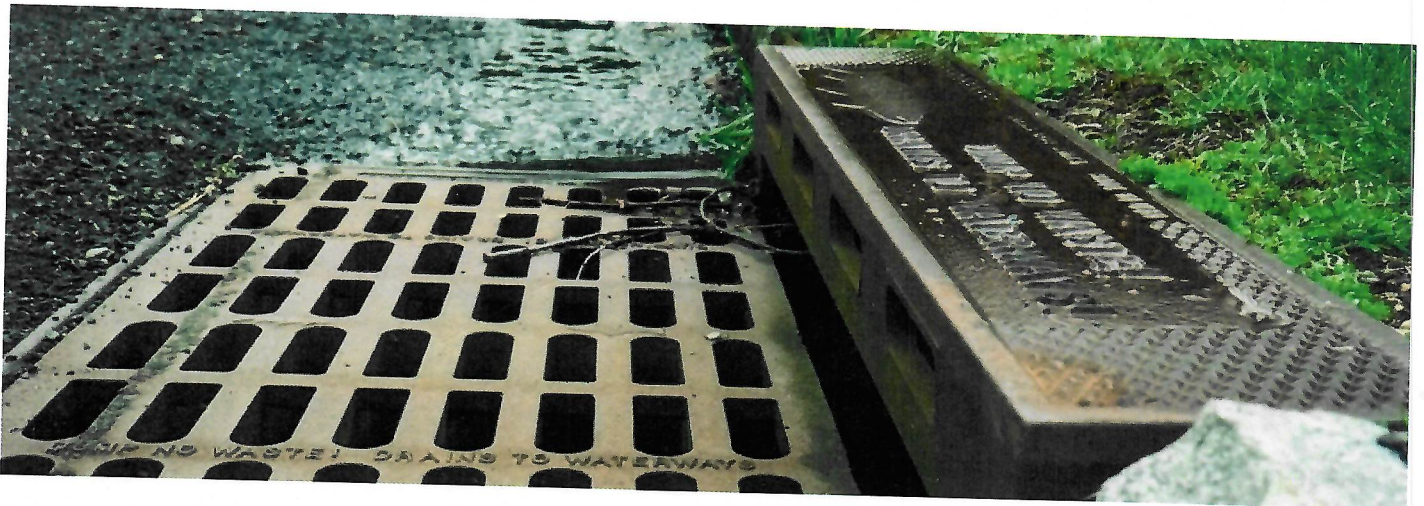


NEWS

What Is Stormwater Management and Why Is It Important?



In places where urbanization hasn't occurred, stormwater—water from rain, melting snow, and ice—will soak into the soil to nourish plants, replenish underground aquifers, and fill streams and rivers.

But, in developed metropolitan areas covered with impermeable surfaces like pavement and concrete, heavy rainwater is unable to take its natural course. Instead, the overflow runs into sewer systems, storm drains, and drainage ditches, which can cause urban health and infrastructure issues.

reduce the risks of floods, mitigate structural damage to buildings and houses, and maintain water quality.

What Is Stormwater Management?

Stormwater management is primarily focused on controlling water surface overflow, filtering stormwater, protecting local habitats and infrastructure, and utilizing excess runoff.

When cities grow and further development takes place, stormwater runoff increases. Stormwater flows from concrete, asphalt, rooftops, and other surfaces designed to shed water and rapidly funnel it toward storm drainage systems.

According to researchers from the University of Nebraska, this can have unintended consequences: "The natural process of infiltration, evaporation, and filtering are greatly reduced, and the amount and speed of stormwater runoff is greatly increased."

In addition to potentially overwhelming infrastructure, water runoff can also pick up pollutants and contaminants that degrade water quality and endanger the public.

Modern stormwater management seeks to proactively address these issues before a major storm hits. Handled properly, it can have significant environmental, social, and economic benefits.

Green Infrastructure

Green infrastructure incorporates emerging technologies and sustainable practices that mimic natural landscapes to reduce the amount of polluted runoff that reaches sewers, lakes, and other bodies of water.

In addition to conserving green spaces, where stormwater can run its natural course, examples of green infrastructure practices include:

- Rain gardens
- Bioretention gardens
- Green roofs
- Constructed wetlands
- Rain barrels and cisterns
- Permeable pavements
- Stream restoration

These systems capture rainfall as it falls, where it's then absorbed by plants and soil.

Low Impact Development (LID)

Instead of developing infrastructure and then considering the downstream impacts it may have in the event of a major storm, LID

In addition to a purposeful design, low-impact development sites often incorporate plants and soils, which mimic natural ecosystems by facilitating infiltration, evaporation, and filtering. According to the California EPA:

“Unlike traditional stormwater management that collects and conveys stormwater runoff through storm drains, pipes, or other conveyances to a centralized stormwater facility, LID takes a different approach by using site design and stormwater management to maintain the site’s pre-development runoff rates and volumes.”

If planned properly, these LID sites can capture excess water, replenish groundwater aquifers and reduce pollutants.

Public Awareness

An essential aspect of stormwater management involves mobilizing the public to contribute to the effort. The actions they take can have a significant impact on this process, especially concerning the pollutants stormwater picks up. As a result, continued public awareness and education campaigns can positively sway community behavior.

Best practices can include:

- Cleaning up pet waste
- Limiting fertilizers to natural surfaces

- Picking up and removing litter

Why Does Stormwater Management Matter?

When a storm hits, there's often too much stormwater for drainage systems to handle. This can cause significant issues, such as:

- Downstream flooding
- Streambank erosion
- Habitat destruction
- Infrastructure damage.

To make matters worse, stormwater can be contaminated by pollutants, debris, or sanitary sewer system overflows. This, in turn, negatively impacts drinking water while threatening the purity of the streams, rivers, and coastal waters these systems flow into.

Stormwater management is about being proactive rather than reactive. It's about planning urban development so that new infrastructure helps mitigate the issue rather than contribute to it. The goal here is to maintain and restore natural hydrologies.

Taking such steps protects the environment, prevents infrastructure damage due to flooding, and ensures that the lifewater the world relies on is potable.

and less green space naturally lead to increases in the speed and amount of runoff.

But, proper stormwater management could prevent, or at least mitigate, many of these downstream issues from negatively impacting the community and the environment.

MFS Engineering—Stormwater Management Experts

It's impossible to overstate the importance of stormwater management. That's why, whenever you're breaking ground on a new piece of development, you should only work with construction and engineering professionals that prioritize stormwater management in their site planning and designs.

At MFS Engineers & Surveyors, we have worked throughout NY and NJ on projects where stormwater management was a significant concern. Our geotechnical and environmental services have been utilized for several green infrastructure projects across the state.

If you'd like to learn more about our stormwater management practices,

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