



Washington State Municipal Stormwater Conference

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Maintenance Tracking and Asset Management




Maintenance Tracking and Asset Management

My experience with Large NPDES MS4s


- **Maryland State Highways Administration**
- **State of Hawaii, Highways Division**








Maintenance Tracking and Asset Management


Maryland State Highways Administration (MDSA) NPDES MS4



MDSHA Asset Management

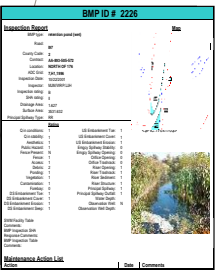




SHA rating	Action/response
I	No maintenance
II	Minor or routine maintenance
III	Major maintenance
IV	Retrofit / Functional Enhancement
V	Immediate Response
VI	Abandon





MDSHA Maintenance & Costs

Minor maintenance
\$200 - \$25,000*



Major maintenance \$1,000 - \$75,000*






MDSHA SWM Facilities Retrofits



Retrofit of a failed infiltration basin into a sand filter










MDSHA Lessons Learned


- SWM facilities
 - Design considerations - maintenance access, pre-treatment
 - Infiltration trenches needed periodic inspections and media replacement about every 5 years
 - Use of construction inspector to oversee maintenance contractors




MDSHA - Where are they now?

- Chesapeake Bay and other TMDLs
 - Watershed based approach
- MDSHA Bay WIP II
 - Milestones of annual goals for impervious areas treated from BMPs such as SWM facilities (new and retrofits), stream restoration, urban tree planting etc. until 2025
 - Quantifying load reductions from various BMPs
 - Tracking and verification using geodatabase



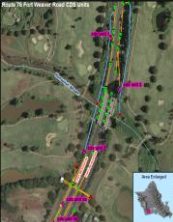



Maintenance
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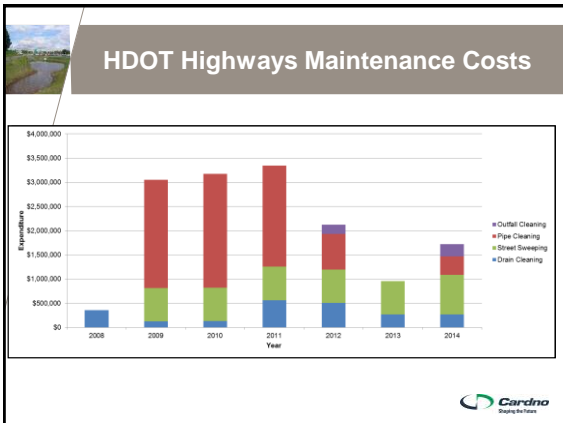
State of Hawaii Highways
Division
(HDOT-Highways)
NPDES MS4



HDOT Highways MS4 Inspections

- Inspect/clean 12 permanent post-construction BMPs
 - CDS units
 - Bioretention facilities
 - Skimmer Box









HDOT Highways Lessons Learned


- Contracts for drain cleaning and street sweeping
 - Use of construction inspector to oversee maintenance contractors
 - Access, erosion and ROW issues with outfall cleaning
 - Pipe cleaning in conjunction with CCTV inspections
- Post-construction BMPs aka SWM facilities O&M
 - Design considerations - maintenance access
 - Need contractors with variable skills

Cardno
Shaping the Future



HDOT Highways - Where are they now?

- New Permit Issued October 28, 2013
 - Trash reduction plan
 - TMDL Compliance Schedules
- Working on updating the SWMP (Early 2015)
 - Debris Cleaning Assessment Plan – evaluation of street sweeping for WLA reductions
 - Cost per pound of pollutant removal





Thank You