

*GIS in Post Disaster Impact
Assessment and Planning by
Garland ISD*

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Tornado Response

- Several of us have had training with EGRT
 - EGRT is a volunteer organization
 - We are available to respond with mapping assistance for emergency response.



- On the night of December 26th my home power went out I had no idea there had been a tornado in Garland.
- Early the next morning I got a call From John Hunt with EGRT asking if I could aid with the response to the “Disaster In Garland”
- I Spent the following 2 days at the Garland DPS EOC helping with mapping needs as data came in.
- Robert was at the City of Rowlett’s EOC.
- Starting the morning of the 29th we were asked to attend a series of meetings with district leadership, where the situation was assessed and plans were made.

Geocoding and Student Data

- The Garland ISD GIS department maintains a point based address system.
 - Data sources included
 - DCAD Parcel Data
 - 911 address files from Garland Rowlett and Sachse
 - Data provided from GISD Transportation
 - Data collected by GIS department for apartment complex's
- Address system is used to Geocode or match address to geographic positions on the map.
 - Over the years we have used this data to support Transportation and Student Services.
 - In 2015 being able to put kids and employees on a map was used in the districts response planning after the December 26th Tornado.

Transportation System

- The Garland ISD GIS department also maintains data for and supports the operation of our transportation departments bus routing system.
- The routing system we use is Compass, which is a product of Seon.
 - The Compass system is ESRI based and uses network analyst for routing.
- We maintain a routable street network and a routable sidewalk network.

Tornado Response

In these meetings we used GIS to create maps and reports such as students and employees affected by correlating home address data with building inspection data from the cities.



Dr. Bob Morrison, Superintendent of Garland ISD, right, and Brian Abbett, Dir. of Transportation, discuss about temporary bus routes in the tornado hit area during a meeting at the Padgett Auxiliary Services Center in Garland, Texas, Friday, Jan. 1, 2016. (Jae S. Lee/The Dallas Morning News)



Garland ISD staff members meet at the Padgett Auxiliary Services Center in Garland, Texas, Friday, Jan. 1, 2016. (Jae S. Lee/The Dallas Morning News)

Tornado Response

- While the tornado path ran very close to two of our elementary schools, none of our facilities had major damage.
- Since the tornado struck during the winter break we had a week to gather data and make plans prior to students returning to school.
- In addition to hundreds of houses and an apartment complex which were destroyed more houses were damaged, without power, or the roads leading to them were blocked by debris.
- GISD had to plan for transporting students who had been displaced and those who were still living in the impact area.

Tornado Response

- Data from NOAA was used to identify the impact area.
- Data from the cities was used to identify damaged and destroyed homes, this was compared to both geo-coded student and employee data to identify those most likely displaced.
- The district set up a temporary web page and call center which gathered data on displaced students.
- The GIS department provided the administration with lists of potentially impacted students and maps of these known to be displaced so that decisions could be made.

Tornado Response

- Our a few days after the storm our transportation department and administration drove the impacted areas determining where they could and could not send busses.
- GIS produced maps of the non traversable areas.
- Administration selected a series of temporary bus stops, where any child needing to get to any school would be collected. Administrators manned these stops to insure that kids were gotten onto the correct busses. GIS provided maps of these stop locations which were made available to the public.
- Busses and Suburban's were sent to collect displaced students , many of which were temporarily staying outside the district.

Conclusion

- Data that we had on hand for normal operations became critical in providing our administration with information during this disaster.
- While our GIS team was able to respond effectively we also identified a few areas where we could have been better prepared.
- It is our hope that GISD will not face such a disaster again, but should we have another disaster it is also our hope that the GIS department will again be able to provide support .