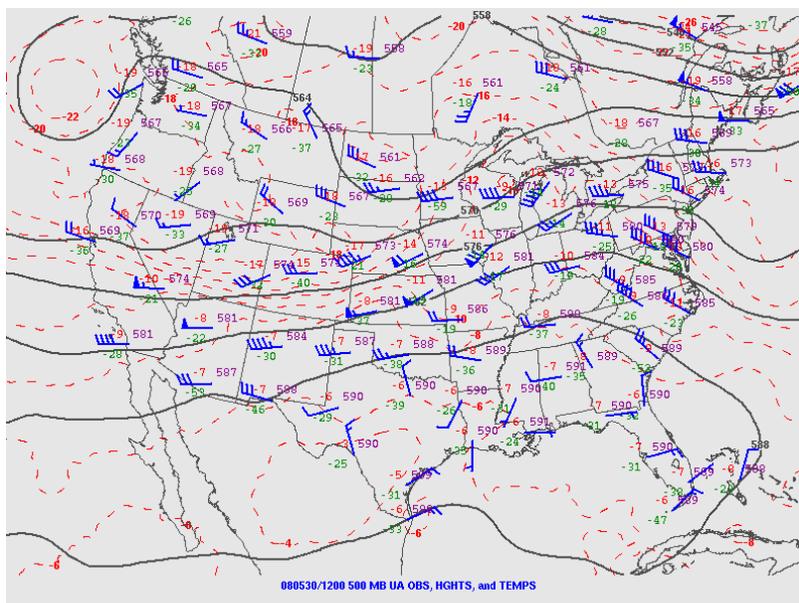


May 30 & 31, 2008: Widespread Hail Across Central and Southern Minnesota

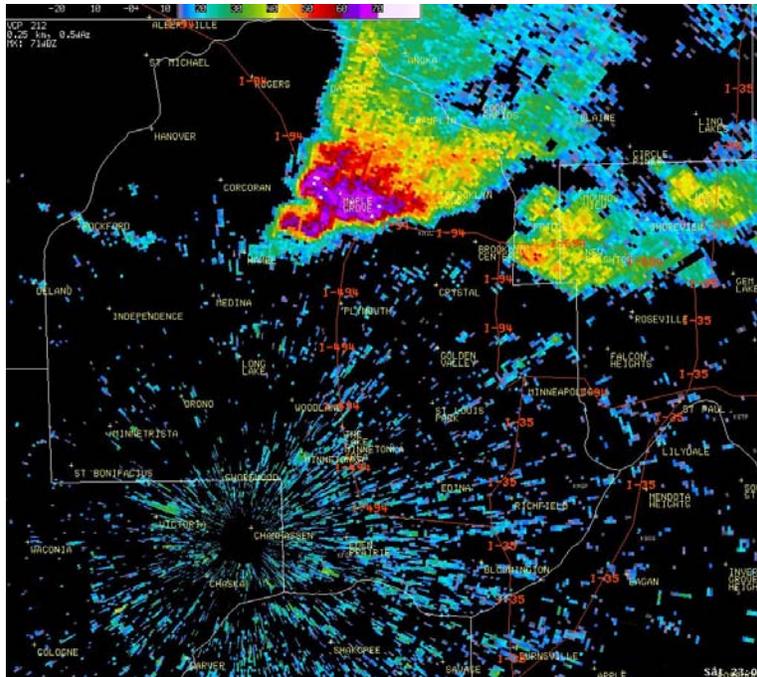
Event Synopsis

A cooler than normal spring helped to set the stage for a cool atmosphere and hail potential during the final days of May, 2008. Ample cold air was present in the 10 to 30 kft layer due to northwest winds. In the lowest levels, warming had occurred which helped create moderate instability during the afternoons of May 30th and 31st. Thunderstorms developed because of this. The upper level map from 500 mb (~18,000 ft) below from the morning of Friday May 30th reveals the colder temperatures moving in from the northwest at that level. The "u-shaped" wave in the heights is what meteorologists refer to as short wave troughs aloft. These can frequently generate clouds and precipitation.

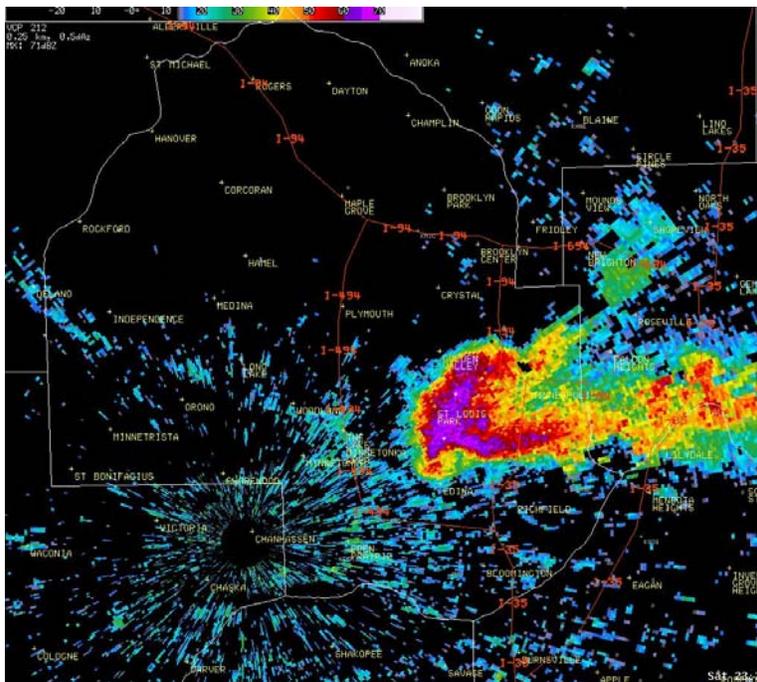


May 30, 2008 Upper Level Map at 500mb (~18,000 ft): 7 am

A similar situation was true on the 31st. Though there were only a handful of severe thunderstorms that afternoon, they produced significant hail swaths. One storm in particular dove southeast through the western half of the Twin Cities metro producing quarter to golf ball size hail across many communities. The hail came down so heavy that it covered the ground in many communities for hours afterwards. Radar pictures of this storm can be seen below.



May 30, 2008 NWS Doppler Radar 0.5° Reflectivity: 6:01 pm

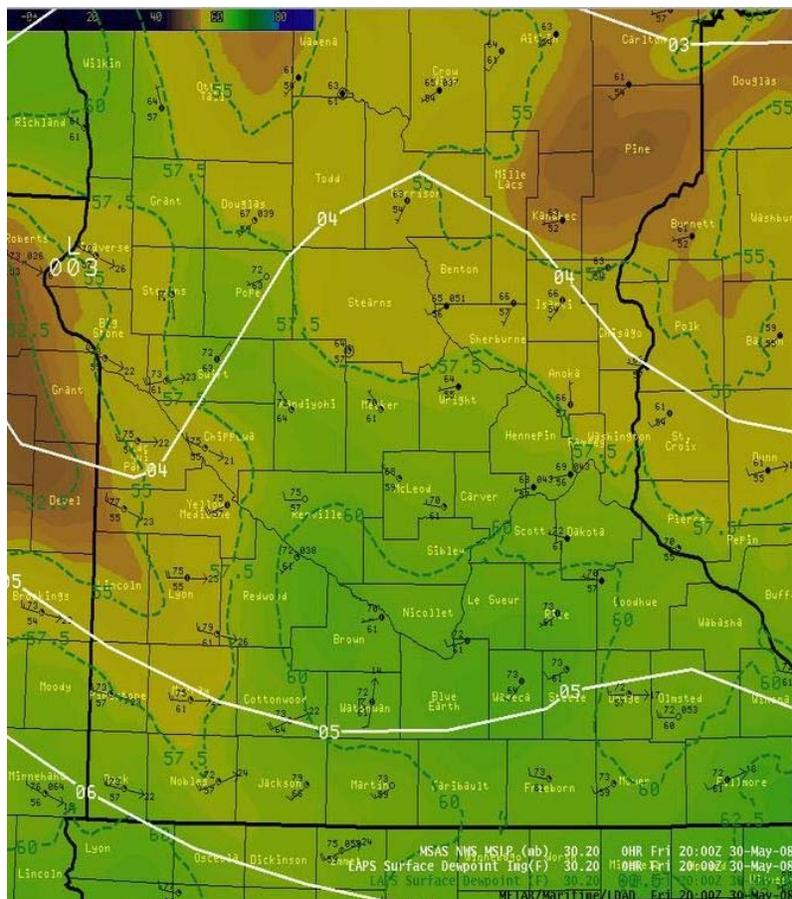


May 30, 2008 NWS Doppler Radar 0.5° Reflectivity: 6:28 pm

Both days also brought the slight chance for short-lived tornadoes with some of the thunderstorms. Around aforementioned short waves, there tends to be atmospheric spin in the mid levels. There was also some pre-existing low level spin near the surface due to the low pressure system. Another favorable ingredient was that vertical air motion was from the surface, which can help

stretch spin out. Finally, there was just enough surface moisture for the possibility of tornadoes. The caveats for widespread or long-lived tornadoes were that wind speeds were fairly light in the atmosphere contributing to little wind shear.

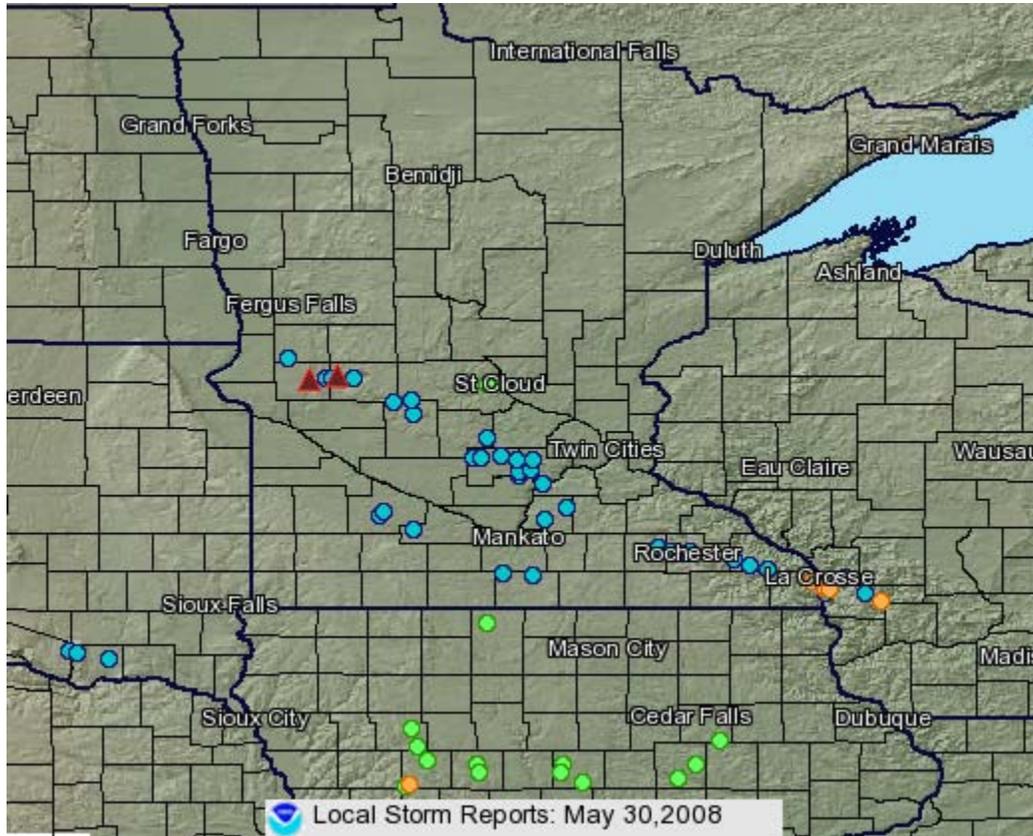
Two brief tornado touchdowns did occur in west central Minnesota and within 10 minutes of each other during the afternoon of May 30th. At 3:30 pm, a tornado touched down for less than a minute three miles northeast of Cyrus in Pope County. Another weak tornado touched down from a separate storm just 8 minutes later three miles northwest of Morris in Stevens County. The below surface weather map from 3 pm reveals the surface low approaching that area along with the narrow tongue of low level moisture (reflected by the image of dew points).



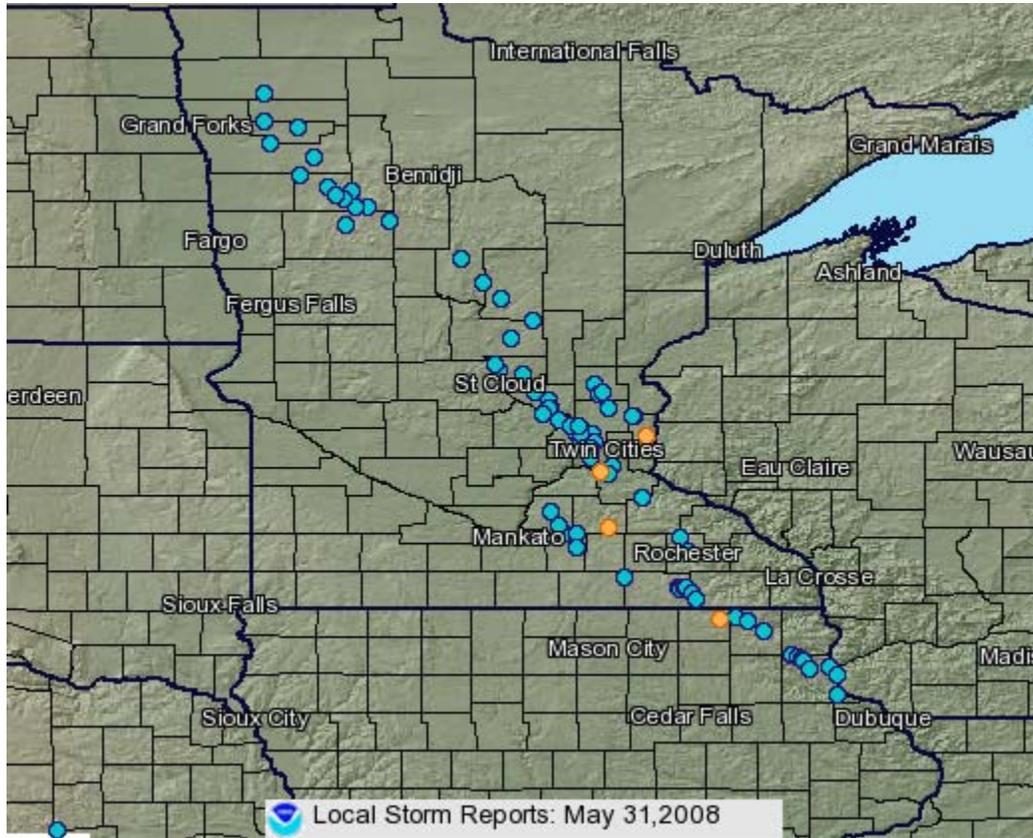
May 30th, 2008 Surface Weather Map: 3 pm

Storm Reports

May 30, 2008 Storm Reports



May 31, 2008 Storm Reports



The map above contains a plot of severe weather reports across the region during May 30th and 31st, 2008. The below listing are of severe weather reports received during or soon after the events by the NWS Twin Cities/Chanhassen Forecast Office from local government officials or trained storm spotters.

May 30th Text Reports

PRELIMINARY LOCAL STORM REPORT...SUMMARY
 NATIONAL WEATHER SERVICE TWIN CITIES/CHANHASSEN MN
 205 PM CDT SAT MAY 31 2008

..TIME...	...EVENT...	...CITY LOCATION...	...LAT.LON...
..DATE...MAG....	..COUNTY LOCATION..ST..	...SOURCE....
	..REMARKS..		
0215 PM	HAIL	SPRINGFIELD	44.24N 94.98W
05/30/2008	M0.75 INCH	BROWN	MN TRAINED SPOTTER
0320 PM	HAIL	CYRUS	45.62N 95.74W

05/30/2008	M1.00 INCH	POPE	MN	PUBLIC
0323 PM	HAIL	2 W CYRUS		45.62N 95.78W
05/30/2008	M1.00 INCH	STEVENS	MN	PUBLIC
0330 PM	HAIL	2 E CLEVELAND		44.32N 93.79W
05/30/2008	M0.75 INCH	LE SUEUR	MN	TRAINED SPOTTER
0330 PM	TORNADO	3 NE CYRUS		45.65N 95.69W
05/30/2008		POPE	MN	TRAINED SPOTTER
BRIEF TOUCHDOWN IN AN OPEN FIELD.				
0335 PM	HAIL	CYRUS		45.62N 95.74W
05/30/2008	M1.75 INCH	POPE	MN	TRAINED SPOTTER
HAIL RANGING FROM NICKEL SIZE TO GOLF BALL SIZE IN CYRUS. TIME APPROXIMATED.				
0337 PM	HAIL	MONTGOMERY		44.44N 93.58W
05/30/2008	M0.75 INCH	LE SUEUR	MN	PUBLIC
0338 PM	TORNADO	3 NW MORRIS		45.62N 95.95W
05/30/2008		STEVENS	MN	LAW ENFORCEMENT
BRIEF TORNADO TOUCHDOWN ABOUT 3 MILES NORTHWEST OF MORRIS.				
0345 PM	HAIL	STARBUCK		45.61N 95.53W
05/30/2008	M1.00 INCH	POPE	MN	LAW ENFORCEMENT
0353 PM	FUNNEL CLOUD	6 WNW STARBUCK		45.65N 95.65W
05/30/2008		POPE	MN	LAW ENFORCEMENT
FUNNEL CLOUD ALMOST TOUCHED GROUND 2 MILES NORTH AND 6 MILES WEST OF STARBUCK.				
0410 PM	HAIL	4 S AMBOY		43.83N 94.16W
05/30/2008	M1.75 INCH	FARIBAULT	MN	TRAINED SPOTTER
0420 PM	HAIL	3 W HUTCHINSON		44.89N 94.44W
05/30/2008	M0.75 INCH	MCLEOD	MN	LAW ENFORCEMENT
0420 PM	HAIL	2 W NEW LONDON		45.30N 94.99W
05/30/2008	M0.75 INCH	KANDIYOHI	MN	EMERGENCY MNGR
REPORTED AT COUNTY ROAD 40.				
0420 PM	HAIL	4 N EASTON		43.82N 93.90W
05/30/2008	M0.75 INCH	FARIBAULT	MN	TRAINED SPOTTER
0430 PM	HAIL	HUTCHINSON		44.89N 94.37W
05/30/2008	M0.88 INCH	MCLEOD	MN	TRAINED SPOTTER
0432 PM	HAIL	5 NE SUNBURG		45.40N 95.17W
05/30/2008	M0.88 INCH	KANDIYOHI	MN	LAW ENFORCEMENT

REPORT AT COUNTY ROAD 36 NEAR NORWAY LAKE.

0447 PM HAIL 2 S BELGRADE 45.42N 95.00W
05/30/2008 M0.75 INCH STEARNS MN AMATEUR RADIO

REPORT LOCATED AT STEARNS AND KANDIYOHI COUNTY LINE ALONG
HWY. 71 AND COUNTY ROAD 198.

0459 PM HAIL PAYNESVILLE 45.38N 94.72W
05/30/2008 M0.75 INCH STEARNS MN AMATEUR RADIO

0500 PM HAIL 1 E GLENCOE 44.77N 94.13W
05/30/2008 M1.00 INCH MCLEOD MN LAW ENFORCEMENT

REPORT LOCATED AT HWY. 212 AND FALCON.

0507 PM HAIL GLENCOE 44.77N 94.15W
05/30/2008 M1.00 INCH MCLEOD MN TRAINED SPOTTER

0512 PM HAIL 3 SSE PLATO 44.73N 94.02W
05/30/2008 M0.88 INCH MCLEOD MN FIRE DEPT/RESCUE

0515 PM HAIL 1 SE PLATO 44.76N 94.02W
05/30/2008 M1.00 INCH MCLEOD MN TRAINED SPOTTER

0522 PM HAIL NORWOOD/YOUNG AMERICA 44.78N 93.92W
05/30/2008 M0.75 INCH CARVER MN TRAINED SPOTTER

0542 PM HAIL DASSEL 45.08N 94.31W
05/30/2008 M0.75 INCH MEEKER MN TRAINED SPOTTER

0542 PM HAIL DASSEL 45.08N 94.31W
05/30/2008 M0.75 INCH MEEKER MN TRAINED SPOTTER

0555 PM HAIL 3 NW BELLE PLAINE 44.65N 93.81W
05/30/2008 M1.00 INCH SIBLEY MN TRAINED SPOTTER

0647 PM HAIL E SILVER LAKE 44.90N 94.19W
05/30/2008 M0.75 INCH MCLEOD MN TRAINED SPOTTER

0655 PM HAIL MAYER 44.88N 93.89W
05/30/2008 M0.75 INCH CARVER MN FIRE DEPT/RESCUE

0700 PM HAIL LESTER PRAIRIE 44.88N 94.04W
05/30/2008 M0.75 INCH MCLEOD MN TRAINED SPOTTER

May 31st Text Reports

PRELIMINARY LOCAL STORM REPORT...SUMMARY
NATIONAL WEATHER SERVICE TWIN CITIES/CHANHASSEN MN
1133 AM CDT SUN JUN 01 2008

..TIME...	...EVENT...	...CITY LOCATION...	...LAT.LON...
..DATE...MAG....	..COUNTY LOCATION..ST..	...SOURCE....
..REMARKS..			
0250 PM	HAIL	LE CENTER	44.39N 93.73W
05/31/2008	E0.75 INCH	LE SUEUR MN	PUBLIC
0310 PM	TSTM WND DMG	5 SE FARIBAULT	44.25N 93.20W
05/31/2008		RICE MN	EMERGENCY MNGR
LARGE TREE DOWN ACROSS ROAD.			
0321 PM	HAIL	3 SW MORRISTOWN	44.20N 93.49W
05/31/2008	E0.75 INCH	WASECA MN	TRAINED SPOTTER
0324 PM	HAIL	7 NE JANESVILLE	44.19N 93.61W
05/31/2008	M0.75 INCH	WASECA MN	EMERGENCY MNGR
0324 PM	HAIL	5 NW WATERVILLE	44.27N 93.65W
05/31/2008	E0.75 INCH	LE SUEUR MN	TRAINED SPOTTER
0358 PM	HAIL	WASECA	44.08N 93.50W
05/31/2008	M1.00 INCH	WASECA MN	TRAINED SPOTTER
0411 PM	HAIL	3 E ST STEPHEN	45.70N 94.21W
05/31/2008	M0.75 INCH	STEARNS MN	AMATEUR RADIO
NEAR COUNTY ROAD 1 AND COUNTY ROAD 5.			
0429 PM	HAIL	4 W FOLEY	45.66N 93.99W
05/31/2008	M0.75 INCH	BENTON MN	AMATEUR RADIO
AT COUNTY ROADS 25 AND 4.			
0430 PM	HAIL	8 ENE HOLLANDALE	43.80N 93.06W
05/31/2008	E0.75 INCH	FREEBORN MN	PUBLIC
HAILED ABOUT 5 MINUTES.			
0439 PM	HAIL	RICE	45.75N 94.23W
05/31/2008	M0.75 INCH	BENTON MN	AMATEUR RADIO
0455 PM	HAIL	9 N HILLMAN	46.14N 93.89W
05/31/2008	E0.75 INCH	MORRISON MN	PUBLIC
HAIL BEGAN AT 0.75 THEN DECREASED TO PEA SIZE. IT LASTED ABOUT TEN MINUTES.			
0455 PM	HAIL	9 N BECKER	45.50N 93.87W
05/31/2008	M0.75 INCH	SHERBURNE MN	FIRE DEPT/RESCUE
0500 PM	HAIL	4 SSW VINELAND	46.13N 93.80W
05/31/2008	E0.50 INCH	MILLE LACS MN	TRAINED SPOTTER
HAIL CAME DOWN IN SHEETS AND COVERED THE GROUND. GARDEN LOST. HAIL STILL ON GROUND IN DRIFTS THREE HOURS LATER.			

0504 PM	HAIL	8 N BECKER	45.49N 93.87W
05/31/2008	M0.88 INCH	SHERBURNE	MN AMATEUR RADIO
0517 PM	HAIL	PIERZ	45.98N 94.10W
05/31/2008	E0.88 INCH	MORRISON	MN LAW ENFORCEMENT
0521 PM	HAIL	5 N BIG LAKE	45.41N 93.75W
05/31/2008	M1.00 INCH	SHERBURNE	MN AMATEUR RADIO
0524 PM	HAIL	1 N BIG LAKE	45.35N 93.75W
05/31/2008	E1.75 INCH	SHERBURNE	MN AMATEUR RADIO
0525 PM	HAIL	1 E BIG LAKE	45.34N 93.73W
05/31/2008	M1.50 INCH	SHERBURNE	MN STORM CHASER
0526 PM	FUNNEL CLOUD	BIG LAKE	45.34N 93.75W
05/31/2008		SHERBURNE	MN STORM CHASER
VISIBLE FUNNEL HALFWAY TO GROUND NOTED. HOWEVER THE BLOWING DUST NEAR FUNNEL IS UNIDIRECTIONAL AND SHOWS NO ROTATION AND IS LIKELY RFD WIND.			
0529 PM	HAIL	MONTICELLO	45.30N 93.80W
05/31/2008	M0.75 INCH	WRIGHT	MN AMATEUR RADIO
0530 PM	HAIL	1 N BIG LAKE	45.35N 93.75W
05/31/2008	M0.75 INCH	SHERBURNE	MN AMATEUR RADIO
0530 PM	HAIL	BUCKMAN	45.90N 94.09W
05/31/2008	M0.75 INCH	MORRISON	MN TRAINED SPOTTER
FEW DIME TO PENNY SIZE HAILSTONES BUT LARGER JUST SOUTH OF BUCKMAN WITH DAMAGE TO VINYL SIDING ON HOMES.			
0540 PM	HAIL	DAYTON	45.19N 93.47W
05/31/2008	M0.88 INCH	HENNEPIN	MN TRAINED SPOTTER
AT INTERSECTION OF COUNTY ROADS 12 AND 13.			
0547 PM	FUNNEL CLOUD	CORCORAN	45.12N 93.59W
05/31/2008		HENNEPIN	MN LAW ENFORCEMENT
GOING UP AND DOWN BUT HAS NOT TOUCHED DOWN AT THIS TIME. LOCATION IS LIKELY NORTHERN CORCORAN.			
0547 PM	HAIL	ALBERTVILLE	45.24N 93.66W
05/31/2008	M0.75 INCH	WRIGHT	MN AMATEUR RADIO
0552 PM	HAIL	ROGERS	45.19N 93.55W
05/31/2008	E1.75 INCH	HENNEPIN	MN TRAINED SPOTTER
0553 PM	HAIL	BROOKLYN PARK	45.11N 93.35W
05/31/2008	M0.75 INCH	HENNEPIN	MN AMATEUR RADIO
AT BROOKLYN BLVD AND ZANE.			
0557 PM	HAIL	2 WNW MAPLE GROVE	45.11N 93.50W
05/31/2008	M1.00 INCH	HENNEPIN	MN TRAINED SPOTTER
0559 PM	HAIL	MAPLE GROVE	45.11N 93.46W

05/31/2008 E0.88 INCH HENNEPIN MN STORM CHASER
AT INTERSTATE 94 AND HEMLOCK. METEOROLOGIST CHASER ALSO
SEES SIGNIFICANT RFD WIND BUT NO FUNNEL.

0559 PM HAIL ROGERS 45.19N 93.55W
05/31/2008 E1.50 INCH HENNEPIN MN AMATEUR RADIO

0602 PM HAIL MAPLE GROVE 45.11N 93.46W
05/31/2008 E1.00 INCH HENNEPIN MN AMATEUR RADIO
INTERSTATE 94 AND COUNTY ROAD 30.

0603 PM HAIL MAPLE GROVE 45.11N 93.46W
05/31/2008 E1.75 INCH HENNEPIN MN LAW ENFORCEMENT
OVER WESTERN AND CENTRAL PORTIONS OF MAPLE GROVE PER CITY
POLICE.

0607 PM HAIL MAPLE GROVE 45.11N 93.46W
05/31/2008 M1.00 INCH HENNEPIN MN AMATEUR RADIO
AT I-94 AND HEMLOCK.

0609 PM HAIL 3 NE PLYMOUTH 45.05N 93.43W
05/31/2008 E1.75 INCH HENNEPIN MN TRAINED SPOTTER

0610 PM HAIL BROOKLYN PARK 45.11N 93.35W
05/31/2008 M0.75 INCH HENNEPIN MN AMATEUR RADIO
AT 169 AND 63RD.

0610 PM HAIL PLYMOUTH 45.02N 93.46W
05/31/2008 M1.00 INCH HENNEPIN MN AMATEUR RADIO
169 AND SCHMIDT LAKE RD.

0612 PM HAIL CRYSTAL 45.04N 93.36W
05/31/2008 M1.00 INCH HENNEPIN MN AMATEUR RADIO

0612 PM HAIL PLYMOUTH 45.02N 93.46W
05/31/2008 M1.00 INCH HENNEPIN MN AMATEUR RADIO
494 AND COUNTY ROAD 9.

0614 PM HAIL NEW HOPE 45.04N 93.39W
05/31/2008 M1.00 INCH HENNEPIN MN AMATEUR RADIO

0615 PM HAIL CRYSTAL 45.04N 93.36W
05/31/2008 E0.75 INCH HENNEPIN MN AMATEUR RADIO
BOONE AVE AND 32ND.

0615 PM HAIL ROBBINSDALE 45.03N 93.33W
05/31/2008 E0.75 INCH HENNEPIN MN AMATEUR RADIO
AT NORTH MEMORIAL HOSPITAL.

0617 PM HAIL MAPLE GROVE 45.11N 93.46W
05/31/2008 E1.00 INCH HENNEPIN MN AMATEUR RADIO
INTERSTATE 94 AND COUNTY ROAD 30.

0622 PM HAIL GOLDEN VALLEY 44.99N 93.36W
05/31/2008 E1.00 INCH HENNEPIN MN AMATEUR RADIO
ONE MILE NORTH OF HIGHWAY 55 AND WINNETKA.

0622 PM	HAIL	5 WSW MINNEAPOLIS	44.95N 93.36W
05/31/2008	E1.00 INCH	HENNEPIN	MN TRAINED SPOTTER
MINNETONKA BLVD AND LOUISIANA.			
0622 PM	HAIL	ST LOUIS PARK	44.95N 93.36W
05/31/2008	E1.00 INCH	HENNEPIN	MN AMATEUR RADIO
HIGHWAY 100 AND COUNTY ROAD 40.			
0624 PM	HAIL	ST LOUIS PARK	44.95N 93.36W
05/31/2008	E1.75 INCH	HENNEPIN	MN AMATEUR RADIO
LAKE STREET AND MINNETONKA			
0624 PM	HAIL	5 W CAMBRIDGE	45.56N 93.33W
05/31/2008	E0.75 INCH	ISANTI	MN AMATEUR RADIO
HIGHWAY 95 AND RUM RIVER AT WALBO.			
0628 PM	HAIL	EDINA	44.89N 93.36W
05/31/2008	E1.00 INCH	HENNEPIN	MN TRAINED SPOTTER
HIGHWAY 100 AND 50TH. SIGNIFICANT DAMAGE TO TREES AND VEGETATION.			
0628 PM	HAIL	GOLDEN VALLEY	44.99N 93.36W
05/31/2008	M1.00 INCH	HENNEPIN	MN AMATEUR RADIO
NEAR EXCELSIOR AND HAWTHORNE.			
0628 PM	HAIL	ST LOUIS PARK	44.95N 93.36W
05/31/2008	E1.75 INCH	HENNEPIN	MN TRAINED SPOTTER
HIGHWAY 100 AND MINNETONKA			
0632 PM	HAIL	GOLDEN VALLEY	44.99N 93.36W
05/31/2008	E1.00 INCH	HENNEPIN	MN TRAINED SPOTTER
HIGHWAY 100 AND INTERSTATE 394.			
0634 PM	HAIL	ISANTI	45.49N 93.25W
05/31/2008	E0.75 INCH	ISANTI	MN AMATEUR RADIO
COUNTY ROAD 5 AND WHISKEY.			
0635 PM	HAIL	MINNEAPOLIS	44.96N 93.27W
05/31/2008	E0.75 INCH	HENNEPIN	MN TRAINED SPOTTER
NEAR LORING PARK ON EDGE OF DOWNTOWN.			
0635 PM	HAIL	EDINA	44.89N 93.36W
05/31/2008	E1.00 INCH	HENNEPIN	MN TRAINED SPOTTER
HIGHWAY 100 AND INTERSTATE 494.			
0635 PM	HAIL	2 WSW ISANTI	45.48N 93.29W
05/31/2008	E0.75 INCH	ISANTI	MN TRAINED SPOTTER
0635 PM	HAIL	ISANTI	45.49N 93.25W
05/31/2008	E0.75 INCH	ISANTI	MN TRAINED SPOTTER
0642 PM	TSTM WND DMG	BURNSVILLE	44.76N 93.28W
05/31/2008		DAKOTA	MN TRAINED SPOTTER
ROOF PARTIALLY OFF BUILDING NEAR CLIFF ROAD AND 12TH. REPORTED BY NON-NWS METEOROLOGISTS.			

0647 PM	HAIL	EAST BETHEL	45.34N 93.20W
05/31/2008	E1.75 INCH	ANOKA	MN TRAINED SPOTTER
0655 PM	HAIL	EAGAN	44.82N 93.16W
05/31/2008	E1.75 INCH	DAKOTA	MN AMATEUR RADIO
INTERSTATE 35E AND CLIFF ROAD.			
0700 PM	HAIL	APPLE VALLEY	44.75N 93.20W
05/31/2008	E1.00 INCH	DAKOTA	MN TRAINED SPOTTER
0710 PM	HAIL	3 SW VERMILLION	44.64N 93.01W
05/31/2008	E0.75 INCH	DAKOTA	MN LAW ENFORCEMENT
OCCURED IN EMPIRE.			
0712 PM	HAIL	FOREST LAKE	45.28N 92.99W
05/31/2008	E1.00 INCH	WASHINGTON	MN AMATEUR RADIO
NEAR HIGHWAYS 61 AND 97.			
0712 PM	HAIL	1 ESE FOREST LAKE	45.27N 92.97W
05/31/2008	M0.88 INCH	WASHINGTON	MN TRAINED SPOTTER
0730 PM	HAIL	CANNON FALLS	44.52N 92.90W
05/31/2008	E1.00 INCH	GOODHUE	MN LAW ENFORCEMENT
0740 PM	HAIL	4 NE WASTEDO	44.45N 92.79W
05/31/2008	E1.25 INCH	GOODHUE	MN PUBLIC
LASTED UNTIL 750 PM.			
0804 PM	TSTM WND DMG	3 NNW STILLWATER	45.10N 92.85W
05/31/2008		WASHINGTON	MN AMATEUR RADIO
FIVE TREES UPROOTED AND ONE SNAPPED NEAR 96TH STREET AND NOREL AVE.			