

Best Management Practice	Description	Other Names and Examples	Suitable Locations	Maintenance	Potential Benefits	Installation Costs (per unit)
Rain Barrels and Cisterns	Barrels, tanks and cisterns that capture roof water and store for a later use such as landscape irrigation, boat washing, etc.	Rainwater harvesting, rainwater collection systems	Rain barrels can be connected to most buildings. Marinas often use them for landscape irrigation and educational purposes. Cisterns can collect large amounts of water which marinas can use instead of municipal water in their operations, such as boat washing. Sizing and placement of a cistern will depend on building location, the local climate, and use(s) for the water.	Inspect after storms for clogging and leaks. Check for debris and mosquitoes in tank and ensure overflow is functional. Clean gutters and inlet filters as needed. Must drain and take system offline for winter months.	Reduces water bills. Potential to reduce nuisance flooding. Opportunity for community engagement (e.g., rain barrel art).	Variable depending on design ranging from a few hundred to tens of thousands of dollars. Rain barrels cost approximately \$100 per barrel. For larger systems, the cost is roughly \$1-2 per gallon stored.
Rain Gardens	Depressed areas with engineered soils and native and/or long-rooted plants to collect stormwater that allow it to be stored, taken up by plants or infiltrate into the ground.	Bioretention, bioinfiltration, biofiltration	Applicable to a wide range of areas as long it is large enough for the contributing drainage area. Common sites include parking lot islands and downspout discharge areas, however, other areas depressed areas where stormwater from lawns, roofs and sidewalks can be collected are also appropriate. Avoid wetlands and low areas that are frequently soggy.	Typical maintenance requirements for rain gardens include spring clean-up (prune plants and replenish mulch), bi-monthly weeding, and inspection of plant health and replacement (if needed). Semiannually, remove trash and debris build-up and check for clogging. Forebay cleanout should be performed once per year. Removal of sediment accumulated on mulch or bottom of the basin required less frequently which can be done by hand, vacuum truck or in worse cases may require an excavator.	Improves aesthetics. Potential to reduce nuisance flooding. Provides wildlife habitat. Opportunity for community engagement (e.g., installation and maintained with assistance from local community service organization or volunteer group). Helps prevent trash and debris from going into water.	\$10-20 per square foot
Green Roof	Roofs designed with a layer of plants to capture and absorb water. These systems normally consist of a waterproof membrane, a drainage layer, a growing media layer, and vegetation.	Living roof	Any roof with adequate structural load capacity.	Maintenance needs can be higher than traditional roofing system and will vary based on the type of green roof. Green roof maintenance is particularly important during the first five years following installation to ensure vegetation becomes well established. This includes weeding, plant replacement, irrigation, periodic fertilization and soil testing.	Improves aesthetics. Typically reduces building heating and cooling costs. Extends the life of the roof. May reduce stormwater fees. Provides wildlife habitat.	Information forthcoming
Bioswales and Hybrid Ditches	Shallow channels designed with engineered soils, an underdrain and planted with grass or native plants that help slow stormwater, filter out pollutants and allow water to soak into the ground.	Grassed swales, native planted swales	Grass areas at edge of pavement and parking lot islands.	Requires regular landscaping such as trimming, mowing and removal of invasive plants and trash. Inspect annually for erosion.	Improves aesthetics. Potential to reduce nuisance flooding. Provides wildlife habitat. Helps prevent trash and debris from going into water.	\$10-20 per square foot
Permeable Pavement	Permeable pavement systems allow stormwater and snowmelt to soak through the surface through pores, joints or gaps, and into the ground below.	Porous asphalt, pervious concrete, permeable interlocking concrete pavers, cellular paving grids, gap-graded concrete	Replacement for paved areas, typically placed at strategic locations to reduce square footage and costs (e.g., parking lanes/spots, around storm drain). Should avoid areas that experience heavy loads, such as boat storage and haul out areas.	Maintenance varies depending on the type of permeable pavement. Requires periodic inspection of the surface for clogging and removing sediment build-up as needed. Removal of sediment can be done with a vacuum sweeper or pressure washer. Weed removal and replacement of missing sand or gravel between pavers as needed.	Potential to reduce nuisance flooding. Reduces salt use in winter.	\$5-20 per square foot
Infiltration Practices	Infiltration practices capture and temporarily store stormwater, before allowing it to soak into the ground.	Basins, trenches and underground systems	Infiltration practices require areas with good soil drainage, typically areas with sandy or gravelly soils. Locations with clays soils, wetlands or low soggy areas should be avoided. Infiltration basins should be located in low areas where stormwater from lawns, roofs and sidewalks can be collected. Infiltration trenches can often be placed long grassy areas to collect stormwater from roads and parking lots. Underground infiltration systems are typically placed underneath parking lots.	Inspect after larger storm events to ensure practice is not holding water. Remove trash and accumulated sediment as needed. In infiltration basins, mow grass as needed during dry conditions. For underground systems, may need to use vacuum truck to remove accumulated sediment and trash.	Can be used to reduce nuisance flooding. Helps prevent trash and debris from going into water. Greatly improves water quality.	Infiltration basins and trenches \$5 to \$15 per square foot. Underground infiltration systems \$10 to \$50 per square foot.
Tree and Planter Boxes	Compact stormwater collection systems that filter stormwater through layers of mulch, soil, and trees or plants.	Tree box filter, high flow biofilter, biofiltration	The edges of pavement such as along roads, around the perimeter of parking lots or parking lot islands. Sites should have naturally permeable soils and a suitable distance to the seasonally high groundwater table, bedrock or other impermeable layer.	Inspect semiannually to ensure practice is not holding water, remove trash and accumulated sediment. A vacuum truck should be used to remove accumulated sediment and trash. Prune plants and replenish mulch as needed.	Improves aesthetics. Potential to reduce nuisance flooding. Provides wildlife habitat. Helps prevent trash and debris from going into water.	Highly variable depending on site attributes and design. \$10-50K installed.
Downspout Disconnection	Discharge of downspout into a rain garden, planter box, grassy area or other area where it can soak into the ground. Rain barrels or cisterns can also be used to collect roof water to be repurposed for irrigation or boat washing.	Vegetated filter strip, rooftop disconnection	Buildings with a lawn or landscaped area for downspout discharge or located near a water use need, such as boat washing and irrigation. Often paired with other practices like rain barrels, planter boxes and rain gardens.	Low maintenance option. Routine maintenance at the beginning and end of season for gutters, downspouts and discharge area or rainwater collection system (e.g., landscaped area, rain barrel or cistern).	Potential to reduce nuisance flooding. May reduce stormwater fees.	Supplies (e.g., downspout gutter extension) ~\$50 maximum
Buffers	Grassy, landscaped or native planted strips that intercept stormwater and debris from paved areas preventing pollutants from going directly into a waterbody.	Disconnection from impervious area, vegetated buffer strip, vegetated filter strips, filter strips	Adjacent to paved areas that abut water bodies, such as between a sidewalk and a bulkhead, or between a parking lot and rip-rap.	Requires regular landscape maintenance such as trimming, mowing and removal of invasive plants and trash. Inspect annually for erosion.	Improves aesthetics. Provides wildlife habitat. Helps prevent trash and debris from going into water.	Information forthcoming
Constructed/Engineered Wetlands	Stormwater treatment system that uses natural hydrologic processes and wetland vegetation to slow down stormwater and capture pollutants.	Stormwater wetland	Low area, natural drainage areas or areas adjacent to water bodies.	Maintenance for the first year is important to ensure successful wetland establishment and includes post-storm inspections, spot reseeding of wetland buffer, watering and plant replacement. Once established, the constructed wetland should be inspected semiannually for trash, clogging, proper drawdown and invasive plants. Control and removal of invasive plants and mowing as needed. Excavator may be needed to remove sediment build-up in forebay.	Improves aesthetics. Potential to reduce nuisance flooding. Provides wildlife habitat. Helps prevent trash and debris from going into water.	Typically \$3-8 per square foot. Costs are reduced as the size of the area increases.
Native Landscaping	Landscaped areas planted or restored with native vegetation.	Transition/enhancement of landscaping and turf with native vegetation; pollinator gardens	Replacement for grass and other traditionally landscaped areas.	Regular watering in the first year until plants have established. Spring weed control is necessary. Divide crowded plants in spring and fall as needed. Once established, long-term maintenance is lowered as mowing is no longer needed. Inspect annually for erosion.	Improves aesthetics. Provides wildlife habitat. Maintains natural stormwater infiltration capacity. Potential to reduce nuisance flooding. Reduces landscaping maintenance. Opportunity for community engagement (e.g., installation and maintained with assistance from local community service organization or volunteer group).	Information forthcoming
Preserving and Enhancing Wildlife Habitat	Maintaining and enhancing natural areas including trees, shorelines, and wetlands.	Natural shorelines, living shorelines, maintain and preserve trees, floating wetlands, wetland restoration	Current or restorable natural areas at the marina.	Annual inspection and maintenance to ensure health of plants and removal of invasive plants.	Improves aesthetics. Provides wildlife habitat. Maintains natural stormwater infiltration capacity.	Shoreline restoration \$1000-5000 per linear foot