CONSTRUCTION WORK

Best Management Practices

Chapter 4 of the Best Management Practices Manual for the
City's Storm Water Management Program

Planning Department
Public Works Department
809 Center Street, Santa Cruz, CA 95060

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BEST MANAGEMENT PRACTICES (BMPs)
FOR
CONSTRUCTION WORK

In the City of Santa Cruz, water in the streets, gutters, and storm drains flows directly to local creeks, the San Lorenzo River, or Monterey Bay without any treatment. If certain precautions are not taken, construction sites and even small home construction projects can generate wastewater and runoff that carry debris, paint, concrete, and other harmful pollutants into our storm drain system. These pollutants can clog storm drain inlets and pipes, damage sensitive creek habitats, and pollute our bay and ocean. Also, unless proper erosion control measures are taken, runoff from construction sites can cause erosion and the deposition of soil and sediment in our waterways. This, in turn, leads to the degradation of creeks and rivers and can inhibit fish populations.

Therefore, in order to reduce the amount of pollutants reaching the storm drain system and local waterways, the City developed "Best Management Practices (BMPs)" for construction work. All types of construction projects, whether large sites or small projects, must abide by these BMPs, as applicable, in addition to complying with the City Municipal Code. Construction work includes, but is not limited to, clearing, grading, excavation, stockpiling, building, masonry and concrete work, and roadwork. These BMPs apply to commercial, retail, industrial, and residential projects, and to both new construction sites and remodeling projects. The City Planning and Public Works Departments may also place additional conditions or requirements on a construction project in accordance with the Municipal Code.

Applicants for a construction permit should also be aware that the State of California requires construction sites equal to or greater than one acre (or less than one acre but part of a larger common plan of development or sale) to obtain the state's Construction Activities Storm Water General Permit. The landowner is responsible for filing a Notice of Intent (NOI) with the State Regional Water Quality Control Board (RWQCB) and for developing a Storm Water Pollution Prevention Plan (SWPPP) prior to commencement of any soil disturbing activities. For more information about the Construction Activities Storm Water General Permit, please call the State Water Quality Control Board at (916) 341-5537 or refer to their website at:

http://www.swrcb.ca.gov/stormwtr/construction.html.

The Best Management Practices (BMPs) for construction work are detailed on the following pages. *If you have any questions, please call the City of Santa Cruz Planning Department, Inspection Services, at 420-5120, or the Public Works Department at 420-5131.*

PLANNING CONSTRUCTION PROJECTS

- Site development shall be fitted to the topography and soil in order to minimize the potential for erosion.
- Conduct grading operations in phases in order to reduce the amount of disturbed areas and exposed soil at any one time. In addition, unless specifically approved on the project's *Erosion Control Plan*, clearing, excavation, and grading shall not be conducted during rainy weather. All rainy season grading must be in accordance with Section 18.45.040 of Title 18 of the City's Municipal Code. An exception may be granted for minor clearing or grading that does not present a hazard and is approved by the Building Official.
- Clearing limits, easements, setbacks, sensitive or critical areas, trees, drainage courses, and buffer zones must be delineated to prevent excessive or unnecessary disturbances and exposure prior to construction.
- Align roads and driveways, whether temporary or permanent, along slope contours as feasible.
- Plan to route construction traffic over areas that must be disturbed for other construction activities in order to reduce the amount of area that must be cleared.
- Access roads and entrances must be constructed to minimize the tracking of soil, mud, or hazardous materials into the roadway or drains. Shaker roads and/or wash down facilities for construction vehicles must be installed on any site greater than one acre and on a case-by-case basis for smaller sites. Either City Public Works or Inspection Services staff must approve shaker road design and maintenance prior to installation. Mud, dirt, gravel, sand, and other materials tracked or dropped on city streets must be cleaned up to prevent washing into storm drains. Heavy equipment that is not rubber wheeled or smooth–tracked must be offloaded on the construction site, not in the street.
- Plan to recycle waste or demolition materials whenever possible. Call the City's Customer Service Division, at (831) 420-5220, for information about what may be recycled and to arrange to have recycling bins or dumpsters brought to the site.
- If your construction site is equal to or greater than one acre in size (or is less than one acre but part of a larger development), you must file a Notice of Intent (NOI) with the state Regional Water Quality Control Board (RWQCB) for the Construction Activities Storm Water General Permit prior to commencing work and prior to applying for a construction permit with the City of Santa Cruz.

EROSION AND SEDIMENT CONTROL

Minimizing Land Disturbance and Vegetation Removal

- Erosion and sediment control BMP's shall be in place and implemented, as appropriate, prior to commencing grading or vegetation removal. Such measures shall be maintained on all disturbed areas in order to prevent a net increase of sediment load in a site's storm water discharge relative to pre-construction levels.

- All on-site erosion control measures and structural devices, both temporary and permanent, shall be properly installed and maintained. If damaged during construction, they shall be promptly repaired or reinstalled.
- Minimize land disturbance such as cuts and fills. Stabilize slopes and all disturbed areas as soon as grading is finished or cut-and-fills are made.
- Use one or more of the following to reduce the erosion potential from bare, exposed, or disturbed soil: filter fabric, erosion control blankets, geotextiles, mulching, seeding, vegetation planting, or other appropriate cover material. If vegetative cover is used, a uniform vegetative cover with a minimum of 70 percent coverage must be established.
- Vegetation removal shall be limited to the amount necessary and according to approved erosion control plans.
- Prior to commencing vegetation or topsoil removal, clearly mark the proposed limits of land disturbance to ensure that only the required land is cleared.
- Cleared vegetation may not be disposed of in a creek, gully, or waterway.
- Waste vegetation should be disposed of through the City's GreenCycle! program. The program accepts many types of vegetation including brush, plants, branches, and tree trunks (not exceeding 24 inches in diameter and four feet in length). Vegetation may be dropped off at the City's Resource Recovery Facility or placed in a City GreenCycle! container for pickup by the City. For more details, please call the City's Customer Service Division at (831) 420-5220.
- As permanent vegetation is maturing, temporary vegetation shall be established on all disturbed areas as needed to stabilize the soil and as each grading phase is completed.
- Jute netting, mulching, fertilizing, and irrigation must be used to protect new plantings. When planting trees for retention, protect tree crowns and root zones.

Preventing Water and Sediment Runoff

- Effective erosion and sediment control measures must be implemented and maintained on all disturbed areas in order to prevent a net increase of sediment load in a site's storm water discharge relative to pre-construction levels.
- During the rainy season, erosion control measures must also be located at all appropriate locations along the site's perimeter and at all inlets to the storm drain system. Effective methods to protect storm drain inlets include sand bag barriers, heavy rubber mats to cover and seal the inlet, and sediment traps or basins.
- Effective filtration devices, barriers, and settling devices shall be selected, installed and maintained properly.
- Silt fences must be installed so that the drainage around each fence does not create additional erosion and rills down slope of the fence.
- If straw bales are used to filter sediment from runoff, ensure that the bales are actually filtering the water (and not just causing the water to travel around the bale) and that straw pieces are not carried into the storm drain system.

- Whenever possible, use terracing, surface roughening (e.g. with a dozer), and energy dissipaters (such as riprap, sand bags, and rocks) on slopes to reduce runoff velocity and trap sediments. Do not use asphalt rubble or other demolition debris for this purpose.
- All on-site erosion control measures and structural devices, both temporary and permanent, shall be properly maintained so that they do not become nuisances with stagnant water, odors, insect breeding, heavy algae growth, debris, and/or safety hazards.
- A qualified person should conduct inspections of all on-site BMPs during each rainstorm, if possible, and after a storm is over to ensure that the BMPs are functioning properly. For sites greater than one-acre, on-site inspections are required in accordance with the State Water Quality Control Board Construction Activities Storm Water General Permit.

LANDSCAPING

- Existing trees or tree stands located on a site for which a discretionary permit is required shall not be removed until such a permit is approved by the Planning Department.
- Trees subject to the Heritage Tree Ordinance and other trees designated for protection by a development proposal shall be protected through the use of barricades or other appropriate methods during the construction phases.
- Never dump or leave soil, mulch, vegetation, and other landscape products into the street, gutter, or storm drain system.
- At the end of each day, sweep up soil and other landscape products that remain on pavement, such as the sidewalk, driveway, or street.

PAINTING

- Paint, paint thinner, and rinse water containing either of these may never be discharged into the storm drain system. In addition, rinse water that contains paint or pain thinner may never be discharged into the storm drain system.
- When there is a risk of a spill reaching storm drains, nearby storm drain inlets must be protected prior to starting painting.
- When work is conducted on a bridge, take precautions to prevent runoff from reaching the water body beneath the bridge.
- Clean up spills immediately.
- Paintbrushes, rollers, and containers may never be cleaned or rinsed into a street gutter or storm drain inlet.
- When cleaning brushes and rollers after painting, brush out excess paint onto newspaper or cardboard. If using latex paints, the brush or roller may then be rinsed in a sink that is plumbed to the sanitary sewer. If using oil-based paints, the brush or roller needs to be cleaned with paint thinner. Paint thinners cannot be discharged to the sanitary sewer and must be disposed of as hazardous waste.

- Leftover paint in the roller pan should be drained back into the paint can. If using paint hoses and guns, spray out the paint residue into the paint can.
- Leftover water-based (latex) paint should be recycled, returned to the supplier or donated to someone who will use it. Dried latex paint and empty paint cans may be disposed of in the garbage.
- Leftover oil-based paint may be recycled or disposed of as hazardous waste. Paint thinners must be disposed of as hazardous waste. For more information about hazardous waste disposal, please contact the County Environmental Health Department at (831) 454-2022.
- 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. Residue from chemical paint stripping and chips and dust from marine paints or paints containing lead or tributyl tin must be disposed of as a hazardous waste.
- When using high-pressure water to strip or clean building exteriors prior to painting, cover or berm nearby storm drain inlets to prevent discharge into the storm drain system. The wastewater must be collected and should be discharged to the sanitary sewer if the paint does not contain lead (usually buildings painted after 1978) or mercury. If paint containing lead or mercury was used, contact an Environmental Compliance Inspector, at (831) 420-6050, for information about the appropriate discharge or disposal options prior to commencing the work.
- If grinding or blasting is used to remove old paint, protect nearby storm drain inlets with some type of a protective cover such as a heavy rubber mat. Paint dust, particles, and other debris must be completely cleaned up, preferably by sweeping, after the job is done.

MASONRY AND CONCRETE WORK

- Concrete, cement, and masonry products may never be discharged into the storm drain system. Concrete, cement, and masonry mixing containers may not be washed or rinsed into the street or storm drain system. If a concrete transit mixer is used, a suitable washout box, excavation or self-washing mixer able to contain the waste material shall be provided on-site.
- Sediment or pollutant laden water may not be discharged into the storm drain system
- Do not mix fresh concrete or cement mortar in a gutter, over a storm drain inlet, or immediately adjacent to a water body.
- The discharge of slurry to the storm drain system is prohibited. During tile cutting, ensure that the slurry water does not run off into the street or storm drain system. Also, dried slurry must be cleaned up and properly disposed so that it will not be carried into the storm drain system by wind, traffic, or rain.
- Store materials under cover and protected from wind, rain, and runoff.
- Small amounts of excess concrete, grout, and mortar may be disposed of in the trash.

- Wash out from concrete mixers may never be disposed of in the street or storm drain system. If possible, pump the washout back into the mixer for reuse.

ROADWORK AND PAVING

- Protect nearby storm drain inlets (preferably with heavy rubber mats) and adjacent water bodies prior to breaking up asphalt or concrete.
- The discharge of saw cut slurry to the storm drain system is prohibited. Take measures to contain the slurry and, if necessary, protect nearby catch basins or gutters. If slurry enters the storm drain system, remove material immediately.
- Dried saw cut slurry must be cleaned up and properly disposed so that it will not be carried into the storm drain system by wind, traffic, or rainfall.
- After breaking up old pavement, sweep up materials and recycle as much material as possible. Properly dispose of non-recyclable materials.
- Cover and seal nearby storm drain inlets and manholes before applying seal coat, slurry seal, etc. Leave covers in place until the oil sealant is dry or the end of the day.
- If it rains unexpectedly, take appropriate action to prevent pollution of storm water runoff (e.g., divert runoff around work areas, cover materials).
- Park paving machines over drip pans or absorbent materials if they have a drip or leak.
- Never wash sweepings from exposed aggregate concrete into a street or a storm drain inlet. Collect and return to aggregate base stockpile or dispose of in the trash.
- Remove and clean up material stockpiles (i.e. asphalt and sand) by the end of each week or, if during the rainy season, the end of the day. Stockpiles must be removed by the end of each day if they are located in a public right-of-way.

EQUIPMENT AND VEHICLE MAINTENANCE AND CLEANING

- Inspect equipment and vehicles frequently and repair any leaks as soon as possible. Perform major maintenance and repairs off-site.
- Clean up leaks, drips, and spills immediately. Use dry cleanup methods if possible.
- If refueling or repair of vehicles and equipment must be done on-site, use a designated location away from storm drain inlets, water bodies, and other sensitive areas.
- If equipment is washed on-site, wash water may not be discharged to the storm drain system. If possible, wash vehicles at an appropriate off-site facility.
- Recycle used motor oil, other vehicle fluids, and vehicle parts whenever possible.

MATERIAL AND SOIL STOCKPILES AND STORAGE

- Material and soil stockpiles must be located away from gutters, storm drain inlets, and water bodies. In addition, keep stockpiles away from steep slopes and unstable soil in order to minimize the chance of an accidental release to the environment. Stockpiles may never be stored on a street or in an alley unless specifically approved by the City.
- Store materials, including stockpiles and excavation spoils, under cover and protected from wind, rain, and runoff. Cover piles of soil, construction materials and wastes with plastic sheeting or tarps so that wind or rain will not carry them into the street or storm drain. Open bags of particulate, granular, or powder materials (such as plaster or concrete) should be stored indoors if possible. If stored outside, they must be covered at all times and, during the rainy season, kept within secondary containment.
- Paints, chemicals, solvents, and other hazardous materials must be stored inside or within a shed with double containment.
- Open bags of particulate, granular, or powder materials (such as plaster or concrete) should be stored indoors if possible. If stored outside, they must be covered or closed, and during the rainy season they must kept within secondary containment.
- During the rainy season, after October 15th or sooner if rain is forecast, control measures must be implemented for the items listed below if stored outside in order to prevent sediment, litter, and other pollutants from leaving the site and/or being discharged into the storm drain system.
    - Material stockpiles
    - Soil stockpiles
    - Excavation spoils
    - Construction materials

WASTE DISPOSAL: VEGETATION, BUILDING MATERIALS, AND DEMOLITION WASTES

- Waste vegetation, discarded building materials and demolition wastes must never be left in a street, gully, or waterway.
- Wastes should be stored in containers or a dumpster whenever possible. Piles of uncontained wastes should be covered and protected from wind and rain.
- Waste vegetation should be disposed of through the City's GreenCycle! program. The program accepts many types of vegetation including brush, plants, branches, and tree trunks (not exceeding 24 inches in diameter and four feet in length). Vegetation may be dropped off at the City's Resource Recovery Facility or placed in a City GreenCycle! container for pickup by the City. For more details, please call the City's Customer Service Division at (831) 420-5220.
- Recycle waste, such as vegetation or demolition materials, whenever possible. Call the City's Customer Service Division, at telephone (831) 420-5220, for information about

what may be recycled and to make arrangements to have recycling bins or dumpsters brought to the work site.

There are reduced rates available for certain waste materials separated according to type. These waste types are: 1) green waste, lumber and wood; 2) mixed construction and demolition debris; 3) dirt; and 4) broken brick, asphalt, and concrete. When calling Customer Service, please ask about the "Other Materials" box rates and tonnage fees for separated materials. The same tonnage fees are also available at the landfill for self-hauled separated loads.

- Construction projects at commercial or industrial sites must obtain any detached roll-off boxes, dumpsters, debris-boxes or other containers for collection of waste materials (to be disposed of or recycled) from the City's Sanitation Services at (831) 420-5220. A private hauling service may be used only if all roll-off boxes or containers are left attached to the service's vehicle the entire time the box is at the site.
- Recycle broken concrete from concrete structures and pavement whenever possible. To facilitate recycling, do not mix concrete with other types of waste.
- Unpainted and untreated waste lumber should be disposed of through the City's GreenCycle! program.
- Scrap metal and appliances may be recycled at the City's Resource Recovery Facility. Toilets and sinks may also be recycled if the plumbing fixtures are removed. For more information, please call the City's Customer Service Division at (831) 420-5220.
- Asbestos and other debris containing hazardous materials must be disposed of as hazardous waste. For more information about hazardous waste disposal, please contact the County Environmental Health Department at (831) 454-2022.

SITE CLEANUP

- When cleaning up, sweep instead of hosing down whenever possible. Litter and debris must be picked up and disposed of properly.
- The street, sidewalk, and other paved areas may not be cleaned by washing or by directing sediment, concrete, asphalt, or other particles into the storm drain system. If water is used to flush sediment or particles from pavement, the water must be directed to a landscaped or grassy area large enough to absorb all the water.
- If conducting road or sidewalk work, material stockpiles must be removed and cleaned up by the end of each day.
- Discarded building materials and demolition wastes must never be left in a street, gully, or waterway. Dispose of all wastes properly including leftover paint and chemicals. Materials that cannot be reused or recycled must be taken to an appropriate landfill or disposed of as hazardous waste.
- When the job is completed, collect all unused or waste materials and dispose of properly. Never leave or abandon materials or excavation spoils onsite. Ensure that nothing has "drifted" towards the street, gutter, or catch basin.

GOOD HOUSEKEEPING PRACTICES

- Prior to beginning a project, identify all storm drains, drainage swales, and creeks located at and nearby the construction site. Ensure all subcontractors are aware of these locations.
- Protect vegetation and trees from accidental damages from construction activities by surrounding them with fencing, tree armoring, or retaining walls.
- Clean up leaks, drips, and other spills immediately. Use dry cleanup methods if possible.
- Leaks, spills, and drips of hazardous materials and chemicals must be contained and cleaned up as quickly as possible to minimize run-off or soak in. This includes fuel and motor oil, hydraulic fluid, and glycol based anti-freeze from vehicles. Encountered abandoned fuel/oil tanks (and their contents) must be removed in a manner consistent with methodology approved by both the City and the Santa Cruz County Environmental Health Department.
- Place trash cans around the site to reduce litter. Dispose of non-hazardous construction wastes in covered dumpsters or recycling receptacles.
- Keep dumpster lids closed and secured. For dumpsters or bins that don't have a lid, cover them with plastic sheeting or a tarp during rainy or windy weather.
- If portable toilets are used, ensure that the leasing company properly maintains the toilets and promptly makes repairs as needed. Conduct visual inspections for leaks.

TRAINING

- Train your employees on these BMPS and familiarize them with storm water issues prior to beginning work. Inform your subcontractors about storm water requirements and be sure that they also abide by these BMPs.
- If your site is required by the Regional Water Quality Control Board to implement a Storm Water Pollution Prevention Plan (SWPP), ensure that the individuals responsible for SWPPP preparation, implementation, and permit compliance are appropriately trained, and that this training is documented. This includes those personnel responsible for installation, inspection, maintenance, and repair of BMPs. Those responsible for overseeing, revising, and amending the SWPPP must also document their training.

ADDITIONAL REFERENCE MANUAL

For general state guidelines and more in-depth information on erosion and sediment control practices to protect water quality during construction projects, please refer to the *Erosion and Sediment Control Field Manual*, Fourth Edition August 2002, produced by the CA Regional Water Quality Control Board, San Francisco Bay Region. This manual may be obtained by contacting the San Francisco Estuary Project, at 510-622-2465, or ordering online at the ABAG (Association of Bay Area Governments) web store at: http://store.abag.ca.gov/construction.asp.

For more information, please call the City of Santa Cruz:

Planning Department, Inspection Services, at 420-5120

or

Public Works Department at 420-5131.