Soon after Hurricane Harvey dissipated from the Gulf Coast, Hurricane Irma began to move through the Carribean, passing near Puerto Rico, and headed to the coast of Florida. As part of preparations, the Federal Emergency Management Agency (FEMA) began activating members of the Incident Support Team (IST), with members of TX-TF1 activating on September 4, 2017, in support of the impending impact of Irma. TX-TF1 members deployed and staged in Puerto Rico and Florida.

On September 6, the eye of Hurricane Irma passed just north of San Juan, Puerto Rico, and caused waves of 30 feet in height and 111 mile per hour gust of winds. The storm caused 4 deaths in Puerto Rico.

A few days later, FEMA activated the IST Central Division Cache on September 8, 2017. Personnel prepared the cache for travel by flight, and the following day, the cache and support personnel departed JRB Fort Worth via C-17 towards San Juan, Puerto Rico.

Hurricane Irma continued northwest, made landfall in Florida as a Category 4 hurricane on September 10, and again as a Category 3 hurricane at Marco Island. The storm caused many residents to lose power, damaged many homes, and is responsible for at least 82 deaths in Florida. Irma was the 1st tropical cyclone to impact all 67 counties in Florida.

The IST and the IST Cache remained deployed assisting their assigned jurisdiction in the aftermath of Irma, and would remain deployed to support operations for incoming Hurricane Maria. Overall, the Hurricane Irma deployment lasted a total of 14 days, with most members remaining deployed at the end of the event on September 17.