Community Partners for Clean Streams

Stormwater Management Systems

Stormwater Management Systems help to control flooding and remove pollution from stormwater before it reaches our rivers and lakes.

SYSTEM DESIGN

Stomwater management goals include controlling bank erosion, improving water quality, as well as managing flooding. To achieve these objectives, the volume, velocity and pollutant load of runoff leaving a site after development must be similar to that which occurred under natural conditions.

FINDING THE RIGHT ENGINEER

It is common to hire an engineer or contractor to design stormwater management systems. Be sure that your engineer is familiar with current stormwater standards and is dedicated to water quality.

MINDFUL PROJECT MANAGEMENT

Protect Natural Features

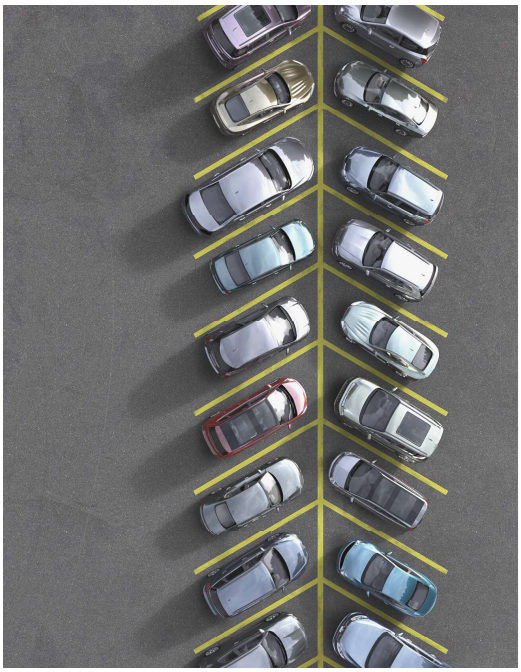
One of the most important ways to protect our watersheds is to preserve existing features that naturally manage stormwater. Before construction, identify and protect natural features and drainage patterns such as:

- wetlands
- woodlands
- floodplains
- permeable soils
- natural drainageways and depressions
- vegetation along streambanks

Each of these features help to slow and store stormwater, as well as filter out pollutants.

Impacts of Impervious Surfaces

Impervious surfaces (such as buildings and pavement) prevent stormwater from filtering back into the ground. This leads to an increase in the volume and velocity of runoff. Since infiltration removes pollutants from stormwater, impervious surfaces also reduce water quality. Increase infiltration by:



- Minimizing the use of concrete, asphalt and other impermeable surfaces. Consider alternatives such as modular pavers, permeable pavement, or gravel.

- Designing roads and pathways to reduce runoff velocities and increase stormwater infiltration. For example, curve roads and/or reduce their width.

- Conveying stormwater through vegetated swales instead of enclosed pipes, whenever possible.

Irrigation Systems

- Over watering sandy soils can cause nutrients to leach away too quickly.
- Since heavy clay soils hold moisture for a longer period of time, over watering clay soils can cause plants and microorganisms to drown.
- Proper watering will depend on a number of factors including soils and current weather patterns. In general:
    - Design irrigation systems to avoid over watering by incorporating separate irrigation zones. Zoned irrigation saves water and minimizes runoff by allowing only the amount of water required to be applied to different areas, according to the separate needs of each zone.
    - Test soils throughout your site and adjust watering acording to soil type.

MAINTAINING LARGE STORMWATER SYSTEMS

Maintaining stormwater management systems is an important and impactful way to protect water quality. Even the most well designed system will eventually stop functioning properly without maintenance. Different types of stormwater management features will need their own maintenance activity. If you have a large system you may want to contract out your maintenance work. Regular inspections of your system will help identify any issues and may help prevent larger problems or failures.

General maintenance may include:

- Regularly check and clean inlet sedimentation basins to ensure they can function properly.
- Removal of sediment and debris from outflow control devices and inlets.
- Create a Maintenance Plan:
    - Your Maintenance Plan will help ensure that your system is properly cared for and functioning. This tool will help you identify all the storm water management components, access points, and vegetated buffers on your site. It will also help you plan for the routine inspection of each component of the system. Engineers should inspect structural facilities.
    - A Stormwater Maintenance Plan should list:
        - Tasks required to maintain individual components.
        - A schedule for maintenance including preventative and corrective actions.
        - Who will be responsible for each maintenance activity.
        - A description and timeline for on-going landscape maintenance needs and soil erosion control actions.