

# **The July 26th, 2022 Tornadoes: A Case Study on Storm Evolution and WFO Messaging Strategy**

**Kalitta Kauffman, [kalitta.kauffman@noaa.gov](mailto:kalitta.kauffman@noaa.gov)**

**Jeremy Martin, [jeremy.martin@noaa.gov](mailto:jeremy.martin@noaa.gov)**

**National Weather Service Goodland, KS**

**920 Armory Road**

**Goodland, KS 67735**

**Phone: 785-899-7119**

For decades research on non-mesocyclone tornadoes has been conducted and refined to help meteorologists forecast the phenomena. What remains a challenge is providing warnings or other messaging to the public due to low predictability, low radar detectability, as well as spatial and temporal continuity issues from local reports. To improve services and messaging, the National Weather Service (NWS) Central Region Tornado Warning Improvement Project (TWIP) developed a Landspout Alert warning policy to assist the region's weather forecast offices (WFO). On July 26th, 2022 the Goodland, Kansas WFO applied the policy for a tornadic event in far East-Central Colorado.

During the afternoon hours, a nearly-stationary boundary oriented southwest to northeast was located over far East-Central Colorado. With non-supercell tornado guidance favoring potential over the area, a Landspout Watch Special Weather Statement was issued during the early afternoon for locales along a Stratton, Colorado - Burlington, Colorado - Benkelman, Nebraska line. Disorganized discrete cells and clusters of storms began to develop on both sides of the boundary. The discrete storms that developed along and just south of the boundary evolved into a cluster. As the boundary slowly pushed south, it caught up with the southern cluster where the first two landspouts developed in rural areas of north-central Kit Carson County. A cell moving southwest developed on the southwest end of the cluster producing two more tornadoes near the towns of Stratton and Vona. These were highly observed by the public and local partners with EF-0 damage reported just west of Vona. Due to the proximity to towns and Interstate 70, Tornado Warnings were issued with an average lead time of 6.2 minutes. With the chosen messaging strategy, NWS Goodland was able to provide just over two hours of lead time between the Landspout Watch and the first report of a landspout.