

APPENDIX B:

**County Best Management
Practices**

May 2000

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COUNTY BEST MANAGEMENT PRACTICES

The following table presents ongoing County department and division practices that minimize water pollution. Each department or division was provided a copy of these BMPs to review and confirm the practices. These are considered best management practices for purposes of meeting the NPDES minimum control measures. Some of the activities are conducted by County contractors. Contractors are required, often through Water Pollution Control Plans, Storm Water Pollution Prevention Plans, or through conditions of approval, to establish the BMPs outlined below.

Best Management Practice	Implementation methods
Municipal Operations <i>Sidewalks, Plazas, Structures, and Parking Lot Cleaning</i>	Establish frequency of public parking lot sweeping based on usage and field observations of waste accumulation. Sweep all parking lots at least once before the onset of the wet season. Use dry methods as much as possible (i.e., sweeping and vacuuming).
<i>Streets Medians, Parks, and Other Municipal Landscaped Areas (Erosion Control)</i>	Maintain vegetative cover on medians and embankments to prevent soil erosion. Apply mulch or leave clippings in place to serve as additional cover.
	Provide energy dissipaters (e.g. riprap) below culvert outfalls to minimize potential for erosion.
<i>(Vegetation Management/Irrigation)</i>	Remove clipped or pruned vegetation from gutter, paved shoulder and area around storm drain.
	Avoid loosening the soil when removing weeds.
	Do not pour muddy water into storm drains.
<i>(Pesticides Diazinon, Chlorpyrifos, and other Similar Products)</i>	Follow federal, state, and local laws governing pesticides/herbicides.
	Do not use herbicides if rain is expected.
<i>(Fertilizers)</i>	Minimize use of chemical fertilizers.
	Calibrate the distributor to avoid excessive application.
<i>Repair and Maintenance of City Surfaces (Asphalt/Concrete Demolition)</i>	Schedule asphalt and concrete removal activities for dry weather.
	Protect and cover any nearby storm drains before breaking up asphalt or concrete.
	After breaking up concrete or asphalt, sweep up all debris and recycle as much as possible.
	Use as little water as possible.
<i>(Concrete Installation and Repair)</i>	Avoid mixing excess amounts of fresh concrete or cement mortar on-site.
	Protect dry and wet materials from rainfall or runoff.
	Wash concrete transit mixers only in designated wash-out areas.
	Recycle or dispose of small amounts of excess concrete, grout, and mortar in the trash.
<i>(Patching, Resurfacing, and Surface Sealing)</i>	Schedule patching, resurfacing and surface sealing during dry weather.
	Stockpile materials away from streets, gutter areas, storm drain inlets or watercourses and cover during wet weather.
	Pre-heat, transfer or load hot bituminous material away from drainage systems or watercourses.
	Cover and seal nearby storm drain inlets and manholes before applying seal coat, slurry seal, etc. Leave covers until complete.
	Designate an area for clean up and proper disposal of excess materials.
	Use as little water as possible & avoid runoff.
	Sweep up as much material as possible and dispose properly.
	After the job is complete, remove stockpiles as soon as possible.
<i>(Equipment Cleaning,</i>	Inspect equipment daily and repair any leaks.

Best Management Practice	Implementation methods
<i>Maintenance and Storage)</i>	
	If refueling or repairing vehicles & equipment must be done on-site, use a location away from storm drains & creeks.
	Recycle vehicle fluids when possible (e.g. motor oil).
	Construct entrance/exit tire wash.
	Use dry sweeping methods where and when possible. If water must be used, collect runoff in temporary storage and dispose properly. Protect infiltration of storm drain inlets.
<i>(Other Measures)</i>	Slope roughening/terracing/rounding.
<i>BMPs to Capture Sediment</i>	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. Devices include sandbag 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.
Sewer	Countywide assessment of problem.
<i>Storm Drain System Cleaning</i>	Evaluate creek cleaning and drop inlet cleanout.
	Conduct periodic visual inspections and clean if necessary. Inspect and clean all inlets and basins before onset of wet season.
	Inspect and clean storm drain pipelines that are near pollutant generating sources immediately or at a minimum before the wet season.
	Store wastes collected from the cleaning in appropriate containers.
	Dewater the wastes if necessary with outflow into the sanitary sewer.
	Sediment is removed from the catchbasin or inlet cleaning should be analyzed and disposed properly.
<i>(Concrete Installation and Repair)</i>	Avoid mixing excess amounts of fresh concrete or cement mortar on-site.
	Protect dry and wet materials from rainfall or runoff.
	Wash concrete transit mixers only in designated wash-out areas. Pump water from settling ponds to the sanitary sewer, where allowed.
	Dispose of or recycle small amounts of excess concrete, grout, and mortar in the trash.
<i>(Equipment Cleaning, Maintenance and Storage)</i>	Inspect equipment daily and repair any leaks.
	Major equipment repairs are performed at the maintenance yard, when practical.
	When refueling or repairing vehicles & equipment will be done on-site, a location away from storm drains & creeks will be used.
	Recycling of vehicle fluids (e.g. motor oil).
	Equipment will be cleaned at the end of each day. Cleaning will be conducted at the maintenance yard, when possible.
<i>Structural Retrofit of Storm Drain Inlets/Catch Basins</i>	Given the distinct dry and wet season climate regime in CA, often the runoff from the first storm carries very high pollutant loads. A potential structural control would be to direct the water from the first storm to the sanitary sewer system for treatment at the wastewater treatment plant. This BMP is not recommended for area-wide application, rather for urban runoff from limited areas where the runoff is known to be highly

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	polluted. Also, this will need to be coordinated with the local/regional wastewater treatment plant.
	The following steps will be necessary: (1) Determine areas where the runoff is extremely polluted, (2) Estimate the drainage area and volume of runoff from a design storm. Estimate the runoff from the entire storm and not just the first portion of it, (3) Contact the local/regional wastewater treatment plant to determine if the facility has capacity to handle these projected flows, (4) If capacity is available, develop appropriate connections (pipe and valve) between the storm drain and sewer system, after obtaining permission from the local wastewater treatment agency, and (5) Designate staff to evaluate and as appropriate, install in-line separators.
Construction Sites <i>Construction Site Planning BMPs (Site Plan)</i>	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.
<i>(Other Measures)</i>	Phase grading operations to reduce disturbed areas and time of exposure.
	Avoid excavation and grading during wet weather.
	Winterized construction site.
<i>BMPs to Minimize Soil Movement (Soil Cover)</i>	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.
<i>(Tracking Control)</i>	Construct stabilized access roads and entrances.
	Construct entrance/exit tire wash.
	Use dry sweeping methods where and when possible. If water must be used, collect runoff in temporary storage and dispose properly. Protect infiltration of storm drain inlets.
<i>(Structures to Control and Convey Runoff)</i>	Earth dikes, drainage swales and ditches.
	Slope drains and subsurface drains.
	Velocity dissipation devices.
	Flared culvert end sections.
	Check dams.
<i>(Other Measures)</i>	Slope roughening/terracing/rounding.
	Level spreader.
<i>BMPs to Capture Sediment</i>	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. Devices include sandbag 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.

Best Management Practice	Implementation methods
General	Establish and support ongoing Wetland and Riparian Restoration Working Group.
	Direct County Parks to hire/contract with specialist to develop restoration plans.
	Direct PCW to host restoration workshops/develop info brochure on guidelines.
	Direct County staff to use local native plant stock for restoration work.
	Establish a grant team to seek funding for restoration projects.
	Utilize new development mitigation requirements as source of support for restoration projects.
Vehicle Service Facilities Facility Maintenance & Management	Drip pans will be used under leaking vehicles to capture fluids. Regular sweeping or vacuuming of the shop floor and other paved surfaces at your facility. Mopping as an alternative to hosing down or washing work areas. When mopping is used to clean shop floors: spills will be spot cleaned and any fluids will be cleaned using absorbents or rags. Mop water will be discharged to the sanitary sewer.
	All hazardous waste will be labeled accordingly (including batteries). Wastes are separate to increase your waste recycling/disposal options and to reduce your costs. Never mix waste oil with fuel, antifreeze, or chlorinated solvents. A double-containment system is used on all bulk fluids and wastes to prevent accidental discharges to the sewer and storm drain. Storage areas are kept clean and dry. Conduction of regular inspections. Appropriate measure are taken to ensure wash water from vehicles does not enter storm drains.
<i>Education and Training</i>	Train all employees upon hiring, and provide refresher training as necessary. Post instructional/informational signs around your shop for customers and employees. Label drains within the facility boundary to indicate whether they flow to an on-site treatment device, directly to the sanitary sewer, or to a storm drain. Post emergency telephone numbers of the wastewater treatment plant and the fire department.
<i>Changing Oil and Other Fluids</i>	Change vehicle fluids indoors whenever possible. Avoid working over surfaces that absorb vehicle fluids. If vehicle fluids must be removed outdoors, always use a drip pan. Prevent spills from reaching streets, storm drain by working over an absorbent mat and covering nearby storm drains, or working in a bermed area. Transfer fluids drained from vehicles to a designated waste storage area as soon as possible. Never pour vehicle fluids or other hazardous waste into sinks, toilets, floor drains, outside storm drains, or in the garbage.
<i>Cleaning Engines and Parts, and Flushing Radiators</i>	Eliminate discharges from engine cleaning and flushing of radiators to the sanitary sewer and storm drains. Use a licensed service to haul and recycle or dispose of wastes. Steam cleaning of engines must be done in a closed-loop water recycling system. Designate specific areas or service bays for engine, parts, or radiator cleaning. Use self-contained sinks and tanks when working with solvents. Inspect equipment.
	Never discharge cleaning solutions used for engines or parts into the sewer sanitary system without adequate treatment. Most facilities have these solutions hauled off-side as hazardous waste because of the permits necessary for on-site treatment. Rinsewater may only be discharged to the sanitary sewer after adequate treatment and approval by the sewage treatment plant. Never discharge wastewater from steam cleaning, or engine/parts cleaning to a street, gutter, storm

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	drain, or sanitary sewer.
Vehicle Service Facilities <i>Washing Cars and Other Vehicles</i>	<p>If car washing is a central activity of your business, the most desirable option is to treat and recycle the wash water. Designate a vehicle washing area and wash cars and trucks only in that area. This "wash pad" should be bermed to prevent discharges to storm drains and should discharge to the sanitary sewer after adequate treatment and approval of the sewage treatment plant. Cover an outside wash pad or minimize the area of an uncovered pad to reduce the amount of rainwater reaching the sanitary sewer. Acid-based wheel cleaners and other specialized cleaners may be prohibited or require additional treatment before discharge to the sewer.</p>
<i>Body Repair and Painting</i>	<p>Whenever possible, conduct all body repair and painting work indoors or under cover. When receiving damaged vehicles, inspect for leaks. Use drip pans if necessary. When cleaning auto body parts before painting, do not use hose-off degreasers. Brush off loose debris and use rags to wipe down parts. Use dry clean-up methods whenever possible. Minimize waste paint and thinner by carefully calculating paint needs based on surface area and using the proper sprayer cup size. Do not use water to control overspray or dust in the paint booth unless you collect this wastewater and treat it correctly. Clean spray guns in a self-contained cleaner.</p>
<i>Fuel Dispensing</i>	<p>Maintain fuel-dispensing areas using dry cleanup methods. Fueling areas should never be washed down unless dry clean-up has been done and the wash water is collected and disposed of in the sanitary sewer system. Fit underground storage tanks with spill containment and overflow prevention systems. Fit fuel dispensing nozzles with "hold-open latches" (automatic shutoffs) except where prohibited by local fire departments. Post signs against "topping off" of vehicle fuel tanks.</p>
Vehicle Service Facilities <i>New or Substantially Remodeled Vehicle Service Facilities</i>	<p>Fuel dispensing areas must be paved with portland cement concrete (or, equivalent smooth impervious surface), with a 2% to 4% slope to prevent ponding, and must be separated from the rest of the site by a grade break that prevents run-on of storm water. The fuel dispensing area is defined as extending 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. The paving around the fuel dispensing area may exceed the minimum dimensions of the "fuel dispensing area" stated above. The fuel dispensing area must be covered and the cover's minimum dimensions must be equal to or greater than the area within the grade break. The cover must not drain onto the fuel dispensing area.</p>
	<p>For substantially remodeled facilities the canopy cover over the fuel dispensing area is being substantially replaced and the footing is structurally sufficient to support a cover of the minimum dimensions described above, or one or more fuel dispensers are relocated or added in such a way that the portland cement concrete paving and grade break or the canopy cover over the fuel dispensing area do not meet the minimum dimensions as defined above. Replacement of existing dispensers does not, by itself, constitute a substantial remodel.</p>
<i>(Equipment Cleaning, Maintenance and Storage)</i>	<p>Inspect equipment daily and repair any leaks on monthly basis.</p>
	<p>Perform major equipment repairs at corporation yard, when practical.</p>

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	If refueling or repairing vehicles & equipment must be done on-site, use a location away from storm drains & creeks.
	Recycle vehicle fluids when possible (e.g. motor oil).
	Clean equipment at the end of each day. Conduct cleaning at a corporation or maintenance yard if possible.
<i>(Painting and Paint Removal)</i>	Clean up spills immediately.
	Cover nearby storm drain inlets prior to starting work if sand blasting is used to remove paint.
	Recycle paint when possible. Dispose of paint at an appropriate household hazardous waste facility.
<i>(Outdoor Storage Materials--Hazardous and Non Hazardous Materials)</i>	Store hazardous materials and wastes in secondary containment where they are protected from rain and in a way that prevents spills from reaching the sanitary sewer or storm drain.
	Keep lids on containers and keep under cover.
	All hazardous wastes must be labeled according to hazardous waste regulations. Consult local hazardous waste agency or Fire Department.
	Keep wastes separate to increase your waste recycling/disposal options and to reduce your costs.
	Never mix waste oil with fuel, antifreeze, or chlorinated solvents. Consult your hazardous waste hauler for details.
	Double-contain all bulk fluids and wastes to prevent accidental discharges to the sewer and storm drain.
	Keep storage areas clean and dry.
	Store new batteries securely to avoid breakage and acid spills during earthquakes. Shelving should be secured to the wall. Store used batteries indoors and in plastic trays to contain potential leaks. Recycle old batteries to catch leaking fluids.