

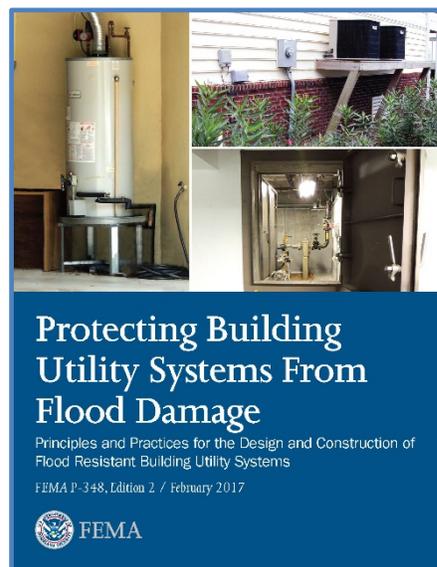
More on Protecting Building Utilities

The Building Science Branch of the Federal Emergency Management Agency (FEMA) has released the second edition of *Protecting Building Utility Systems from Flood Damage* (FEMA P-348). Like its predecessor, the updated publication illustrates the design and construction of utility systems that comply with the National Flood Insurance Program (NFIP) requirements for new or substantially improved residential and non-residential structures in floodprone areas.

Geared to local officials, building owners, architects, engineers, builders, contractors, and property managers, the guide can be especially useful when considering upgrades to or replacement of utility systems. It points out ways to meet floodplain management regulations and building codes. Even if NFIP compliance is not required, many building owners find that applying the mitigation measures described in this publication will not only reduce future flood damage, but also facilitate faster recovery after flooding.

The guide addresses mitigation measures for

- **Mechanical equipment and appliances:** heating and cooling equipment and appliances, exhaust systems, duct systems, boilers and water heaters, hydronic piping, and solar energy systems.
- **Electrical systems:** service equipment, feeders, panelboards, switches, fuse boxes, cabinets and control panels, outlets, receptacles, wiring, and emergency power generators.
- **Communications:** telephone, cable, fiber optic, internet, and wi-fi systems.
- **Plumbing:** water supply piping, water treatment systems, sanitary drainage, fixtures, laundry appliances, plumbing vents, septic tanks, fire protection systems, and pumps and equipment for pools and spas.
- **Water supply systems:** wells, water connections, and filtration and treatment systems.
- **Fuel systems:** fuel gas and oil supply pipes, oil tanks, propane tanks, meters, pumps, and gas and oil-fired equipment, and appliances.
- **Conveyances:** elevators, escalators, and lifts.



The guidebook has been updated to reflect the latest versions of the International Code Council codes and building standards. The sections on specific mitigation measures have been expanded. In addition, dozens of illustrations and tables help building owners determine the best mitigation option for a particular building type and condition. An appendix gives helpful information about how property owners can obtain FEMA assistance for flood retrofitting projects.

Download a copy of FEMA P-348 from the [FEMA website](https://www.fema.gov/media-library/assets/documents/3729) (available at <https://www.fema.gov/media-library/assets/documents/3729>).