

Model Conditions of Approval for Stormwater Quality

Introduction

The SCVURPPP Model Conditions of Approval contain site design and source control measures to reduce runoff and control sources of storm water pollutants associated with the post-construction phase of new development and redevelopment projects. Each identified source of pollutants may have one or more appropriate control measures. The model list is intended to be a menu of measures from which Co-permittees may select appropriate measures to apply to specific projects. Co-permittees do not have to use the exact wording of a site design or source control measure as long as the intent of the measure (i.e., to keep pollutants out of stormwater, groundwater, creeks, and the Bay) is preserved. Phrases in brackets represent alternative or optional wording.

Site Design Measures

General

1. The project will incorporate site design measures for reducing water quality impacts of the project, in compliance with the Municipal Regional Stormwater Permit Provision C.3. requirements. Guidance on approved site design measures is available from the [Public Works/Planning Department]. Final approval for site design measures must be obtained from the [Planning/Community Development/Public Works Department].
2. Projects that discharge directly to CWA section 303(d) listed waterbodies will implement appropriate source control, site design and treatment measures for the listed pollutants of concern.

Minimize Land Disturbance

1. Significant natural features and resources on site such as undisturbed forest area, setbacks, easements, large, healthy trees and other vegetation, steep slopes, erosive soils, channels, wetlands, or riparian areas shall be identified within the area to be developed and protected as project amenities during construction and during future use of the site.
2. Site layout shall conform to natural landforms on-site. Buildings shall be located to utilize natural drainage systems as much as possible and avoid unnecessary disturbance of vegetation and soils. Development on unstable or easily erodible soils shall be avoided due to their greater erosion potential.
3. Minimize compaction of soils that are highly permeable soils and where stormwater control measures with infiltration shall be constructed. Restore permeability and health of soils where feasible with amendments such as compost and other means.
4. Disturbance of natural water bodies and drainage systems shall be minimized.
5. Impacts from stormwater and urban runoff on the biological integrity of natural drainage systems and water bodies shall be minimized.

Minimize Impervious Surfaces

1. Directly connected impervious surfaces shall be minimized. Runoff from impervious areas --including rooftops, driveways and/or uncovered parking lots -- shall be directed into cisterns or rain barrels for use, or channeled to vegetated areas (e.g., park strips, vegetated planters) where possible prior to discharge to the storm drain.
2. Site permeability shall be maximized by clustering structures and pavement, reducing building footprints, minimizing impervious surfaces (especially parking lots), and paving with permeable materials where feasible.
3. The project shall cluster structures and incorporate smaller lot sizes where feasible to reduce overall impervious surface coverage and provide more undisturbed open space, for protection of water resources.

Preserve Open Space

1. The amount of open space on the site shall be maximized, as appropriate for the density of proposed development, and the open space area maintained in a natural manner.
2. Undisturbed natural areas such as forested conservation areas and stream buffers shall be utilized to treat and control stormwater runoff from other areas of the site with proper design.

Reduce Effects of Hydromodification

1. The project shall utilize harvesting and reuse, infiltration, evapotranspiration or biotreatment measures to reduce stormwater discharge to the greatest extent feasible.
2. The project shall minimize increases in stormwater flow and volume to protect creeks and waterways from flooding and erosion impacts.

Street Design

1. Where density, topography, soils, slope, utility and safety issues permit, pervious pavement systems, bioretention areas or other GSI measures shall be used in the street right of way to treat stormwater runoff from roadways.
2. Evaluate the health of existing street trees. Remove unhealthy trees and plant new trees where feasible. Provide rootable soil volume for new trees. Recommended volumes are based on the size of the tree species at maturity: 600 cubic feet per small tree, 900 cubic feet per medium tree and 1200 cubic feet per large tree. Suspended pavement systems can be utilized to provide soil volume under paved areas.
3. Sidewalks shall be sloped to drain to adjacent vegetated park strips with sustainable/regenerative landscaping depressed to allow for 3" of ponding where possible.

Parking Lots

1. Where feasible, parking lots and other impervious areas shall be designed to drain stormwater runoff to GSI measures that can be integrated into required landscaping areas and traffic islands prior to discharge into storm drain systems.
2. The amount of impervious area associated with parking lots shall be minimized by providing compact car spaces, reducing stall dimensions, incorporating efficient parking lanes, and using pervious pavement where feasible and/or where required.
3. Plant trees species with large canopies, as feasible, with sufficient soil volume for roots to provide shade and integrated with GSI measures.
4. Curb cuts (one every 10 feet), tire stops, or other means shall be provided to protect landscaped areas and allow maximum flow of stormwater into landscaped areas.
5. The use of permeable paving for parking and driveway surfaces is encouraged, to reduce runoff from the site. Such paving should meet fire department requirements and be structurally appropriate for the location.

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Landscaping as a Stormwater Drainage/Treatment Feature

1. Projects shall be designed to direct stormwater runoff into landscaping or natural vegetation where feasible.
2. Large landscaped areas shall be designed to collect and infiltrate stormwater where feasible. Overflow drains shall be placed so that landscaped areas can store runoff and drain at capacity. Such collection areas shall be designed and maintained to meet vector control requirements.
3. Where possible, runoff from impervious areas such as rooftops, roadways and parking lots shall be directed to cisterns or rain barrels, pervious areas, open channels, or vegetated areas prior to discharge to the storm drain system.
4. Use the regenerative landscape practices and principles of ReScape (www.rescapeca.org)

Riparian Areas

1. Naturally vegetated buffers shall be delineated, preserved and/or restored along perennial streams, rivers, lakes, and wetlands.

Source Control Measures

Structural Control Measures

A. Illegal Dumping to Storm Drain Inlets and Waterways

1. On-site storm drain inlets shall be clearly marked with the words “No Dumping! Flows to Bay,” or equivalent, using methods approved by the [Co-permittee].
2. It is unlawful to discharge any wastewater into storm drains, gutters, creeks, or the San Francisco Bay. Unlawful discharges to storm drains include, but are not limited to, discharges from toilets; sinks; industrial processes; cooling systems; boilers; fabric cleaning; equipment cleaning; or vehicle cleaning.
3. It is unlawful to cause hazardous domestic waste materials to be deposited in such a manner or location as to constitute a threatened discharge into storm drains, gutters, creeks or San Francisco Bay.

B. Interior Floor Drains

1. Interior floor drains shall be plumbed to the sanitary sewer system and shall not be connected to storm drains.

C. Parking Lots

1. Interior level parking garage floor drains shall be connected to [a water treatment device approved by the (Co-permittee) prior to discharging to] the sanitary sewer system. The applicant shall contact the local permitting authority and/or sanitary district with jurisdiction for specific connection and discharge requirements.

D. Pesticide/Fertilizer Application

1. Use Integrated Pest Management practices including the following design measures.
2. Landscaping shall be designed to minimize irrigation and runoff, promote surface infiltration where possible, minimize the use of quick-release and/or synthetic fertilizers and pesticides that can contribute to stormwater pollution, and incorporate appropriate regenerative landscaping practices such as ReScape’s **8 Principles** (see www.rescape.org).
3. Structures shall be designed to discourage the occurrence and entry of pests into buildings, thus minimizing the need for pesticides. For example, dumpster areas should be located away from occupied buildings, and building foundation vents shall be covered with screens.
4. Pest-resistant plants shall be considered for use throughout the landscaped area, especially along any hardscaped area.
5. Plant materials 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 plant interactions to ensure successful establishment. Use California native plants where possible.
6. Existing native trees, shrubs, and ground cover shall be retained and incorporated into the landscape plan to the maximum extent possible.

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7. The {City/County Engineer/Plant Specialist/Administrator} shall have the authority to approve the installation of comparable substitute pest-resistant plant materials to satisfy the requirements of the approved landscape plan when the approved plants and materials are unavailable for installation, or when other unforeseen conditions prevent the exact implementation of the landscape plan.
8. Proper maintenance of landscaping, with minimal pesticide use, shall be the responsibility of the property owner.

E. Pool, Spa, and Fountain Discharges

1. New or rebuilt swimming pools, hot tubs, spas and fountains shall have a connection to the sanitary sewer system, subject to the local sanitary sewer agency's authority and standards, to facilitate draining events. This connection could be a drain in the pool to the sanitary sewer, or a sanitary sewer cleanout located close enough to the pool so that a hose can readily direct the pool discharge into the sanitary sewer cleanout.
2. Discharges from swimming pools, hot tubs, spas and fountains shall be directed to the sanitary sewer, subject to the local sanitary sewer agency's authority and standards, or to a landscaped area that can accommodate the volume.
3. When draining is necessary, a hose or other temporary system shall direct the pool discharge into a sanitary sewer clean out, subject to the local sanitary sewer agency's authority and standards.
4. Discharges from swimming pools, hot tubs, spas and fountains are not allowed into storm drain collection systems.

F. Food Service Equipment Cleaning

1. Food service facilities (including restaurants and grocery stores) shall have a sink or other area for cleaning floor mats, containers, hood filters, and equipment, that is connected to a grease interceptor prior to discharging to the sanitary sewer system. The cleaning area shall be large enough to clean the largest mat or piece of equipment to be cleaned. The cleaning area shall be indoors or in a covered area outdoors; both areas must be plumbed to the sanitary sewer.

G. Refuse Areas

1. New buildings shall provide indoor, covered and enclosed areas for trash, organics and recycling containers per local and State regulations. Similar protected areas shall also be provided for other disposed materials such as e-waste, hazardous waste, special waste, universal waste and bulky items generated on-site. The areas shall be designed to prevent water run-on to the area and runoff from the area.
2. Areas around trash, organics and recycling disposal enclosure areas shall not discharge to the storm drain system. Any drains installed in or beneath dumpsters, compactors, and tallow bin areas serving food service facilities shall be connected [to a grease removal device prior to discharging] to the sanitary sewer. The applicant shall contact the local permitting authority and/or sanitary district with jurisdiction for specific connection and discharge requirements.

H. Outdoor Process Activities/Equipment

1. Process activities shall be performed either indoors or outdoors under cover. If performed outdoors, the area shall be designed to prevent run-on to and runoff from the site.
2. Process equipment areas shall drain to the sanitary sewer system. The applicant shall contact the local permitting authority and/or sanitary district with jurisdiction for specific connection and discharge requirements.

I. Outdoor Equipment/Materials Storage

1. All outdoor equipment and materials storage areas shall be covered [and bermed], or shall be designed to limit the potential for runoff to contact pollutants [or a storm drain inlet valves shall be provided on exterior drains in the area].
2. Storage areas containing non-hazardous liquids shall be covered by a roof and/or drain to the sanitary sewer system, and be contained by berms, dikes, liners or vaults. The applicant shall contact the local permitting authority and/or sanitary district with jurisdiction for specific connection and discharge requirements.
3. All hazardous materials and wastes, as defined [or regulated] by [cite ordinance or regulation], on the site must be used and stored in compliance with the [Co-permittee's] Hazardous Materials Ordinance and Hazardous Materials Management Plan for the site approved by the [Co-permittee department].

J. Vehicle/Equipment Cleaning

1. Wastewater from washing of vehicles, equipment, and accessories shall not be discharged to the storm drain system.
2. Commercial/industrial facilities having vehicle/equipment cleaning needs [and new residential complexes of 25 units or greater] shall either provide a covered, bermed area for washing activities or discourage vehicle/equipment washing by removing hose bibs and installing signs prohibiting such uses. Vehicle/equipment/accessories washing areas shall be paved, designed to prevent run-on to or runoff from the area, and plumbed to drain to the sanitary sewer. The applicant shall contact the local permitting authority and/or sanitary district with jurisdiction for specific connection and discharge requirements.
3. Commercial car wash facilities shall be designed and operated such that no runoff from the facility is discharged to the storm drain system. Wastewater from the facility shall discharge to the sanitary sewer [or a wastewater reclamation system shall be installed]. The applicant shall contact the local permitting authority and/or sanitary district with jurisdiction for specific connection and discharge requirements.

¹ Examples of businesses that may have outdoor process activities and equipment include machine shops and auto repair shops, and industries that have pretreatment facilities.

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K. Vehicle/Equipment Repair and Maintenance

1. Vehicle/equipment repair and maintenance shall be performed in a designated area indoors, or if such services must be performed outdoors, in an area designed to prevent the run-on and runoff of stormwater.
2. Secondary containment shall be provided for exterior work areas where motor oil, brake fluid, gasoline, diesel fuel, radiator fluid, acid-containing batteries or other hazardous materials or hazardous wastes are used or stored. Drains shall not be installed within the secondary containment areas.
3. Vehicle service facilities shall not contain floor drains unless the floor drains are connected to wastewater pretreatment systems prior to discharge to the sanitary sewer, for which an industrial waste discharge permit has been obtained. The applicant shall contact the local permitting authority and/or sanitary district with jurisdiction for specific connection and discharge requirements.
4. Tanks, containers or sinks used for parts cleaning or rinsing shall not be connected to the storm drain system. Tanks, containers or sinks used for such purposes may only be connected to the sanitary sewer system if allowed by an industrial waste discharge permit. The applicant shall contact the local permitting authority and/or sanitary district with jurisdiction for specific connection and discharge requirements.

L. Fuel Dispensing Areas

1. Fueling areas² shall have impermeable floors (i.e., portland cement concrete or equivalent smooth impervious surface) that are: a) graded at the minimum slope necessary to prevent ponding; and b) separated from the rest of the site by a grade break that prevents run-on of stormwater to the maximum extent practicable.
2. Fueling areas shall be covered by a canopy that extends a minimum of ten feet in each direction from each pump. [Alternative: The fueling area must be covered and the cover's minimum dimensions must be equal to or greater than the area within the grade break or fuel dispensing area, as defined below¹.] The canopy [or cover] shall not drain onto the fueling area.

M. Loading Docks

1. Loading docks shall be covered and/or graded to minimize run-on to and runoff from the loading area. Roof downspouts shall be positioned to direct stormwater away from the loading area. Water from loading dock areas shall be drained to the sanitary sewer, or diverted and collected for ultimate discharge to the sanitary sewer. The applicant shall contact the local permitting authority and/or sanitary district with jurisdiction for specific connection and discharge requirements.

² The fueling area shall be defined as the area extending a minimum of 6.5 feet from the corner of each fuel dispenser or the length at which the hose and nozzle assembly may be operated plus a minimum of one foot, whichever is greater.

2. Loading dock areas draining directly to the sanitary sewer shall be equipped with a spill control valve or equivalent device, which shall be kept closed during periods of operation.
3. Door skirts between the trailers and the building shall be installed to prevent exposure of loading activities to rain.

N. Fire Sprinkler Test Water

1. Fire sprinkler test water shall discharge to onsite vegetated areas, or to the sanitary sewer, subject to local sanitary sewer agency's authority and standards, if discharge to onsite vegetated areas is not feasible.

O. Miscellaneous Drain or Wash Water

1. Boiler drain lines shall be directly or indirectly connected to the sanitary sewer system and may not discharge to the storm drain system.
2. [Air compressor or air conditioner] condensate drain lines may not discharge to the storm drain system. Condensate from air conditioning units shall be directed to landscaped areas or the ground.
3. Roof drains shall discharge and drain away from the building foundation to an unpaved area wherever possible.
4. Roof top equipment shall drain to onsite vegetated areas, if feasible. If this is not feasible, roof top equipment may drain to the sanitary sewer. The applicant shall contact the local permitting authority and/or sanitary district with jurisdiction for specific connection and discharge requirements.

P. Copper Architectural Features

1. Waste water generated from the installation, cleaning, treating, and washing of the surface of copper architectural features, including copper roofs, shall not be discharged to storm drains.

Operational Control Measures

A. Paved Sidewalks and Parking Lots

1. Sidewalks and parking lots shall be swept regularly to prevent the accumulation of litter and debris. Debris resulting from pressure washing shall be trapped and collected to prevent entry into the storm drain system. Washwater containing any cleaning agent or degreaser shall be collected and discharged to the sanitary sewer and shall not be discharged to a storm drain. The applicant shall contact the local permitting authority and/or sanitary district with jurisdiction for specific connection and discharge requirements.

B. Private Streets

1. Owner of private streets and storm drains shall prepare and implement a plan for street sweeping of paved private roads and cleaning of all storm drain inlets.

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C. Vehicle/Equipment Repair and Maintenance

1. No person shall dispose of, nor permit the disposal, directly or indirectly, of vehicle fluids, hazardous materials, or rinse water from parts cleaning operations into storm drains.
2. No vehicle fluid removal shall be performed outside a building, nor on asphalt or ground surfaces, whether inside or outside a building, except in such a manner as to ensure that any spilled fluid will be in an area of secondary containment. Leaking vehicle fluids shall be contained or drained from the vehicle immediately.
3. No person shall leave unattended drip parts or other open containers containing vehicle fluid, unless such containers are in use or in an area of secondary containment.

D. Fueling Areas

1. The property owner shall dry sweep the fueling area routinely.

Pesticide Reduction Measures

If a landscaping plan is required as part of a development project application, the plan shall meet the following conditions related to reduction of pesticide use on the project site:

1. Landscaping shall be designed using Integrated Pest Management practices, such as efficient irrigation to reduce runoff (comply with local and/or State WELO requirements), promote surface infiltration, and minimize the use of fertilizers and pesticides that can contribute to water pollution.
2. Where feasible, landscaping shall be designed and operated to treat stormwater runoff by incorporating elements that collect, detain, and infiltrate runoff. In areas that provide detention of water, plants that are tolerant of saturated soil conditions and prolonged exposure to water shall be specified.
3. Plant materials 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 plant interactions to ensure successful establishment. California native plants shall be used where possible.
4. Existing healthy, significant, and/or large native trees, shrubs, and ground cover shall be retained and incorporated into the landscape plan to the maximum extent possible and per local requirements.
5. Proper maintenance of landscaping, with minimal pesticide use, shall be the responsibility of the property owner.
6. Landscaping shall incorporate appropriate regenerative landscaping practices such as ReScape's **8 Principles** (see www.rescape.org).

References

Site Design Measures

Atlanta Regional Commission, *Georgia Stormwater Management Manual Volume 2 (Technical Handbook)*, August 2001

City of Palo Alto, Municipal Code Title 18.12.050 Site Development Regulations.

City of Portland Environmental Services, *Stormwater Management Manual*, September 2002.

City of Sunnyvale, *Industrial Pretreatment/Urban Runoff Program*, August 1998.

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Washington State Department of Ecology, *Stormwater Management Manual for Western Washington*, August 2001.

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Alameda Countywide Clean Water Program (ACCWP) Model Conditions of Approval (1999);

City of Palo Alto Municipal Code Chapter 16.09, and revisions to Chapter 16.09 approved July 22, 2002;

City of Cupertino, Guidance for Selecting BMPs for Development Projects;

Example source control measures provided by Regional Board staff in Provision C.3.k. of the SCVURPPP NPDES Permit (October 2001);

San Francisco Bay Regional Water Quality Control Board, Municipal Regional Stormwater Permit, October 2009.

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Alameda Countywide Clean Water Program, Model Conditions of Approval, 1999.

City of Concord, North Carolina, *Unified Development Ordinance*, “Article 7, Landscaping and Buffering Standards” <http://www.ci.concord.nc.us/planning/zoning/acrobats/Article%207.pdf>,

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King County Local Hazardous Waste Management Program, *Tri-County Integrated Pest and Vegetation Management: Guidelines*.