Elevate Fuel Tank

Overview

- If you have outdoor fuel tanks located below the Base Flood Elevation line, they are at risk during flood events.
- Elevate outdoor fuel tanks onto a platform in order to remove the tanks from the flood path and help avoid flood damages.
- Types of platforms:
  - Cantilevered platforms supported by the first-floor framing system
  - A platform or pedestal of the same foundation type as the structure (e.g., piles, brick, concrete)
  - Structural fill on top of the existing grade with a concrete slab on top
- Anchoring the fuel tank is recommended in order to secure it to the platform.
- Elevating the fuel tank onto a cantilevered platform is effective against coastal flooding and high velocity river flooding.
- If replacing the fuel tank and/or system, consider upgrading to a new, more efficient energy system such as solar or wind energy.
- The cost of elevating outdoor fuel tanks depends on the type of building and the location of the wiring/gas lines.
- If the fuel tank is not elevated and leaks, catches fire, or explodes during flooding, soil testing for contamination will be required. If contamination is found, there may be high remediation costs.
- This strategy will not protect the building from flooding, but it will help reduce flooding associated costs.

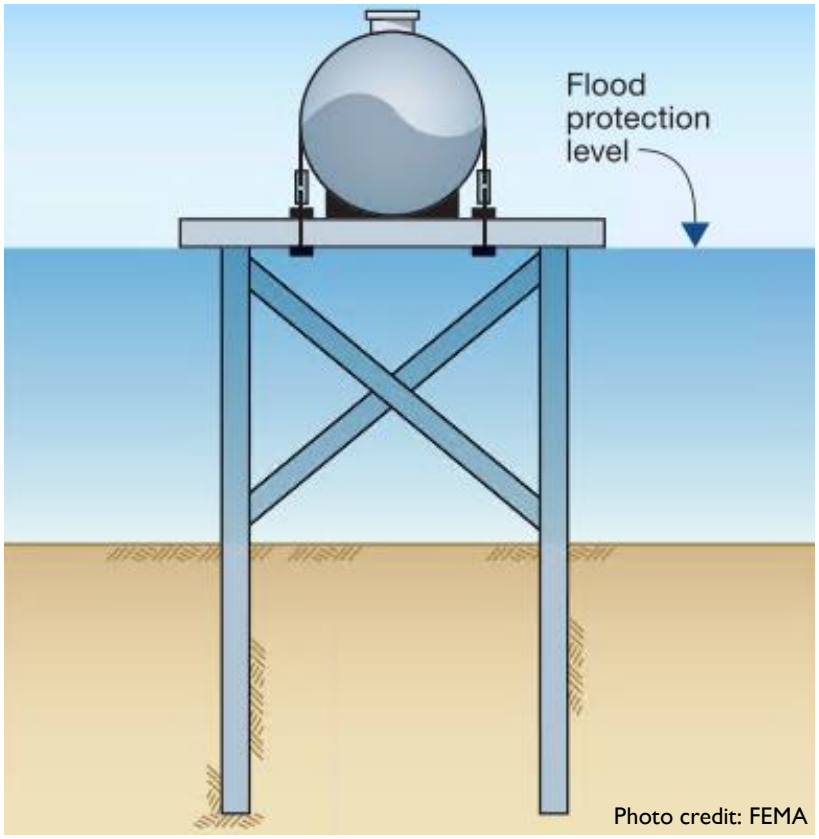

Photo credit: FEMA

Key Takeaways

During flood events, ground level fuel tanks can dislodge. Unsecured tanks could leak, catch on fire, and/or explode.

Additionally, the tank could become a floating projectile with the potential to cause extensive damage to the building or other properties.

To avoid hazardous conditions and reduce associated costs, fuel tanks can be elevated onto platforms.

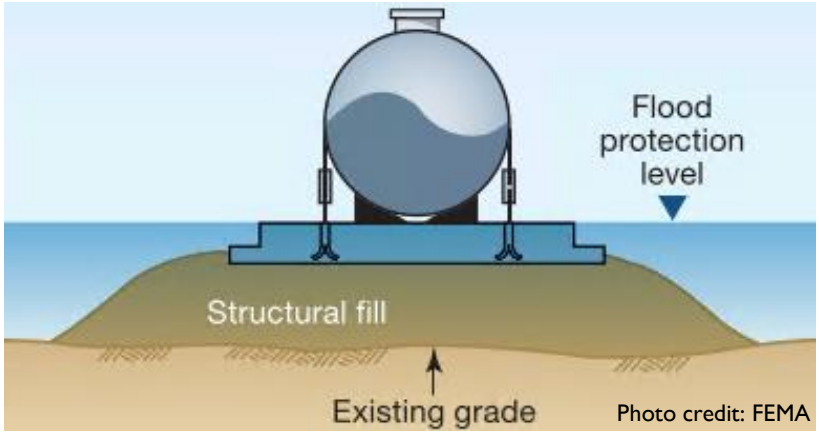

Photo credit: FEMA

I-ADAPT

Exterior Adaptation

Elevate Fuel Tank

Estimated Costs/Benefits

*U.S. dollars (2022), estimates are subject to change

Potential Costs			Potential Benefits	
Item		*Estimate*	*Post-Flooding Recovery Action*	*Estimate*
Cantilevered wooden platform (4'x5' platform)		$900-$1,000	Installation of new fuel tank	$800-$3,800
OR			Elevating new fuel tank	$1,060-$5,825
Ground platform or pedestal (4'x5' platform on 4' base)	Wood	$900-$1,000		
	Brick/ concrete	$400-$1,700	Gas line damage repair	$270-$760
	Piles	$1,800-$4,800	Soil testing for contamination	$300-$5,000
AND				
Re-route gas line		$60-$125	Soil remediation (10 cubic yards)	$200-$3,100
ESTIMATED TOTAL COST		**$460-$4,925+**	**ESTIMATED TOTAL SAVINGS**	**$2,630-$18,485+**

Potential Funding Sources

- USDA Single Family Housing Repair Loans & Grants Program

Additional Resources

- FEMA Protecting Building Utility Systems from Flood Damage
- FEMA Principles and Practices for the Design and Construction of Flood Resistant Building Utility Systems
- FEMA 9.0 Protecting Service Equipment

Resources can also be found at https://de.gov/iadapt

Expected Maintenance

- Regular fuel tank maintenance.
- Periodically ensure that there is no damage to platforms/pedestals.
- Follow manufacturer's guidance and associated permits regarding maintenance.

Additional Actions

- Elevate other outdoor utility equipment.

Permitting Agencies

Contacts for permitting requirements include but are not limited to the following:

- DNREC Coastal Construction Permit
- Your city and/or county government for local flood ordinances or regulations
- Your city and/or county government for building permits

Who to Contact

- Contractor
- Utility company

Technical definitions and more information are located on the I-ADAPT website: https://de.gov/iadapt.

For more information, contact DNREC's Division of Climate, Coastal and Energy at DNREC_IADAPT@Delaware.gov