2013 Floods – Guidance: Management and Disposal of Flood Debris

In response to the flood disaster, the Colorado Department of Public Health and Environment ("Department") is providing guidance and regulatory relief for the management and disposal of damaged or destroyed structures, vegetation debris, vehicles, spoiled food, household chemicals, dead animals, septage and sewage. This guidance only applies to flood debris resulting from the September 2013 floods.

Flooding can create debris and waste that warrant rapid response. Prompt cleanup and appropriate management of flood debris enables residents to move forward with their lives while minimizing potential public health and environmental issues that may be exacerbated the longer the debris is left in place. For instance, prompt cleanup can prevent nuisance conditions, odors, disease, and water contamination from runoff. To enable timely cleanup of flood debris items referenced above, the Department will temporarily not enforce certain regulatory requirements, as described below.

The Department’s choice not to apply certain regulatory requirements extends only to flood debris and sediment from the September 2013 floods; the Department will entertain requests for similar treatment in later years if necessary.

The Department is providing a list of landfills (http://goo.gl/maps/l3ksY) that will accept flood debris and waste from the recent flooding. Roll-offs can be taken to any one of the landfills on the list. Please call the landfill contact before transporting loads to alert the landfill that the material is coming and confirm it will accept the waste.

Handling and Disposal of Flood Debris:

A) Vegetation

The Department has determined it will not enforce the following regulatory requirements for vegetative debris:

1) Vegetation debris and sediment laying in-place following the flood may be managed by the property owner or the property owner’s contractor in accordance with local (city and county) rules and ordinances. The Department will not enforce solid waste requirements so long as the management does not create a nuisance or violate the Water Quality Control Division’s stormwater regulations.

2) Vegetation debris, and sediment transported by stormwater (rain or other forms of precipitation) into ditches, natural or manmade ponds or other low lying areas may
be removed to preserve the function of these structures. Vegetative debris and sediment wastes, once removed or stockpiled, must be managed in accordance with local (city or county) rules and ordinances. The Department will not enforce solid waste requirements so long as the waste material does not create a nuisance.

3) Vegetation debris should be handled and stored in a manner to prevent a release to storm drains, streams, ditches, and other surface waters. Waste should be stored in upland areas away from concentrated stormwater flows, and in a manner that prevents erosion and transport of materials.

B) Structures
Damaged and destroyed structures may be managed by the property owner or property owner’s contractor. Structures that are partially damaged, but safe to enter, can manage household hazardous waste (HHW) (i.e., paints, car batteries, pesticides, etc.) at the County or municipal HHW facility. Structures should be handled in a manner that will minimize potential exposures to any unknown hazardous materials that could potentially be present in a damaged structure or debris from structures. Older structures have a greater potential to contain asbestos and lead. Some inert debris (nonleachable) and sediment may be disposed of onsite (as described below). If you wish to bring debris from a damaged structure to a landfill, please contact the facility to alert them that flood debris is coming and confirm the landfill will accept the waste.

C) Vehicles
Fuel, oil, hydraulic fluid, and other automotive fluids from vehicles must be removed and managed appropriately prior to recycling or disposal of the vehicle at a landfill.

D) Food Waste
Spoiled, contaminated, or expired food managed by residents and businesses may be disposed at a landfill or taken to a composting operation approved to accept food waste. Food waste may be managed by the property owner or the property owner’s contractor in accordance with local (city and county) rules and ordinances. The Department will not enforce solid waste requirements so long as the management: 1) does not create a nuisance, 2) does not violate the Water Quality Control Division’s stormwater regulations and 3) is done in accordance with the following criteria:
   1) No food waste shall be placed in any body of water or seasonal creek or pond;
   2) Surface water should be diverted from the pit utilizing an upgradient diversion berm or other method;
   3) All food waste must be buried at least 150 feet down gradient from any groundwater supply source;
   4) In no case should the bottom of the burial pit be closer than five feet to the groundwater table.
   5) The food waste burial is done in accordance with local (city and county) rules and ordinances.

E) Household Chemicals
Household Chemicals (i.e., Household Hazardous Waste (HHW)) can be taken to a county or municipal HHW facility for recycling or potentially reuse. Check with your local environmental health representative to see if a temporary HHW collection site has been established. If HHW
cannot safely be removed from other flood debris or no recycling option is available, HHW can be taken to a landfill for disposal.

F) Dead Animals
The property owner must follow the Emergency Livestock Disposal Policy issued by CDPHE. If the homeowner cannot meet the requirements of the preapproved plan defined in the Policy, they will need to submit a disposal plan to the Department and local governing body. Alternatively, dead animals may be taken to a landfill for final disposal.

G) Septage and Sewage
Many waste water treatment plants were impacted by the flooding. In some cases flood waters inundated domestic wastewater treatment plants resulting in untreated and partially treated sewage leaving the plant and being carried away by flood waters. Likewise, a number of septic systems may have been destroyed or compromised from the flooding. If during cleanup sewage or septage is encountered comingled with other flood debris, the waste does not need to be separated, but can be disposed at a landfill mixed with other flood debris. Property owners and contractors should take precautions to prevent exposure when working in or around setpage and sewage. Care should be taken to minimize or eliminate contact with the contaminated materials and to not spread the septage or sewage.

On Site Disposal of Flood Debris:
The Solid Waste Act and Regulations allow any person, other than governmental entities, to dispose of their own waste on their own property provided the Department approves an engineering and operations plan that complies with the landfill: 1) location restrictions and standards; 2) design requirements; and 3) operating criteria. The landfill design and operating requirements vary depending on the site setting and type of material being disposed. We typically encounter three major types of disaster debris including: 1) inert (non-leachable and/or non-reactive) materials; 2) vegetation; and 3) non-inert (leachable and/or reactive) materials. All of these materials, if managed appropriately, should not cause an unsafe impact to people, wildlife, groundwater, surface water or air. The inert materials are the easiest to manage because they are not mobile and will not present a significant risk to human health or the environment. Inert materials include earthen materials, hardened concrete, cured asphalt, masonry, some metals and other approved materials. Inert materials may be disposed of on property with the following provisions:

  1) The disposal of inert waste on the property must be approved by the local government agency;
  2) The inert waste may be disposed of in a basement if present or in a hole in the ground (the base of the hole should be at least 5 feet above groundwater);
  3) The materials need to be covered with at least two feet of clean fill;
  4) The cover needs to be sloped to achieve positive drainage and prevent ponding;
  5) The cover should be revegetated to prevent erosion of the cover and surrounding materials; and
  6) A notice of the fill location should be placed in the property deed.

Non-inert materials may be disposed of on one’s own property, but will require an engineering design and operation plan that is submitted to the Department for review and approval prior to implementation. Disposal of non-inert materials or materials that present a risk to human health (including asbestos) will also require a post-closure care plan,
financial assurance and an environmental covenant. All on site disposal activities must be in accordance with local (city and county) rules and ordinances.

**Temporary Stockpile Location for Flood Debris**
The department is working with local agencies that choose to establish temporary stockpile locations for flood debris. Certain waste and flood debris may not be accepted at temporary locations because of the high threat of vectors and other nuisance conditions. Please check with your local health department representatives for locations and acceptable waste and flood debris.

**Asbestos**
If asbestos-containing materials are known to be present in flood debris in amounts greater than regulatory trigger levels, they must be removed in accordance with Colorado Air Quality Control Commission Regulation No. 8, Part B. Trigger levels for single family residential dwellings are 50 linear feet on pipes, 32 square feet on other surfaces or the volume equivalent of a 55-gallon drum. If this is not known, the material may handled as non-asbestos flood debris and disposed of at a permitted landfill.

A state-issued demolition permit is not required to remove the debris from buildings that have been partially or completely destroyed. However, flood debris may contain unknown substances, including chemicals. People should take care when handling any materials from buildings that either are partially damaged by the floods (i.e., salvageable building materials remaining) or completely destroyed (i.e., only debris remains). All debris should be handled in a manner that will minimize potential exposure to both the people handling the material and those in the surrounding area. The heavy rains and flooding will presumably have resulted in debris that is thoroughly wetted, which should minimize dust and related potential risks from airborne materials during cleanup (including, potentially, asbestos fibers).

The Department will not require flood soaked or thoroughly wetted asbestos containing materials transported for immediate disposal at the landfills to be wrapped with plastic. Roll-offs and trucks need to be covered to prevent: 1) the materials from drying out and 2) the material from blowing out of the vehicles between the point of pick-up and disposal. If the material is thoroughly wetted from flood waters/mud, then potential airborne contaminants should be sufficiently contained for short haul and immediate disposal purposes. In addition, handling flood soaked and muddy materials is hard enough; adding plastic wrapping could increase personal injury risk and hamper timely and effective cleanup.

The risks from potential asbestos fibers and other airborne contaminants could increase as the debris dries out. If the material is not thoroughly wetted, then, if possible, the debris should be packaged inside a 6-mil plastic sheeting liner. This is done to contain the debris as it is transported from the site to the landfill.

Persons engaged in cleaning activities may wish to wear respiratory protection, particularly if the cleanup occurs after materials have dried out. A disposable particulate respirator that has been certified by the National Institute for Occupational Safety and Health (NIOSH) to ensure that it can filter out potentially harmful particles, will offer some protection if properly worn. Commonly available one-strap paper dust masks, which are designed to keep larger particles...
out of the nose and mouth, typically offer little protection. The same is true for bandanas (wet or dry) tied over the mouth and nose. Filter material rated “N95” will capture at least 95% of very small particles, while filter material rated “P100” filters out at least 99.97%. Please seek advice from your physician regarding use of respirators if you have pre-existing heart and lung conditions. Other personal protection may include protective clothing and gloves to avoid skin contact and eye protection.

Metal debris must be washed clean of mud/debris prior to recycling. Concrete debris (foundations) removed from a site must be disposed of at an approved landfill. If you wish to recycle this material, it must be inspected by a certified asbestos building inspector and found to be free of asbestos-containing materials prior to recycling.

Lists of and contact information for landfills that will accept flood debris known to contain asbestos-containing material can be found on the Air Pollution Control Division’s Asbestos Program website: [www.colorado.gov/cdphe/asbestos](http://www.colorado.gov/cdphe/asbestos).

If you need additional information, please contact Charles Johnson at the department’s Solid Waste Unit at 303-692-3348 or [charlesg.johnson@state.co.us](mailto:charlesg.johnson@state.co.us), or the Asbestos Unit at 303-692-3100 or [cdphe.asbestos@state.co.us](mailto:cdphe.asbestos@state.co.us).

Facilities covered by Water Quality Control Division CDPS stormwater discharge permits and municipalities with MS4 permits must ensure practices are in accordance with the facility Stormwater Management Plan or MS4 CDPS Stormwater Management Program, respectively. For more information on Water Quality Control Division requirements, please contact Nathan Moore at 303-692-3555 or [Nathan.Moore@state.co.us](mailto:Nathan.Moore@state.co.us).

The following websites provide additional references and information:
- Colorado Counties Inc. - [http://www.ccionline.org/](http://www.ccionline.org/) (site provides county contact information)
- Solid Waste Facilities List - [http://www.cdphe.state.co.us/hm/lflist.pdf](http://www.cdphe.state.co.us/hm/lflist.pdf)
- Solid Waste Permitters Map - [http://www.cdphe.state.co.us/hm/sw/permittingmap.pdf](http://www.cdphe.state.co.us/hm/sw/permittingmap.pdf)
- Solid Waste Inspectors Map - [http://www.cdphe.state.co.us/hm/sw/inspectormap.pdf](http://www.cdphe.state.co.us/hm/sw/inspectormap.pdf)
- Landfill Disposal Location Map (shows nearest landfill location/information to current fires) - [https://maps.google.com/maps/ms?msid=216854535921100171945.0004c36169c9023be7678&rmsa=0](https://maps.google.com/maps/ms?msid=216854535921100171945.0004c36169c9023be7678&rmsa=0)