

A map of Alabama with various call signs overlaid in different colors and sizes. The call signs include: KD7YEF-2, K4IKR, HUNA1549z, WG85-9N-2, KF4TTB-1, W4G6PS-7, DARC MT6, KG4WSV-3, N8DEU-5, K4JCH, K4JCH-6, W4SBO-7, KB4BSA-8, WX4FC, N4JDB-1, HUNT2027z, R4JW-1, N4TUN-7, AK4B, N4XWC, AJ4LH, N4XWC-8, ND6Q-2, BMXF1842z, KD4TXF-9, BMXX1805z, BMX OUTLK, W4GHD, W40ZK-1, AG4AC-9, BMXT1948z, BMXV1954z, BMXS2020z5z, W4AUB-1, and W40PS-7. There is also a 'Record Controls' interface in the top right corner.

Storm Season has arrived...

Are you Equipped for

Situational Awareness?

The Power of APRS

Madison County - May 3, 2009

Presented by:

Tim Cunningham - N8DEU

Alabama APRS Coordinator

Huntspec Chairman

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APRS - What is it ?

Alabama Packet Radio System

- Abbreviation for the Automatic Packet Reporting System
- Created by Bob Bruninga, WB4APR
- Tactical data communications system
- Improves the value of HAM radio in emergency situations or public service events
- Provides Situational Awareness
- Delivers Messaging Capabilities

APRS - What is it ?

- Delivers instant NWS weather bulletins and coordinates
- Informs you how close you are to the Area of Maximum Concern
- See where everybody is located without asking, especially SKYWARN weather spotters
- Virtually any 2M or HF radio can be used for APRS
- It is more than just a simple tracking system...

APRS - What is it ?



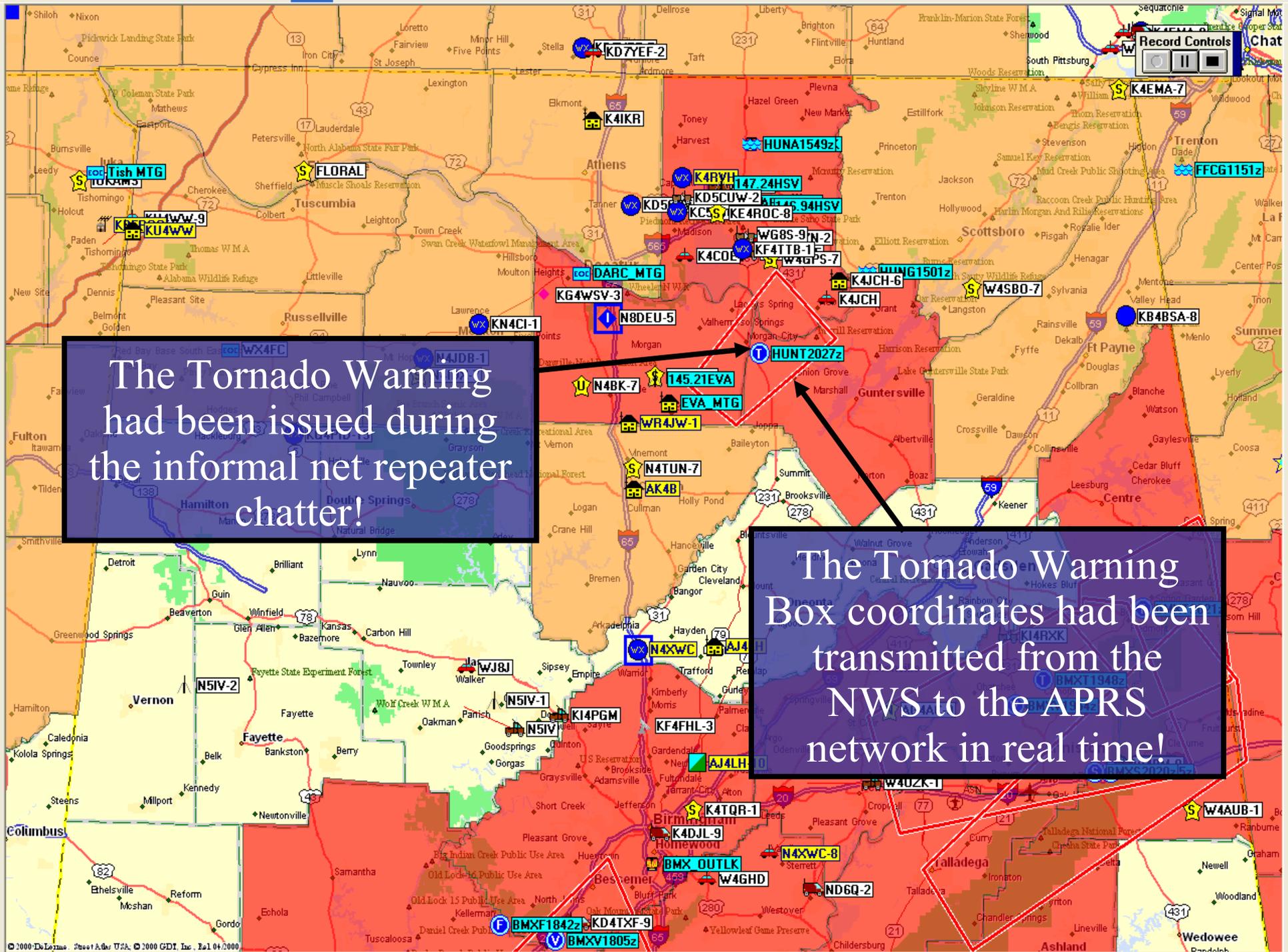
• Public Service and Emergency

- Where is the Event Leader ?
- Where are the emergency vehicles ?
- What is the weather at various points in the country ?
- Where are power lines down ?
- Where is the head of the parade ?
- Where are the VIP's ?
- Where is the mobile ATV camera ?
- Where is the hurricane ?
- WHERE IS THE DX ?
- Or just plain fun



Should We Activate the Net?

- Events of 03-MAY-09
- Severe Weather was reported by the NWS
- Chatter on 146.94 Repeater
 - Should we activate?
 - Should continue with an informal net?
 - Doug, WD0UG, reports the NWS is only talking about isolated storms
- The answer was clear on APRS
 - There was imminent danger
 - A Tornado warning had already been issued!
 - No discussion was required with APRS



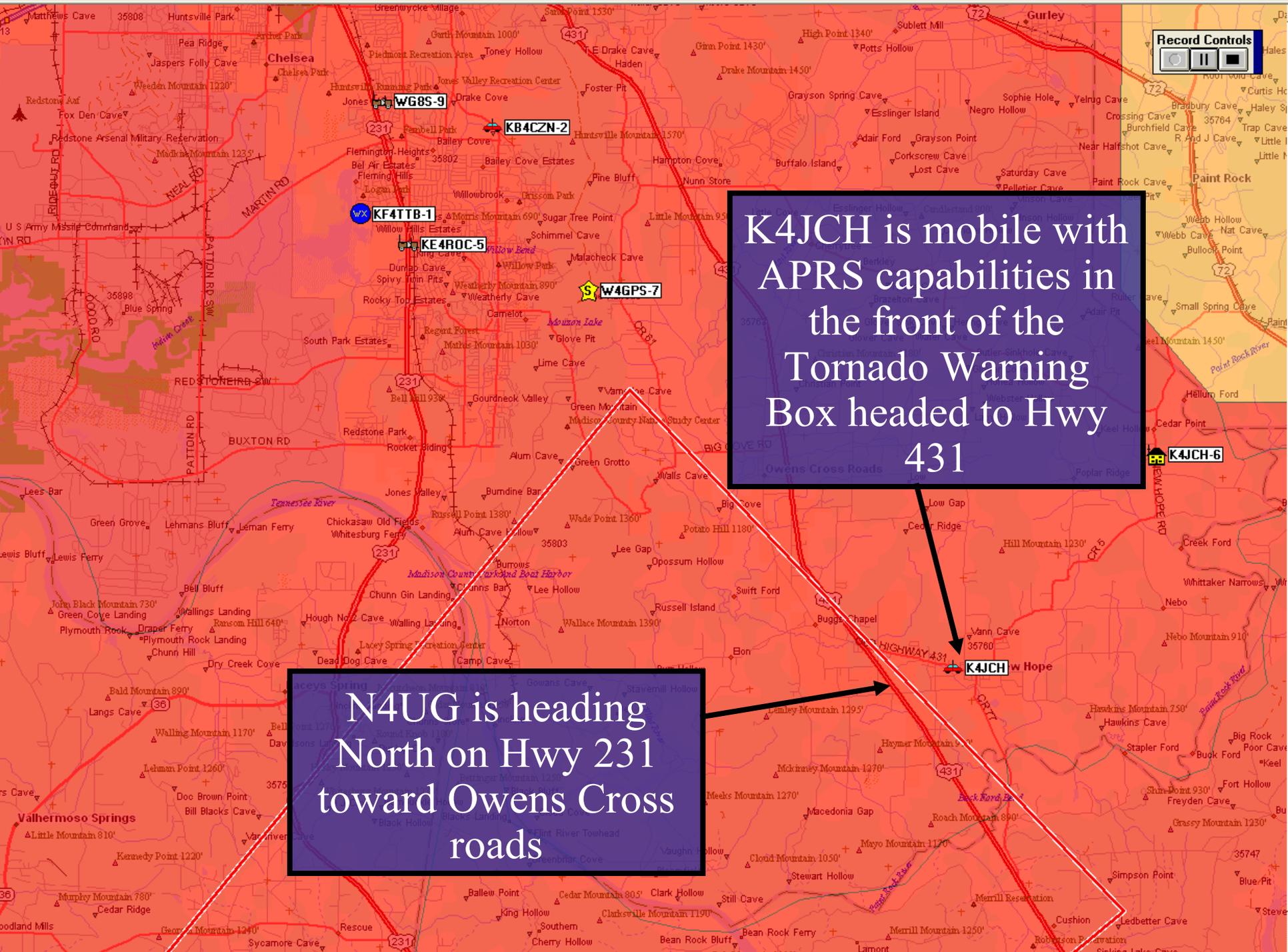
The Tornado Warning had been issued during the informal net repeater chatter!

The Tornado Warning Box coordinates had been transmitted from the NWS to the APRS network in real time!

Record Controls
Chat

What was Happening?

- **N4UG calls in to inquire about WX near Owens Cross Roads**
 - The net is just starting to activate
 - Information was not available
 - I checked in to get his coordinates
 - K4JCH invites him to stop nearby to watch the radar
 - I see K4JCH at the end of the megaphone box
 - N4UG is just entering the area right in front of the Tornado warning box in harms way
- **The Voice Net is formally activated**
- **I can see what is happening in real time on my map with real time data from the NWS**
 - The dots are clearly connected on APRS
 - The WX office is unaware where the spotters are exactly located
 - The spotters have little visibility to what is happening around them
- **APRS is working in real time via RF and the Internet**



Record Controls

⏪ ⏸ ⏩

K4JCH is mobile with APRS capabilities in the front of the Tornado Warning Box headed to Hwy 431

N4UG is heading North on Hwy 231 toward Owens Cross roads

K4JCH

W68S-9

KB4CZ-2

KF4ITB-1

KE4ROC-5

W4GPs-7

K4JCH-6

HIGHWAY 431

231

431

231

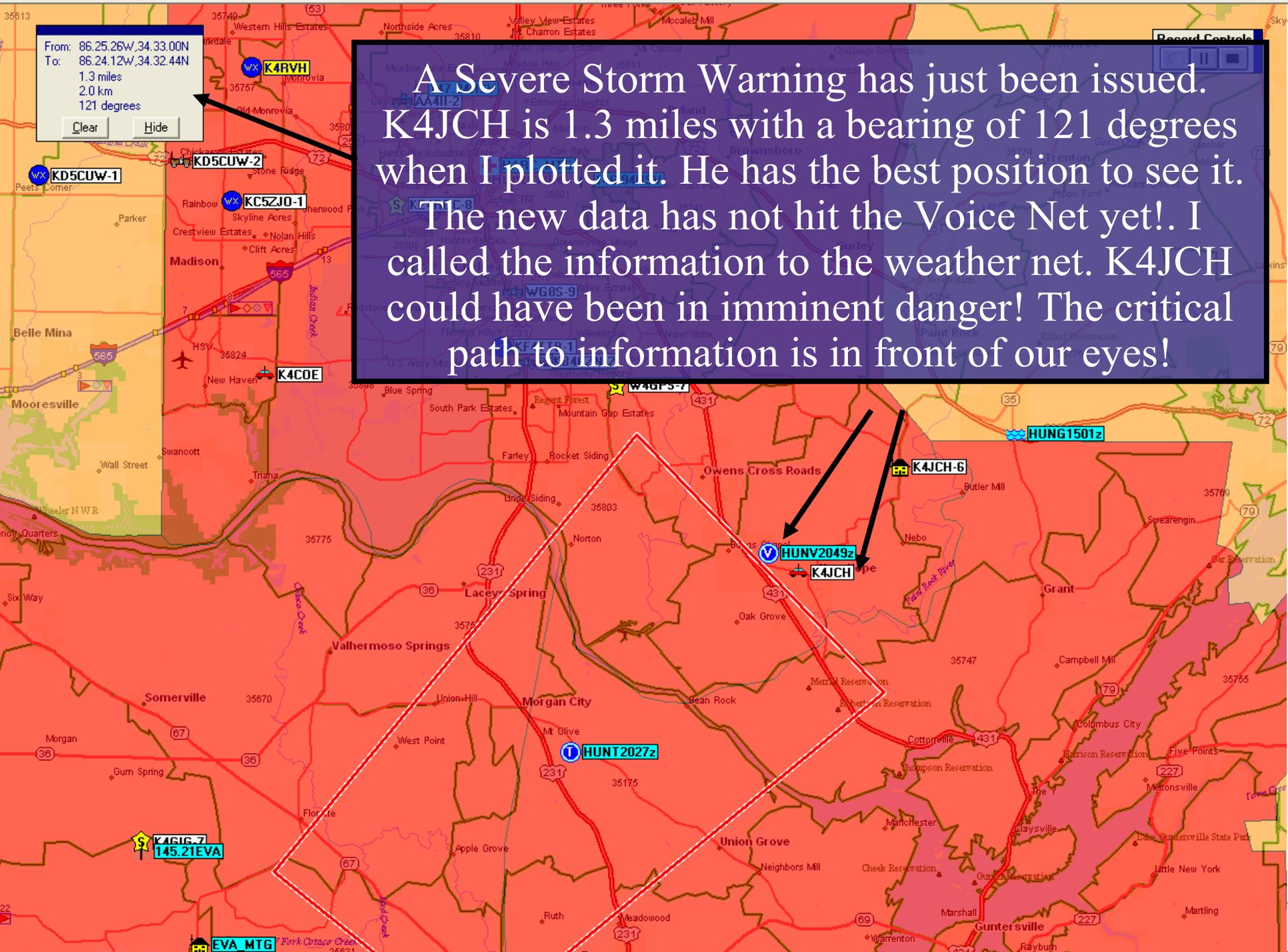
431

Is the Picture Clearer Now?

- **Back in April 2009 I was caught in a storm without my APRS gear**
 - We had to rely on the AM/FM radio
 - Warnings meant nothing to me because I could not picture them (course and direction)
 - I knew where we were located, but no clue where the storms were
 - The news media provided meaningless data for our immediate situation
 - I drove my family right into violent weather
 - The hail was pounding on our vehicle at Lilly Flagg & South Pkwy
 - My battery in my Kenwood D7A was toast from lack of use
 - The feeling of helplessness was evident
 - We were praying for divine intervention
 - Hail was pounding the vehicle until we found shelter under a gas station pavilion (not the safest place)
- **This end user was not happy**

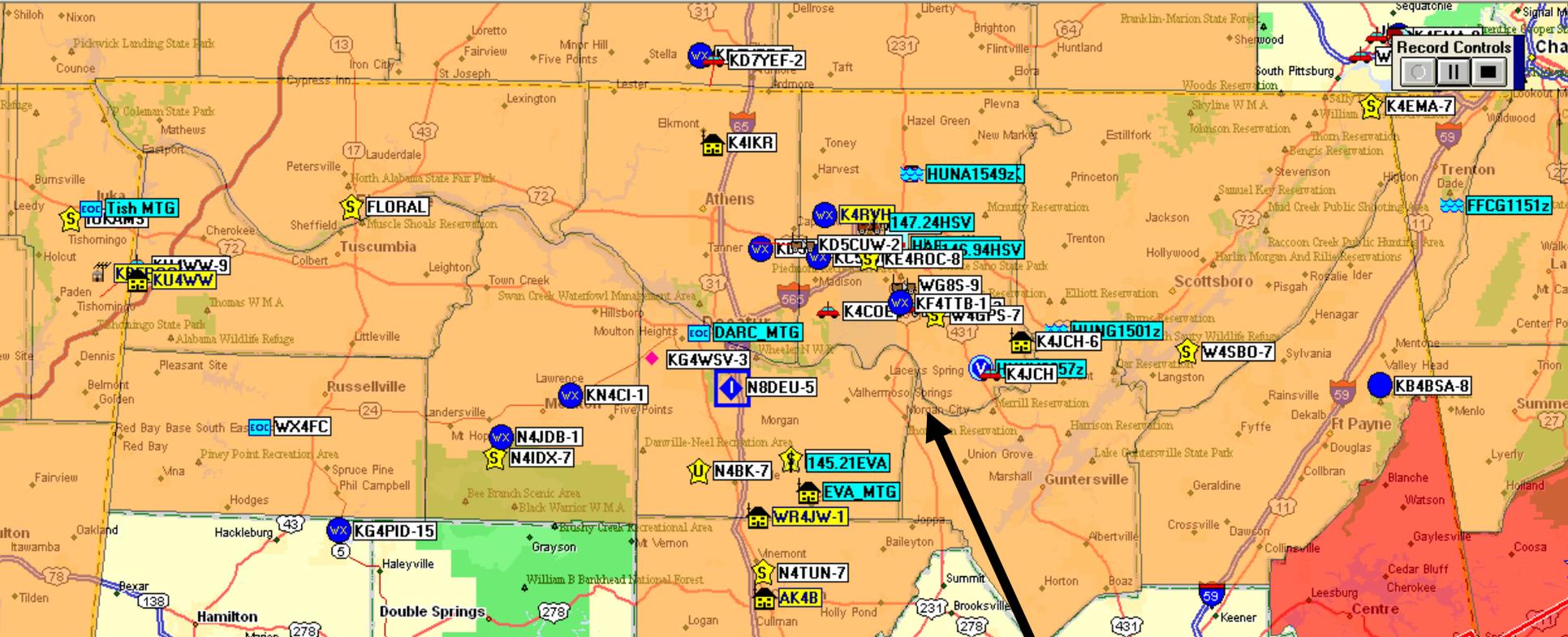
From: 86.25.26W,34.33.00N
To: 86.24.12W,34.32.44N
1.3 miles
2.0 km
121 degrees
Clear Hide

A Severe Storm Warning has just been issued. K4JCH is 1.3 miles with a bearing of 121 degrees when I plotted it. He has the best position to see it. The new data has not hit the Voice Net yet!. I called the information to the weather net. K4JCH could have been in imminent danger! The critical path to information is in front of our eyes!



APRS is Clear and Concise

- The Severe Weather Warning was immediate on APRS
- The message was clear and concise
- The APRS warning beat the NOAA weather radio and the Voice Net alert every time
- Relativity is crystal clear
 - Maximum area of concern is immediately transmitted on the APRS network
 - Location of spotters is known
- Nothing is ambiguous!



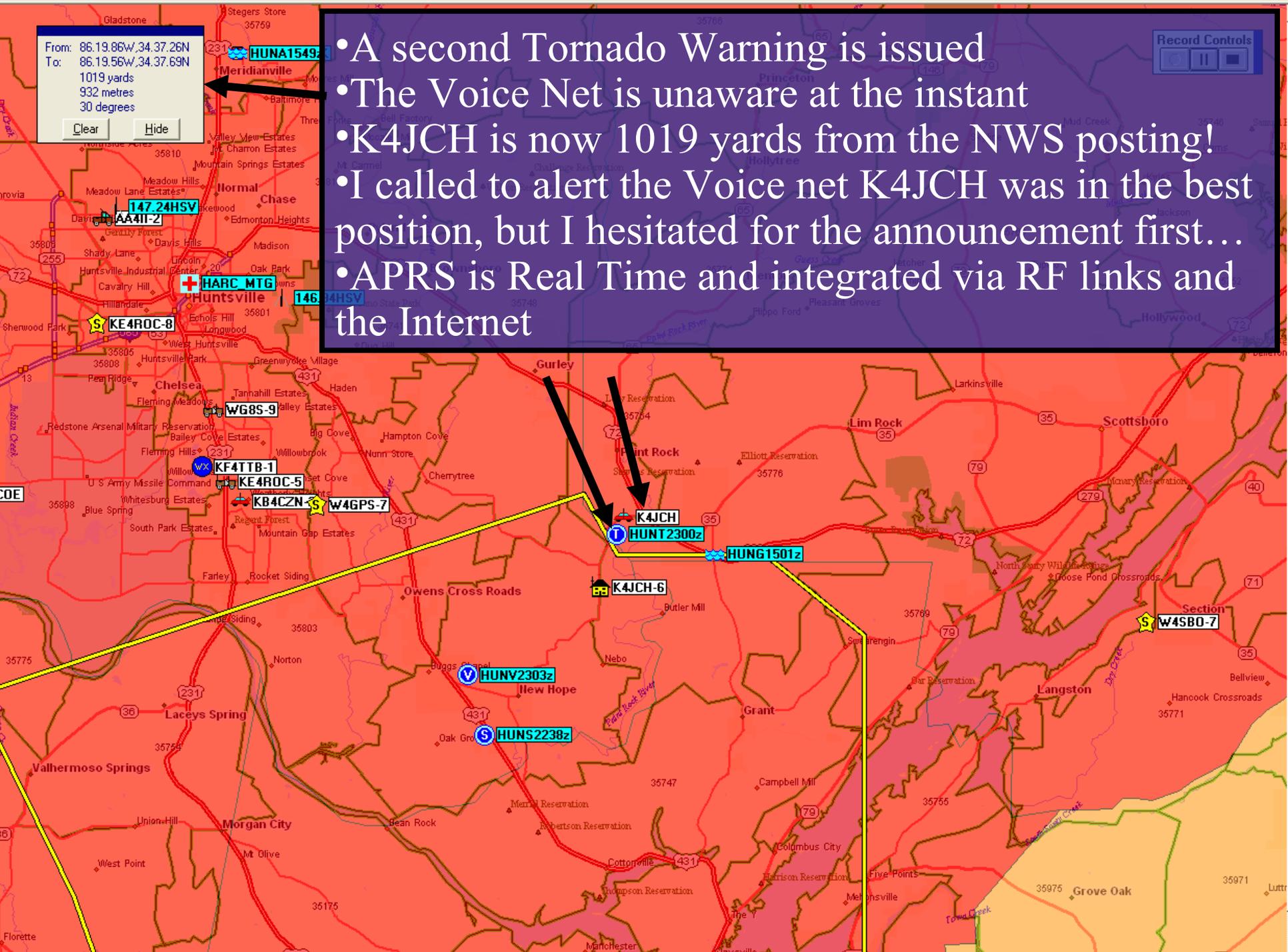
- When a Warning or Watch expire, the map is automatically updated to remove the red, yellow, or green color indicators.
- It is important to keep your clocks accurate for this reason to handle automatic expiration times. Why wait for the NWS or Voice Net to tell you.
- All new weather bulletins are transmitted immediately regardless of your clock settings.
- APRS is Real Time.
- APRS views are the same whether connected by RF or Internet.



From: 86.19.86W,34.37.26N
To: 86.19.56W,34.37.69N
1019 yards
932 metres
30 degrees

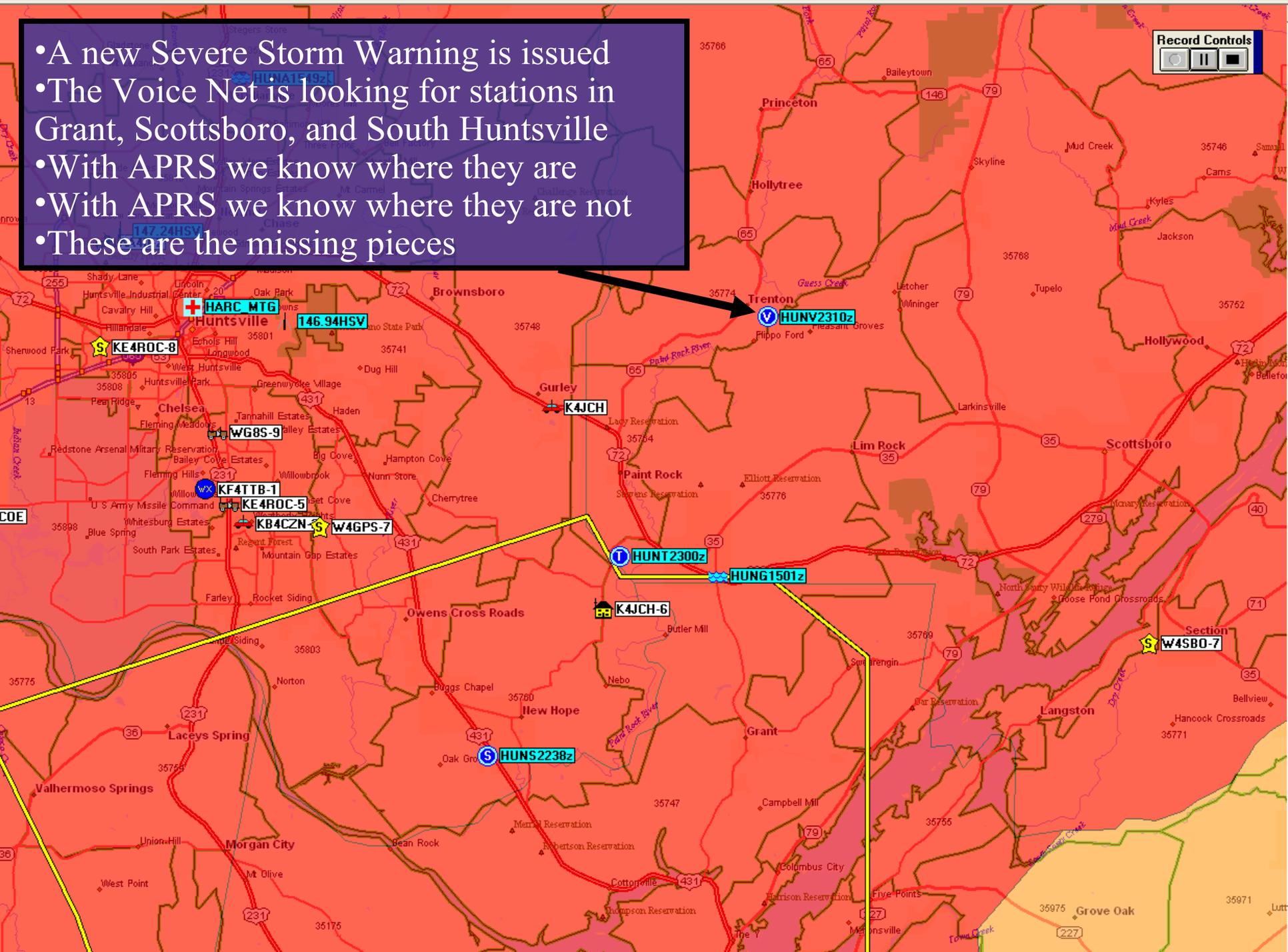
Clear Hide

- A second Tornado Warning is issued
- The Voice Net is unaware at the instant
- K4JCH is now 1019 yards from the NWS posting!
- I called to alert the Voice net K4JCH was in the best position, but I hesitated for the announcement first...
- APRS is Real Time and integrated via RF links and the Internet



- A new Severe Storm Warning is issued
- The Voice Net is looking for stations in Grant, Scottsboro, and South Huntsville
- With APRS we know where they are
- With APRS we know where they are not
- These are the missing pieces

Record Controls





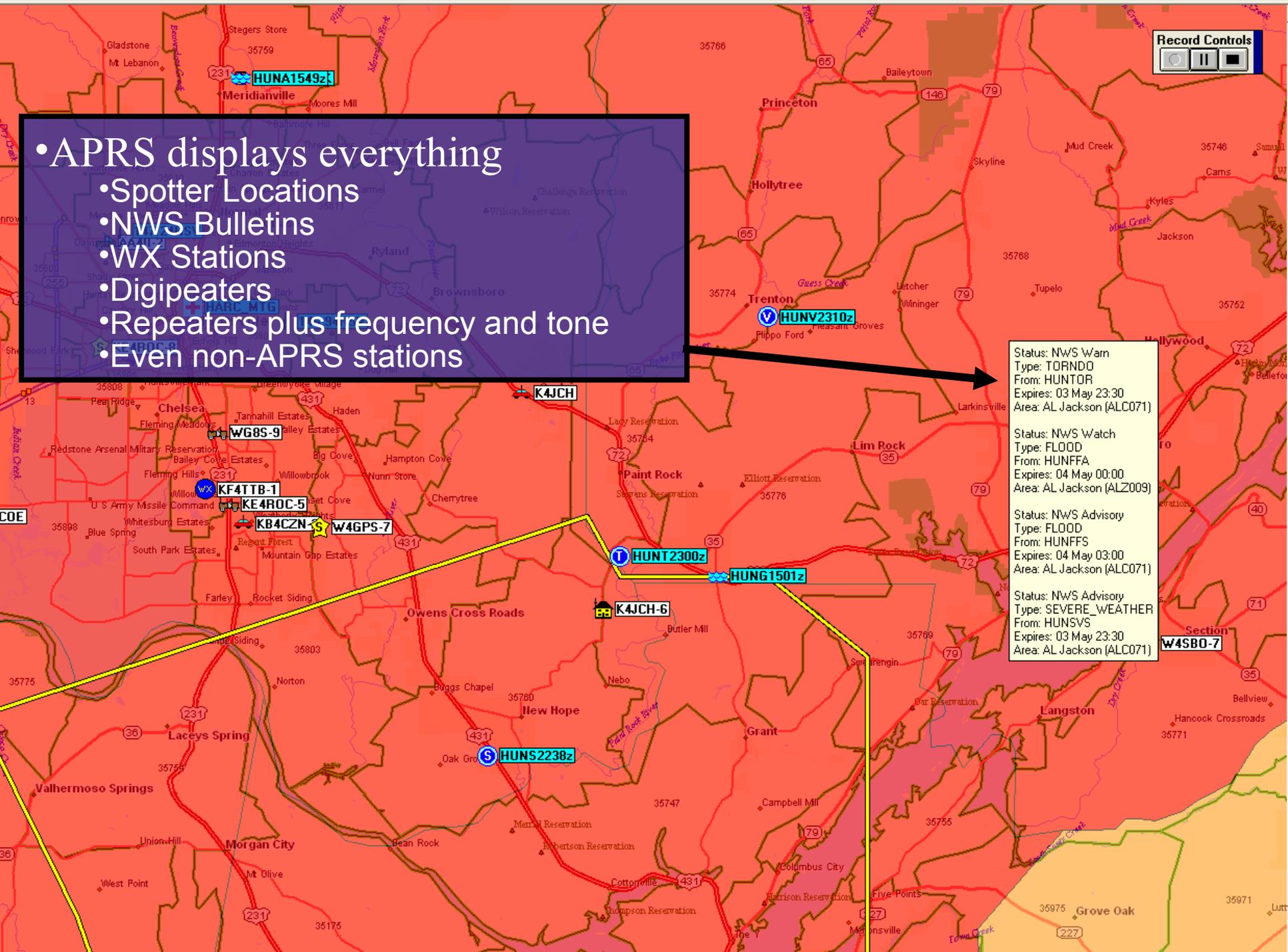
- APRS displays everything
 - Spotter Locations
 - NWS Bulletins
 - WX Stations
 - Digipeaters
 - Repeaters plus frequency and tone
 - Even non-APRS stations

Status: NWS Warn
Type: TORNDO
From: HUNTOR
Expires: 03 May 23:30
Area: AL Jackson (ALC071)

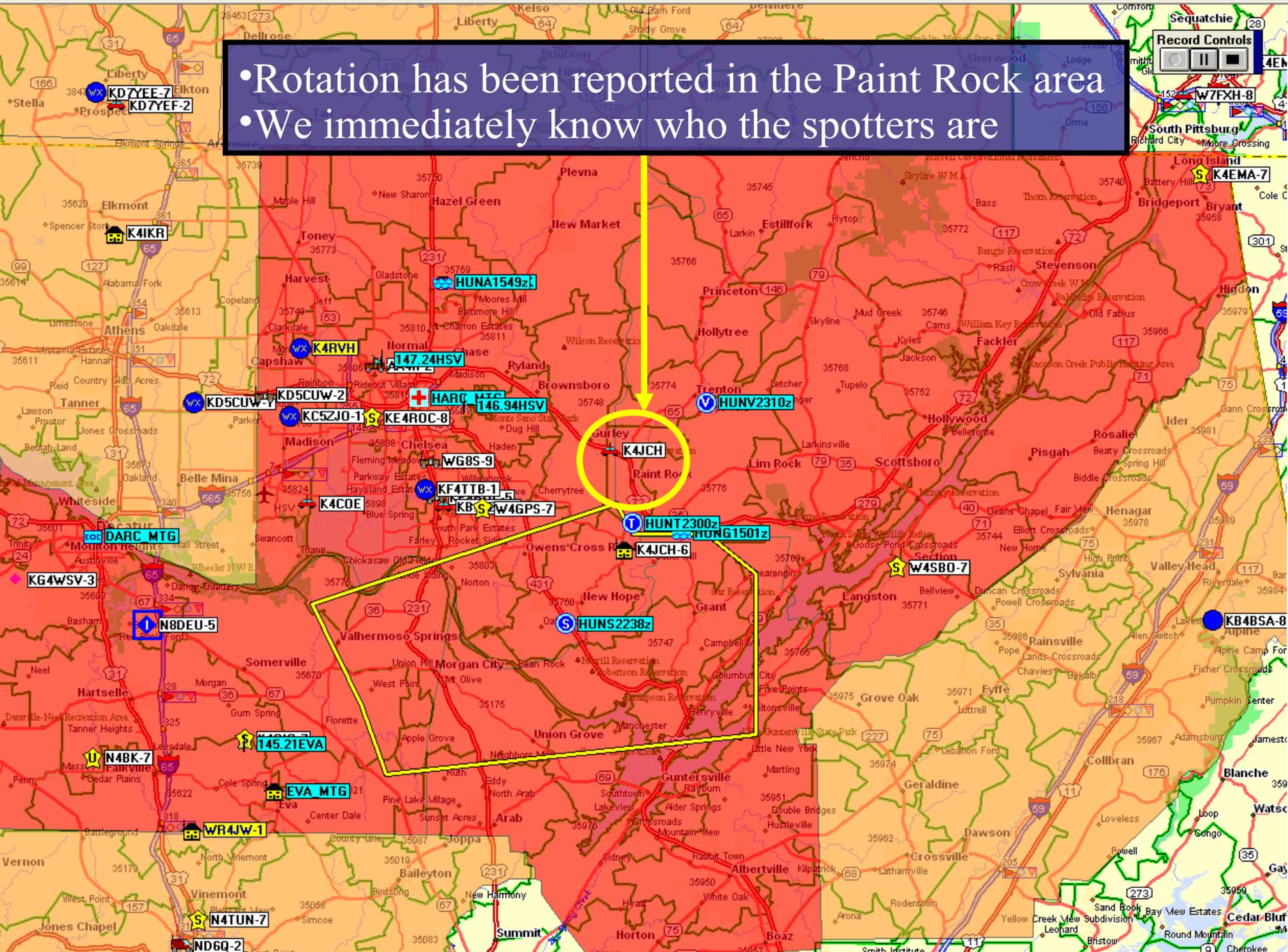
Status: NWS Watch
Type: FLOOD
From: HUNFFA
Expires: 04 May 00:00
Area: AL Jackson (ALZ009)

Status: NWS Advisory
Type: FLOOD
From: HUNFFS
Expires: 04 May 03:00
Area: AL Jackson (ALC071)

Status: NWS Advisory
Type: SEVERE_WEATHER
From: HUNSVS
Expires: 03 May 23:30
Area: AL Jackson (ALC071)



•Rotation has been reported in the Paint Rock area
•We immediately know who the spotters are

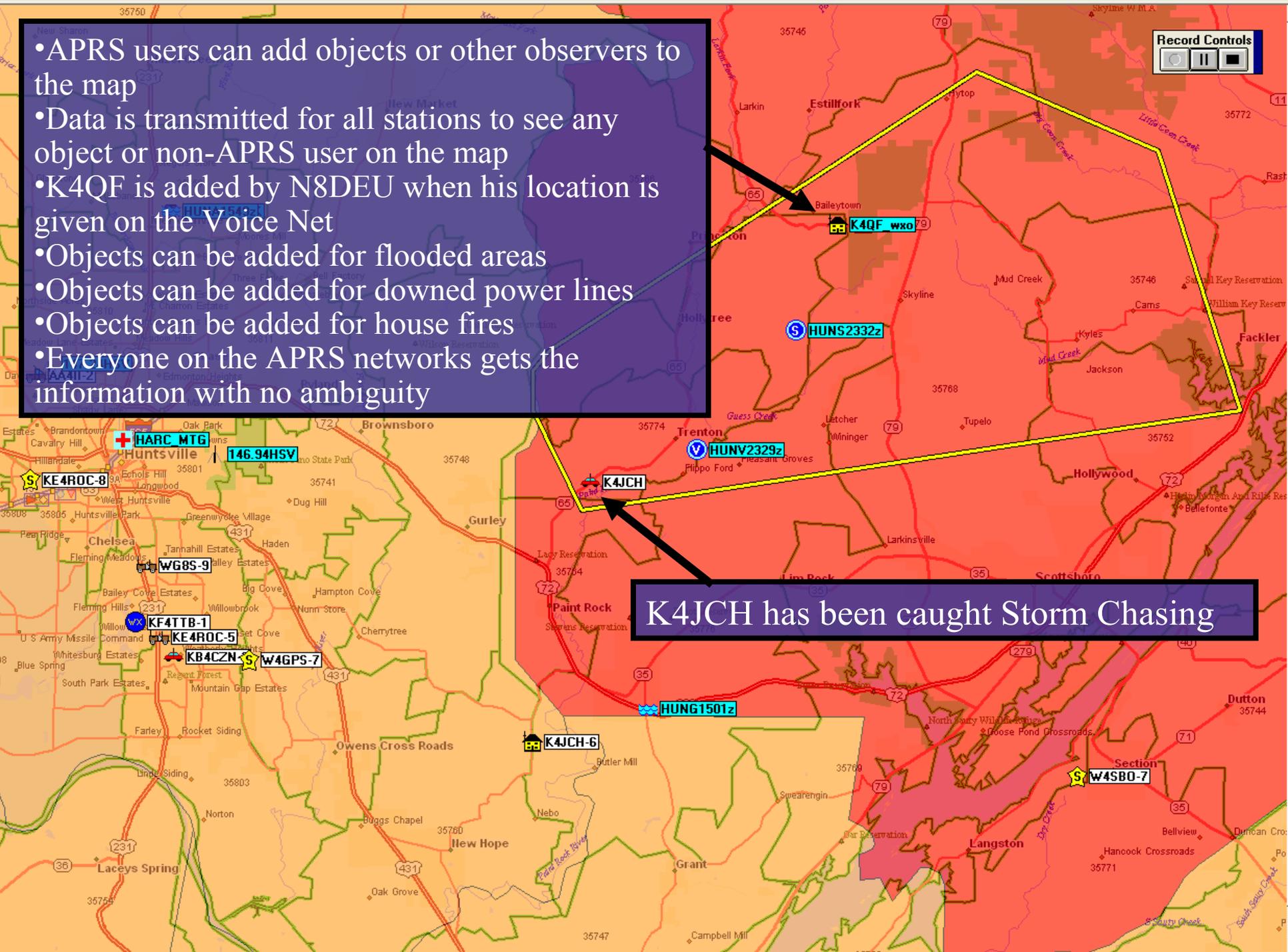


Possible cloud lowering has been reported near Hwy 72 & Hwy 65

Record Controls



- APRS users can add objects or other observers to the map
- Data is transmitted for all stations to see any object or non-APRS user on the map
- K4QF is added by N8DEU when his location is given on the Voice Net
- Objects can be added for flooded areas
- Objects can be added for downed power lines
- Objects can be added for house fires
- Everyone on the APRS networks gets the information with no ambiguity



K4JCH has been caught Storm Chasing

APRS

The Power of APRS

Madison County - May 6, 2009

Presented by:

Tim Cunningham - N8DEU

Alabama APRS Coordinator

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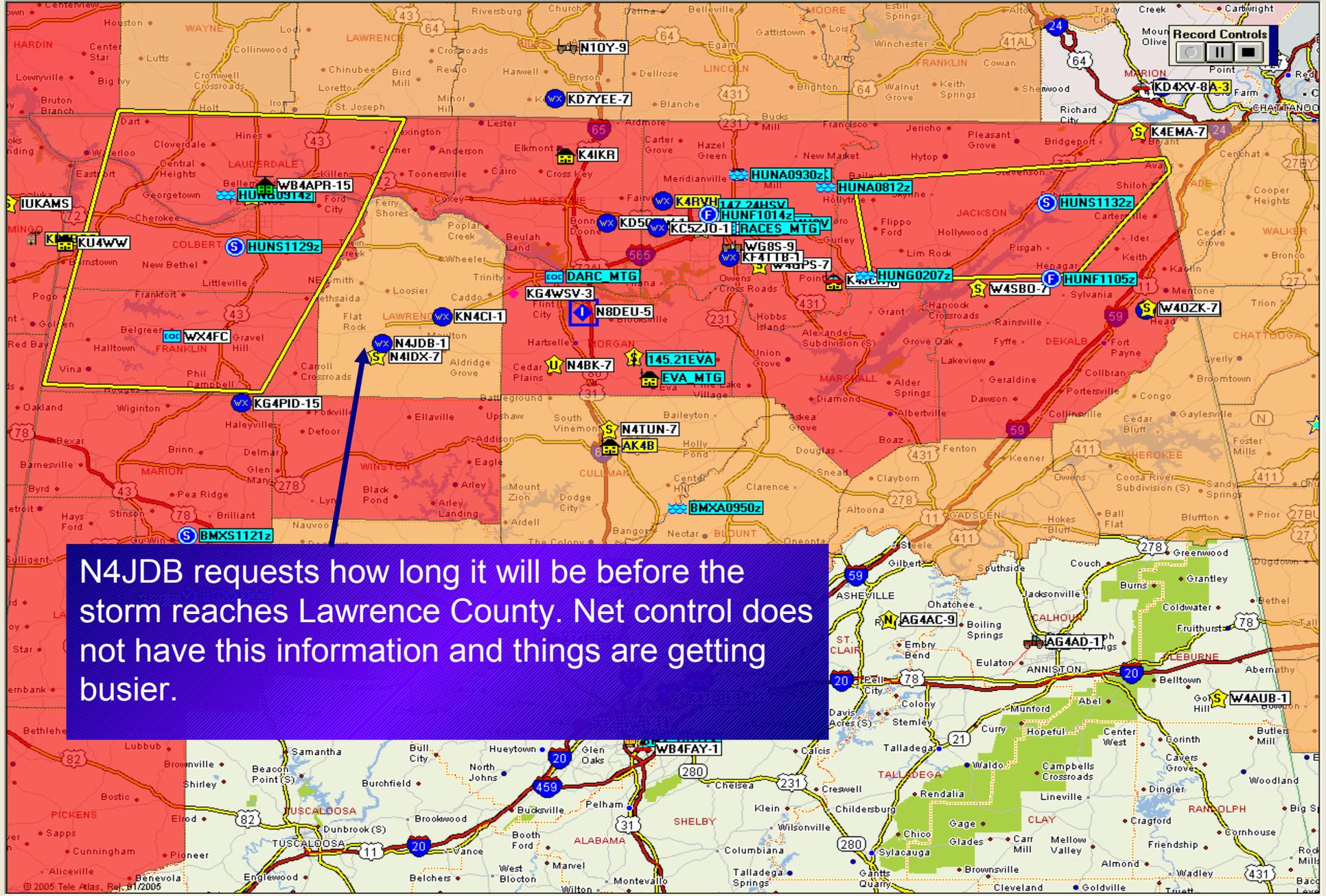
n8deu@arri.net

n8deu@qsl.net

APRS - 06-MAY-09

Alabama Packet Radio System

- The weather net was activated around 6:30am on 06-MAY-09
- Every county in the HUN NWS area in North Alabama had pending warnings except for 2 that had watches posted
- As the net became active some of the pending bulletins were announced
- With APRS we have a full view of what was active instantly to augment the Voice Net
- It was a busy morning
- All those on the Voice Net did an outstanding job



N4JDB requests how long it will be before the storm reaches Lawrence County. Net control does not have this information and things are getting busier.

A spotter reports a Tornado heard near Browns Ferry Rd and Balch Rd. An object is placed on the map titled TOR_SPOTD. Just click on the location, select Object Editor from the Action menu, and enter the data and the symbol type.

Object Editor

Last Updated: []

Identifier: TOR_SPOTD Latitude: 34.42.43N Longitude: 086.46.08W

Comment: []

Symbol: Tornado

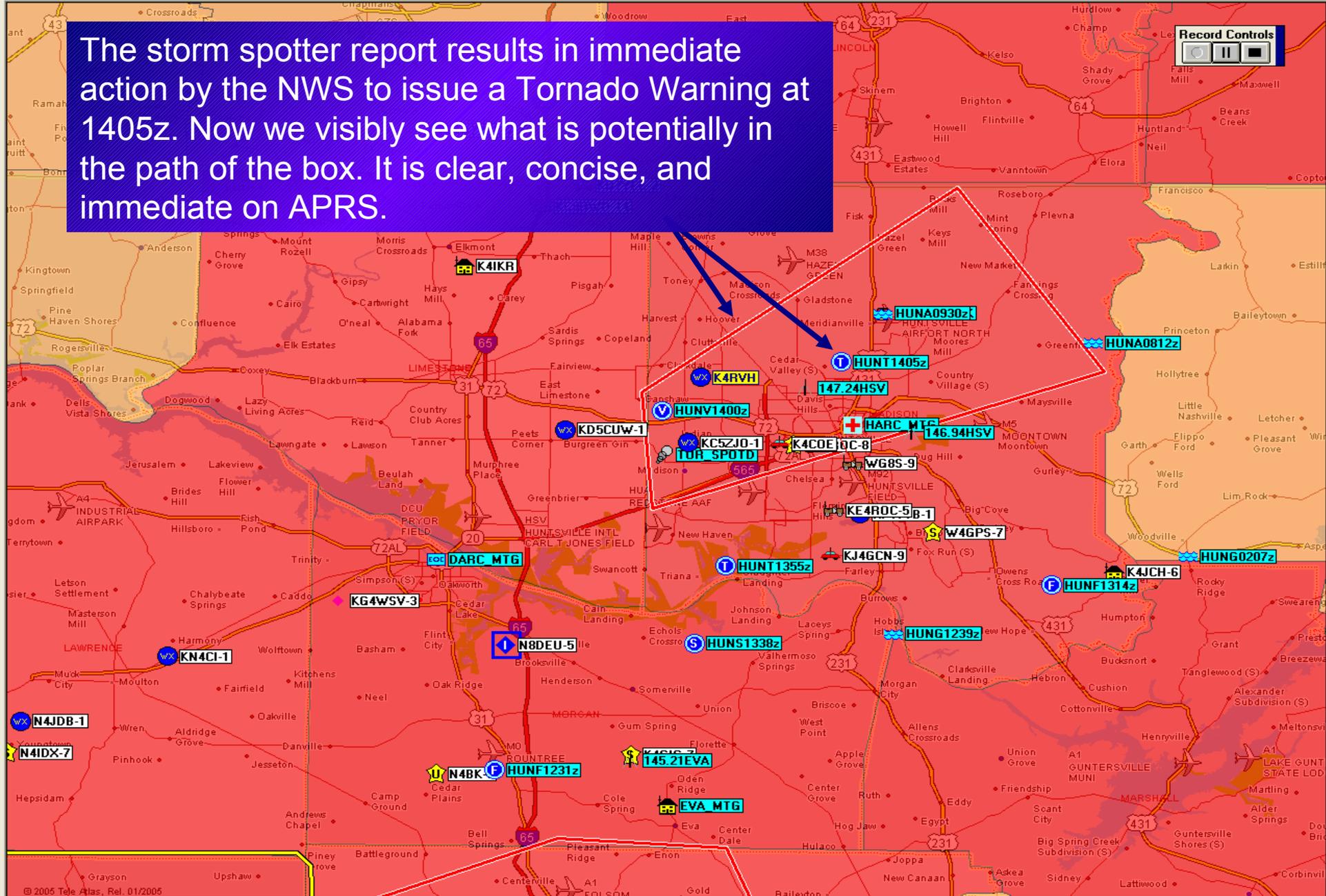
Auto update object posit: Active object:

Course: [] Speed: []

deg kt

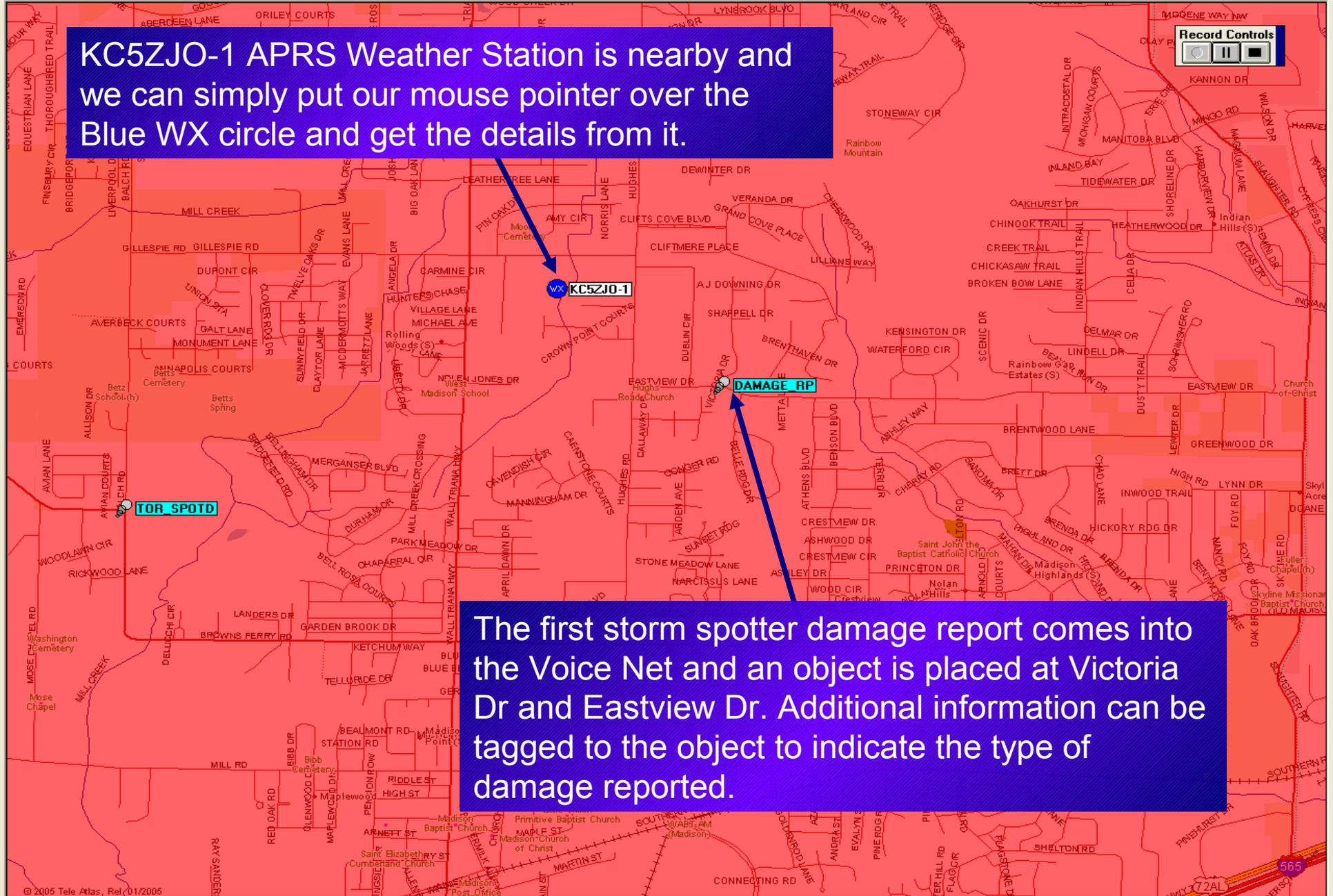
If we know the course and speed of the Object we can make it move and update automatically. This is what APRS does when a beacon is not heard from a moving mobile station if enabled. A new post puts it back on course.

The storm spotter report results in immediate action by the NWS to issue a Tornado Warning at 1405z. Now we visibly see what is potentially in the path of the box. It is clear, concise, and immediate on APRS.



KC5ZJO-1 APRS Weather Station is nearby and we can simply put our mouse pointer over the Blue WX circle and get the details from it.

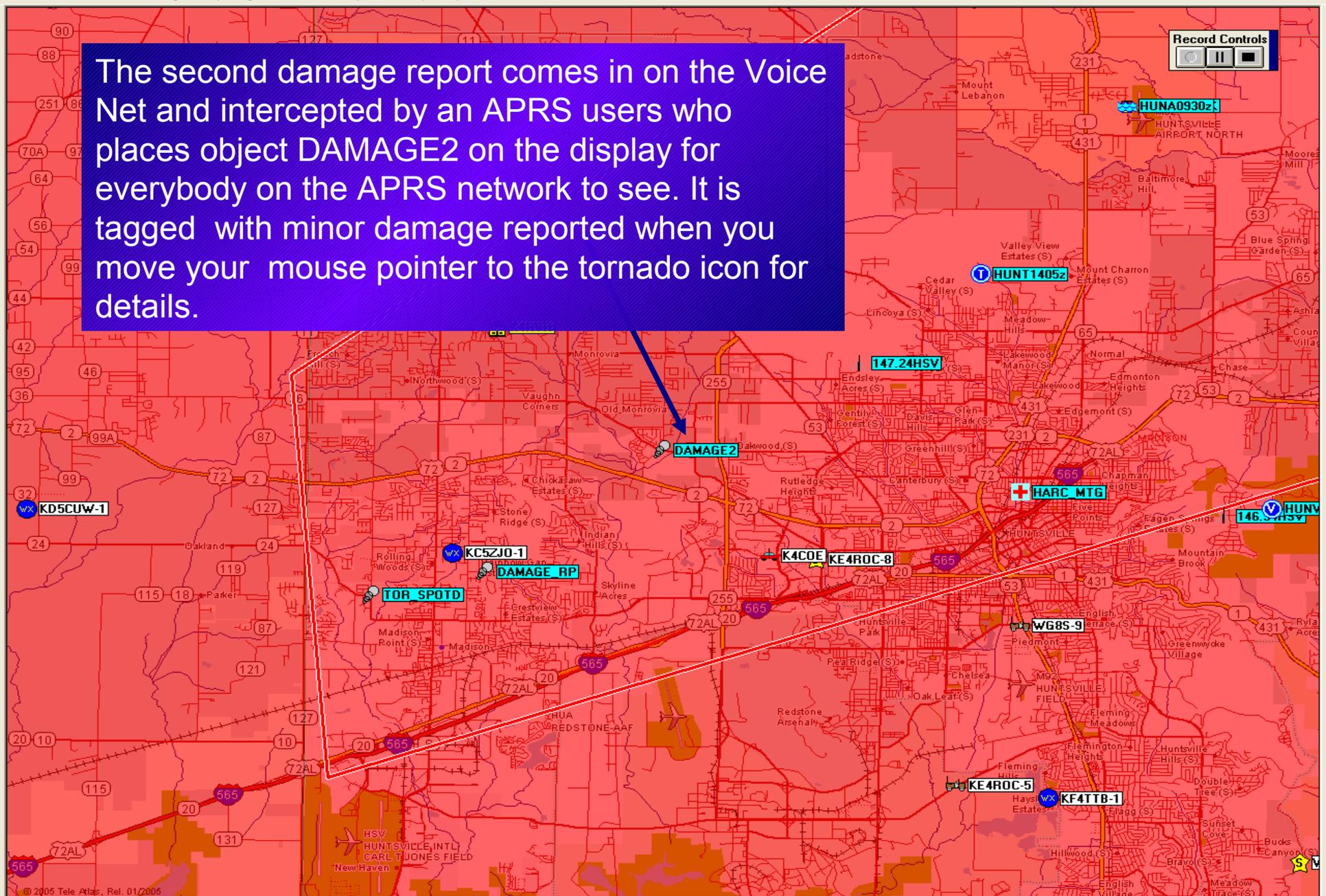
Record Controls

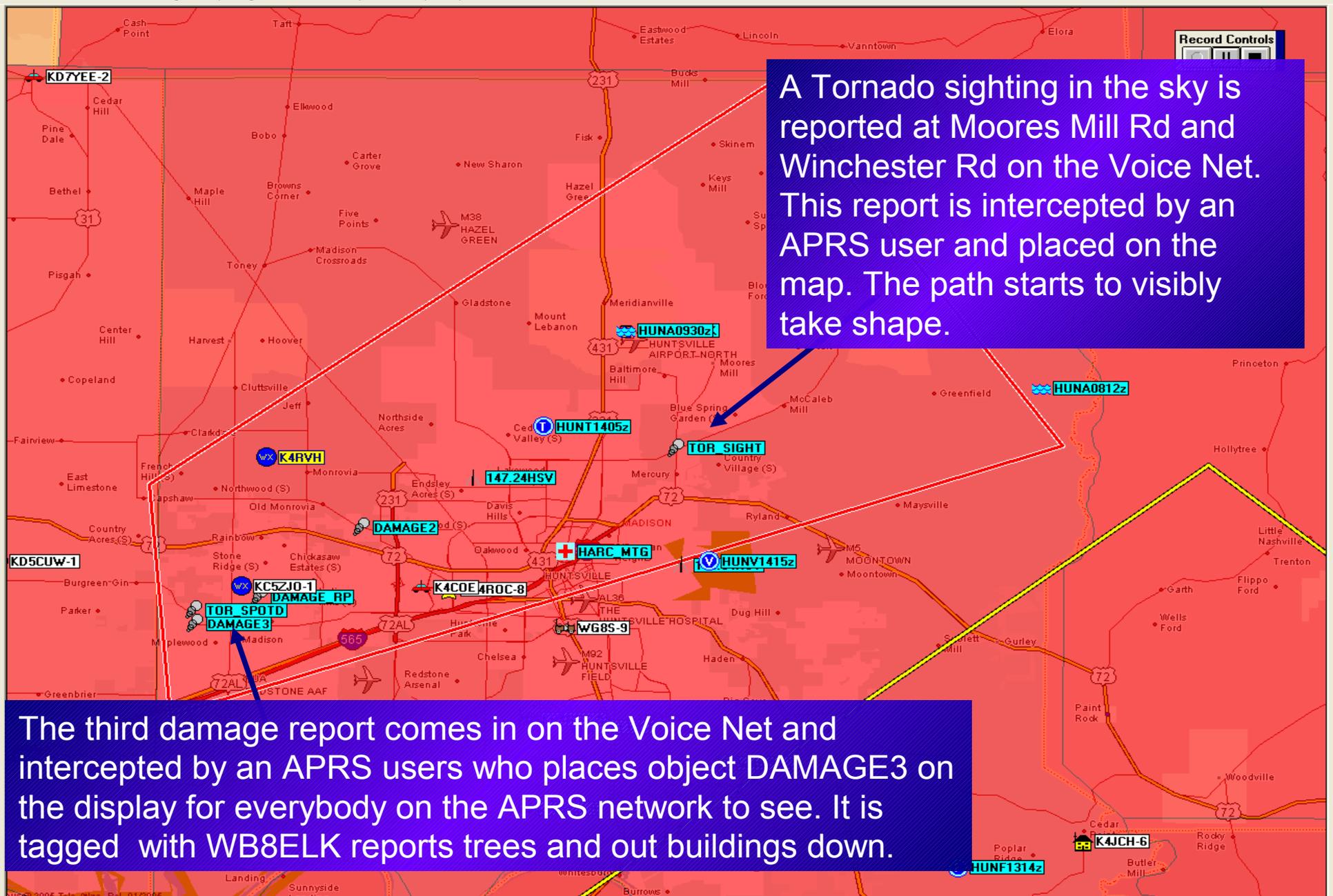


The first storm spotter damage report comes into the Voice Net and an object is placed at Victoria Dr and Eastview Dr. Additional information can be tagged to the object to indicate the type of damage reported.

Record Controls

The second damage report comes in on the Voice Net and intercepted by an APRS users who places object DAMAGE2 on the display for everybody on the APRS network to see. It is tagged with minor damage reported when you move your mouse pointer to the tornado icon for details.

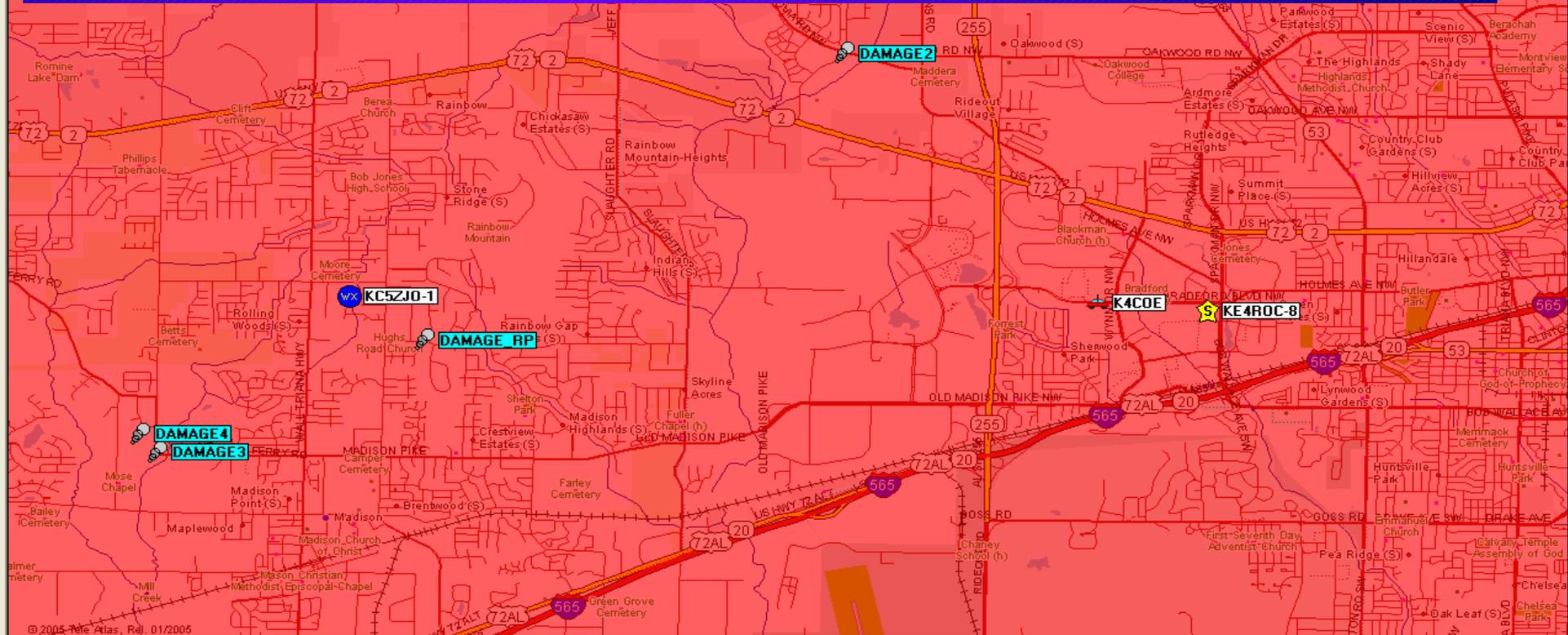




A Tornado sighting in the sky is reported at Moores Mill Rd and Winchester Rd on the Voice Net. This report is intercepted by an APRS user and placed on the map. The path starts to visibly take shape.

The third damage report comes in on the Voice Net and intercepted by an APRS users who places object DAMAGE3 on the display for everybody on the APRS network to see. It is tagged with WB8ELK reports trees and out buildings down.

The damage reports are intercepted from the Voice Net and objects are placed on the map. Note that the TOR_SPOTD object has been removed near DAMAGE4 and DAMAGE3 where it was first reported. Since there was a new sighting across town it was deleted. When an object is deleted a command goes out to all stations on the APRS network to remove it from their maps. The path can take on a definitive shape with the reports. Also note the NWS Tornado Warning Box has expired and disappeared. We also know where the spotters are to warn them as well. It is visible, clear, and concise with no ambiguity on APRS.



APRS – Get the Picture?

- It should be clear APRS delivers real time information
- We know where the NWS bulletins are located
- We know where the spotters are located
- We know where damage has been reported
- The picture of danger is clear and concise
- APRS fills in the missing gaps of the picture
- Messages can be sent via the APRS data network when the voice repeater is out of range for some spotters
- APRS augments the SKYWARN Voice Net
- A Voice Net can be up and running quickly with all the NWS bulletins at their fingertips with APRS
- Why wait until somebody staffs the NWS station
- The time between danger and death is too short

APRS – Get the Picture?

- Situational awareness is key to precise and timely information
- What happens when an area is so devastated and there are no street signs
 - With APRS we know where you are
 - Reports can be plotted easily
 - Information is immediate
- Want NWS bulletins faster with more meaning to situational awareness?
 - Faster than NOAA weather radio alert
 - Faster than SKYWARN Voice Net alert
- Get on the APRS tactical communication data network

Next Step?

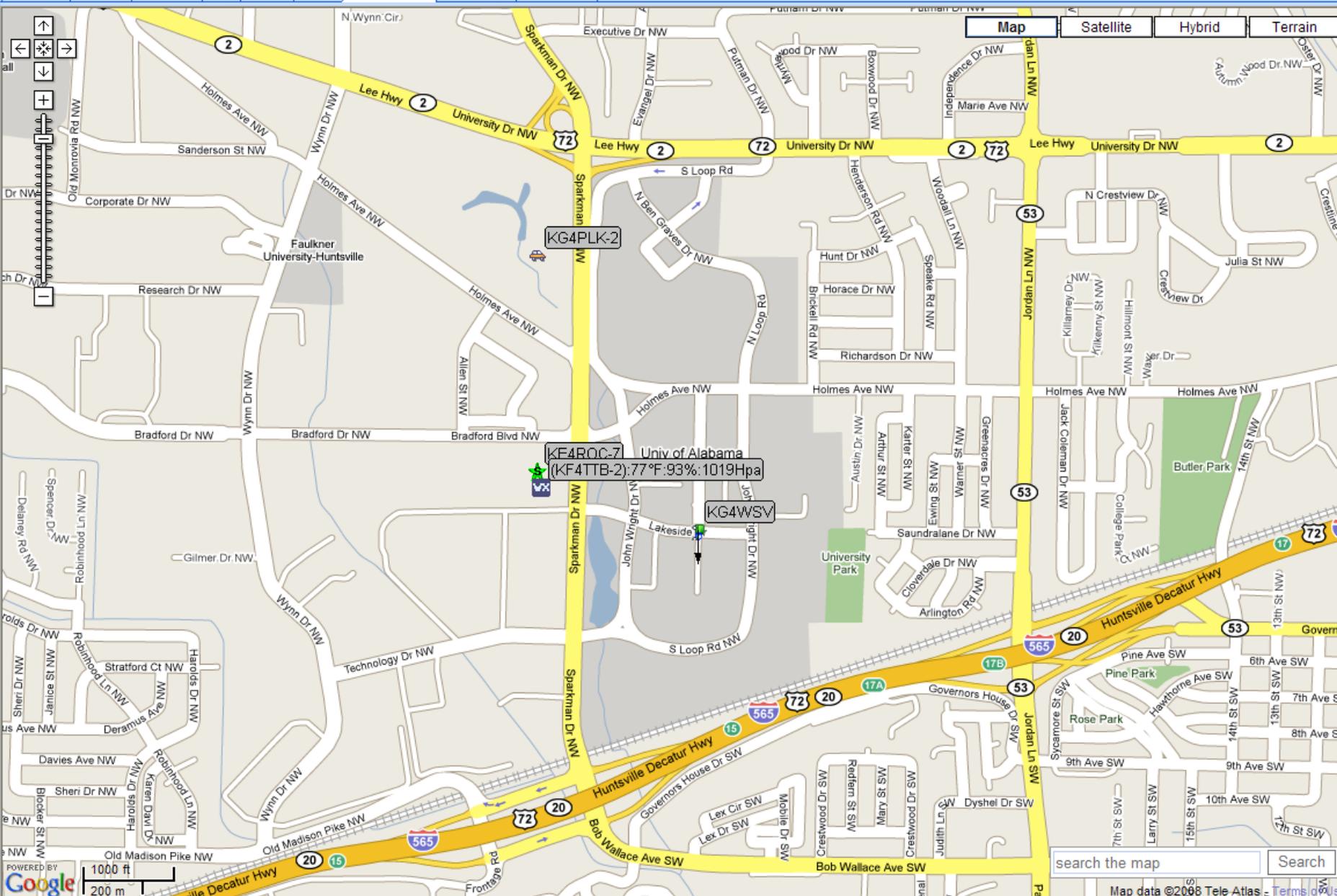
- **APRS can help solve these questions**
 - Should we activate?
 - Should we continue with an informal net?
 - What spotters may be in danger?
- **Is this informative?**
- **Is there any interest in APRS?**
- **If yes, then we can begin to discuss the simple hardware and software requirements**
- **You might be surprised that you already have most of what you need**



Legend
GPS
Station

Monitor Stations DxCluster Msg Alarms Untitled GoogleMaps YahooMaps VirtualEarth

Map Satellite Hybrid Terrain



search the map Search

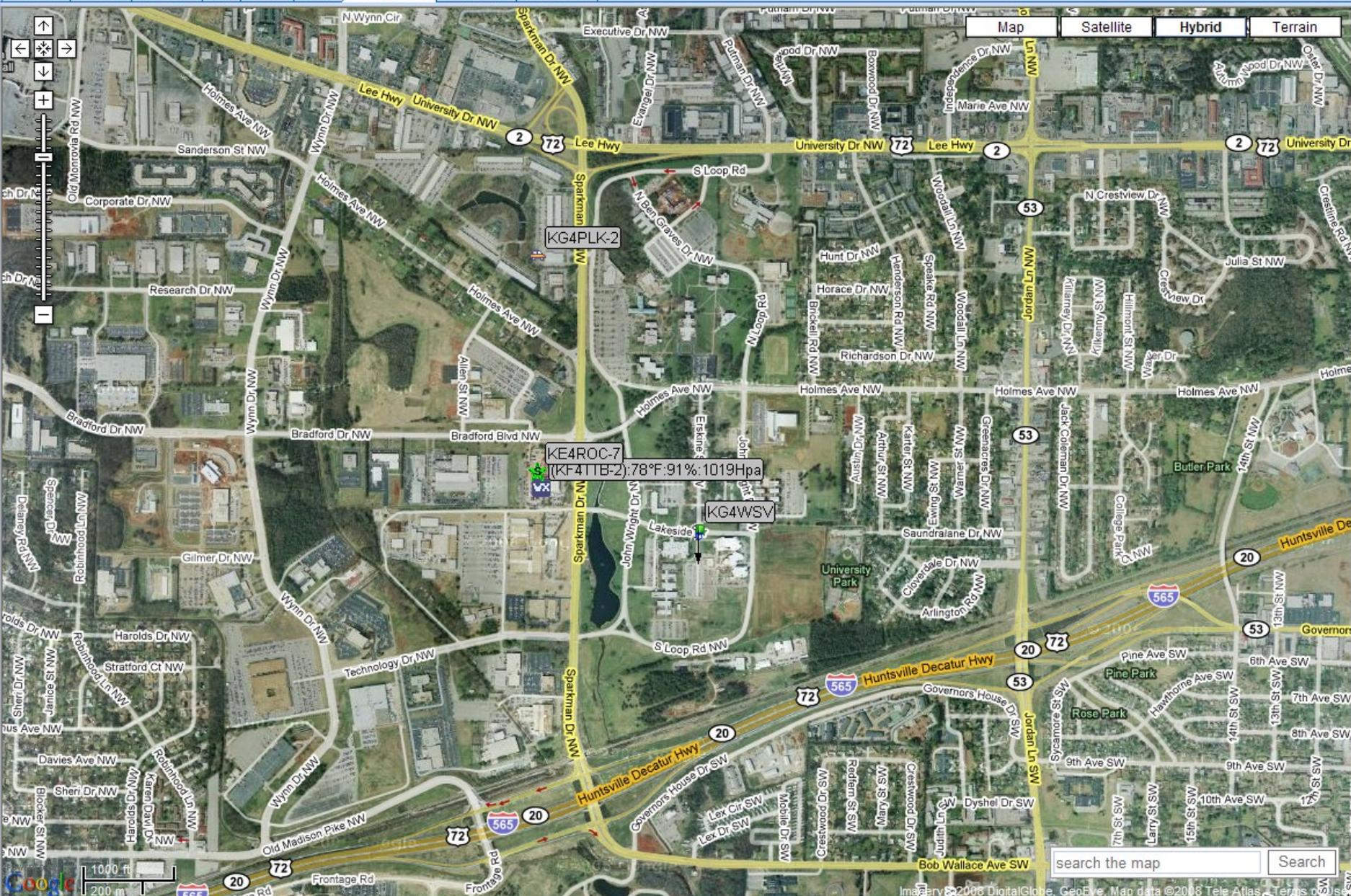
Map data ©2008 Tele Atlas



Legend

GPS

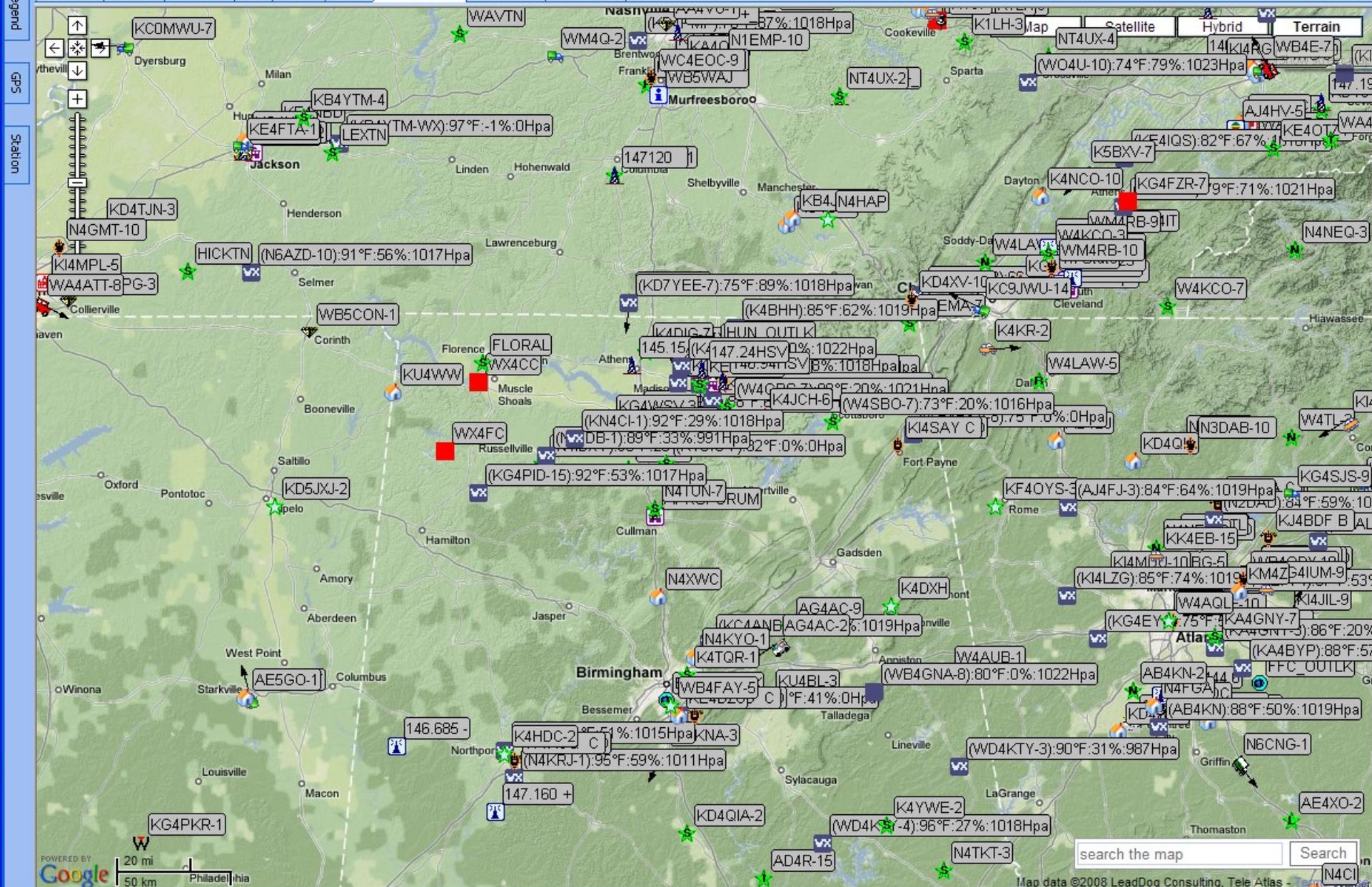
Station



KG4PLK-2

KE4ROC-7
(KF4TTB-2): 78°F: 91%: 1019Hpa

KG4WSV







Map

Satellite

Hybrid



Clinton Ave W

Monroe St SW

Spring Park Lake

Big Spring Park

HFEST_HSV

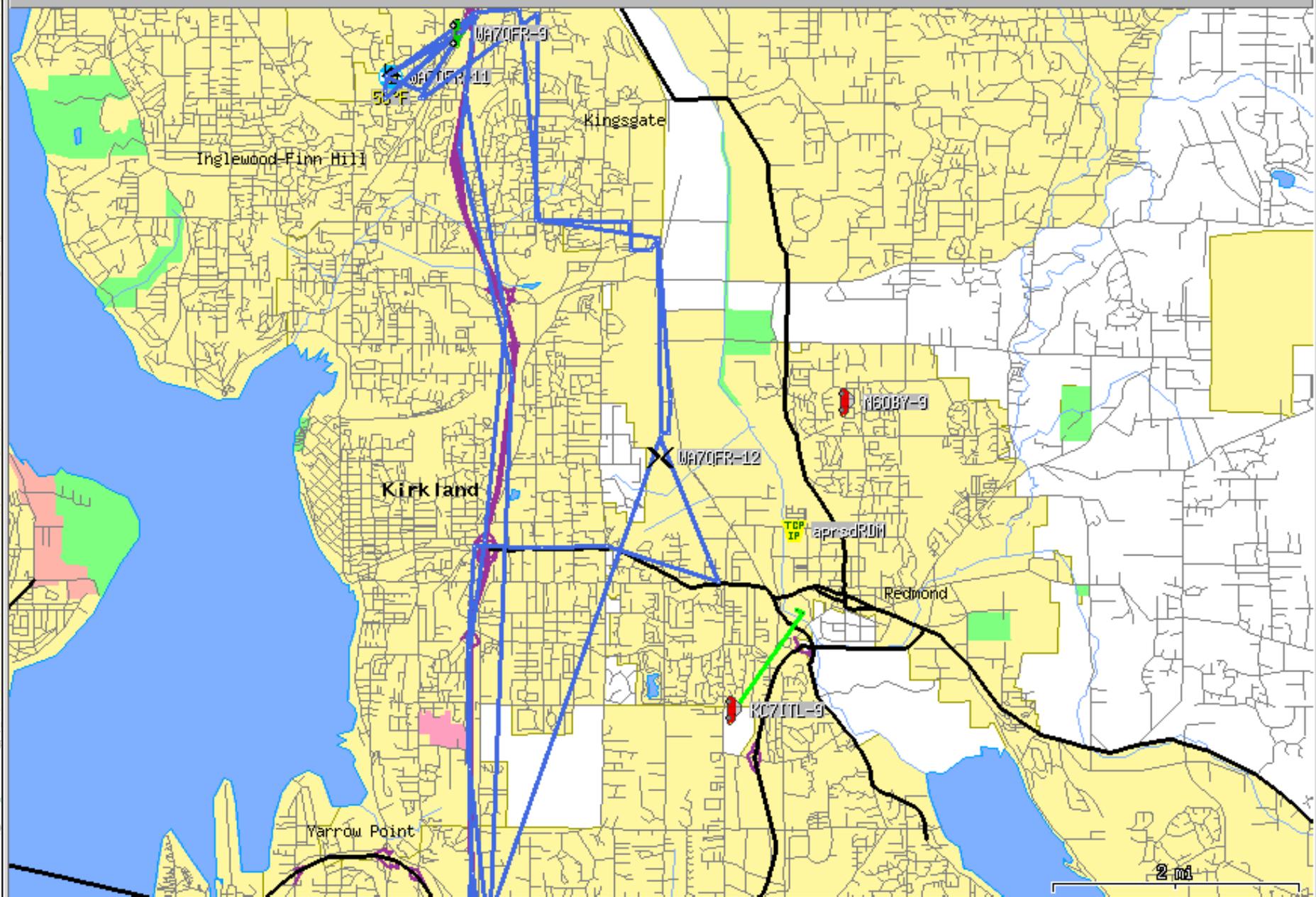
Williams Ave SW

Monroe St SW

Heart of Huntsville Dr SW

Monroe St SW

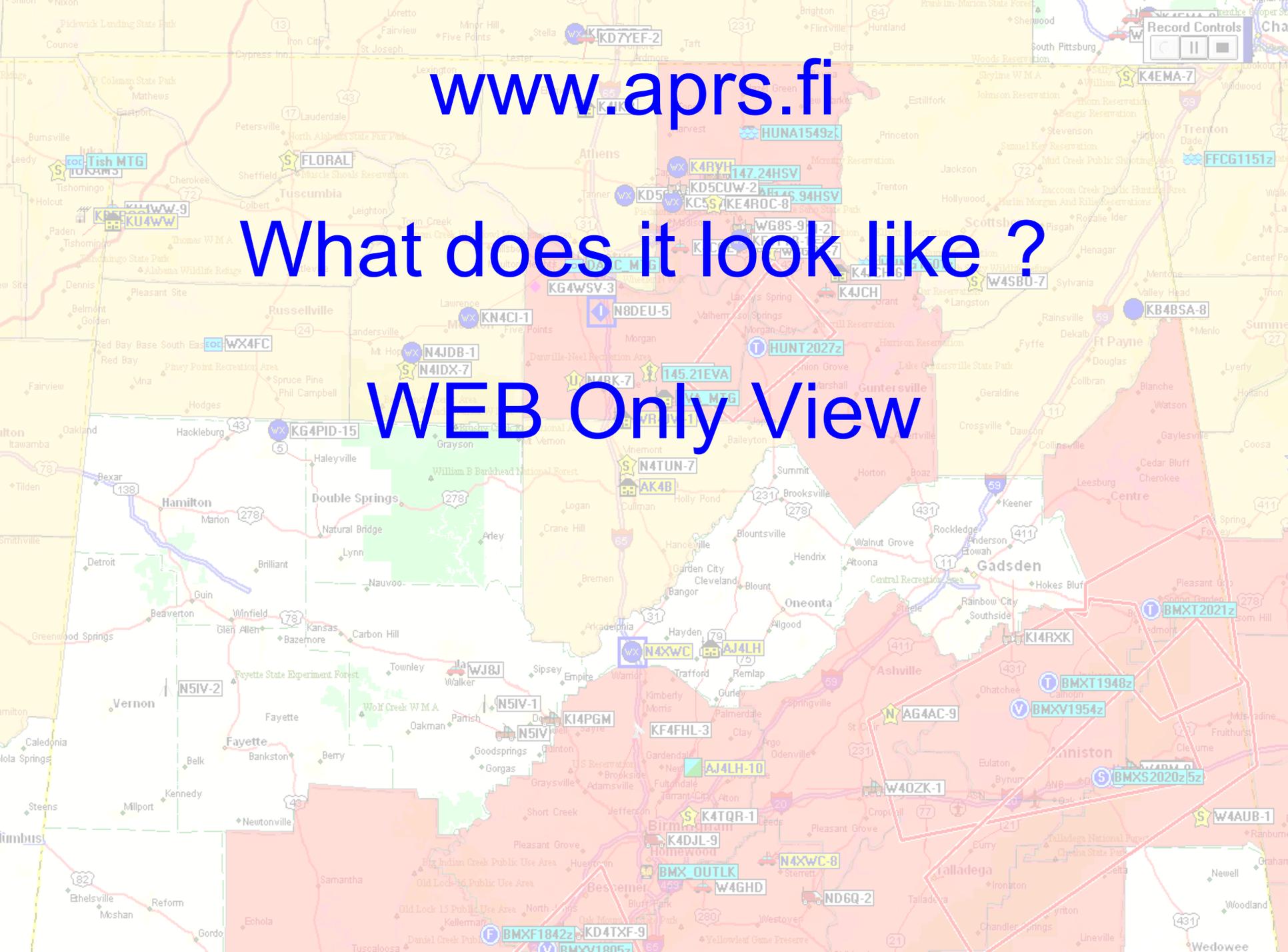


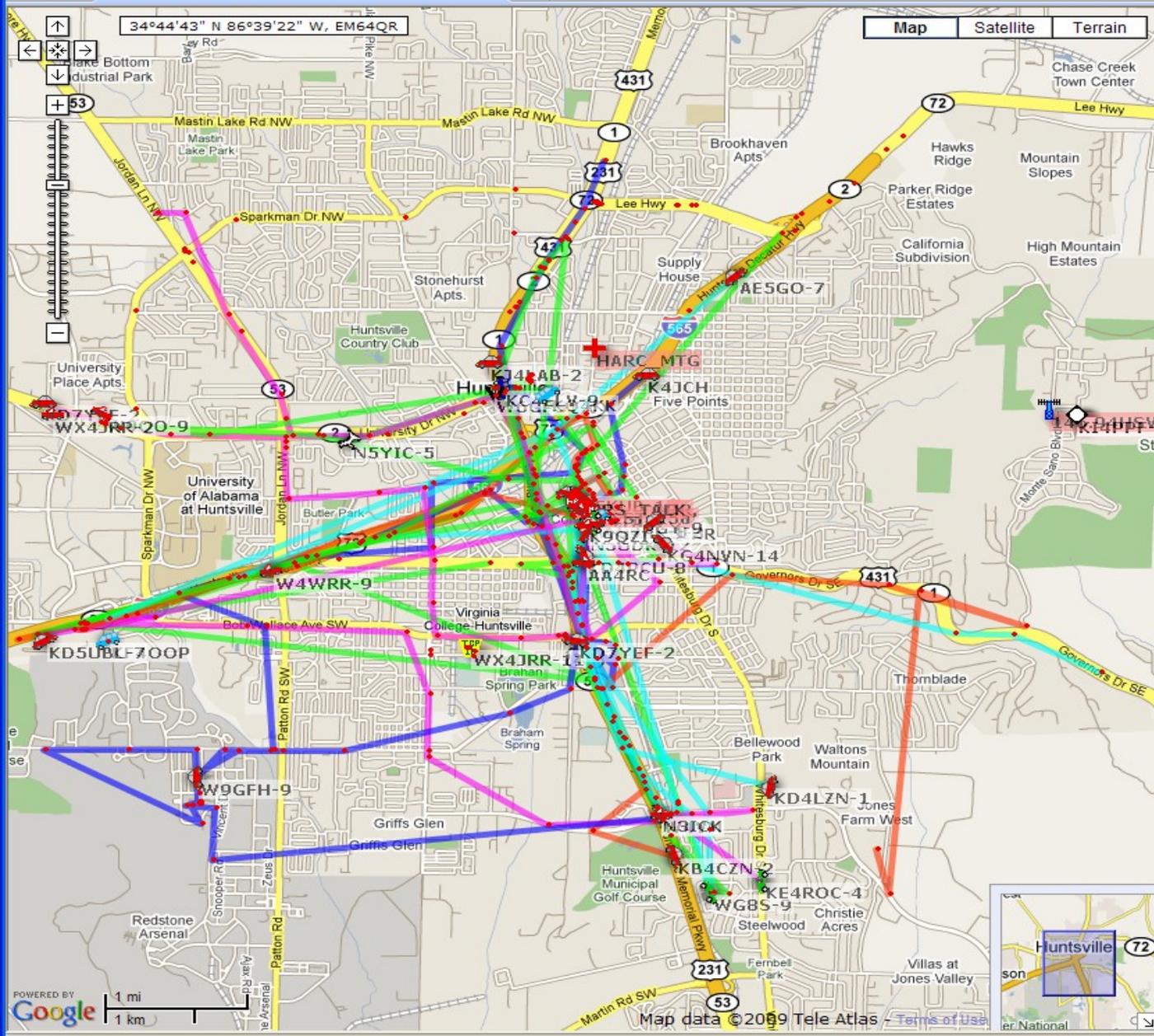


www.aprs.fi

What does it look like ?

WEB Only View





aprs.fi · Login

Show last: 24 hours

Track callsign: [Clear / Show all] Search [?]

Address, city or Locator: [Clear] Search [?]

Wx: 76.3°F 82% 1018 mbar 0.0 MPH SE

Other views:

- Station info
- Raw packets
- Status packets - Beacon packets
- Messages - Bulletin board
- Prefix browsing
- Google Earth KML [?]
- Preferences - My account

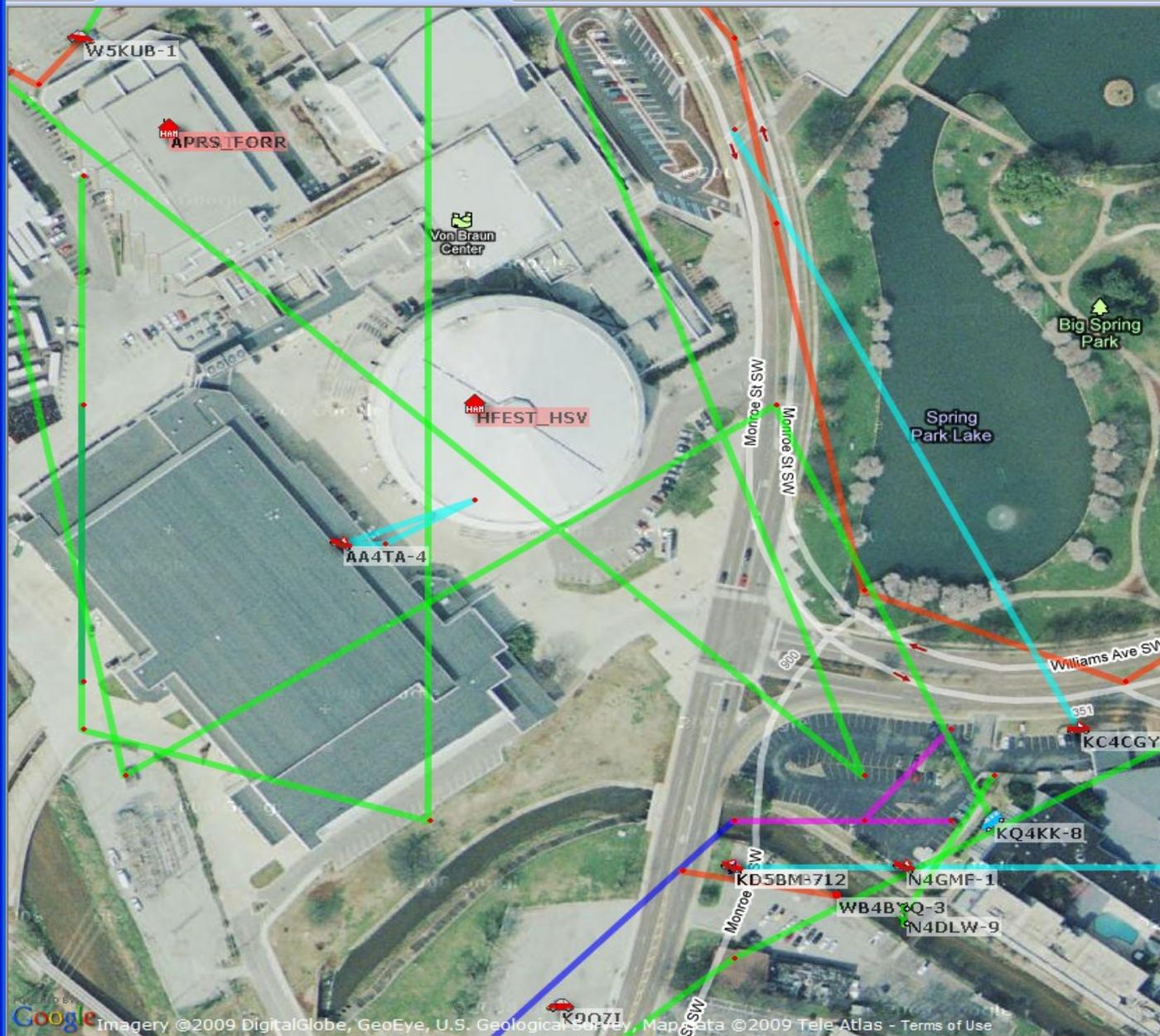
Information:

APRS stations currently moving · Blog · Linking to aprs.fi · AIS sites · Database statistics · Technical details · Change log · Planned changes · Credits and thanks

updating

Ads by Google

- [APRS Weather Station](#)
- [Satellite Map](#)
- [Detailed Map of Italy](#)
- [Network Tracking](#)
- [A Map of the World](#)



aprs.fi - Login

Show last: 12 hours

Track callsign: [Clear / Show all] Search [?]

Address, city or Locator: [Clear] Search [?]

Wx: 76.2°F 83% 1018 mbar 0.0 MPH SE

- Other views:**
- Station info
 - Raw packets
 - Status packets - Beacon packets
 - Messages - Bulletin board
 - Prefix browsing
 - Google Earth KML [?]
 - Preferences - My account

Information:

APRS stations currently moving · Blog · Linking to aprs.fi · AIS sites · Database statistics · Technical details · Change log · Planned changes · Credits and thanks

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- Ads by Google**
- [APRS Weather Station](#)
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Messaging - WinAPRS



N8DEU
Power 49 Watts
Packets Rcvd 62 Height 160 Feet
9/6/2001 21:40:13 Gain 9 db
9/6/2001 22:42:03 Direction 135
Lat 34 48' 10"N Status >062140 n8deu@amsat.org
Lon 86 41' 46"W ID
Messages Sent 0 Beacon
Posit =3448.18N/08641.78W/PHG7493/Playing with WinAPRS 2.5.1 -ALMADHUNTSUIL-251-<530>

History

New Message Dialog

To: Message # 000 HF (P1) VHF (P2) TCP/IP

Msg:

Default Path:
 Reverse Path: TCPXX,
 Other: ONE,TWO

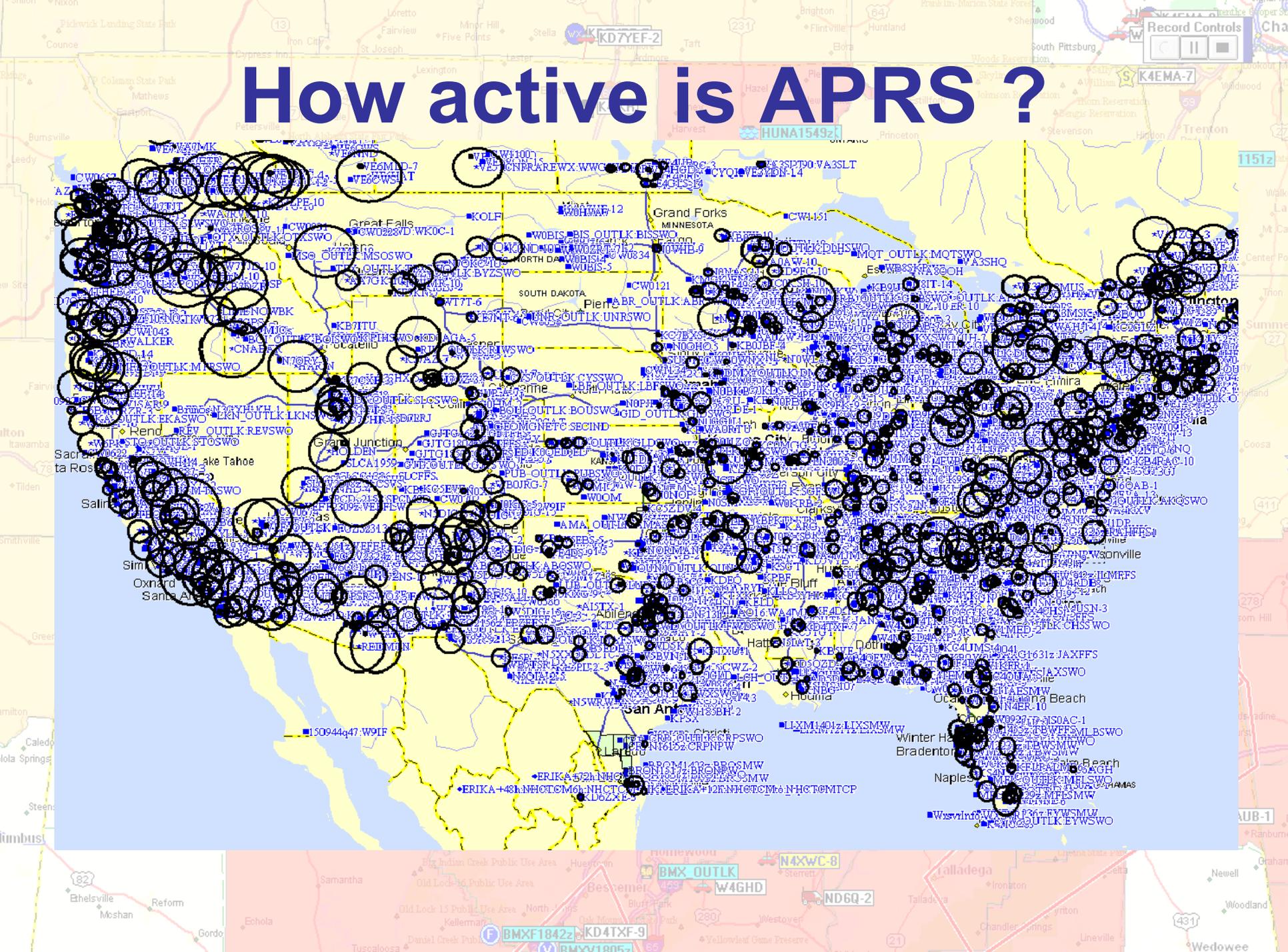
Bulletin

Announcement Msg to NWS

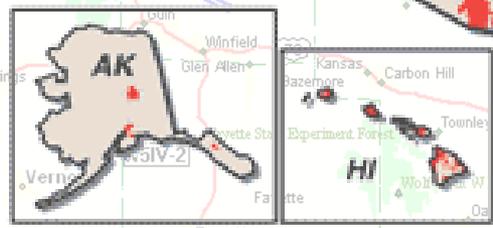
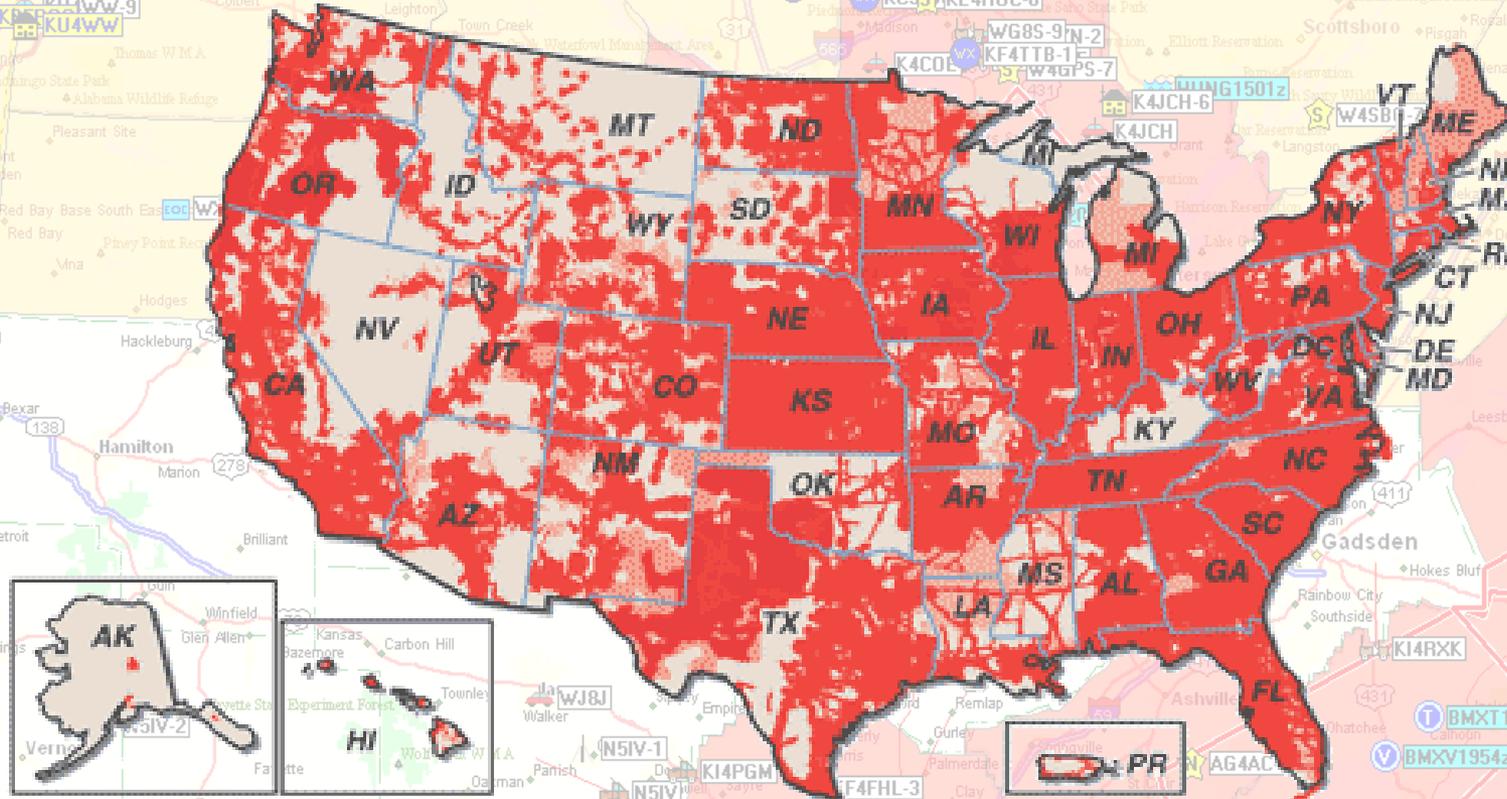
Cancel OK

KE6NUU>GPSLK,N6CP-1*,WIDE4:\$GPRMC,034222,A,3748.250,N,12216.504,W,016.2,295.0,070901,015.7,E*6E

How active is APRS ?



APRS looks like a cell phone map



-  America's ChoiceSM All-Digital Rate Area
-  America's ChoiceSM Rate Area
-  Roaming Area

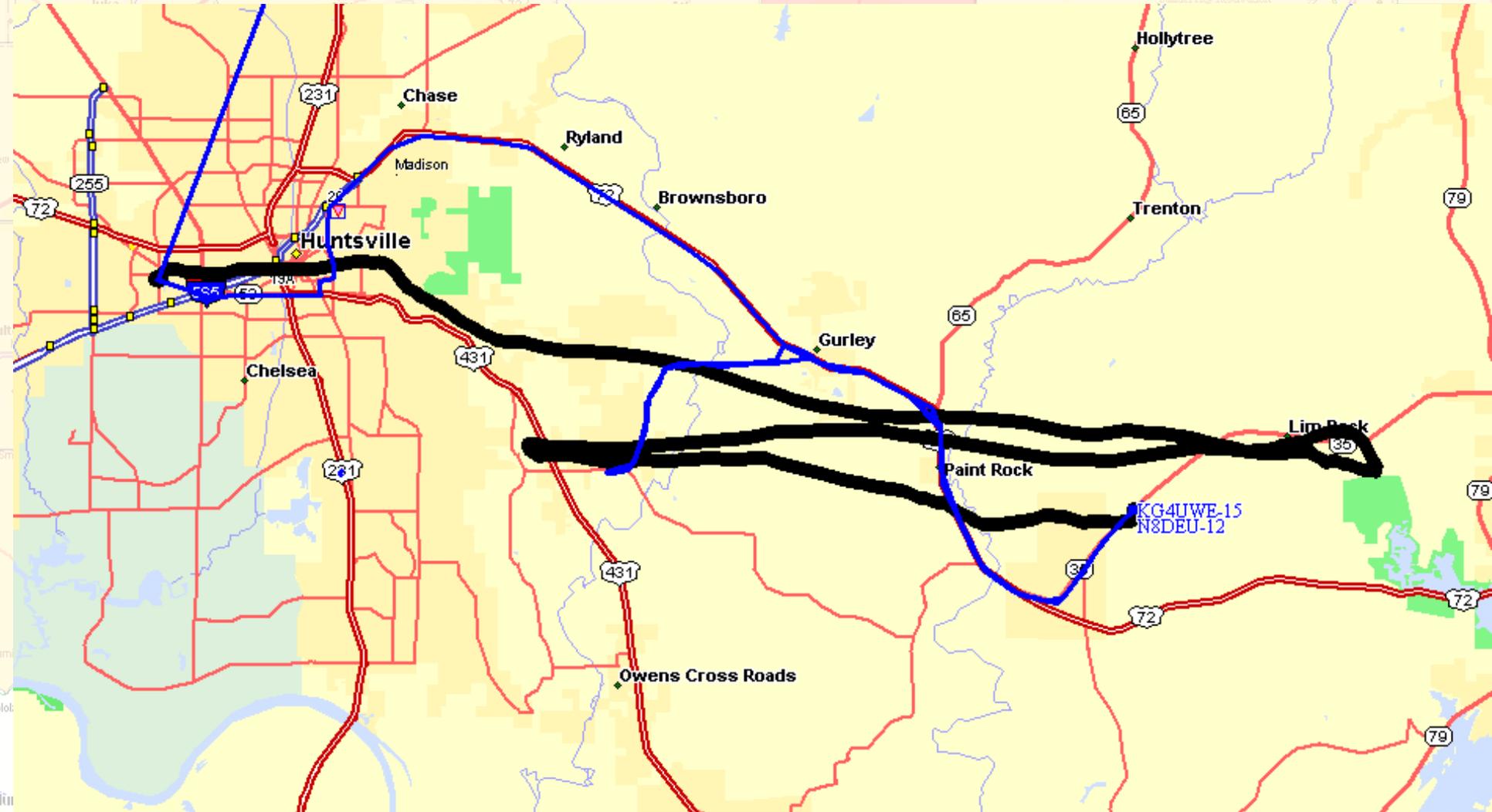
Record Controls



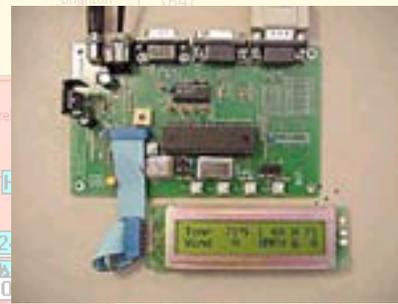
APRS Applications

- **SKYWARN**
- **Hurricane tracking**
- **Weather nets**
- **Plotting satellite contacts**
- **Monitoring DX packet clusters**
- **Plot all DX spots automatically**
- **Marathon tracking**
- **Meteor scatter**
- **HF beacons**
- **Balloon tracking**
- **Search and rescue**

The Balloon Chase using APRS



WX Stations



Our Products

- APRS stations can report wind speed, direction, temperature, barometer, and other WX parameters
- Interfaces to Ultimeter-II, Davis, TAPR T-238 kit, and WeatherMax home weather stations
- Displayed on map as a bright blue WX symbol for continuous weather data
- Standalone weather reporting stations

Federal Grant Issued to Morgan County

Weather Stations

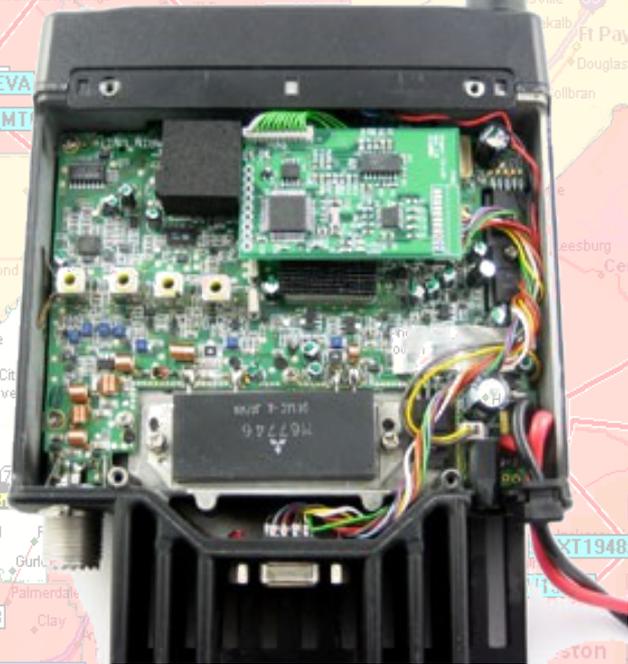
- 22 APRS Weather Stations will be installed at Morgan County Volunteer Fire Departments
 - Davis VanatgePro
 - Davis WeatherLink for APRS
 - Yaesu 50W 2M radio
 - ¼ mobile antenna
 - Byonics TinyPack
- Amateur Radio operators will construct and install the APRS Weather stations
- An Amateur Radio Operator will be responsible to maintain each weather station

Federal Grant Issued to Lawrence County

Weather Stations

- 8 APRS Weather Stations will be installed at various locations across the county
 - Peet Brothers Weather Station
 - Alinco DR-135T
 - Argent T2-135 internal TNC
 - Mast mounted antennas
- Amateur Radio operators will construct and install plug and play APRS Weather stations
- An Amateur Radio Operator will be responsible to maintain each weather station

Alinco DR-135T with T2-135

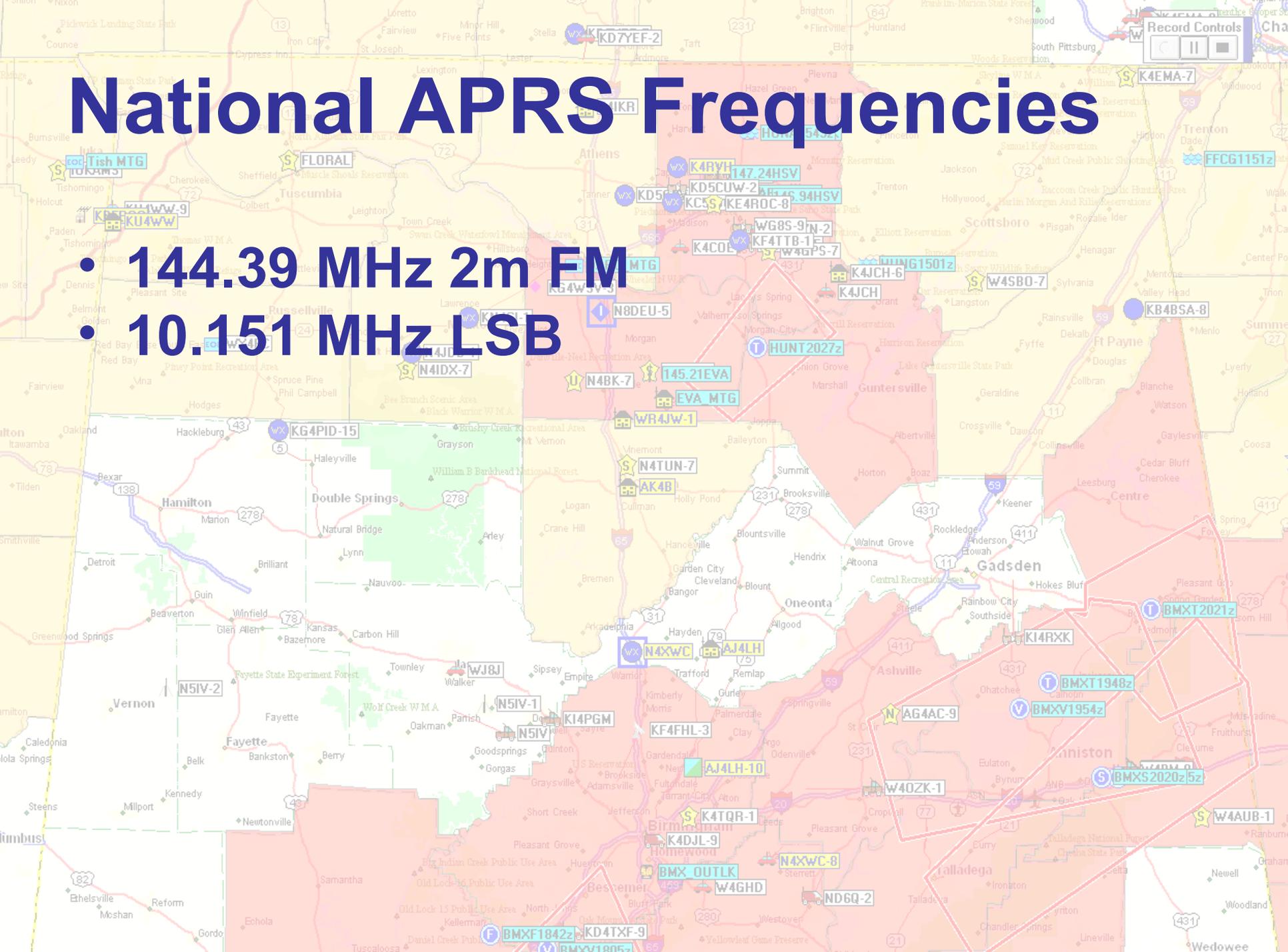


NWS Weather Bulletins

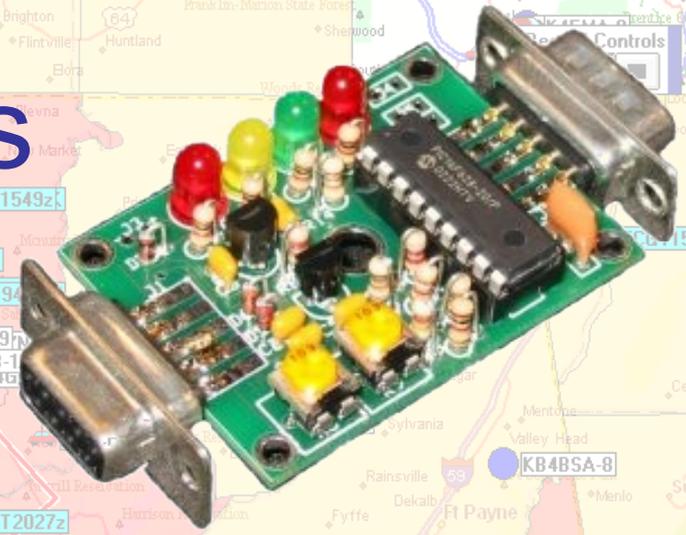
- NWS messages are now generated by Pete Loveall, AE5PL, but have been developed and generated by Dale Huguley, KG5QD, for the past 9 years until June 2009
- NWS message format can be found at:
 - <http://www.aprs-is.net/Wx>
- WX watch boxes, circles, or counties can be hi-lighted with Red, Yellow, or Green colors to visibly indicate WX activity type
- FinduU Server collects WX station data via APRS-IS
- FindU Server dumps WX data every 15 minutes to MADIS Server
- MesoWest gets data from MADIS Server

National APRS Frequencies

- 144.39 MHz 2m FM
- 10.151 MHz LSB

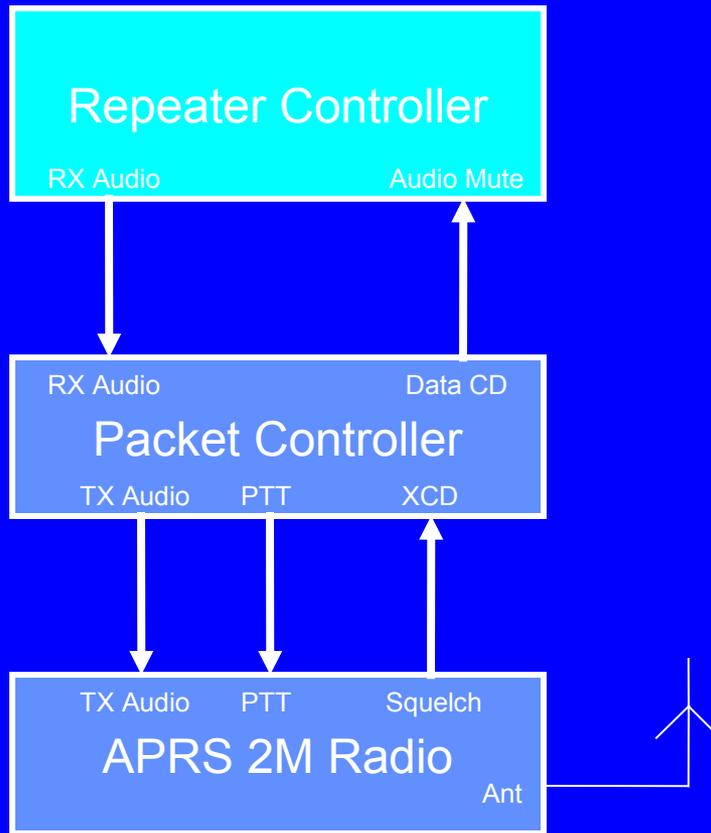


Mic-Encoder Devices



- Low cost tracker
- Data transmit only device
- Can be adapted to almost any 2-meter FM radio
- Provides FM voice stations with APRS transmit support
- Works with Mic-E supported voice repeaters where data is transmitted at the end of a voice transmission
- Some support time slotted reporting or SmartBeaconing
- Most can power a 5V GPS (Byonics GPS1, Garmin GPS18, Deluo GPS WAAS, etc.)
- Provides position beacon to identify weather spotter location
- Data is decoded at the voice repeater and sent to the APRS RF network and the Internet

APRS Decoder to APRS Brappp Filter Repeater Interface Concept



APRS MIC-E / Repeater Controller Interface		
HUNTSPAC		
Tim Cunningham N8DEU	Rev 1.0	Page 1 of 1
	12-JUL-08	

Argent Data Systems Tracker2

<https://www.argentdata.com>

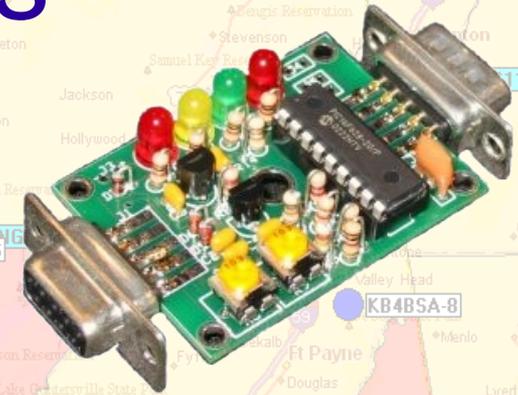
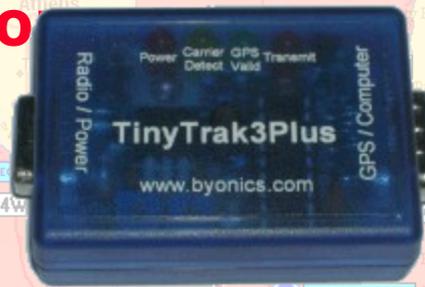
- KISS Support
- WX Station support
- Free Firmware updates
- Advanced APRS features
- Intelligent digipeater support
- Smart beaoning
- Remote Configuration
- Built-in voltage and temp monitor
- Small 5-watt VHF transceiver with integrated Tracker2 available



Byonics Tiny Trak III Plus

<http://www.byonics.com>

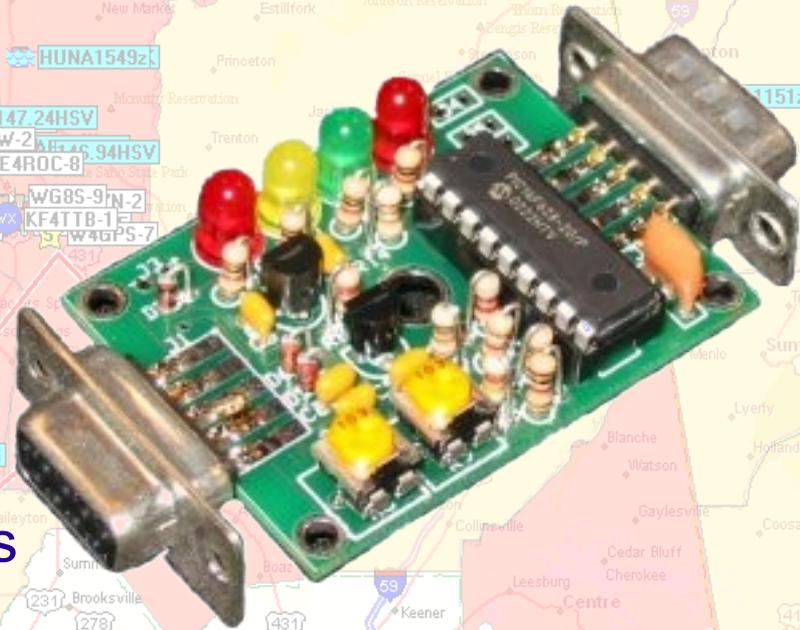
- \$33 kit / \$42 built
- Adjustable TX rate
- Based on PIC 16F628
- Carrier detect to avoid collisions
- Normal APRS or MIC-E operation
- Time slotted reporting or SmartBeaconing
- Can power a 5V GPS (Byonics GPS1, Garmin GPS18 or a Deluo GPS WAAS)
- \$98 kit or \$107 built with Byonics GPS2 small GPS



Byonics WX Trak

<http://www.byonics.com>

- \$33 kit / \$42 built
- Based on Tiny Trak II design
- Supports connected WX Stations
 - Radio Shack WX200
 - Oregon Scientific WM-918
 - Peet Brothers U100, U800, U2000, U2100
 - Davis WX station with WeatherLink APRS adapter



Byonics Tiny Trak4

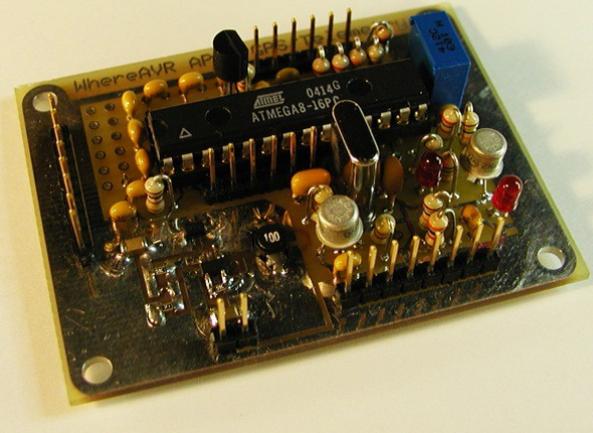
<http://www.byonics.com/tinytrak4>

- \$65 kit / \$75 built
- Field upgradeable
- TX and RX packet data
- Analog telemetry support
- Supports NMEA, MIC-E, and Tracker modes
- Based on ATMEGA324P20U (40 pin DIP) microcontroller
- Time slotted reporting or SmartBeaconing
- Can power a GPS
- DSP Packet Decoding – 300/1200/9600 baud packet, DTMF, and new demodulation techniques can be added since it is not hardware based
- Most of TinyTrak3 functions added



WhereAVR

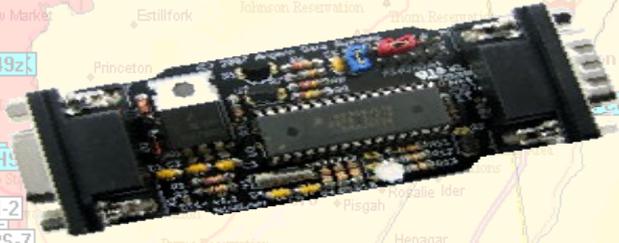
<http://garydion.com/projects/whereavr/>



The WhereAVR is a small, lightweight, low-power, and low-cost APRS tracker much like the commercially available TinyTrak and the open-source OpenTracker. What sets it apart is a full compliment of analog and digital I/O, as well as the ability to decode ax.25 packets. This allows for the reception of remote commands without the need for a "real" TNC. It is designed to hook directly to the speaker and microphone jacks of a handheld radio.

OpenTracker+ (OT+)

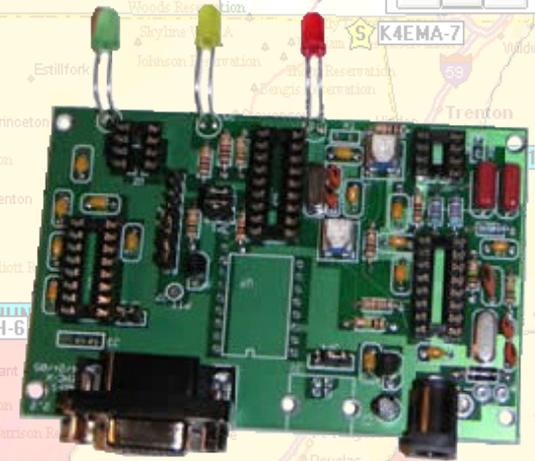
<http://n1vg.net/opentracker>



- Kit \$32 or assembled \$46
- Based on the Freescale MC908JL16CSPE microcontroller
- Supports the following features:
 - Free firmware upgrades
 - RX capability
 - Analog inputs
 - APRS Telemetry output
 - Supports 1-wire and Peet Bros WX station
 - SmartBeaconing
 - PSK31 support for PropNet[®]31 Operation
 - On-board temperature and voltage sensors

TNC-X KISS only TNC

<http://www.tnc-x.com/>

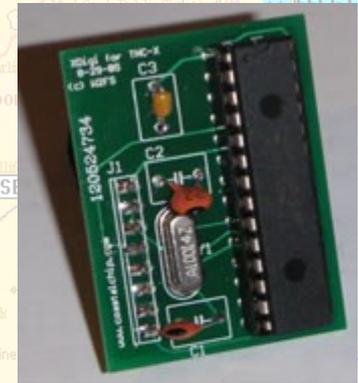


- \$48 kit
- Based on Microchip PIC 16F628A and a CML MX614 Bell 202 modem
- Supports the following options:
 - uSmartDigi
 - X-Digi
 - X-Track
- TNC can be powered by the USB port

XDIGI Daughterboard for TNC-X

<http://www.tnc-x.com/>

- \$20 kit
- Makes TNC-x a standalone APRS digipeater
- Supports the following options:
 - UIFlood
 - UITrace
 - UICall
 - 4 different text beacons
- Can restrict the HOP number in WIDEN-n

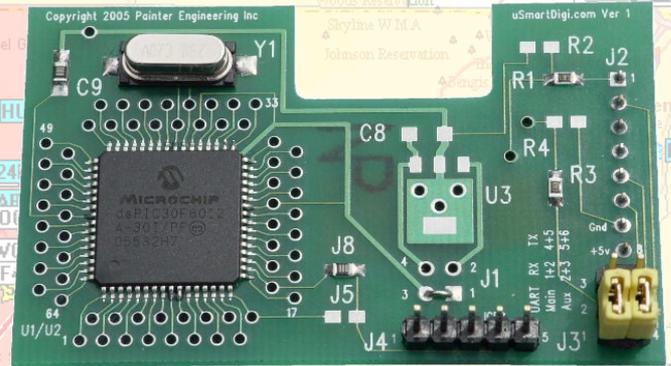


μSmartDigi™

<http://www.usmartdigi.com/>

- Cost: \$67
- Introducing the μSmartDigi™ APRS® Digipeater™
- μSmartDigi™ D-Gate™ D-STAR Gateway

• A postage-stamp-sized DSP microcontroller imbedded in the TNC-X eliminates the dedicated laptop or PC for an APRS Digipeater.



μSmartDigi™ D-Gate D-STAR Gateway

<http://www.usmartdigi.com>

ICOM ID-800



Serial data

DGate
uSmartDigi™



PTT &
Audio Lines



2M FM Radio

Serial data



Serial Monitor

The Kenwood TM-D700A

- Supports APRS
- 1200 / 9600 built-in TNC
- Displays symbol and distance from other stations
- Display up to 40 messages
- 2 serial ports for computer and GPS to display waypoints



The Kenwood TM-D710A

- **APRS® ready (position / message / operation frequency etc.)**
- **1200 / 9600 built-in TNC AX.25**
- **Dual receive on same band (VxV, UxU)**
- **1,000 memory channels**
- **Support for EchoLink system**
- **Decay algorithm when sitting still**
- **NMEA0183 GPS port**
- **APRS weather station ready**
- **SmartBeaconing implemented**
- **Auto Tune Repeater Objects (freq, tone, offset)**



The Kenwood RC-D710A

- Add Kenwood TM-D710 APRS like capabilities to virtually any 2M FM radio
- APRS® ready (position / message / etc.)
- 1200 / 9600 TNC AX.25
- Provides full control of TM-D700A and TM-V71A
- Replaces TM-V71A control head
- Decay algorithm when sitting still
- NMEA0183 GPS port
- APRS weather station ready
- Requires PG-5J cable interface or equivalent



The Alinco DR-D135TP

- Supports APRS
- 2 serial ports for computer and GPS
- No message display
- Works as basic tracker
- 1200/9600 baud built-in TNC option



The Yaesu VX-8R

- **Quad Band HT 6m,2m,220,70cm 5W, 1.2W on 222MHz**
- **Slimmer than the VX-7R**
- **Dual receive (V+V or U+U)**
- **AM/FM broadcast receiver**
- **Supports APRS 1200/9600 baud (B band only)**
- **Weather Alert receiving**
- **High-res spectrum analyzer +/- 60 channels**
- **Optional Accessories**
 - **Bluetooth headset support**
 - **GPS unit and antenna**



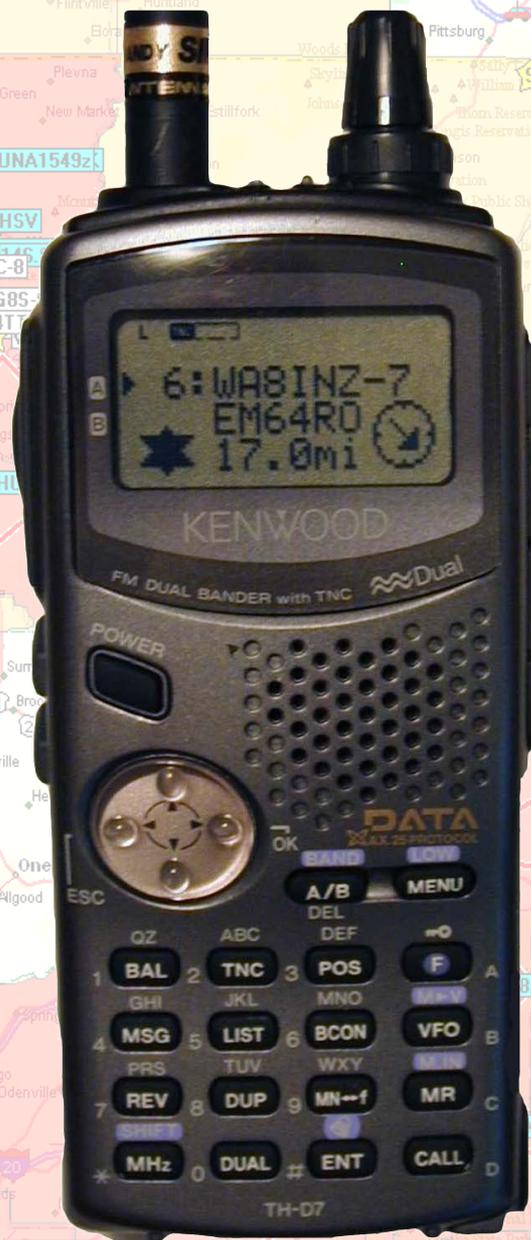
The new Yaesu VX-8DR

- Dubbed a devoted APRS user version of the VX-8R
- Smart beaconing added
- Updated digi path settings from 1 to 7
- Updated message buffer from 20 to 30
- Updated station list from 40 to 50
- Added digi path route indication
- Optional Accessories
 - Bluetooth headset support
 - GPS unit and antenna



The Kenwood TH-D7A

- Supports APRS
- 1200 / 9600 built-in TNC
- Displays symbol and distance from other stations
- Display up to 40 messages
- 2 serial ports for computer and GPS to display waypoints



APRS WEB Sites

- www.aprs.org
- www.openaprs.net
- www.aprs.fi
- www.findu.com
- www.tapr.org
- www.qsl.net/n8deu
- www.sv2agw.com/ham/default.htm
- www.xastir.org
- www.eskimo.com/~archer/aprs_capabilities.html
- www.ui-view.org

Software for APRS

Software downloadable from the Web

- APRSdos
- MacAPRS
- WinAPRS
- javAPRS
- palmAPRS
- Waypoint
- APRS Plus
- APRSdigi
- UIView
- APRSPoint
- AGWTracker
- AGWTracker PPC
- XASTIR

APRS Coordinators

Commissioned by WB4APR

State	Name	Call
Alabama	Tim	N8DEU
Arkansas	Richard	KB4YTM
	Steve	N5JPL
	Travis	KB5ILY
Florida	NA	NA
Georgia	NA	NA
Mississippi (north)	Jeff	KB5NMB
	Richard	KB4YTM
Tennessee (east)	William	KI4HDU
Tennessee (west)	Richard	KB4YTM

How can APRS Help ?

- It is clear and concise
- Repeat of information not required once heard
- No words need to be spoken
- Response time is immediate
 - Beats NOAA WX radio alert every time
 - Beats Voice Net Alert every time
- Relativity is always known
 - How far am I from the storm
 - Key spotters are instantly identified
 - Non-APRS users can be placed on the map
 - Every APRS user views the same data (RF or Internet)
 - Nothing compares to the speed of information
- Augments the Voice Net with critical Real Time Information

The Power of APRS

Presented by:

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