

Disaster in Anytown—Detailed Damage Assessment

High winds from Hurricane John came ashore in Anytown at 7:45 a.m. on June 1, 2015. The winds caused a 100,000 gallon elevated water tank serving the municipal water system to collapse. Wind loads on the tank appear to have caused structural failure of the anchor bolts connecting the lower legs to the foundation. The tank was supported by four steel lattice-type legs, each anchored by a single anchor bolt to a concrete foundation.

In addition to the tank collapse, debris from the falling tank caused more infrastructure damage. Below is a listing of all damage.

1. Anchor bolts failed on four foundations
2. Latticework legs supporting elevated water tank collapsed—4 each
3. 100,000 gal, galvanized steel plate, 28 ft tall x 26 ft diameter, elevated water tank collapsed—1 each
4. 150 hp, 4,000 GPM pump and associated electrical power to supply water to the elevated tank damaged by falling debris—1 each
5. Cast iron piping and associated valves connected to water tank damaged by falling debris—200 linear feet (lf)
6. 100 kW diesel fueled emergency generator damaged by falling debris—1 each
7. 8 ft high, 6 gauge chain link fencing damaged by falling debris—30 lf
8. 5 ft high x 20 ft wide opening, double-wide swing gate damaged by falling debris—1 each