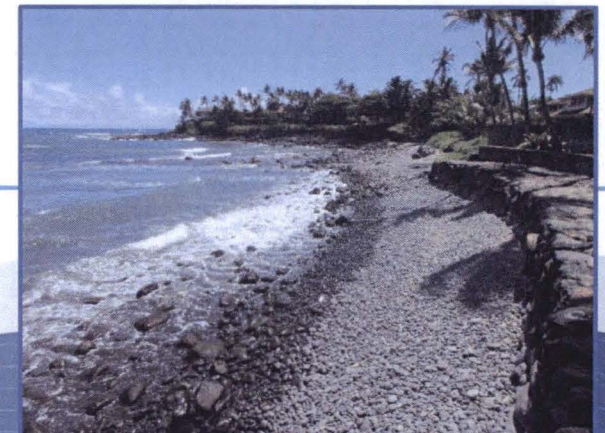


# County of Maui MS4 Program (Municipal Separate Storm Sewer System)

May 13, 2019

RECEIVED AT WAI MEETING ON 5/13/2019  
Acting Director of Public  
Works



# Improving Storm Water Quality



Land-based pollutants carried by storm water **negatively impact downstream properties, beaches, parks, coral reef/marine life**

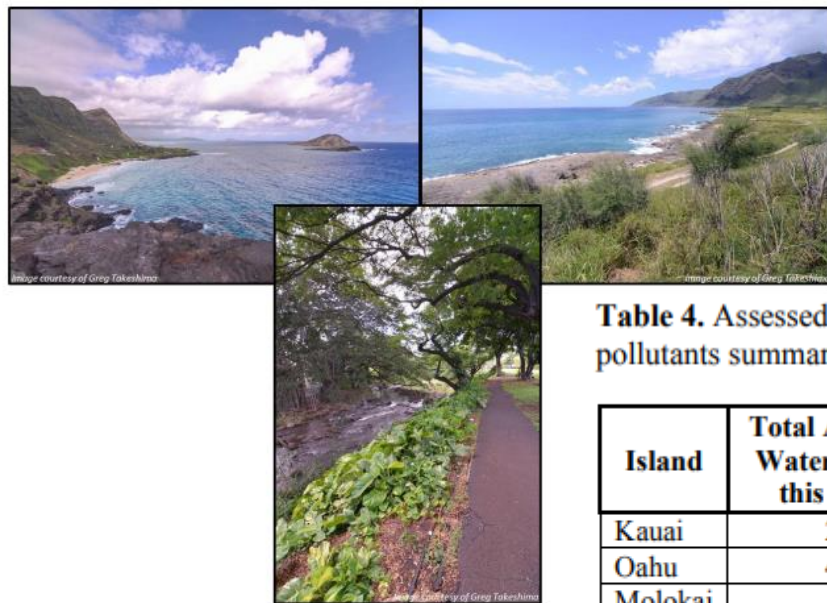
*"The public is advised to stay out of flood waters and storm water runoff due to possible overflowing cesspools, sewer, manholes, pesticides, animal fecal matter, dead animals, pathogens, chemicals, and associated flood debris,"* according to the DOH advisory.



# Increasing Water Quality Emphasis

## 2018 STATE OF HAWAII WATER QUALITY MONITORING AND ASSESSMENT REPORT:

Integrated Report to the U.S. Environmental Protection Agency and the U.S. Congress  
Pursuant to §303(d) and §305(b), Clean Water Act (P.L. 97-117)



The Hawaii State Department of Health  
Clean Water Branch  
Honolulu, Hawaii

Hawai'i State Department of Health | Clean Water Branch  
**Polluted Runoff Control Program**



## Hawai'i's Nonpoint Source Management Plan 2015 to 2020

**Polluted storm water is the major source of water quality impairments throughout the state**

**Table 4.** Assessed marine water body attainment (A) and non-attainment (N) of WQS for pollutants summarized by island. -- = not assessed.

| Island       | Total Assessed Water Bodies this Cycle | Bacteria  |          | Nutrients |           | Turbidity |           | Chlorophyll <i>a</i> |           |
|--------------|--|-----------|----------|-----------|-----------|-----------|-----------|----------------------|-----------|
|              |  | A         | N        | A         | N         | A         | N         | A                    | N         |
| Kauai        | 20                                     | 11        | 2        | 1         | 4         | 0         | 16        | 2                    | 2         |
| Oahu         | 49                                     | 41        | 1        | 7         | 2         | 5         | 27        | 1                    | 7         |
| Molokai      | 0                                      | --        | --       | --        | --        | --        | --        | --                   | --        |
| Lanai        | 1                                      | --        | --       | 0         | 1         | 1         | 0         | 1                    | 0         |
| <b>Maui</b>  | <b>18</b>                              | 7         | <b>3</b> | 0         | <b>10</b> | 3         | <b>14</b> | 2                    | <b>4</b>  |
| Hawaii       | 20                                     | 11        | 1        | 7         | 2         | 5         | 15        | 10                   | 1         |
| <b>Total</b> | <b>108</b>                             | <b>70</b> | <b>7</b> | <b>15</b> | <b>19</b> | <b>14</b> | <b>72</b> | <b>16</b>            | <b>14</b> |

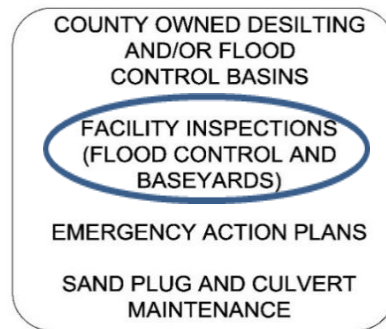
# Rules and Regulations

## PLANNING AND PROJECTS



- NRCS  
- SWCD  
- ACOE  
- FEMA  
- NOAA  
- USGS  
- UH  
- US FISH AND WILDLIFE  
- WATERSHED MANAGEMENT GROUPS  
- ENVIRONMENTAL ADVOCACY GROUPS

## FACILITIES MAINTENANCE



- DLNR  
- NRCS  
- SWCD  
- ACOE  
- HDOH  
- EPA

## PERMIT MANAGEMENT

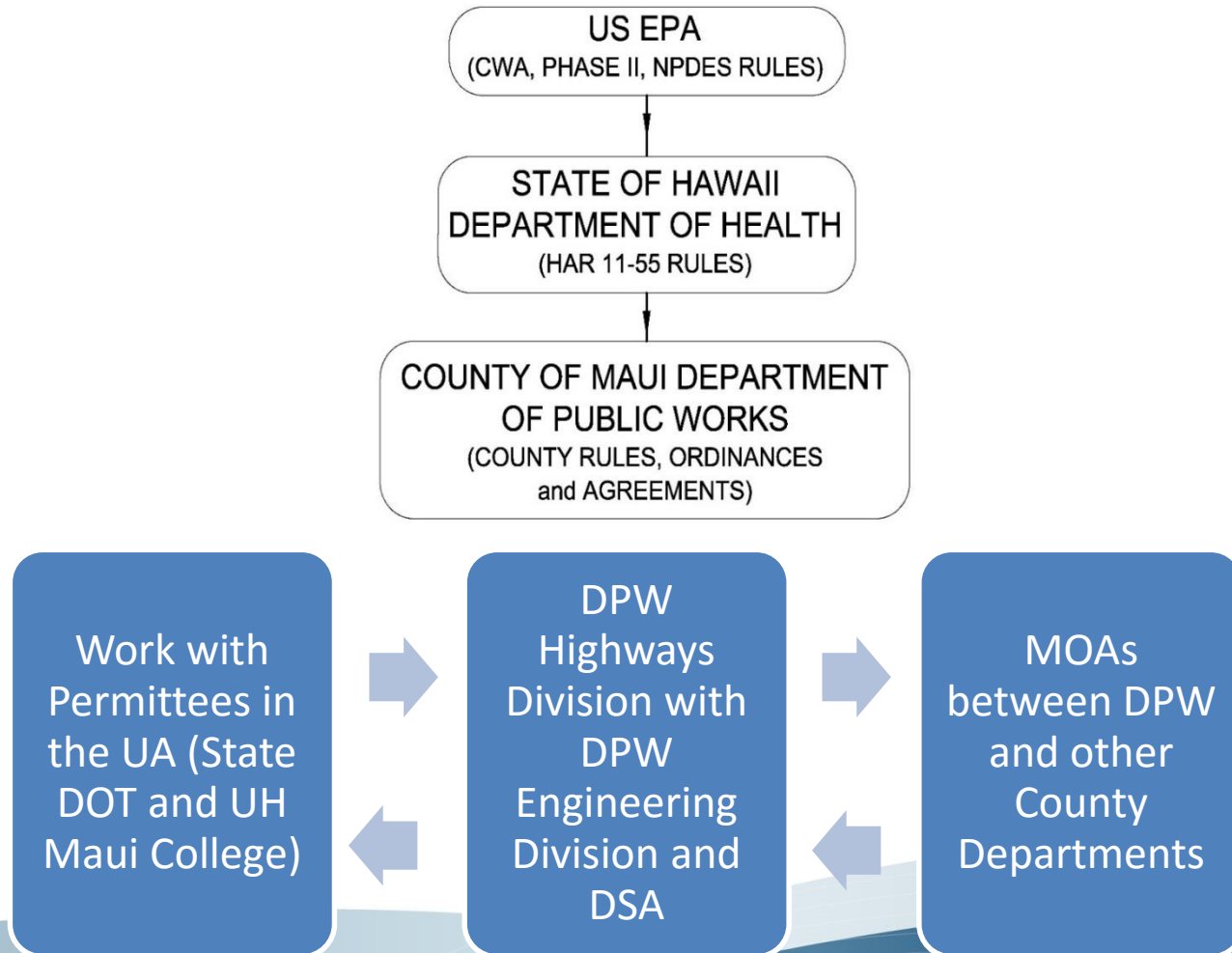


- HDOH - CLEAN WATER BRANCH  
- ARMY CORP OF ENGINEERS  
- STATE DOT  
- COUNTY PLANNING  
- EPA

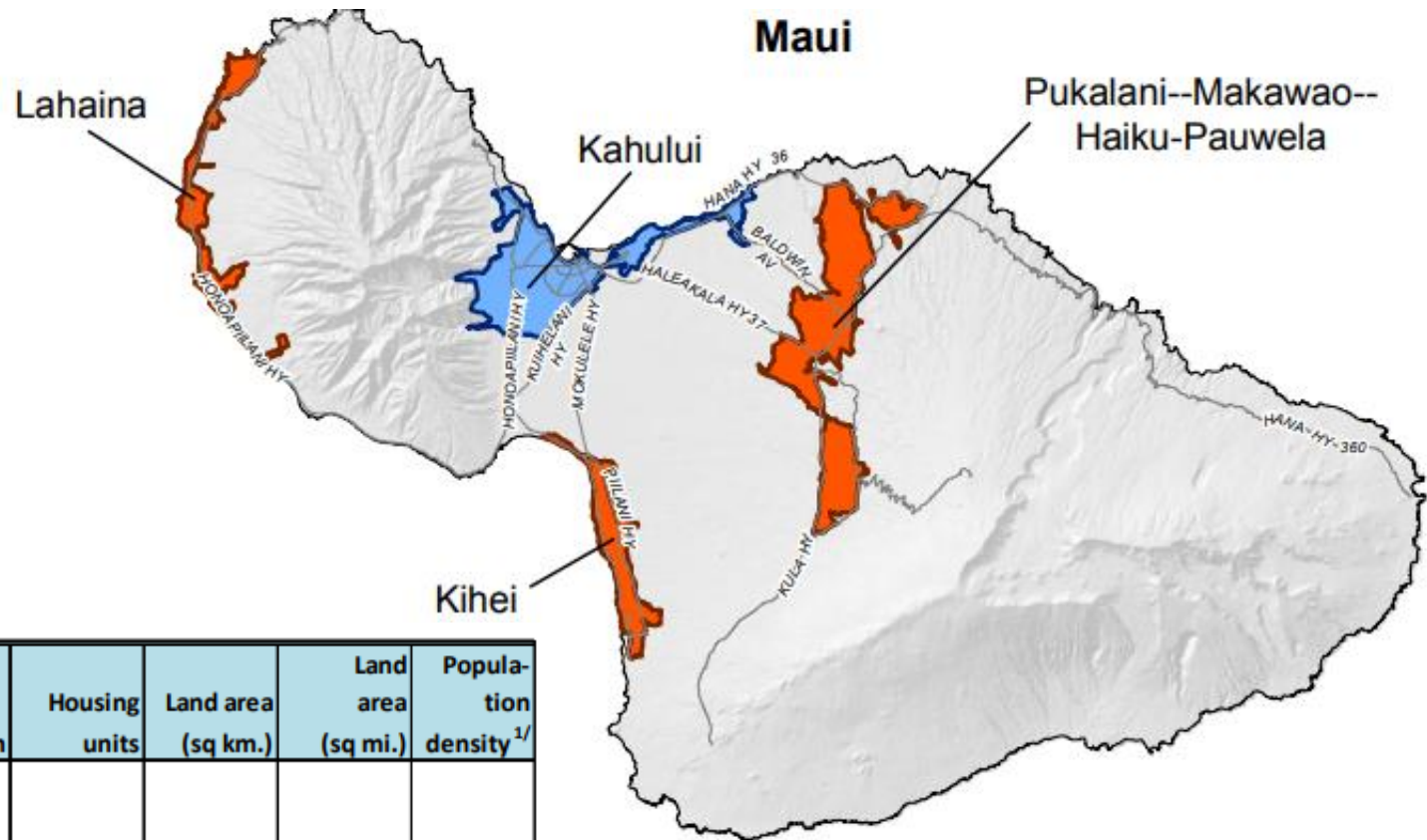
- Interaction with multiple agencies
- Multiple programs and permits are required



## REGULATORY OVERVIEW AND MS4 PERMIT ADMINISTRATION



# Program Expansion Potential



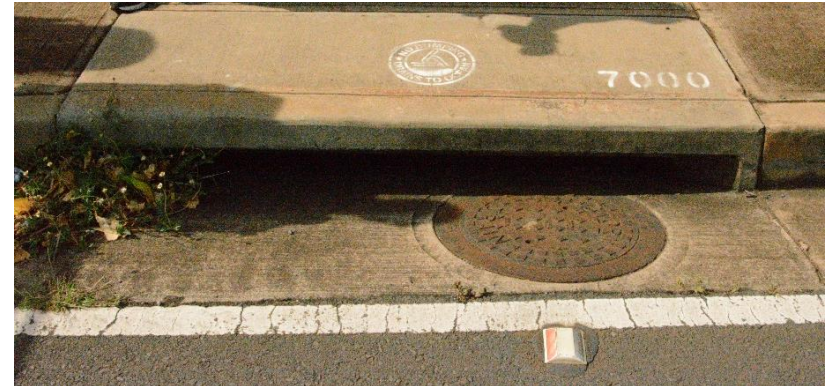
| Area                                 | Population    | Housing units | Land area (sq km.) | Land area (sq mi.) | Population density <sup>1/</sup> |
|--------------------------------------|---------------|---------------|--------------------|--------------------|----------------------------------|
| <b>Maui County</b>                   |               |               |                    |                    |                                  |
| Kihei                                | 25,819        | 17,072        | 17.3               | 6.7                | 3,857.1                          |
| Lahaina                              | 21,331        | 11,533        | 16.9               | 6.5                | 3,259.6                          |
| Lanai City                           | 3,066         | 1,399         | 2.8                | 1.1                | 2,857.9                          |
| Pukalani--Makawao--<br>Haiku-Pauwela | 26,128        | 10,389        | 54.5               | 21.0               | 1,242.5                          |
| <i>Maui County subtotal</i>          | <i>76,344</i> | <i>40,393</i> | <i>91.5</i>        | <i>35.3</i>        | <i>2,160.3</i>                   |



# What is an MS4?

MS4 is a conveyance or system of conveyances that is:

- owned by a state, city, town, village, or other public entity that discharges to waters of the U.S.,
- designed or used to collect or convey storm water (e.g., storm drains, pipes, ditches),
- not a combined sewer, and
- not part of a sewage treatment plant, or publicly owned treatment works (POTW).
- MS4 components include municipal streets, catch basins, curbs, gutters, ditches, or storm drains.



# County's MS4 NPDES Permit

As of April 2014, the County is regulated by a National Pollutant Discharge Elimination System (NPDES) General Permit

- Regulated small Municipal Separate Storm Sewer System (MS4) within the Kahului – Paia “urbanized area”
- Permit requires the County to take actions in 6 categories to control pollutants from their MS4 to the “maximum extent practicable”





# Six Categories

## Managing the MS4 Program

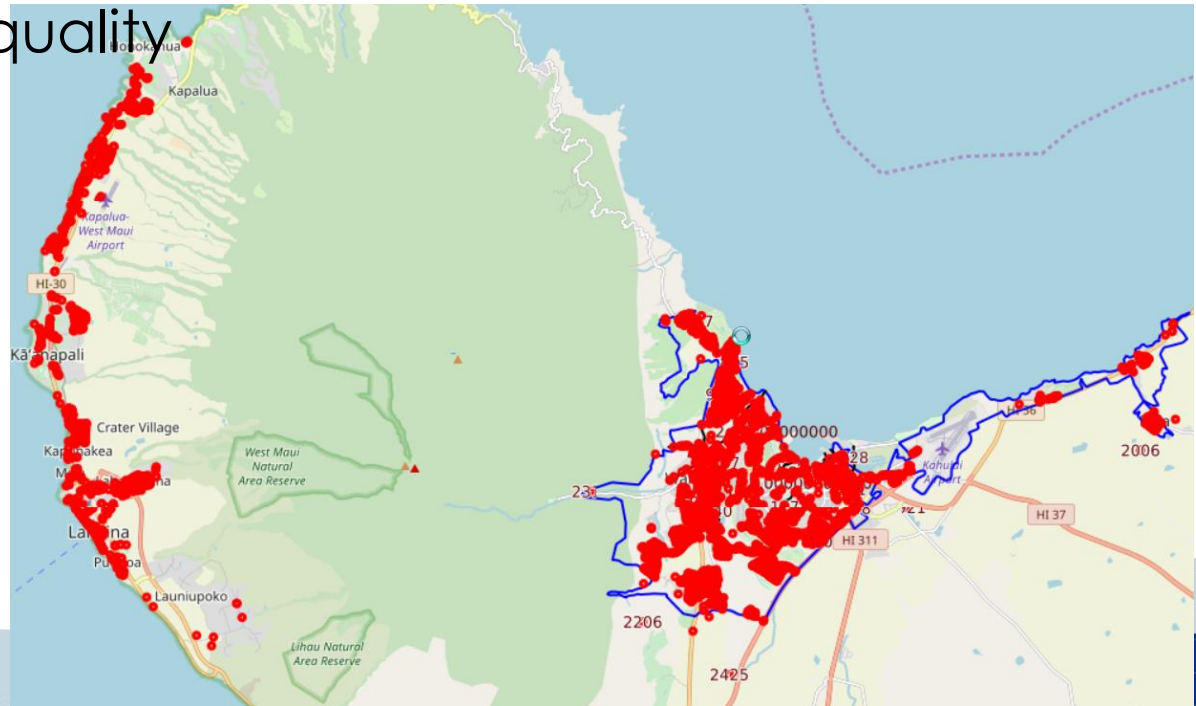
- The program reports progress to HDOH annually on the six categories to control pollutants
  - 1) Public Education & Outreach
  - 2) Public Involvement/Participation
  - 3) Illicit Discharge Detection & Elimination



- 4) Construction Site Runoff Control (BMPs)
- 5) Post-Construction Runoff Management (BMPs)
- 6) Pollution Prevention & Good Housekeeping

# Meeting The Minimums

- Historically, DPW-Highways resources were dedicated to aboveground infrastructure (roads and bridges)
- Our program compels us to recognize the need to put more resources into stormwater infrastructure maintenance to help improve water quality
- In addition, future permit requirements may increase system inspections, maintenance, and the number of assets.



# Proactive Maintenance

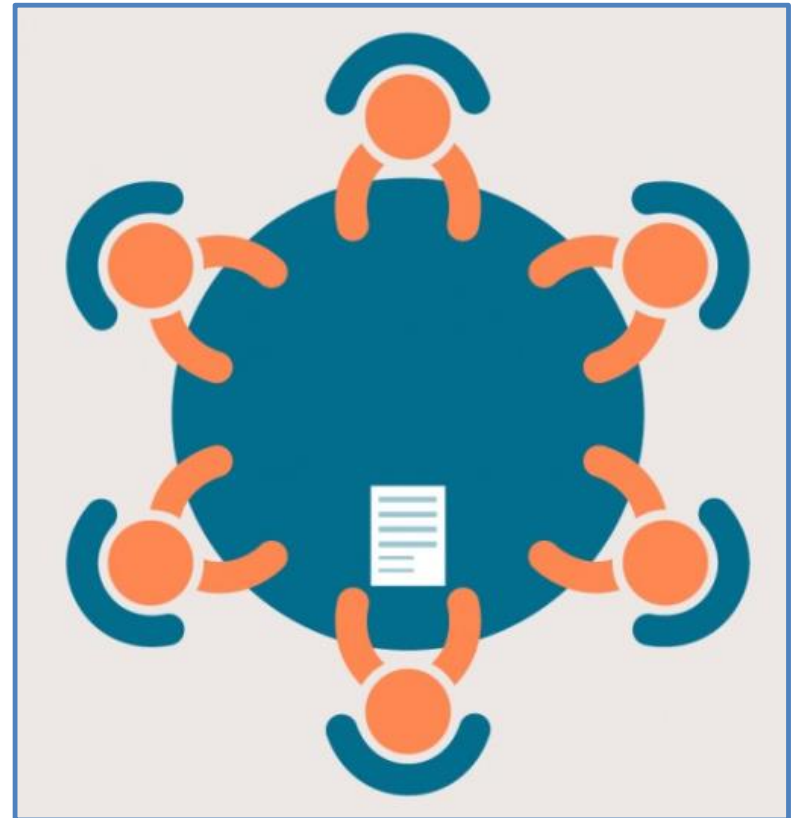
- Program moves us from reactive to proactive maintenance
- Existing maintenance practices will continue to be modified and enhanced because of our MS4 Permit
  - New staff: equipment operators
  - Additional Equipment: street sweepers, vac trucks
  - Dewatering facilities may be required to be in compliance with permit conditions





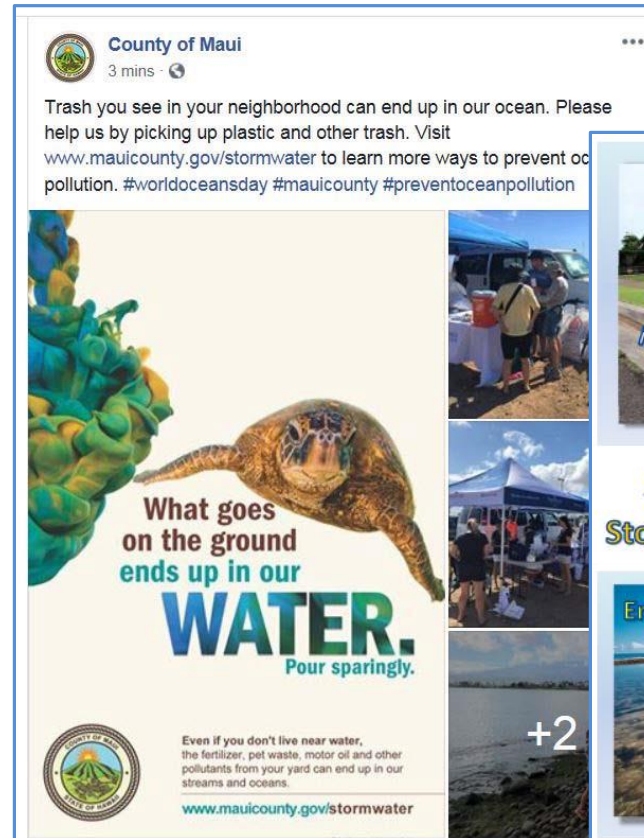
# Significant Tasks FY2019

- Program Management
  - **Storm Water Working Group Development:** Address EPA MS4 technical assessment comment of County-wide nature of its stormwater quality program and legal authorities and obligations.
  - **Formalize MOA between County Departments and Divisions:** Utilize MOA for SWMP implementation and County-wide engagement.
  - **Foster SWMP Stewardship:** Increase departmental awareness of resources required for SWMP implementation and plan / budget appropriately



# Significant Tasks FY2019

- Public Education:  
**Community Outreach**
  - Prepare educational materials for multiple outlets including social media, newsletters, and brochures
  - Develop and update storm water webpage
  - Create storm water presentations for public events and groups



**A Resident's Guide to Storm Water Management**



Department of Public Works  
[www.mauicounty.gov/stormwater](http://www.mauicounty.gov/stormwater)

# Significant Tasks FY2019



- **Public Education:**
  - **Construction Industry**
    - **Permit Obligations:** Three separate requirements for outreach and training of designers and contractors in the SWMP.
    - **Collaboration:** Maui District DOT Highways partners for annual training.





# Significant Tasks FY2019

- Public Education: **Social Marketing**
  - **Study:** Evaluating spill response, disposal activities, and other environmental behaviors relative to storm water pollution prevention in commercial/ industrial areas
  - **Benefits:** Data gathering helps to identify which people to work with, what behavior to influence, and how to develop a message that will reach the targeted audience.
  - **Targeted Area:**
    - ✓ Wailuku: Lower Main Street
    - ✓ Kahului: Hukiliki Street, Alamaha Street, Wakea Street, and Ho'ohana Street



Awareness leads to  
behavior changes  
and stewardship;  
business recognition

# Significant Tasks FY2019

## OCEAN FRIENDLY

### PROPERTY PLEDGE

We pledge to take action to reduce storm water pollution on our property.

Please commit to at least 10 of these 20 practices:

#### Storage & Chemical Management

- ☐ Use a containment unit (such as a storage shed that is enclosed and covered) to store chemicals used for cleaning and yard care.
- ☐ Dispose of and recycle used and leftover chemicals properly.
- ☐ Keep dumpsters closed and make sure they are not used to dispose of liquid contaminants.
- ☐ Make a spill kit available onsite, and ensure employees are trained in its use.
- ☐ Choose Ocean-Preferred Products whenever possible (see listing of less harmful product alternatives found at [westmaikumuwai.org](http://westmaikumuwai.org)) for yard care and pest management.

#### Wash-Down & Work Areas

- ☐ Move wash-down areas away from storm drains onto a vegetated area or an appropriate site elsewhere.\*
- ☐ Where moving wash-down area(s) isn't possible, inlet protection (such as a non-compost-based filter sock) will be used to block drains and/or filter the water that does enter the storm drain.
- ☐ Use a drip pan or absorbent material such as a drop cloth, sheet, or cardboard to prevent harmful substances from washing into drains, and dispose of these materials appropriately.
- ☐ Use dry methods (such as sweeping) to maintain paved areas, clean dumpsters, prepare for painting or pressure washing, and to remove debris; wash only when necessary, and as a final step.

#### Pools

- ☐ Chlorinated pool water will never be disposed of via gutters and storm drains.
- ☐ All pool water will be dechlorinated prior to disposal into storm drains or a sanitary sewer, or redirected onto a vegetated area for infiltration.
- ☐ If constructing a new pool, try a natural swimming pool alternative.

#### Other Strategies

- ☐ Get to know the storm water flow pattern on your site, where the drains are, and where they go.
- ☐ Downspouts are/will be redirected to water plants or soak into the ground, or collect it for future irrigation use via a rain barrel
- ☐ Curb cuts are/will be installed\* so water runoff from paved areas can reach vegetated areas instead of drains.
- ☐ Build a rain garden.\*
- ☐ If new walkways are needed, they will be constructed using semi-permeable pavers to promote infiltration\*.
- ☐ Label the storm drains on or near your property with a stencil or medallion to indicate that they drain to the ocean.
- ☐ Ensure that any maintenance activities contracted out are following these best practices for storm water management, and in compliance with rules and regulations.

#### Landscaping

- ☐ Our landscaper is/will become a member of West Maui Kumuwai's free Ocean-Friendly Landscaper recognition program.



- Public Involvement/ Participation
  - **Social Marketing Analysis Commercial/Industrial:** Storm Water Steward programs similar to West Maui "Ocean-friendly Business".
  - Increase pollution prevention behaviors and sense of personal responsibility



***We pledge to take action to reduce storm water pollution on our property***



# Significant Tasks FY2019

- Illicit Discharge Detection and Elimination
  - **Priority Investigation Areas:** Focused field surveys based on land use and material.
  - **IDDE Ordinance:** Provides enforcement mechanism.
  - **Incorporate into asset management (Development of storm drain inspection/maintenance schedule)**





# Significant Tasks 2019

- Construction
  - **Construction Ordinance:** Provides enforcement mechanism.
  - **DSA Coordination:** Evaluation of current procedures
    - ✓ Design Manual creation
    - ✓ BMP guidance
    - ✓ Inspection tracking & frequency

## STORMWATER POST-DEVELOPMENT CONTROL MEASURE MAINTENANCE CHECK LIST FOR:

### POROUS PAVEMENT



COUNTY OF MAUI

#### MAINTENANCE REQUIREMENTS

| Maintenance Activity  | Schedule                   |
|---|----------------------------|
| Reconstruct or replace facility when it no longer functions properly.   | As needed                  |
| Ensure that appropriate site runoff continues to flow to facility.  | Annual                     |
| Assess overall operation of facility and make necessary repairs.  | Annual                     |
| Keep the surface clean and free of leaves, debris, and sediment.  | Annual, after major storms |
| Fertilize, irrigate, and mow grass to a height less than four inches.   | Annual, after major storms |
| Where reinforcement product is used to stabilize grass or gravel, replace individual grid sections when they are damaged. | Annual, after major storm  |
| Other:  |                            |

## STORMWATER POST-DEVELOPMENT CONTROL MEASURE MAINTENANCE CHECK LIST FOR:

### DETENTION BASIN



COUNTY OF MAUI

#### MAINTENANCE REQUIREMENTS

| Maintenance Activity   | Schedule                                  |
|--|---|
| Reconstruct or replace facility when it no longer functions properly.                      | As needed                                 |
| Ensure that appropriate site runoff continues to flow to facility.                         | Annual                                    |
| Assess overall operation of facility and make necessary repairs.                           | Annual                                    |
| Inspect, clean, and repair all pretreatment areas.   | Annual, After major storms                |
| Maintain establishment of vegetation and replant bare areas.                               | Annual                                    |
| Remove unwanted trees, brush, and weeds.   | Annual                                    |
| Repair inlet and outlet structures, overflow, low flow channels, and any other structures. | Annual, After major storms                |
| Remove trash and debris.   | Annual, After major storms                |
| Repair erosion and other damage.   | Annual, After major storms                |
| Remove sediment from main basin  | When 50% of original volume has been lost |
| Other:   |   |

# Significant Tasks 2019

- Post-construction
  - **Establish BMP Inventory**
    - ✓ Integrate into iWorQ asset database
    - ✓ Review of as-built
    - ✓ Field evaluations
  - **Process for scheduling inspection**
  - **Private BMP Ownership maintenance requirements and agreements**
  - **Post-Construction Ordinance revisions**

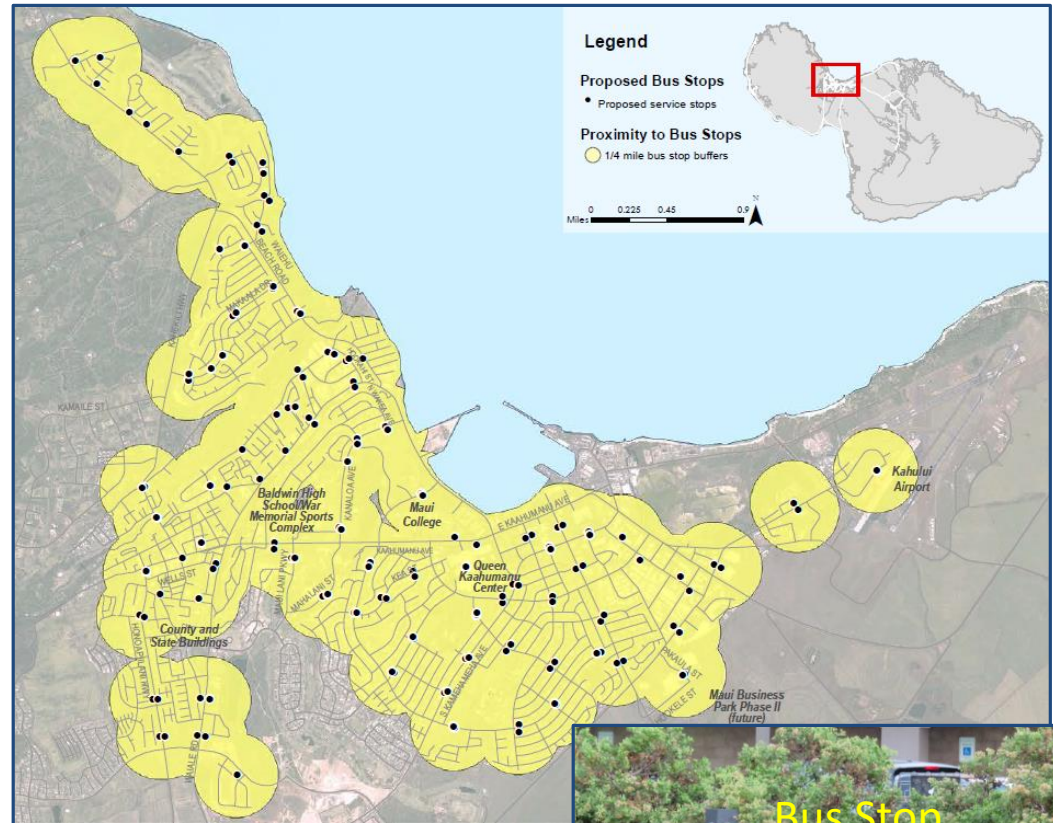


Detention Basin



# Significant Tasks 2019

- Good Housekeeping
  - **Multiple components involved in the implementation of this measure**
  - **Litter Management**
    - ✓ Multiple Departments involved in SWMP implementation (DEM, DPR, MPD, DT, and DSA)
    - ✓ Evaluate street sweeping
    - ✓ Nexus of bus stop waste
    - ✓ Illegal dumping
  - **SPCC & SSBMP Plan updates**
  - **Baseyard inspections**





# Future Program Needs

Program expansion to meet upcoming MS4 Permit requirements (New Permit terms)

- Secure additional positions
- Program additional equipment and operators
  - # of positions and equipment TBD for Highways Division to meet new maintenance requirements
- Program new wash racks and dewatering facilities for County operations



# Possible Funding Sources

- General fund appropriations
- Other program funding sources
  - Storm Water User Fee (perhaps based on impervious area)
  - Increase building, grading, or subdivision fees
  - Increase property tax
- Grants (specific WQ studies or projects only)
  - DOH 319 Funds
- Loans (specific WQ CIP only)
  - DOH/Federal



RELATING TO STORMWATER MANAGEMENT.

**BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:**

(E) Establish and charge user fees to create and maintain any stormwater management system or infrastructure;

# Potential Cost of Inaction

- Potential fines
  - EPA – Up to \$32,500/day/violation of CWA
  - DOH – Up to \$25,000/day/violation
- Consent decree where COM is mandated to establish a program with less control
- Higher cost of delayed infrastructure maintenance
- Impacts to the environment

honoluluadvertiser.com

Posted on: Friday, October 7, 2005

## State to pay \$52M for polluting waters

The state Department of Transportation has agreed to pay \$52 million in one of the nation's largest stormwater violation settlements.

As part of a consent decree with the U.S. Environmental Protection Agency and the state Department of Health, the transportation agency will pay a \$1 million fine, another \$1 million for a program to assess its environmental responsibilities and \$50 million over five years to resolve violations of the federal Clean Water Act at highways and airports.

## EPA ISSUES ACTION AGAINST HAWAII DEPARTMENT OF TRANSPORTATION

Release Date: 9/9/1999

Contact Information: Lois Grunwald, U.S. EPA, 415-744-1588

Department violated stormwater requirements



United States Environmental Protection Agency

## U.S. EPA, DOH require Hawaii Department of Transportation to protect Oahu's coastal waters

Release Date: 09/10/2014

(09/10/14) HDOT to pay \$1.2 million for stormwater violations at Honolulu and Kāleloa Harbors



# Mahalo

Thank you Council for your support over the past 5 years. We look forward to your continued support of the County's MS4 program. Your support reflects the understanding of the necessary resources required to meet permit compliance.

For more information, please check out the "Storm Water Management Program" web page under Public Works on the County's



## Public Works

[Current & Future Projects](#)

[Development Services](#)

[Administration](#)

[Engineering Division](#)

[Highways Division](#)

[Permits & Development](#)

[Applications](#)

[Public Works Commission](#)

[Storm Water Management  
Program](#)

Department of  
Transportation

# Questions?

