UTILIZING THE NEW SPOTTER TECHNOLOGY in Weather-Ready Management

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93rd American Meteorological Society Annual Meeting

First Symposium on Building a Weather-Ready Nation: Enhancing Our Nation's Readiness, Responsiveness, and Resilience to High Impact Weather Events

AN INTRODUCTION

The collection of real-time data relating to severe weather is critical in disaster planning, response, and recovery.

April 3, 2012 Dallas Tornadoes

April 28, 2012 St.Louis Hailstorm

June 26, 2012 Colorado Springs Wildfire

June 29, 2012 Ohio Valley Derecho

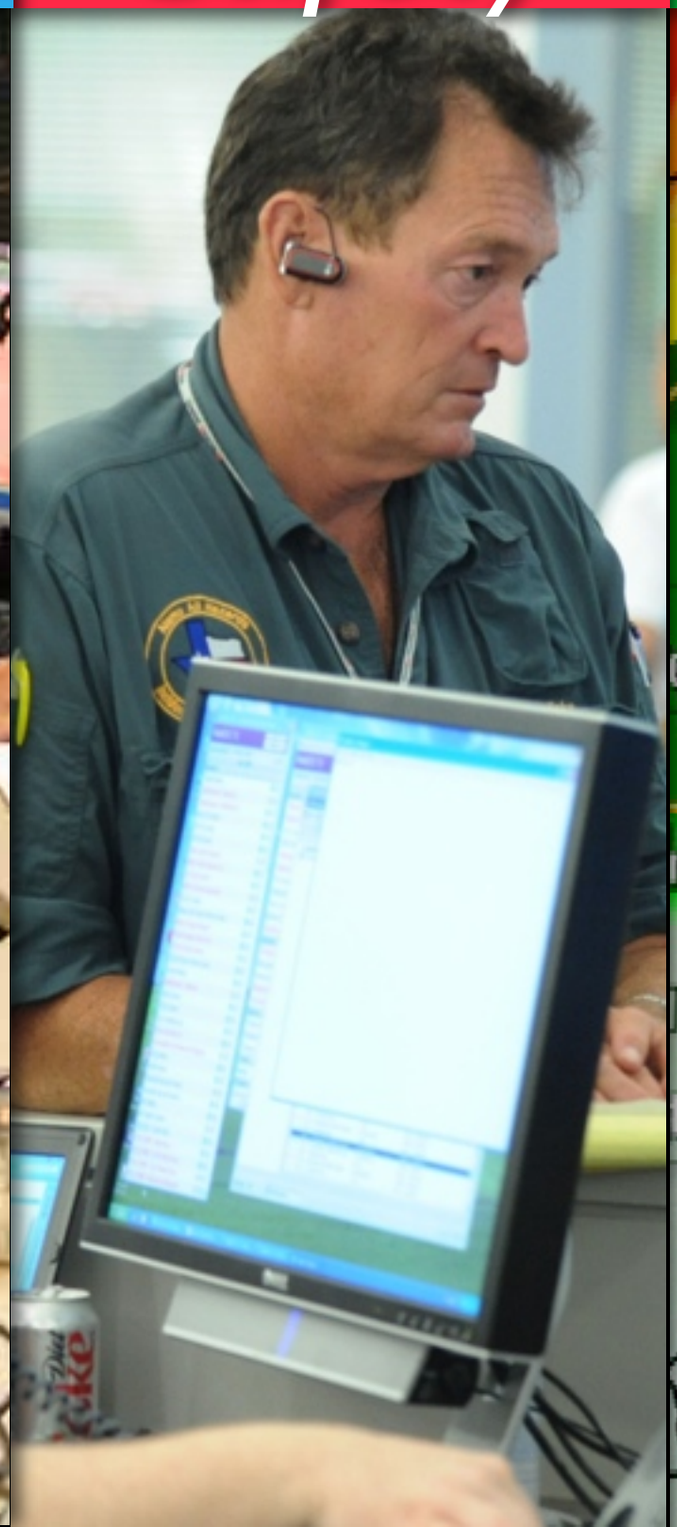
October 29, 2012 Post Tropical Sandy

December 19–20, 2012 Iowa/Wisconsin Blizzard

INTEGRATED WARNING TEAM

NWS

Safety



Media

Spotters

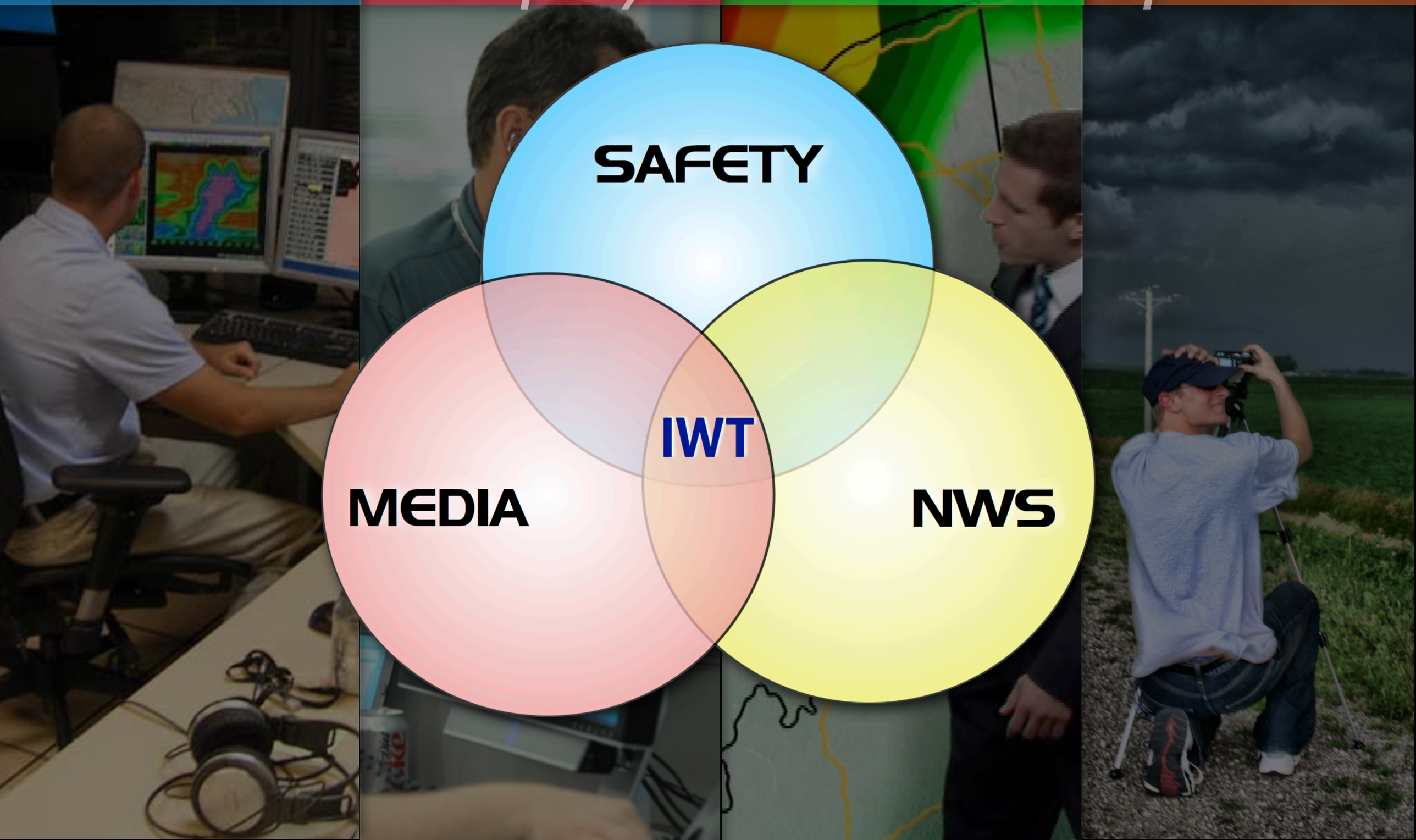
INTEGRATED WARNING TEAM

NWS

Safety

Media

Spotters



350,000

NWS SKYWARN WEATHER SPOTTERS

Storm Reports

- ✓ Give confidence to NWS forecasters in issuing or not issuing warnings.
- ✓ Enhance creditability to call-to-action statements within the warnings
- ✓ Serve as a verification of storm-based warnings
- ✓ Provide a starting point for storm damage survey operations when needed

Emergency Management

Firefighters & Rescuers

Law Enforcement

Weather Spotter Community

Storm Chasers

Volunteer Citizens

Amateur Radio

SPOTTER NETWORK

SN
EST 2006

30,130 Registered Accounts

8,458 Trained

Providing Real-Time Mapping of Spotters and their Storm Reports Nationwide

SN Cloud Solution

SN Processing & Database Servers

Internet

Smart Phones

Tablets

APRS Ham Radios

Laptops - Desktops

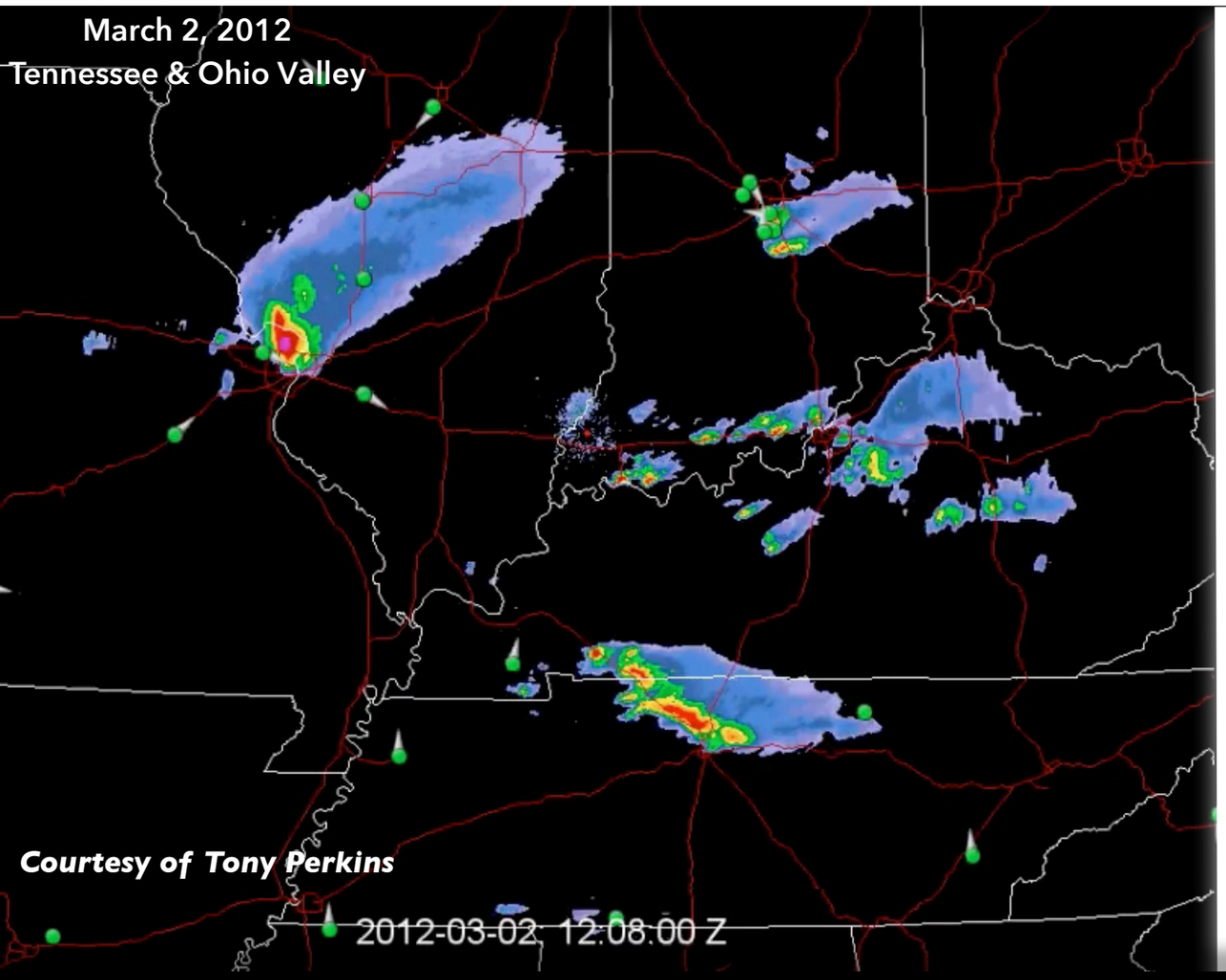
Web Services

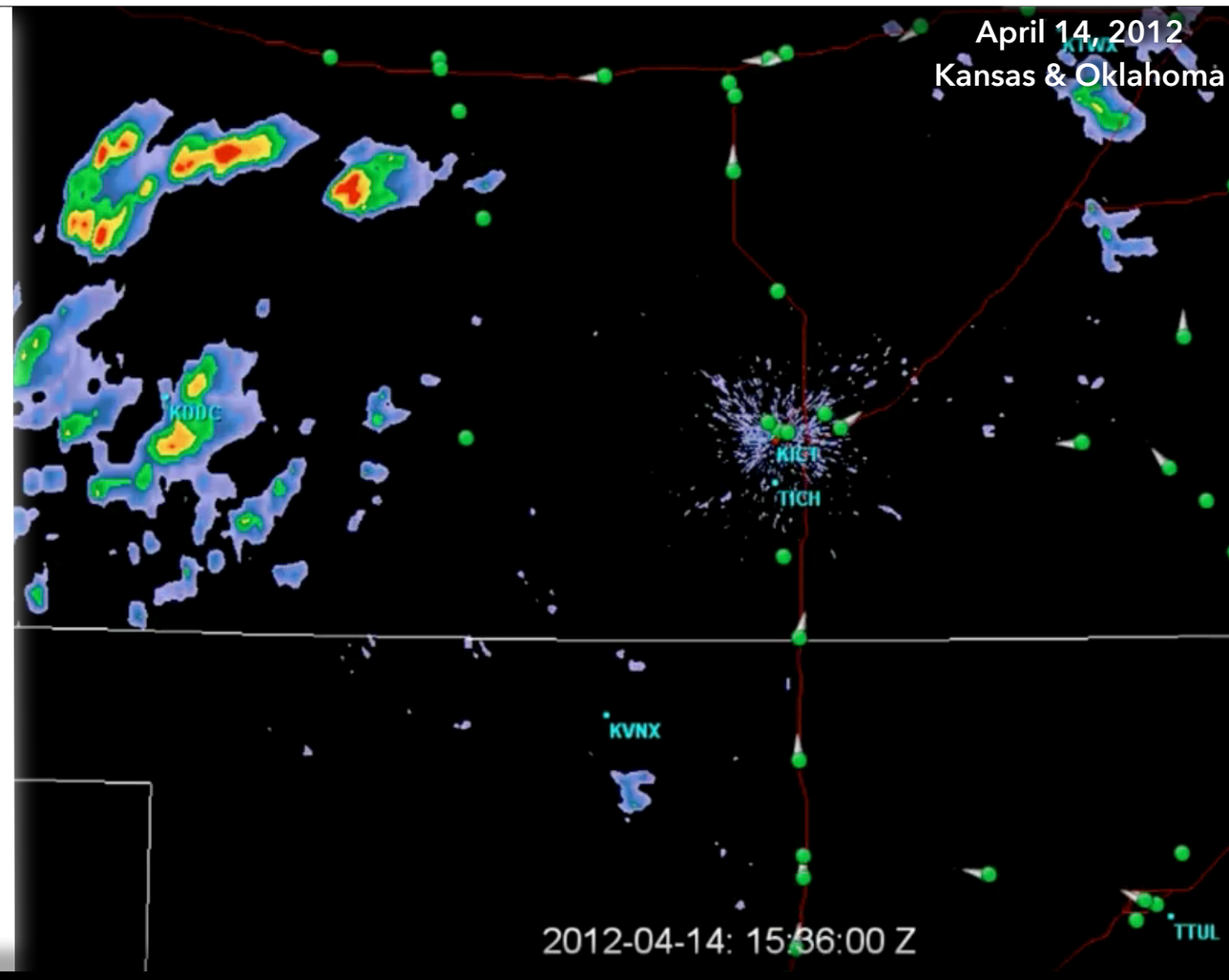
Websites

NOAA/NWS

Mobile Apps

SPOTTER NETWORK



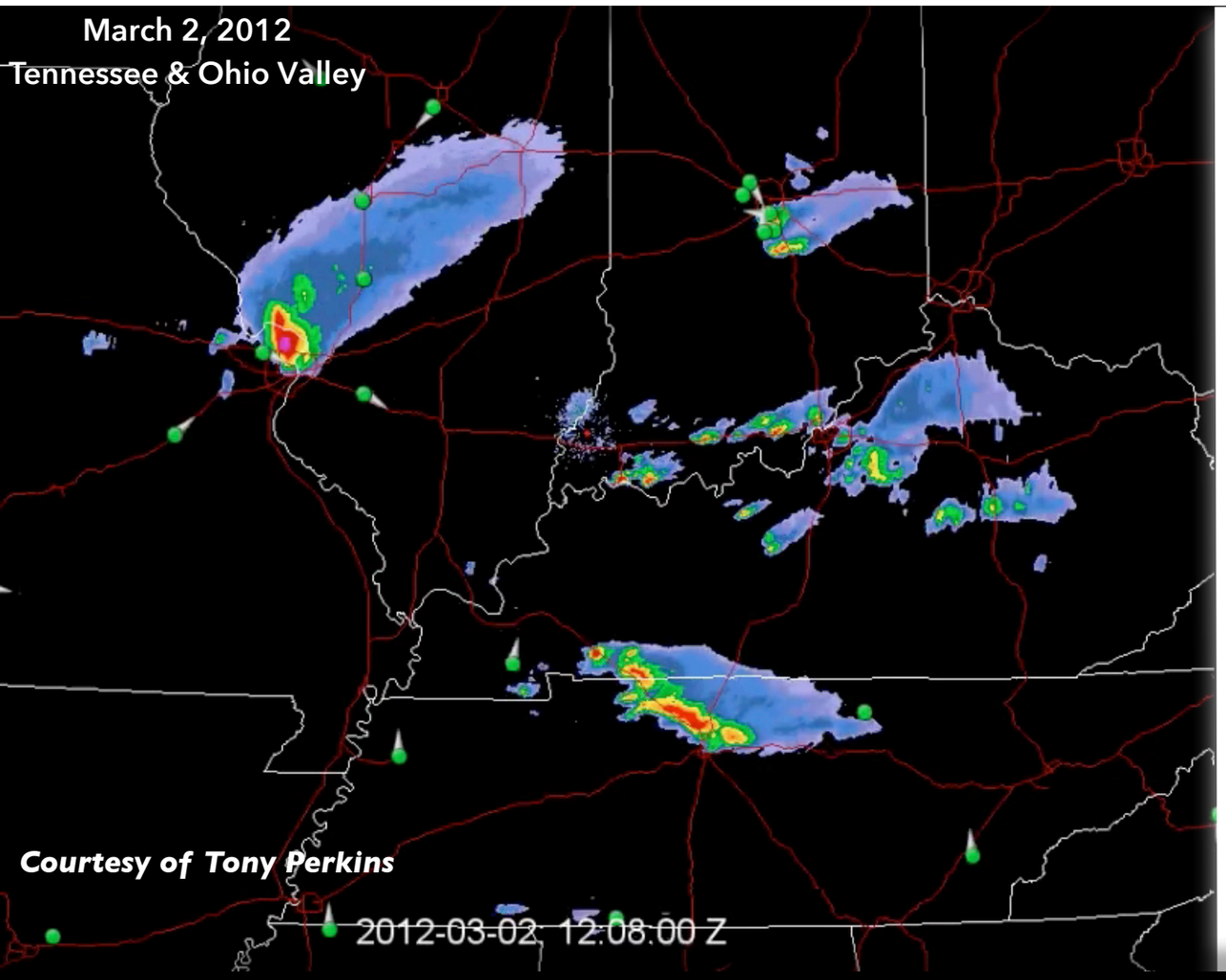


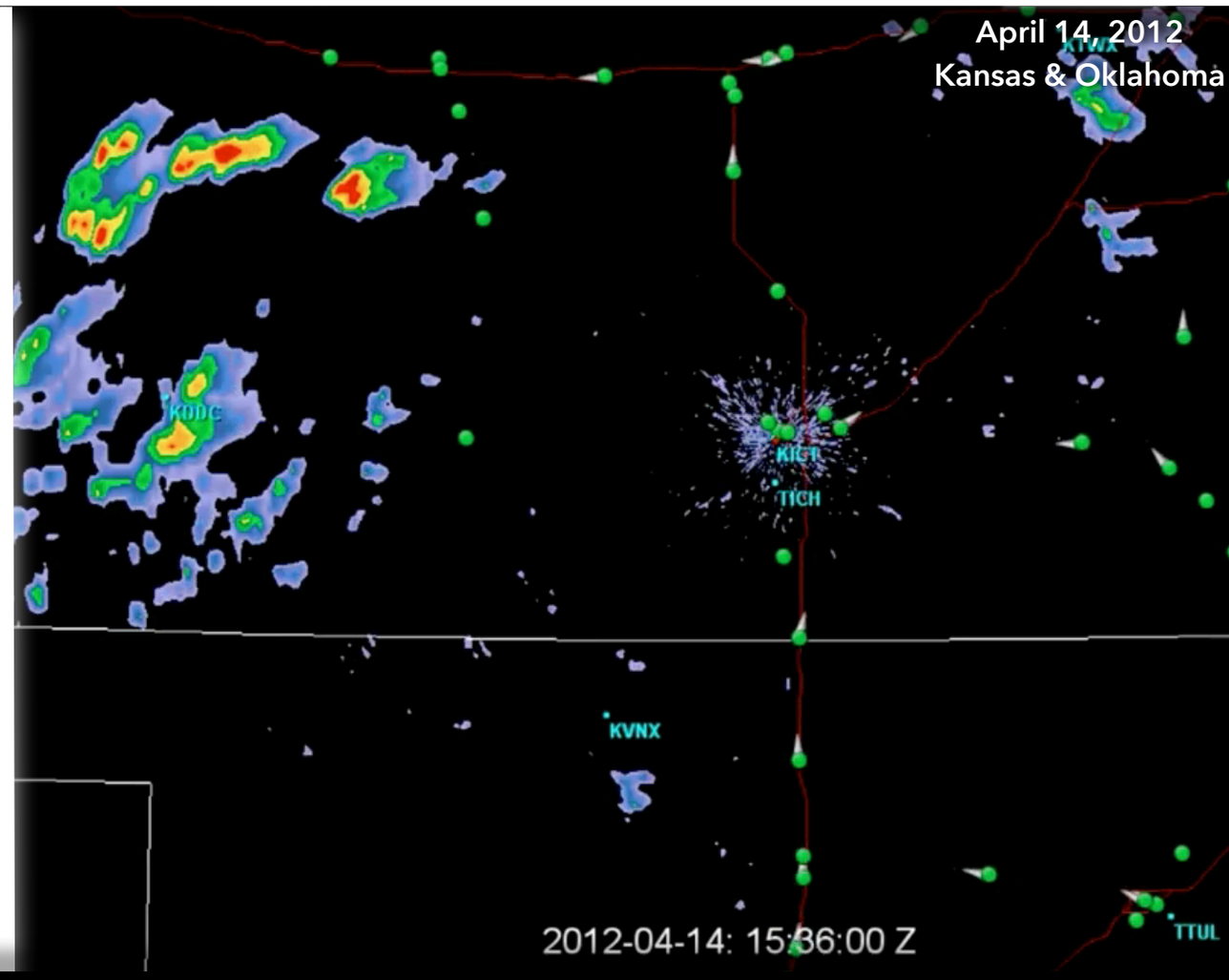
National Spotter Registry

Standarized Training

Location Tracking & Reporting

SPOTTER NETWORK

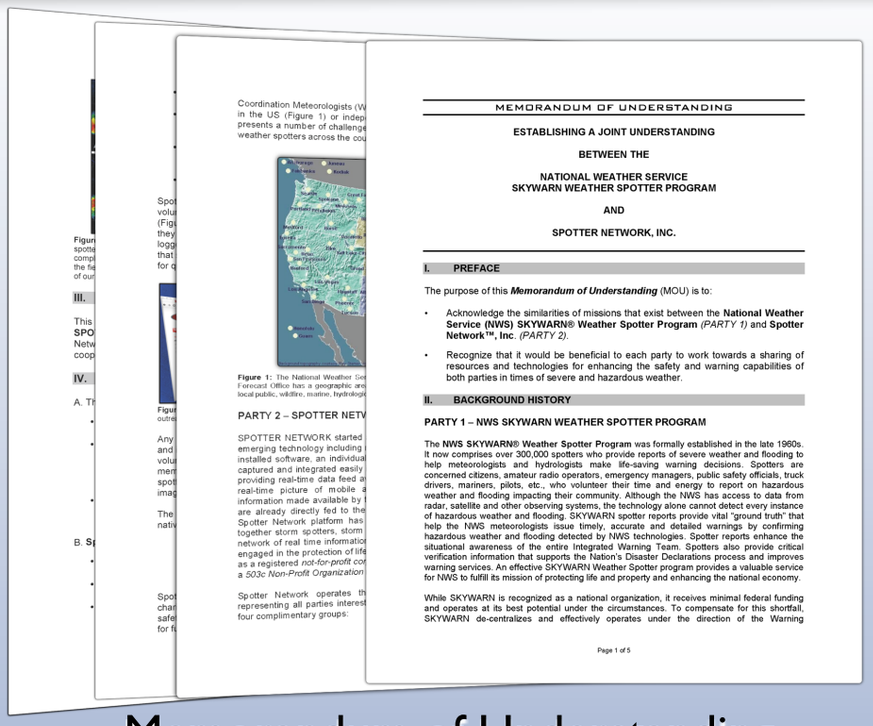




STTARS

Spotter **T**raining, **T**racking **A**nd **R**eporting **S**ystem

NWS SKYWARN SPOTTER NETWORK



MEMORANDUM OF UNDERSTANDING

ESTABLISHING A JOINT UNDERSTANDING

BETWEEN THE

NATIONAL WEATHER SERVICE
SKYWARN WEATHER SPOTTER PROGRAM

AND

SPOTTER NETWORK, INC.

I. PREFACE

The purpose of this ***Memorandum of Understanding*** (MOU) is to:

- Acknowledge the similarities of missions that exist between the **National Weather Service (NWS) SKYWARN® Weather Spotter Program** *(PARTY 1)* and **Spotter Network™, Inc**. *(PARTY 2)*.
- Recognize that it would be beneficial to each party to work towards a sharing of resources and technologies for enhancing the safety and warning capabilities of both parties in times of severe and hazardous weather.

II. BACKGROUND HISTORY

PARTY 1 – NWS SKYWARN WEATHER SPOTTER PROGRAM

The **NWS SKYWARN® Weather Spotter Program** was formally established in the late 1960s. It now comprises over 300,000 spotters who provide reports of severe weather and flooding to help meteorologists and hydrologists make life-saving warning decisions. Spotters are concerned citizens, amateur radio operators, emergency managers, public safety officials, truck drivers, mariners, pilots, etc., who volunteer their time and energy to report on hazardous weather and flooding impacting their community. Although the NWS has access to data from radar, satellite and other observing systems, the technology alone cannot detect every instance of hazardous weather and flooding. SKYWARN spotter reports provide vital "ground truth" that help the NWS meteorologists issue timely, accurate and detailed warnings by confirming hazardous weather and flooding detected by NWS technologies. Spotter reports enhance the situational awareness of the entire Integrated Warning Team. Spotters also provide critical verification information that supports the Nation's Disaster Declarations process and improves warning services. An effective SKYWARN Weather Spotter program provides a valuable service for NWS to fulfill its mission of protecting life and property and enhancing the national economy.

While SKYWARN is recognized as a national organization, it receives minimal federal funding and operates at its best potential under the circumstances. To compensate for this shortfall, SKYWARN de-centralizes and effectively operates under the direction of the Warning

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Memorandum of Understanding
Completed in August 2012

GOAL

- Strengthen and broaden existing partnership between Spotter Network and the NWS.
- Enable further cooperative ventures between the two organizations.

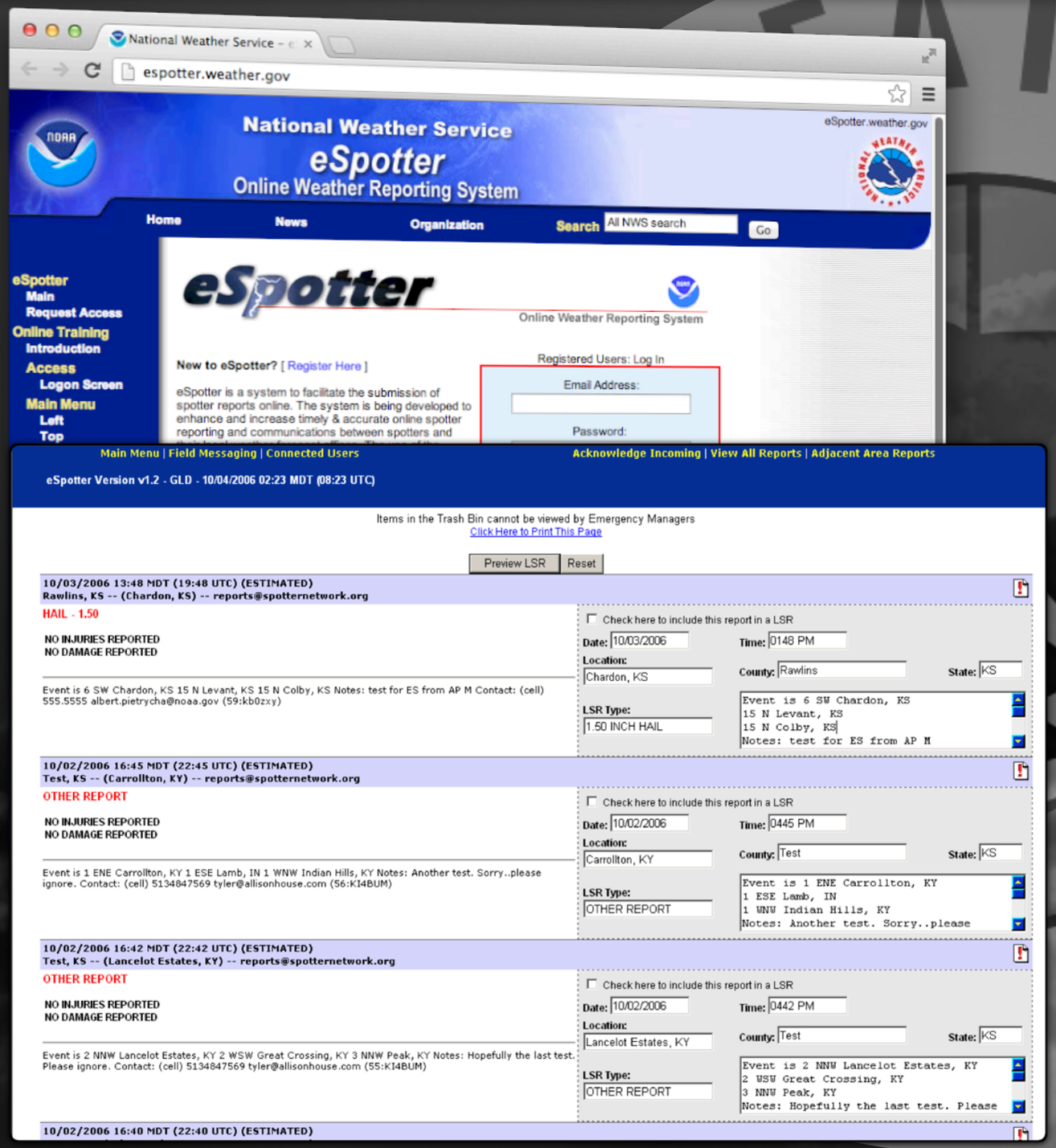
Partnership

Credited to the similarities in missions open table discussions lead to partnership in working together towards a sharing of resources and technologies.

APPROVED

- Provide unrestricted access to Spotter Network data feed for both the storm report and spotter position data officered in a KML, XLM, or TXT file.
- Work with each NWS WFO to setup their own Spotter Network Member Network for spotters in their CWFA.
- Allow any certified SKYWARN weather spotter to complete the Spotter Network Awareness Level training and thereby have access to the network.

NOAA NWS SN INTEGRATION



eSpotter

An online reporting system to facilitate the submission of weather spotter reports online.

Pro

Useful webpage interface for receiving storm reports

Con

Requires real-time monitoring to view information

Storm Report Submission
Latency < 5 seconds

NOAA NWS SN INTEGRATION

NWSChat

An instant messaging program utilized by NWS operational personnel to share critical warning decision expertise and other types of significant weather information.

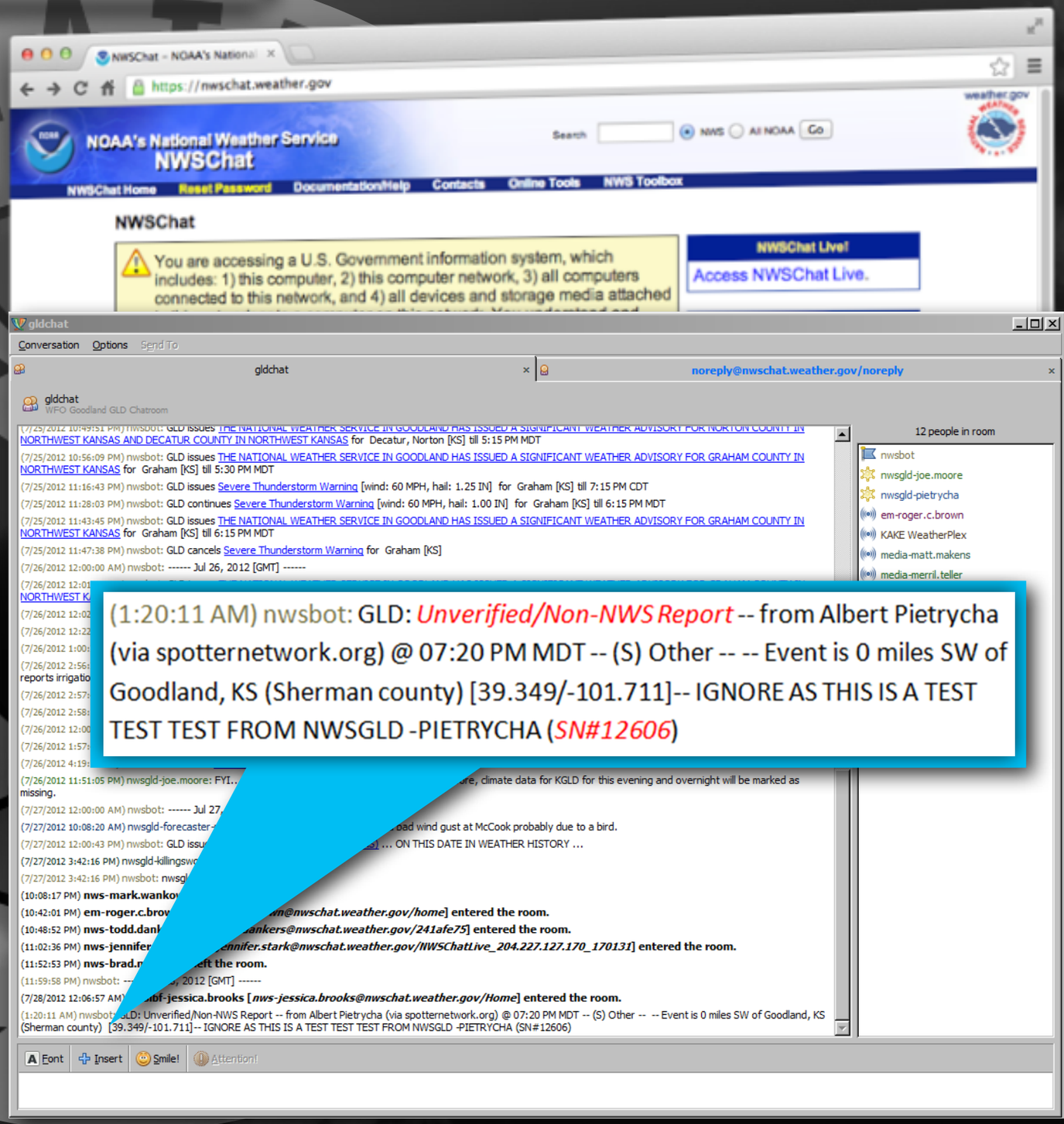
Pro

Passive way for forecasters to monitor storm reports including those from SN

Con

Need to educate users that SN reports are not sent from NWS offices

Storm Report Submission Latency < 3 seconds



NOAA NWS SN INTEGRATION

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WRKESP

REPORT TIME: 07/27/2012 19:20 MDT (01:20 UTC)
1343438414.5426

EVENT TIME: 07/27/2012 19:20 MDT (01:20 UTC) (EXACT)
COUNTY, STATE: Sherman, KS
CITY: 0 miles SW of Goodland, KS
SPOTTER: reports@spotternetwork.org
OTHER REPORT
NO INJURIES REPORTED
NO DAMAGE REPORTED
NARRATIVE: Event is 0 miles SW of Goodland, KS
[39.349200000000000/-101.711400000000000]
6 miles ENE of Caruso, KS
9 miles W of Edson, KS
Notes: IGNORE AS THIS IS A TEST TEST TEST FROM NWSGLD
-PIETRYCHA
Contact:
(phone)  999-999-999
(no email)

(12606)



To acknowledge this report, go to: http://intra.crh.noaa.gov/espotter/
Log in, and click 'Acknowledge Incoming' to mark reports as received.
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AWIPS

A technologically-advanced processing, display, and telecommunications system that is the cornerstone of the NWS operations.

Pro

Can be setup with trigger text alarm whenever a report is submitted.

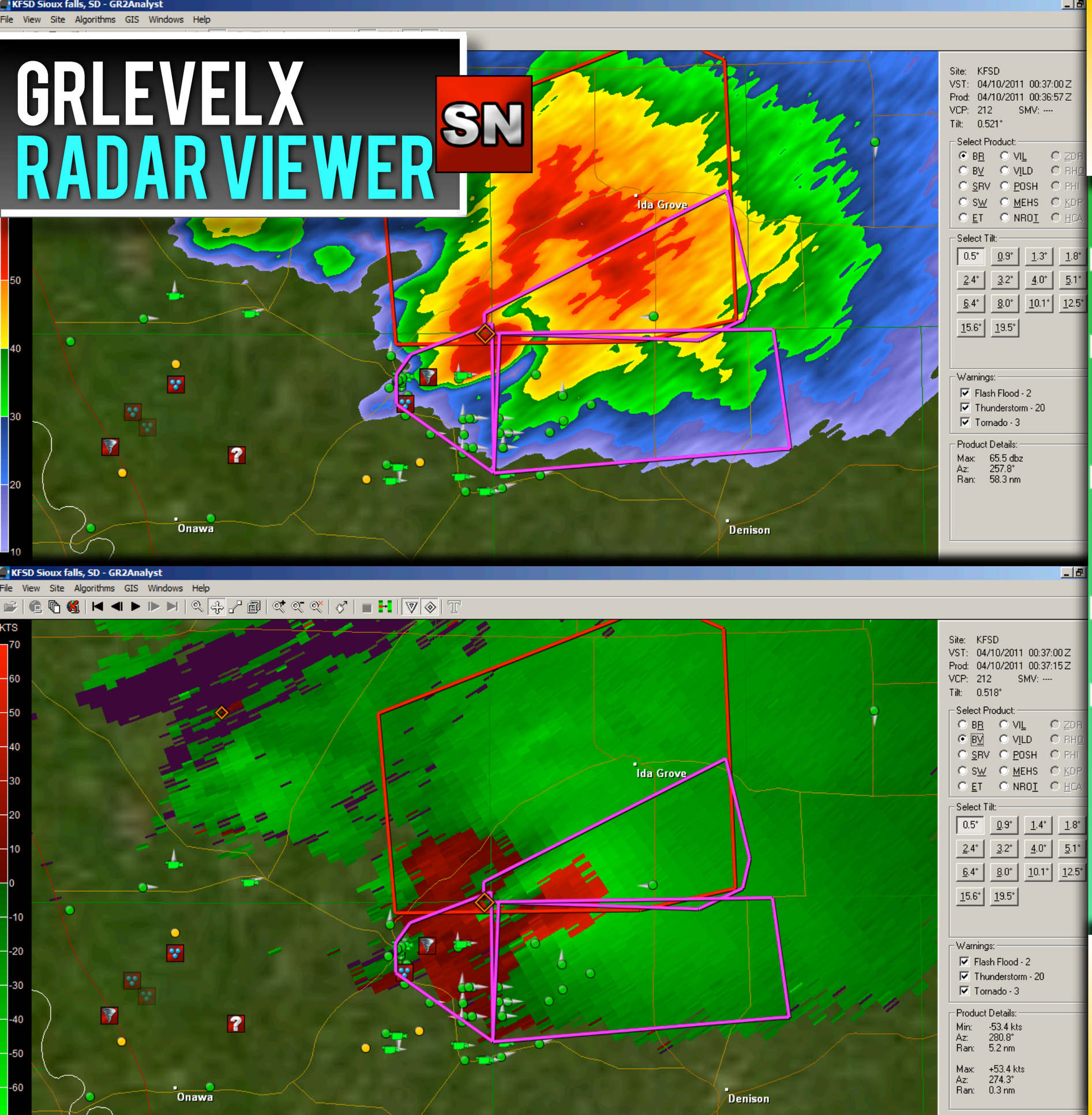
Con

Higher latency of up to 45 second from the time a report is sent to alarm trigger.

Storm Report Submission
Latency up to 45 seconds

GRLEVELX RADAR VIEWER

SN



Public Data Feeds Options

- Storm Reports Only
- Positions of All Trained Members
- All Positions and All Reports Combined
- Video Streamers Only
- Positions of members with > 5 ‘Acceptable’ or better reports in past 12 months

Available @
spotternetwork.org/gr-feeds.php

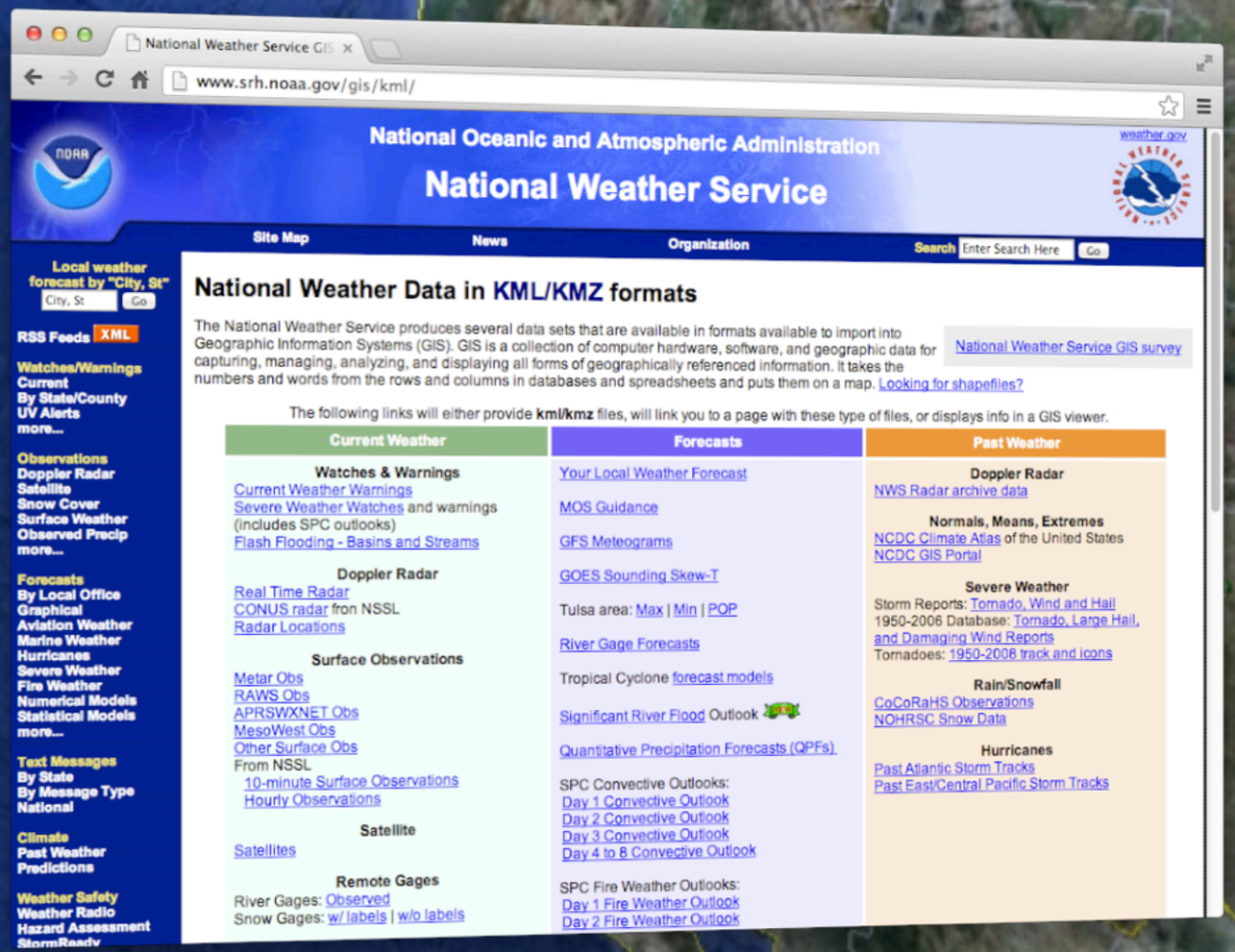
GOOGLE EARTH

SN

Public Feed Available @ spotternetwork.org/feeds/earth.kml

GOOGLE EARTH

SN



Complimentary Addition to Other NWS KML Ready Data

Public Feed Available @ spotternetwork.org/feeds/earth.kml

MOBILE APPS SN

RadarScope

iOS

PYKL3 RADAR

Weather data when you need it...where you need it

Radar
Satellite
Warnings
Outlooks
Observations

Chaser Location

by Apexice

SPOTTER NETWORK

Endorsed by: ChaserTV.com

RapidReport

by Apexice

SPOTTER NETWORK

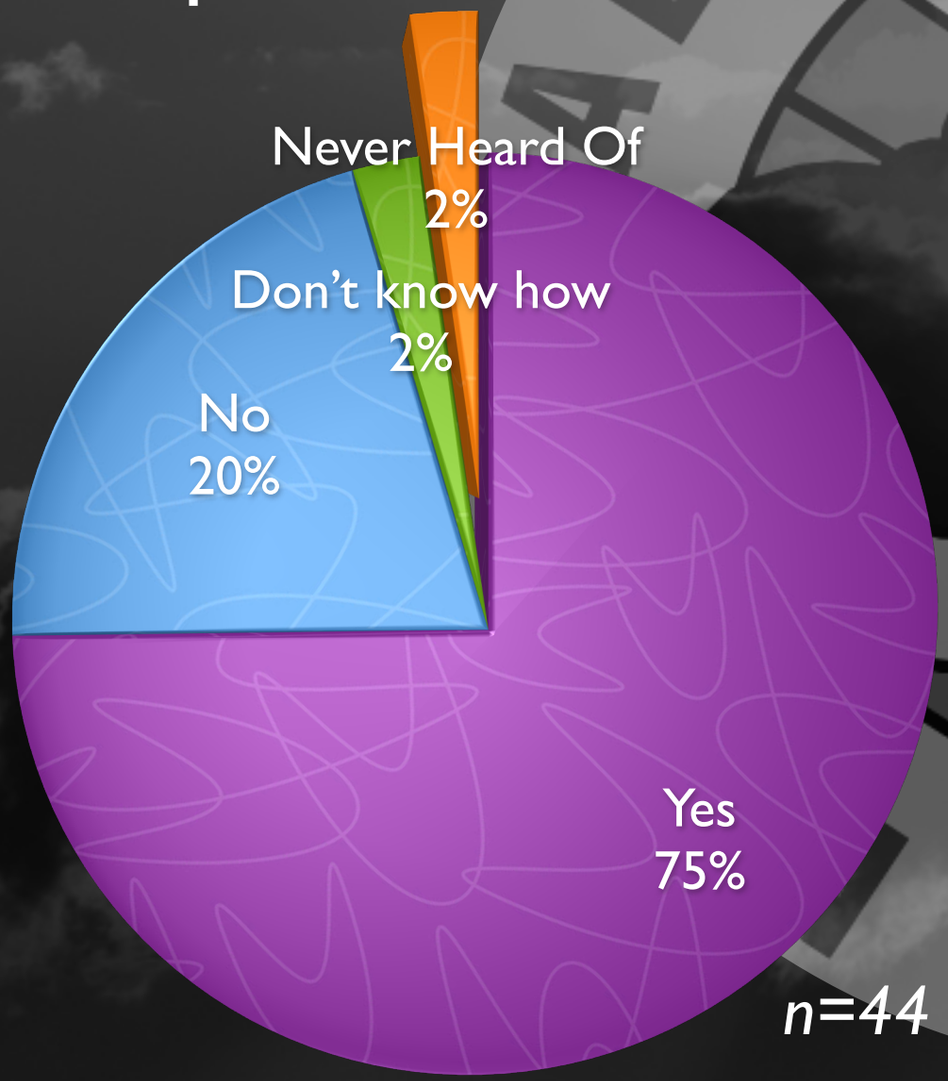
facebook

Endorsed by: ChaserTV.com

NOAA NWS FEEDBACK

SN

WFO Use Spotter Network



View Spotter Network Storm Reports

NWS Chat	59.09%
GRLevelX Radar Software	43.18%
SpotterNetwork.org Website	31.82%
AWIPS	20.45%
PYKL3 Radar	13.64%
RadarScope	11.36%
Google Earth	9.09%

View Spotter Network Position Reports

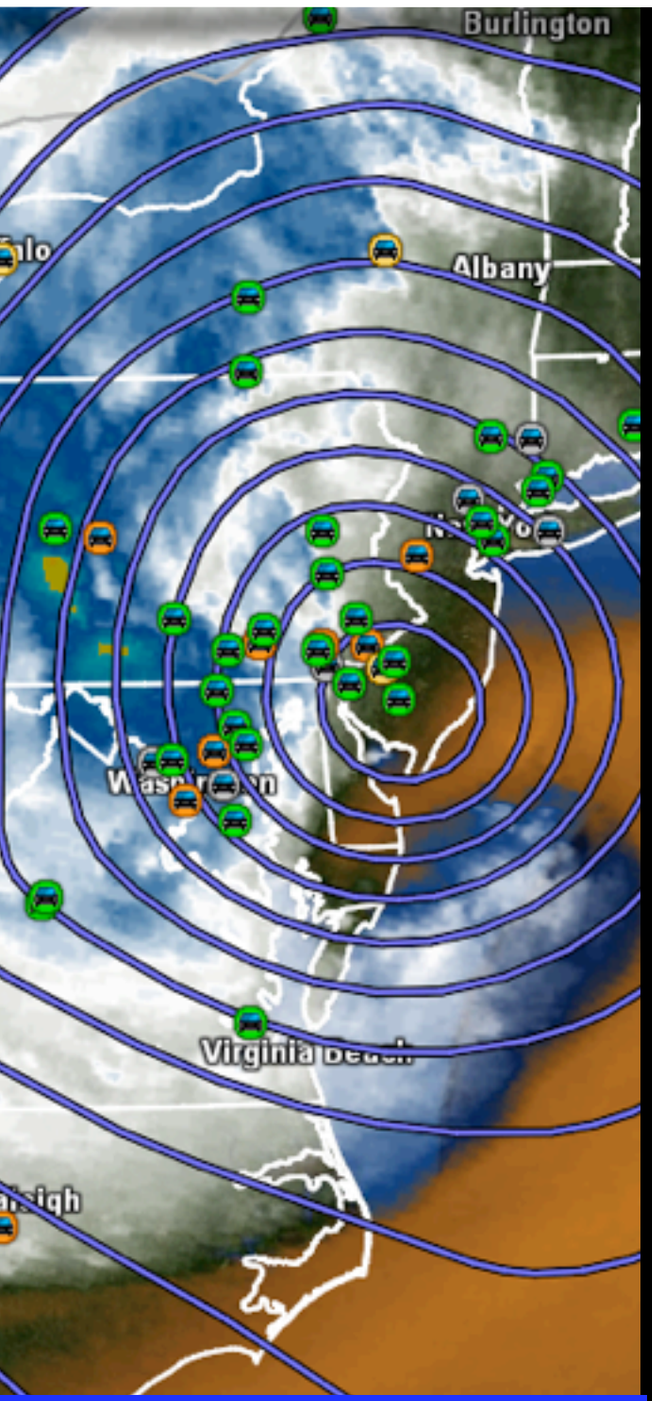
GRLevelX Radar Software	47.73%
SpotterNetwork.org Website	40.91%
PYKL3 Radar	18.18%
RadarScope	11.36%
Google Earth	6.82%
Don't Use It	6.82%
Chaser Location	2.27%

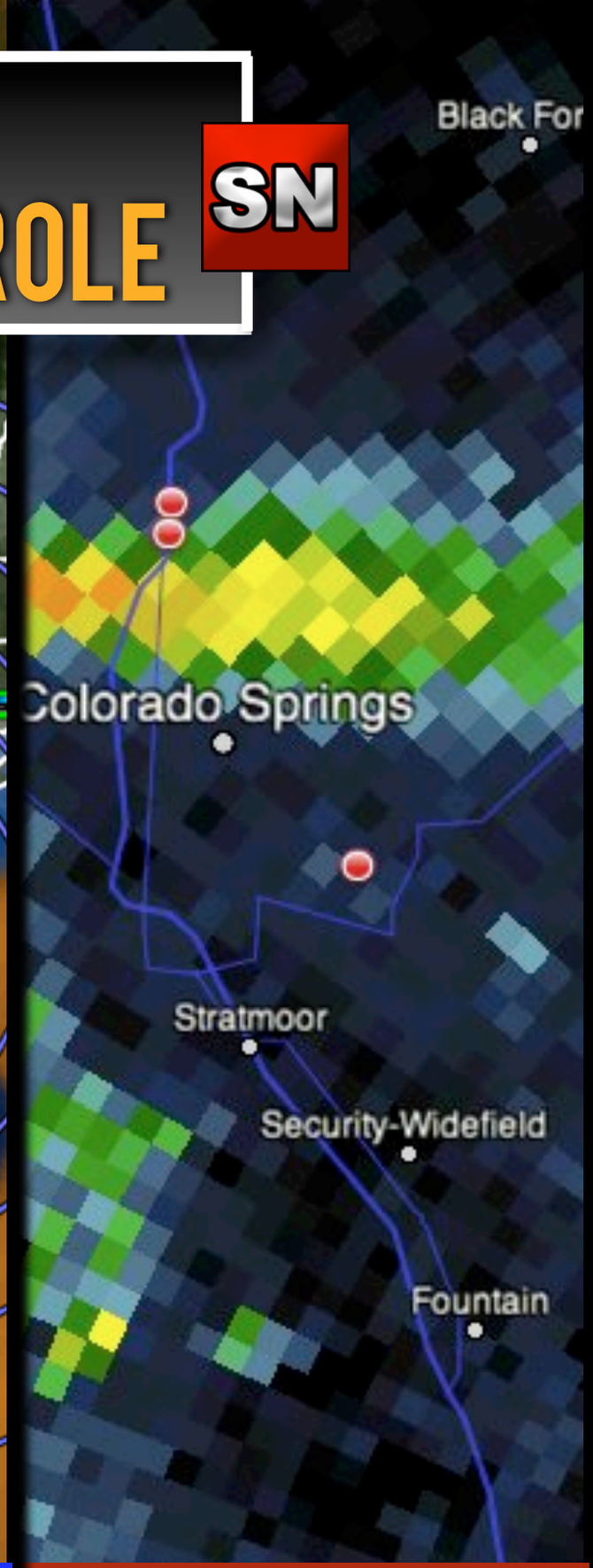
Consensus of feedback provided insight that Spotter Network is used as both real-time operational tool and post-storm tool by several NWS offices.

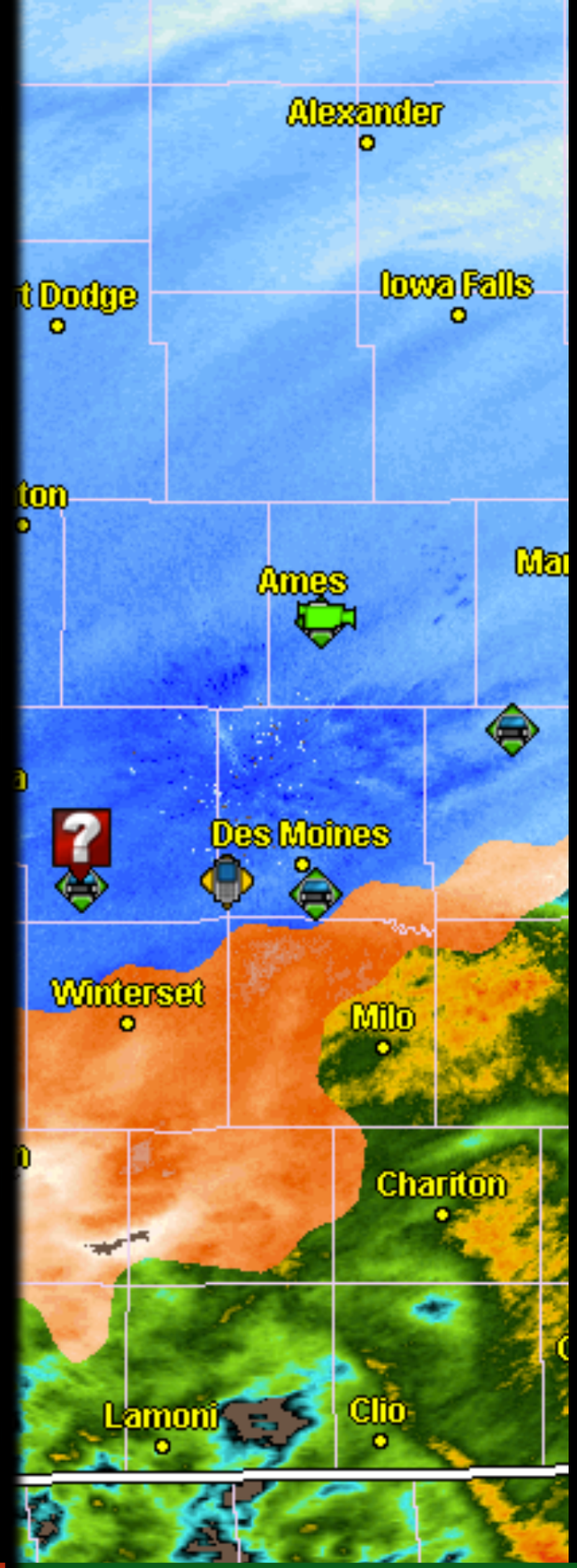
- Enhanced Storm Reporting
- Submission of Photos/Videos
- Standalone App
- Integration of Live Stream
- Full Screen Online Map
- Advanced Filtering Options

SPOTTER EXPANDING ROLE

SN







Tropical | Fire | Winter | Wind

PUBLIC SAFETY COMMMMONGROUND BROADCAST MEDIA

From Emergency Operations Centers

Courtesy of ci.frisco.tx.us

to rural volunteer Fire Departments

Courtesy of Allen Detrich

From National Cable News Channel

Courtesy of The Weather Channel

to Local News Television Stations

PUBLIC SAFETY COMMMONGROUND BROADCAST MEDIA

From Emergency Operations Centers

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Courtesy of Allen Detrich

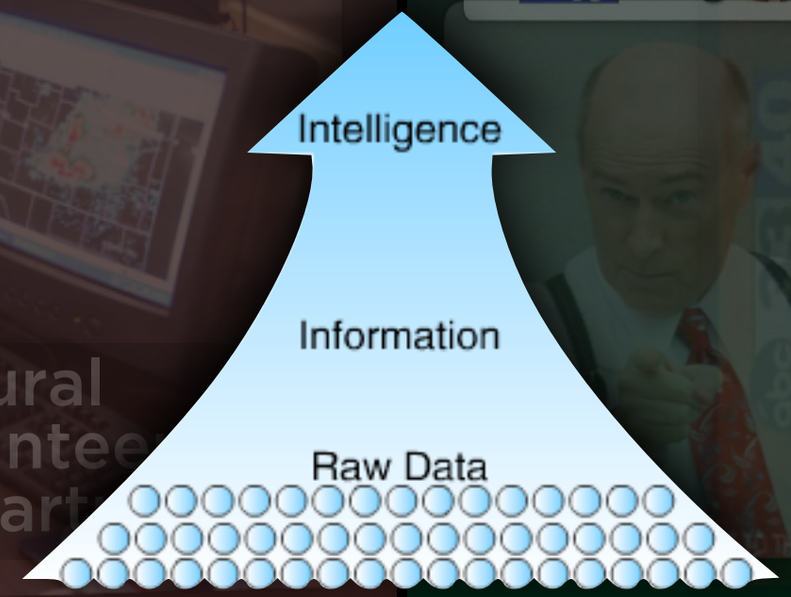
to rural volunteer Depart

to Local News Television Stations

Heavy Reliance on NWSChat

Graphical "Situational Awareness"

Logistic & Decision Support Tool



www.SpotterNetwork.org

How to Get Started? Easy!

Step 1 - Register Online

Step 2 - Download the SN Client or Mobile Apps

Step 3 - Get Some Training

Step 4 - Start Spotting!

A WEATHER-READY NATION

through enlarging

TECHNOLOGY INFRASTRUCTURE ALL-HAZARD TRAINING