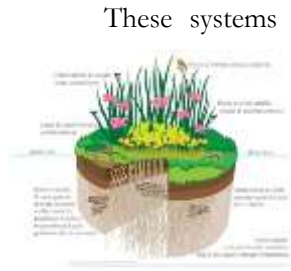


NURTURING

frogs.

ENHANCING

The end result is that bio-remediation and bio-retention systems and rain gardens do much more than provide a source of inspiration and spiritual renewal to residents. These systems **provide a highly efficient, natural way to improve water quality by filtering pollutants and removing excess nutrients.** They are a dynamic synergy of nature, art, engineering and landscape architecture. The tools include aerations to eliminate stagnant zones; redirecting and regulating existing flows; adding bogs and bio-basins to remove excess nitrogen and other nutrients; the use of skimmers; creating shaded areas; carefully addressing feeding, fertilizing and pest control practices; and selection of plants, including many that are native to California, to attract beneficial insects and wildlife.



These systems become a haven for all kinds of wildlife, starting with microbes. At the base of the food chain, these multiply profusely and support the diverse wildlife that come to inhabit bio-swales, rain gardens and bio-retention systems.



PAVERS

Even pervious pavement systems help to mimic nature, by allowing water to percolate through the system back into the ground water basin. However, these systems when used for vehicle traffic areas require annual maintenance as detailed within your PSCS Agreement, the project “Post Construction Maintenance Plan” and the City of Marina’s BMP Guide for PSCS at: www.ci.marina.ca.us, then stormwater.

EMERGENCIES OR SPILLS!

To report a discharge or spill of **HAZARDOUS MATERIALS** call 911 immediately

To report a discharge or spill of **SEWAGE** (*Known or suspected*) immediately call the City of Marina’s Wastewater Collection Department at (831) 384-6131, 24 hours a day, 7 days a week.

For **OTHER EMERGENCIES** call 911.

To report a discharge or spill of **OTHER LIQUID MATERIALS** (*Non-sewage / Non-hazardous*) contact our Dispatch Non-Emergency Hotline at (831) 384-7575.

MORE INFORMATION

The tips contained in this brochure provide guidance for the minimum BMP’s required of PSCS. For specific BMP’s please refer to your PSCS Agreement, the project “Post Construction Maintenance Plan” and the City of Marina’s BMP Guide for PSCS at: www.ci.marina.ca.us. Remember, documentation is your best evidence of compliance. If you should have suggestions contact us at (831) 884-1212. For additional information visit the following websites:

Central Coast Low Impact Development Initiative - www.centralcoastlidi.org/

Contra Costa Clean Water Program - www.cccleanwater.org/

City of Santa Barbara Storm Water BMP Guidance Manual - www.santabarbaraca.gov/


Low Impact Development Center - www.lowimpactdevelopment.org

Call (831) 884-1212


Or visit www.ci.marina.ca.us

(ECS, LLC © 3/11/21)



 **Stormwater Management Program**

Best Management Practices for Private Stormwater Conveyance Systems (Maintain, Inspect, Repair, Document & Report!)



Private Stormwater Conveyance Systems (“PSCS”) exist throughout the City of Marina. These systems often include: detention ponds, infiltration facilities, catch basins, a storm water pass-through, parking lot clarifiers, storm drains/pipes and traditional culverts to name a few. If you are a property owner and you have a PSCS that directly connects to the City’s SCS - i.e. streets, gutters, storm drains, catch basins then there are certain maintenance standards required by the state and federal government that go along with the system. The maintenance of your system is necessary to protect public and private property downstream, upstream, public health and the environment.

This brochure is intended to provide property owners with a general overview of the **minimum Best Management Practices** (“BMPs”) that apply to all PSCS in the City. Follow the **BMPs** listed herein to prevent pollution, protect our environment and protect public health.

More Information Call (831) 884-1212



Private Storm Water Conveyance Systems– Maintain, Inspect, Repair, Document & Report



WHAT'S A BMP?

Best Management Practices (“BMP’s) are techniques, measures or structural controls that are used for a given set of conditions to improve and protect the quality of storm water runoff in a cost effective manner. All PSCS require certain **minimum** and **specific BMP’s to be employed**.

Failure to implement appropriate BMP’s can result in Code Enforcement actions which may result in fines. For site specific BMP’s please refer to your PSCS Agreement, the project “Post Construction Maintenance Plan” and the City of Marina’s BMP Guide for PSCS at:

www.ci.marina.ca.us.



To assist the owners of PSCS the City has developed a Guide that outlines the **minimum standards required**. The guide can be accessed at: www.ci.marina.ca.us. Every owner of a PSCS must perform the following:

Routine Inspections: Owners of PSCS are required to routinely inspect all aspects of any and all PSCS located on their property. Inspections should occur monthly during the dry season (*April 16th – October 14th*), weekly during the wet season (*October 15th – April 15th*), just before the wet season and immediately following the first rain event. Specific schedules depend entirely upon the system installed, the size of the system and the proximity of the system to environmental habitats.

Routine Maintenance - schedules should be developed long before the project is complete. All PSCS require maintenance; such as hydro-flushing of drain pipes, removal and replanting of dead vegetation. Maintenance requirements are completely dependant upon the type of system installed, the size of the system and the proximity of the system to environmental habitats.

Routine Cleanings - are critical to the success of the system and include often weekly removal of trash, debris and what are often termed “floatables.” Cleanings should also include the removal of invasive or noxious weeds, removal of excess sediment to ensure the natural flow and drainage of the system. Routine cleaning requirements are completely dependant upon the type of system installed; the size of the system and the proximity of the system to environmental habitats.

Conduct Repairs as Necessary: During routine inspections, maintenance and cleanings, if damage to system components are discovered then it is the property owner’s responsibility to take corrective measures (*i.e. necessary repairs*) within 30 days or prior to the next predicted rain event which ever is sooner.

Documentation: Document all inspections, maintenance, cleaning activities and repairs conducted. Owners’ of all PSCS must submit to the City an annual PSCS Summary Log (*i.e. Report*) which details inspection specifics, general inspector information, and a summary of general recommendations per inspection.

The primary purpose of these systems is to mimic nature.

Many have dubbed this process “biomimicry” wherein **these systems clean, nurture, enhance water run-off and our environment**.

Bio-retention systems and bio-swales are solid examples of the science of adapting designs from nature to solve modern problems.



BIOMIMICRY

These systems **use natural microbial processes to clean water**. The matrix and plant roots that develop in these systems provide essential surface area for microbes to reproduce. Microbes (*i.e. bacteria*), occurring naturally in water, evolve quickly to remove contaminants of all kinds –

nutrients caused by fertilizer run off, organic waste, nitrates, phosphates, ammonia and heavy metals such as copper and zinc. The effectiveness of these systems

depends upon proper maintenance, routine inspections and repairs when needed.

CLEANSING



Private property owners are responsible for maintaining their own storm water management structures. Owners should have a maintenance program that addresses every component of the storm water system; to ensure that the system does not degrade over time and not meet its intended capability to effectively manage storm water. Local Municipal Code requires that owners of PSCS applying for development submit a maintenance plan, conduct routine and non-routine inspections, and maintain their storm water system and submit an annual inspection and maintenance report to the City of Marina on or before June 15th of each year. SCS consist of a series of collection and conveyance systems, detention systems, and treatment facilities. They are typically a combination of landscape and structural components that direct, slow, filter, detain, or infiltrate storm water runoff on-site after a rainfall event.



PRIVATE SCS – IN GENERAL