

WHAT ARE POST-CONSTRUCTION BEST MANAGEMENT PRACTICES (BMPs)?

Post-construction BMPs are programs and structures developed for a facility to prevent erosion, sediment, and pollutants from entering private and public storm water systems. Post-construction BMPs are also intended to reduce off-site runoff and/or provide groundwater recharge to restore the hydrological character of the property. This brochure explains the types of BMPs that may have been built into your facility, and their intended functions.

One type of post-construction BMP is **SOURCE CONTROL**, which prevents the contamination of storm water and is primarily related to the behavior of users at the property. Another type is **TREATMENT CONTROL**, which utilizes engineered technologies that are designed to remove pollutants from storm water runoff.



An infiltration basin is an example of a treatment control BMP.

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The Law: The Federal Clean Water Act gave the Environmental Protection Agency (EPA) the authority to implement water pollution control programs. Local statutes and ordinances address compliance and enforcement of the EPA's mandates.

The Ordinance: The Revised Ordinances of Honolulu, Section 14-12.23(a) Environmental Quality Control-Violation states, "It shall be unlawful for any person to discharge or cause to be discharged any pollutant into any drainage facility which causes a pollution problem in state waters, or causes a violation of any provision of the City NPDES [National Pollutant Discharge Elimination System] permit or the water quality standards of the State of Hawaii."

Discharging pollutants to the storm drain system is against the law. Violations can result in fines of up to \$25,000 per violation, per day.

REFERENCE:

City and County of Honolulu. Revised 2013. Rules Relating to Storm Drainage Standards. http://www.cleanwaterhonolulu.com/storm/notices/2013_sds/

City and County of Honolulu. 2012. Storm Water BMP Guide. <http://www.honoluluapp.org/reportsnotices/stormwaterqualitypage.aspx>

United States Environmental Protection Agency. 2009. Stormwater Discharges From Industrial Facilities. <http://cfpub.epa.gov/npdes/stormwater/indust.cfm>

STORM WATER BEST MANAGEMENT PRACTICES



POST CONSTRUCTION
What are Post-Construction BMPs?

City and County of Honolulu
Department of Facility Maintenance



SOURCE CONTROL

Source control BMPs aim to prevent pollutants from coming in contact with runoff.

Examples of source control

- Marking storm drains with stencils or other awareness messages to remind staff and the public to keep storm drains free of pollutants since they lead directly to the ocean.



Stencils remind the public that pollution that goes into storm drains ends up in the ocean.

- Developing programs to educate staff on what post-construction BMPs are, what they are supposed to do, and how to inspect and maintain them.
- Keeping lids closed on dumpsters to prevent waste material from contacting storm water.
- Keeping material that could contaminate storm water covered in designated areas away from storm water.
- Diverting storm water flow away from contaminated areas so that storm water doesn't mix with pollutants.

TREATMENT CONTROL

Treatment control BMPs are categorized in two groups, Low Impact Development and Other Methods.

Low Impact Development (LID)

LID is a storm water management practice 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.



A subsurface infiltration system stores runoff underground until it infiltrates into the ground.

Biofiltration

BMPs using biofiltration remove pollutants from runoff by filtering storm water through vegetation and soils.

Examples of BMPs that use biofiltration

- Vegetated swale: a broad shallow earthen channel that is vegetated with erosion resistant and flood tolerant grasses.

- Vegetated buffer strip: a grass slope vegetated with turf grass that is designed to accommodate sheet flow.
- Rain garden: decorative gardens designed to receive runoff for irrigation.



As runoff flows through a vegetated swale, grass filters out pollutants.

Other Methods

The last category of treatment control BMPs includes the treatment of runoff by mechanical methods and capture and reuse of runoff. These BMPs are different from LID treatment controls since they do not decrease runoff or provide for groundwater recharge.

Example of BMP that treats runoff

- Manufactured treatment devices: proprietary water quality structures that utilize technology such as drain inlet filters and hydrodynamic water quality units to separate pollutants from storm water.



This drain inlet filter is a manufactured treatment device that removes pollutants as runoff flows through it. The drain inlet is shown without its grate.

Example of BMP that captures and reuses runoff

Rainwater harvesting: collection and temporary storage of roof runoff in rain barrels for subsequent non-potable use such as irrigation.