

Severe Thunderstorms Bring Damaging Winds to Mitchell County, Texas

The National Weather Service in Midland, Texas conducted a damage survey on Wednesday July 1st, 2020 in Mitchell County along and near Interstate 20 (I-20) between the communities of Colorado City and Loraine, Texas, where severe thunderstorms had impacted the area during the evening of Tuesday, June 30, 2020. Damage was found in three locations around Mitchell County, and it was determined that there were two separate thunderstorms that moved through the county. The main area of damage included a stretch of a frontage road along I-20 to the east of Colorado City and a train track 1 mile south of the frontage road (Figure 1), with additional damage in a cotton field 9 miles southeast of Colorado City.

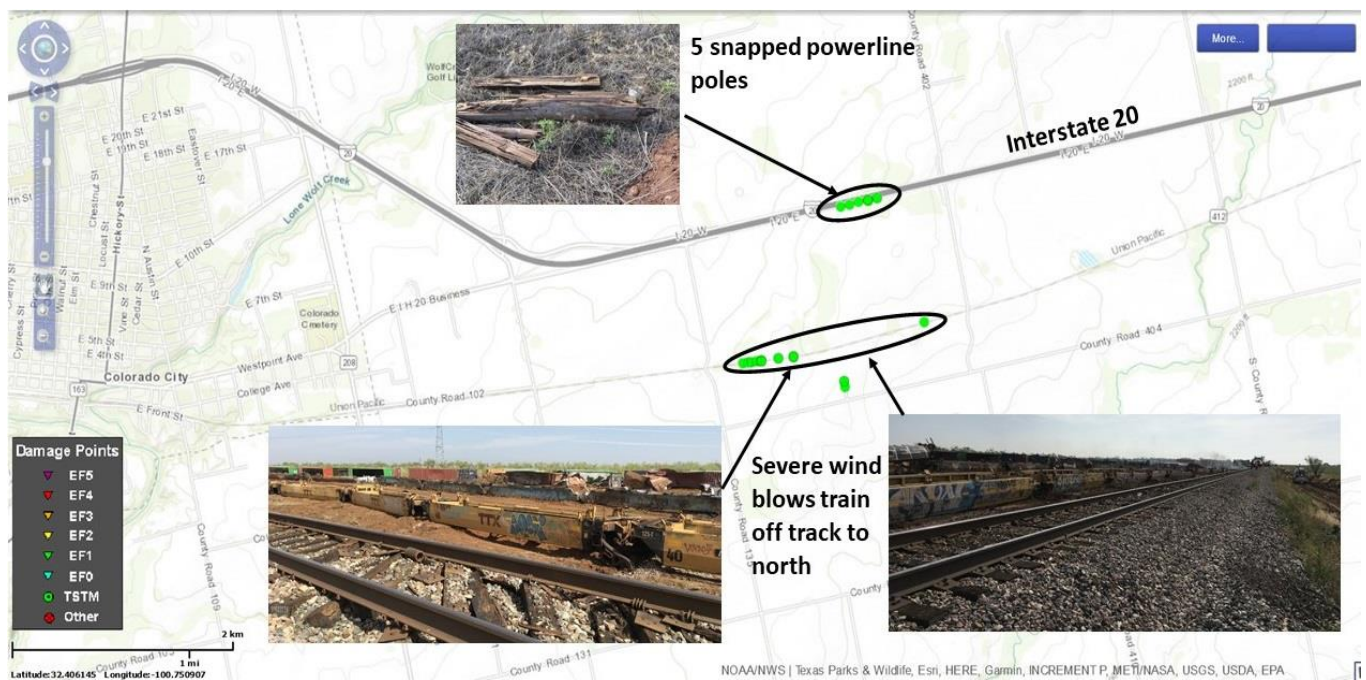


Figure 1. Location of snapped poles and derailed train 3 miles east of Colorado City, TX

The Event

During the afternoon hours of Tuesday, June 30, 2020, intense heating along a dryline across the eastern Permian Basin and Lower Trans Pecos resulted in severe thunderstorm development across these areas. The main impacts from these severe thunderstorms were damaging winds and large hail.

At approximately 6:50 PM CDT on June 30th, a strong storm moved through Colorado City and intensified on the far east side of the city limits. Local emergency managers were called to the south frontage road of I-20 between mile markers 221 and 222 where it was discovered that 5 powerline poles had been snapped in half (Figure 2). All of the poles were laying across the frontage road pointing north. Because of the snapped poles and orientation of the damage, it was determined by the survey team that straight-line winds had occurred.



Figure 2. Stretch of newly installed power poles along the interstate 20 frontage road.

Damage from the same storm was discovered nearly 1 mile south of the frontage road, where an 86-car train was derailed, destroying cargo and causing a large fire (Figures 3-4). The train cars were all thrown to the north side of the track, indicating a large fetch of straight-line winds. A long stretch of track was also damaged and needed to be replaced. Radar evaluation showed a strong downdraft over the area of both damage locations (Figure 5). Due to the windspeed threshold of the train cars and the powerline poles, the peak wind speeds were estimated by the survey team to range between 80-100 mph.



Figure 3. Construction crews trying to upright a large section of derailed train cars.



Figure 4. Burning wreckage caused by derailed train cars carrying a flammable substance.

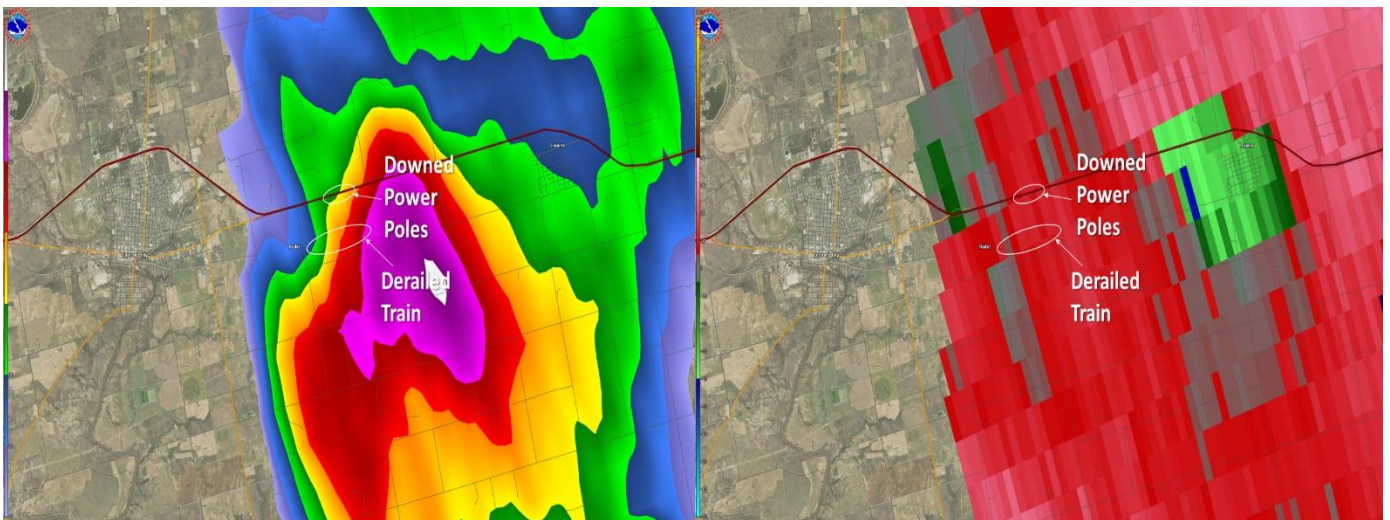


Figure 5. Strong 60+dbz core (left) and convergence signature aloft (right) indicating possible downburst winds occurring over the damage site. Time of both radar images is 6:54 PM CDT.

Nearly an hour after the first storm, at approximately 7:40 PM CDT on June 30th, an isolated storm cell developed in eastern Mitchell County and made its way east, hitting the Lake Champion area. Damage was discovered by the survey team in a cotton field located 9 miles southeast of Colorado City. Here, a 750-foot long center pivot irrigation system was toppled over on its side (Figure 6). Damage was oriented eastward, indicating straight-line winds associated with the thunderstorm as it moved through. The survey team determined the peak wind speeds of this storm to be 65-70 mph. Radar imagery shows possible occurrence of a downburst near area of damage (Figure 7).



Figure 6. Pivot irrigation system blown onto county road.

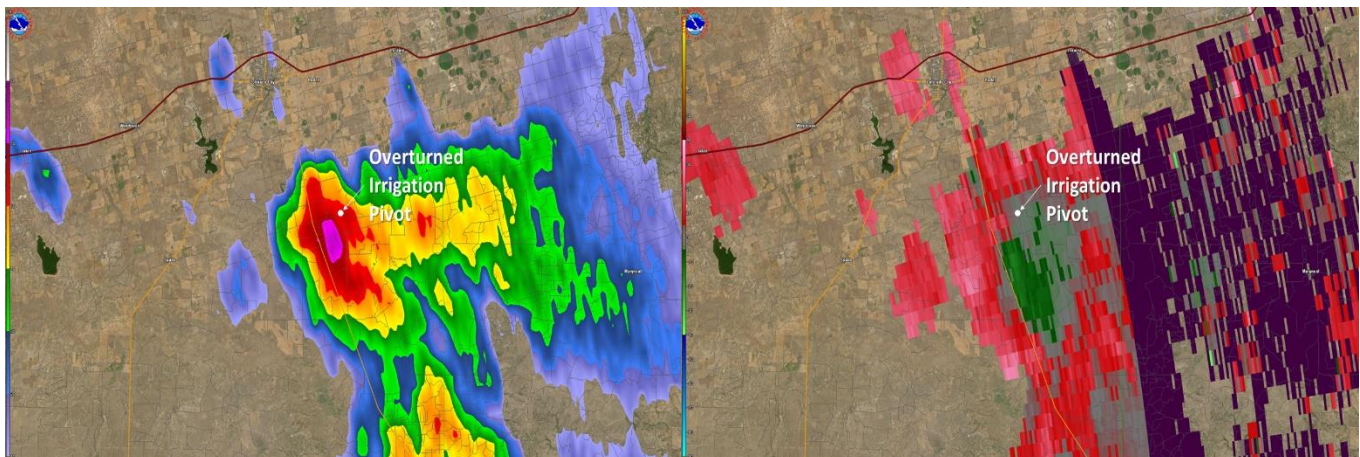


Figure 7. 60+dbz reflectivity (left) and convergent base velocity signature (right) indicate possible downburst near the area of damage. Time of both radar images is 7:40 PM CDT.

Special thanks to Thomas Moore (Mitchell County Sheriff's Office), for assisting with this damage survey.