SC-42 Building Repair and Construction

Description

Site modifications are common, particularly at large industrial sites. The activity can range from minor and normal building repair to major remodeling and the construction of new facilities. These activities can generate pollutants that include solvents, paints, paint and varnish removers, finishing residues, spent thinners, soap cleaners, kerosene, asphalt and concrete materials, adhesive residues, and old asbestos insulation. Protocols in this fact sheet are intended to prevent or reduce the discharge of pollutants to stormwater from building repair, remodeling, and minor construction by using soil erosion controls, enclosing or covering building material storage areas, using good housekeeping practices, using safer alternative products, and training employees.

This fact sheet is intended to be used for minor repairs and construction. If major construction is required, the guidelines in the *Construction BMP Handbook* should be followed.

Approach

The best management practice (BMP) approach is to reduce the potential for pollutant discharges through source control pollution prevention and BMP implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

General Pollution Prevention Protocols

- ☐ Recycle residual paints, solvents, lumber, and other materials to the maximum extent practicable.
- ☐ Avoid outdoor repairs and construction during periods of wet weather.
- ☐ Use safer alternative products to the maximum extent practicable. See also SC-35 Safer Alternative Products for more information.

Objectives
■ *Cover*
■ *Contain*
■ *Educate*
■ *Reduce/Minimize*
■ *Substitute Products*

Targeted Constituents	
Sediment	✓
Nutrients	
Trash	✓
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Minimum BMPs Covered	
Good Housekeeping	✓
Preventative Maintenance	
Spill and Leak Prevention and Response	✓
Material Handling & Waste Management	✓
Erosion and Sediment Controls	✓
Employee Training Program	✓
Quality Assurance Record Keeping	✓

CASQA
CALIFORNIA STORMWATER QUALITY ASSOCIATION®

- Buy recycled products to the maximum extent practicable.
- Inform on-site contractors of company policy on these matters and include appropriate provisions in their contracts to ensure that 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.

Good Housekeeping

Repair and Remodeling

- Keep the work site clean and orderly. Remove debris in a timely fashion. Sweep and vacuum the area regularly to remove sediment and small debris.
- Cover raw materials of particular concern that must be left outside, especially during the rainy season. See also SC-33 Outdoor Storage of Raw Materials for more information.
- Use equipment and tools such as bag sanders to reduce accumulation of debris.
- Limit/prohibit work on windy days; implement roll-down walls or other measures to reduce wind transport of pollutants.
- Do not dump waste liquids down the storm drain.
- Dispose of wash water, sweepings, and sediments properly.
- Store liquid materials properly that are normally used in repair and remodeling such as paints and solvents. See also SC-31 Outdoor Liquid Container Storage for more information.
- Sweep out rain gutters 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 vactor truck, and clean the catch basin sump where you placed the plug.
- Clean the storm drain system in the immediate vicinity of the construction activity after it is completed. See also SC-44 Drainage System Maintenance for more information.

Painting

- Enclose painting operations consistent with local air quality and Occupational Safety and Health Administration (OSHA) regulations.
- Local air pollution regulations may, in many areas of the state, specify painting procedures that, if properly carried out, are usually sufficient to protect water quality.
- Develop paint-handling procedures for proper use, storage, and disposal.

- Transport paint and materials to and from job sites in containers with secure lids and tied down to the transport vehicle.
- Test and inspect spray equipment prior to starting to paint. Tighten all hoses and connections and do not overfill paint containers.
- Mix paint indoors before using it 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 percent effective.
- Transfer and load paint and hot thermoplastic away from storm drain inlets.
- When there is risk of a spill reaching storm drains, plug nearby storm drain inlets prior to starting to paint and remove the plugs when the job is complete.
- If sandblasting is used to remove paint, cover nearby storm drain inlets prior to starting work.
- If painting requires scraping or sandblasting of the existing surface, use a ground cloth to collect the chips. Dispose of the residue properly.
- Cover or enclose painting operations properly to avoid drift.
- If water-based paints are being used, clean the application equipment in a sink that is connected to the sanitary sewer.
- Capture all cleanup-water and dispose of it properly.
- Dispose properly of paints containing lead or tributyl tin and considered a hazardous waste.
- If leftover paints are to be kept for the next job, store them properly, or dispose of them properly.
- Recycle paint when possible. Dispose of paint at an appropriate household hazardous waste facility.

Spill and Leak Prevention and Response

- Keep your spill prevention, control, and countermeasure (SPCC) plan up to date.
- Place a stockpile of spill cleanup materials where they are readily accessible.
- Clean up spills immediately.
- Excavate and remove the contaminated (stained) soil if a spill occurs on dirt.

Material Handling and Waste Management

- Post “No littering” signs, and enforce antilitter laws.
- Provide a sufficient number of litter receptacles for the facility.

- Clean out litter receptacles frequently and cover them to prevent spillage.
- Keep waste collection areas clean.
- Inspect solid waste containers regularly for structural damage. Repair or replace damaged containers as necessary.
- Secure solid waste containers; containers must be closed tightly when not in use.
- Do not fill waste containers with washout water or any other liquid.
- Ensure that only appropriate solid wastes are put in the solid waste container. Certain wastes such as hazardous wastes, appliances, fluorescent lamps, and pesticides may not be disposed of in solid waste containers
- Do not mix wastes; this can cause chemical reactions, make recycling impossible, and complicate disposal. Affix labels to all waste containers clearly stating what they contain.
- Make sure that hazardous waste is collected, removed, and disposed of properly. See also SC-34 Waste Handling and Disposal for more information.

Erosion and Sediment Controls

- Limit disturbance of bare soils and preserve natural vegetation whenever possible. See also EC-2 Preservation of Existing Vegetation in the *Construction BMP Handbook*.
- Stabilize loose soils by revegetating whenever possible. See also EC-4 Hydroseeding in the *Construction BMP Handbook*.
- Use nonvegetative stabilization methods for areas prone to erosion where vegetative options are not feasible. Examples include:
  - ✓ Areas of vehicular or pedestrian traffic such as roads or paths;
  - ✓ Arid environments where vegetation would not provide timely ground coverage, or would require excessive irrigation;
  - ✓ Rocky substrate, infertile or droughty soils where vegetation would be difficult to establish; and
  - ✓ Areas where vegetation will not grow adequately within the construction time frame.

  There are several nonvegetative stabilization methods and selection should be based on site-specific conditions. See also EC-16 Non-Vegetative Stabilization in the *Construction BMP Handbook*.
- Use chemical stabilization when needed. See also EC-5 Soil Binders in the *Construction BMP Handbook*.

- Use geosynthetic membranes to control erosion if feasible. See also EC-7 Geotextiles and Mats in the *Construction BMP Handbook*.
- Stabilize all roadways, entrances, and exits to sufficiently control discharges of erodible materials from discharging or being tracked off the site. See also TC 1-3 Tracking Control in the *Construction BMP Handbook*.
- Refer to the supplemental information later in this fact sheet for projects that involve more extensive soil disturbance activities.

Employee Training Program

- Educate employees about pollution prevention measures and goals.
- Train employees how to properly implement the source control BMPs described above. Detailed information for erosion and sediment control BMPs is provided in the *Construction BMP Handbook*.
- Proper education of off-site contractors is often overlooked. The conscientious efforts of well-trained employees can be wasted by unknowing off-site contractors, so make sure they are well informed about pollutant source control responsibilities.
- Use a training log or similar method to document training.

Quality Assurance and Record Keeping

- Keep accurate maintenance logs that document minimum BMP activities performed for building repair and construction, types and quantities of waste disposed of, and any improvement actions.
- Keep accurate logs of spill response actions that document what was spilled, how it was cleaned up, and the method used to dispose of the waste.
- Establish procedures to complete logs and file them in the central office.

Potential Limitations and Work-Arounds

Some facilities may have space constraints, limited staffing, and time limitations that preclude implementation of BMPs. The following are typical limitations and recommended work-arounds.

- This BMP is for minor construction only. The state's General Construction Activity Stormwater Permit has more extensive requirements for larger projects that would disturb 1 or more acres of surface.
  - ✓ Refer to the companion *Construction BMP Handbook* for specific guidance and BMPs for larger scale projects.
- Time constraints might require some outdoor repairs and construction during wet weather.

- ✓ Require employees to understand and follow good housekeeping and spill and leak prevention BMPs.
- ✓ Inspect erosion and sediment control BMPs daily during periods of wet weather and repair or improve BMP implementation as necessary.

- Hazardous waste that cannot be reused or recycled must be disposed of by a licensed hazardous waste hauler.
  - ✓ Minimize use of hazardous materials to the maximum extent practicable.
- Be certain that actions to help stormwater quality are consistent with Cal/ and Fed/OSHA and air quality regulations.
- Prices for recycled/safer alternative materials and fluids may be higher than those of conventional materials.

Potential Capital Facility Costs and Operation & Maintenance Requirements

Facilities

- Limited capital investments may be required at some sites if cover and containment facilities are inadequate for construction materials and wastes.
- Purchase and installation of erosion and sediment controls, if needed, will require additional capital investments, and this amount will vary depending on site characteristics and the types of BMPs being implemented.
- Minimize costs by maintaining existing vegetation and limiting construction operations on bare soils.

Maintenance

- The erosion and sediment control BMPs described above require periodic inspection and maintenance to remain effective. The cost of these actions will vary depending on site characteristics and the types of BMPs being implemented.
- Irrigation costs may be required to establish and maintain vegetation.

Supplemental Information

Soil/Erosion Control

If the work involves exposing large areas of soil, employ the appropriate soil erosion and control techniques. See the *Construction BMP Handbook*. If old buildings are being torn down and not replaced in the near future, stabilize the site using measures described in SC-40 Contaminated and Erodible Areas.

If a building is to be placed over an open area with a storm drainage system, make sure the 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.

References and Resources

City of Seattle. 2016. *City of Seattle Stormwater Manual*. Seattle Public Utilities Department of Planning and Development. Available online at http://www.seattle.gov/dpd/cs/groups/pan/@pan/documents/web_informational/p2358283.pdf.

California Stormwater Quality Association, 2019. *Construction Stormwater Best Management Practice Handbook*. Available at http://www.casqa.org.

Kennedy/Jenks Consultants. 2007. *The Truckee Meadows Industrial and Commercial Storm Water Best Management Practices Handbook*. Available online at https://www.washoecounty.us/csd/engineering_capitalprojects/files-engineering-capital-projects/development_review_forms/Industrial and Commercial Storm Water Best Management Practices Handbook.pdf.

Sacramento Stormwater Management Program. n.d. *Best Management Practices for Industrial Storm Water Pollution Control*. Available online at http://www.waterresources.saccounty.net/stormwater/documents/industrial-BMP-manual.pdf.

US EPA. 2005. *Construction Site Stormwater Runoff Control*. Available online at: https://www3.epa.gov/npdes/pubs/fact2-6.pdf.