



Erosion occurs when soil particles are displaced by raindrops, moving water and/or wind. Common erosion factors include: (1) Splash erosion – the dislodging of soil particles by raindrop impact; (2) Sheet-flow erosion – the uniform removal of saturated soil particles by overland flow; (3) Rill erosion - occurs when water flow creates long, narrow depressions in the ground; (4) Gully erosion – occurs when water flow creates deep and wide depressions in the ground; (5) Streambank erosion – occurs when water in a natural drainage channel creates bank sloughing; (6) and Wind erosion – occurs when wind passes over exposed soil areas removing small particulates.

Erosion Control: When soils are exposed due to site grubbing, grading and/or other activities the site owner / operator must install appropriate erosion control materials. Common practices to reduce the risk of erosion include:

- a) **Vegetative Soil Cover:** (1) Maintain natural soil cover (*vegetation*), (2) Maintain natural perimeter vegetation, (3) Plant temporary vegetation, (4) Plant temporary perimeter vegetation, (5) Maintain site bushes & trees, (6) **Limiting site disturbance** (*Only disturbed those soil areas necessary to effectuate construction*).
- b) **Non-Vegetative Methods:** Utilize: (1) Stone, (2) Mulch, (3) Matting, (4) Intercept runoff (*fiber rolls*), (5) Flow control (*fiber rolls, proper grading*), (6) Velocity Control (*fiber rolls, velocity dissipaters*), (7) Plastic covering, (8) Hydroseeding mixes, (9) and etcetera.
- c) **Dust Control:** All sites with exposed soils must be concerned with limiting, if not eliminating air borne dust at all times. There are many Best Management Practices that can be implemented to prevent dust emission.
- d) **Stabilized Construction Entrance / Exit (SCEE):** All sites that include significant grading activities require the use of a SCEE in accordance with Caltrans / CASQA standards (*i.e. Shaker plates &/or 3" – 6" aggregate material*) to eliminate sediment track-out.
- e) **Stockpile Management:** All stockpiles of compost, dirt, sand, sediment, soil and etcetera must be covered or stabilized when not in active use. Also, stockpiles must be surrounded by wattles or gravel bags.

Sediment Control: Sediment control is a practice or device designed to keep eroded soil on a construction site, so that it does not wash off and cause water pollution. Sediment controls are generally designed to be temporary measures. Common sediment controls include perimeter control, slope control and/or velocity control measures. Devices utilized include: graduated silt fencing, gravel bags, silt fencing and/or straw wattles. Sediment control also includes routine sidewalk and street sweeping activities.

Good Housekeeping Practices: Sites must be kept in an orderly and clean manner at all times.

Washouts: All sites must include a designed lined washout for residual concrete, plaster, paint, stucco and etcetera. These devices must be lined with 10ml plastic, covered before and during storm events and replaced when ½ full.

Chemical / Fuel Storage: The storage of chemicals and/or fuels on site requires the use of secondary containment devices, placement on paved surfaces and covered at all times except when in use. Never store within a storm water flow path.

Waste Management: All sites must include trash and recycling receptacles with lids and/or covers. These must remain closed at all times except during loading and servicing. Pick up loose trash daily. **Portable restroom facilities** must include secondary containment and never placed within the flow line to a storm drain inlet and/or waterway.

Spill Management: All sites must include a spill management plan. Simply spills and discharges of any material including: chemicals, concrete, oils, paints, slurry and etcetera must be cleaned up immediately and disposed of in a proper manner. Spills shall not be washed into the drainage system.

WPCP: All sites not requiring a SWRCB WDID# / SWPPP require the development, submittal and implementation of a Water Pollution Control Plan. A template WPCP can be found within the "City of San Marcos Supplement to the 2015 Standard Specifications for Public Works Construction "Greenbook."

It is the responsibility of the project owner, site operator and all staff to comply with local and state water quality regulations at all times. For additional information visit the following websites:

- Ca Construction General Permit:
www.waterboards.ca.gov/water_issues/programs/stormwater/gen_const.shtml#const_permit
- California Stormwater Quality Association www.casqa.org/
- City's Stormwater Permit, JRMP & WQIP www.projectcleanwater.org/