

Event	Tornado
-- Scale	EF1
-- Length	1.73 Miles
-- Width	85 Yards
State	IOWA
County/Area	PAGE
WFO	OAX
Report Source	NWS Storm Survey
NCEI Data Source	CSV
Begin Date	2024-05-21 13:57 CST-6
Begin Location	3NE HEPBURN
Begin Lat/Lon	40.887/-94.957
End Date	2024-05-21 13:59 CST-6
End Location	5NE HEPBURN
End Lat/Lon	40.8996/-94.9285
Deaths Direct/Indirect	0/0 (fatality details below, when available...)
Injuries Direct/Indirect	0/0
Property Damage	
Crop Damage	
Episode Narrative	<p>Trouthing over the western CONUS brought southwesterly flow aloft over the central and northern Plains for the duration of this event. In the couple of days leading up to May 21st, the upper-level flow pattern amplified as a trough deepened over the northern Rockies. This trough then ejected out into the central Plains on the 21st. At the surface, a stationary front developed and stretched across central Nebraska and southern Iowa by the evening of the 19th. Elevated convection that morning north of the developing surface boundary resulted in isolated instances of severe hail and wind across southeast Nebraska. Additional scattered strong to severe thunderstorms developed along this frontal boundary as it slowly lifted north, with a 64 miles per hour wind gust measured in Lancaster County and golf ball sized hail falling in Clarinda Iowa. A weak low-pressure system developed the morning of the 20th in response to a shortwave rounding the base of the main trough out west, resulting in a cold front that pushed southeast across South Dakota and central Nebraska that afternoon. This front, however, stalled out across eastern Nebraska and western Iowa that evening, remaining draped across the region that night and into the morning of the 21st. Numerous rounds of strong and severe thunderstorms that night brought widespread severe weather and flash flooding, primarily across east-central Nebraska and southwest Iowa, though some elevated supercells in northeast Nebraska brought small hail to the area. After 10 UTC, an intense line of severe thunderstorms moved across eastern Nebraska and western Iowa bringing wind gusts ranging from 60 to 95 miles per hour, in addition to several spin-up tornadoes. As the primary upper level disturbance ejected out over the Great Plains, intense surface cyclogenesis was noted over eastern Nebraska. This resulted in the frontal boundary that had been draped across eastern Nebraska and western Iowa that night prior to be forced northward. By 18 UTC, a strong cold front pushed through southeast Nebraska and into Iowa that afternoon. Scattered supercell thunderstorms developed along this cold front and moved across southeast Nebraska and western Iowa. These supercells became tornadic after crossing the Missouri River into Iowa, with several long-track significant tornadoes being confirmed across the state. In the OAX CWA, the strongest tornado damage confirmed was that consistent of an EF-2 in Montgomery County. This tornado continued into the DMX CWA where it caused EF-3 damage. Another tornado developed in Page County shortly before 3 PM that afternoon. This tornado went on to produce EF-4 damage in the DMX CWA. All in all, over this three-day event, 10 tornadoes were confirmed across the OAX CWA.</p>
Event Narrative	<p>This tornado started at the intersection of 110th Street and Vine Avenue. As it developed and tracked northeast, it broke branches off of trees and tore the roof off a farm outbuilding on Willow Avenue. The tornado briefly crossed into Taylor County just south of the Montgomery-Page Street and Tailor-Paige Avenue intersection before tracking into Adams County where it would go on to produce EF-4 damage. The peak winds in the Page County segment of this track were estimated to be at 100 miles per hour. The max width in Page County was measured to be at 85 yards, with an average width estimated at 60 yards. There were no casualties in Page County, though there were 5 fatalities and 35 injuries in the Des Moines NWS CWA.</p>

Event	Tornado
-- Scale	EFU
-- Length	0.13 Miles
-- Width	90 Yards
State	IOWA
County/Area	TAYLOR
WFO	DMX
Report Source	NWS Storm Survey
NCEI Data Source	CSV
Begin Date	2024-05-21 13:59 CST-6
Begin Location	3N GUSS
Begin Lat/Lon	40.8996/-94.9285
End Date	2024-05-21 14:00 CST-6
End Location	4N GUSS
End Lat/Lon	40.9007/-94.9265
Deaths Direct/Indirect	0/0 (fatality details below, when available...)
Injuries Direct/Indirect	0/0
Property Damage	0.00K
Crop Damage	0.00K
Episode Narrative	<p>PLEASE NOTE, for hail, wind, heavy rain and flooding, please see separate Storm Data entry for May 20-22.</p> <p>Numerous tornadoes occurred on this day with numerous injuries and four fatalities at Greenfield in Adair County.</p> <p>Multiple rounds of thunderstorms brought torrential rainfall, damaging winds, hail and destructive tornadoes to the state. These thunderstorms were the result of a low pressure system which lifted north into the area on the night of May 20th, 2024, producing slow moving storms that dropped 2 to 4 inches of rainfall. This resulted in flash flooding over portions of northern and central Iowa through the morning of May 21st, 2024.</p> <p>Following the heavy rainfall through the morning, skies cleared out ahead of an approaching cold front. By the afternoon hours of May 21st, 2024, this cold front produced a line of strong thunderstorms which produced multiple strong tornadoes throughout the state, including one which led to significant damage in the town of Greenfield, IA, among other locations. This line of storms also produced damaging winds, leading to widespread tree damage and power outages throughout the forecast area.</p>
Event Narrative	<p>This tornado moved from Page County into Taylor County. The path was very short in Taylor County only catching the extreme northwest corner of the county. No impacts to damage indicators occurred along the path, hence the EFU rating for this portion of the path.</p>

Event Details:

Event	Tornado
-- Scale	EF3
-- Length	24.78 Miles
-- Width	1300 Yards
State	IOWA
County/Area	ADAMS
WFO	DMX
Report Source	NWS Storm Survey
NCEI Data Source	CSV
Begin Date	2024-05-21 14:00 CST-6
Begin Location	3SW NODAWAY
Begin Lat/Lon	40.9007/-94.9265
End Date	2024-05-21 14:27 CST-6
End Location	1WNW WILLIAMSON
End Lat/Lon	41.1579/-94.5951
Deaths Direct/Indirect	1/0 (fatality details below, when available...)
Injuries Direct/Indirect	0/0
Property Damage	1.80M
Crop Damage	0.00K
Episode Narrative	<p>PLEASE NOTE, for hail, wind, heavy rain and flooding, please see separate Storm Data entry for May 20-22.</p> <p>Numerous tornadoes occurred on this day with numerous injuries and four fatalities at Greenfield in Adair County.</p> <p>Multiple rounds of thunderstorms brought torrential rainfall, damaging winds, hail and destructive tornadoes to the state. These thunderstorms were the result of a low pressure system which lifted north into the area on the night of May 20th, 2024, producing slow moving storms that dropped 2 to 4 inches of rainfall. This resulted in flash flooding over portions of northern and central Iowa through the morning of May 21st, 2024.</p> <p>Following the heavy rainfall through the morning, skies cleared out ahead of an approaching cold front. By the afternoon hours of May 21st, 2024, this cold front produced a line of strong thunderstorms which produced multiple strong tornadoes throughout the state, including one which led to significant damage in the town of Greenfield, IA, among other locations. This line of storms also produced damaging winds, leading to widespread tree damage and power outages throughout the forecast area.</p>
Event Narrative	<p>The tornado entered into Adams County after clipping the northwest corner of Taylor County. Damage was immediate on the county border with damage to trees and and to farm buildings and power poles within the first few miles in the county. The tornado continued to gain in strength and size as it travelled northeast through southwest Adams county remaining in rural areas south and east of Nodaway. The tornado eventually crossed Federal Highway 34 just north of Brooks with plenty of videos showing a large funnel with debris swirling below it. As the tornado crossed State Highway 148, it gained in strength with EF2 damage becoming more common. Upon reaching the intersection of 150th Street and Notchwood Avenue, EF3 damage occurred with much of an unanchored house losing walls and sliding off the foundation. All outbuildings at this site were also destroyed. As the tornado continued into the north central portion of the county, it encountered several industrial wind mills. Several of the towers collapsed along with the large blades being tossed hundreds of feet through the air. The tornado was multi-vortex at this point with a width of 1300 yards. The tornado exited the county into Adair County between Quince Avenue and Redwood Avenue. The was one death in the county from this tornado when a female driver was ejected from a vehicle which got caught within the circulation.</p>

Event Fatality Details:

Type	Age	Gender	Fatality Location
Death (Direct)	49	Female	Vehicle/Towed Trailer

Event Details:

Event	Tornado
-- Scale	EF4
-- Length	15.74 Miles
-- Width	1100 Yards
State	IOWA
County/Area	ADAIR
WFO	DMX
Report Source	NWS Storm Survey
NCEI Data Source	CSV
Begin Date	2024-05-21 14:27 CST-6
Begin Location	4SW FISK
Begin Lat/Lon	41.1579/-94.5951
End Date	2024-05-21 14:45 CST-6
End Location	3E GREENFIELD ARPT
End Lat/Lon	41.3276/-94.3931
Deaths Direct/Indirect	4/0 (fatality details below, when available...)
Injuries Direct/Indirect	35/0
Property Damage	30.00M
Crop Damage	0.00K
Episode Narrative	<p>PLEASE NOTE, for hail, wind, heavy rain and flooding, please see separate Storm Data entry for May 20-22.</p> <p>Numerous tornadoes occurred on this day with numerous injuries and four fatalities at Greenfield in Adair County.</p> <p>Multiple rounds of thunderstorms brought torrential rainfall, damaging winds, hail and destructive tornadoes to the state. These thunderstorms were the result of a low pressure system which lifted north into the area on the night of May 20th, 2024, producing slow moving storms that dropped 2 to 4 inches of rainfall. This resulted in flash flooding over portions of northern and central Iowa through the morning of May 21st, 2024.</p> <p>Following the heavy rainfall through the morning, skies cleared out ahead of an approaching cold front. By the afternoon hours of May 21st, 2024, this cold front produced a line of strong thunderstorms which produced multiple strong tornadoes throughout the state, including one which led to significant damage in the town of Greenfield, IA, among other locations. This line of storms also produced damaging winds, leading to widespread tree damage and power outages throughout the forecast area.</p>
Event Narrative	<p>This large and violent tornado entered into south central Adair County from Adams County. The tornado remained a multi-vortex circulation as it moved into the county producing high end damage for much of its remaining path. The tornado encountered several houses in the vicinity of Fontanelle Road and 320th Street. Many of the structures received at least EF2 damage with one house north of the intersection receiving up to EF4 damage with a sufficiently anchored structure destroyed and slumped into a debris field nearby. Additional EF4 damage was noted at a farmstead on Jordan Avenue south of 280th Street with the house destroyed and trees chewed down to only the largest trucks and portions of the bark removed. The path then passed through another wind mill area with additional turbines collapsing west of Kent Avenue. The tornado then passed over Nodaway Park Ponds and entered the southwest side of Greenfield along SW 3rd Street. Several structures over the next several blocks had up to EF4 damage from SW 3rd Street over the SE 3rd Street and South of Linn Street and north of Oak and Noble Streets. Most of these saw complete destruction of the house with much of the debris scattered in the area but not completely swept away. The tornado weakened slightly for the later half of the destructive path through Greenfield. EF3 damage was widespread from SE Kent Street and SE 4th Street to the Intersection of E Iowa Street and NE 8th Street. The tornado exited the east side of Greenfield near the Adair County Fairgrounds. The tornado continued east northeast and gradually weakened impacting a few more houses before dissipating just south of the intersection of 220th Street and Quebec Avenue. This tornado produced at least 35 injuries in addition to 4 deaths within Greenfield. All of the deaths occurred in homes. Of note, according to media reports, a Doppler on Wheels (DOW) intercept research team measured a wind speed of just over 300 mph approximately 150 feet above ground level with this tornado.</p>

Event Fatality Details:

Type	Age	Gender	Fatality Location
Death (Direct)	70	Male	Permanent Home
Death (Direct)	73	Male	Permanent Home
Death (Direct)	78	Male	Permanent Home
Death (Direct)	77	Female	Permanent Home