

**Significant impacts to streams, drinking water supplies and wastewater treatment facilities are possible when fire fighting activities are in close proximity.**

## How Can Surface Waters Become Impacted By Fire Fighting?

- Chemicals used to fight the fire can enter the water body, changing water chemistry.
- Pollutants mobilized by fighting the fire can be transported into streams and lakes, as water will pick up anything in its path.
- The post-fire landscape can impact water quality due to an increase in erosion, turbidity, and sedimentation.
- Terrestrial and aquatic invasive species can be transported during firefighting operations via vehicles and equipment.
- Brush fires near a water body or tributary can cause immediate impacts due to possible direct contact of firefighting vehicles or destruction of wetland areas.
- **If a brush fire has occurred near a drinking water supply, please notify the drinking water supplier as soon as possible.**

**In certain instances, it might be necessary for a water supplier to monitor tributary or reservoir water quality after a fire has occurred.**

Ideally, the only thing that should enter a storm drain is rain water – clean, uncontaminated rain water.

In many cases, firefighting materials utilize storm drain systems during operations.

Knowing where storm drains are located and, more importantly, where they flow to is an important step in ensuring the quality of local waterways.

Best Management Practices and good housekeeping can also significantly reduce the possibility of fire fighting activities from negatively impacting water resources and the environment.



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## Clean Stream Tips for the Firefighting Community

*A body of water  
is only a storm  
drain away.*



Public safety is the first priority of firefighting, but water quality can be significantly impacted during these operations.

## How Can Your Fire Department Help Protect Waterways?

- Be aware of and protect all storm drain inlets and streams located near a fire site.
- Store fire suppression chemicals and other potentially hazardous materials properly at the Fire Station and use secondary containment measures.
- Drain fire hoses to a flat surface or where the water can soak into the ground rather than enter into a storm drain.



Firefighting foam in stream

- When washing trucks, utilize biodegradable soap. **Keep vehicle washwater from entering into storm drains; this is a violation of a municipal MS4 permit!**
- Ensure that speedi-dry or other absorbents are properly cleaned up and disposed of post incident.
- If applicable, flush hydrants after street sweeping has been completed, or hand sweep road gutter from hydrant to down gradient storm drain before flushing.
- Have a Department Mitigation Plan in place for motor vehicle accidents to contain any fluids.

## The EPA MS4 Program

The storm drain system in every U.S. city and town (with the exception of some smaller communities) is regulated by the Environmental Protection Agency's (EPA) Municipal Separate Storm Sewer System (MS4) permit program. The EPA, by issuing this permit, is giving approval for a municipality to discharge stormwater to surface waters with the understanding that only clean stormwater will be released. The community then becomes responsible for ensuring that nothing enters the system that can pollute its lakes, rivers, and streams.

This permit also includes the prohibition of direct discharges (such as dumping hazardous materials like paint) into the storm drain system.

The MS4 permit authorizes discharges from fire fighting activities during emergency situations as allowable non-stormwater discharges, unless identified by the EPA as significant sources of pollutants to the Waters of the United States.

**Routine truck and equipment washing, however, DOES NOT fall under the MS4 firefighting exemption. Washwater must be kept from entering storm drains.**



**Water quality in streams, lakes, ponds, and reservoirs can be affected as a result of pollutants mobilized by the fire and chemicals used to fight the fire.**

## Firefighting Foams

Firefighting foams are an essential and standard practice for fighting fires, but they can have a negative effect on water quality when entering into streams or surface waters, either directly or via storm drain systems.

- Foams contain surfactants, which are chemical compounds that lower the surface tension of a liquid allowing an increase in contact between the liquid and another substance.
- Most of the ingredients in foams are regulated at some point in their production. Foams may produce significant and immediate impacts:
  - Foams can change the surface water chemistry and remove all oxygen, causing fish and plant kills.
  - Foams can emulsify oil on waterfowl, causing the birds to lose insulation and buoyancy in the water.
  - At a drinking water supply, changes in water chemistry can impact treatment and disinfection.
- Manufacturers are working on new products that will retain the same fire suppression capabilities as existing agents while meeting federal stewardship goals.

**“Environmentally Friendly” foams do not necessarily eliminate negative water quality impacts.**