

Maintain road access by maintaining your stormwater devices

Heavy rain can cause devastating damage such as road washouts and landslides. Most residential roads in Coral Bay are the only means of access to and from homes, so taking action to make sure our roads' stormwater devices will function well during rain events is critical.

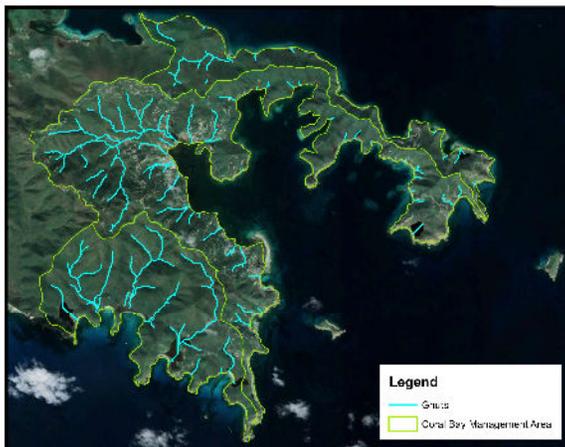
Stormwater devices, called **BMPs for "Best Management Practices,"** protect road surfaces by directing flow off roads to the natural gut (flowpath), slowing the rate of flow, and preventing erosion. In addition, BMPs reduce sediment transport that negatively impacts the condition of our bay and health of marine life.

Most of our neighborhood roads are not publicly owned, thus the government is not responsible for maintenance.

CBCC is providing this guide to help property owners identify the existing stormwater BMPs along their roads and encourage regular maintenance. Our goal is to have every neighborhood know how to get their roads ready to handle heavy rains.

Stormwater flows around you

Get to know how stormwater flows over your property naturally. Does it flow both directions around your house? Do you have ways to encourage infiltration into the ground? See CBCC's *Landscaping for Erosion Control* manual for ideas (on our website).

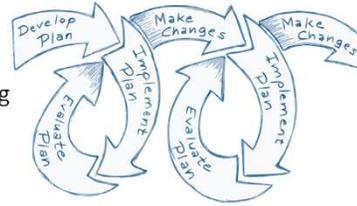


Coral Bay Management Area Ghuts



is part of Watershed Management

Watershed Management is a coordinated and multi-disciplinary approach to managing resources and activities within our watershed on land and sea according to our collective Coral Bay vision and integrated with other territorial plans.



Rainwater conveys pollutants such as sediment, nutrients like nitrogen and phosphorus, pesticides and toxic substances into groundwater and downhill to wetlands and coastal waters.



All activities higher up in the watershed impact houses, infrastructure and the health of our mangroves, wetlands, seagrass beds and sensitive coral reef ecosystems below.

Managing stormwater runoff on your property and residential road supports our Watershed Management Plan.

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Prepare your



Road

for Hurricane Season



A maintenance guide from Coral Bay Community Council supporting our Watershed Management Plan



~For People who love Coral Bay~



Stormwater Device (BMP) Maintenance to Manage Stormwater on your Residential Road



1) Talk to your neighbors about creating a plan. Make sure you have a complete contact list of the property owners along your shared residential road(s).



2) Walk your road(s) and inventory all BMPs. Start at the top and work your way down, noting on a map the BMP locations, types and condition. Refer to the chart of common BMPs below. Keep in mind some BMPs may be covered by debris.



3) Create a calendar for inspection and maintenance. You may want to categorize tasks as monthly, quarterly or annual, **plus before & after storms**. Then, assign responsibilities. Plan to clean BMPs immediately after heavy rain events, either with owner volunteer work or hired labor.

4) If you don't already have an HOA, consider forming one to manage funds and make decisions. Talk to us about how. **Please share your plan and progress with CBCC. Our staff can help.**

	Water bar	Ditch / Roadside Swale	Culverts / Cross-drains	Dips / Low water crossings / Cross-road swales	Sediment traps / Detention ponds / Rain Gardens	Geotextiles
What is it?	Narrow raised berm that directs water diagonally across road by intercepting shallow flows from road surface.	Narrow channel (approx. 18" to 24") along road that carries water to an outlet. Can be paved or dirt, lined with rocks or vegetation. May have check dams to slow velocity.	A tunnel or open stream under a road. Typically water is directed first into a grate/drain, then into culvert. Riprap should be installed at outlet. May be combined with a concrete headwall and/or end wall.	Wide, shallow, gradually-sloped, reinforced depression that intercepts water flowing down the road surface and ditch and transfers it to a stable outlet. Can be compressed dirt, but better if concrete, interlocking blocks, or mortared rock.	Temporary ponding area that holds runoff from small, disturbed areas or road segments. Detains water long enough that sediment settles out of stormwater.	Permeable synthetic fabrics, 2D grids, and 3D containment cells that strengthen road surfaces and reduce erosion.
Maintenance Tips	  <ul style="list-style-type: none"> Remove accumulated sediment and debris. Remove vegetative berms at outlet that could prevent discharge. Ensure there is adequate riprap/coarse rock at outlet.* 	  <ul style="list-style-type: none"> Remove accumulated sediment and debris. Keep shape of bottom parabolic/round and well-compacted. Avoid V-shaped bottom. Line swales with >5% slope with rocks, gravel or plants to slow flow and filter sediment. Consider adding check dams. Prevent water from pooling/standing (weakens road) 	  <ul style="list-style-type: none"> Clean out grates. Remove any clogs in pipe or tunnel until 100% clear. Ensure an energy dissipator* is installed at outlet. Remove any debris and sediment from it. If the ends of the pipes are damaged or you see erosion, consider adding a headwall or end wall. 	 <ul style="list-style-type: none"> Remove accumulated sediment and debris from road surface. Ensure unpaved dips are properly compacted and pitched. For paved dips, correct any erosion between concrete edge and road surface Remove vegetation and accumulated sediment at outlet* Ensure an energy dissipator* is installed at outlet. Remove any debris and sediment. 	 <ul style="list-style-type: none"> Inspect/clear pond of debris, tree limbs, dead vegetation, etc. Remove accumulated sediment when capacity is reduced by 1/3 original volume. Use a shovel and wheelbarrow for a small pond. May need heavy machine for large ponds. Inspect for and repair any erosion of side slopes, around dam, and downstream of spillway/outlet. 	  <ul style="list-style-type: none"> Requires little maintenance if installed correctly. Inspect for exposed material along road edges and surface. Add more cover material (such as compacted gravel) as needed.

* Importance of Energy Dissipators

An energy dissipator provides erosion protection by slowing water velocity, spreading discharged flows, and filtering sediment. When placed at the outlet of a water bar, culvert, or dip, it acts as a buffer to prevent erosion around the road surface, and can promote sheet flow. Types of energy dissipators include: rip rap/pile of rocks, rock apron with vegetated buffer, vetiver grass diffuser, combination of rocks and plants, concrete apron with drains, and more. Ensure that energy dissipators are clear of debris and sediment and that vegetation is healthy.

Helpful Resources:

- *Landscaping for Erosion Control Manual* (CBCC)— free hard copy at CBCC office <https://coralbaycommunitycouncil.org/landscaping-sediment-reduction/>
- *Unpaved Roads Standards for Caribbean and Pacific Islands*. Horsley Witten Group & Protectoros de Cuencas for NOAA CRCP. Examples and diagrams of BMPs and more maintenance advice. <https://horsleywitten.com/tropics/>