement for Soil Loss Calculations***

Category 1A/1B ESCP Small Project Template



City and County of Honolulu

Appendix A

Erosion and Sediment Control Plan Category 1A Template

Construction Site Project Name: _____
Physical Site Address: _____
Erosion and Sediment Control Coordinator: _____ Phone Number: _____
Building Permit Number: _____

Instructions:

This completed template is to be used as the Erosion and Sediment Control Plan (ESCP) for projects which fall under the City and County of Honolulu, Department of Planning and Permitting (DPP) Category 1A: Single-family or Two-family detached residential building projects that disturb less than 1,000 square feet of land and where there will not be land disturbing activities on slopes greater than 15%.

This ESCP must be submitted as part of the Building Permit application and made available on the job site at all times. This ESCP may be prepared by the owner of the project or an authorized representative designated by the owner. Both individuals must certify this ESCP below.

Read through the instructions for each of the three (3) sections on the next pages, **I. Erosion Prevention**, **II. Sediment Control**, and **III. Good Housekeeping**. Any best management practices (BMP) boxes that are checked are mandatory during construction. For more information on each type of BMP, this template lists applicable fact sheet numbers from the City's Construction BMP Manual that may help you decide on which BMP type to use and how to use them. The manual is available on the DPP website. For any conflicting information between the Rules Relating to Water Quality and the Construction BMP Manual, the requirements of the Rules shall be followed. If other BMPs not listed are used to achieve the same or similar results, attach additional documentation.

I. EROSION PREVENTION: practices that prevent erosion from occurring.

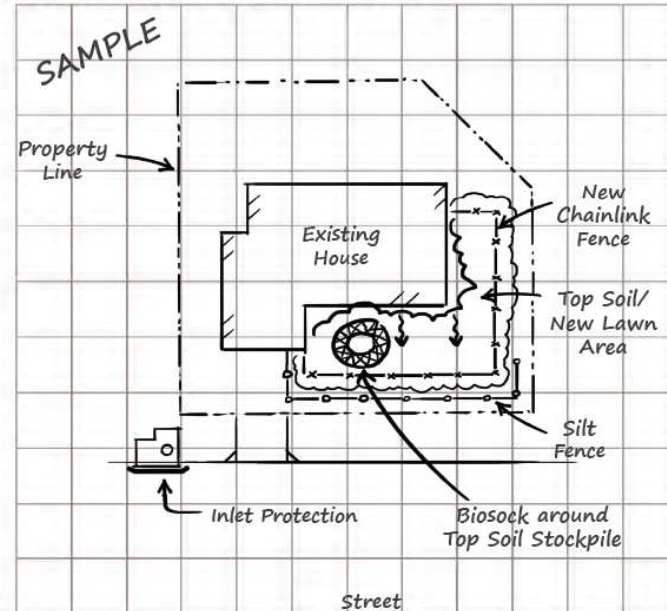
BMP	Check Appropriate Box	Reference Factsheets
1. Project Scheduling Notify the DPP two (2) weeks prior to starting work. Attach a Project Schedule to this ESCP including dates when BMPs will be installed, when land disturbing activities will begin and end, and dates when BMPs will be removed.	<input type="checkbox"/> Applicable <input type="checkbox"/> Not Applicable	EC-1
2. Permanent Stabilization Prior to final approval and closing of the permits for work on the project site, permanent stabilization must be in place.	<input type="checkbox"/> Applicable <input type="checkbox"/> Not Applicable	N/A

II. SEDIMENT CONTROL: practices to prevent soil and sediment from leaving the project site and entering storm drains during rain events.

BMP	Check Appropriate Box	Reference Factsheets
1. Perimeter Controls Sediment fences or barriers shall be used at the perimeter of all disturbed areas if there is the potential for runoff to flow off the project site, and around the base of all material stockpiles. These may include gravel bags, sand bags, fiber rolls, silt fences, or compost socks that intercept runoff.	<input type="checkbox"/> Applicable <input type="checkbox"/> Not Applicable	SE-1, SE-5, SE-6, SE-8, SE-16
2. Storm Drain Inlet Protection Inlet protection is required over storm drains within 50 feet of your project site unless those inlets drain to a sediment basin or trap.	<input type="checkbox"/> Applicable <input type="checkbox"/> Not Applicable	SE-10

SITE DIAGRAM

Provide a drawing of your site below or attach another map. Include the building outlines, property boundary or fence line, flow path for storm water runoff, any BMPs planned, the limits of where your work will be located, and any storm drains within 50 feet of your property. The drawing does not need to be to scale.



CERTIFICATION

By signing, you acknowledge that you understand that erosion prevention, sediment control, and good housekeeping BMPs in this plan are mandatory conditions of your building permit and are subject to inspection and enforcement by the Department of Planning and Permitting.

Owner Name _____ Signature _____ Date _____

ESCP Coordinator Name _____ Signature _____ Date _____

Example ESCP (continued)

Details

Sequence

Notes

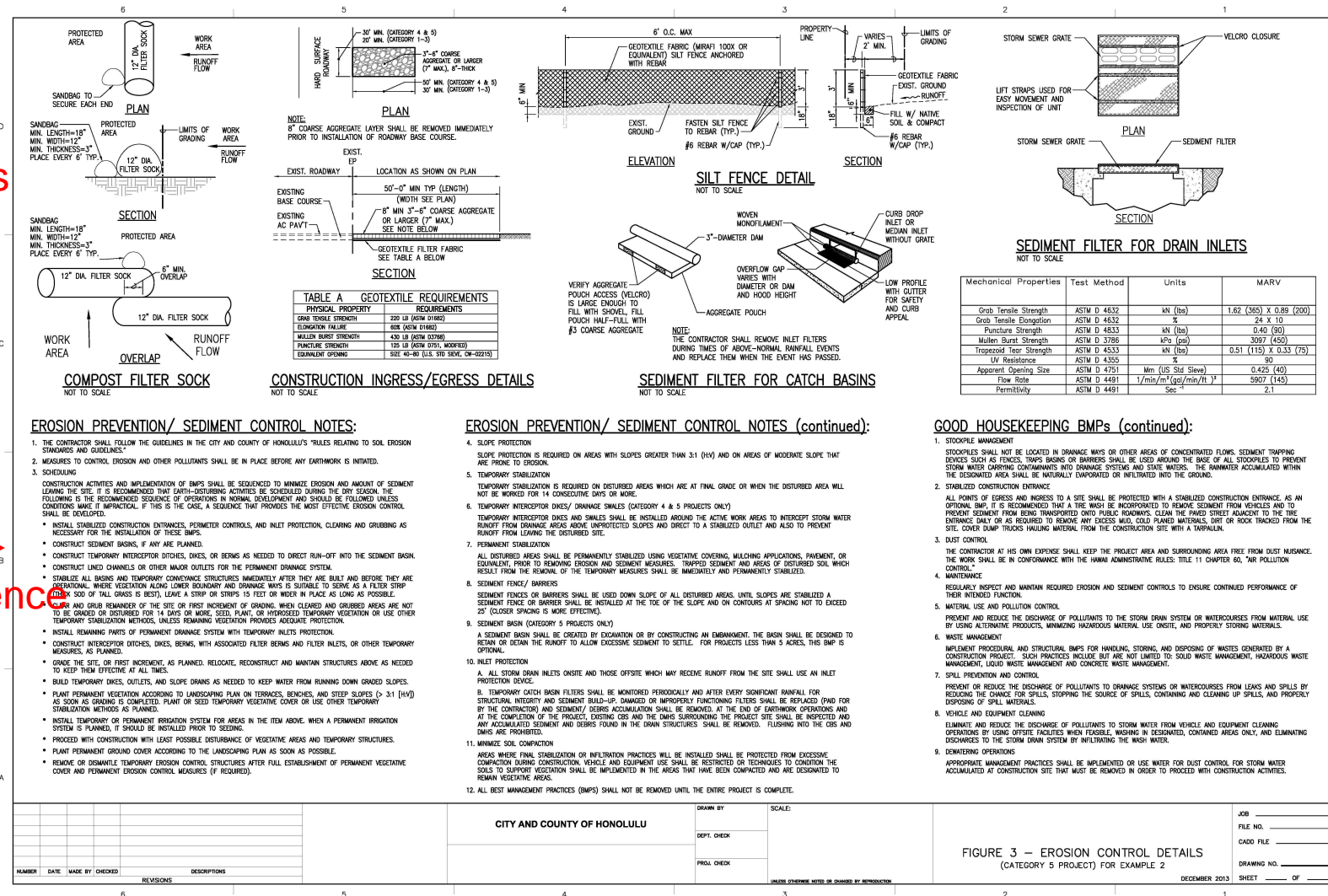


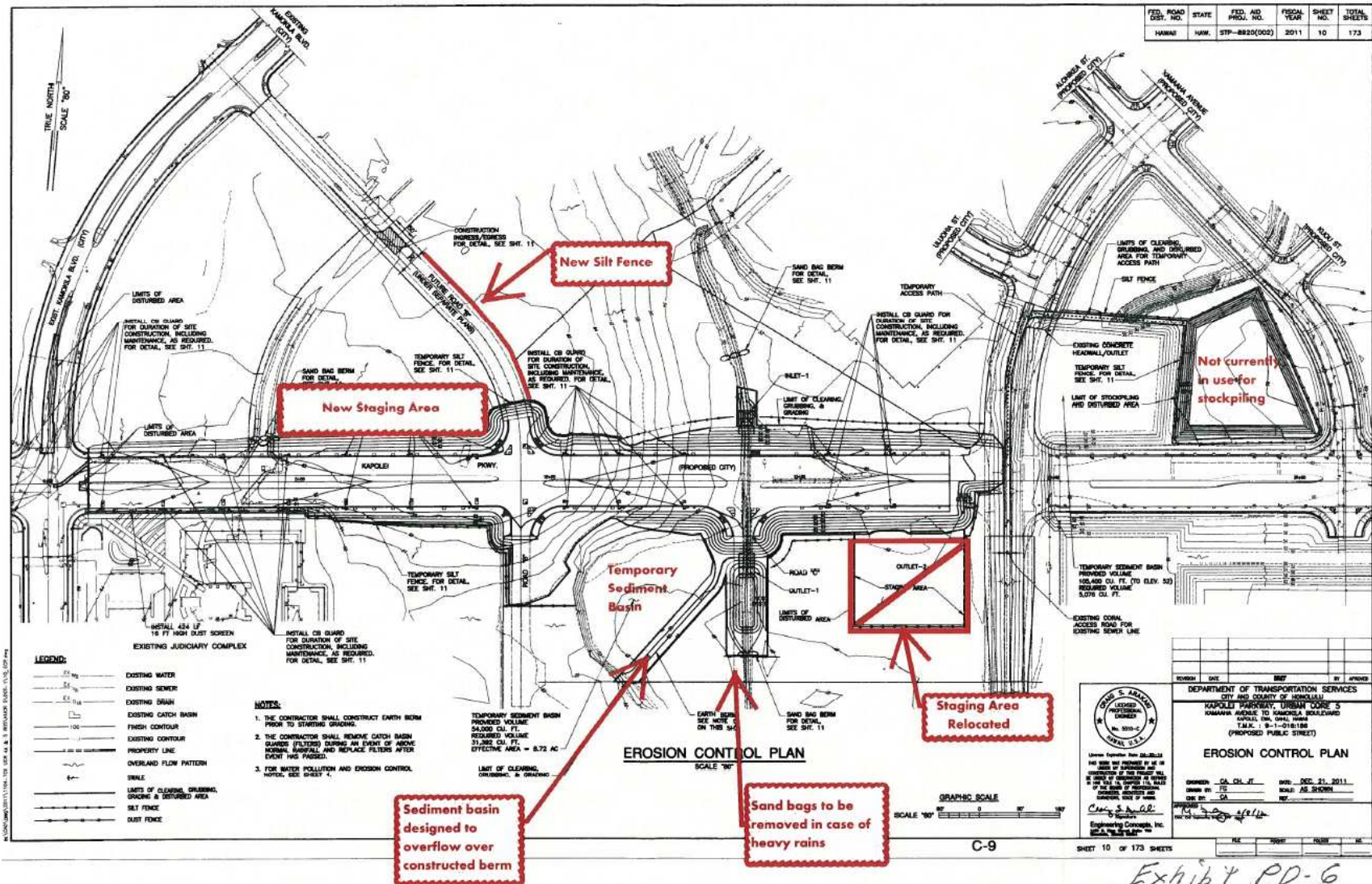
FIGURE 3 - EROSION CONTROL DETAILS
(CATEGORY 5 PROJECT) FOR EXAMPLE 2

DECEMBER 2013

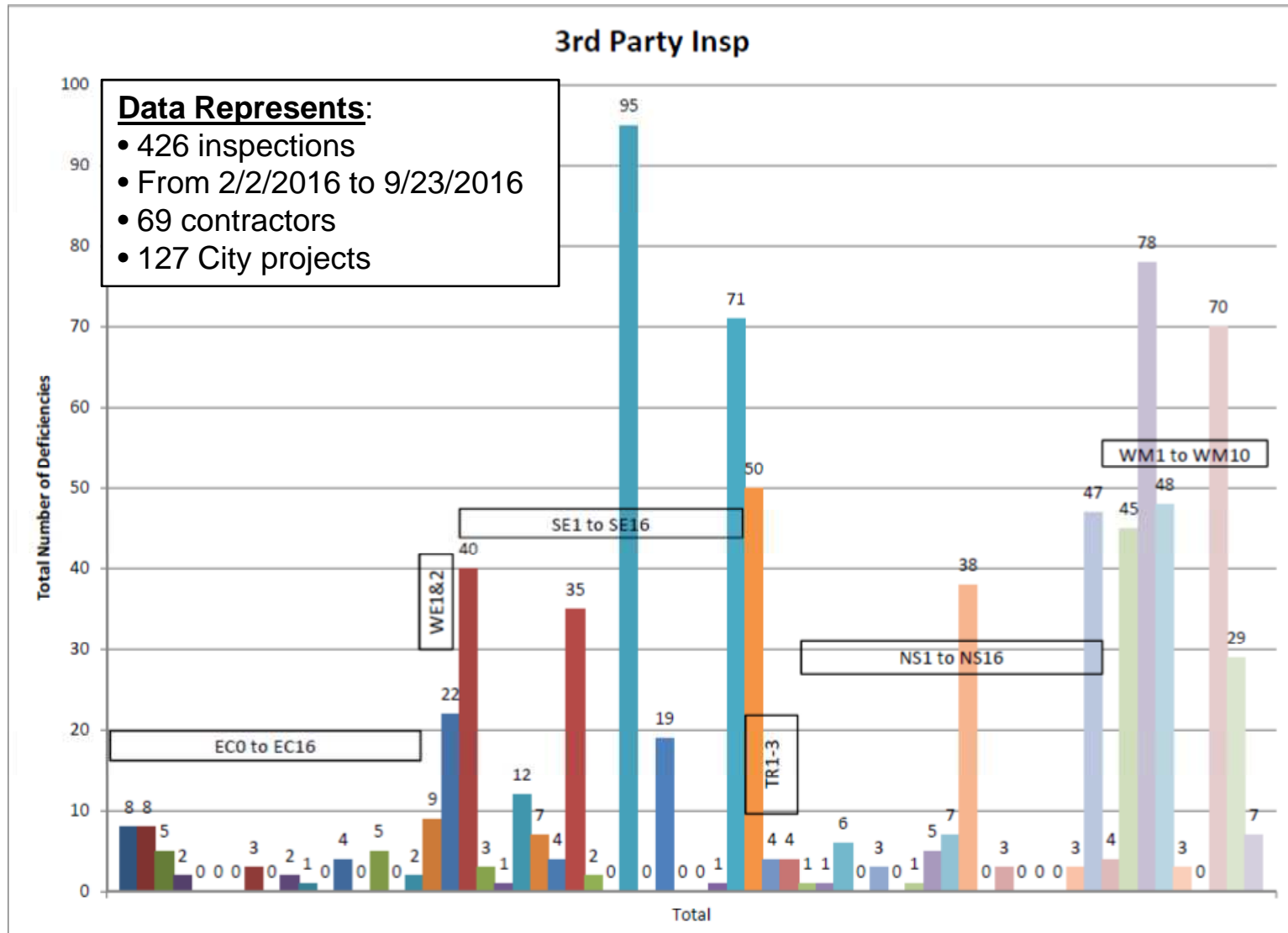
SHEET

OF

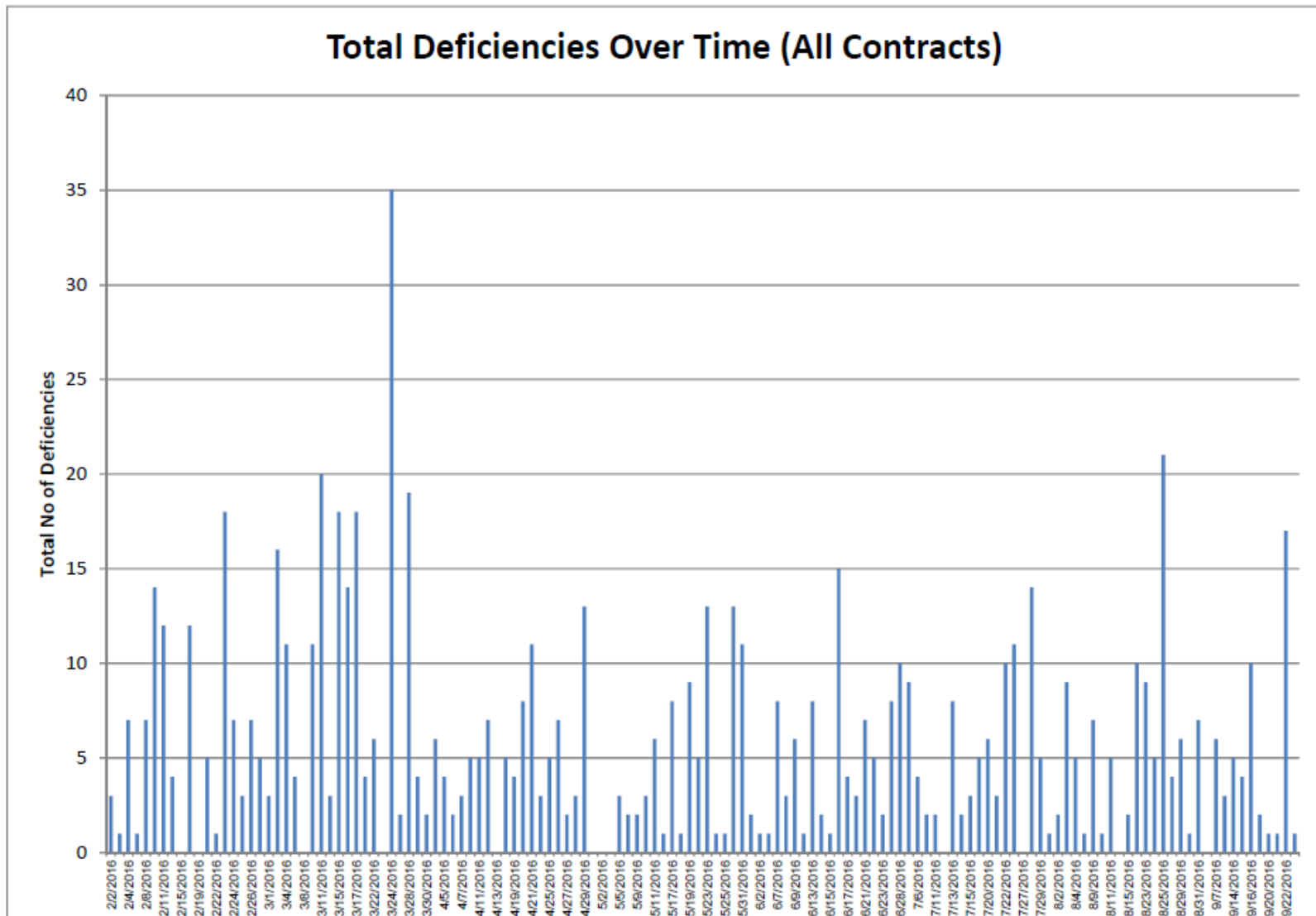
Example ESCP (continued)



Monthly 3rd Party Inspections CITY Projects



Monthly 3rd Party Inspections CITY Projects



POST-CONSTRUCTION

**Plan Review and Implementation of BMPs
following Construction**

Major Revisions from 2012 Rules Relating to Storm Drainage Standards

- ☐ Revised List of Priority Projects
- ☐ Mandatory implementation of LID for priority projects and revised infeasibility criteria
- ☐ Revised Storm Water Quality Report and Operations and Maintenance requirements
- ☐ 1.5x Water Quality Volume and Flow Rate for Treat and Release BMPs
- ☐ Requirement to prepare a separate Post-Construction BMP Plan that identifies both LID, Treatment and Source Control BMPs on the drawing

Major Revisions from 2012 Rules Relating to Storm Drainage Standards (Cont'd)

- ☐ Requirement for submitting a Storm Water Quality Checklist for smaller projects. Checklist will include attaching an O&M Plan outlining inspection and maintenance responsibilities.
- ☐ Post-Construction Certification and Recording
- ☐ Requirement for a Certificate of Completion - Licensed Professional to observe and attest that the BMPs have been installed in general conformance to the approved construction plans prior to permit closure.

“Development”

“Development” means the sum of any and all actions that are undertaken to alter the natural or existing condition of real property or improvements on real property if a building, electric, grading, grubbing, plumbing, stockpiling or trenching permit is required for the Project. Development also includes Redevelopment and changes in land use that may result in different or increased Pollutant discharges to the MS4 or Receiving Waters.”

“Redevelopment”

“Redevelopment” means the **creation, addition,** and/or **replacement** of impervious surface on improved real property. Redevelopment does not include trenching and resurfacing associated with utility work, resurfacing and reconfiguring existing impervious surfaces, the repair of sidewalks or pedestrian ramps, pothole repair, ordinary road maintenance or the marking of vehicular or pedestrian lanes on existing roads.”

“Replacement of Impervious Surface” includes any activity that is not part of routine maintenance and where impervious materials are removed, exposing underlying soil during construction.

“Certified Water Pollution Plan Preparer”

“Certified Water Pollution Plan Preparer” means an Architect, Land Surveyor, or Landscape Architect licensed in the State of Hawaii who has a current Water Pollution Plan Preparer Certificate from the Department.

“Design Engineer”

“Design Engineer” means a licensed Civil Engineer in the State of Hawaii who stamps or certifies plans that are submitted to the Department for review and approval.

Post-Construction Submittal Requirements

- ☐ Priority A projects must submit Storm Water Strategic Plan With Master Development Plan (§20-3-50)
- ☐ Priority A and B1 projects will be required to submit a Storm Water Quality Report (§20-3-51)
 - Includes:
 - Discussion on Pollutants of Concern and how addressed
 - Sizing Calculations/Worksheets
 - Feasibility screening Documents Site Design and Source Control BMPs worksheet
 - Infiltration Testing Results
 - Operations and Maintenance Plan
- ☐ Priority B2 projects must submit a Storm Water Quality Checklist (§20-3-52)
 - Documents Site Design and Source Control BMPs

Post-Construction Certification and Recording (§20-3-54)

- ☐ Construction of permanent BMPs must be observed and certified by a licensed professional hired by the owner/ developer (does not need to be the same as the design engineer).
- ☐ Post Construction Plan and O&M Plan must be recorded at the Bureau of Conveyances or Land Court with property deed

Variances (§20-3-64)

- For deviations from the Rules, applicants must submit a petition for variance to the director and may be authorized if all of the following are true:
 - The variance is necessary to prevent a hardship caused by unique Site conditions on the property that are not ordinarily found in other areas within the City;
 - The unique conditions on the property are not the result of petitioner's own actions or the actions of h/her agents, contractors, consultants, or tenants;
 - Granting a variance will not adversely affect the rights of abutting property owners;
 - The variance requested will not result in an unreasonable threat of Pollutant discharges to the MS4 or State Waters;
 - The variance requested is the minimum accommodation needed to overcome the hardship caused by naturally occurring conditions on the property; and
 - Pollutant discharges to the MS4 and State Waters will not exceed levels that would occur if the petitioner complied with a strict application of these rules.

Priority Projects Definitions (§20-3-48)

Priority A	Priority B	
All new development and redevelopment, including any incremental development, that proposes land disturbing activities of 1 acre or more .	Any project that may have significant water quality impacts due to its location or associated land use activities, including but not limited to the development or redevelopment of: <ul style="list-style-type: none">•Retail gas outlets•Automotive repair shops•Restaurants•Parking lots with 20 stalls or more•Buildings greater than 100 feet in height•Retail malls•Industrial parks	
	Priority B1: Projects with 5,000 square feet of impervious surface area or greater	Priority B2: Projects with less than 5,000 square feet of impervious surface area

Priority Projects Definitions (§20-3-48)

- Where 50 percent or more of the impervious surface of a previously developed site will be altered, the entire development site must meet the requirements of these Rules.
- Where less than 50 percent of the impervious surface of a previously developed site will be altered, only the proposed alteration must meet the requirements of these Rules.

Site Planning Process

**Fueling
Areas**



POTENTIAL SOURCES

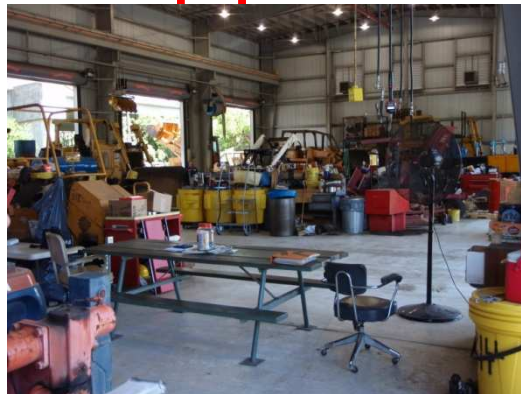
Loading Docks



Roof Areas



Equipment



Parking Lots



Site Planning Process

POLLUTANTS OF CONCERN

Pathogens



Heavy Metals



Oils and Greases



Turbidity and Suspend Solids



Trash and Debris



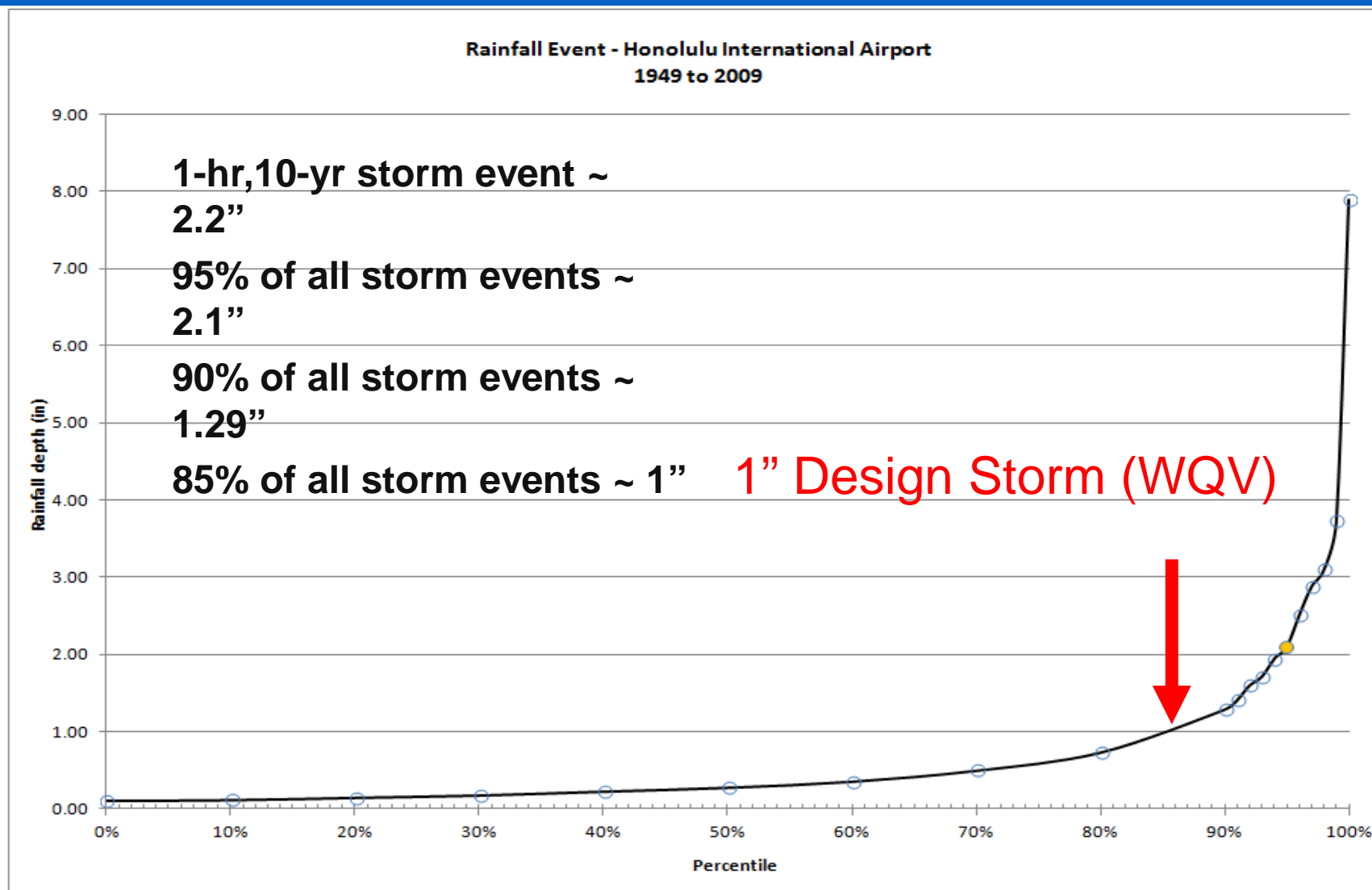
Site Planning Process

BMP SIZING CRITERIA

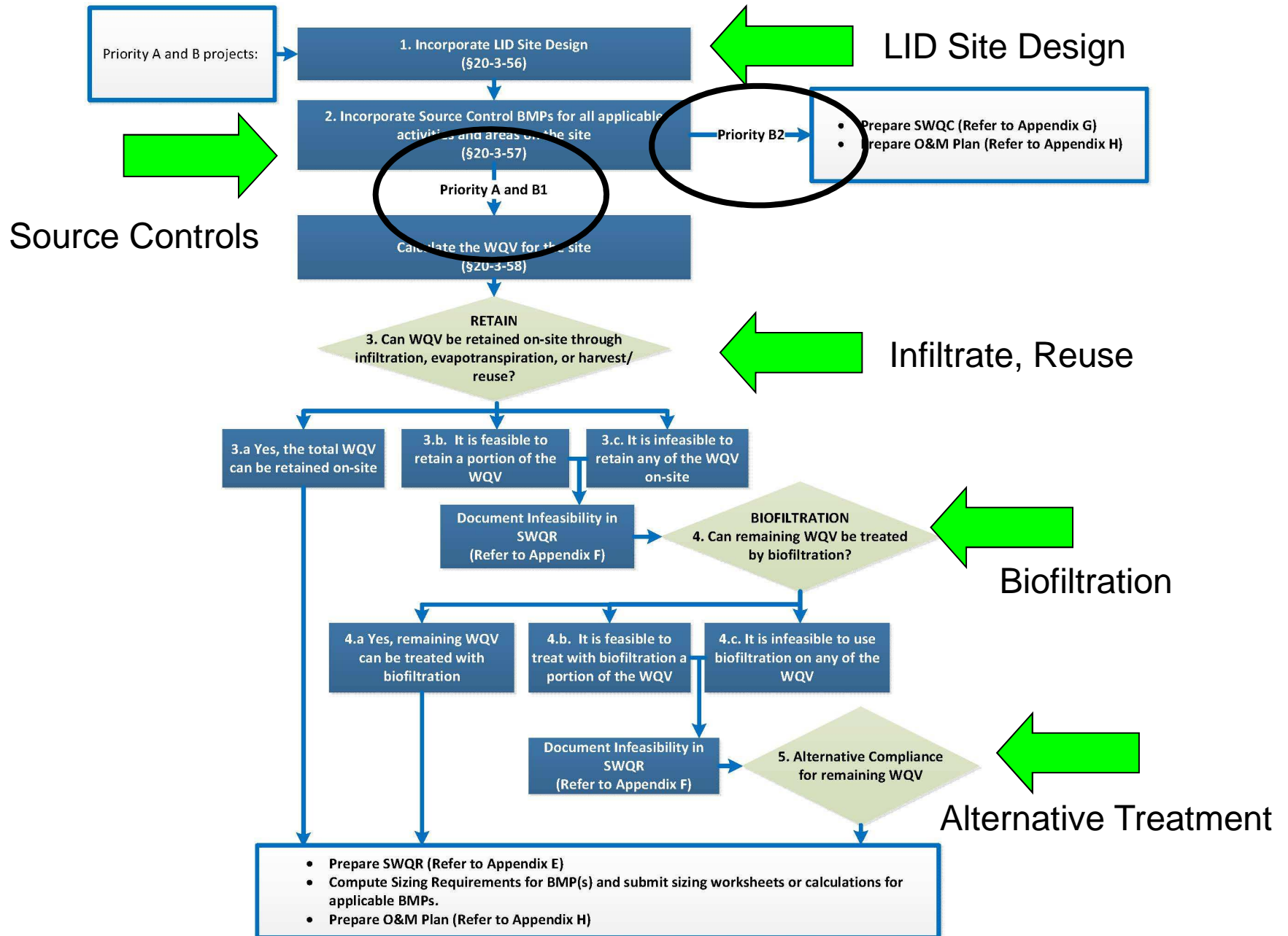
BMP Type	Sizing Criteria
Volume Based	Rainfall depth of 1 inch
Flow Based	Rainfall intensity of 0.4 in/hr
Area Based	10% of contributing area or 100% of contributing flow path
Demand Based	80% of total annual runoff is captured and 80% of total annual reuse demand is met

WATER QUALITY VOLUME (WQV) / WATER QUALITY FLOW RATE (WQF)

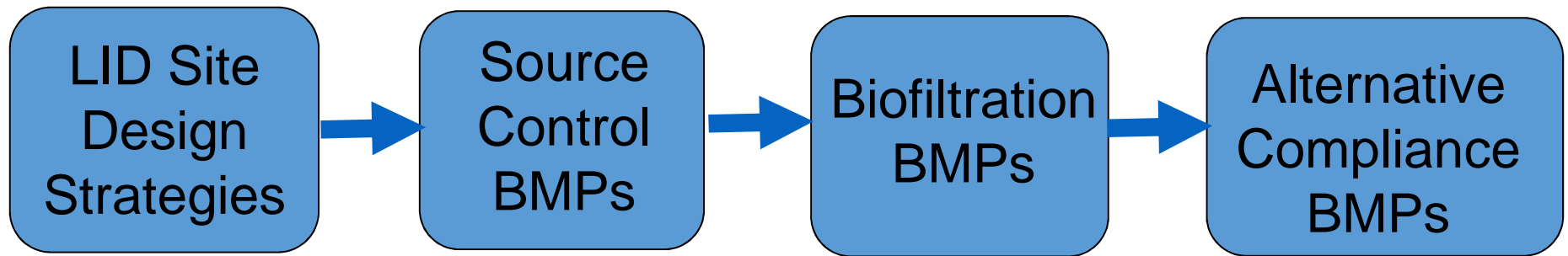
Rain Events at Honolulu Airport 1949 to 2009



Post-Construction Storm Water Requirements



Water Quality Rules



Best Management Practices (BMPs)



Reduce Pollutants by retaining, reusing and/or infiltrating stormwater.

collect



**LOW IMPACT
DEVELOPMENT**



infiltrate

filter

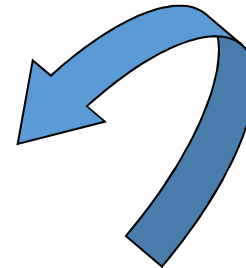


CATCH BASIN

drain



reuse



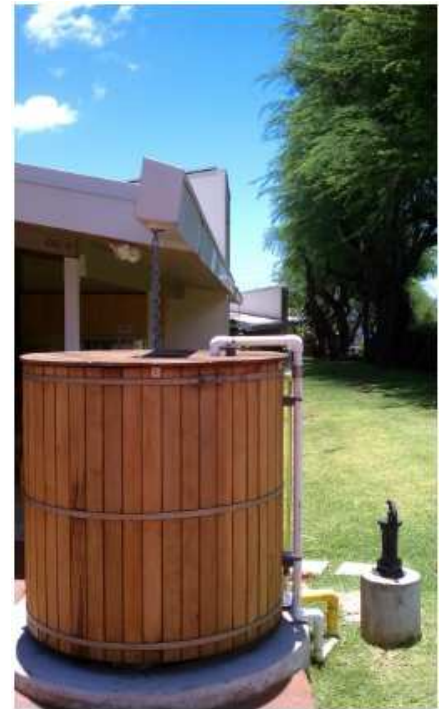
Low Impact Development (LID) BMPs/Green Infrastructure

LID treatment measures include harvesting and reuse, infiltration, evapotranspiration or biotreatment of storm water runoff as close to its source

- Infiltration Basins
- Bioretention
- Green Roofs
- Permeable Pavement
- Cisterns/Rain Barrels
- Vegetative Swales



Green Roof

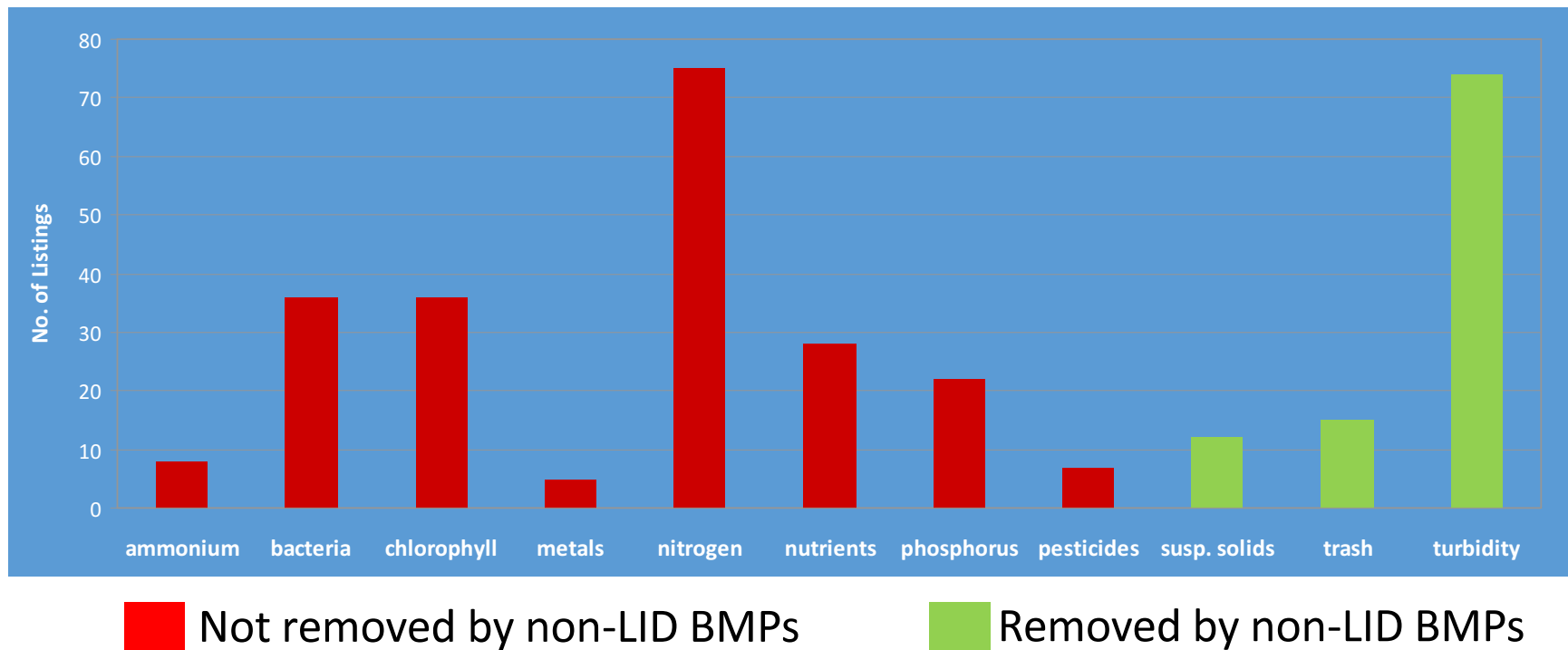


Cistern

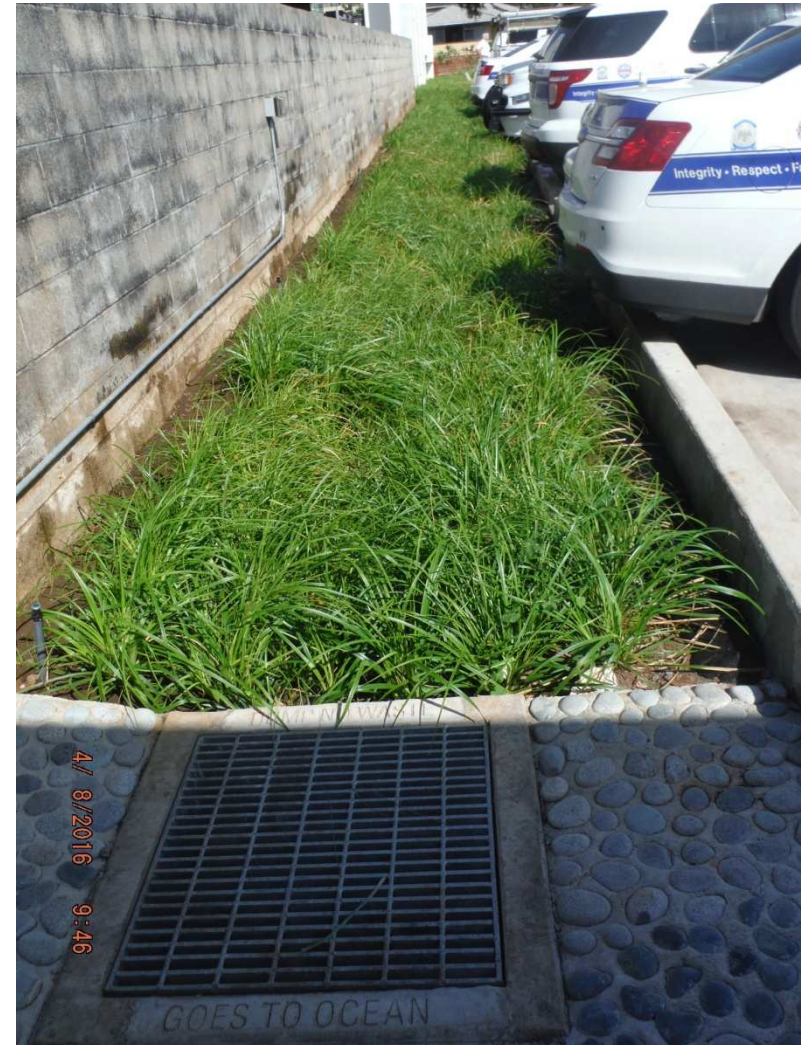
Why LID's?

non-LID BMPs don't address Pollutants of Concern

- 117 waterbodies on 2014 303(d) List
- 319 total pollutant listings



Bioretention/Rain Gardens



Vegetated Swales



Green Roofs



Cisterns/Rain Barrels/Catchment



Permeable Pavements



Porous Pavement







www.cleanwaterhonolulu.com


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HONOLULU


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-AAA+


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BE AN EVERYDAY
CLEAN WATER
HERO

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Facility Maintenance Home

Storm Water Quality Branch

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Learning Center

Get Involved

Calendar

Photo Gallery

Resource Library

Media Library

FAQ & Glossary


Forms

News & Public Notices

Contact Us

Keiki Teachers Homeowner Industry/Retail Construction Property Maint

Construction & Post Construction



The City's main priorities are educating industries on pollution prevention and regulating to ensure compliance.

In accordance with the City's NPDES permit, the City regularly inspects. In addition, if a complaint is filed or there is a community concern, the business found discharging pollution or wastewater into the storm sewer system may be subject to fines of up to \$25,000.

As a business in the State of Hawaii, you can reduce storm water pollution in work activities. Click the links for the following categories for information and tips to keep our state beautiful:


LOW IMPACT DEVELOPMENT

Low Impact Development (LID) are means to control storm water quality at its source, using methods to maintain or restore the natural hydrological character of a site by reducing runoff, improving water quality, and providing groundwater recharge. LID methods include retention and biofiltration.

Retention

BMPs using retention treat storm water by retaining runoff on site with no off-site discharge. Runoff remains on site by infiltrating into the soil, evaporating, or evapotranspiring from plants. Examples of BMPs that use retention:

- Infiltration basin: a shallow depression where runoff is stored until it infiltrates the ground through the bottom of the basin.
- Infiltration trench: a rock filled trench with no outlet where storm water runoff is stored in the void spaces between rocks and infiltrates through the bottom into the soil.
- Dry well: a prefabricated, perforated underground storage unit with a drain grate and no outlet that allows storm water to infiltrate into the soil.
- Subsurface infiltration systems: storage units that store runoff underground, instead of on the surface.



Next Steps

- ☐ Technical Workshops for Contractors and Developers (June 26-30)
- ☐ Technical Workshops for Engineers, Architects, Planners, and Landscape Architects (June 26-30)
- ☐ Web-Based Certification Training for Water Pollution Prevention Plan Preparers
- ☐ Web-Based Certification Training for Erosion and Sediment Control Plan (ESCP) Coordinators
- ☐ Revise Environmental Pollution Control Specs for all City Projects
- ☐ Facilitate and host CPESC and CISEC Training Sessions

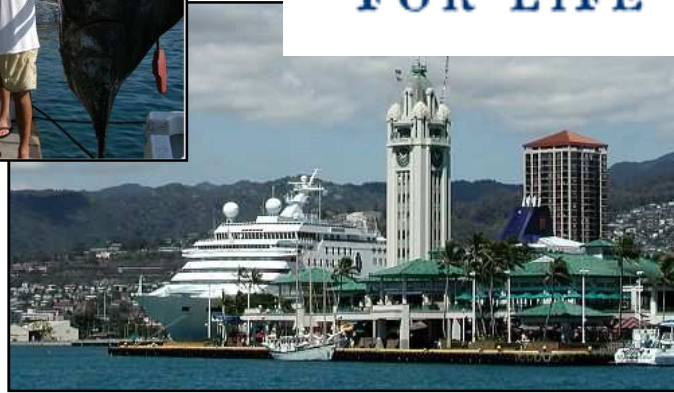
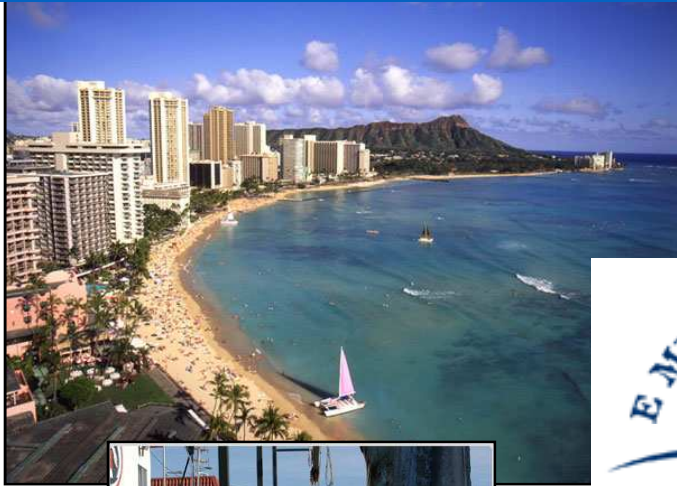
Definition of Success

Collaboration



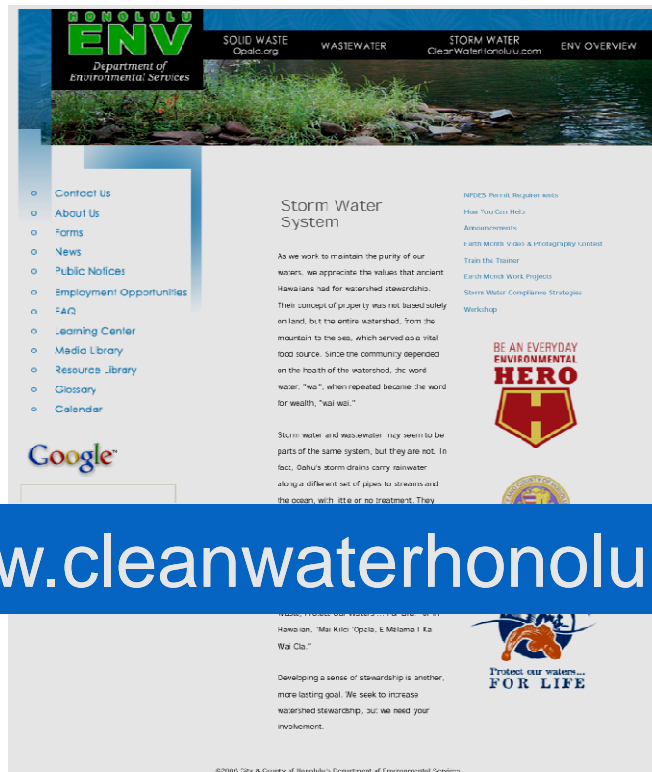
Teamwork

QUESTIONS



THANK YOU

For More Information:



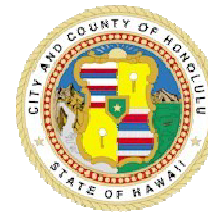
www.cleanwaterhonolulu.com

RANDALL WAKUMOTO, BRANCH HEAD
Storm Water Quality Branch

Ph: 768-3242

Email: rwakumoto@honolulu.gov

City & County of Honolulu
Department of Facility
Maintenance



Environmental Concern Line

768-3300