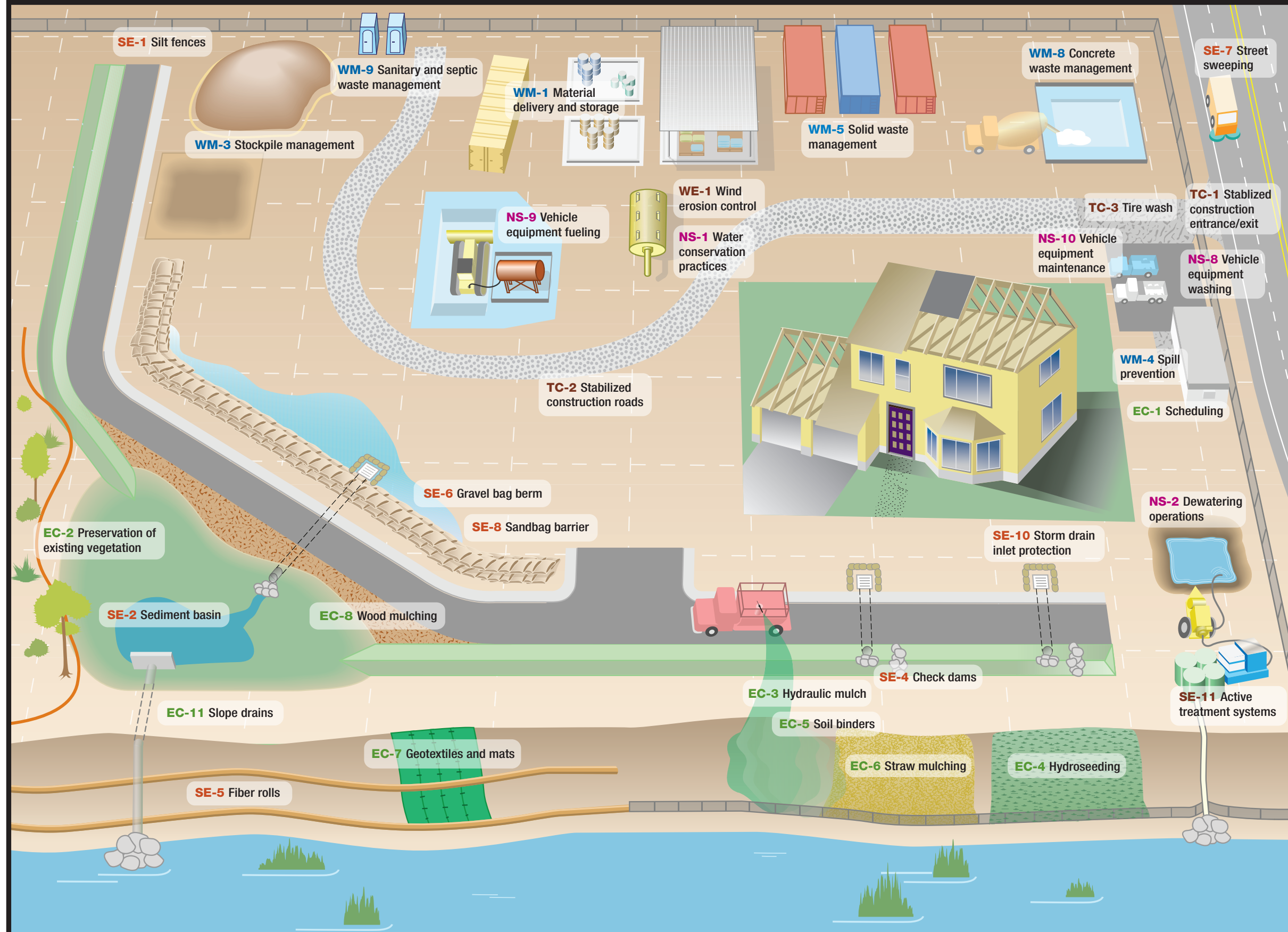




Stormwater runoff in the County drains directly into local creeks and into the ocean. Implementing Best Management Practices (BMPs) to keep construction site runoff clean is an important part of the County's program. This brochure describes BMPs that must be implemented for high risk construction projects within the County.

Erosion Control

- EC-1** Scheduling
- EC-2** Preservation of existing vegetation
- EC-3** Hydraulic mulch
- EC-4** Hydroseeding
- EC-5** Soil binders
- EC-6** Straw mulching
- EC-7** Geotextiles and mats
- EC-8** Wood mulching
- EC-11** Slope drains

Sediment Control

- SE-1** Silt fences
- SE-2** Sediment basin
- SE-4** Check dams
- SE-5** Fiber rolls
- SE-6** Gravel bag berms
- SE-7** Street sweeping and vacuuming
- SE-8** Sandbag barrier
- SE-10** Storm drain inlet protection
- SE-11** Active treatment systems

Additional Controls

- WE-1** Wind erosion or dust control
- TC-1** Stabilized construction entrance/exit
- TC-2** Stabilized construction roads
- TC-3** Tire wash
- SE-11** Active treatment systems

Non-Stormwater Management

- NS-1** Water conservation practices
- NS-2** Dewatering operations
- NS-8** Vehicle and equipment washing
- NS-9** Vehicle equipment fueling
- NS-10** Vehicle equipment maintenance

Waste Management

- WM-1** Material delivery and storage
- WM-3** Stockpile management
- WM-4** Spill prevention
- WM-5** Solid waste management
- WM-8** Concrete waste management
- WM-9** Sanitary and septic waste management

Stormwater Quality Protection Program | Enhanced BMPs for High Risk Projects

Enhanced Construction BMP Implementation Definitions

Erosion Control

- EC-1 Scheduling** is the development of a written plan that includes sequencing of activities and BMPs taking local climate (e.g., rainfall, wind) into consideration. A primary objective of scheduling is to reduce the area and duration of soil exposed to erosion.
- EC-2 Preservation of existing vegetation** identifies and protects desirable existing vegetation to provide erosion and sediment control benefits.
- EC-3 Hydraulic mulch** consists of fibrous materials mixed with water into slurry and sprayed onto the soil surface to provide temporary protection from wind and water erosion.
- EC-4 Hydroseeding** combines hydraulic mulch with seed and sometimes a soil binder. The mulch provides temporary protection of exposed soils until the vegetation becomes established.
- EC-5 Soil binders** are soil stabilizing chemicals (such as a polymer) that are applied to exposed soil surfaces to provide temporary erosions control. Soil binders come in liquid or powder form and are sprayed onto or mixed into the soil surface.
- EC-6 Straw mulching** consists of placing a uniform layer of straw and incorporating it into the soil with a studded roller or crimper, or anchoring it with a tackifier or to form an erosion-resistant layer.
- EC-7 Geotextiles and mats** also called rolled erosion control products (RECPs) are made of natural or synthetic materials or a combination. They cover the soil to form an erosion-resistant layer. When used in combination with seed, RECPs absorb and hold moisture, enhancing germination conditions.
- EC-8 Wood mulching** consists of placing a layer of shredded wood mulch, bark, or compost alone or in combination on flat disturbed soil areas. Wood mulch reduces erosion by protecting bare soil from rainfall impact, increasing infiltration, and reducing runoff.
- EC-11 Slope drains** intercept and pipe surface runoff or groundwater to a stabilized watercourse, sediment trap, or stabilized area. Slope drains are used with earth dikes and drainage ditches to intercept and direct surface flow away from slopes.

Sediment Control

- SE-1 Silt fences** are woven geotextiles that are trenched, attached to support stakes, and sometimes backed by a strengthening mesh. A silt fence ponds sediment-laden runoff allowing sediment to settle out behind the fence.
- SE-2 A sediment basin** is a temporary basin formed by excavating or by constructing an embankment to temporarily detain sediment-laden runoff, allowing sediment to settle out before the runoff is discharged. Basins must be designed/engineered according to specific guidelines.
- SE-4 Check dams** are small barriers constructed of various materials (e.g., rock, sandbags, fiber rolls), placed across a constructed swale or drainage ditch. Check dams reduce the slope of the channel, thereby reducing erosion by slowing the flow and allowing sediment to settle behind the dams.
- SE-5 Fiber rolls** are tubes of straw, coconut fiber, or other biodegradable material wrapped by netting. Some fiber rolls are weighted with gravel cores. Fiber rolls are typically installed along contours in a trench and staked into place. Fiber rolls perform a variety of erosion control and sediment control functions including slowing flow, reducing slope length, ponding runoff, and releasing the runoff as sheet flow.
- SE-6 Gravel bag berms** consist of a series of gravel-filled bags placed on a level contour to intercept sheet flows. Gravel bags pond runoff, allowing sediment to settle out, and slowly release runoff as sheet flow.
- SE-7 Street sweeping and vacuuming** includes using self-propelled and walk-behind equipment to remove sediment from streets, roads, and paved surfaces. Sweeping and vacuuming are suitable anywhere sediment is tracked from the project site onto public or private paved surfaces and within the project site on paved surfaces.
- SE-8 A sandbag barrier** is a series of sand-filled bags placed on a level contour to intercept or to divert sheet flows. Sandbag barriers can be used to pond runoff allowing sediment to settle out.
- SE-10 Storm drain inlet protection** consists of a sediment filter or ponding area in, around, or upstream of a storm drain inlet. These practices temporarily pond runoff before it enters the storm drain, allowing sediment to settle. Some practices remove sediment by filtering, but usually the ponding results in the greatest sediment reduction.

Additional Controls

- WE-1 Wind erosion or dust control** consists of applying water or chemical dust suppressants to disturbed soils or covering stockpiles and small areas with RECPs or mulch to prevent dust.
- TC-1 A stabilized construction entrance/exit** is a defined access point that is stabilized to reduce the tracking of mud and dirt onto public roads. The access point can be stabilized with a rumble strip or a layer of appropriately sized rock underlain with a geotextile fabric.
- TC-2 Stabilized construction roads** include paving, applying gravel or other forms of stabilization to access roads and other road cuts immediately after grading to prevent erosion and control dust. Road stabilization also includes grading roads to minimize flow down the road face and drainage controls manage flow and remove sediment.
- TC-3 A tire wash** is an area located at stabilized construction exit to wash sediment and mud from tires and under carriages to prevent sediment from being carried off the project site.
- SE-11 Active treatment systems (ATS)** reduce turbidity by introducing chemicals to stormwater through direct dosing or an electrical current to flocculate fine suspended sediments that would otherwise remain in suspension and cause turbid discharges. ATS include several steps for containing water, dosing, filtering, and monitoring water quality throughout the treatment process.
- Non-Stormwater Management**
- NS-1 Water conservation practices** use water during the construction in a manner that prevents erosion and the transport of pollutants offsite. BMPs include: limiting water use; repairing water leaks; limiting the contact of water with construction materials; and containing and reusing water or soaking water into the ground.
- NS-2 Dewatering operations** manage the discharge of pollutants (primarily sediment) when contained stormwater must be removed from the site. These practices employ BMPs that trap sediment or cause it to settle out before discharge. Dewatering groundwater requires a separate NPDES permit from the Regional Board.
- NS-8 Vehicle and equipment washing** practices include: using offsite wash facilities; or washing in designated, contained areas; and eliminating discharges to the storm drain.

- NS-9 Vehicle equipment fueling** practices are designed to prevent fuel spills and leaks by using offsite facilities, fueling in designated areas, enclosing or covering stored fuel, implementing spill controls, and training workers in proper fueling procedures.
- NS-10 Vehicle equipment maintenance** is performed in a manner to maintain a *clean and dry site*. The best option is to perform maintenance at an offsite facility. Otherwise, perform maintenance in designated areas, where materials and waste can be properly stored, and spill prevention equipment is available.
- Waste Management**
- WM-1 Material delivery and storage** practices include: minimizing the storage of materials onsite; storing materials in watertight containers; enclosed areas (e.g., sheds); or installing secondary containment (e.g., double-lined tank); and conducting regular inspections of stored materials.
- WM-3 Stockpile management** practices prevent air and stormwater pollution from stockpiles (e.g., soil, sand, paving materials, and pressure-treated wood) by properly locating stockpiles, using perimeter barriers, and covering stockpiles.
- WM-4 Spill prevention** reduces the discharge of pollutants from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, and properly disposing of spill materials.
- WM-5 Solid waste management** prevents the discharge of pollutants by providing appropriate, designated waste collection areas and containers, arranging for regular waste collection, and proper disposal.
- WM-8 Concrete waste management** is conducting washout in a designated, contained area and properly disposing of wastes. Workers need be informed about proper washout, and the washout must be regularly inspected.
- WM-9 Sanitary and septic waste management** is achieved by providing convenient, appropriately placed, well-maintained facilities, and arranging for regular service and disposal.

Additional Information

- A high risk project is determined by site condition and location. If any of these conditions are true, the project is high risk:
- 1) On slopes of 20% or greater;
 - 2) Discharges directly to a water listed as impaired for sediment or siltation (currently Calleguas Creek, Malibu Creek, Medea Creek, or Triunfo Canyon Creek); or
 - 3) Located in or within 200 feet of an Environmentally Sensitive Area. County staff can assist you in determining if your project is high risk.
- High risk projects that are $\geq$ one acre must also comply with the State's General NPDES Permit for Stormwater Discharges Associated with Construction and Land Disturbing Activities. See http://www.waterboards.ca.gov/water_issues/programs/stormwater/
- For more information contact:** Ventura County Stormwater Program staff at (805) 662-6737 or (805) 645-1382 or visit Surface Water Quality Section at <http://onestoppermit.ventura.org/>

Detailed information on the BMPs described in this brochure can be obtained from: California Stormwater Quality Association <http://www.casqa.org>, or California Department of Transportation www.dot.ca.gov/hq/construc/stormwater/manuals.htm

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