

## HAZARDOUS MATERIALS PROGRAM ENVIRONMENTAL FACT SHEET

## Requirements for Installing Aboveground Storage Tanks (ASTs) in Flood Prone Areas

Flooding is the most common natural disaster that occurs in Vermont. Many homes that are situated in flood prone areas own aboveground storage tanks (ASTs), and many of these ASTs are installed in basements. Releases of heating fuel in flooded basements are especially challenging to clean up and incredibly disruptive to the lives of the property residents. In 2013, the Agency of Natural Resources (ANR) amended the AST Rules to include minimum standards for the installation of ASTs in flood prone areas; the requirements were expanded when the AST Rules were revised in 2017 and again in 2024. Effective August 1, 2024, the [2024 AST Rules](#) (AST Rules) have incorporated these flood prone area installation standards into tank inspection requirements.

### What ASTs do the flood prone area installation standards apply to?

- *New ASTs* installed in flood prone areas must be compliant with the installation standards specific to flood prone areas. All new tanks installed in flood prone areas that are not compliant with these standards will be prohibited from receiving fuel deliveries.
- *Existing ASTs* located in flood prone areas must be compliant with the flood prone area installation standards by July 1, 2030.

### What is a flood prone area?

The AST Rules define a “flood prone area” as “any area that is susceptible to flooding by any source and is adjacent to lakes, streams and rivers that are prone to recurring floodings.” Flood prone area has the same meaning as “flood hazard area” in 10 V.S.A. § 752, which relies on the federal definition of “area of special flood hazard” (44 CFR § 59.1). The Federal Emergency Management Agency (FEMA) defines area of special flood hazard as “the land in the flood plain within a community that is subject to a 1% or greater chance of flooding in any given year” (i.e., the “100-year” flood plain). Tank installers must verify whether a tank owner’s property falls within an area of special flood hazard. For more information, please refer to the [Making a Flood Prone Area Determination Guidance](#).

### What are the requirements for installing ASTs in flood prone areas?

Below is a summary of the standards established in § 9-304 of the AST Rules. Be aware that ASTs in flood prone areas are also held to the general requirements of § 9-302; and the design, installation, and alteration standards of § 9-303. Please refer to the AST Rules for specific requirements

#### Tanks Located Inside a Structure (this includes all basement tanks)

- Tank vent pipes must be of sufficient length to extend above the level of a projected flood. Extending a vent pipe at least five feet above ground level will typically meet this requirement.
- Tanks must be anchored to a concrete pad or an alternative foundation (that has been

approved by ANR) through one of the following methods:

- For tanks with pipe legs on a foundation, foot flanges with threaded ends must be connected to compatible pipe ends. Each foot flange must be secured to the supporting surface with concrete bolts or screws.
- For tanks with saddles or pipe legs for new surfaces in combination with hold-down straps, concrete anchors with a means for attaching the strap end must be cast into the supporting surface.
- For tanks with saddles or pipe legs for undersized pads in combination with hold-down straps, earth augers with a means for attaching the strap end must be installed under the concrete slab.
- Any other method recommended by the tank manufacturer or installer that is based on the tank installation type, supporting surface, and other appropriate considerations.
- Hold-down straps used with a concrete anchor or earth auger method must have a means to connect to fixed attachment points and a means to tighten the strap (e.g., a turnbuckle).

### Tanks Located Outside a Structure

New tanks located outside a structure must comply with the criteria for AST systems located inside a structure (listed above) to prevent product loss and damage to the tank system. An exemption from this requirement may be requested from ANR and will be approved on a case-by-case basis.

### **What about properties near smaller streams that do not fall in a special flood hazard area, or properties just outside of a special flood hazard area?**

If an AST is being installed close to a small stream where sufficient FEMA flood data is not available, ANR recommends considering a 50-foot setback. If a 50-foot setback cannot be achieved, ANR recommends that the AST be anchored. Properties that are located just outside of special flood hazard areas have an annual flooding probability of 0.2% (i.e., the “500-year” flood plain). While ASTs located in these areas are not required to be installed per the flood prone area standards, ANR recommends that installers consider these standards when discussing installation with the homeowner. If a home is located in an area that has been flooded within the past five years, ANR recommends following the flood prone area installation requirements.

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***For more information regarding installing ASTs in flood prone areas, or if you have other questions about ASTs, please contact:***

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<https://dec.vermont.gov/waste-management/storage-tanks/aboveground-storage-tanks-asts>