

GLOSSARY

Glossary

The following are the terms and acronyms used frequently in this handbook.

ADT— Average daily traffic

Base flow — Streamflow which results from precipitation that infiltrates into the soil and eventually moves through the soil to the stream channel. This is also referred to as groundwater flow, or dry-weather flow.

Biofilter— Any of a number of devices used to control pollution using living materials to filter or chemically process pollutants.

Bioretention— A technique that uses parking lot islands, planting strips, or swales to collect and filter urban stormwater, that includes grass and sand filters, loamy soils, mulch, shallow ponding and native trees and shrubs.

Best Management Practices (BMPs) —Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of “waters of the United States.” BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw materials storage. BMPs include structural and nonstructural controls, and operation and maintenance procedures, which can be applied before, during, and/or after pollution producing activities.

Buffer— A zone created or sustained adjacent to a shoreline, wetland or stream where development is restricted or prohibited to minimize the negative effects of land development on animals and plants and their habitats.

CCRWQCB— Central Coast Regional Water Quality Control Board

Cluster Development — The principle of cluster development incorporates grouping new homes onto part of a development parcel so that the remaining land can be preserved as open space.

Commercial Development — Any development on private land that is not heavy industrial or residential. The category includes, but is not limited to hospitals, laboratories and other medical facilities, educational institutions, recreational facilities, plant nurseries, car wash facilities, mini-malls, business complexes, shopping malls, hotels, office buildings, public warehouses, and light industrial complexes.

Commercial/Industrial Facility — Any facility involved and/or used in the production, manufacture, storage, transportation, distribution, exchange or sale of goods and/or commodities, and any facility involved and/or used in providing professional and non-professional services. This category of facilities includes, but is not limited to, any facility

defined by the SIC Code. Facility ownership (federal, state, municipal, private) and profit motive of the facility are not factors in this definition.

Connected Impervious Area — An impervious area is considered connected if runoff from it flows directly into the drainage system. It is also considered connected if runoff from it occurs as concentrated shallow flow that runs over a pervious area and then into a drainage system.

Construction — Clearing, grading, excavating, building and related activities that result in soil disturbance. Construction includes structure teardown. It does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of facility; emergency construction activities required to immediately protect public health and safety; interior remodeling with no outside exposure of construction material or construction waste to stormwater; mechanical permit work; or sign permit work.

Control — To minimize, reduce, eliminate, or prohibit by technological, legal, contractual or other means, the discharge of pollutants from an activity or activities.

Control Structure — A device used to hold back or direct a calculated amount of stormwater to or from a stormwater management facility. Typical control structures include vaults or manholes fitted with baffles, weirs, or orifices.

Conveyance — The transport of stormwater from one point to another.

Design Storm — Rainfall runoff data or where rainfall runoff data is not available, data based on a synthetic rainstorm, as defined by rainfall intensities and durations.

Detention — The collection of runoff in a ponding area, depression, or storage chamber followed by its gradual release through an outlet into a receiving water body. Detention is one way to reduce a site's peak runoff rate to its pre-development peak rate for the storm event of a given magnitude, but is not an effective way to reduce the runoff volume. The detention process allows sediment and associated pollutants to settle out of the runoff.

Development — Any construction, rehabilitation, redevelopment or reconstruction of any public or private residential project (whether single-family, multi-unit or planned unit development); industrial, commercial, retail and other non-residential projects, including public agency projects; or mass grading for future construction. It does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of facility, nor does it include emergency construction activities required to immediately protect public health and safety.

Development Standards — Standards that the County has developed for new development and significant redevelopment projects to control the discharge of stormwater pollutants in post-construction stormwater.

Directly Adjacent — Situated within 200 feet.

Directly Connected Impervious Area or Surface — The area of impervious surface which drains directly into the storm drain system without first allowing flow across a pervious area (e.g. lawn).

Discharging directly to — An outflow from a drainage conveyance system that is composed entirely of flow from the subject development or redevelopment site and not commingled with flows from adjacent land.

Disconnected impervious area or surface — An impervious area or surface that drains across a pervious area prior to discharge to a storm drain system.

Drawdown — The time required for a stormwater detention or infiltration BMP to drain and return to the dry weather condition. For detention BMPs, drawdown time is a function of basin volume and outlet orifice size. For infiltration BMPs, drawdown time is a function of basin volume and infiltration rate.

Drywell — A structural subsurface facility with perforated sides or bottom, used to infiltrate stormwater into the ground.

Effective Imperiousness Area (EIA) — Impervious area not directly connected to a stream or drainage system during the specified design storm.

Environmentally Sensitive areas (ESA) — Areas that include but are not limited to all Clean Water Act Section 303(d) impaired water bodies; areas designated as special biological significance by the State Water Resource Control Board, water bodies designated with the habitat-related uses EST, WET, MAR, WILD, BIO, RARE, SPWN by the State Water Resource Control Board, areas designated as preserves within the County of San Luis Obispo.

Evapotranspiration — The combined loss of water from a given area, occurring during a specified period of time, by evaporation from the soil surface and transpiration from plants into the atmosphere.

Erosion — (1) The loosening and transportation of rock and soil debris by wind, rain, or running water. (2) The gradual wearing away of the upper layers of earth.

Feasible— Capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental and technological factors. Infeasibility must be supported by substantial evidence developed through good faith efforts to investigate alternatives that would result in less adverse impacts. A substantial modification to the configuration of a development, or reduction in density or intensity, would not be considered infeasible unless support by the above factors.

Flow-Based Treatment Control Measures — Stormwater quality treatment measures that rely on flow capacity to treat stormwater. These measures remove pollutants from a moving

stream of water through filtration, infiltration, adsorption, and/or biological processes. Examples: vegetated swales and filter strips.

General Construction Activities Stormwater Permit (Construction General Permit) — The general NPDES permit adopted by the State Regional Water Quality Control Board, which authorizes the discharge of stormwater from construction activities under certain conditions.

General Industrial Activities Stormwater Permit (Industrial General Permit) — The general NPDES permit adopted by the State Board which authorizes the discharge of stormwater from certain industrial activities under certain conditions.

Habitat-Related Uses — Several habitat-related beneficial uses defined by the Regional Water Quality Control Board that include warm and cold freshwater habitats; estuarine, wetland and marine habitats; wildlife habitat; biological habitats (including Areas of Special Biological Significance); habitats that support rare, threatened, or endangered species; habitats that support migration of aquatic organisms; and habitats that support spawning, reproduction, and/or early development of fish.

Head (hydraulic head) — Energy represented as a difference in elevation. In slow-flowing open systems, the difference in water surface elevation, e.g., between an inlet and outlet

Heat Island Effect — The increase in ambient temperatures generated by heat radiating from paved surfaces exposed to sunlight.

Hillside — Lands that have a natural gradient of 10 percent or greater.

Hot Spots — A land use or activity that produces higher concentrations of trace metals, hydrocarbons or priority pollutants than normally found in urban runoff. Hot spots are typically associated with auto recyclers, vehicle service, maintenance and washing facilities, industrial facilities with outdoor storage or loading docks.

Hydrograph — Runoff flow rate plotted as a function of time.

Hydromodification — Hydromodification is the alteration of hydrologic characteristics (i.e. flow duration, magnitude, recharge rates and runoff volumes) within a watershed.

Hydraulic Residence Time — The average time required to completely renew a waterbody's water volume.

Hydrologic Soil Group (HSG) — A group of soils having similar runoff potential under similar storm and cover conditions. Natural Resource Conservation Service (NRCS) HSG information for a given site can be used to identify the likelihood that native soils can be used for infiltration BMPs (<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>). There are four types of HSG's.

1. (Low runoff potential). The soils have a high infiltration rate even when thoroughly wetted. They chiefly consist of deep, well drained to excessively drained sands or gravels. They have a high rate of water transmission (1 to 8.3 inches per hour).
2. The soils have a moderate infiltration rate when thoroughly wetted. They chiefly are moderately deep to deep, moderately well drained to well drained soils that have moderately fine to moderately coarse textures. They have a moderate rate of water transmission (0.5 to 1 inch per hour).
3. The soils have a slow infiltration rate when thoroughly wetted. They chiefly have a layer that impedes downward movement of water or have moderately fine to fine texture. They have a slow rate of water transmission (0.17 to 0.27 inches per hour).
4. (High runoff potential). The soils have a very slow infiltration rate when thoroughly wetted. They chiefly consist of clay soils that have a high swelling potential, soils that have a permanent high water table, soils that have a claypan or clay layer at or near the surface, and shallow soils over nearly impervious material. They have a very slow rate of water transmission (0.02 to 0.1 inches per hour).

Typically those designated as Type 1 and Type 2 are more readily available for use with infiltration BMPs

Illicit Connection — Any man-made conveyance that is connected to the storm drain system without a permit, excluding roof drains and other similar type connections. Examples include channels, pipelines, conduits, inlets, or outlets that are connected directly to the storm drain system.

Illicit Discharge — Any discharge to the storm drain system that is prohibited under local, state, or federal statutes, ordinances, codes, or regulations. The term illicit discharge includes all non storm-water discharges except discharges pursuant to an NPDES permit, discharges that are identified as "allowable" in NPDES Municipal Stormwater Permits, and discharges authorized by the Regional Board.

Impervious Surface — Any material that prevents or substantially reduces infiltration of water into the soil.

Impervious Surface Area — The ground area covered or sheltered by an impervious surface, measured in plan view, i.e., the impervious surface of a pitched roof is equal to the ground ware it shelters, rather than the surface area of the roof itself.

Infiltration — The downward entry of water into the surface of the soil. Infiltration rate (or infiltration capacity) is the maximum rate at which a soil in a given condition will absorb water.

Inspection — Entry and the conduct of an on-site review of a facility and its operations, at reasonable times, to determine compliance with specific municipal or other legal requirements.

Integrated Management Practices (IMPs) — A LID practice or combination of practices that are the most effective and practicable (including technological, economic, and institutional considerations) means of controlling the predevelopment site hydrology, point or non-point source pollutants at levels compatible with environmental quality goals. They are small-scale structural stormwater practices distributed through out a site or drainage area for the purpose of managing or influencing the site hydrology.

Low Impact Development (LID) — An approach to site design and stormwater management that seeks to maintain the site's pre-development rates and volumes of runoff. LID accomplishes this through the minimization of impervious cover, strategic placement of buildings, pavement and landscaping, and the use of small-scale distributed runoff management features that are collectively called "Integrated Management Practices" (IMPs). LID emphasizes conservation and use of existing natural site features.

Maximum Extent Practicable (MEP) — Section 402(p)(3)(B) of the Clean Water Act (CWA) directs the Regional Board to issue NPDES Municipal Stormwater Permits which require the dischargers to develop and implement programs with the goal of reducing the discharge of pollutants in stormwater runoff to the maximum extent practicable (MEP). The SWRCB through a State Board's Office of Chief Counsel (OCC) issued memorandum (dated 11 February 1993) defined MEP to include *technical feasibility, cost, and benefit derived with the burden being on the municipality to demonstrate compliance with MEP by showing that a BMP is not technically feasible in the locality or that BMP costs would exceed any benefit to be derived* (dated 11 February 1993).

Municipal Separate Storm Sewer System (MS4) — A conveyance or system of conveyances (including roads with drainage systems, municipal streets, alleys, catch basins, curbs, gutters, ditches, manmade channels, or storm drains) owned by a State, city, county, town or other public body, that is designed or used for collecting or conveying stormwater, which is not a combined sewer, and which is not part of a publicly owned treatment works, and which discharges to waters of the United States.

National Pollutant Discharge Elimination System (NPDES) — The national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits under Clean Water Act §307, 402, 318, and 405.

Natural Drainage System — An unlined or unimproved (not engineered) creek, stream, river or similar waterway.

New Development — Land disturbing activities; structural development, including construction or installation of a building or structure, creation of impervious surfaces; and land subdivision.

Nonpoint Source Pollution— Pollution that enters water from dispersed and uncontrolled sources, such as rainfall, moving over and through the ground rather than a single, identifiable source.

Non-Stormwater Discharge — Any discharge to a storm drain that is not composed entirely of stormwater. Certain non-stormwater discharges are authorized per the NPDES Municipal Stormwater Permits.

Non-Structural Practices — Natural features or directed activities specifically utilized for the purpose of managing or influencing the site hydrology and/or improving water quality. Non-structural practices can include pollution prevention, preservation of open space and natural flow paths, street sweeping, etc.

Not Directly Connected Pavement — See Disconnected Pavement.

NPDES Municipal Stormwater Permit — A permit issued by a Regional Water Quality Control Board to local government agencies (Dischargers) placing provisions on allowable discharges of municipal stormwater to waters of the state.

Peak Runoff — The maximum stormwater runoff rate (cfs) determined for the design storm, or design rainfall intensity

Performance Standard — A narrative or measurable number specifying the minimum acceptable outcome for a pollution control practice.

Permeable — A type of material that allows passage of water.

Permitting Agency — The entity responsible for issuing grading, building and encroachment permits for new and redevelopment projects.

Pervious Pavement — See Porous Pavement.

Pollutants — Any introduced gas, liquid, or solid that makes a resource unfit for its normal or usual purpose and substances defined in CWA §502(6) (33.U.S.C.§1362(6)), and incorporated by reference into California Water Code §13373.

Pollutants of Concern (POC) — Biochemical oxygen demand (BOD), sediment or a parameter that addresses sediment (such as total suspended solids, turbidity or siltation), pathogens, oil and grease, and any pollutant that has been identified as a cause of impairment in any water body to which the MS4 discharges.

Point Source Pollution — A source of pollutants from a single point of conveyance, such as a pipe. For example, the discharge from a sewage treatment plant or a factory is a point source pollutant.

Porous Pavements (Pervious pavements) — Pavements for roadways, sidewalks, parking lots or plazas that are designed to infiltrate runoff, such as: pervious concrete, pervious asphalt, unit pavers- on-sand, and crushed gravel.

Post-Construction Stormwater Quality Plan — A plan specifying and documenting permanent site features and control measures that are designed to control pollutants for the life of the project. The plan should include sufficient design detail and calculations to demonstrate the adequacy of the stormwater quality control measures to control pollution from the developed site. This plan may be required prior to issuance of certain development permits; check with your local permitting agency.

Pre-Developed Condition — Native vegetation and soils that existed at a site prior to any development. The pre-developed condition may be assumed to be an area with the typical vegetation, soil, and stormwater runoff characteristics of open space areas typical of California's central coast unless reasonable historic information is provided that the area was atypical.

Priority Development Project — Any development project that falls within any of the following categories:

- Single-family hillside residence
- Commercial development where the land area for development is $\geq 100,000$ sf
- Automotive repair shop defined in any of the following standard industrial classification codes: 5013, 5014, 5541, 7532-7534, or 7536-7539.
- Retail Gasoline Outlet
- Restaurant where the land area for development or redevelopment \geq or 5,000 sf. (SIC Code 5812)
- Detached residential development of 10 or more units
- Attached residential development of 10 or more units
- Parking lots $\geq 5,000$ sf or with at least 25 parking spaces AND potentially exposed to stormwater runoff
- Discharging to receiving waters within defined *Environmentally Sensitive Areas*. All development and redevelopment located within or directly adjacent to or discharging directly to an environmentally sensitive areas.

Rain Event or Storm Event — Any rain event greater than 0.1 inch in 24 hours except where specifically stated otherwise.

Rainy Season — For San Luis Obispo County, the calendar period beginning October 15 and ending April 15.

Rational Method — A method of calculating runoff flows based on rainfall intensity, and tributary area, and a factor representing the proportion of rainfall that runs off.

Receiving Waters — All surface water bodies identified in the Basin Plan (<http://www.swrcb.ca.gov/rwqcb3/BasinPlan/Index.htm>) prepared by the Central Coast Regional Water Quality Control Board.

Recharge— Infiltration of surface water to groundwater.

Redevelopment — Land-disturbing activity that results in the creation, addition, or replacement of 5,000 square feet or more of impervious surface area on an already developed site. Redevelopment includes, but is not limited to: the expansion of a building footprint; addition or replacement of a structure; replacement of impervious surface area that is not part of a routine maintenance activity; and land disturbing activities related to structural or impervious surfaces. Where redevelopment results in an increase of less than 50% of the impervious surface of a previously existing development, and the existing development was not subject to the Design Standards, the Design Standards apply only to the addition, and not to the entire development. It does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of facility, nor does it include emergency construction activities required to immediately protect public health and safety.

Regional Stormwater Quality Treatment Facility (Regional Facility) — A facility that treats runoff from more than one project or parcel. A regional facility may be in lieu of on-site treatment controls to treat urban runoff prior to discharge to Waters of the State, subject to the approval of the applicable permitting agency.

Regional Water Quality Control Board (RWQCB) — California RWQCBs are responsible for implementing pollution control provisions of the Clean Water Act and California Water Code within their jurisdiction. There are nine California RWQCBs. San Luis Obispo County is within the Central Coast Regional Water Quality Control Board (Region 3).

Restaurant — A facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (SIC Code 5812).

Retail Gasoline Outlet — Any facility engaged in selling gasoline and lubricating oils.

Retention — The practice of holding stormwater in ponds or basins and allowing it to slowly infiltrate to groundwater. Some portion will evaporate. Also see infiltration. Retention reduces the volume of runoff from a site and can also be effective in reducing the peak runoff rate if the retention volume is sufficiently large.

Runoff — See Urban Runoff

Runoff Coefficient — A measure of the permeability that is used to estimate the portion of the rainfall that will run off the watershed.

SIC Code — Standard Industrial Classification Codes as defined by the U.S. Department of Labor (see http://www.osha.gov/pls/imis/sic_manual.html)

Setback— The required distance between a structure and a lot line.

Sheet flow — A flow condition during a storm where the depth of stormwater runoff is shallow and informally spread over the land surface.

Significant Redevelopment — Includes, but is not limited to: expansion of a building footprint; replacement of a structure; replacement of impervious surface that is not part of routine maintenance activity; and land-disturbing activities related to structural or impervious surfaces. For redevelopment projects subject to this manual, the applicable design standards apply only to the redeveloped area, and not to the entire site, except in cases where untreated drainage from the existing developed portion is allowed to enter/flow through the redeveloped portion. In such cases, any new required treatment control measures must be designed for the entire contributing drainage area. Redevelopment and infill project applicants should check with the local permitting agency at the start of project design to verify whether or not the manual requirements apply.

Significant Tree— Any tree which is more than 12-inches in diameter measured four and one-half feet above the root crown; or any (list specific tree and size).

Source Control Measure — Any schedule of activities, prohibition of practices, maintenance procedure, managerial practice or operational practice that aims to prevent stormwater pollution by reducing the potential for contamination at the source of pollution.

Steep Slope — An area of land that has a slope angle of 10% or greater.

Stormwater — Stormwater runoff, snowmelt runoff, and surface runoff and drainage.

Stormwater Quality Plan — See Post-Construction Stormwater Quality Plan

Storm Runoff — Surplus surface water generated by rainfall that does not seep into the earth and flows overland to flowing or stagnant bodies of water.

Structural Control Measure — Any structural facility designed and constructed to mitigate the adverse impacts of stormwater and urban runoff pollution (e.g. canopy, structural enclosure). The category may include both source and treatment control measures.

Structural Practices — Any man made stormwater practice or feature that requires maintenance in order to function or provide the hydrologic benefit as designed. Structural practices include, but are not limited to, rain gardens, stormwater bioretention basins, stormwater infiltration facilities, stormwater retention and detention facilities, engineered vegetated filter strips, and any other features that are designed, constructed and maintained in order to managing or influencing the site hydrology and/or improve runoff water quality.

Target Pollutants — Pollutants identified by the County or RWQCB as most likely to impair local receiving waters, based on evaluation of available monitoring data and other information.

Time of Concentration (Tc) – The time for runoff to travel from the hydraulically most distant point of the development site to the watershed outlet or study point.

Treatment — The application of engineered systems that use physical, chemical, or biological processes to remove pollutants. Such processes include, but are not limited to, filtration, gravity settling, media absorption, biodegradation, biological uptake, chemical oxidation, and UV radiation.

Treatment train — A stormwater technique in which several treatment types (filtration, infiltration, retention, evaporation) are used in conjunction with one another and are integrated into a comprehensive runoff management system.

Treatment Control Measure — Any engineered system designed to remove pollutants by simple gravity settling of particulate pollutants, filtration, biological uptake, media absorption or any other physical, biological, or chemical process.

Urban Runoff — Any runoff from urbanized areas including stormwater and dry weather flows from a drainage area that reaches a receiving water body or subsurface. During dry weather, urban runoff may be comprised of groundwater base flow and/or nuisance flows, such as excess irrigation water.

Vector— Any insect or organism that is capable of harboring or transmitting a causative agent of human disease.

Volume-Based Treatment Control Measures — Stormwater quality treatment measures that rely on volume capacity to treat stormwater. These measures detain or retain runoff and treat it primarily through settling or infiltration. Examples: detention and infiltration basins, porous pavement and stormwater planters (bioretention).

Water Board(s) — Generic reference to the State Water Resources Control Board (SWRCB) and/or the nine Regional Water Quality Control Boards (RWQCBs).

Water Table— The upper surface of groundwater or the level below which the soil is saturate with water. The water table indicates the uppermost extent of groundwater.

Water Quality Volume (WQV) — For stormwater treatment BMPs that depend on detention to work, the volume of water that must be detained to achieve maximum extent practicable pollutant removal. This volume of water must be detained for a specified drawdown time.

Appendix A

Stormwater Project Permit Designation Checklist

Measures Homeowners Can Take to Reduce Stormwater Impacts

STORMWATER PROJECT DESIGNATION CHECKLIST

Post-construction stormwater management is required for all projects. The required documentation and level of processing varies based on the project designation: “Priority”, “Standard” or “Exempt”. The checklist below is provided to assist you in determining the designation of your project.

| ITEM | DEVELOPMENT AND REDEVELOPMENT CATEGORY | YES | NO |
|------|---|-----|----|
| 1. | Single-family hillside residence on slope greater than 10%? | | |
| 2. | Commercial development where the land area for development is \geq 100,000 square feet? | | |
| 3. | Automotive repair shop? | | |
| 4. | Retail Gasoline Outlet? | | |
| 5. | Restaurant where the land area for development or redevelopment greater than or equal to 5,000 square feet? | | |
| 6. | Detached residential development of 10 or more units? | | |
| 7. | Attached residential development of 10 or more units? | | |
| 8. | Parking lots greater than or equal to 5,000 square feet or with at least 25 parking spaces AND potentially exposed to storm water runoff? | | |
| 9. | Discharging to 303(d) receiving waters, Sensitive Resource Area (SRA), Sensitive Riparian Vegetation (SRV) or Wetlands (WET) Overlays? | | |

If you answered **YES** to any of the above questions, then your project is considered a **PRIORITY PROJECT** and will be required to submit a **Stormwater Quality Plan** and a **Stormwater Quality Priority Project Application**.

If you answered **NO** to all of the above, and your project disturbs greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, your project is considered a **STANDARD PROJECT** and you are required to develop and implement strategies that include a combination of structural and/or non-structural BMPs. Standard projects must submit a completed **Stormwater Quality Standard Project Application**.

If your project does not meet any of the above criteria, your project may be an **EXEMPT PROJECT**. Consult with Planning and Building Department staff to verify that your project meets the criteria to be considered “Exempt.” Exempt projects are encouraged to implement practices that will reduce stormwater impacts associated with development and redevelopment. A list of practices appropriate for homeowners is included on the back of this sheet.

Specific information regarding these requirements is provided in the County of San Luis Obispo LID Handbook.

Measures Homeowners Can Take to Reduce Stormwater Impacts

Everyone is strongly encouraged to reduce stormwater impacts associated with development and redevelopment by taking these actions:

- Protect soils from compaction that will ultimately be used in planted areas
- Amend soils designated to be used as planted areas
- Sumped planted areas are preferred over mounded planting areas to better retain irrigation and rain water.
- Direct driveway runoff and runoff from roof downspouts at least 10-feet away from foundations and towards planting beds and lawns where water can safely soak into the ground. Plant rain gardens.
- Protect existing trees from construction impacts by placing safety fence around the root zone of the tree (minimally the shadow of the tree canopy at high noon) and/or plant new trees
- Use permeable pavers for walkways, driveway and patios instead of concrete
- Through minor grading, encourage water retention on site (but away from foundations)
- Install rain cisterns and/or rain barrels to capture and re-use roof rain water

Appendix B

Stormwater Quality Plan Application for Priority Projects and Required Checklists

Stormwater Quality Plan Application for Priority Projects

Applicant Information Check box for contact person assigned to this project

| | |
|--------------------------|---|
| <input type="checkbox"/> | Landowner Name Mailing Address Email Address Phone |
| <input type="checkbox"/> | Applicant Name Mailing Address Email Address Phone |
| <input type="checkbox"/> | Agent Name Mailing Address Email Address Phone |

Since the SWQP is a living document, revisions may be necessary during various stages of approval by the County. Please provide the approval information requested below.

| Project Review Stage | Does the SWQP need revisions? | | If YES, provide revision date |
|----------------------|-------------------------------|----|-------------------------------|
| | Yes | No | |
| | | | |
| | | | |
| | | | |

Attachments

| | Attachment | Completed | N/A |
|---|--|-----------|-----|
| A | Project Location Map (scale 1" = 250') | | |
| B | Site Map (scale 1" = 40') with easements and rights-of-way depicted. | | |
| C | Stormwater Quality Plan | | |
| D | Treatment BMP Location Map | | |
| E | Operation and Maintenance Plan for Treatment BMPs | | |

Stormwater Quality Plan Checklist

The submittal requirements checklist is intended to aid the design engineer in preparing a stormwater quality plan.

Exhibits

- Existing natural hydrologic features (depressions, watercourses, relatively undisturbed areas) and significant natural resources with drain areas and sub-areas (if applicable) delineated and with arrows showing flow direction of stormwater. If applicable, show 100-year flood elevations.
- Soil types and depth to groundwater. If applicable, show monitoring well locations, soil boring locations.
- Existing and proposed site drainage network and connections to drainage offsite.
- Proposed design features and surface treatments used to minimize imperviousness.
- Entire site divided into separate drainage areas, with each area identified as self-retaining (zero discharge), self-treating, or draining to a treatment/flow control facility.
- For each drainage area, types of impervious surface area proposed (roof, plaza/sidewalk, and streets/parking) and area for each.
- Proposed locations and sizes of infiltration, treatment, or flow-control facilities. Include tributary area and basis for sizing (rational C, NRCS CN value, Tc, etc)
- Potential pollutant source areas, including loading docks, food service areas, refuse areas, outdoor processes and storage, vehicle cleaning, repair or maintenance, fuel dispensing, equipment washing, etc. listed in Table 3-7.

Report

- Table of Contents
- Project and applicant name, location (address and APN No.), and description (type of project)
- List of permits requested and other permits required (401, 404, Caltrans Encroachment, etc)
- List of water bodies that will receive runoff from the site. (Step 1)
- Table of minimum requirements that apply to the project (Step 1)
- Narrative analysis or description of site features and conditions that constrain, or provide opportunities for, stormwater control. (Step 2)
- Narrative description of site design characteristics that protect natural resources. (Step 2)
- Narrative description and/or tabulation of site design characteristics, building features, and pavement selections that reduce imperviousness of the site. (Step 3)
- A table of identified pollutant sources and for each source, the source control measure(s) used to reduce pollutants to the maximum extent practicable. (Step 4).

- Applicable flowcharts for determining minimum requirements with decision path clearly marked. (Step 4, 5 and 6)
- Identification of any conflicts with codes or requirements or other anticipated obstacles to implementing the Stormwater Quality Plan. (Step 7)
- Tabulation of proposed pervious and impervious area, showing self-treating areas, self-retaining areas, and areas tributary to each infiltration, treatment, or flow-control facility. (Step 7)
- Preliminary designs, including calculations, for each infiltration, treatment, or flow-control facility. Elevations should show sufficient hydraulic head for each. (Step 8)
- General maintenance requirements for infiltration, treatment, and flow-control facilities. (Step 9)
- Means by which facility maintenance will be financed and implemented. (Step 9)
- Statement accepting responsibility for operation & maintenance of facilities (Step 9)
- Certification by a civil engineer, architect, and landscape architect

Checklist for Source Controls

Please complete the following checklist for Source Control BMPs. If the BMP is not applicable for this project, then check N/A only at the main category.

| BMP | | Yes | No | N/A |
|-----|---|-----|----|-----|
| 1. | Provide Storm Drain System Marking | | | |
| | a. All storm drain inlets and catch basins within the project area shall have prohibitive language (such as: "NO DUMPING – DRAINS TO WATERBODY") and graphical icons to discourage illegal dumping. | | | |
| 2. | Design Outdoors Material Storage Areas to Reduce Pollution Introduction | | | |
| | a. This is a detached single-family residential project. Therefore, personal storage areas are exempt from this requirement. | | | |
| | b. Outdoor equipment and materials storages areas are either: (1) placed in an enclosure such as, but not limited to, a cabinet, shed, or similar structure that prevents contact with runoff or spillage to the stormwater conveyance system; or (2) protected by secondary containment structures such as berms, dikes, or curbs. | | | |
| | c. Non hazardous storage areas are paved and sufficiently impervious to contain leaks and spills. | | | |
| | d. The storage areas have a roof or awning to minimize direct precipitation within the secondary containment area. | | | |
| 3. | Design Trash Storage Areas to Reduce Pollution Introduction | | | |
| | a. Paved with an impervious surface, designed not to allow run-on from adjoining areas, screened or walled to prevent off-site transport of trash; or, | | | |
| | b. Provide attached lids on all trash containers that exclude rain, or roof or awning to minimize direct precipitation. | | | |
| 4. | Use Efficient Irrigation Systems & Landscape Design | | | |
| | a. Irrigation system has a rain shutoff device to prevent irrigation after precipitation. | | | |
| | b. Irrigation system is programmed for each landscape area's specific water requirements. | | | |
| | c. Irrigation system utilizes flow reducers or shutoff valves triggered by a pressure drop to control water loss in the event of broken sprinkler heads or lines. | | | |
| | d. Plant material selected shall be appropriate to site specific characteristics such as soil type, topography, climate, amount and timing of sunlight, prevailing winds, rainfall, air movement, patterns of land use, ecological consistency and plan iterations. | | | |

| | | | | | |
|----|--|--|--|--|--|
| | e. | Existing native trees, shrubs and ground cover retained and incorporated in the landscape plan. | | | |
| | f. | Proper maintenance and landscaping is the responsibility of the owner. | | | |
| 5. | Private Roads | | | | |
| | a. | Rural swale system: street sheet flows to vegetated swale or gravel shoulder, curbs at street corners, culverts under driveways and street crossings. | | | |
| | b. | Urban curb/swale system: street slopes to curb, periodic swale inlets drain to vegetated swale/biofilter. | | | |
| | c. | Dual drainage system: First flush captured in street catch basins and discharged to adjacent vegetated swale or gravel shoulder, high flows connect directly to stormwater conveyance system. | | | |
| 6. | Residential Driveways & Guest Parking | | | | |
| | a. | Design driveways with shared access, flared (single lane at street) or wheelstrips (paving only under tires); or, drain into landscaping prior to discharging to the stormwater conveyance system. | | | |
| | b. | Uncovered temporary or guest parking on private residential lots paved with a permeable surface; or, designed to drain into landscaping prior to discharging to the stormwater conveyance system. | | | |
| 7. | Dock Areas | | | | |
| | a. | Loading dock areas are covered and/or graded to minimize run-on and runoff from the loading area. | | | |
| | b. | Loading docks use for the loading and unloading of liquids in containers shall be provided with an inlet with a shutoff valve and have enough capacity to hold a spill while the valve is closed. | | | |
| | | Direct connections to storm drains from depressed loading docks (truck wells) are prohibited. | | | |
| 8. | Maintenance Bays | | | | |
| | a. | Repair/maintenance bays shall be indoors; or, designed to preclude urban run-on and runoff. | | | |
| | b. | Design a repair/maintenance bay drainage system to capture all wash water, leaks and spills. Connect drains to a sump for collection and disposal. Direct connection of the repair/maintenance bays to the storm drain system is prohibited. | | | |
| 9. | Vehicle Wash Areas | | | | |
| | a. | Wastewater from vehicle washing operations is not discharged to a storm drain system (without a permit). | | | |

| | | | | | |
|-----|---------------------------------|---|--|--|--|
| | b. | Commercial/industrial facilities wash areas are self-contained; or covered with a roof or overhang, be equipped with a clarifier, grease trap or other pretreatment facility, as appropriate and properly connected to a sanitary sewer (with a permit) | | | |
| 10. | Outdoor Processing Areas | | | | |
| | a. | Cover or enclose areas that would be the most significant source of pollutants; or, slope the area toward a dead-end sump; or, discharge to the sanitary sewer system following appropriate treatment in accordance with conditions established by the applicable sewer agency. | | | |
| | b. | Grade or berm area to prevent run-on from surrounding areas. | | | |
| | c. | Installation of storm drains in areas of equipment repair is prohibited. | | | |
| 11. | Equipment Wash Areas | | | | |
| | a. | Be self-contained; or covered with a roof or overhang. | | | |
| | b. | Sink and cleanings area are equipped with a clarifier, grease trap or other pretreatment facility, prior to discharge to the sanitary sewer. | | | |
| | c. | Interior floor drains shall be properly connected to a sanitary sewer. | | | |
| | d. | Food service facilities, including restaurants and grocery stores, have a sink or other area for cleaning floor mats, containers, and equipment. The cleaning area is located on a paved surface and has secondary containment, and is large enough to clean the largest mat or piece of equipment that needs cleaning. | | | |
| 12. | Parking Areas | | | | |
| | a. | Where landscaping is proposed in parking areas, incorporate landscape areas into the drainage design. | | | |
| | b. | Overflow parking (parking stalls provided in excess of the minimum parking requirement) are constructed with permeable paving materials. | | | |
| | c. | Interior level parking garage floor drains shall be connected to a water treatment device approved by the County prior to discharging to the sanitary sewer system. | | | |
| | d. | Parking lots are swept regularly to prevent the accumulation of litter and debris. | | | |
| 13. | Fueling Area | | | | |
| | a. | Fuel dispensing areas have an overhanging roof structure or canopy that extends a minimum of ten feet in each direction from each pump. The cover's minimum dimensions are equal to or greater than the area within the grade break. The cover does not drain onto the fuel dispensing area and the downspouts are routed to prevent drainage across the fueling area. The fueling area drain to the project's treatment control BMP(s) prior to discharging to the stormwater conveyance system. | | | |

| | | | | | |
|-----|--|--|--|--|--|
| | b. | Fuel dispensing areas are paved with Portland cement concrete (or equivalent smooth impervious surface) and graded at the minimum slope to prevent ponding. Fueling areas are separated from the rest of the site by a grade break that prevents run-on of stormwater. | | | |
| | c. | Have an appropriate slope to prevent ponding, and must be separated from the rest of the site by a grade break that prevents run-on of urban runoff. | | | |
| | d. | At a minimum, the concrete fuel dispensing area must extend 6.5 feet from the corner of each fuel dispenser, or the length at which the hose and nozzle assembly may be operated plus 1 foot, whichever is less. | | | |
| 14. | Pool / Spa / Fountain Discharge | | | | |
| | a. | Swimming pool, hot tub, spa and fountain discharge drains... | | | |
| 15. | Miscellaneous Drain/Wash water | | | | |
| | a. | Building roof drains discharge away from the building to an unpaved or vegetated area. | | | |

Checklist for Site Design Controls

Table 3-5: Commonly Needed Site Information

| Item | Site Design Options | Yes | No | N/A |
|------|---|-----|----|-----|
| 1. | Can the project be relocated or realigned to avoid/reduce impacts to receiving waters or to increase the preservation of critical (or problematic) areas such as floodplains, steep slopes, wetlands, and areas with erosive or unstable soil conditions? | | | |
| 2. | Can the project be designed to minimize impervious footprint? | | | |
| 3. | Are natural areas conserved where feasible? | | | |
| 4. | Where landscape is proposed, can rooftops, impervious sidewalks, walkways, trails and patios be drained into adjacent landscaping? | | | |
| 5. | For roadway projects, can structures and bridges be designed or located to reduce work in live streams and minimized construction impacts? | | | |
| 6. | Can any of the following methods be utilized to minimize erosion from slopes? | | | |
| | a. Minimize slope disturbance? | | | |
| | b. Shorten slope length or steepness with retaining walls? | | | |
| | c. Provide benches or terraces on high cut and fill slopes to reduce concentration of flows? | | | |
| | d. Can the slopes be rounded to reduce concentration of flows? | | | |
| | e. Can concentrated flows be collected and conveyed in stabilized drains and channels? | | | |
| 7. | Are stormwater facilities located outside of streams and wetlands? | | | |

For projects that include work in channels, consider site design measures.

Table 3-6: Channel Site Design Impact Table

| Item | Criteria | Yes | No | N/A | Comments |
|------|--|-----|----|-----|------------------|
| 1. | Will the project increase velocity or volume of downstream flow? | | | | If YES, go to 5. |
| 2. | Will the project discharge to unlined channels? | | | | If YES, go to 5. |
| 3. | Will the project increase potential sediment load or downstream flow? | | | | If YES, go to 5. |
| 4. | Will the project encroach, cross, realign, or cause other hydraulic changes to a stream or affect upstream and/or downstream stability? | | | | If YES, go to 7. |
| 5. | Review channel lining materials and design for streambank erosion. | | | | Continue to 6. |
| 6. | Consider channel erosion control measures within the project limits as well as downstream. Consider scour velocity. | | | | Continue to 7. |
| 7. | Include, where appropriate, energy dissipation devices at culverts. | | | | Continue to 8. |
| 8. | Ensure all transitions between culvert outlets/headwalls/wingwalls and channels area smooth to reduce turbulence and scour. | | | | Continue to 9. |
| 9. | Include, if appropriate, detention facilities to reduce peak discharges. | | | | |
| 10. | "Hardening" natural downstream areas to prevent erosion is not an acceptable technique for protecting channel slopes, unless pre-development conditions are determined to be such that that hardening would be required even in the absence of the proposed development. | | | | Continue to 11. |
| 11 | Provide other design principles that are comparable and equally effective. | | | | |

Treatment Control Feasibility Checklist

| TREATMENT CONTROL BMP | CONSIDERED FOR USE | REJECTED BASED ON |
|--------------------------------|--------------------|-------------------|
| Infiltration Trench (TC-10) | | |
| Constructed Wetland (TC-21) | | |
| Retention Basin (TC-11) | | |
| Detention Basin (TC-22) | | |
| Vegetated Swale (TC-30) | | |
| Vegetated Filter Strip (TC-31) | | |
| Bioretention (TC-32) | | |
| Surface Sand Filter | | |
| Media Filter (TC-40) | | |
| Oil & Water Separator (TC-50) | | |
| Catch Basin Insert | | |
| Proprietary System | | |

Appendix C

Stormwater Quality Plan Application for Standard Projects and Required Checklists

Stormwater Quality Plan Application for Standard Projects

Applicant Information Check box for contact person assigned to this project

| | |
|--------------------------|---|
| <input type="checkbox"/> | Landowner Name Mailing Address Email Address Phone |
| <input type="checkbox"/> | Applicant Name Mailing Address Email Address Phone |
| <input type="checkbox"/> | Agent Name Mailing Address Email Address Phone |

Since the SWQP is a living document, revisions may be necessary during various stages of approval by the County. Please provide the approval information requested below.

| Project Review Stage | Does the SWQP need revisions? | | If YES, provide revision date |
|----------------------|-------------------------------|----|-------------------------------|
| | Yes | No | |
| | | | |
| | | | |
| | | | |

Item A. Post-Construction Phase

| | |
|--------------------------|--|
| <input type="checkbox"/> | My project is not defined as a Priority Project (Refer to Step 1) |
|--------------------------|--|

Indicate the post-construction BMPs that will be used:

- There will be permanent landscaping as part of this project. The property owner will maintain the landscaping.
- Outlet protection/ velocity dissipation devices will be placed at storm drain outfalls to reduce the velocity of the flow.
- Other

Attachments

| | Attachment | Completed | N/A |
|---|----------------------|-----------|-----|
| A | Project Location Map | | |
| B | Site Map | | |

Treatment Control Feasibility Checklist

| TREATMENT CONTROL BMP | CONSIDERED FOR USE | REJECTED BASED ON |
|--------------------------------|--------------------|-------------------|
| Infiltration Trench (TC-10) | | |
| Constructed Wetland (TC-21) | | |
| Retention Basin (TC-11) | | |
| Detention Basin (TC-22) | | |
| Vegetated Swale (TC-30) | | |
| Vegetated Filter Strip (TC-31) | | |
| Bioretention (TC-32) | | |
| Surface Sand Filter | | |
| Media Filter (TC-40) | | |
| Oil & Water Separator (TC-50) | | |
| Catch Basin Insert | | |
| Proprietary System | | |