

Texas EGRT: A Grass Roots Concept of GIS for Emergency Response

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How EGRT Developed in Texas for Emergency Response

- ☆ The Texas Emergency GIS Response Team, or EGRT, is a rapidly deployable GIS resource built to support disaster response and recovery efforts across Texas. The concept for EGRT was developed in 2006 for the North East Fire Department Association (NEFDA) which covered 14 cities in northeast Tarrant County with operational agreements to share equipment and resources. A GIS team was formed and given access to the NEFDA Mobile Command Post, and since 2006, has responded to numerous incidents including flooding, a chemical spill, and several apartment fires. The team has also been deployed to Galveston for Hurricane Ike and the Possum Kingdom grass fires.
- ☆ Eight years later, the concept has expanded to cover the entire State of Texas for emergency training and response.
- ☆ On Oct. 3rd, 2014, the City of Red Oak, TX designed and executed a full-scale drill of a chemical spill from a rail car. Texas EGRT (Tx EGRT) responded, producing maps of the spill plume area, evacuated areas, closed roads, shelter sites, and school sites. This event was a successful test of response time and use of templates and datasets.
- ☆ On Oct. 12-18, 2014, Tx EGRT was called into Disaster District 4 Garland Emergency Operations Center (EOC) to provide mapping support for the Ebola outbreak in Dallas, Texas. Fifteen different members responded, producing maps of cleanup sites, hazmat material routes, and locations of monitored contacts over a period of 8 days. This event tested the Team's ability to staff the EOC over a week's time and respond in a real situation.

Sunnyvale-Garland-Rowlett Tornado
December 26, 2015
Start 6:45 PM CST Sunnyvale/Dallas
End 7:02 PM CST Lake Ray Hubbard/Rockwall



Photo courtesy of Steve Zheng



Photo courtesy of Olesya Powers



Photo courtesy of https://dallasnews.imgix.net/NMC_27TORNADOFOL027GM_47948392.jpg

In December 2015, Olesya Powers was extremely lucky when a tornado hit her neighborhood in Sunnyvale, but left her own home basically untouched. Instead, it targeted several of the homes in her neighborhood, destroying structures and ultimately causing 13 fatalities.

After emergency services arrived at the scene, the residents were told to evacuate the area. Olesya evacuated to her in-laws home. The following morning, she received an EGRT activation call and she headed to the Emergency Operations Center set up at Rowlett Fire Station #1 in Rowlett, Tx.

Tx EGRT Response to the Sunnyvale Tornado

- ☆ On Dec. 26, 2015, the team responded to a severe weather event in north Texas near Sunnyvale. Twelve tornadoes were confirmed, 3 were rated EF-2 or greater with the most intense, damage occurring with the Sunnyvale-Garland-Rowlett tornado. Thirteen fatalities occurred.
- ☆ The next morning, the Tx EGRT team was activated, bringing in team members from the surrounding area to man the EGRT Mapping Unit in the EOC, including Olesya Powers, a Sunnyvale resident. She had been trained and was listed on the On-Call List for emergency response.
- ☆ Olesya said that when she arrived, she was a little surprised by the chaos as emergency personnel, who had not slept since the day before when the tornado event began, moved quickly around the room obtaining situation information for the personnel on duty.
- ☆ She took her place designated as the "EGRT Mapping Unit" and began helping the responders obtain a picture of the situation. She offered advice to field personnel on how set up the GPS units to record the damage and assisted with setting up the Commons Operational Picture map on the wall of the EOC that showed all personnel the location of the incident and the surrounding neighborhood. Once decisions on how to respond began being made, individual Incident Action Plan maps were created to illustrate the location of the certain streets and houses that were impacted and showed the best way to enter the neighborhood safely.



EOC Personnel Discussing Incident
 Photo courtesy of David Allen



EOC Personnel (Marty Penny and Josh Roberts) Discussing Incident
 Photo courtesy of David Allen



Tom Konzel, David Allen, Director of Tx EGRT, and Olesya Powers
 Photo courtesy of David Allen



David Allen, Director of Tx EGRT creating maps with Response Team member, Wenyuan Yin
 Photo courtesy of David Allen

EGRT Mapping in the EOC

Common Operational Picture

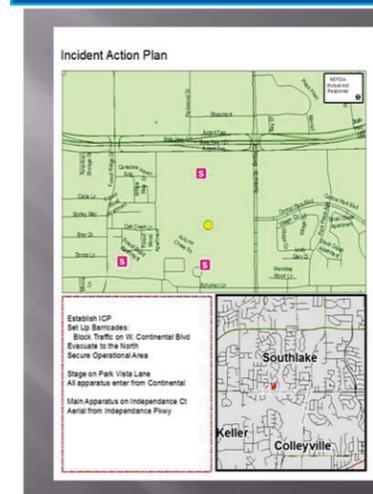


Graphic courtesy of David Allen

This Common Operational Picture map shows an exclusion zone, street blockage, and evacuation routes

After GIS mapping staff set up a map with base data (street centerlines, railroads, cities, airports, etc.) that is preloaded onto a dvd provided by EGRT, they then begin to add specific incident data (incident location, location of command post, staging area, shelters, etc.) as it becomes available in EOC. This map keeps everyone in the EOC up to date as to the status of the incident response in the field.

Incident Action Plan

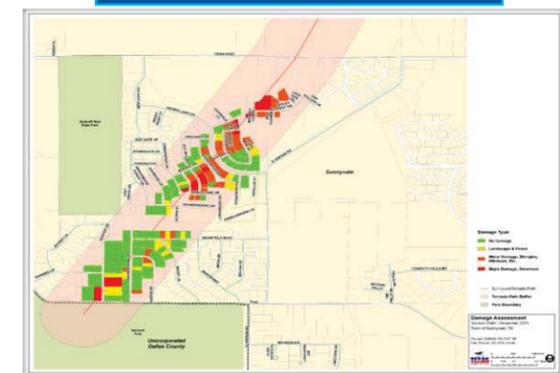


Graphic courtesy of David Allen

This Incident Action Plan map shows goals for the next operational period.

In addition to continually updating the Common Operations Picture map in the EOC, staff also continually revise and print 8 1/2 x 11 maps to be taken out into the field showing activities such as Recovery Operations, Demobilization Areas, or Long-Term Actions.

Initial Damage Assessment



Map data courtesy of David Allen
 (see metadata attached)

One of the final mapping products is a Damage Assessment map that shows an initial property damage assessment after the Incident.

As field data comes into the EOC concerning damage to property, an initial damage assessment map is created. This map will assist the municipality or county in estimating the potential dollar-amount of damage from an incident so that a request for monetary aid can be placed as soon as possible.