

June 26th-30th, 2021 High-Impact Flooding in the Permian Basin and Southeast New Mexico

In late June of 2021, a stalled surface front draped across West Texas and Southeast New Mexico and high amounts of gulf moisture across the region set the stage for a substantial multi-day flooding event. Multiple rounds of heavy rainfall occurred from the 26th-30th, which led to extreme flooding. The most prolific flooding occurred across the I-20 corridor initially, before the focus shifted to portions of Southeast New Mexico. Numerous homes, businesses, vehicles, and roads were inundated by flood waters for days following the event.

June 26th

The flood event began on the 26th across the northern Permian Basin. Conditions were very unstable on this day which brought the threat of severe weather as well as flash flooding. The strongest thunderstorms moved across Borden and Dawson Counties. One storm in particular moved into Lamesa where it produced straight-line winds and resulted in significant damage on the east side of town. The storm also produced significant flash flooding across town as nearly 4.00" of rain fell in less than an hour. One area in particular, the Boys and Girls Club Park lake rose several feet out of its bank, flooding the surrounding residential area and displacing many families (Fig. 1).



Fig 1. Flash flooding causes a lake to overflow at the Lamesa Boys & Girls Club Park.

June 27th

Additional thunderstorms developed across the Permian Basin on the night of the 26th and into the early morning hours of the 27th. Storms began to move over the same areas, especially along the I-20 corridor. Midland and Odessa experienced several rounds of heavy rain throughout the morning of the 27th and Midland International Airport received a record daily precipitation total of 2.67". Numerous streets, underpasses, and parks were flooded, resulting in several road closures and stranded vehicles across both cities (Fig 2).



Fig 2. Top left: Duck pond at Wadley-Barron Park overflowing onto A street in Midland. Top right: Water up to foundation of home. Bottom: Flooding of A street in Midland.

June 28th

Another batch of heavy rainfall moved across the I-20 corridor on the morning of the 28th, exacerbating flood problems in the Midland-Odessa area. One of the worst areas impacted was around Business 20 and Faudree Rd where poor drainage contributed to flooding of homes and businesses (Fig 3). Water rose several feet into homes near the Odessa Country Club Golf Course causing significant property damage. Gas stations and other businesses along Business 20 were also inundated by the flooding. Large pumping equipment was brought into the neighborhood to help extract water out of homes, however it took days for the water in this area to recede since it had nowhere to drain.

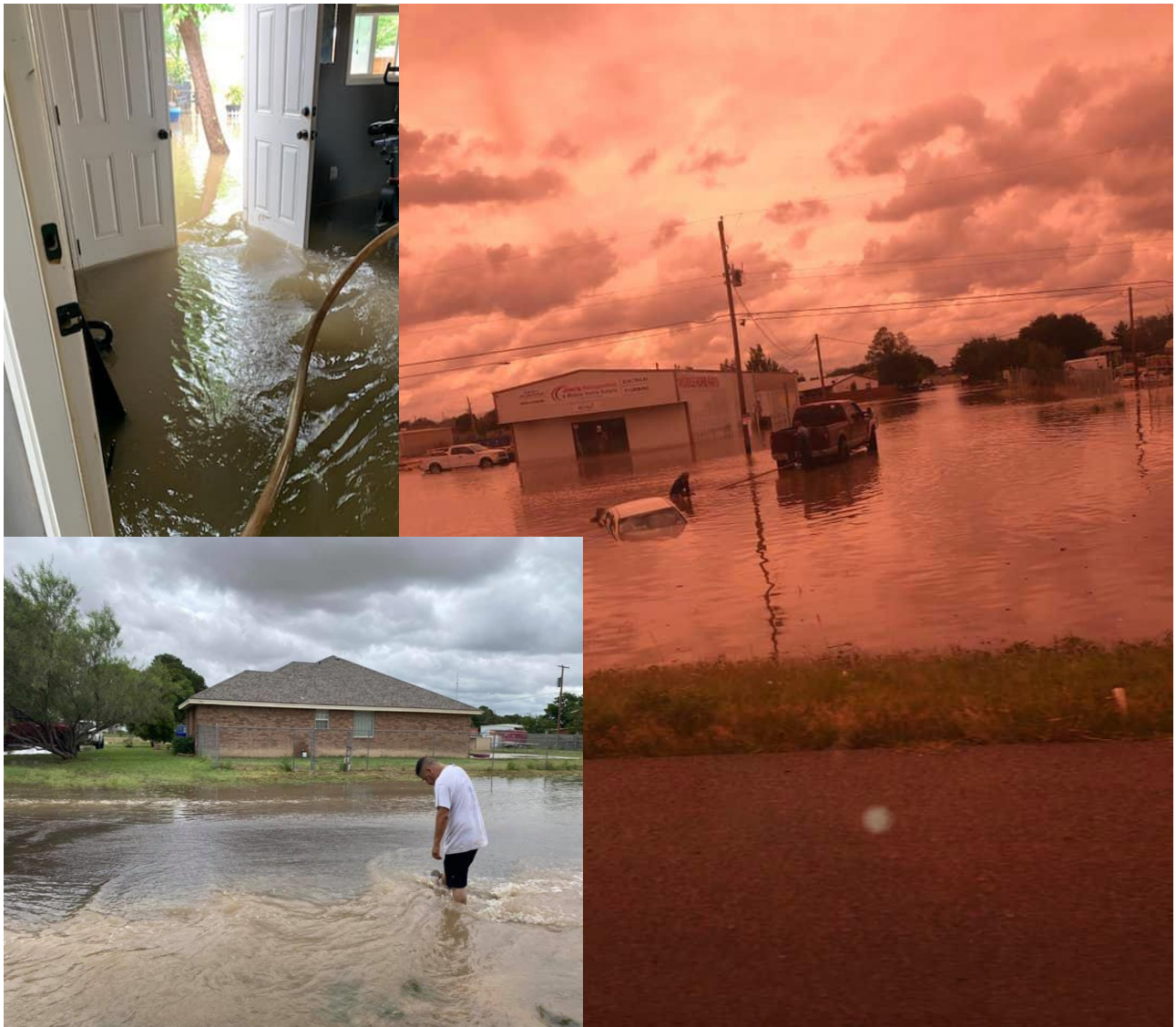


Fig 3. Top left: Flood waters inside of home. Bottom left: Knee deep flooding in Odessa neighborhood. Right: Vehicles and businesses inundated by flooding along Business 20 Frontage Rd in Odessa.

The focus of heavy rainfall shifted to areas west of the Pecos River on the evening of the 28th, including the Davis Mountains and Marfa Plateau. Flash flooding occurred along Alamito Creek in Marfa and multiple low water crossings were submerged by fast moving water. Unfortunately, around 10 PM CDT, a motorist attempted to cross the creek and was swept away by flood waters and carried several miles downstream (Fig 4). The driver was pronounced deceased at the scene by the Presidio County Sheriff's office on the morning of the 29th.



Fig 4. One fatality reported when this vehicle was swept away by flood waters near Marfa, TX

June 29-30th

Flash flooding continued overnight and throughout the day on the 29th. A final round of heavy rain moved from the Permian Basin and Trans Pecos into Southeast New Mexico during this time frame and portions of Lea and Eddy County experienced rainfall totals over 3.00" in a 24-hour period. This caused significant flash flooding to occur in numerous washes and draws. Dark Canyon Draw in Carlsbad, NM turned into a torrent of water, overwhelming San Jose Blvd. Water levels in Dark Canyon at Carlsbad reached 19.26 ft on the afternoon of the 29th which was the 4th highest flood crest on record. San Jose Blvd was closed due to the flooding along with several other low water crossings in town. Sadly, another motorist perished after driving around a barricade and attempting to cross a flooded road in Carlsbad around 10 PM MDT on the 29th. Although the rain began to subside throughout the day on the 30th, flooding continued along the Pecos River and much of the Permian Basin due to excessive runoff.



Fig 5. Dark Canyon Draw turned into a raging torrent of water, overwhelming San Jose Blvd in Carlsbad, NM.

Summary

Widespread flooding persisted for numerous days after the rain ended, especially in Carlsbad and Midland-Odessa where the highest totals accumulated. Overall, a large swath of 3-6 inches of rain with locally higher amounts were recorded along and north of Interstate 20 over the course of 72 hours, making this one of the most prolific June rainfall events in the past decade.

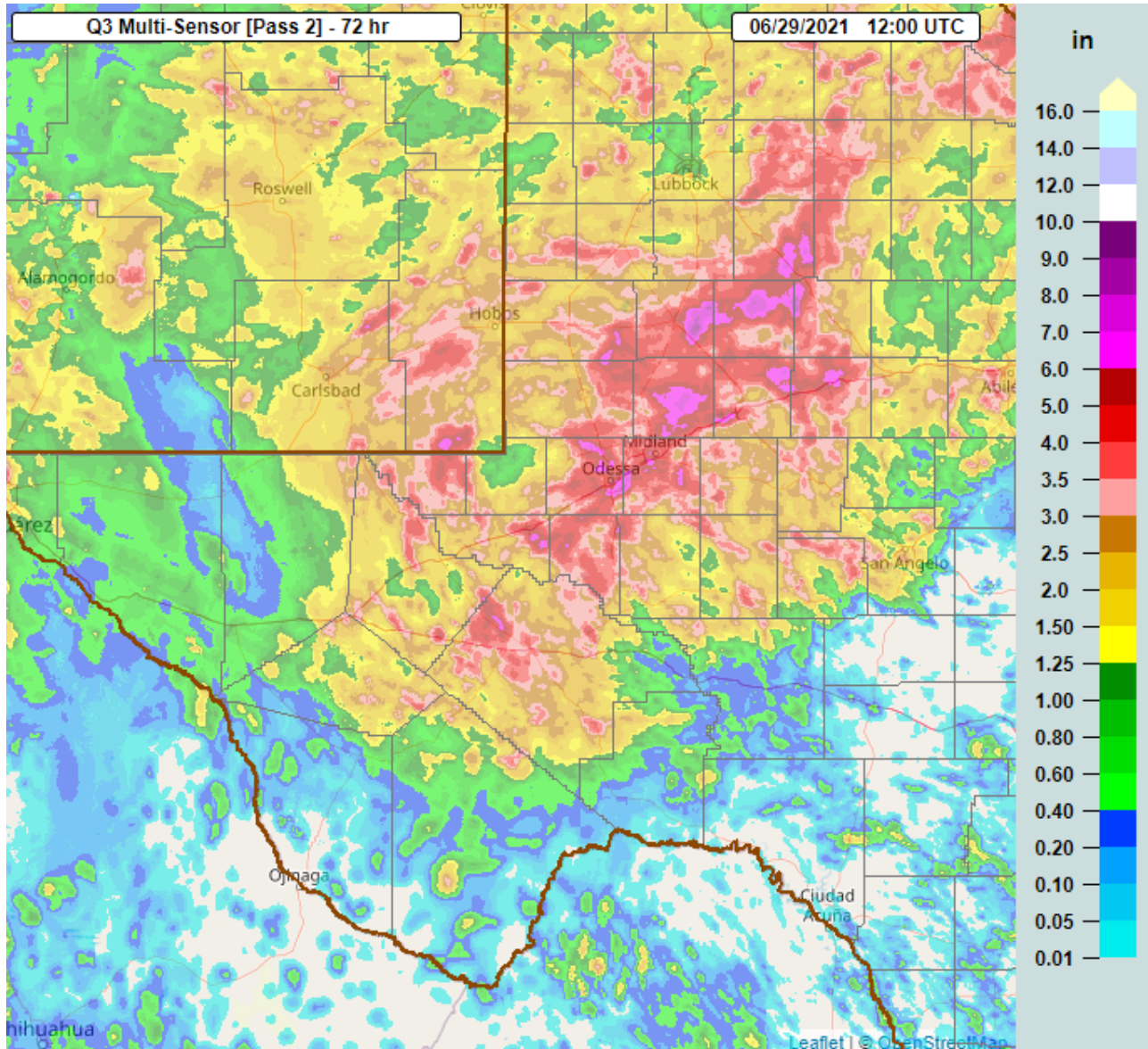


Fig 6. Rainfall totals ending at 7:00 AM CST on June 29th. A large swath of 3-6" of rain accumulated along and north of the I-20 corridor during this 72 hr period.