

Move Utilities/Equipment to a Higher Floor

Overview

- If there is utility equipment in the basement or below the base flood elevation line, the equipment may be at risk during flood events.
- Indoor utility equipment includes but is not limited to the following:
 - Wiring and outlets
 - Hot water heaters
 - Furnace/evaporator coil
 - Boiler
 - Ductwork
 - Gas line
 - Fuel tanks
- When moving utility equipment, new outlets and/or gas lines may need to be installed.
- When choosing a new location for the utility equipment, try to keep them near the existing utilities to reduce costs.
- If replacing utility equipment, upgrade to more efficient equipment, if possible.
- The cost of moving indoor utility equipment depends on the type of building, the location of the utilities and availability of space for the relocation.
- When moving utility equipment to a higher floor, move important personal items as well.



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Key Takeaways

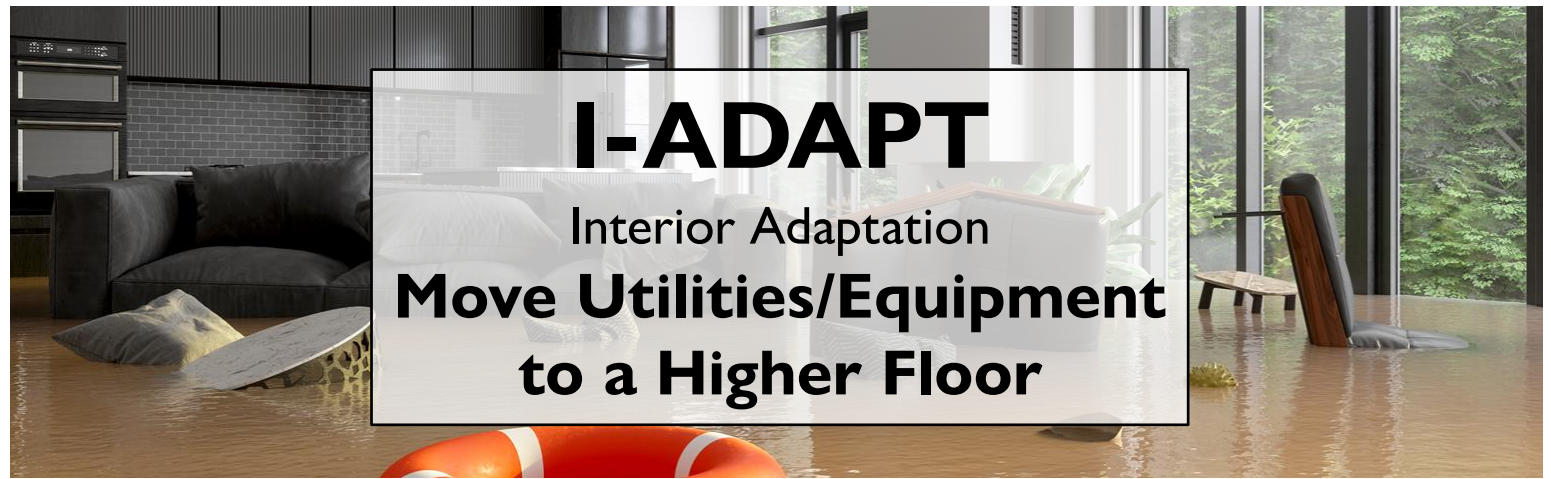
During flood events, flood water inside the building can damage or destroy indoor utility equipment.

Additionally, if indoor utility equipment gets dislodged, the equipment may float, which can cause more damage inside the structure.

To avoid replacement or repair costs related to flood damaged or destroyed indoor utility equipment, the equipment can be moved to a floor above the base flood elevation line.



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I-ADAPT

Interior Adaptation

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Estimated Costs/Benefits

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

Potential Costs		Potential Benefits	
Item	Estimate	Post-Flooding Recovery Action/Item	Estimate
Re-wire ground floor	\$1,400-\$4,800	New wiring	\$800-\$1,500
New hot water heater outlet (240-volt dedicated circuit, which serves only the water heater and no other appliances or devices)	\$300-\$800	New water heater	\$600-\$3,000
		New furnace/evaporator coil	\$2,600-\$10,000
New furnace outlet	\$75-\$485	New boiler	\$3,200-\$9,000
New boiler outlet	\$75-\$485	New ductwork	\$1,500-\$6,000
Re-route ductwork	\$1,400-\$5,500	New fuel tank	\$800-\$3,800
Re-route existing gas line(s)	\$200-\$750	Repair gas line	\$150-\$700
ESTIMATED TOTAL COST	\$3,450-\$12,820	ESTIMATED TOTAL SAVINGS	\$9,650-\$34,000

Additional Resources

- [FEMA Homeowner's Guide to Retrofitting \(Chapter 8\)](#)
- [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>

Potential Funding Sources

- [Flooding Mitigation Assistance \(FMA\) Grant](#)
- [Building Resilient Infrastructure and Communities \(BRIC\)](#)
- [DNREC Weatherization Assistance Program](#)

Expected Maintenance

- Regular utilities maintenance.

Additional Actions

- Other equipment, appliances and furniture may also need to be moved.

Permitting Agencies

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

- Your city and/or county government for local flood ordinances or regulations
- Your city and/or county government for building permits
- Electrical permit for installing new outlets

Who to Contact

- Plumber
- Electrician
- Contractor

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



This information is intended to be used for planning purposes. It is not intended to substitute or take precedence over the guidance of design engineers, contractors, utility companies or regulatory agencies.

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

