

...FINAL DAMAGE SURVEY RESULTS FOR NORWALK AND CUMMING ...

ON MONDAY...JUNE 25...2007...IOWA HELICOPTER CONDUCTED AN AERIAL DAMAGE SURVEY OF THE CUMMING AND NORWALK TORNADOES THAT OCCURED ON JUNE 22...2007. AFTER REVIEWING THE AERIAL PHOTOS...THE FINAL DAMAGE SURVEY REPORT FOR THE TWO TORNADOES HAS BEEN UPDATED.

THE NATIONAL WEATHER SERVICE THANKS IOWA HELICOPTER IN THE TIME AND RESOURCES NEEDED TO COMPLETE THE AERIAL SURVEY.

THE FOLLOWING IS A FINAL GROUND ASSESSMENT FOR THE DAMAGE THAT OCCURRED OVER NORWALK AND CUMMING ON JUNE 23...2007.

\* EVENT DATE: JUNE 22 2007

\* ESTIMATED START TIME: TORNADO ONE STARTED AT AROUND 435 PM CDT. TORNADO TWO STARTED AT AROUND 440 PM CDT.

\* EVENT TYPE: TORNADO ONE WAS RATED AN EF2 ON THE ENHANCED FUJITA DAMAGE SCALE. TORNADO TWO WAS RATED AN EF1 ON THE ENHANCED FUJITA DAMAGE SCALE.

\* EVENT LOCATION: TORNADO ONE STARTED ABOUT ABOUT 2 MILES NORTHWEST OF CUMMING NEAR I35. TORNADO ONE TRAVELED SOUTHEAST THROUGH THE SOUTHERN EDGE OF CUMMING FOR ABOUT 6 MILES. THE TORNADO CAUSED EF1 DAMAGE TO FARM BUILDINGS ON THE SOUTH SIDE OF CUMMING AND IT DAMAGED SEVERAL FARMS ALONG ITS PATH. AT ABOUT 5 MILES SOUTHEAST OF CUMMING...THE TORNADO TURNED TO A EAST NORTHEAST DIRECTION FOR ABOUT A HALF MILE WHERE IT PRODUCED DAMAGE TO TREES. AT THAT POINT...A COUPLE MILES SOUTHWEST OF NORWALK...THE TORNADO TURNED BACK SOUTHEAST FOR ANOTHER MILE. FINALLY...AT ABOUT 1 MILE SOUTHWEST OF NORWALK...THE TORNADO TURNED BACK NORTHEAST WHERE IT TRAVELED THROUGH SOUTHERN NORWALK BEFORE ENDING A MILE OR SO SOUTHEAST OF NORWALK. THE TORNADO TRACK BETWEEN CUMMING AND NORWALK WAS INTERMITTENT AND PRODUCED OCCASIONAL EF0 TO EF1 DAMAGE. THE TORNADO REACHED ITS MAXIMUM INTENSITY JUST PRIOR TO ENDING WHERE IT CAUSED EF2 DAMAGE TO A HOME SOUTHEAST OF NORWALK.

TORNADO TWO WAS WEAKER THAN TORNADO ONE. IT STARTED NORTH OF NORWALK NEAR LEGACY GOLF COURSE THEN MOVED SOUTHEAST THROUGH NORWALK WHERE IT DAMAGED THE FIRE STATION...A CASEYS STORE AND SEVERAL HOMES. THE DAMAGE WAS RELATIVELY LIGHT WITH THE MAXIMUM OBSERVED DAMAGE BEING EF1 IN NORTHEAST NORWALK. FROM THERE...THE TORNADO CONTINUED SOUTHEAST FOR AROUND 3 MILES BEFORE ENDING IN RURAL WARREN COUNTY. TORNADO TWO CROSSED THE PATH OF TORNADO ONE SOUTHEAST OF NORWALK.

\* PEAK WIND: TORNADO ONE HAD ITS MAXIMUM WIND DAMAGE ON THE SOUTHWEST SIDE OF NORWALK WHERE A HOME WAS SEVERLY DAMAGED. OTHER EF0 AND EF1 DAMAGE OCCURRED ALONG ITS TRACK FROM CUMMING TO NORWALK. THE MAXIMUM ESTIMATED WINDS WAS BASED ON DAMAGE TO THE HOME IN SOUTHEAST NORWALK AT 125 MPH OR EF2. TORNADO ONE WAS WEAKER AND PRODUCED EF1 DAMAGE TO TREES IN NORTHEAST NORWALK. THE ESTIMATED WIND SPEED BASED ON THE DAMAGE WAS AROUND 100 MPH.

\* AVERAGE PATH WIDTH: TORNADO ONE HAD AN ESTIMATED PATH WITH AT ITS MAXIMUM OF 150 YARDS. TORNADO TWO HAD AN ESTIMATED PATH WIDTH OF 100 YARDS AT ITS MAXIMUM.

\* PATH LENGTH: TORNADO ONE WAS APPROXIMATELY 12 TO 14 MILES IN LENGTH. TORNADO TWO WAS APPROXIMATELY 3.5 TO 4 MILES IN LENGTH.

\* INJURIES: NONE. ONE PERSON INJURED DURING RECOVERY.

\* FATALITIES: NONE.

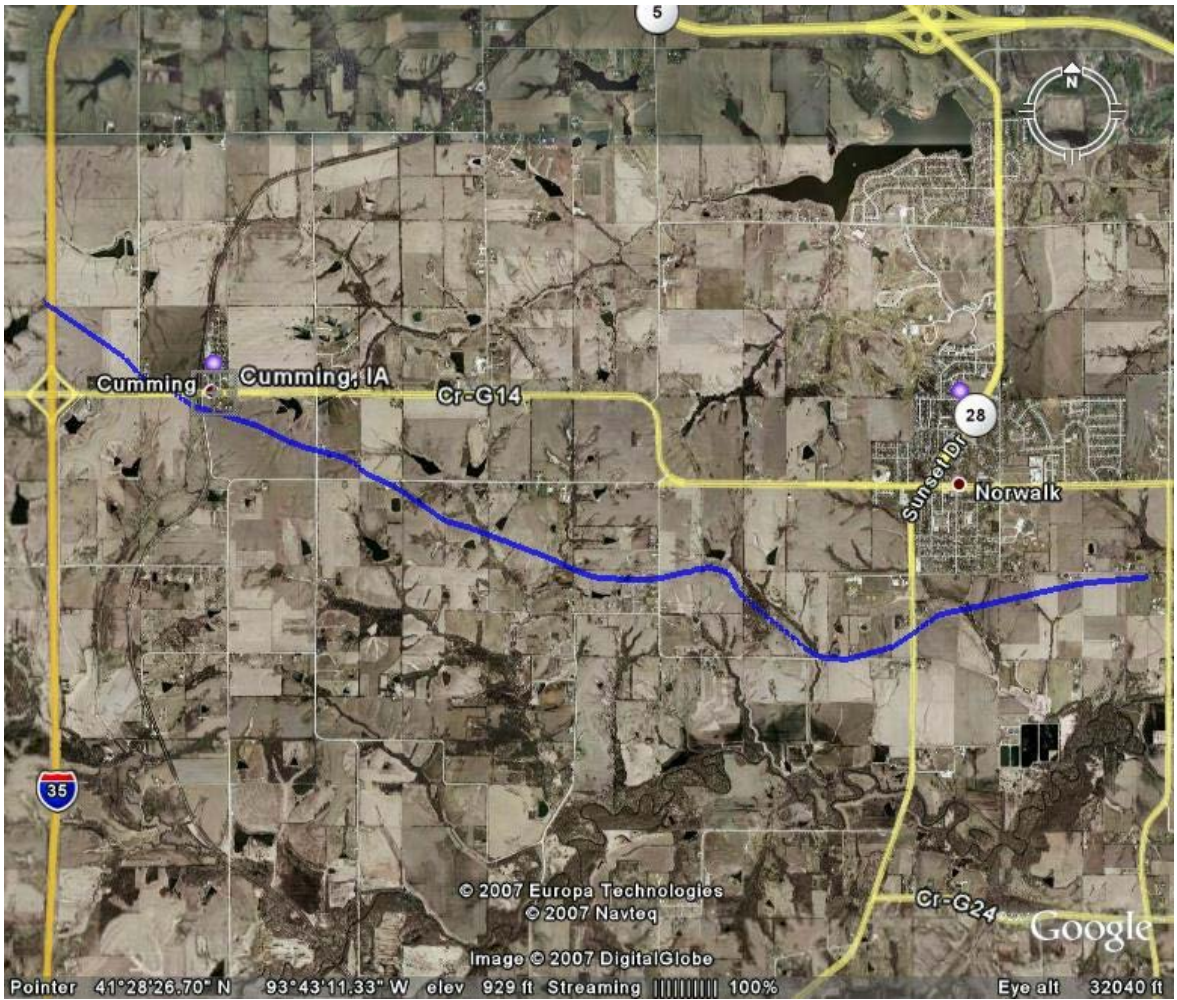
\* DISCUSSION/DAMAGE: SIGNIFICANT STRAIGHT WIND DAMAGE OCCURRED OVER MUCH OF WARREN COUNTY.

PICTURES FROM THE GROUND AND AERIAL SURVEY WILL BE POSTED ON THE NATIONAL WEATHER SERVICE WEB SITE AT [WWW.WEATHER.GOV/DESMOINES](http://WWW.WEATHER.GOV/DESMOINES).  
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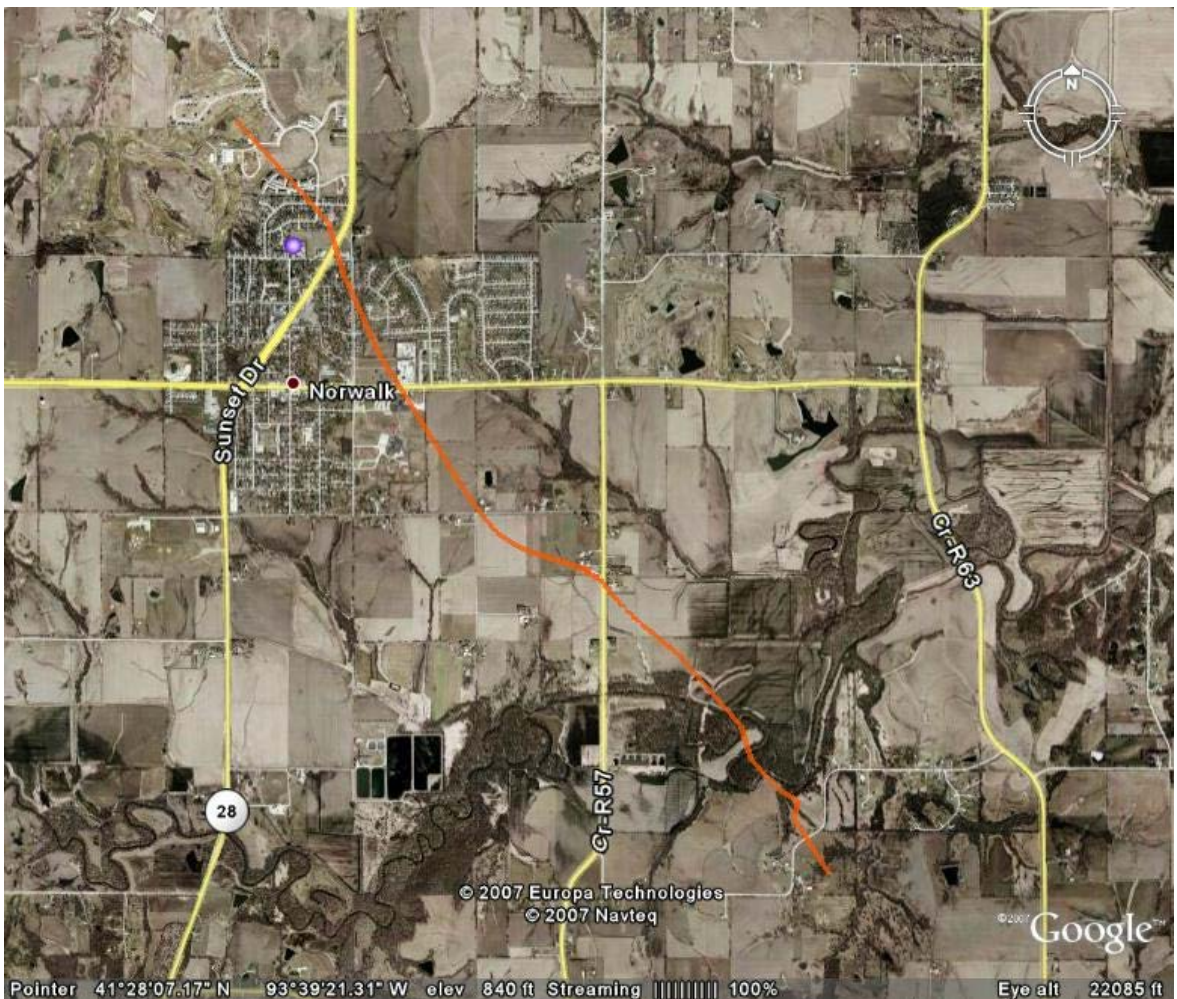
FOR REFERENCE...THE FUJITA TORNADO SCALE CLASSIFIES TORNADOES INTO THE FOLLOWING CATEGORIES:

EF0...WIND SPEEDS 65 TO 85 MPH.  
EF1...WIND SPEEDS 86 TO 110 MPH.  
EF2...WIND SPEEDS 111 TO 135 MPH.  
EF3...WIND SPEEDS 136 TO 165 MPH.  
EF4...WIND SPEEDS 166 TO 200 MPH.  
EF5...WIND SPEEDS GREATER THAN 200 MPH. \$\$

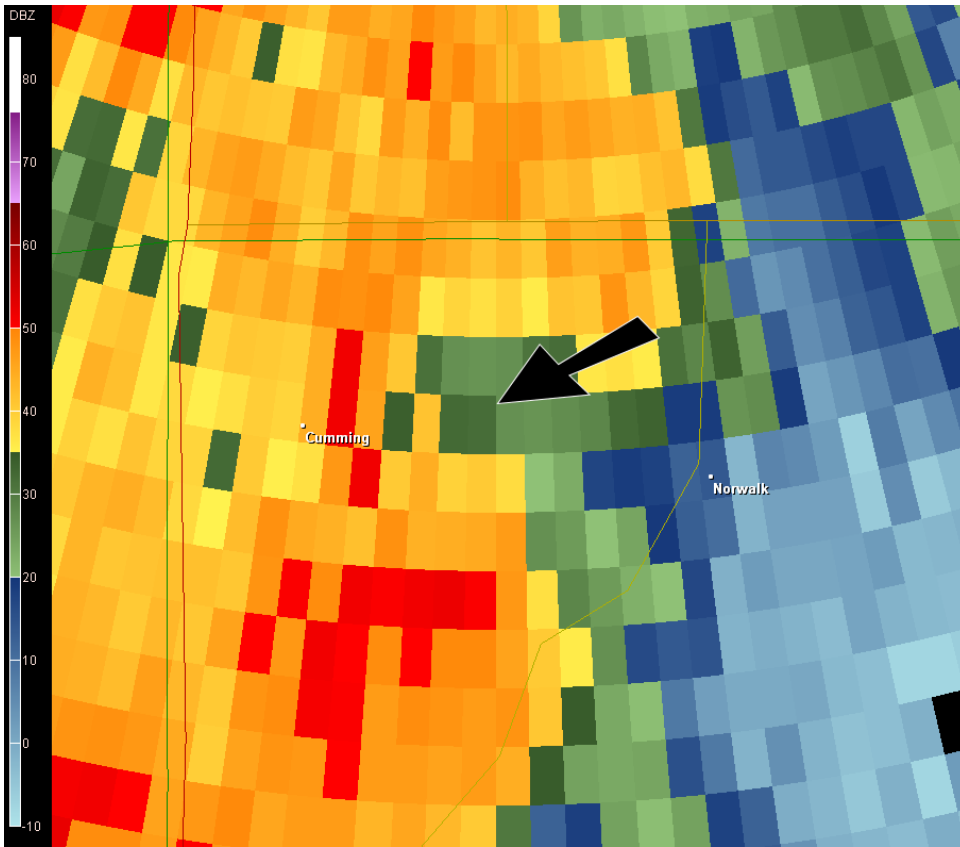
RADAR AND DAMAGE IMAGES ARE BELOW



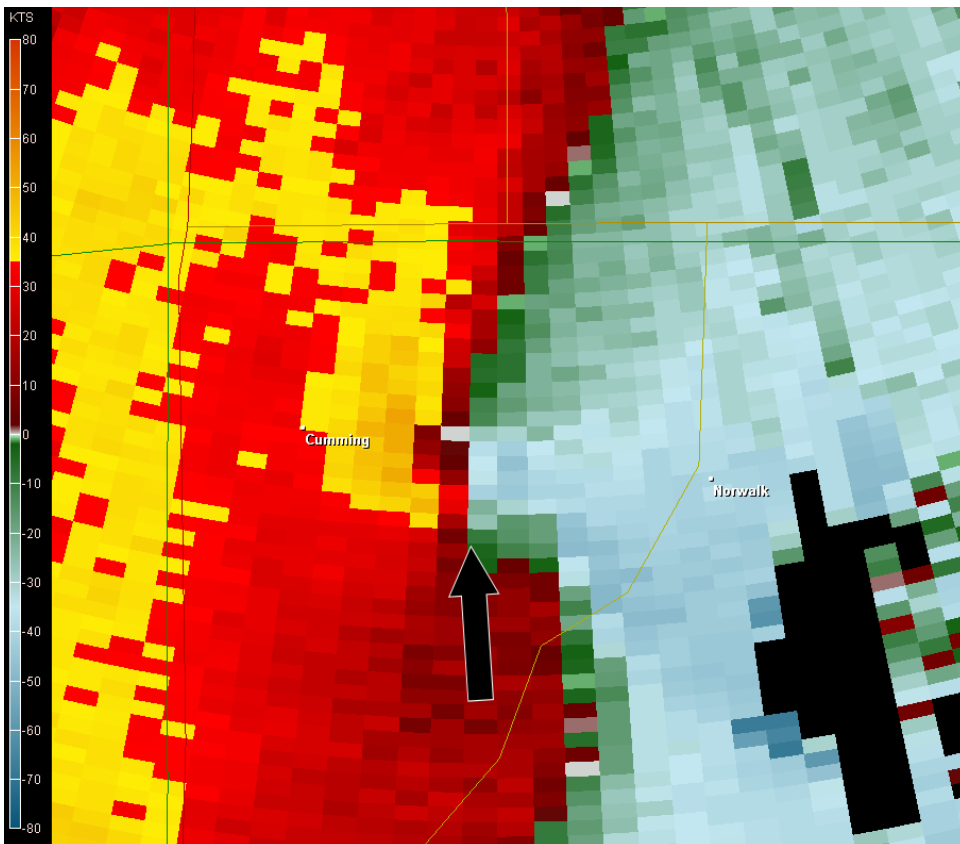
Cumming to Norwalk tornado track rated EF2 just southeast of Norwalk. Courtesy of IowaHelicopter.com



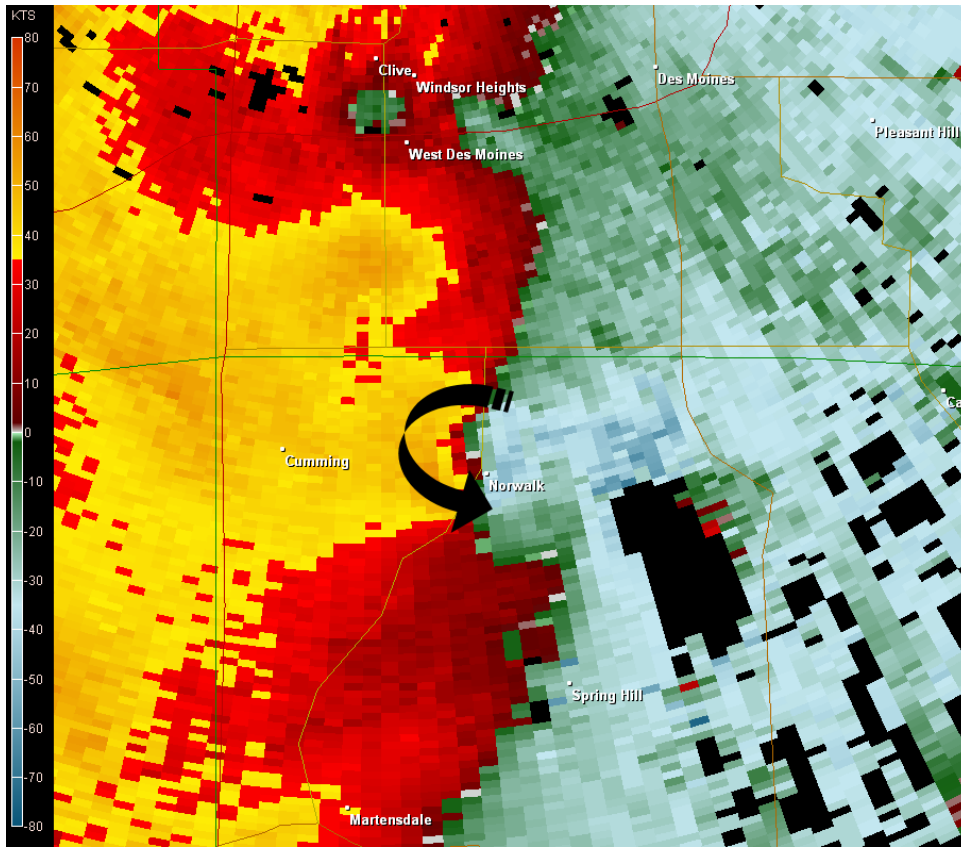
Norwalk tornado which was weaker than the first tornado. It produced EF1 damage in northeast Norwalk. Courtesy IowaHelicopter.com



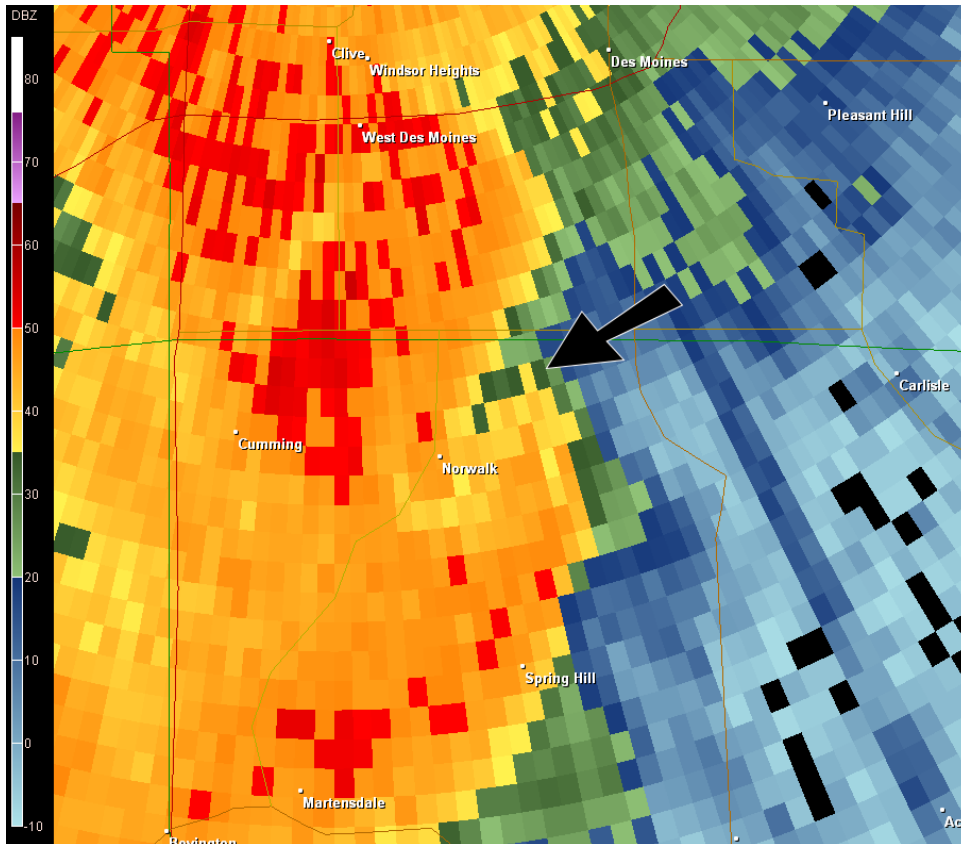
1) KDMX WSR 88-D radar Reflectivity image around 4:37 PM CDT, shortly after an EF-1 tornado touched down in Cumming. The arrow depicts the notch in the reflectivity image that developed as the 1st tornado occurred.



2) KDMX WSR 88-D Storm Relative Motion image around 4:37 PM CDT corresponding with the reflectivity image in graphic #1. On this image, yellow displays strong motion away from the radar while blue displays strong motion towards the radar. The arrow points to the area of strongest rotation at this time which is now between Cumming and Norwalk.



3) KDMX WSR 88-D radar Storm Relative Motion at 4:40 PM CDT near the time a second tornado touched down, this time in Norwalk. Once again the yellow color depicts strong motion away from the radar and the blue is strong motion towards the radar. The arrow demonstrates the cyclonic (counter-clockwise) motion displayed by the radar.



4) The above reflectivity image from KDMX WSR 88-D radar is at 4:44 PM CDT with the arrow pointing to the notch in the reflectivity image as it passed over Norwalk. This image is near the time EF-2 damage (estimated 125 mph wind) was occurring on the southeast side of Norwalk.



5) Tree Damage in Norwalk southeast of the Casey's area. The tree damage throughout town was rated EF-0 to EF-1 with estimated windspeeds of 88 to 107 mph based on the tree damage.



6) Home on the southeast side of Norwalk where the most intense tornadic damage occurred. The damage at this home was rated an EF-2 with windspeeds of 125 mph were estimated based on the damage.



Aerial photo of home with EF2 damage southeast of Norwalk. The picture is looking northeast. Note the damage path in the corn approaching the home suggesting a northeast movement at this point. Courtesy of IowaHelicopter.com



Tornado damage west of Cumming just east of I35. Courtesy IowaHelicopter.com