BMP C154: Concrete Washout Area

Purpose

Prevent or reduce the discharge of pollutants ~~to stormwater~~ from concrete waste to stormwater by conducting washout offsite, or performing onsite washout in a designated area. ~~to prevent pollutants from entering surface waters or groundwater.~~

Conditions of Use

Concrete washout areas ~~best management practices~~ are implemented on construction projects where:

- Concrete is used as a construction material.
- It is not possible to dispose of all concrete wastewater and washout offsite (ready mix plant, etc.).
- Concrete trucks drums are~~,~~ ~~pumpers, or other concrete coated equipment are~~ washed onsite.
- Note that auxiliary concrete truck components (e.g., chutes and hoses) and small concrete handling equipment (e.g., hand tools, screeds, shovels, rakes, floats, trowels, and wheelbarrows) may be washed into formed areas awaiting concrete pour.~~:~~ ~~If fewer than 10 concrete trucks or pumpers need to be washed out onsite, the washwater may be disposed of in a formed area awaiting concrete or an upland disposal site where it will not contaminate surface or groundwater. The upland disposal site shall be at least 50 feet from sensitive areas such as storm drains, open ditches, or water bodies, including wetlands.~~
- At no time shall concrete be washed off into the footprint of an area where an infilitration feature will be installed.

Design and Installation Specifications

Implementation:

~~The following steps will help reduce stormwater pollution from concrete wastes:~~

- Perform washout of concrete trucks drums at an approved offsite location or in designated concrete washout areas only.
- Do not wash out concrete ~~trucks~~ onto non-formed areas, ~~the ground,~~ or into storm drains, open ditches, streets, or streams.

- Wash equipment difficult to move, such as concrete paving machines, in areas that do not directly drain to natural or constructed stormwater conveyance or potential infiltration areas.

- Do not allow excess concrete to be dumped onsite, except in designated concrete washout areas as allowed above.

- Concrete washout areas may be prefabricated concrete washout containers, or self-installed structures (above-grade or below-grade).

- Prefabricated containers are most resistant to damage and protect against spills and leaks. Companies may offer delivery service and provide regular maintenance and disposal of solid and liquid waste.

- If self-installed concrete washout areas are used, below-grade structures are preferred over above-grade structures because they are less prone to spills and leaks.

- Self-installed above-ground structures should only be used if excavation is not practical.
~~Self-installed above-grade structures should only be used if excavation is not practical.~~

- Concrete washout areas shall be constructed and maintained in sufficient quanity and size to contain all liquid and concrete waste generated by washout operations.

Education:

- Discuss the concrete management techniques described in this BMP with the ready-mix concrete supplier before any deliveries are made.

- Educate employees and subcontractors on the concrete waste management techniques described in this BMP.

- Arrange for contractor's superintendent or Certified Erosion and Sediment Control Lead (CESCL) to oversee and enforce concrete waste management procedures.

- A sign should be installed adjacent to each ~~temporary~~ concrete washout ~~facility~~ area to inform concrete equipment operators to utilize the proper facilities.

Contracts:

Incorporate requirements for concrete waste management into concrete supplier and subcontractor agreements.

Location and Placement:

- Locate concrete washout area at least 50 ~~-~~ feet from sensitive areas such as storm drains, open ditches, ~~or~~ water bodies, or ~~including~~ wetlands.
- Allow convenient access to the concrete washout area for concrete trucks, preferably near the area where the concrete is being poured.
- If trucks need to leave a paved area to access the concrete washout area, prevent track-out with a pad of rock or quarry spalls (see BMP C105: Stabilzation Construction Entrance/Exit). These areas should be far enough away from other construction traffic to reduce the likelihood of accidental damage and spills.
- The number of ~~facilities~~ concrete washout areas you install should depend on the expected demand for storage capacity.
- On large sites with extensive concrete work, concrete washout~~s~~ areas should be placed in multiple locations for ease of use by concrete truck drivers.

Concrete Truck Washout Procedures:~~Onsite Temporary Concrete Washout Facility, Transit Truck Washout Procedures:~~

- ~~Temporary concrete washout facilities shall be located a minimum of 50 feet from sensitive areas including storm drain inlets, open drainage facilities, and water courses. See Figure 3.5, as well as Attachments Section C, Details 23.0 and 23.1.~~
- ~~Concrete washout facilities shall be constructed and maintained in sufficient quantity and size to contain all liquid and concrete waste generated by washout operations.~~
- Washout of concrete truck~~s~~ drums shall be performed in designated concrete washout areas only.
- Concrete washout from concrete pumper bins can be washed into concrete pumper trucks and discharged into designated concrete washout area or properly disposed of offsite.
- ~~Once concrete wastes are washed into the designated area and allowed to harden, the concrete should be broken up, removed, and disposed of per applicable solid waste regulations. Dispose of hardened concrete on a regular basis.~~

Concrete Washout Area Installation:

- Concrete washout areas should be constructed as shown in the figure 3.5

below and Attachments, Section C, Details 23.0 and 23.1, with a recommended minimum length and minimum width of 10-feet, but with sufficient quantity and volume to contain all liquid and concrete waste generated by washout operations.

- Plastic lining material shall be a minimum of 10 mil polyethylene sheeting and should be free of holes, tears, or other defects that compromise the impermeability of the material.
- Lath and flagging shall be commercial type.
- Liner seams shall be installed in accordance with manufacturers' recommendations.
- Soil base shall be prepared free of rocks or other debris that may cause tears or holes in the plastic lining material.

- ~~Temporary Above-Grade Concrete Washout Facility:~~
  - ~~Temporary concrete washout facility (type above grade) should be constructed as shown on the details below, with a recommended minimum length and minimum width of 10 feet, but with sufficient quantity and volume to contain all liquid and concrete waste generated by washout operations.~~
  - ~~Plastic lining material should be a minimum of 10 mil polyethylene sheeting and should be free of holes, tears, or other defects that compromise the impermeability of the material.~~
- ~~Temporary Below-Grade Concrete Washout Facility:~~
  - ~~Temporary concrete washout facilities (type below grade) should be constructed as shown on the details below, with a recommended minimum length and minimum width of 10 feet. The quantity and volume should be sufficient to contain all liquid and concrete waste generated by washout operations.~~
  - ~~Lath and flagging should be commercial type.~~

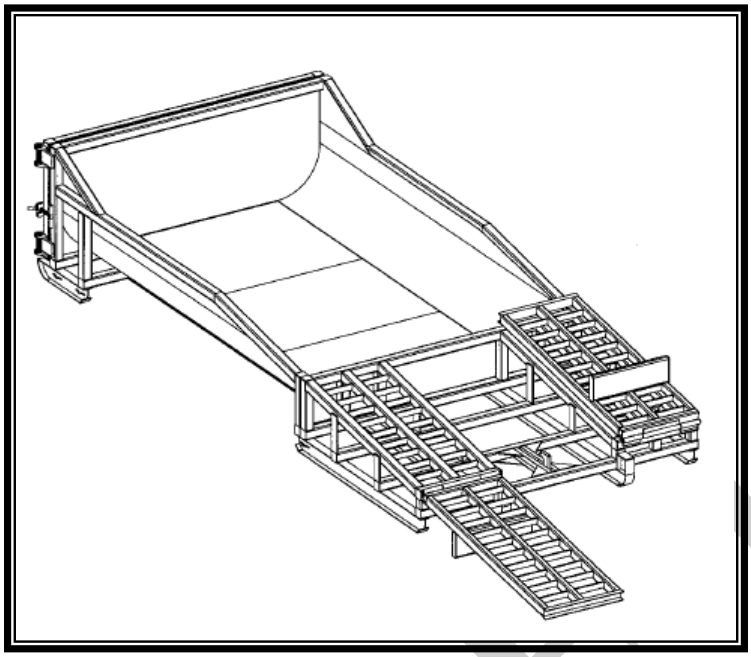

Figure 3.5. Prefabricated Concrete Washout Container with Ramp

- ~~Plastic lining material shall be a minimum of 10 mil polyethylene sheeting and should be free of holes, tears, or other defects that compromise the impermeability of the material.~~
- ~~Liner seams shall be installed in accordance with manufacturers' recommendations.~~
- ~~Soil base shall be prepared free of rocks or other debris that may cause tears or holes in the plastic lining material.~~

Maintenance Standards

Inspection and Maintenance:

- Inspect and verify that concrete washout ~~BMPs~~ areas are in place prior to the commencement of concrete work.
- Once concrete wastes are washed into the designated washout area and allowed to harden, the concrete should be broken up, removed, and disposed of per applicable solid waste regulations. Dispose of hardened concrete on a regular basis.
- During periods of concrete work, inspect the concrete washout areas daily to verify continued performance.
  - Check overall condition and performance

- Check remaining capacity (percent full)
- If using self-installed concrete washout areas~~facilities~~, verify plastic liners are intact and sidewalls are not damaged
- If using prefabricated containers, check for leaks.

- Maintain the concrete washout areas~~Washout facilities shall be maintained~~ to provide adequate holding capacity with a minimum freeboard of 12 ~~-~~ inches.
- Concrete ~~W~~washout ~~facilities~~ areas must be cleaned, or new ~~facilities~~ concrete washout areas must be constructed and ready for use once the concrete washout area is 75 percent full.
- If the concrete washout area is nearing capacity, vacuum and dispose of the waste material in an approved manner.
  - Do not discharge liquid or slurry to waterways, storm drains or directly onto ground.
  - Do not use sanitary sewer without a permit that must be obtained from the County Industrial Pretreatment Program at (253) 798-3013.
  - Place a secure, non-collapsing, non-water collecting cover over the concrete washout ~~facility~~ area prior to predicted wet weather to prevent accumulation and overflow of precipitation.
  - Remove and dispose of hardened concrete and return the structure to a functional condition. Concrete may be reused onsite or hauled away for disposal or recycling.
- When you remove materials from the self-installed concrete washout area, build a new structure; or, if the previous structure is still intact, inspect for signs of weakening or damage, and make any necessary repairs. Re-line the structure with new plastic after each cleaning.

Removal of ~~Temporary~~ Concrete Washout Areas~~Facilities~~:

- When ~~temporary~~ concrete washout ~~facilities~~ areas are no longer required for the work, the hardened concrete, slurries and liquids shall be removed and properly disposed of.
- Materials used to construct ~~temporary~~ concrete washout ~~facilities~~ areas shall be removed from the site of the work and disposed of or recycled.

- Holes, depressions or other ground disturbance caused by the removal of the ~~temporary~~ concrete washout ~~facilities~~ areas shall be backfilled, repaired, and stabilized to prevent erosion.

A4.3 Temporary Storage or Processing of Fruits or Vegetables

Description of Pollutant Sources: This activity applies to businesses that temporarily store fruits and vegetables outdoors prior to processing or sale, or that crush, cut, or shred fruits or vegetables for wines, frozen juices, and other food and beverage products. ~~Nutrients and soil washing off of fruit can have a detrimental effect on receiving waters.~~

Activities involving the storage or processing of fruits, vegetables, and grains can potentially result in the delivery of pollutants to stormwater. Potential~~P~~pollutants of concern from all fruits and vegetable storage and processing activities include nutrients, suspended solids, substances that increase biological oxygen demand~~ing~~ (BOD)~~substances (i.e., BOD and COD),~~ and color. These pollutants must not be discharged to the drainage system or directly into receiving waters.

Pollutant Control Approach: Store and process fruits and vegetables indoors or under cover whenever possible. Educate employees about proper procedures. Eliminate illicit connections to the stormwater drainage system. Cover and contain operations and apply good housekeeping and preventive maintenance practices to prevent the contamination of stormwater.

Required BMPs

The following BMPs or equivalent measures are required of all businesses engaged in *storage* of fruits or vegetables:

Employees must be educated on benefits of keeping a clean storage area.

- Keep fruits, vegetables, and grains stored outside for longer than a day in plastic bins or in bins lined with plastic. The edge of the plastic liner should be higher than the amount of fruit stored or should drape over the side of the bin.
- Dispose of rotten fruit, vegetables, and grains in a timely manner (typically, within a week).
- Make sure all outside materials that have the potential to leach or spill to the drainage system are covered, contained, or moved to an indoor location. For fruits, vegetables, and grains stored outside for a week or more, cover with a tarp or other waterproof material. Make sure coverings are secured from wind.
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- Eliminate illicit connections to the stormwater drainage system. See BMP S.1 in Chapter 5 for details on detecting and eliminating these connections.

No untreated water used to clean produce can enter the stormwater drainage system. Minimize the use of water when cleaning produce to avoid excess runoff.

- The storage areas must be swept or shoveled daily to collect dirt and fruit and vegetable fragments for proper disposal. Keep hosing to a minimum.
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- Cleanup materials, such as brooms and dustpans, must be kept near the storage area.
- Gutters, storm drains, and catch basins on the property must be cleaned as needed. See BMP S.9 in Chapter 5 for details on catch basin cleaning requirements.

- If a holding tank is used for the storage of wastewater, pump out the contents before the tank is full and dispose of wastewater to a sanitary sewer or approved wastewater treatment system.

The following BMPs or equivalent measures are required of all businesses that *process* fruits or vegetables:

- Eliminate illicit connections to the stormwater drainage system. See BMP S.1 in Chapter 5 for details on detecting and eliminating these connections.
- Employees must be educated on benefits of keeping a clean processing area.
- Cleanup materials, such as brooms, dustpans, and shovels, must be kept near the storage area.
- The processing area must be swept or shoveled daily to collect dirt and fruit and vegetable fragments for proper disposal.
- The processing area must be enclosed in a building or shed, or covered with provisions for stormwater runon prevention. See BMPs S.4, S.5, and S.7 in Chapter 5 for more on covering and runon prevention.

OR

- The processing area must be paved and sloped to a sanitary sewer drain, holding tank, or process treatment system collection drain, and stormwater runon prevention must be provided for the processing area. Call Pierce County Industrial Pretreatment Program (253) 798-3013 for information

on discharging to the sanitary sewer. See BMPs S.6 and S.3 in Chapter 5 for details on paving and drainage.

Suggested BMPs

The following BMPs are not required but can provide additional pollution protection:

- Cover storage areas for fruits and vegetables. See BMPs S.4 and S.5 in Chapter 5 for more details on coverings.
- A containment curb, dike, or berm can be used to prevent offsite runoff from storage or processing areas and also to prevent stormwater runon. See BMP S.7 in Chapter 5 for more information. Note that runon prevention is required for processing areas, but not for storage areas.
- ~~The storage area should be swept or shoveled daily to collect dirt and fruit and vegetable fragments for proper disposal. Keep hosing to a minimum.~~
- Use an approved or equivalent treatment BMPs for any runoff (see Volume V).

S.14 Goose Waste

Description of Pollutant Sources: Goose waste deposited near water or in water can contribute nutrients and algae growth. Goose feces may contain pathogens and contribute to the spread of diseases. Swimmers itch (schistosome or cercarial dermatitis) is caused by a parasite that can be spread by goose droppings but does not mature or reproduce in humans.

Pollutant Control Approach: To help decrease geese pollution to water sources, remove waste periodically and use deterrent management practices.

Required BMPs

This BMP is for areas of chronic accumulation of goose waste that impact stormwater systems.

- If possible, pick up goose waste using shovels, brooms, rakes, power sweepers, and trash cans. Properly dispose of goose waste in the garbage.
- Do not blow, sweep, or wash goose waste into waterways or storm drain systems.
- Regularly clean goose waste from areas of chronic deposition where deterrence measures are impractical.
- Do not feed wild geese or any other wild animals.
- In recreational areas, post signs discouraging the feeding of geese and other wild animals.

Suggested BMPs

- Change the habitat from goose-friendly to goose-resistant. Reduce lawn areas and increase the height of shoreline vegetation (tall grass, shrubs), as geese are reluctant to walk through tall vegetation.
- Create a natural geese barrier. 20- to 100-feet of herbaceous vegetation

at least 3-feet in height to discourage geese . A narrow, winding path through the plantings will allow for beach access, while preventing geese from having a direct line of sight through the planted area.

- Make bank slopes steeper than 4:1 to discourage geese by preventing a clear view of the bank top and potential predators. Or, separate the beach from the grass with a few steep steps, which makes the ascent too difficult for most geese.

- Narrow ponds to limit takeoff and landing opportunities.

- Where space is limited, use one or two rows of shrub plantings combined with a fence. Fences can be made from woven wire, poultry netting, plastic netting, plastic snow fencing, monofilament line, or electrified wire. Fences should be at least 24-inches tall (3-feet may be better), firmly constructed, and installed to prevent the geese from walking around the ends. Lower openings should be no larger than 4-inches from the ground to prevent goslings from walking under or through the fence.

- Construct a grid of wire or line above the water's surface to prevent geese from flying into a pond that they have been accustomed to using. The grid should be one to two feet above the water surface but may be taller if humans need access to the area under the grid. There should be no more than five feet of space between gridlines. To prevent geese from walking under the grid, install a perimeter fence. Regularly monitor the grid for holes, trapped wildlife, and sagging.

- Canada geese are protected under federal and state law and a hunting license and open season are required to hunt them. Where lethal control of Canada geese is necessary outside of hunting seasons, it should be carried out only after the above nonlethal control techniques have proven unsuccessful and only under permits issued by the U.S. Fish and Wildlife Service. Currently, the only agency permitted for lethal removal is the U.S. Department of Agriculture's Wildlife Services. Lethal control techniques include legal hunting, shooting out of season by permit, egg destruction by permit, and euthanasia of adults by government officials.

- Scare geese away when they are around. Geese often learn quickly to ignore scare devices that are not a real physical danger. Vary the use, timing, and location of tactics. Take advantage of geese being fearful of new objects. Examples of harassment and scare tactics:

    - **Dog patrols:** When directed by a handler, dogs are the method of choice for large open areas. Results are often immediate. After an aggressive initial use (several times a day for one or

two weeks), geese get tired of being harassed and will use adjacent areas instead. A dog can be tethered to a long lead (which may require relocating the dog and tether frequently to cover more area), be allowed to chase and retrieve a decoy thrown over a large flock of geese or be periodically released to chase the birds (if this is not against leash laws).

- **Eyespot Balloons:** Large, helium-filled balloons with large eye-like images. Tether balloons on a 20- to 40-foot monofilament line attached to a stake or heavy object. Locate balloons where they will not tangle with trees or utility lines.
- **Flags and Streamers:** Simple flags from plastic mounted on tall poles or mylar tape to make 6-foot streamers attached to the top of 8-foot long poles. Flags and streamers work best in areas where there is steady wind.
- **Scarecrows:** Effective in areas where geese view humans as dangerous predators. For maximum effect, the arms and legs should move in the wind, use bright colors, and large eyes. Large, blowup toy snakes are reported to work as a type of scarecrow.
- **Noisemakers:** Devices that make a loud bang such as propane cannons, blanks, and whistle bombs can scare geese. Making the noise as soon as geese arrive and persistence are the keys to success when using these devices. Consult noise ordinances and other permitting authorities (such as the local police department) before using.
- **Lasers:** Relatively low-power, long wavelength lasers provide an effective means of dispersing geese under low light conditions. The birds view the light as a physical object or predator coming toward them and generally fly away to escape. Never aim lasers in the direction of people, roads, or aircrafts.

- Geese's favorite food is new shoots of grass. Low lying grass also allows easy access to the water for protection from predators. Let grass grow to six inches or taller. Stop fertilizing and watering the lawn to reduce the palatability of the lawn.
- Minimize open sight lines for geese to less than 30-feet.
- Plant shrubs or trees along ponds to limit takeoff and landing opportunities.

Refer to: <http://www.humanesociety.org/assets/pdfs/wild_neighbors/canada_goose_guide.pdf> and <https://wdfw.wa.gov/species-habitats/species/branta-canadensis> for additional information.