

Water Distribution System Design Competition

Sponsor

Tennessee Water Resources Research Center (TNWRRC)

Description

Students will work in small teams (1–4 members) to design and build a small network of pipes that delivers water from an elevated reservoir to three storage containers. The objective is to design a network that distributes water equally among the containers. The team whose network fills the containers most evenly wins the competition.

Rules

1. Students must design and build a pipe network that meets the following requirements:
 - a. The network must connect the main water reservoir to all three storage containers at the designated connection points. These locations will remain fixed throughout the competition.
 - b. Each design must use at least 16 pipes. All pipes must be connected to the network at junctions using the fittings provided.
 - c. No pipe may terminate in a dead end.
2. Booth staff will test and score each design. The score will be calculated by adding the differences in water mass between the container with the greatest amount of water and the two other containers. One penalty point will be assessed for each gram of difference. The team with the lowest score wins the competition.
3. After its initial run, each team may modify its design and complete one additional trial. The team's lower score from the two trials will be used for the competition.