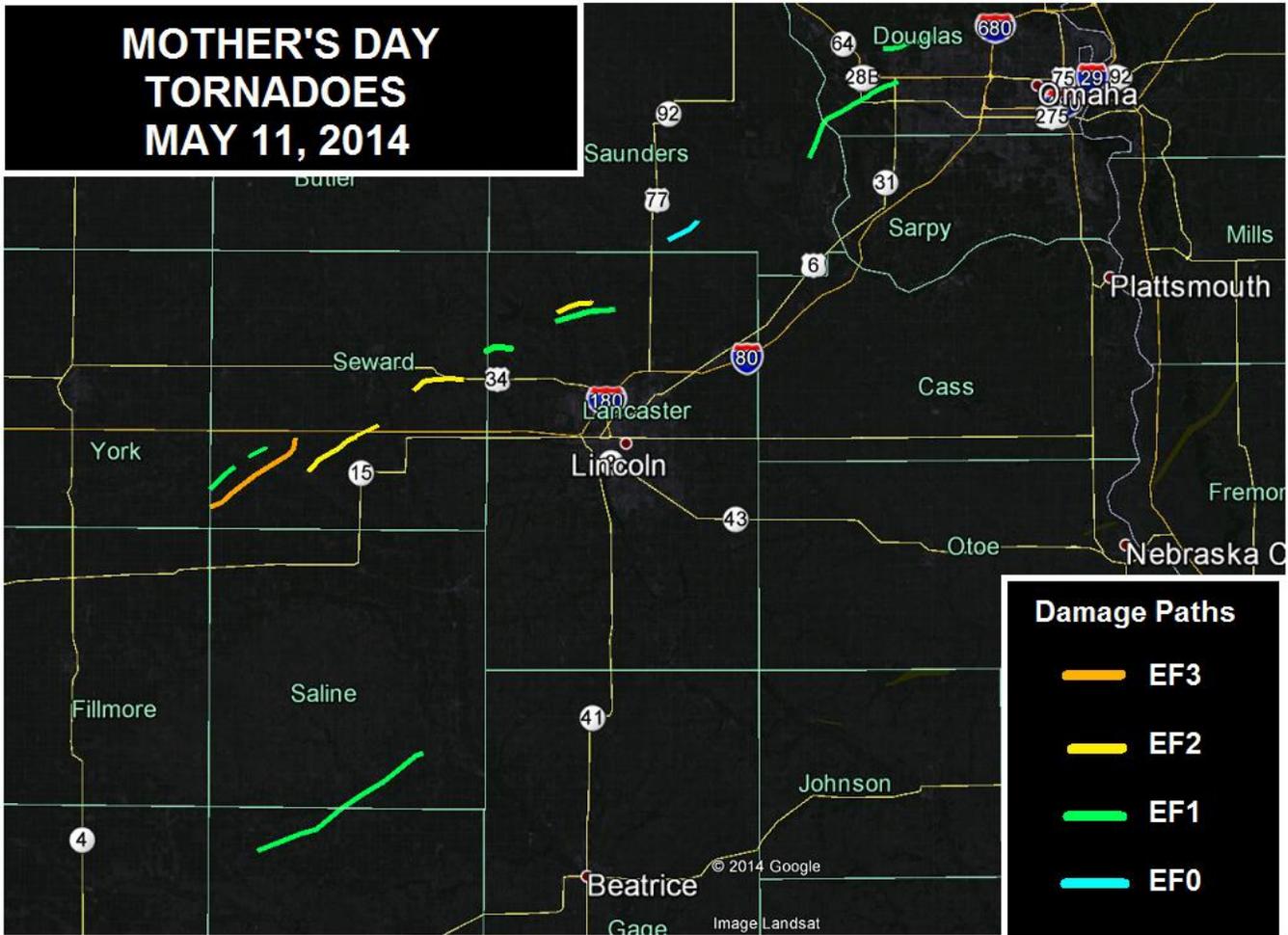
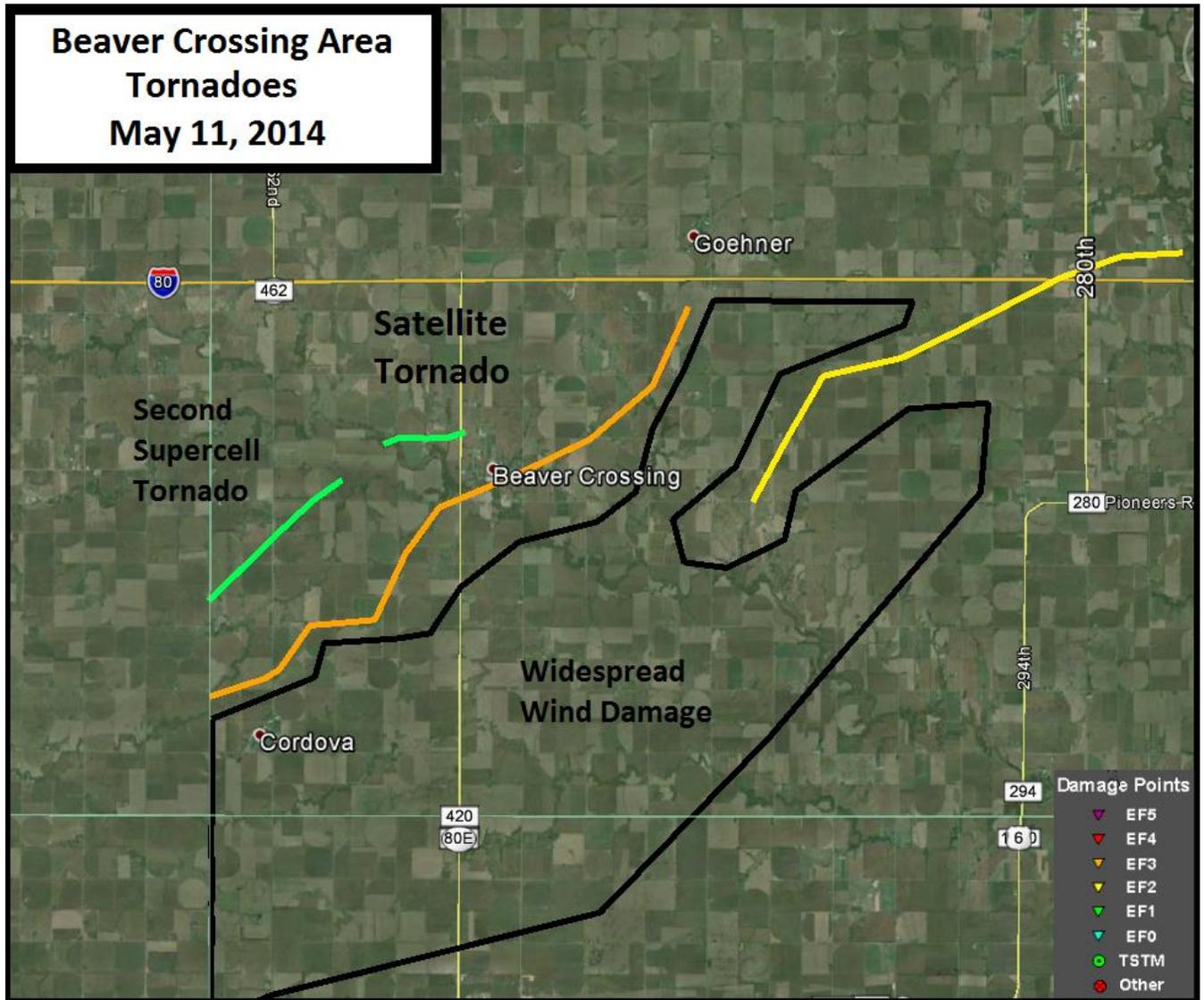


Mother's Day Severe Weather and Flooding, May 11, 2014

During the late afternoon and evening of May 11, 2014 severe thunderstorms developed along a warm front draped across southeast Nebraska and southwest Iowa. One large supercell produced a series of twelve tornadoes for 119 miles from Clay County to Douglas County in Nebraska. In addition to the tornadoes, damaging straight line winds, large hail, and flooding occurred. This is a summary of the events.



The Beaver Crossing/Seward County Tornadoes



BEAVER CROSSING TORNADO...

RATING: EF-3
ESTIMATED PEAK WIND: 140 MPH
PATH LENGTH /STATUTE/: 14.1 IN THE OAX CWA
MILES PATH WIDTH /MAXIMUM/: 1.50 MILES
FATALITIES: 0
INJURIES: 1

START DATE: MAY 11 2014
START TIME (in Seward County): 510 PM

START LOCATION: THE TORNADO ENTERED SEWARD COUNTY 1 MILE NORTHWEST OF CORDOVA

END DATE: MAY 11 2014

END TIME: 540 PM

END LOCATION: 4.7 MILES EAST SOUTHEAST OF GOEHNER

THIS STRONG TORNADO ENTERED SEWARD COUNTY AND PRODUCED TREE AND POWERLINE DAMAGE TO THE NORTHWEST OF CORDOVA. THE TORNADO MOVED ON A NORTHEAST TRACK...CROSSING COUNTY ROAD 462 1 MILE NORTH OF CORDOVA WHERE DAMAGE OCCURRED TO TWO FARMSTEADS. AT ONE FARM...LOW-END EF3 DAMAGE WAS PRODUCED WHERE A BRICK HOME SUSTAINED SIGNIFICANT DAMAGE INCLUDING REMOVAL OF THE ROOF AND SOME EXTERIOR WALLS KNOCKED DOWN. THE TORNADO CONTINUED NORTHEAST WHILE INCREASING IN WIDTH. THE TORNADO IMPACTED ADDITIONAL FARMS ALONG DENTON ROAD BETWEEN COUNTY ROAD 462 AND 448. HERE THE MOST SIGNIFICANT DAMAGE WAS PRODUCED WHERE A WELL BUILT BRICK HOME SUSTAINED MAJOR DAMAGE. THE ROOF WAS REMOVED...AS WELL AS EXTERIOR AND SOME INTERIOR WALLS KNOCKED DOWN. THERE ALSO WAS COMPLETE DESTRUCTION OF OUTBUILDINGS AT THESE LOCATIONS. THE TORNADO CONTINUED NORTHEAST WHILE SHEARING POWER POLES AND TIPPING OVER AND TWISTING IRRIGATION STRUCTURES. THE TORNADO CONTINUED NORTHEAST CROSSING DENTON...OLD CHENEY AND PIONEERS ROADS WHERE THE TORNADO WAS AT ITS WIDEST. THE TORNADO THEN ENTERED THE TOWN OF BEAVER CROSSING. SIGNIFICANT DAMAGE WAS DONE IN THE CITY...WHERE NEARLY EVERY STRUCTURE IN TOWN RECEIVED SOME DAMAGE RANGING FROM MINOR TO SIGNIFICANT. SEVERAL HOMES HAD THE ROOF REMOVED AND NUMEROUS OUTBUILDINGS AND GARAGES WERE COMPLETELY DESTROYED. THE TORNADO CONTINUED NORTHEAST WHILE BECOMING INCREASINGLY NARROW AND GENERALLY WEAKENING IN STRENGTH. ON VAN DORN ROAD EAST OF BEAVER CROSSING...ONE ADDITIONAL HOME HAD THE ROOF COMPLETELY REMOVED. THE TORNADO CONTINUED NORTHEAST CROSSING A STREET...AND THEN TURNED MORE EAST PARALLELING INTERSTATE 80 AND ENDING BETWEEN 308TH AND 294TH STREETS. THERE WAS ALSO AT LEAST ONE SATELLITE TORNADO PRODUCED DURING THIS TIME TO THE WEST OF BEAVER CROSSING.

THIS SUPERCELL ALSO PRODUCED A SIGNIFICANT AMOUNT OF WIND DAMAGE TO THE SOUTH OF THE TRACK OF THE TORNADO. SOME OF THIS DAMAGE...ESPECIALLY FROM CORDOVA...AND POINTS EAST ALONG ROKEBY...YANKEE HILL...DENTON AND OLD CHENEY ROADS WAS INTENSE. IN THIS AREA...SOME STRAIGHT-LINE WIND SPEEDS REACHED 110 MPH. OTHER STRAIGHT-LINE WIND DAMAGE EXTENDED EVEN FARTHER SOUTH INTO NORTHERN SALINE COUNTY INCLUDING THE FRIEND AND DORCHESTER AREAS.



Damage to a house in Beaver Crossing.



Brick home south of Beaver Crossing nearly destroyed.

NORTH OF CORDOVA TO NORTHWEST OF BEAVER CROSSING...

**RATING: EF-1
ESTIMATED PEAK WIND: 90 MPH
PATH LENGTH /STATUTE/: 4.71 MILES IN SEWARD COUNTY
PATH WIDTH /MAXIMUM/: 700 YARDS
FATALITIES: 0
INJURIES: 0**

**START DATE: MAY 11 2014
START TIME: 601 PM**

START LOCATION: 2.50 MILES NORTHWEST OF CORDOVA

END DATE: MAY 11 2014

END TIME: 610 PM

END LOCATION: 1 MILE NORTHWEST OF BEAVER CROSSING

A SECOND SUPERCELL ENTERED WESTERN SEWARD COUNTY AFTER THE FIRST SUPERCELL. THIS SUPERCELL WAS ALSO PRODUCING A TORNADO AS IT ENTERED THE COUNTY...TO THE NORTHWEST OF CORDOVA. THIS TORNADO MAINLY TRAVELED OVER RURAL AREAS OF WESTERN SEWARD COUNTY...BUT DID BREAK WOODEN POWER POLES ALONG COUNTY ROAD 476 AS WELL AS DESTROYING GRAIN BINS AND TIPPING OVER IRRIGATION SYSTEMS. THE TORNADO TRAVELED NORTHEAST...CROSSING COUNTY ROAD 462 BETWEEN OLD CHENEY AND PIONEERS ROAD. THE TORNADO IMPACTED A FARMSTEAD ALONG PIONEERS ROAD EAST OF COUNTY ROAD 462 WHERE OUTBUILDINGS WERE DAMAGED AND DESTROYED AND TREE DAMAGE WAS DONE. THE TORNADO THEN CONTINUE INTO THE WEST FORK OF THE BIG BLUE RIVER VALLEY...PRODUCING TREE DAMAGE BEFORE ENDING NORTHWEST OF BEAVER CROSSING.

SATELLITE TORNADO NORTHWEST OF BEAVER CROSSING...

RATING: EF-1

ESTIMATED PEAK WIND: TBD

PATH LENGTH /STATUTE/: TBD

PATH WIDTH /MAXIMUM/: TBD

FATALITIES: 0

INJURIES: 0

START DATE: MAY 11 2014

START TIME: TBD

START LOCATION: TBD

END DATE: MAY 11 2014

END TIME: TBD

END LOCATION: TBD

EAST OF BEAVER CROSSING TORNADO...

RATING: EF-2

ESTIMATED PEAK WIND: TBD

PATH LENGTH /STATUTE/: TBD

PATH WIDTH /MAXIMUM/: TBD

FATALITIES: 0

INJURIES: 0

START DATE: MAY 11 2014
START TIME: TBD
START LOCATION: TBD

END DATE: MAY 11 2014
END TIME: TBD
END LOCATION: TBD

SOUTH OF GARLAND/EAST OF SEWARD TORNADO...

RATING: EF-2
ESTIMATED PEAK WIND: 115 MPH
PATH LENGTH /STATUTE/: 3.5 MILES
PATH WIDTH /MAXIMUM/: 330 YARDS
FATALITIES: 0
INJURIES: 0

START DATE: MAY 11 2014
START TIME: 555 PM
START LOCATION: 4.3 MILES SOUTHWEST OF GARLAND

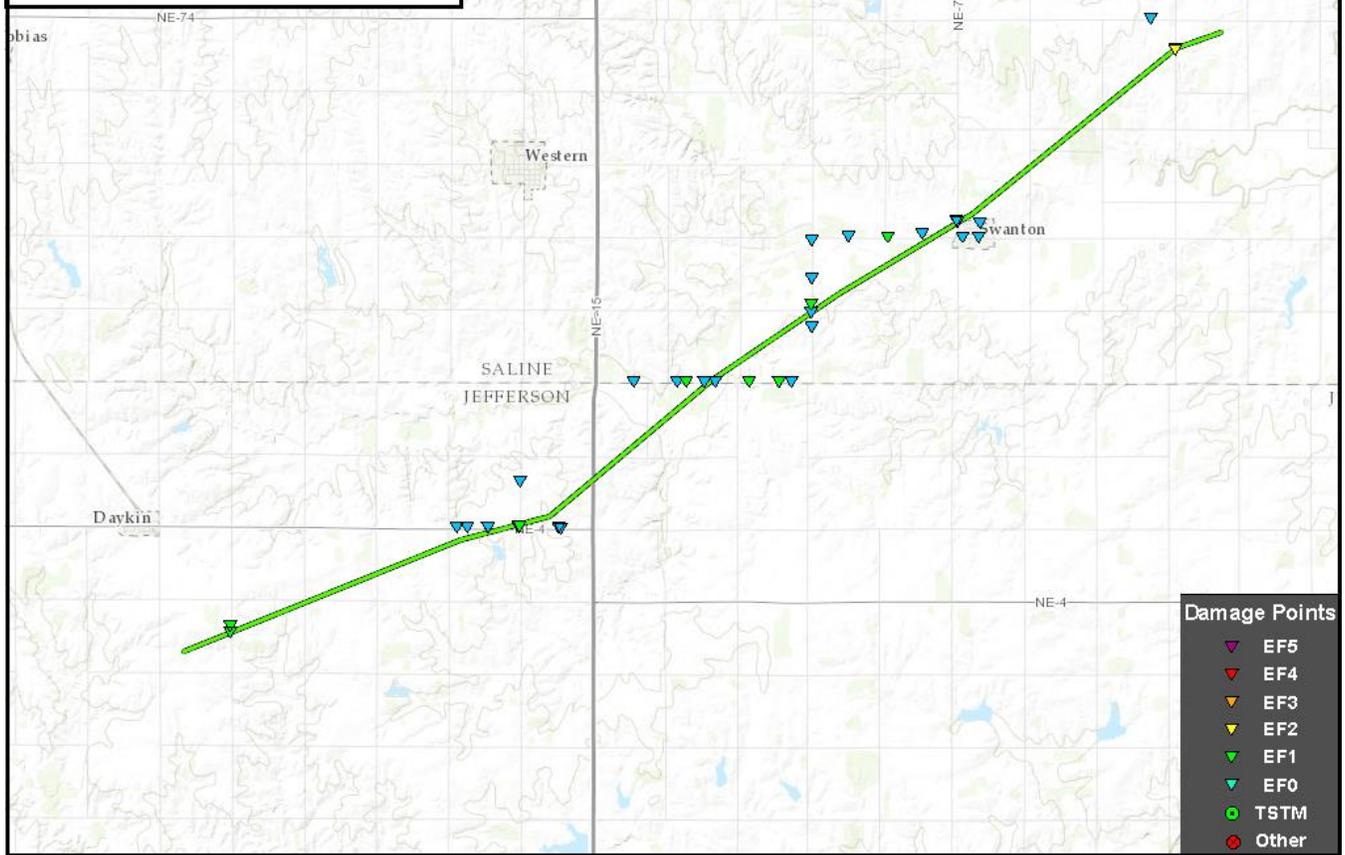
END DATE: MAY 11 2014
END TIME: 605 PM
END LOCATION: 4.3 MILES SOUTHEAST OF GARLAND

THIS TORNADO DEVELOPED AFTER THE BEAVER CROSSING TORNADO DISSIPATED. THE TORNADO WAS INITIALLY WEAK AND PRODUCED MAINLY TREE AND POWER LINE DAMAGE ALONG FLETCHER ROAD A HALF MILE EAST OF MATZKE HIGHWAY. THE TORNADO MOVED EAST-NORTHEAST FROM HERE...PRODUCING TREE DAMAGE AS IT CROSSED 224TH AND 210TH STREETS. THE TORNADO INCREASED IN INTENSITY AS IT MOVED BETWEEN 210TH AND HIGHWAY 34. HERE SEVERAL RESIDENTS WERE IMPACTED. THE MOST SIGNIFICANT DAMAGE HERE WAS TO A HOUSE WHERE HALF THE ROOF WAS MOVED FROM A NEWLY CONSTRUCTED HOUSE. OTHER NEWLY CONTRUCTED LARGE OUTBUILDINGS WERE COMPLETELY DESTROYED IN THIS AREA AND THE DEGREE OF TREE DAMAGE INCREASED. THE TORNADO CONTINUED EAST NORTHEAST ALONG HIGHWAY 34 WHILE WEAKENING. THE TORNADO ENDED NEAR COUNTY ROAD 168 AND HIGHWAY 34.



Damage to garages southwest of Garland (foreground and far right).

Swanton Tornado May 11, 2014



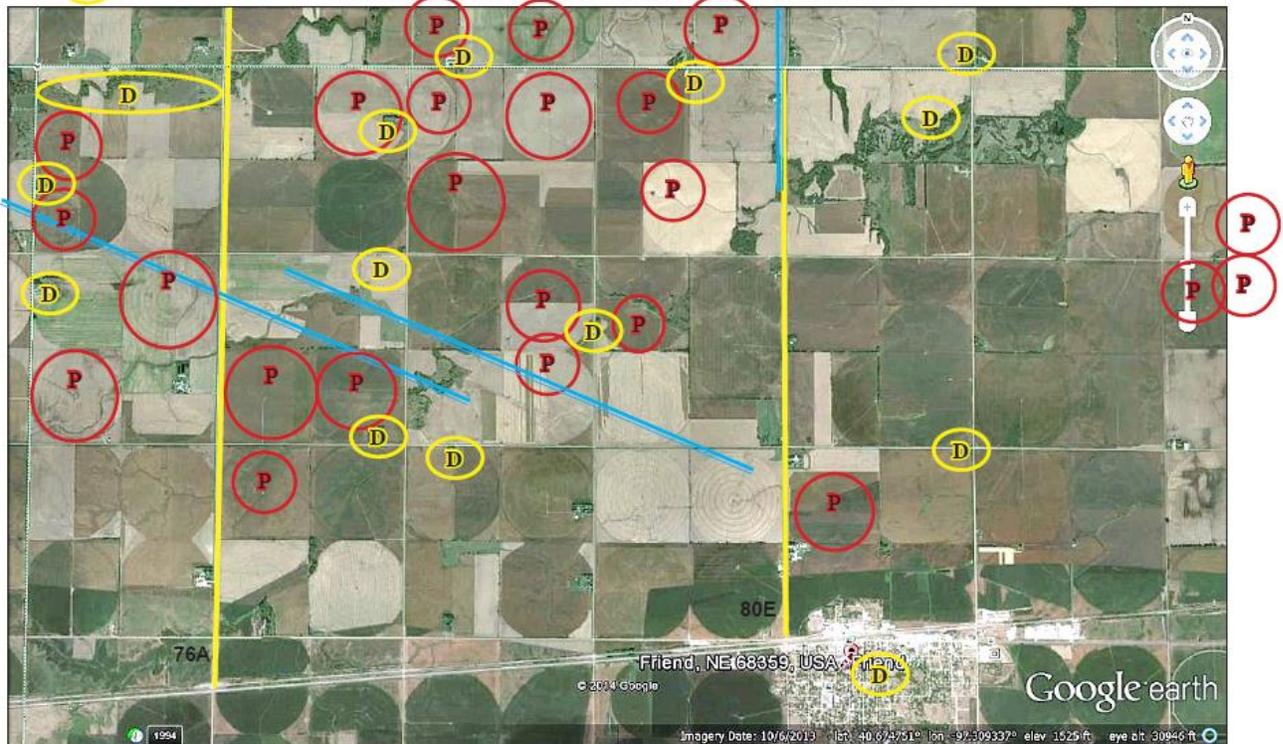
DAYKIN TO SWANTON TORNADO...

RATING: EF-1
ESTIMATED PEAK WIND: 90 MPH
PATH LENGTH /STATUTE/: 15.5 MILES
PATH WIDTH /MAXIMUM/: 500 YARDS
FATALITIES: 0
INJURIES: 1

START DATE: MAY 11 2014
START TIME: 655 PM
START LOCATION: 1.75 MILES SOUTHEAST OF DAYKIN

END DATE: MAY 11 2014
END TIME: 715 PM
END LOCATION: 4 MILES NORTHEAST OF SWANTON

MAY 11, 2014 TORNADO – NW SALINE COUNTY DAMAGE
 (BASED UPON VISUAL INSPECTION OF ENTIRE AREA NORTH OF HIGHWAY 6 AND WEST OF
 COUNTY ROAD 900 ON MAY 12 & MAY 18)



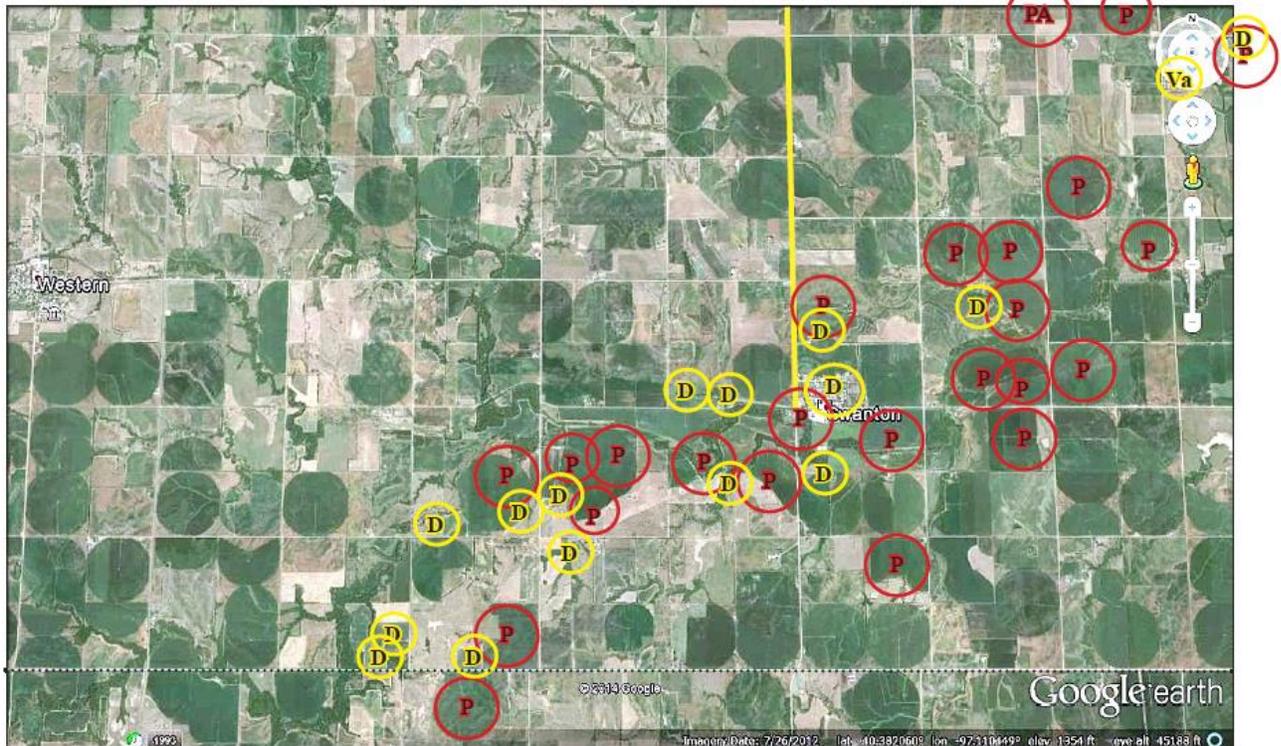
P = Pivot damaged/destroyed
 D = Building damage

ESTIMATED Damage (not including utilities):
 20 pivots @ \$50,000 each = \$1 million
 Building damage (bins, sheds, etc.) = \$480,000 minimum

NOTE: The two circles on the right side outside the map are pivots (1) 0.5 mile E of 806 CR B, and (2) SW corner of CR 900 & B

Center pivot and building damage map for NW Saline County provided by Saline County Emergency Management.

MAY 11, 2014 TORNADO – SC SALINE COUNTY DAMAGE
 (BASED UPON VISUAL INSPECTION OF ENTIRE AREA EAST OF HIGHWAY 15 AND NORTH OF SALINE-JEFFERSON COUNTY LINE ON MAY 12 & MAY 18 BY EMA & FIRE DEPT.)



P = Pivot damaged/destroyed
 D = Building damage

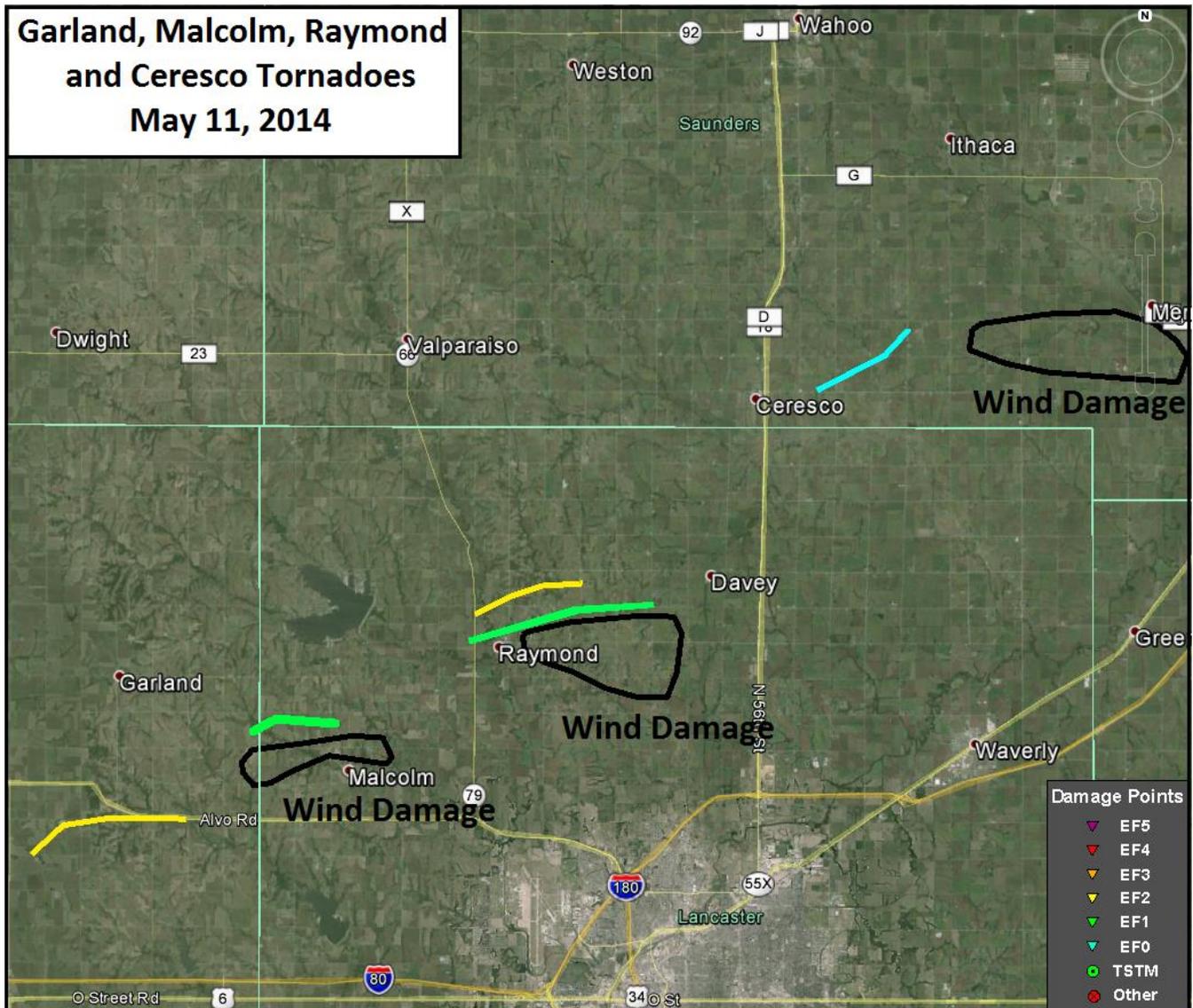
ESTIMATED Damage (not including utilities):
 22 pivots @ \$50,000 each = \$1.1 million
 Building damage (bins, sheds, etc.) = \$500,000

NOTE: The two circles on the upper right corner side outside the map are (1) SW corner of CR 2000 & T, and (2) NW corner of 1900 & T. The PA circle is on CR S just W of CR 1800.

Center pivot and building damage map for SC Saline County provided by Saline County Emergency Management.

THIS TORNADO DEVELOPED IN OPEN COUNTRY SOUTHEAST OF DAYKIN AND TRAVELED NORTHEAST...IMPACTING A FARM ON 563RD AVE WHERE OUTBUILDINGS WERE DAMAGED. THE TORNADO THEN CONTINUED NORTHEAST... CROSSING HIGHWAY 4 BETWEEN 566TH AND HIGHWAY 15 WHERE A HOUSE AND A CHURCH WERE HIT. THE CHURCH HAS SOME MINOR BRICK DAMAGE AND THE HOUSE HAD MINOR ROOF DAMAGE. THE TORNADO CONTINUED NORTHEAST PRODUCING MINOR DAMAGE AT ANOTHER FARMSTEAD BETWEEN HIGHWAY 15 AND 576TH AVE. CONTINUING NORTHEAST...THE TORNADO PRODUCED TREE DAMAGE ALONG COUNTY ROAD Y AS IT CROSSED INTO SALINE COUNTY. THE TORNADO THEN MOVED INTO SWANTON WHERE SIGNIFICANT TREE DAMAGE AND MINOR STRUCTURAL DAMAGE WERE PRODUCED. THE TORNADO CONTINUED NORTHEAST THROUGH OPEN COUNTRY...WHERE A FARM WAS IMPACTED ALONG COUNTRY ROAD 1900 WHERE OUTBUILDINGS WERE DESTROYED AND SOME MINOR ROOF DAMAGE WAS DONE TO A MODULAR HOME. THE TORNADO ENDED SHORTLY AFTER THIS FARMSTEAD.

The Lancaster County/Ceresco Tornadoes



MALCOLM TORNADO...

RATING: EF-1
ESTIMATED PEAK WIND: 90 MPH
PATH LENGTH /STATUTE/: 3 MILES
MILES PATH WIDTH /MAXIMUM/: 400 YARDS
FATALITIES: 0
INJURIES: 0

START DATE: MAY 11 2014

START TIME: 607 PM
START LOCATION: 2.5 MILES NORTHWEST OF MALCOLM
END DATE: MAY 11 2014
END TIME: 612 PM
END LOCATION: 1 MILE NORTH OF MALCOLM

THIS TORNADO DEVELOPED BETWEEN WAVERLY AND BLUFF ROAD WEST OF NORTHWEST 140TH STREET. INITIAL DAMAGE WAS MAINLY CONFINED TO TREE DAMAGE. THE TORNADO CONTINUED EAST-NORTHEAST...STRIKING RESIDENCES ALONG 140TH STREET WHERE WELL BUILT NEWLY CONSTRUCTED LARGE OUTBUILDINGS WERE SIGNIFICANTLY DAMAGED. THE TORNADO INCREASED IN INTENSITY AS IT MOVED EAST...STRIKING A RESIDENCE ALONG 126TH STREET. HERE THE ROOF WAS PARTIALLY REMOVED FROM A HOME AND OUTBUILDINGS WERE DESTROYED. AS THE TORNADO CONTINUED EAST...IT WEAKENED AND NARROWED AS IT CROSSED 112TH STREET PRODUCING TREE DAMAGE...AND ENDED NORTH OF MALCOLM NEAR 105 STREET.

RAYMOND TORNADO #1...

RATING: EF-2
ESTIMATED PEAK WIND: 115 MPH
PATH LENGTH /STATUTE/: 2.5 MILES MILES
PATH WIDTH /MAXIMUM/: 300
YARDS FATALITIES: 0 INJURIES: 0

START DATE: MAY 11 2014
START TIME: 617 PM
START LOCATION: 0.5 MILES NORTH OF RAYMOND

END DATE: MAY 11 2014
END TIME: 622 PM
END LOCATION: 2.8 MILES NORTHEAST OF RAYMOND

TWO PARTICULAR TORNADO TRACKS WERE SURVEYED NEAR THE RAYMOND AREA. THE FIRST...AND MOST SIGNIFICANT...DEVELOPED WEST OF RAYMOND WHERE A FARM WAS STRUCK NEAR WEST RAYMOND ROAD...DAMAGING OUTBUILDINGS. THE TORNADO CONTINUED NORTHEAST...CROSSING HIGHWAY 79 WHERE TREE DAMAGE WAS OBSERVED. THE TORNADO TURNED MORE EAST AND MOVED ACROSS MAINLY OPEN COUNTRY BEFORE IMPACTING A FARMSTEAD ALONG NORTHWEST 12TH ST SOUTH OF WEST DAVEY ROAD. HERE SIGNIFICANT DAMAGE WAS DONE TO THE RESIDENCE...INCLUDING THE ROOF BEING PARTIALLY REMOVED FROM THE HOME. ALL OUTBUILDINGS WERE DESTROYED...AS WELL AS UPROOTING TREES IN THIS AREA. THE TORNADO ENDED SHORTLY EAST OF NORTHWEST 12TH STREET.



A house sustained significant damage near Raymond.

RAYMOND TORNADO #2...

RATING: EF-1

ESTIMATED PEAK WIND: 90 MPH

PATH LENGTH /STATUTE/: 5.3

PATH WIDTH /MAXIMUM/: 280

YARDS FATALITIES: 0 INJURIES: 0

START DATE: MAY 11 2014

START TIME: 620 PM

START LOCATION: 1 MILE WEST OF RAYMOND

END DATE: MAY 11 2014

END TIME: 630 PM

END LOCATION: 1.8 MILES SOUTHWEST OF DAVEY

CERESCO TORNADO ...

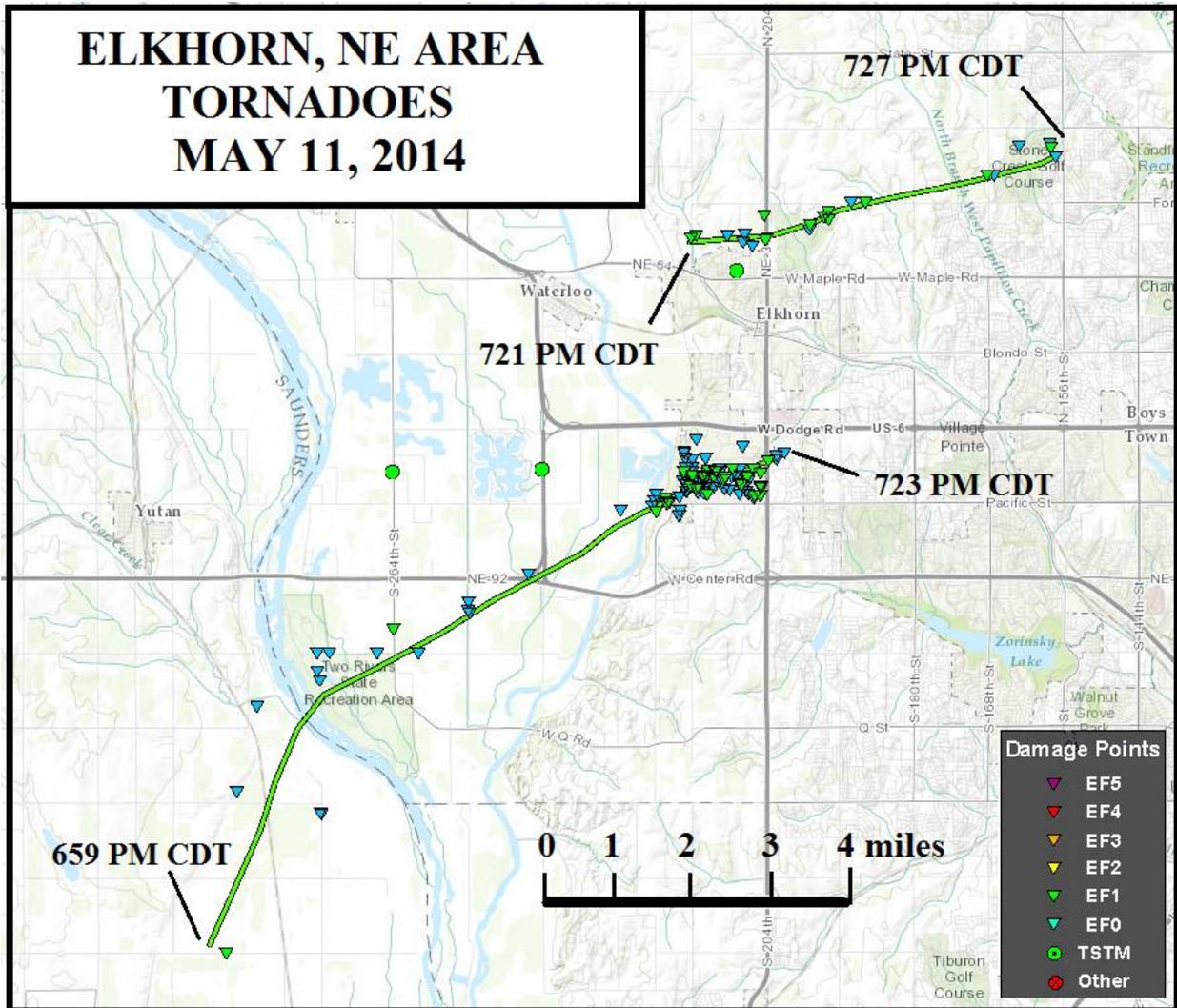
RATING: EF-0
ESTIMATED PEAK WIND: 70
PATH LENGTH /STATUTE/: 1.8
PATH WIDTH /MAXIMUM/: 200
YARDS FATALITIES: 0 INJURIES: 0

START DATE: MAY 11 2014
START TIME: 642 PM
START LOCATION: 1.7 MILES EAST OF CERESCO

END DATE: MAY 11 2014
END TIME: 645 PM
END LOCATION: 1.7 MILES NORTHEAST OF CERESCO

The Elkhorn Area Tornadoes

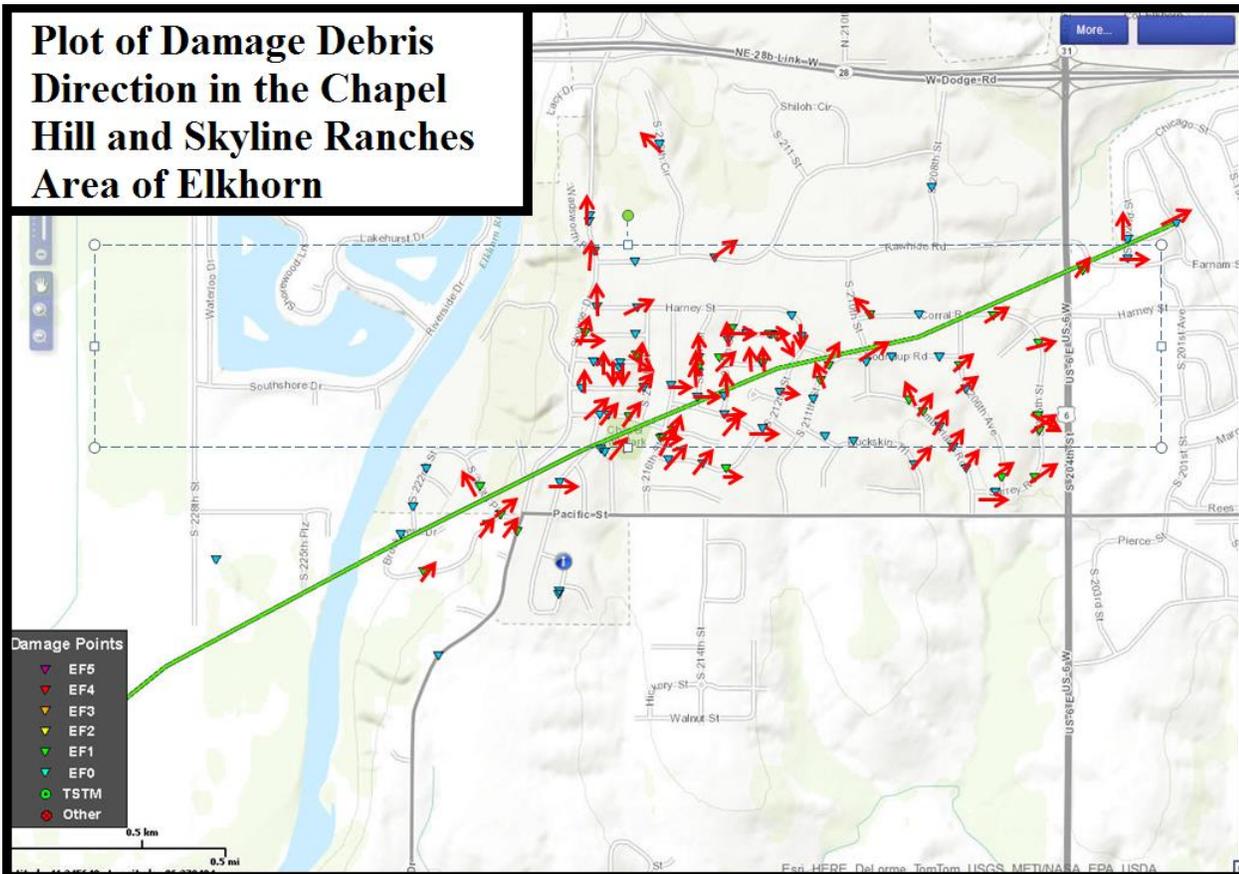
Here are the tracks of tornadoes in the Elkhorn, NE area on Sunday evening



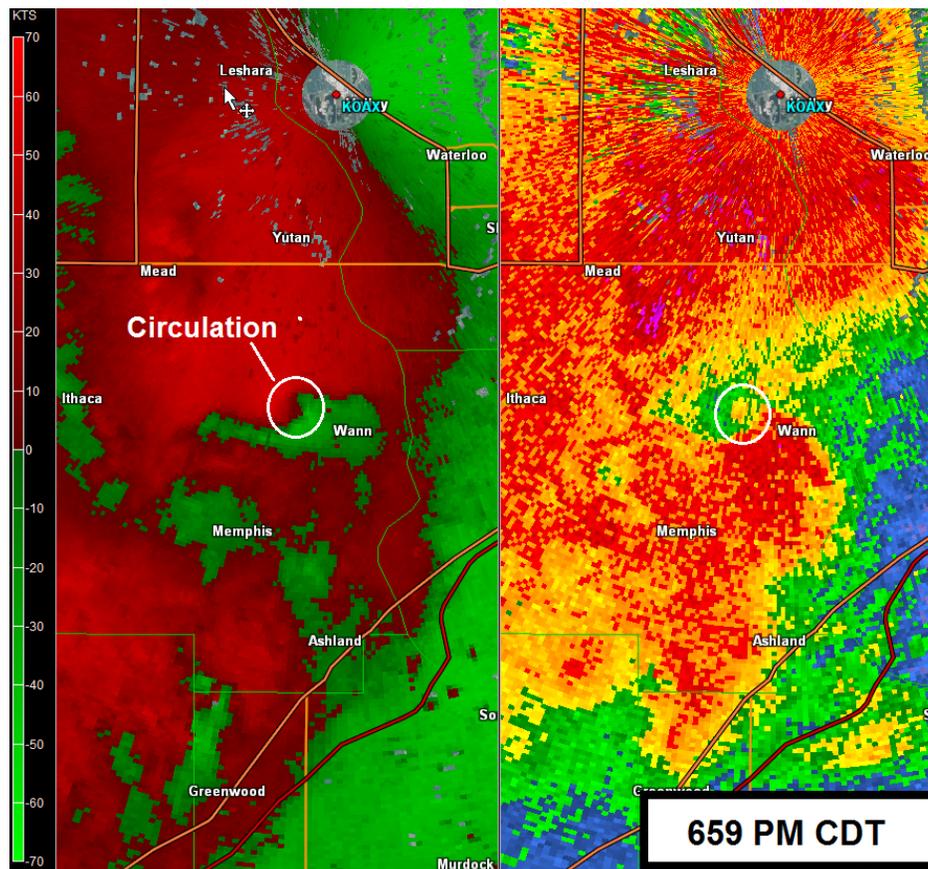
The type of thunderstorm that produced the tornadoes is a High Precipitation (HP) Supercell storm. The tornado many times becomes embedded in rain in these instances. Starting in Saunders County south of Yutan, the tornado tracked northeast damaging trees before crossing the Platte River and heading into Two Rivers State Recreation area. The storm turned to the right and continued to damage trees and crossed the river into the south part of Elkhorn. The hardest hit areas from the tornado were in the Chapel Hill and Skyline Ranches area. Numerous trees were toppled, some damaging homes and automobiles. The tornado weakened as it crossed Nebraska Highway 31 and then produced shingle damage and minor tree damage in the Elk Valley Subdivision.

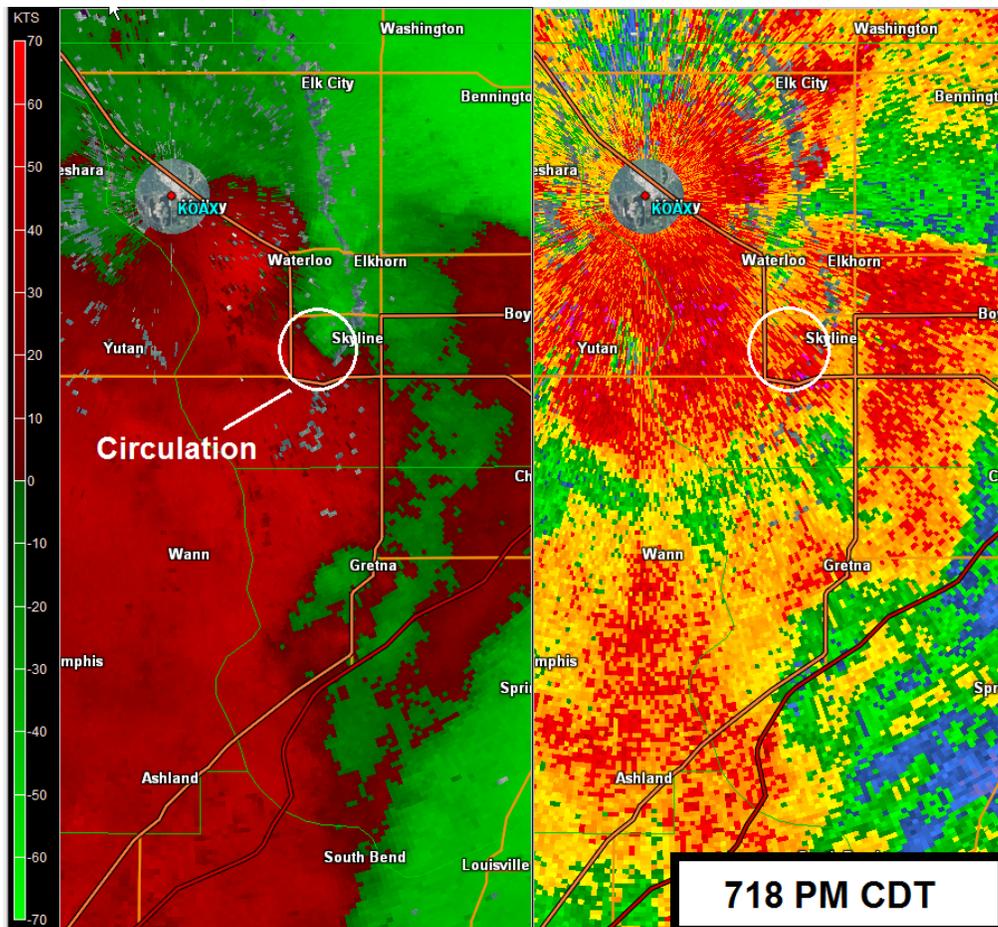
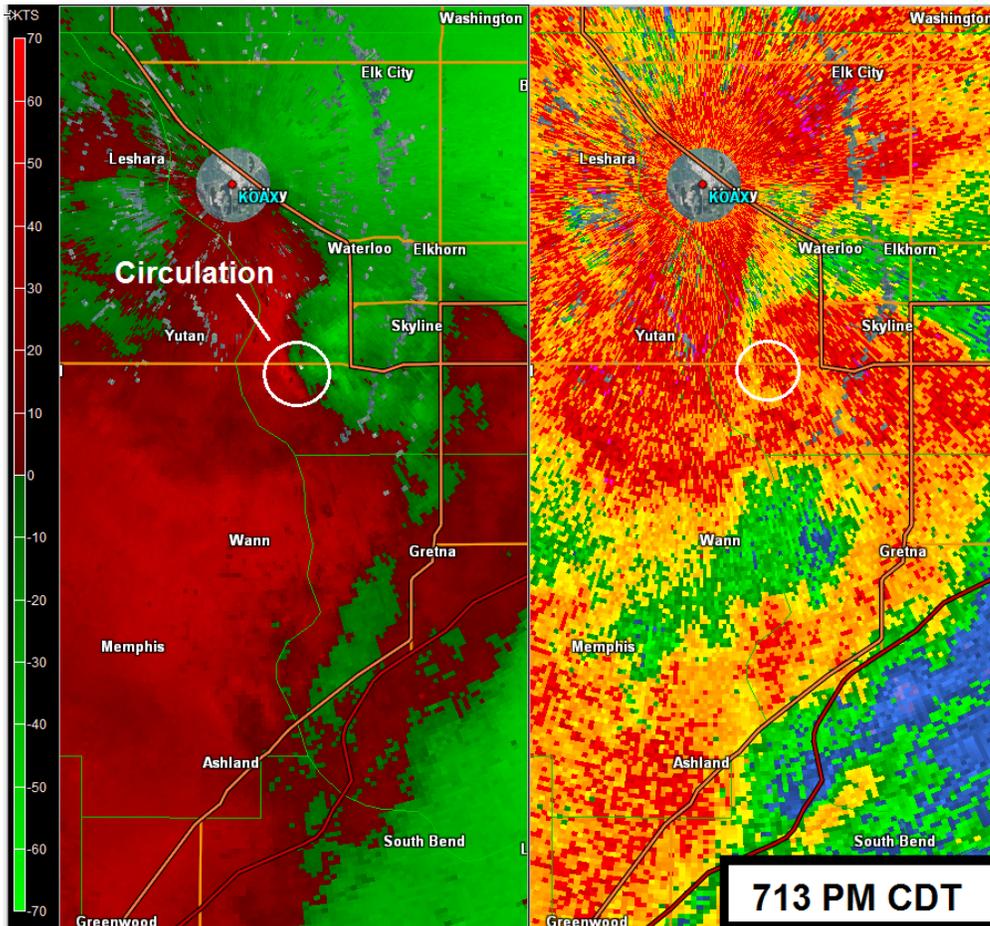
A second tornado developed northwest of Elkhorn on north 216th St and caused extensive roof damage to an older farm house. The tornado then tracked east-northeast and crossed Nebraska Highway 31 just north of Maple Street where it snapped power poles. The tornado then went into Indian Creek Golf Course and toppled trees. The worst damage from this storm occurred at a home on the north side of the golf course. Much of the roof of this home was lifted off. The tornado then continued east-northeast for another 3 miles, causing damage to a farm shed and shingle damage to roofs of homes.

Here is a close up view of the debris patterns in the Chapel Hill and Skyline Ranches Subdivision in Elkhorn. The arrows represent the direction that trees, large branches and light poles had fallen or were leaning.



On radar, the parent circulations (mesocyclones) of the Elkhorn tornadoes can be seen. Displayed are the radar reflectivity (right) and storm-relative velocity (left) at the 0.5 degree elevation level. The large, fat hook echo shown in the reflectivity wraps up cyclonically and the tornado formed on the inside part of the hook and then became rain-wrapped. The original circulation dissipates and a new circulation develops to the north that is associated with the northern track tornado.







Bent pole in the Chapel Hill Subdivision.



Garage door blown in by the tornado winds.



Home that lost part of its roof in the northern Elkhorn Tornado.

SKYLINE/ELKHORN TORNADO...

RATING: EF-1

ESTIMATED PEAK WIND: 90 MPH

PATH LENGTH /STATUTE/: 10.7 MILES

PATH WIDTH /MAXIMUM/: 800 YARDS

FATALITIES: 0

INJURIES: 0

START DATE: MAY 11 2014

START TIME: 659 PM CDT

START LOCATION: 5 MILES SOUTH OF YUTAN NE

END TIME: 725 PM CDT

END LOCATION: ELK VALLEY SUBDIVISION OF ELKHORN NE

INDIAN CREEK/ELKHORN TORNADO...

RATING: EF-1

ESTIMATED PEAK WIND: 95 MPH

PATH LENGTH /STATUTE/: 5.16 MILES

PATH WIDTH /MAXIMUM/: 200 YARDS

FATALITIES: 0

INJURIES: 0

START DATE: MAY 11 2014

START TIME: 721 PM CDT

START LOCATION: 1 MILE NW OF ELKHORN

END TIME: 727 PM CDT

END LOCATION: 3 MILES S OF BENNINGTON