

Mitigation Projects Considered Cost-Effective by FEMA for Water/Wastewater Utilities		
General Project Area	Project Type	Project Description
Sanitary and storm sewer systems	Access covers	When feasible, access covers can be elevated to the hydraulic grade line. There are a number of devices that prevent infiltration into access holes.
	Sewer lines	Repair, lining, or encasement of damaged sections to prevent infiltration or structural collapse.
	Pump stations	Equipment or controls in a pump station that are subject to damage from a 100-year flood can be elevated. Pump station buildings can be dry flood-proofed.
		Installation of camlocks, transfer switches, and electrical panels to facilitate the connection of portable emergency generators.
		If pumps and their attached motors are damaged by storm water inundation, replace them with submersible or inline pumps as appropriate.
		If pump station equipment is damaged as a result of inundation resulting from power failure, install switches, circuit isolation and quick connect capability to facilitate rapid connection of backup power.
Wastewater treatment plants	WWTP facilities	If pump station equipment is damaged as a result of inundation resulting from power failure, install switches, circuit isolation and quick connect capability to facilitate rapid connection of backup power.
		Elevation of equipment and controls that can be elevated easily.
		Dry or wet flood-proofing of buildings.
Potable water	Well systems	Reduction of infiltration and subsequent contamination of the aquifer. Methods include casing the well or raising the elevation of the well head.
		Elevation of controls, mechanical equipment, or electrical service associated with use of the well to protect them from flood damage.
	Raw water intakes	Buttressing to prevent damage from erosion, scour and flood debris.
	Water treatment plants	Elevation of equipment and controls that can be elevated easily.
		Dry flood-proofing.
Piping / Water mains	Underground pipelines	Installation of shut-off valves so that damaged sections of pipeline can be isolated.
	Flexible piping	Installation of flexible piping at pipe/conduit connections to equipment to accommodate expected movement in an earthquake.