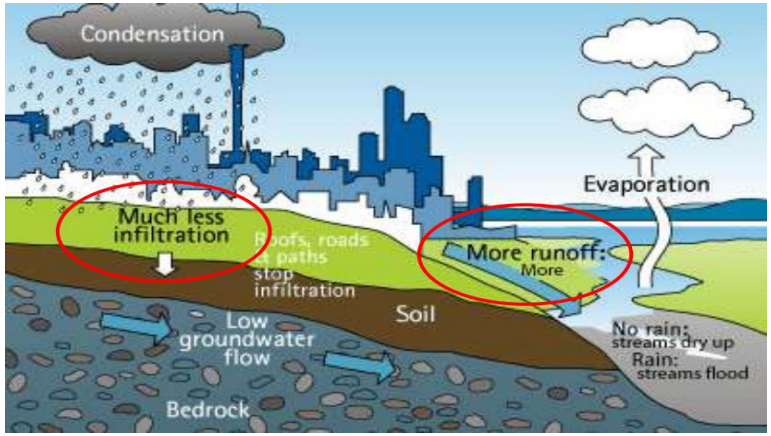
## STORMWATER, CSOs and GREEN INFRASTRUCTURE

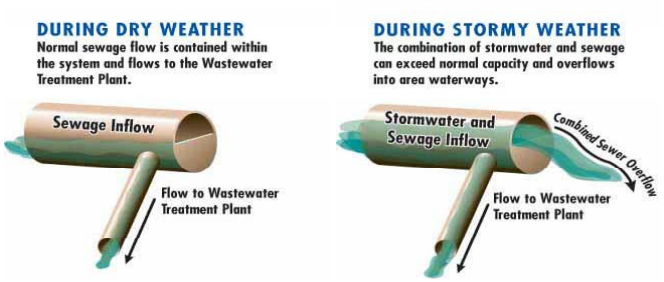
### WHAT IS STORMWATER?

Stormwater is rainwater or melted snow that flows across the ground and into creeks, streams and bays. Stormwater should be absorbed back into the ground (refilling the aquifer that supplies drinking water) but in urban areas, where the ground is hard (impervious), the water cannot get into the ground so it flows from streets, sidewalks, lawns, and building roofs into street storm drains. As the water runs along the ground towards the storm drains, it picks up pollutants such as lawn chemicals, oil, chemicals from cars, and animal waste. These pollutants then flow into creeks, rivers, bays, and then the ocean.




### COMBINED SEWER OVERFLOWS

Many older communities in New Jersey have combined sewers systems that transport stormwater and sewage in the same pipes to sewer treatment plants. These systems are designed so that when too much stormwater enters the system, rather than have sewage back up in the pipes, the pipes release untreated sewage directly into rivers and bays. There are over 200 outfalls in New Jersey that discharge raw sewage into the Passaic, Hudson, Hackensack and Delaware Rivers and the Raritan and Newark Bays. Furthermore, residents in communities with combined systems pay unnecessary sewage treatment fees for processing stormwater through the sewage treatment plant.




### FLOODING AND STORMWATER MANAGEMENT IN URBAN AREAS

In addition to causing raw sewage to flow into our rivers and bays, stormwater can cause **flooding**. If a storm drains clogs, the water gets blocked and backs up into the streets. Sometimes there is just more water than can fit down a stormdrain. Additionally, because the water flows so quickly through the pipes into drainage ditches, creeks, rivers, and bays there is more water than these waterbodies can handle causing flooding, erosion, and damage to natural habitat.

### WHAT'S THE ANSWER?

Stormwater should be slowed down and managed *before* it reaches the storm drain. **Green infrastructure**, such as rain gardens, rain barrels, and green roofs capture or slow down stormwater so that it can be reused, absorbed into the ground, or evaporated. The best part of green infrastructure is that not only does it better manage stormwater, it makes communities more beautiful!

### GREEN INFRASTRUCTURE FOR THE HOME

Rain barrels are one of the most popular pieces of green infrastructure. Rain barrels connect to a gutter's downspout and collect rainwater to be later used for watering. Rain barrels can be as simple as a garbage can or plastic drum (many homeowners decorate them with paint) or as fancy as a wooden casks. Stormwater can also be captured in larger cisterns for extra storage.

Rain gardens are beautifying and also absorb a lot of stormwater. Rain gardens look like a regular flower garden but they are designed to gather rain water and let it slowly filter into the ground. A rain garden is a few inches deep and planted with a variety of native plants to help absorb the water that gathers in the garden. They absorb 30% more water than a lawn.

Other things homeowners can do to slow down storm water include planting trees, aerating your lawn and garden

(impacted soil is not absorbent) and using large planters. Green roofs and pervious pavement are more expensive items that absorb lots of water.

You can also ask your municipality or sewerage authority to incorporate green infrastructure by:

- Building rain gardens in parking and road islands, along sidewalks and in parks
- Using bioswales (channels that are dug out and filled with plants) around roadways and waterways
- Offering incentives for rain barrels
- Using natural, planted detention basins for water detention
- Use permeable pavers
- Restoring wetlands

Thanks to our partners at Rutgers Cooperative Extension Water Resources Program for assisting with the content for this pamphlet. Please visit their web site for more detailed information about Green Infrastructure: water.rutgers.edu

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***NY/NJ Baykeeper*** is the citizen's guardian of the Hudson-Raritan Estuary. Since 1989, we have worked to protect, preserve, and restore the environment of one of the most urban estuaries on Earth- benefiting its natural and human communities.

Through our Estuary –wide programs we seek to end pollution, improve public access, conserve and restore public lands, restore aquatic habitats, encourage appropriate and discourage inappropriate development, carry out public education, and work with federal and NY/NJ state regulators and citizen group as partners in planning for a sustainable future for the Hudson – Raritan Estuary watershed.

Founded with the help of Hudson Riverkeeper and the American Littoral Society in 1989, Baykeeper is a wholly independent nonprofit with its own 501c3. Baykeeper has a full and part time staff, its own Board of Directors and many dedicated volunteers. Baykeeper is the only bi-stat full time advocate for the Hudson – Raritan Estuary and Harbor.

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