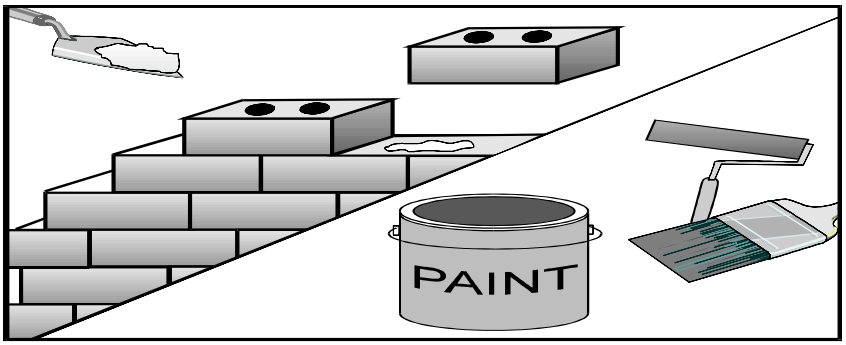
ACTIVITY: Building and Grounds Construction and Maintenance	ICP – 10



Targeted Constituents				
● Significant Benefit	◗ Partial Benefit	○ Low or Unknown Benefit		
● Sediment	● Heavy Metals	● Floatable Materials	● Oxygen Demanding Substances	
● Nutrients	● Toxic Materials	● Oil & Grease	○ Bacteria & Viruses	○ Construction Wastes

Implementation Requirements			
● High	◗ Medium	○ Low	
○ Capital Costs	◗ O & M Costs	◗ Maintenance	◗ Training

Description

Prevent or reduce the discharge of pollutants to stormwater from buildings and grounds construction and maintenance by using soil erosion controls, enclosing or covering building material storage areas, using good housekeeping practices, using safer alternative products, training employees, washing and cleaning up with as little water as possible, preventing and cleaning up spills immediately, keeping debris from entering the storm drains, and maintaining the stormwater collection system. This management practice is likely to create a significant reduction in sediment, nutrients, heavy metals, toxic materials, floatable materials, oxygen demanding substances, and oil and grease.

Approach

Modifications are a common occurrence particularly at large industrial sites. The activity may vary from landscaping maintenance to minor and normal building repair to major remodeling, or the installation of new facilities on currently open space. These activities can generate pollutants that can reach stormwater if proper care is not taken. The sources of these contaminants may be pesticides, herbicides, fertilizers, solvents, paints, and varnish removers, finishing residues, spent thinners, soap cleaners, kerosene, asphalt and concrete materials, adhesive residues, and old asbestos installation.

- Leaving or planting native vegetation to reduce water, fertilizer, and pesticide needs.
- Careful use of pesticides and fertilizers in landscaping.
- Integrated pest management where appropriate.
- Sweeping of paved surfaces.
- Cleaning of the stormwater system at appropriate intervals.

- Proper disposal of wash water, sweepings, and sediments.
- Remove debris in a timely fashion to keep the work site clean and orderly.
- Collect and properly dispose of roofing debris prior to rainfall and upon completion of work to prevent entry of debris and materials into gutter downspouts.
- Inform employees and subcontractors of acceptable housekeeping, disposal and other stormwater management practices and include appropriate provisions in subcontracts to make certain proper housekeeping disposal and other stormwater management practices are implemented.
- Do not remove original product labels, they contain important safety and disposal information.
- Make Material Safety Data Sheets (MSDSs) available to all employees and review in periodic safety training.
- Use soil erosion control techniques if bare ground is temporarily exposed. See the Temporary Construction Site Management Practice (TCP) and Contractor Management Practices (CP) sections of this manual.
- Use permanent soil erosion control techniques if the remodeling clears buildings from an area that is not to be replaced. See the Permanent Erosion and Sediment Control Management Practices (PESC) section of this manual.
- Enclose painting operations, consistent with local air quality regulations and OSHA.
- Properly store materials that are normally used in repair and remodeling such as paints and solvents.
- Properly store and dispose waste materials generated from the activity. ICP-8: Waste Handling and Disposal BMP fact sheet.
- Mix paint indoors, or in a containment area.
- Use all the product before disposing of the container.
- For water-based paints, paint out brushes to the extent practical, and rinse to a drain leading to a sanitary sewer where permitted, or into a concrete washout pit or temporary sediment trap.
- For oil-based paints, paint out brushes to the extent practical, and filter and reuse thinners and solvents.
- Never clean paintbrushes or rinse paint containers into a street, gutter, storm drain or watercourse.
- For a quick reference on disposal alternatives for specific wastes see Table ICP-12-

1 presented in Employee/Subcontractor Training BMP fact sheet. Dispose of any paint, thinners, residue, and sludges that cannot be recycled as hazardous waste.

- Latex paint and paint cans, used brushes, rags, absorbent materials, and drop cloths, when thoroughly dry and are no longer hazardous, may be disposed of with other construction debris.

- Recycle residual paints, solvents, lumber, and other materials to the maximum extent practical. Buy recycled products to the maximum extent practical.

Requirements

- Costs (Capital, O&M)
  - Cost will vary depending on the type and size of facility.
  - Overall costs should be low in comparison to structural BMPs.

Maintenance

- The BMPs themselves relate to training, maintenance and construction activities that do not require maintenance as they do not involve structures. However, regular inspection and refresher training is warranted.

- Spot check employees and subcontractors at least monthly throughout the job to ensure appropriate practices are being employed.

Limitations

- Alternative pest/weed controls may not be available, suitable, or effective in every case.

- Safer alternative building and construction products may not be available or suitable in every instance.

- This BMP is for minor construction only.

- Hazardous waste that cannot be re-used or recycled must be disposed of by a licensed hazardous waste hauler.

- Be certain that actions to help stormwater quality are consistent with TDEC and Fed-OSHA and air quality regulations.

Additional Information

<u>Pesticide/Fertilizer Management</u>

Landscape maintenance involves the use of pesticides and fertilizers. Proper use of these materials will reduce the risk of loss to stormwater. In particular, do not apply these materials during rain as they may be carried from the site by the runoff. When irrigating the landscaped areas, avoid over-watering not only to conserve water but to avoid the discharge of water, which may have become contaminated with excess nutrients and pesticides.

It is important to properly store pesticides and application equipment, and to dispose the used containers in a responsible manner, consistent with TDEC regulations. Personnel who use pesticides should be trained in their use.

Written procedures for the use of pesticides and fertilizers relevant to your facility would help maintenance staff understand the “do’s” and don’ts”. If you have large

vegetated areas, consider the use of integrated pest management (IPM) techniques to reduce the use of pesticides.

Good Housekeeping

Proper care involves a variety of mostly common sense, housekeeping actions such as:

- Keep the work site clean and orderly. Removing debris in a timely fashion. Sweep the area.
- Cover materials of particular concern that must be left outside.
- Educate employees who are doing the work about the importance of keeping pollutants out of the stormwater system including review of the Spill Prevention, Control and Countermeasures (SPCC) Plan.
- Inform on-site contractors of company policy on these matters and include appropriate provisions in their contract to make certain proper housekeeping and disposal practices are implemented.
- Make sure that nearby storm drains are well marked to minimize the chance of inadvertent disposal of residual paints and other liquids.
- Advise concrete truck drivers to not wash their truck over the storm drain. Have a designated area that does not drain to the storm drain. See CP-10: Concrete Waste Management.
- Clean the storm drain system in the immediate vicinity after the construction activity is completed.

Proper education of off-site contractors is often overlooked. The conscientious efforts of well trained employees can be lost by unknowing off-site contractors, so make sure they are well informed about what they are expected to do. See ICP-12: Employee/ Subcontractor Training.

Painting operations should be properly enclosed or covered to avoid drift. Use temporary scaffolding to hang drop cloths or draperies to prevent drift. Application equipment that minimizes overspray also helps. Air pollution regulations may, specify painting procedures which if properly carried out are usually sufficient to protect water quality. If painting requires scraping or sand blasting of the existing surface, use a ground cloth to collect the chips. Dispose the residue properly. If the paint contains lead or tributyl tin, it is considered a hazardous waste.

Mix paint indoors before using so that any spill will not be exposed to rain. Do so even during dry weather because cleanup of a spill will never be 100% effective. Dried paint will erode from a surface and be washed away by storms. If using water based paints, clean the application equipment in a sink that is connected to the sanitary sewer. Properly store leftover paints if they are to be kept for the next job, or dispose properly.

When using sealants on wood, pavement, roofs, etc. quickly clean up spills. Remove

excess liquid with absorbent material or rags. If when repairing roofs, small particles have accumulated in the gutter, either sweep out the gutter or wash the gutter and trap the particles at the outlet of the downspout. A sock or geofabric placed over the outlet may effectively trap the materials. If the downspout is tight lined, place a temporary plug at the first convenient point in the storm drain and pump out the water with a vacuum truck, and clean the catch basin sump where you placed the plug.

Parking/Storm Sewer Maintenance

A parking area that drains to the same stormwater system as the industrial activity that is to be permitted must also be evaluated for suitable BMPs. Stormwater from parking lots may contain undesirable concentrations of oil, grease, suspended particulates, and metals such as copper, lead, cadmium, and zinc, as well as the petroleum byproducts of engine combustion. Deposition of air particulates, generated by the facility or by adjacent industries, may contribute significant amounts of pollutants.

The two most appropriate maintenance BMPs are periodic sweeping and cleaning catch basins if they are part of the stormwater system. A vacuum sweeper is the best method of sweeping, rather than mechanical brush sweeping which is not as effective at removing the fine particulates.

Catch basins in parking lots generally need to be cleaned every 6 to 12 months, or whenever the sump is half full. A sump that is more than half full is not effective at removing additional particulate pollutants from the stormwater. If the storm drain lines have a low gradient, less than about 0.5 feet in elevation drop per 100 feet of line, it is likely that material is settling in the lines during the small, frequent storms. If you have not cleaned the storm drain system for some time, check the lines as well. If they are not cleaned, the catch basins will likely be filled during the next significant storm by material that is washed from the lines. Also, install skimmers, “turn-down” elbows or similar devices on the outlets of the catch basins; they serve to retain floatables, oil and grease.

Clearly mark the storm drain inlets, either with a color code (to distinguish from pretreatment-process water inlets if you have them) or with the painted stencil. This will minimize inadvertent dumping of liquid wastes.

Sweepings and sediments from these maintenance activities are generally low in metals and other pollutants and therefore can be disposed on-site or to a construction debris landfill. Test the material if there is a reasonable doubt whether metals or other pollutants are present. If concentrations of contaminants are high, it indicates that other BMPs may be needed to eliminate or reduce emissions from the source. If a vactor truck is used to clean the storm drainage system, dirty water will be generated. This water should not be discharged to the storm drainage system as it is silt laden and contains much of the pollutants that were removed by the catch basins. The water should be disposed to the process wastewater system, if you have one, or to the public sewer if permission is granted by the local sewer authority. Alternatively, the water can be placed somewhere on the site where it can evaporate such as a sediment trap or basin.

If some employees have cars that are leaking abnormal amounts of engine fluids, encourage them to have the problem corrected.

Older Buildings and Sewers

If a building is to be placed over an open area with a storm drainage system, make sure that storm inlets within the building are covered or removed, or the storm line is connected to the sanitary sewer. If because of the remodeling a new drainage system is to be installed or the existing system is to be modified, consider installing catch basins as they serve as effective "in-line" treatment devices. Include in the catch basin a "turn-down" elbow or similar device to trap floatables.

Primary References

Caltrans Storm Water Quality Handbooks, Construction Contractor's Guide and Specifications, April 1997.

Subordinate References

Best Management Practices for Industrial Storm Water Pollution Control, Santa Clara Valley Nonpoint Source Pollution Control Program, 1992.