

Revised Storm Water Post-Construction Best Management Practices(BMP) Manual Workshop Q&A

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Hawaii State Department of Transportation, Highways Division



Q&A

What is the difference between a “MS4 Permit Area” and “Non-MS4 Permit Area”?

- A “MS4 Permit Area” is an area authorized and governed by a MS4 Permit. The MS4 Permit Areas are the islands of Oahu and Maui.
- A “Non-MS4 Permit Area” is an area that does not have an MS4 Permit. The Non-MS4 Permit Areas are the islands of Hawaii, Kauai, Lanai, and Molokai.

Why is the entire island of Maui classified as a “MS4 Permit Area”?

- Although only the urbanized areas of Kahului and Paia are covered by Maui’s MS4 Permit, the entire island of Maui is considered an MS4 Permit Area to avoid confusion.

Q&A

How does this manual define "Disturbance"?

- Disturbance is defined as “Any construction-related activity that results in the penetration, turning, or moving of soil including roadway construction, demolition, grading, grubbing, and reconstruction of pavement which exposes the underlying base course or bare soil. Disturbance does not include clearing that leaves soil intact nor does it include the operation of vehicles, staging, and storage of materials and equipment on paved surfaces.

Does "Disturbed Area" include areas outside DOT-HWYS right-of-way?

- The “Disturbed Area” includes the disturbed area for the entire project.

Q&A

If a project includes an exempt activity such as a new utility installation, can the area disturbed by the exempt activity be subtracted from the “Disturbed Area”?

- No, if a project includes non-exempt activities, the entire disturbed area shall be used to determine whether it exceeds the 1-acre threshold.

If a project includes sidewalks or bike paths which are considered “non-vehicular” and “low pollutant generating”, can those areas be excluded from the “Disturbed Area”?

- No, the entire disturbed area shall be used to determine whether it exceeds the 1-acre threshold. However, they are excluded from the calculation for the Required Treatment Area.

POST-CONSTRUCTION BMP DESIGN FAQs

Which post-construction BMPs should be used on a project?

- Projects that require post-construction BMPs must prioritize using Low Impact Development (LID) BMPs that favor treatment via infiltration, bioretention, evapotranspiration, or rainwater harvesting.
 - Reduce runoff volumes
 - Maintain pre-development runoff
 - Groundwater recharge
 - Minimize treat and release
- Only if LID BMPs are deemed to be infeasible, non-LID BMPs that treat and release storm water will be allowed.

TREATMENT CONTROL BMP SUMMARY MATRIX

Treatment Control BMP		Typical Targeted Pollutants for Removal						Notes
		Sediment ¹	Nutrients ¹	Oil & Grease ²	Metals ¹	Trash ²	Bacteria ¹	
LID	Vegetated Buffer Strip	x		x		x		
	Vegetated Swale	x		x		x		
	Enhanced Swale	x	x	x	x	x		
	Infiltration Trench	x	x	x	x	x	x	
	Infiltration Basin	x	x	x	x	x	x	
	Bioretention Facility	x	x	x	x	x	x	
	Permeable Pavement	x	x	x	x		n/a	
	Pocket Wetland	x	varies	x	x	x	x	
	Rainwater Harvesting	varies	varies	n/a	varies	n/a	varies	Primarily for runoff reduction
	Tree Box Filter	x	x	x	n/a	x	x	
TRADITIONAL NON-LID	Wet Pond	x	x	x	x	x	x	
	Wet Extended Detention Pond	x	x	x	x	x	x	
	Sand Filter	x	varies	x	x	x		
PROPRIETARY NON-LID	Drain Inlet Filter	x				x		Results vary depending on type/model. Refer to manufacturer's data for targeted pollutant removal efficiencies.
	Modified Catch Basin	x				x		
	Oil/Grit Separator	x		x	n/a	x	n/a	
	Centrifugal Hydrodynamic Separator	x		x	x	x		
	Multi-Stage Hydrodynamic Separator	x		x	x	x		

- Simplified to show general performance for pollutant removal
 - Sediment
 - Nutrients
 - Oil and Grease
 - Metals
 - Trash
 - Bacteria
- Low Impact Development
- Traditional Non-LID
- Proprietary Non-LID

POST-CONSTRUCTION BMP DESIGN FAQs

Does DOT-HWYS have a list of approved proprietary BMPs?

- No, DOT-HWYS does not maintain a list of approved proprietary BMPs.
- DOT-HWYS may allow other types of post-construction BMPs if the consultant can demonstrate that it will fulfill the required treatment necessary.
- Proprietary devices must have a current verification from the New Jersey Corporation for Advanced Technology (NJCAT), the State of Washington Department of Ecology Technology Assessment Protocol-Ecology (TAPE), or a national testing and verification program.

POST-CONSTRUCTION BMP DESIGN FAQs

Is ponding depth for the various post-construction BMPs based on the designer's judgement?

- Ponding depth should be designed based upon the designer's judgment based on several factors including impact to surrounding areas, public health, and safety.

Pretreatment is assumed to be sized for 10% of the WQV. If a filtration device is used for pretreatment, is there also a reduction in the BMP size allowed?

- Since a filtration device does not provide storage of flows, no reduction in WQV is granted.

POST-CONSTRUCTION BMP DESIGN FAQs

Typical Drawdown Time is shown to be 48 hours. What is Drawdown Time?

- The time it takes for the BMP to drain from full

$$= \frac{\text{Total Volume}}{\text{Avg Discharge Rate}}$$

- The BMP volume is a measure of how much of the first storm the BMP can capture and manage.
- The Drawdown Time is a measure of how much of the next storm the BMP can capture and manage.

POST-CONSTRUCTION BMP DESIGN FAQs

Are underdrains required for BMP facilities?

- Underdrains may be included based upon the BMP design at the designer's discretion.
 - Infiltration rates
 - Size of facility
 - BMP location

QUESTIONS?

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