

National Severe Weather Workshop 2006

Learning and Growing Together: Expanding Severe Weather Horizons

A national forum for academia, emergency management, media, and NOAA to exchange information and techniques for public safety during severe weather.

March 2-4, 2006

Reed Center

5800 Will Rogers
Midwest City, Oklahoma



Dr. Ken Dewey: UNL, High Plains Regional Climate Center and Lancaster County Emergency Management:
“The UNL Nebraska Vortex Intercept Team Partnership with Emergency Management, the NWS and SPC”

Part I. At the EOC



Part II. In the field with the storms



Part III. Post disaster emergency management

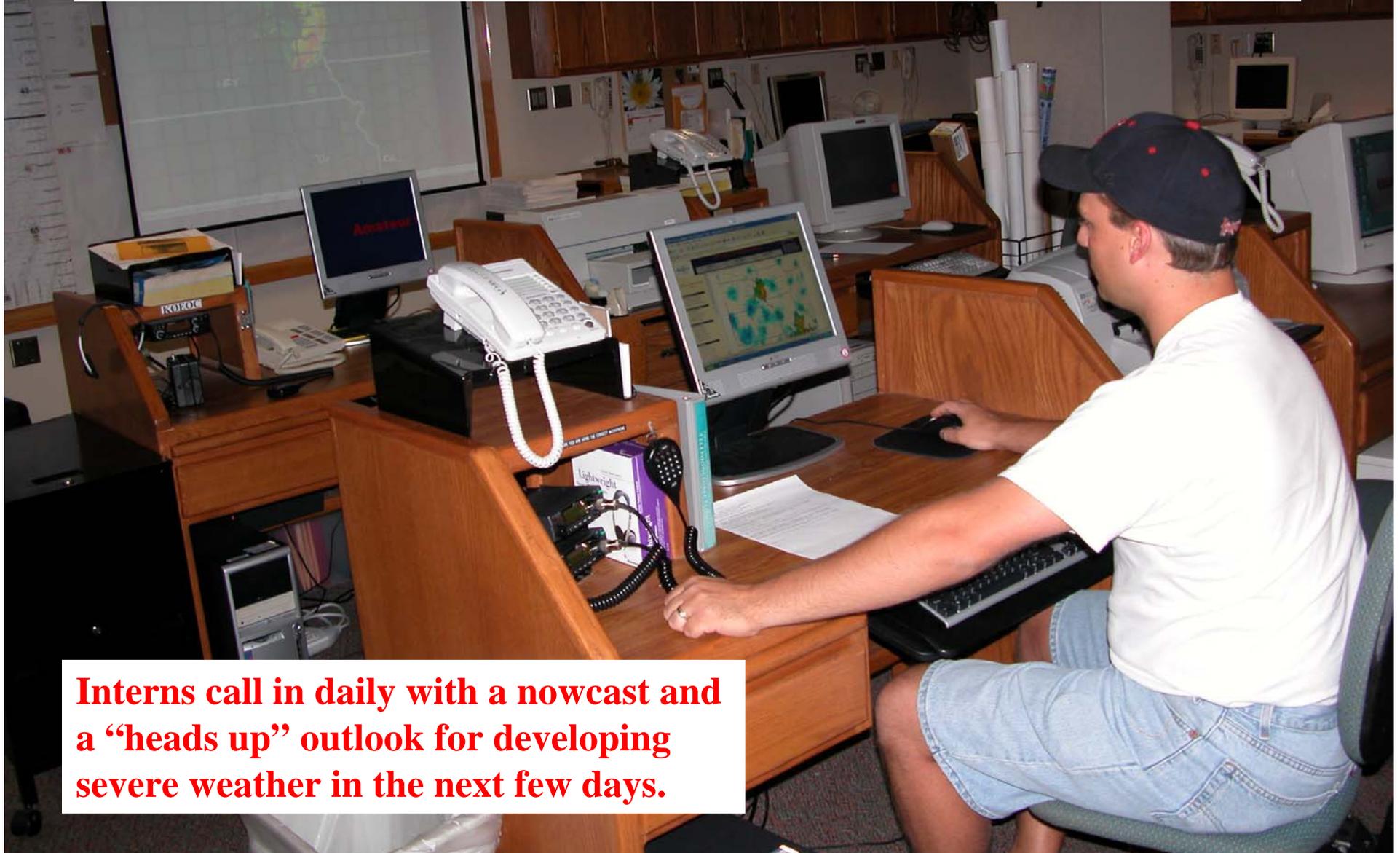
Part IV. Annual Weather Symposium for spotters, the media and the public



**Supercells begin to form off to the SW of Lancaster County.
SPC issues a tornado watch covering Lancaster County and
several surrounding counties**

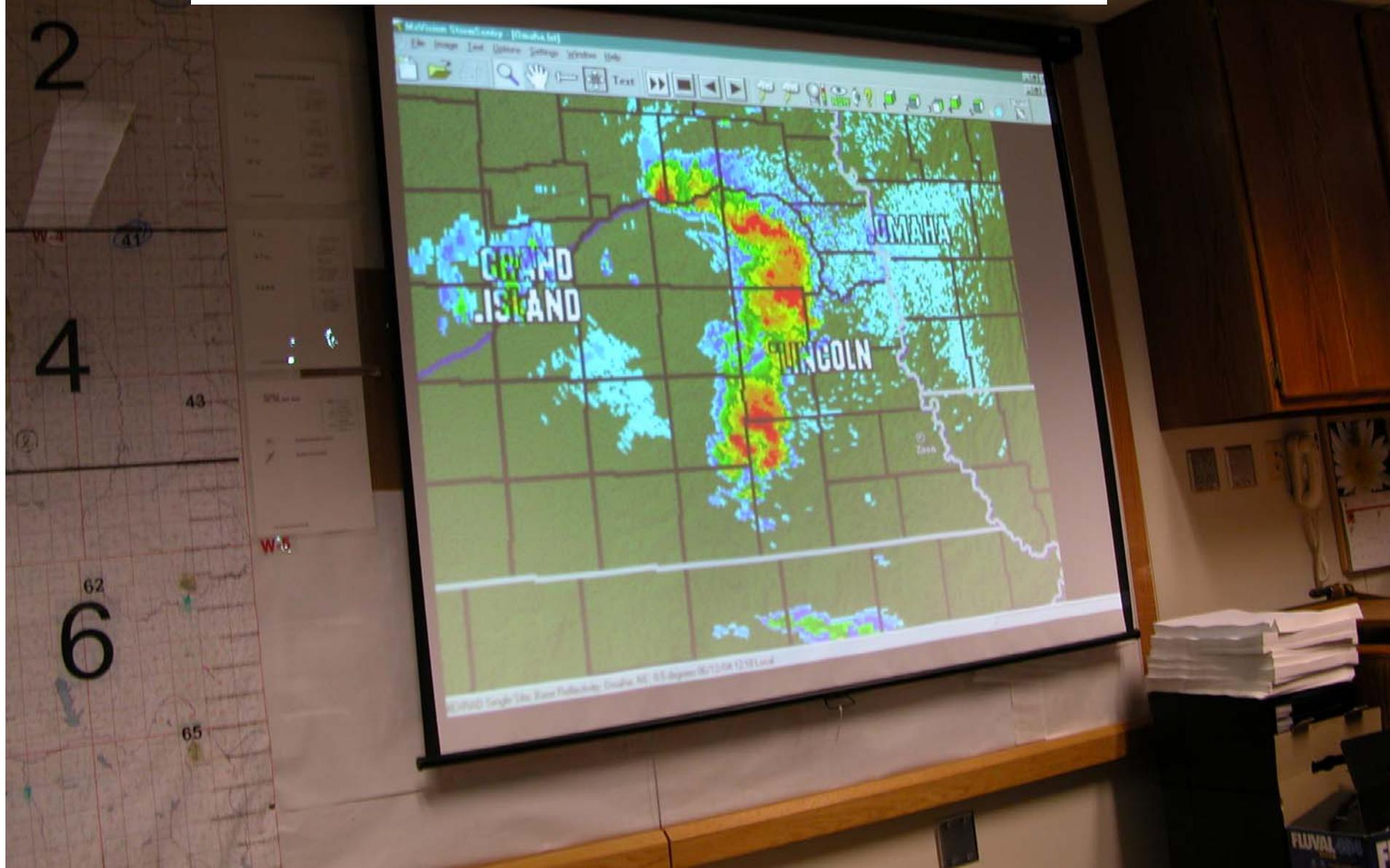


UNL Met. Student Justin Turcotte arrives at the EOC. He evaluates the meteorological parameters. Spotter dispatcher consulted. Spotters called out. EOC volunteers begin to arrive.

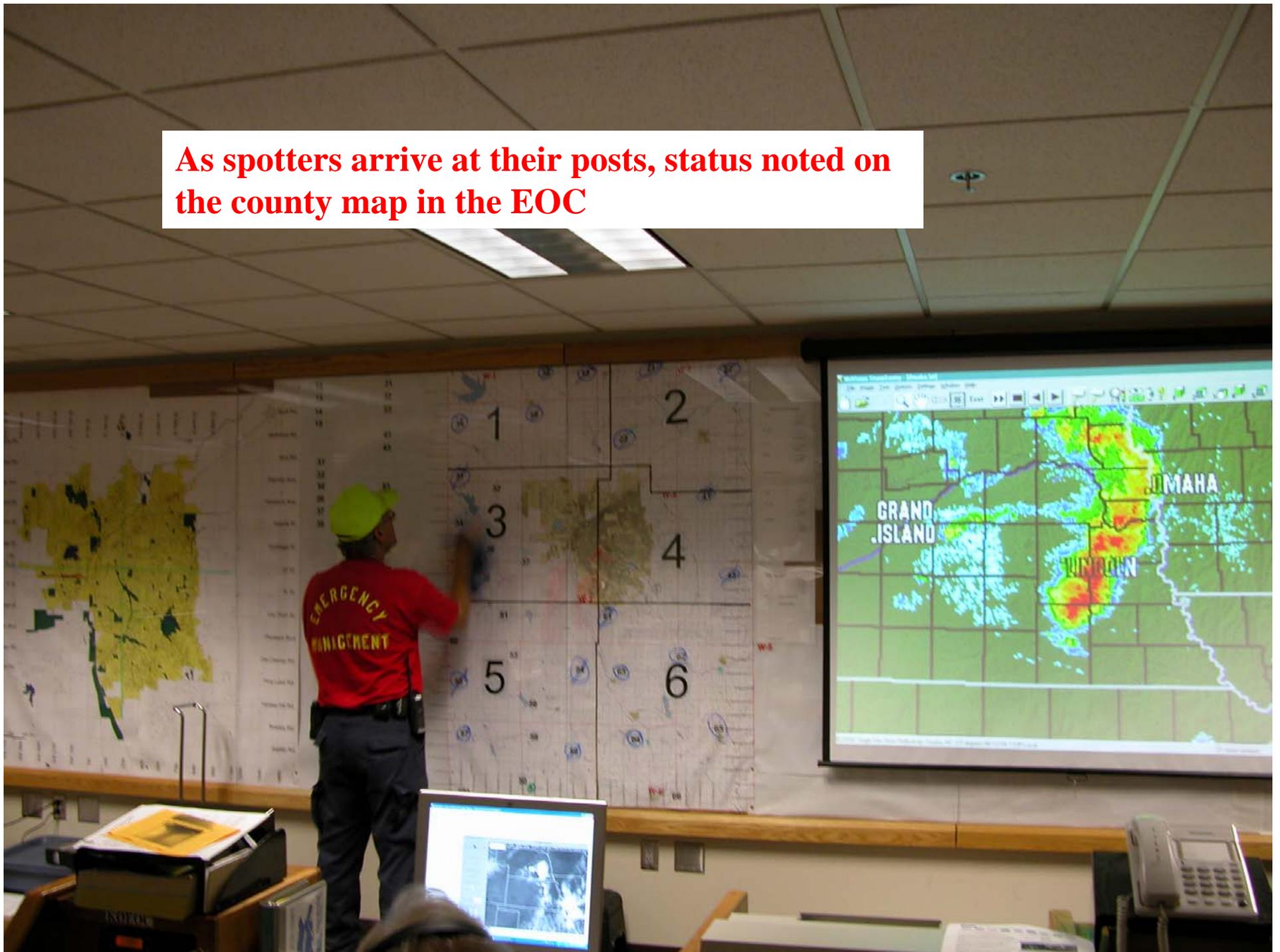


Interns call in daily with a nowcast and a “heads up” outlook for developing severe weather in the next few days.

Radar and other products are projected onto the large screen which is visible throughout the EOC



As spotters arrive at their posts, status noted on the county map in the EOC

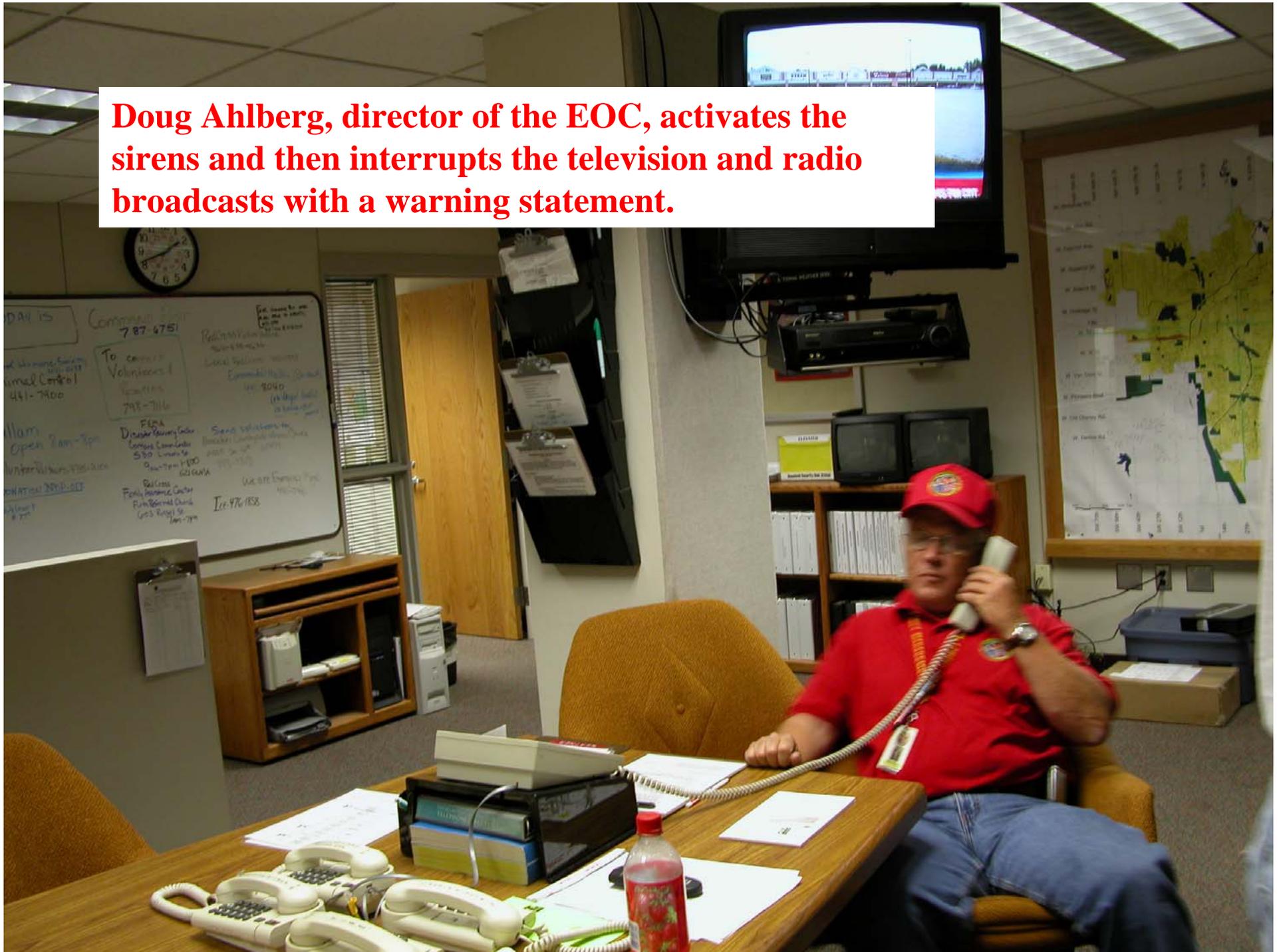




All communications are coordinated at the EOC. The 911 facility is located in the next room and the city police and County sheriffs offices are down the hallway.



Doug Ahlberg, director of the EOC, activates the sirens and then interrupts the television and radio broadcasts with a warning statement.



Part II. In the field with the storms







2 PM Kearney











Part III. Post disaster emergency management

11 AM, morning after the tornado,
1/2 mile east of Hallam



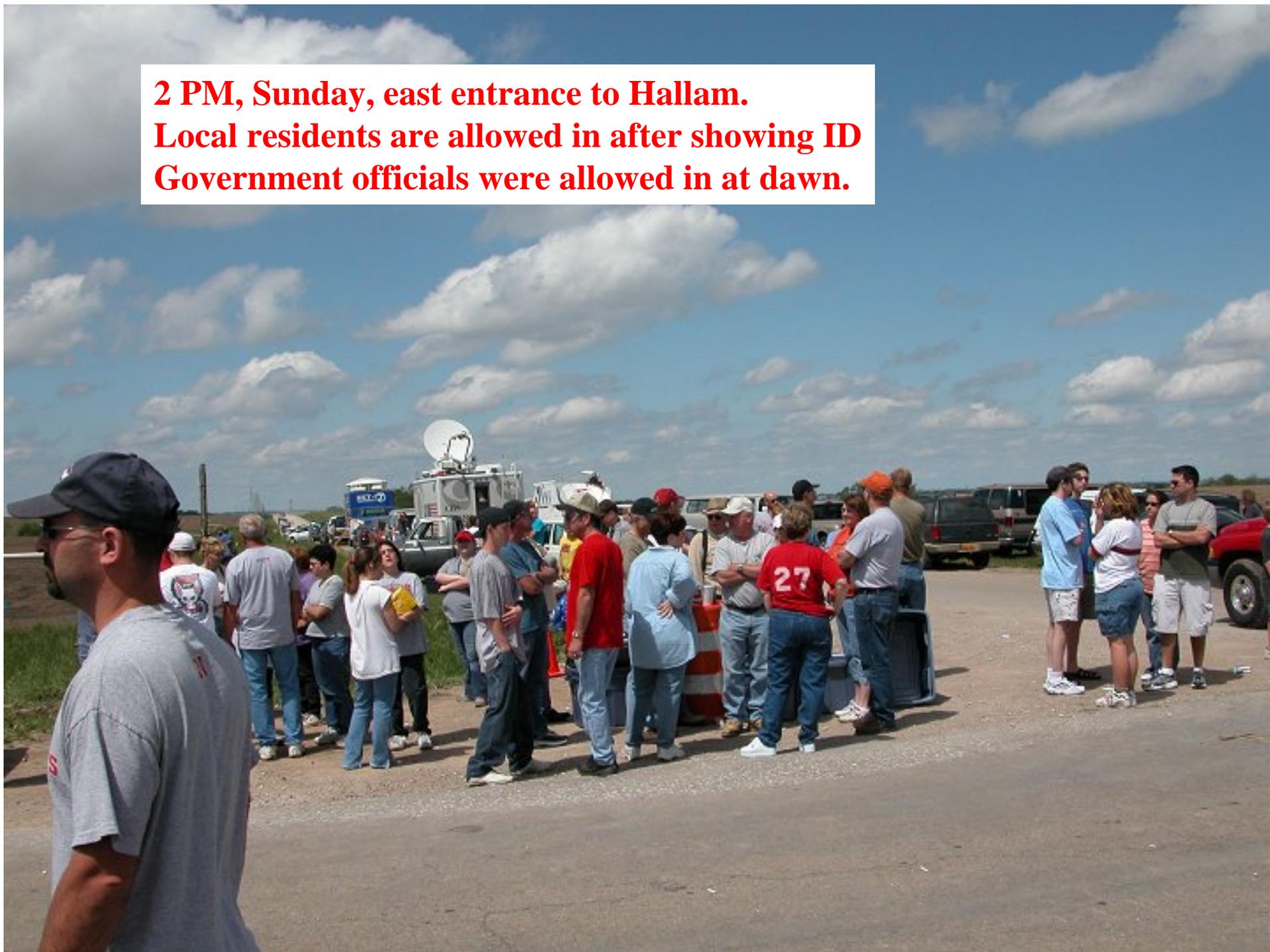
east entrance to Hallam.



**Noon, Sunday, east entrance to Hallam.
Inner perimeter with National Guard.**



**2 PM, Sunday, east entrance to Hallam.
Local residents are allowed in after showing ID
Government officials were allowed in at dawn.**



However, MEDIA NOT ALLOWED IN so they had to conduct their interviews outside the security perimeter. This was a great idea according to the residents.



2:30 PM, Sunday, checking ID's and a resident getting a pass to enter approved



2:30 PM, Weather Channel storm experts working with me get admission into Hallam

NEBRASKA STATE PATROL

TO ENTER RESTRICTED AREA
BEARER HAS PERMISSION OF
GOVERNMENT OFFICIAL
(NOT INFORMED)

BEARER MUST WEAR TA
AT ALL TIMES WHEN IN
RESTRICTED AREA

NAME: _____
ADDRESS: _____
PHONE: _____
DATE: _____
UNTIL: _____

Matt from the Weather Channel describes some of his observations to Doug Ahlberg, Lancaster County Emergency Management Director.



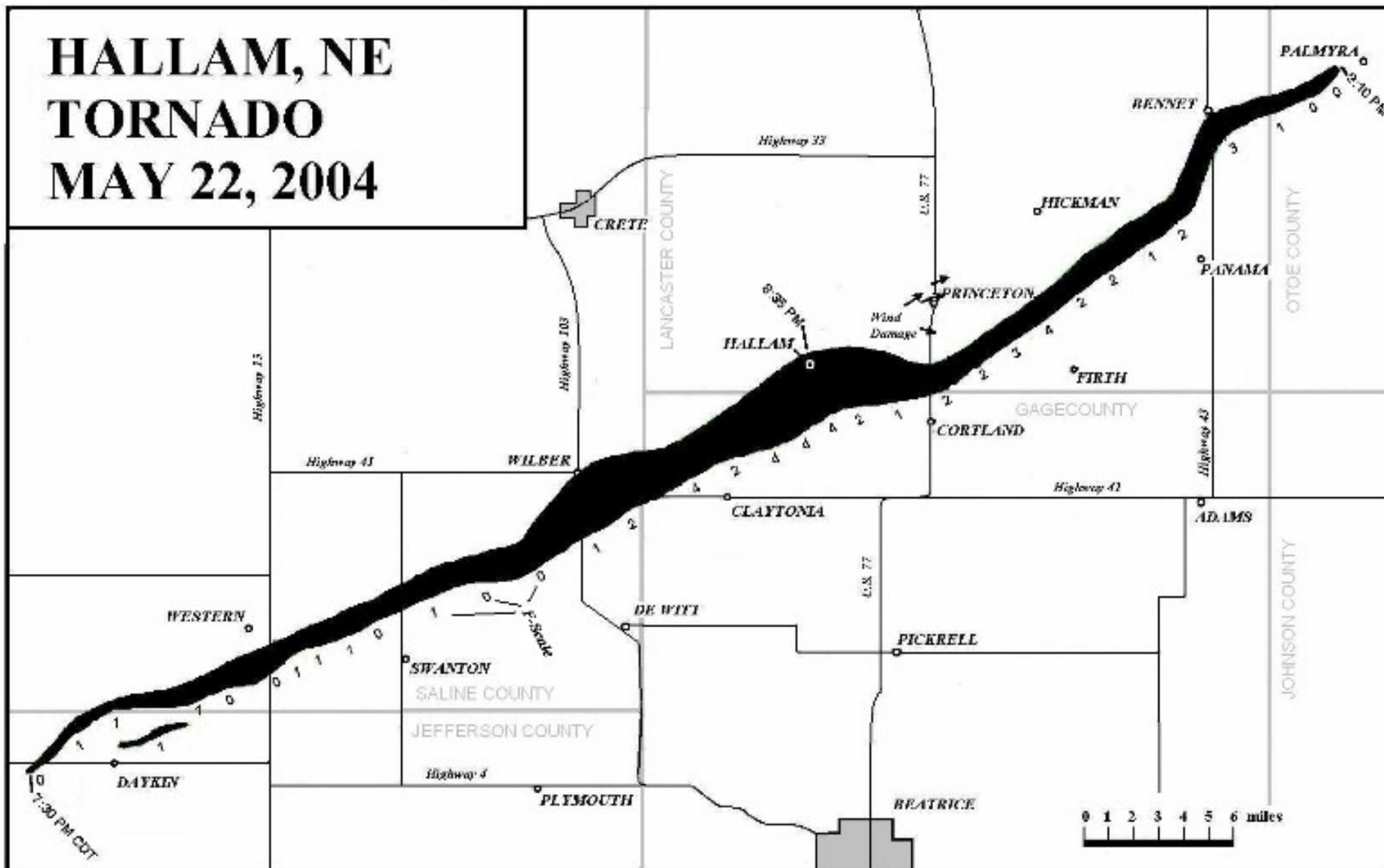
4 PM, Sunday, inside damage area, meet with Brian Smith (WCM, NWS Omaha) and discuss F-Scale rating and damage survey.



First approximation, high end F-3, Monday upgraded to F-4.



HALLAM, NE TORNADO MAY 22, 2004



BASED ON STORM SURVEYS BY NWS OMAHA VALLEY AND EMERGENCY MANAGEMENT



The next step was a ground level survey of all of the structural damage in Hallam and numerous interviews. LARC primary communications into and out of disaster area.

There is also a section of photos at the storm web site showing the emergency management operations



I have created several photo galleries for the May 22, 2004 tornadoes and the recovery efforts. This is from one of the four damage photo galleries





This is what a tornado disaster site looks like BEFORE any clean-up.

Some walls still standing = F-3+.



We walked up and down each street, documenting the damage





I am also interested in how structures are damaged and destroyed to better understand how to build stronger structures and for “safest locations”.







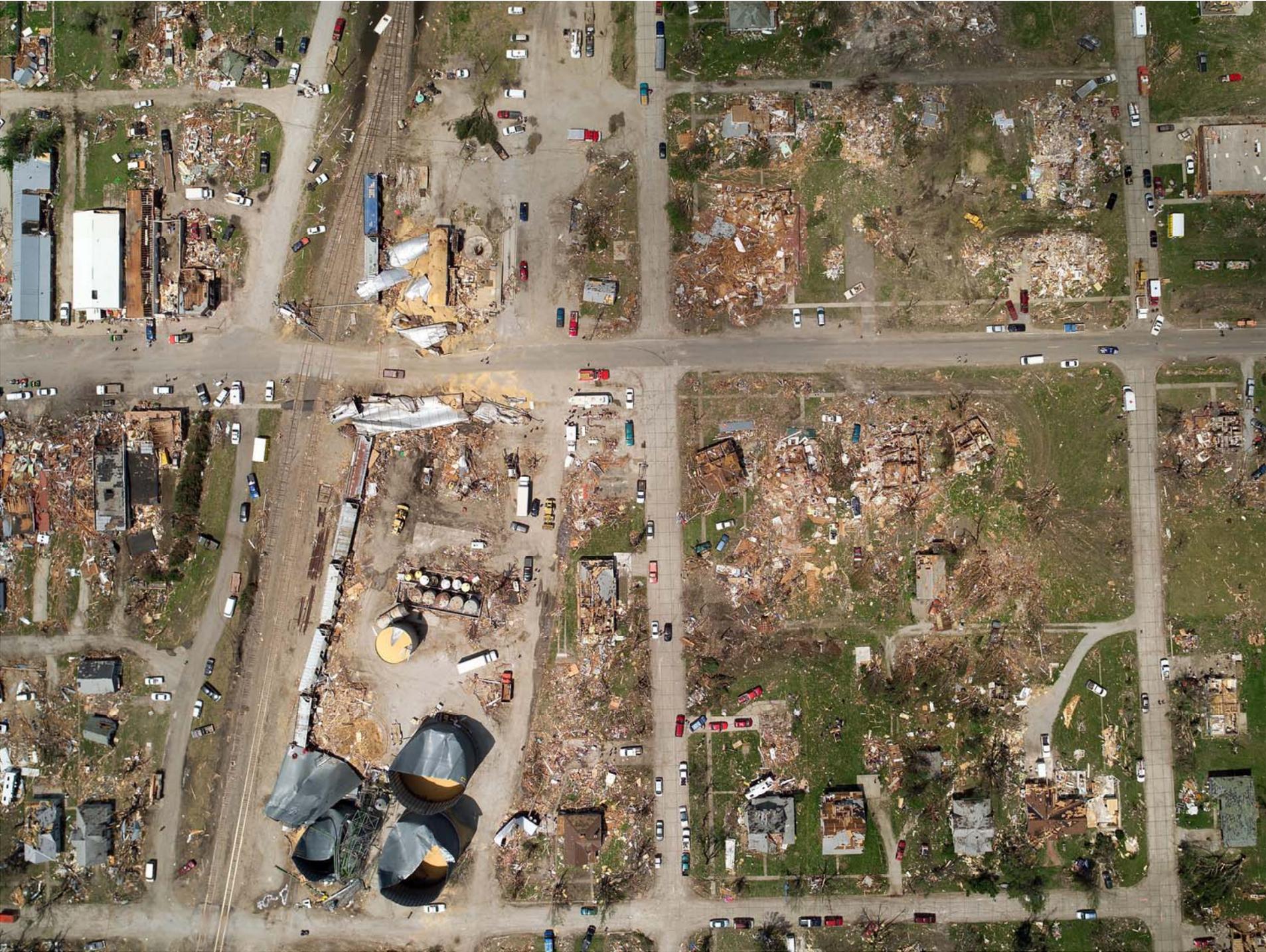
Going vertical made it easier to see the damage pattern and determine the structure of the tornado and to determine the impact on structures.





UNL Remote Sensing Center owns a plane and flew over the entire damage path. Digital photos were quickly made available to the command center









And we began our interviews of the disaster workers and the residents

Used red and green flags on the lawn. Just like stop lights for the media.



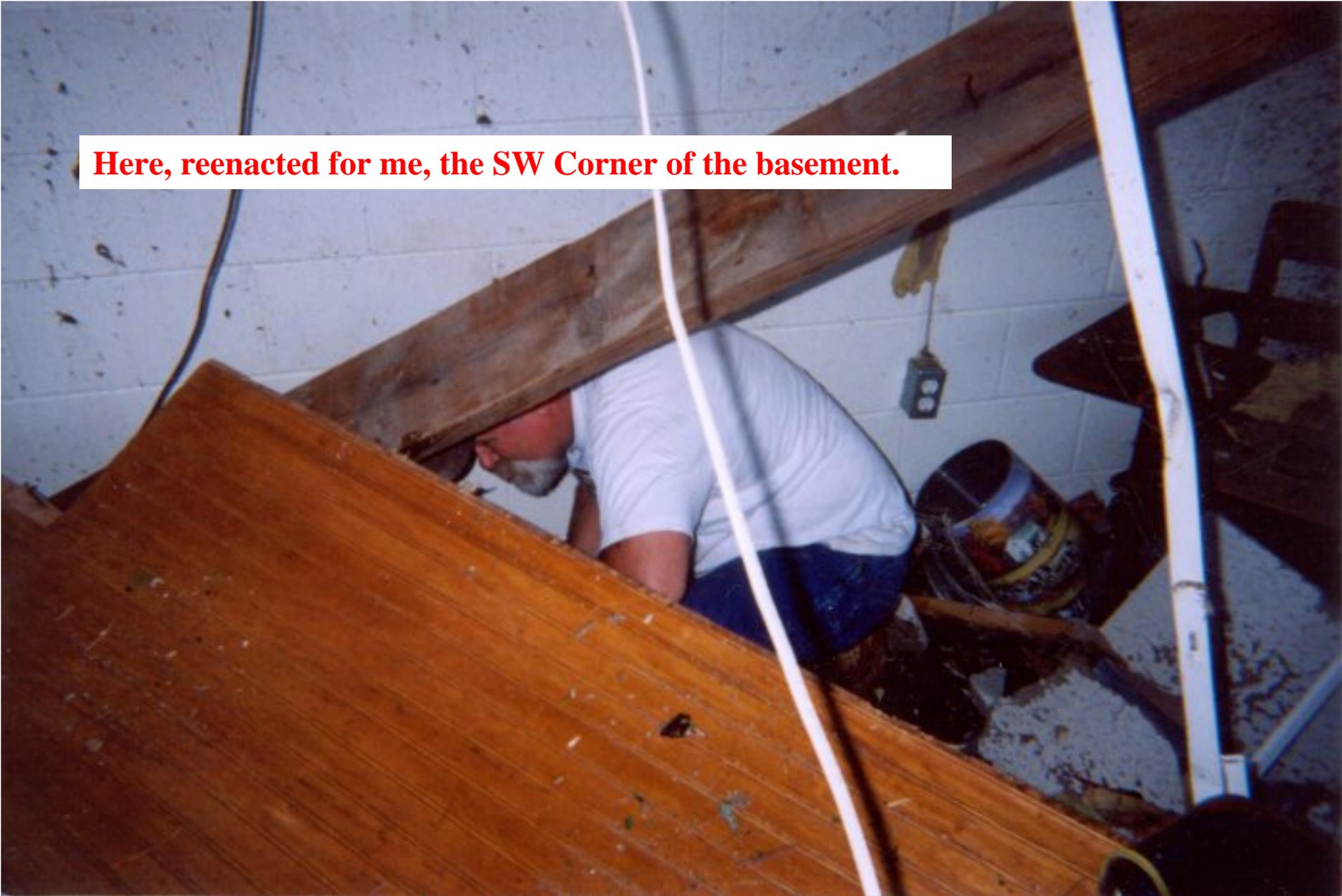


Several volunteers went house to house every day assessing needs of individuals.

Our work is not done getting the correct safety messages out there.



Where did the Taylor family go for safety?



Here, reenacted for me, the SW Corner of the basement.

Residents, of all ages, claimed that the SW corner is the recommended place to be.



I put together a photo gallery at the storm report website covering the topic of basement safety during a tornado.

1 interviewed resident falsely opened windows to “equalize” the pressure

596 WFUS53 KOAX 230109 TOROAX NEC067-109-230215-

BULLETIN - EAS ACTIVATION REQUESTED

TORNADO WARNING

NATIONAL WEATHER SERVICE OMAHA NE **808 PM CDT SAT MAY 22 2004**

Hallam power went out 26 minutes after NWS warning (8:34 PM).

Hallam was hit with tornado 36 minutes after NWS warning (8:44 PM)

THE NATIONAL WEATHER SERVICE IN OMAHA HAS ISSUED A

* TORNADO WARNING FOR...

GAGE COUNTY IN SOUTHEAST NEBRASKA

LANCASTER COUNTY IN SOUTHEAST NEBRASKA

•UNTIL 915 PM CDT **So how did the residents get their warning?**

* **AT 803 PM CDT...A TORNADO WAS ON THE GROUND 6 MILES SOUTH OF WILBUR...**OR 16 MILES NORTHWEST OF BEATRICE...MOVING NORTHEAST AT 25 MPH.

* LOCATIONS IMPACTED INCLUDE...

CLATONIA , HALLAM, CORTLAND, SPRAGUE, FIRTH, HICKMAN...ROCA

AT THIS TIME...IT APPEARS THAT THE TORNADO WILL TRACK SOUTH OF THE LINCOLN METRO AREA AND NORTH OF THE BEATRICE METRO AREA.

A total of 42 interviews were conducted in Hallam and surrounding rural areas. Residents could list more than one source. No one heard a siren.

Television (26)

A phone call (relative or friend) (19)

Power went out, treated it as warning (16)

AM or FM Radio (14)

Neighbor came over (7)

Computer Internet (1)

NOAA Weather Radio (0)

Lesson: We need to spread the word, get a battery powered weather radio

Lesson: The safety message of a bathroom must be stressed as “interior” bathroom and to avoid any exterior walls.



I would think this photo I took in Hallam will demonstrate why it is unsafe in any house on a floor above ground



Lesson: School safety is still a troubling issue

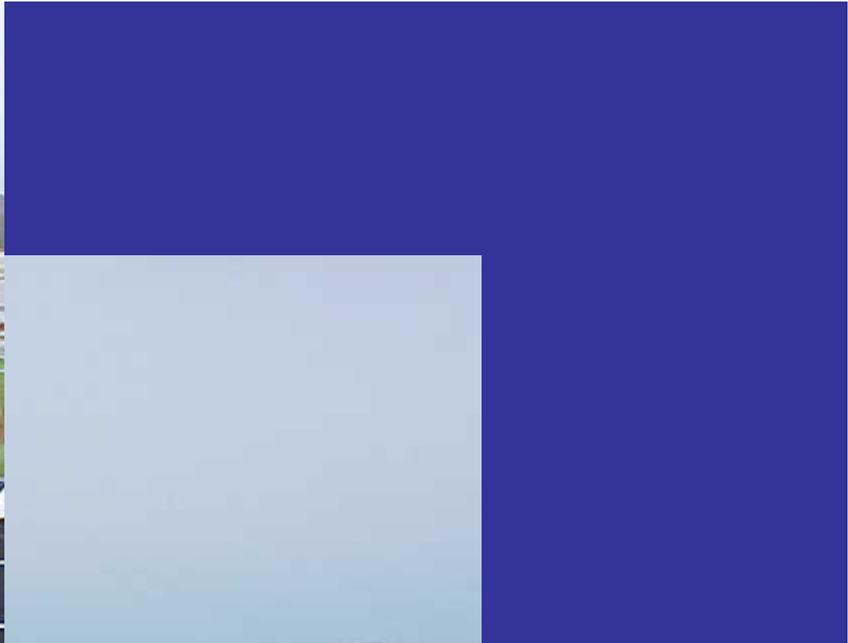
Some of the damage was breathtaking and there is a photo gallery with many images at the storm report web site



The Norris High School auditorium. WHAT IF there had been people sitting in those seats?

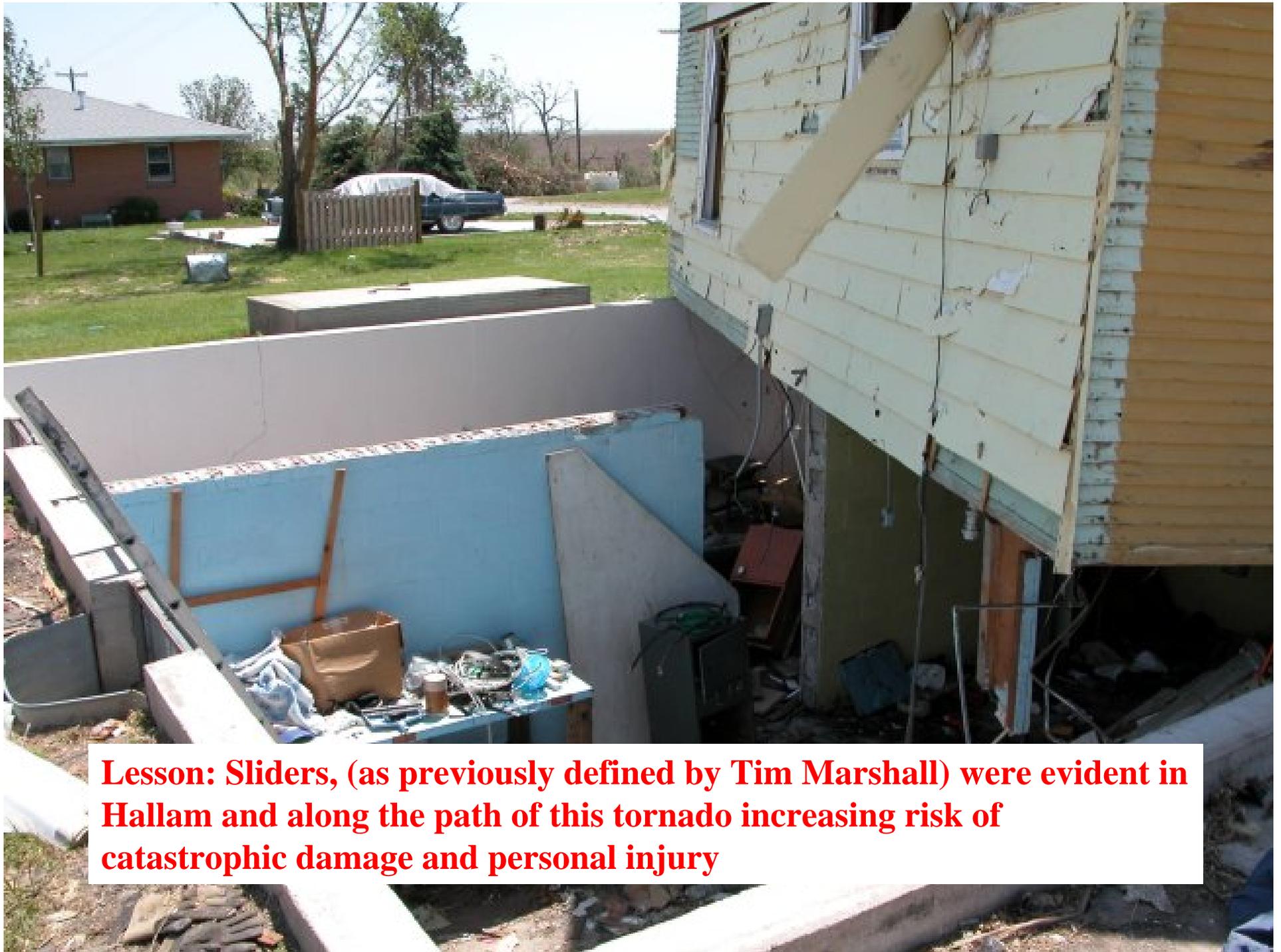


They would have been crushed to death.

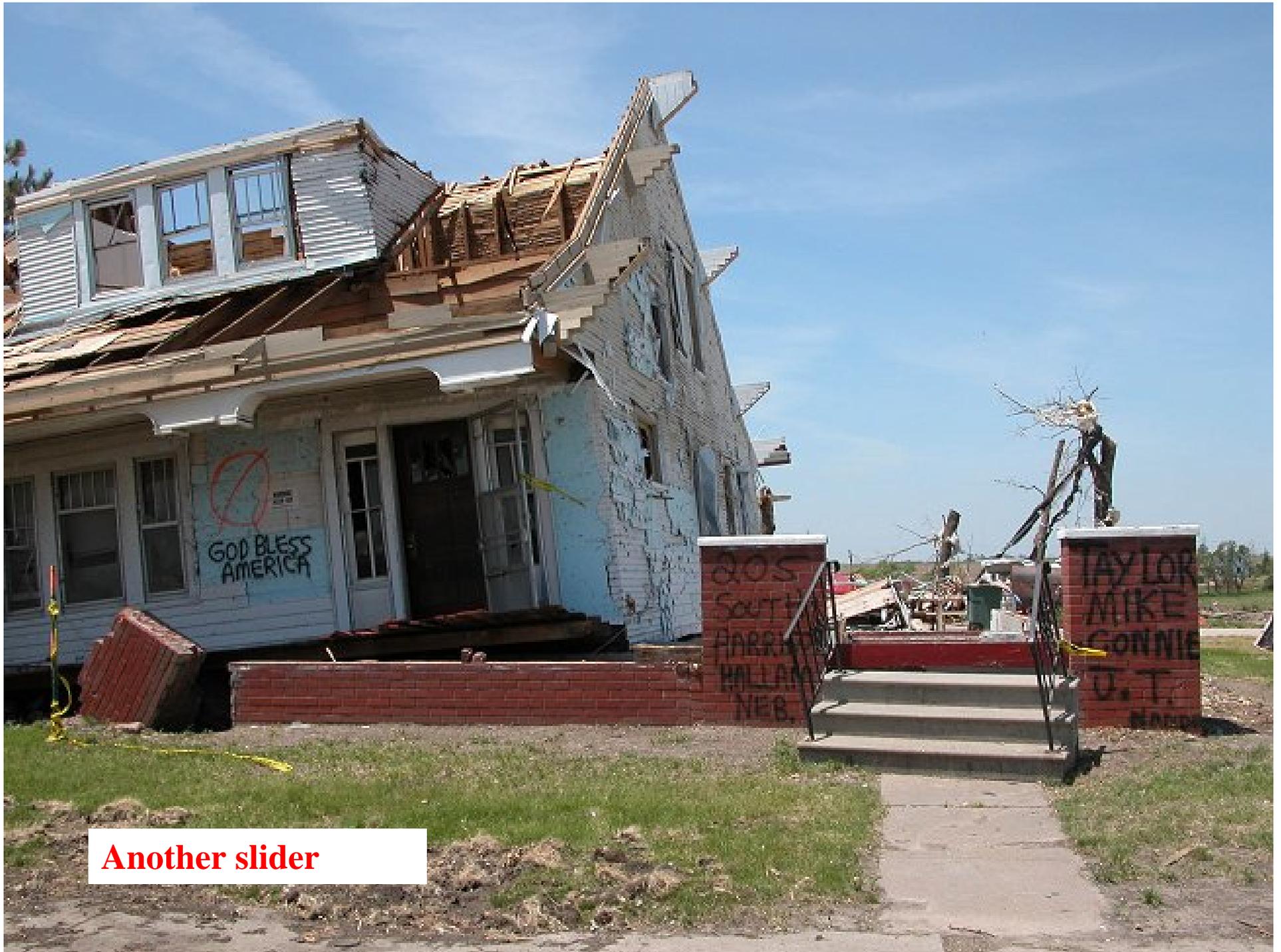






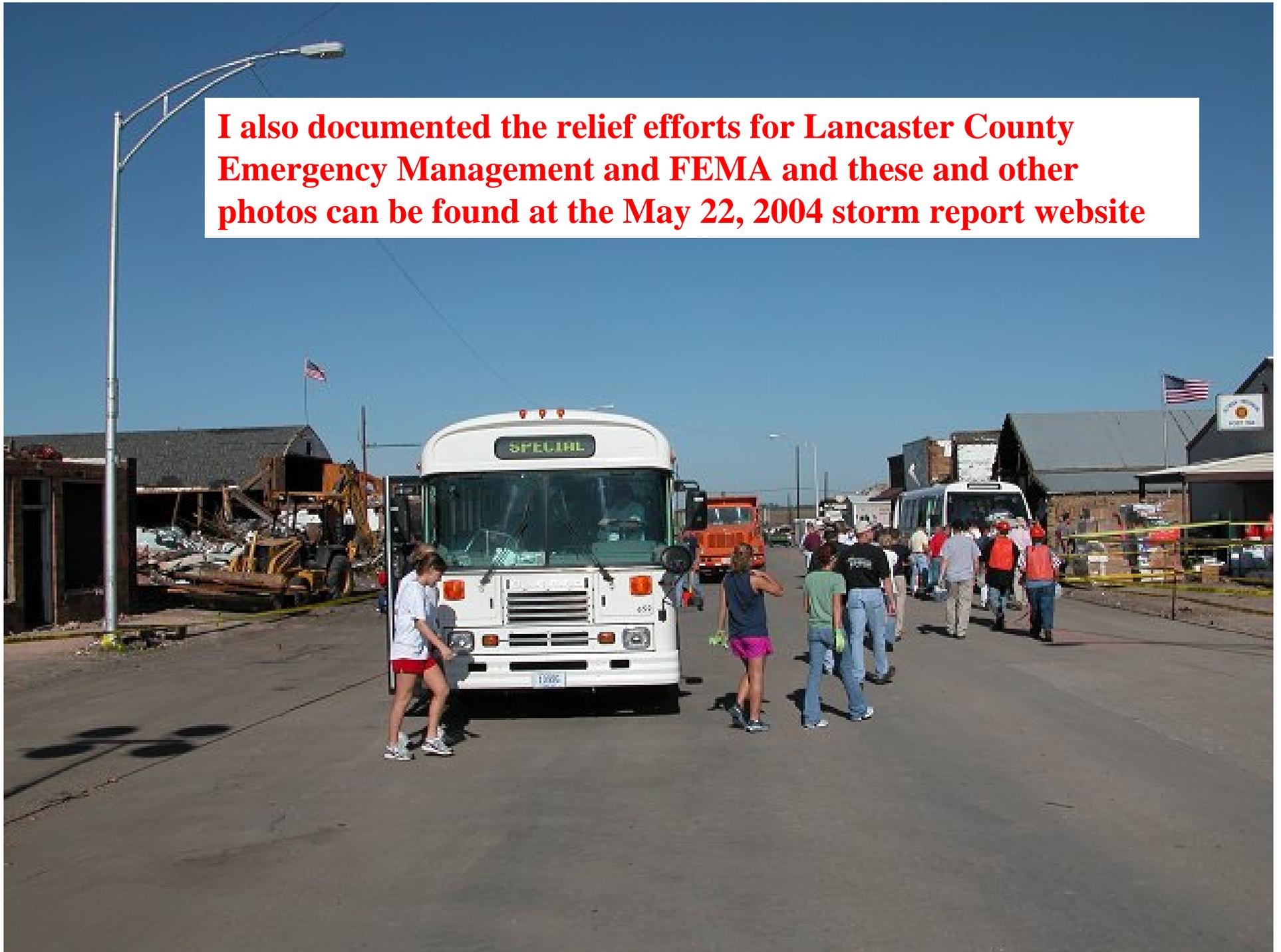


Lesson: Sliders, (as previously defined by Tim Marshall) were evident in Hallam and along the path of this tornado increasing risk of catastrophic damage and personal injury



Another slider

**I also documented the relief efforts for Lancaster County
Emergency Management and FEMA and these and other
photos can be found at the May 22, 2004 storm report website**













Major Lesson: After any disaster, meet with the first responders, without the media, to learn what worked well and what didn't and what to change in future preparedness training.





- Lessons Learned
1. Dispersing equipment during severe weather might be a consideration?
 2. Have a "graded call" for Vol. depts?
 3. Do we need to look at training law enforcement for search/rescue?
 4. Locate IC with information on # of Staff & equipment
 5. Need more training on IC?

- Lessons Learned
6. Need agency representatives at EOC?
 7. Communications were a problem
 8. GPS capability would be useful for responders
 9. Separate areas of responsibility?
 10. Once assignments are given, feedback is critical

The “first responders” to this 50+ mile long disaster provided us with many “lessons learned” from an emergency management perspective.

Lesson: As we learned with Hurricane Katrina, only one form of communication continued to function perfectly during and following the disaster: Amateur Radio. UNL met. Student and LARC member providing security and communications.



LARC had a constant participation from the night of the tornado well into June



Because all aspects flowed smoothly, the managing agencies could relax, sit back and watch the “practice drill” be put into action.



This is a summary of the Lincoln Amateur Radio Volunteer efforts from spotting, damage survey to cleanup in Hallam, Nebraska

Month	Date	Volunteers	Hours	Miles	Month	Date	Volunteers	Hours	Miles
May	22	51	206.60	970.3	Jun	7	1	3.00	55.0
May	23	41	147.40	2196.0	Jun	8	1	5.00	110.0
May	27	17	147.25	721.4	Jun	10	8	81.75	867.3
May	28	16	100.80	686.0	Jun	11	11	115.50	1132.3
May	29	22	142.00	1468.5	Jun	12	17	87.75	1225.2
May	31	18	174.25	1221.0	Jun	17	5	37.00	282.4
Jun	1	10	94.25	875.5	Jun	18	6	36.45	358.9
Jun	2	12	117.75	341.3	Jun	19	12	83.75	1076.5
Jun	3	12	96.15	984.3	Jul	9	8	63.00	531.9
Jun	4	13	118.00	1425.5	Jul	10	10	89.63	1046.2
Jun	5	13	104.25	1117.8	Jul	23	8	69.50	400.2
Jun	6	1	2.50	55.0	Jul	24	7	43.50	539.4
								2,167.03	19,687.9



Our response to the tornado outbreak of May 22, 2004 will be featured in a National Geographic Tornado Special later this spring.

And in a Public TV Hour Long Special on tornadoes this coming Spring.



Part IV. Our Annual Weather Symposium for the public, the media and spotter training. Kick off to the state's Severe Weather Awareness Week. 2006 theme: "We can't Prevent Severe Weather but We Can Be Better Prepared".



Technical and safety presentations in the auditorium



**Bill Randby, local
ABC weathercaster.**



**Brian Smith,
WCM, NWS.**



**Christy
Carlson, UNL
Met. student.**





Spotter training begins mid afternoon and is OPEN TO THE PUBLIC.



1999, 3 exhibits, 250 in attendance
2005, 37 exhibits, 3500 in attendance
2006, 60+ exhibits, April 1, 2006.



Skywarn Amateur Radio.



Local NWS.

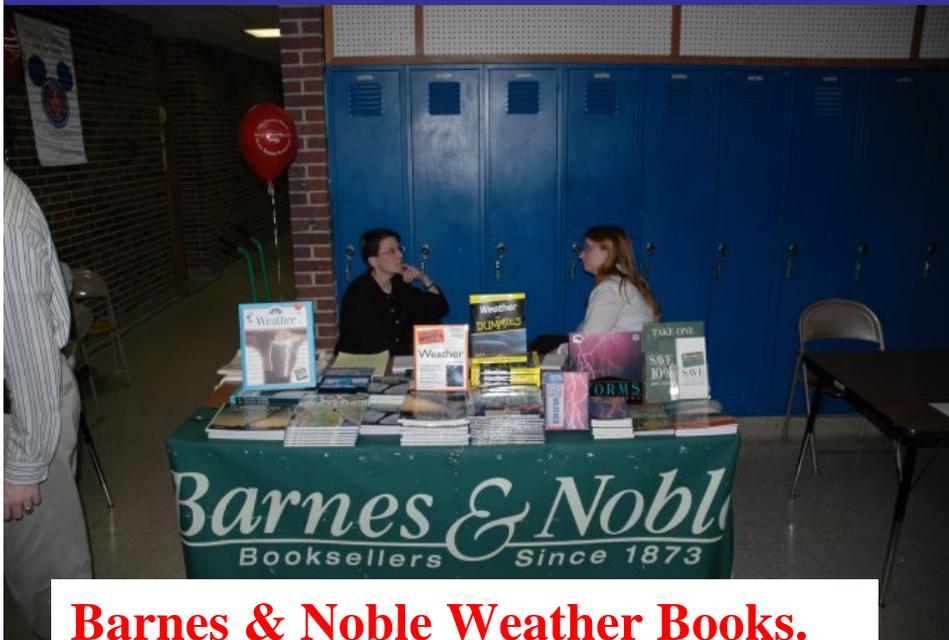




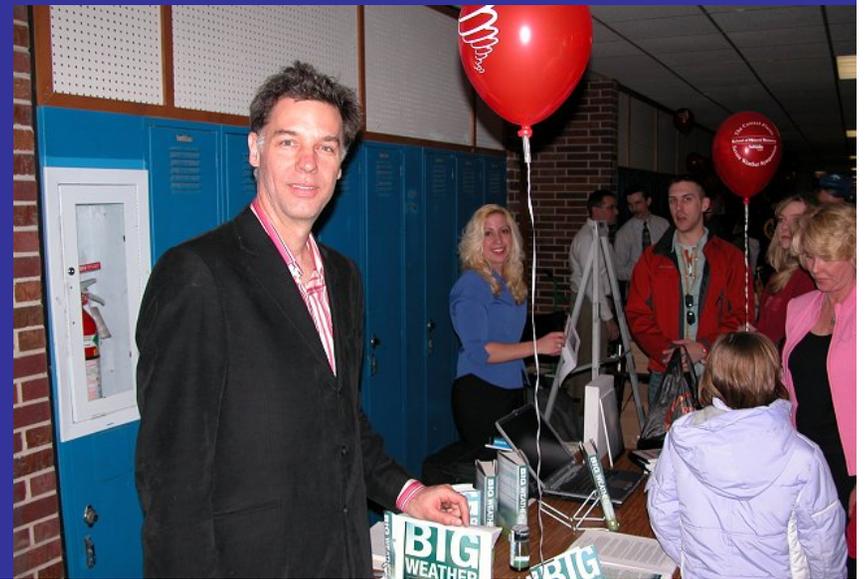
Nebraska Emergency Management.



American Red Cross.



Barnes & Noble Weather Books.



Big Weather author, Mark Svenvold.



High Plains Regional Climate Center, with input from Emergency Management and NWS created 4-season weather safety posters.



One of several homemade tornado generators.



Family and kid friendly weather activities. Note the “Please Touch” sign for kids to interact with exhibits.





“How the Weatherworks” (out of Florida) were brought in, and used our students as assistants and had interactive activities all day





Outside: Urban search and rescue dog demonstrations; emergency vehicles, mobile emergency operations vehicle, and a weather balloon launch.











THE END...THANK YOU!

<http://www.hprcc.unl.edu/nebraska>