4P BMPs for Construction Sites

Construction Sites

Focus of Document

This guidance lists BMPs for construction sites and indicates the documents where further details can be obtained.

The Municipality should provide informational materials on these BMPs, as well as a general handout that explains the importance of each of the five principles in reducing construction site runoff pollution.

The Municipality should ensure training of its plan review staff and inspectors in all aspects of these BMPs including the details of the BMP, its applicability and effectiveness, and conditions under which it should be recommended or required for a construction site.

Construction Site Planning BMPs

Site Plan

- ✓ Plan the development to fit the topography, soils, drainage pattern and natural vegetation of the site.
- ✓ Remove existing vegetation only when absolutely necessary.
- ✓ Delineate clearing limits, easements, setbacks, sensitive or critical areas, trees, drainage courses, and buffer zones to prevent excessive or unnecessary disturbances and exposure.
- ✓ Avoid construction on steep slopes*
- ✓ Minimize cuts and fills*
- ✓ Align temporary and permanent roads and driveways along slope contours*

Other Measures

- ✓ Phase grading operations to reduce disturbed areas and time of exposure
- ✓ Avoid excavation and grading during wet weather
- ✓ Winterize construction site*

***For additional details, see Erosion and Sediment Control Field Manual prepared by the California Regional Water Quality Control Board, San Francisco. 1997.**

BMPs to Minimize Soil Movement

Soil Cover

- ✓ Install cover materials such as vegetative debris, mulch, crushed stone, geotextile fabric, erosion control blankets*
- ✓ Use soil stabilizers as appropriate*
- ✓ Use temporary seeding and planting to reduce erosion potential*

Tracking Control

- ✓ Construct stabilized access roads and entrances*
- ✓ Construct entrance/exit tire wash*
- ✓ When cleaning sediments from streets, driveways and paved areas on construction sites, use dry sweeping methods where possible. If water must be used to flush pavement, collect runoff in temporary storage tanks to settle out sediments prior to discharge to the storm drains, and protect storm drain inlets.

Structures to Control and Convey Runoff

- ✓ Earth dikes, drainage swales and ditches*
- ✓ Slope drains and subsurface drains*
- ✓ Velocity dissipation devices*
- ✓ Flared culvert end sections*
- ✓ Check dams*

Other Measures

- ✓ Slope roughening/terracing/rounding*
- ✓ Level spreader*

***For details, see Erosion and Sediment Control Field Manual prepared by California Regional Water Quality Control Board, San Francisco, Bay Region, 1997.**

BMPs to Capture Sediment

- ✓ Use terracing, riprap, sand bags, rocks, straw bales, and/or temporary vegetation on slopes to reduce runoff velocity and trap sediments. Do not use asphalt rubble or other demolition debris for this purpose.

- ✓ Protect storm drain inlets from sediment-laden runoff. Storm drain inlet protection devices include sand bag barriers, filter fabric fences, block and gravel filters, and excavated drop inlet sediment traps.*

- ✓ When dewatering the site, remove sediment from the discharge using filtration methods. Mobile units specifically designed for construction site dewatering can be rented for this purpose.

Other Controls

- ✓ Silt fence*

- ✓ Straw bale barrier (other than at storm drain inlets)*

- ✓ Sand bag barrier*

- ✓ Brush or rock filter*

- ✓ Sediment trap*

- ✓ Temporary sediment basin*

***For details, see Erosion and Sediment Control Field Manual prepared by California Regional Water Quality Control Board, San Francisco, Bay Region, 1997.**

Good Housekeeping Practices

All Construction Sites

- ✓ Identify all storm drains, drainage swales and creeks located near the construction site and make sure all subcontractors are aware of their locations to prevent pollutants from entering them.

- ✓ Clean up leaks, drips, and other spills immediately.

- ✓ Refuel vehicles and heavy equipment in one designated location.

- ✓ Wash vehicles at an appropriate off-site facility. If equipment must be washed on-site, do not use soaps, solvents, degreasers, or steam cleaning equipment, and prevent wash water from entering the storm drain.

- ✓ Never wash down pavement or surfaces where materials have spilled. Use dry cleanup methods whenever possible.

- ✓ Avoid contaminating clean runoff from areas adjacent to your site by using berms and/or temporary or permanent drainage ditches to divert water flow around the site.

- ✓ Keep materials out of the rain. Schedule clearing or heavy earth moving activities for periods of dry weather. Cover exposed piles of soil, construction materials and wastes with plastic sheeting or temporary roofs. Before it rains, sweep and remove materials from surfaces that drain to storm drains, creeks, or channels.

- ✓ Place trash cans around the site to reduce litter. Dispose of non-hazardous construction wastes in covered dumpsters or recycling receptacles. Recycle leftover materials whenever possible.

- ✓ Dispose of all wastes properly. Materials that can not be reused or recycled must be taken to an appropriate landfill or disposed of as hazardous waste.

- ✓ Cover open dumpsters with plastic sheeting or a tarp during rainy weather. Secure the sheeting or tarp around the outside of the dumpster. If your dumpster has a cover, close it.

- ✓ Train your employees and inform subcontractors about the stormwater requirements and their own responsibilities.

Construction Projects Involving Paint Work

- ✓ Non-hazardous paint chips and dust from dry stripping and sand blasting may be swept up or collected in plastic drop cloths and disposed of as trash. Chemical paint stripping residue and chips and dust from marine paints or paints containing lead or tributyl tin must be disposed of as a hazardous waste.

- ✓ When stripping or cleaning building exteriors with high-pressure water, cover or berm storm drain inlets. If possible (and allowed by your local wastewater treatment plant), collect (mop or vacuum) building cleaning water and discharge to the sanitary sewer.

- ✓ Never clean brushes or rinse paint containers into a street, gutter, storm drain, or creek.

- ✓ For water-based paints, paint out brushes to the extent possible and rinse to a drain leading to the sanitary sewer (i.e., indoor plumbing).

- ✓ For oil-based paints, paint out brushes to the extent possible, and filter and reuse thinners and solvents. Dispose of unusable thinners and residue as hazardous waste.

- ✓ Recycle, return to supplier or donate unwanted water-based (latex) paint.

- ✓ Dried latex paint may be disposed of in the garbage.

- ✓ Unwanted oil-based paint (that is not recycled), thinners, and sludges must be disposed of as hazardous waste.

Construction Projects Involving Cement and Concrete Work

- ✓ Avoid mixing excess amounts of fresh concrete or cement mortar on-site.

- ✓ Store dry and wet materials under cover, protected form rainfall and runoff.

- ✓ Wash out concrete transit mixers only in designated wash-out areas where the water will flow into settling ponds or onto dirt or stockpiles of aggregate base or sand. Pump water from settling ponds to the sanitary sewer, where allowed. Whenever possible, recycle washout by pumping back into mixers for reuse. Never dispose of washout into the street, storm drains, drainage ditches, or creeks.

- ✓ Whenever possible, return contents of mixer barrel to the yard for recycling. Dispose of small amounts of excess concrete, grout, and mortar in the trash.

Construction Projects Involving Roadwork/Pavement Construction

- ✓ Apply concrete, asphalt, and seal coat during dry weather to prevent contaminants from contacting stormwater runoff.

- ✓ Cover storm drain inlets and manholes when paving or applying seal coat, slurry seal, fog seal, etc.

- ✓ Always park paving machines over drip pans or absorbent materials, since they tend to drip continuously.

- ✓ When making saw-cuts in pavement, use as little water as possible. Cover each storm drain inlet completely with filter fabric during the sawing operation and contain the slurry by placing straw bales, sandbags, or gravel dams around the catch basins. After the liquid drains or evaporates, shovel or vacuum the slurry residue from the pavement or gutter and remove from site.

- ✓ Wash down exposed aggregate concrete only when the wash water can: (1) flow onto a dirt area; (2) drain onto a bermed surface from which it can be

pumped and disposed of properly; or (3) be vacuumed from the area along the curb where sediment has accumulated by blocking a storm drain inlet.

- ✓ Allow aggregate rinse to settle, and pump the water to the sanitary sewer if allowed by your local wastewater authority.

- ✓ Never wash sweepings from exposed aggregate concrete into a street or storm drain. Collect and return to aggregate base stockpile, or dispose with trash.

- ✓ Recycle broken concrete and asphalt.

BMPs to Minimize Impacts of Post-Construction Storm Water Discharges

See Appendix 4T of the MURP.

Note: This guidance is primarily based on "Blueprint for a Clean Bay. Best Management Practices to Prevent Stormwater Pollution from Construction-Related Activities," published by BASMAA and the Santa Clara Valley Nonpoint Source Pollution Control Program. 1995.

Sources Of Additional Information

Additional information on Construction Site Controls is available in the publications listed below.

Stormwater Quality Task Force. 1993. California Storm Water Best Management Practice Handbook - Construction.

Association of Bay Area Governments. 1995. Manual of Standards for Erosion and Sediment Control Measures. A comprehensive filed guide for controlling soil erosion in California. May.

BASMAA. 1996. Start at the Source — Residential Site Planning and Design Guidance Manual.

Caltrans. 1996. Storm Water Quality Handbooks – Construction Contractors Guide and Specifications. May.