

## Manufactured Homes, Recreational Vehicles, and Trailers in the Floodplain



***Manufactured home** means a structure, transportable in one or more sections, that is built on a permanent chassis and designed to be used with or without a permanent foundation when connected to the required utilities. This includes older mobile homes that pre-date current manufactured home standards.*

### **Manufactured Homes**

Manufactured homes must meet the same standards as any other residential building for elevation of the first floor, use of flood damage-resistant materials below the flood protection level, and elevation or protection of utilities. The best way to meet this requirement is to elevate the bottom of the manufactured home chassis to the flood protection elevation (see *Floodplain Facts #4: Residential Structures in the Floodplain*).

***Replacement of an existing manufactured home** with a new structure constitutes a substantial improvement, which means that the entire structure must comply with current elevation, construction, and anchoring requirements.*

***Manufactured homes must be elevated on a permanent foundation and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.*** A “permanent foundation” means more than a stack of concrete blocks. It should include a below-grade footing that is capable of resisting overturning, deep enough to account for frost depth and expected scour, and sized appropriately for the site’s soil bearing capacity. “Adequately anchored” means a system of ties, anchors, and anchoring equipment that will withstand flood and wind forces and will work in saturated soil conditions. Usually this means over-the-top or frame tie-downs in addition to standard connections to the foundation.

If a solid perimeter foundation wall (or rigid skirting that is attached to the frame or foundation) encloses space below a manufactured home, openings are required to relieve hydrostatic loads and minimize the potential for damage to the home and its supporting foundation system (see *Floodplain Facts #8: Enclosed Areas Below the Flood Protection Level*). Flexible skirting or rigid skirting that is not attached to the frame or foundation does not trigger the requirement for flood vent openings, provided that the skirting does not provide structural support and will collapse under water loads without causing structural damage to the elevated home or the foundation.

**Recreational vehicle or trailer** means a vehicle that is: (1) built on a single chassis; (2) 400 square feet or less when measured at the largest horizontal projections; (3) designed to be self-propelled or permanently towable by a light duty truck; and (4) not designed primarily for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

### Recreational Vehicles and Trailers

A recreational vehicle or trailer located in the regulated floodplain must:

- Meet the elevation and anchoring requirements for manufactured homes; OR
- Be on the site for fewer than 180 consecutive days; OR
- Be fully licensed and ready for highway use (i.e. on its wheels or jacking system, attached to the site only by quick disconnect type utilities, and with no permanently attached additions).



### Recreational Vehicle and Trailer Parks

If a campground or recreational vehicle park is located in the floodplain, it should have an emergency plan that specifies how flood warnings will be received and how vehicles, trailers, and occupants will be safely evacuated in the event of a flood. If there will not be sufficient warning time to ensure that recreational vehicles and trailers will be removed prior to flooding, they should either be located outside of the floodplain or installed in a manner that meets the elevation and anchoring requirements for manufactured homes.

### Additional Resources

- *Manufactured Home Installation in Flood Hazard Areas*, FEMA 85 (1985), available at <http://www.fema.gov/hazard/flood/pubs/lib85.shtm>. This manual provides technical guidance on installation methods designed to make manufactured homes more resistant to flood and wind forces. It is currently being revised.