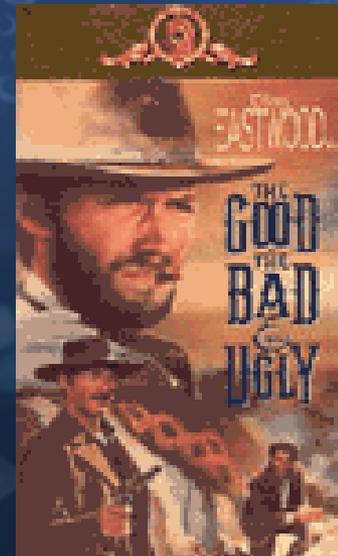


# The Commercial Mobile Alert System (CMAS)

*The GOOD, The BAD, & The UGLY*



John Ferree  
National Severe Storms Services Leader  
National Weather Service  
2 March 2012



# IPAWS Vision

*Timely Alert And Warning To American Citizens In  
The Preservation of Life And Property*



Television



Radio



Cell Phone  
(CMAS)



Computer



Home Phone



Public Signage



Alerting Authorities  
Federal, State,  
Territorial, tribal,  
and local

Common Alerting  
Protocol (CAP)



IPAWS Alert Aggregators



# Commercial Mobile Alert System (CMAS) The Good

## Alerting Authorities



Federal Agencies  
(e.g., NWS, FEMA),  
State EOC, Local EOC

## Alert Aggregators

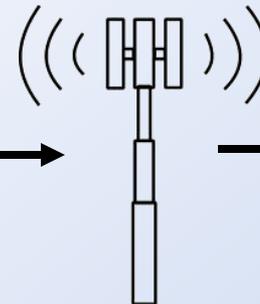


FEMA

## Carrier Infrastructure



Provider  
Gateway



Cell  
Towers

## Mobile Devices



Public



- Point to multipoint radio **broadcast** from cell tower
  - *Not point to point SMS text message*
- Opt-out (not opt-in)
- Many cell phones already compatible, more on the way
- Information “relevant” to the user’s current location

# Commercial Mobile Alert System (CMAS)

## The Good

- **Three Types of Messages**

- *Presidential*
- *Imminent threats (tornadoes, toxic spills, etc.)*
- *Amber Alerts*



- **Cell tower broadcast of 90 character message to all cell phones covered by tower**
- **Purpose is notification, recipient must seek additional info**
- **Rollout starts April 2012 (varies by carriers and alert originators)**
- **100+ carriers participating, including all major carriers**

# Commercial Mobile Alert System (CMAS) The Good



Sample obtained from DHS showing SVR. Note, NWS **not** proposing to include SVR at rollout

**Type of event**  
+  
**Area affected (“in this area”)**  
+  
**Expiration Time (e.g., until 4:15PM EST)**  
+  
**Action (from CAP “response type”)**  
+  
**Originator (e.g., police, fire, NWS)**

# Commercial Mobile Alert System (CMAS) The Good



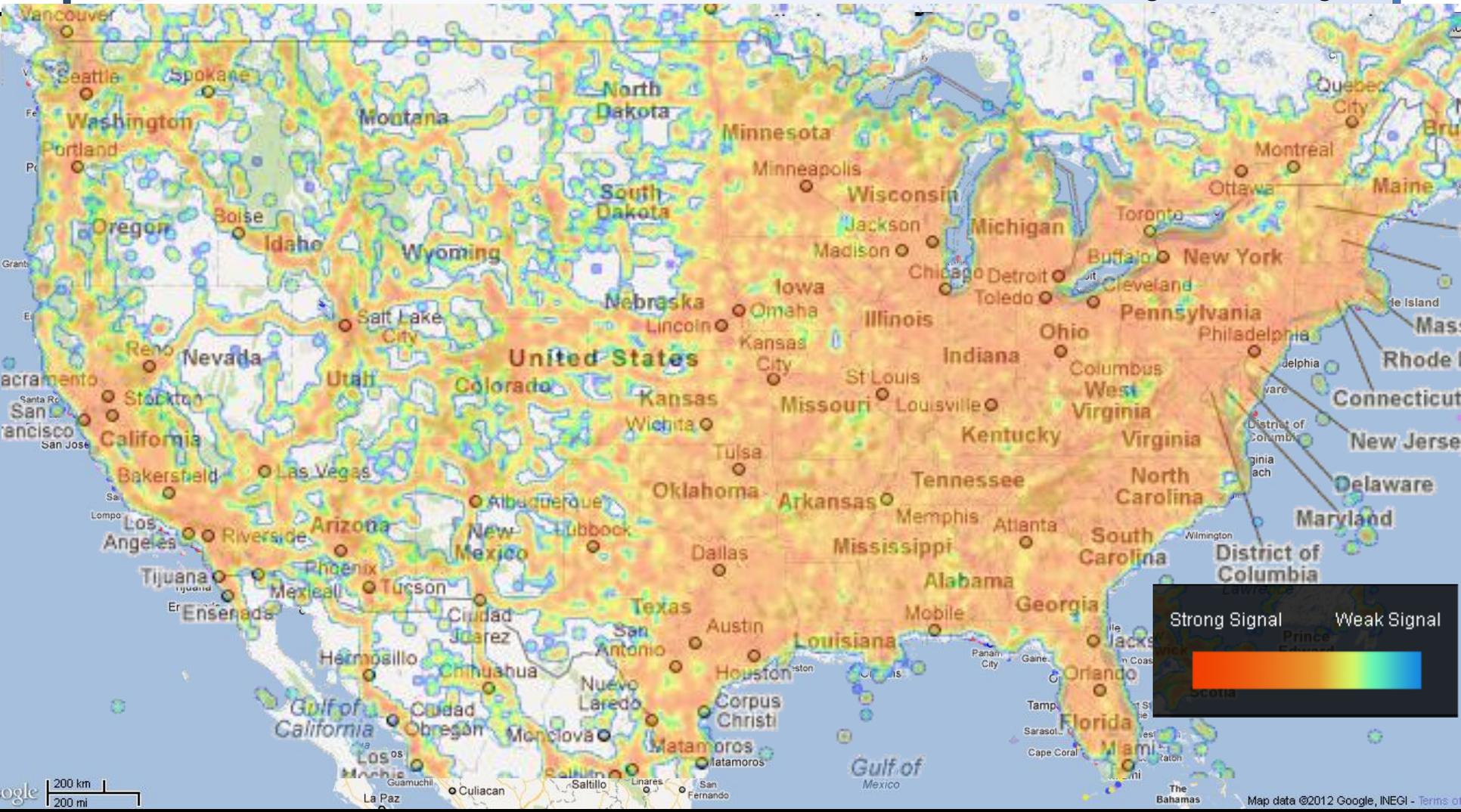
618,657 Cell Towers



633 Cellular Networks



371,279,933 Signal Readings



# Commercial Mobile Alert System (CMAS) Personal Localized Alert Network (PLAN) Wireless Emergency Alerts (WEA)

First end-to-end test in New York City on December 15, 2011



*New York City Mayor Michael R. Bloomberg announcing the Personal Localized Alerting Network (PLAN) with FCC Chairman Julius Genachowski (third from left), public safety officials, and members of New York's congressional delegation, on May 10, 2011*



# Commercial Mobile Alert System (CMAS) The Bad

- Opting Out is different on each phone
  - *Option presented with warning*
  - *Option buried in system settings menus*
- Many phones (?) are not CMAS compatible
- Potential for over alerting
  - *Local alerting agencies have flexibility*
  - *Imminent threats are not specifically defined*
- Reception dependent on numerous factors, including:
  - *Frequency of signal in use (i.e. the underlying technology)*
  - *Transmitter's power, size, directional or omni-directional*
  - *Subscriber's device*
  - *Local geography, regulatory factors, weather*
  - *Range from cell tower can vary from 5 miles to 50 miles*



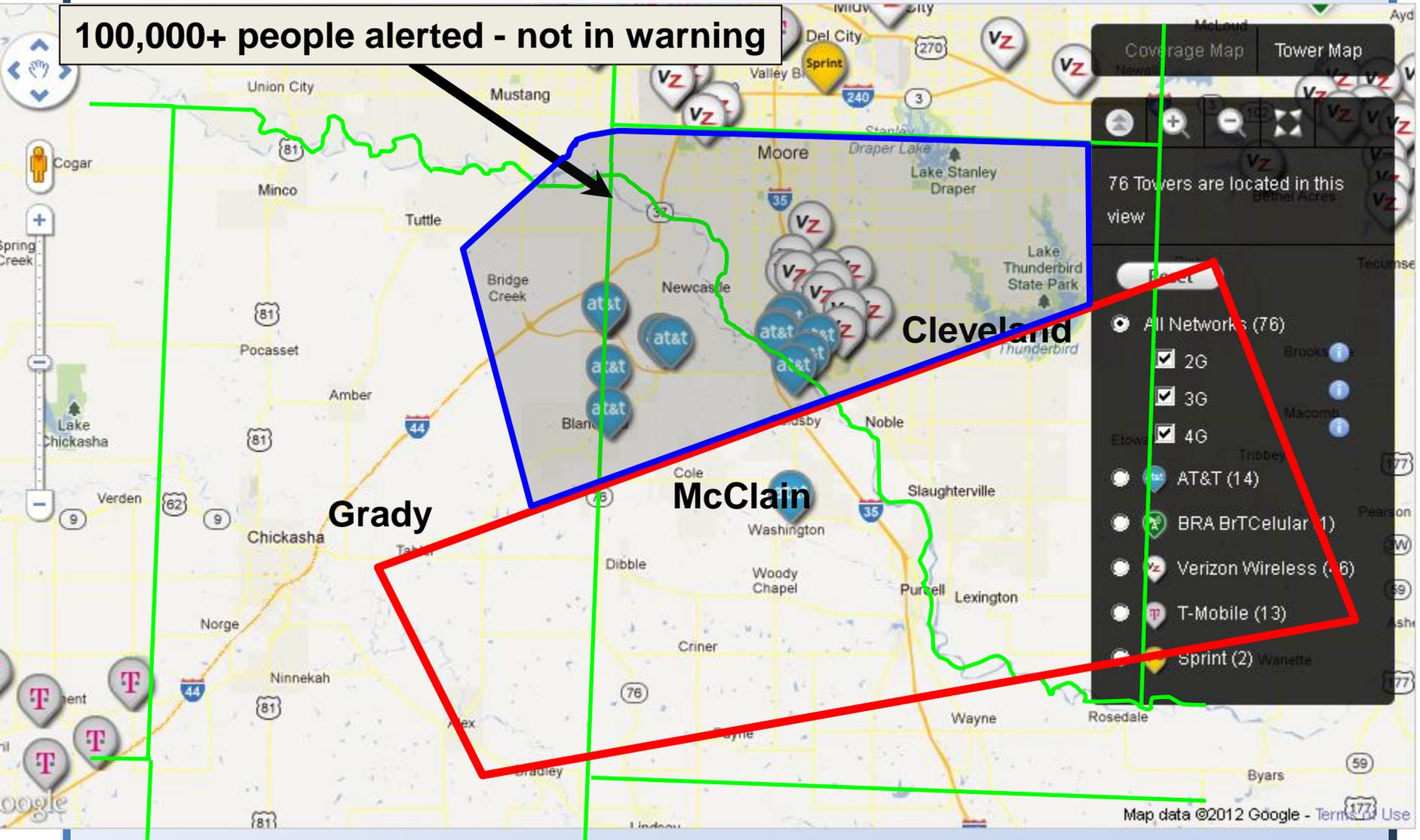
# Commercial Mobile Alert System (CMAS) The Ugly

*Wireless carriers are only required to warn down to the county level  
NWS and FEMA appealing to wireless carriers to warn to polygon level*



# Storm-based (polygon) vs County-based

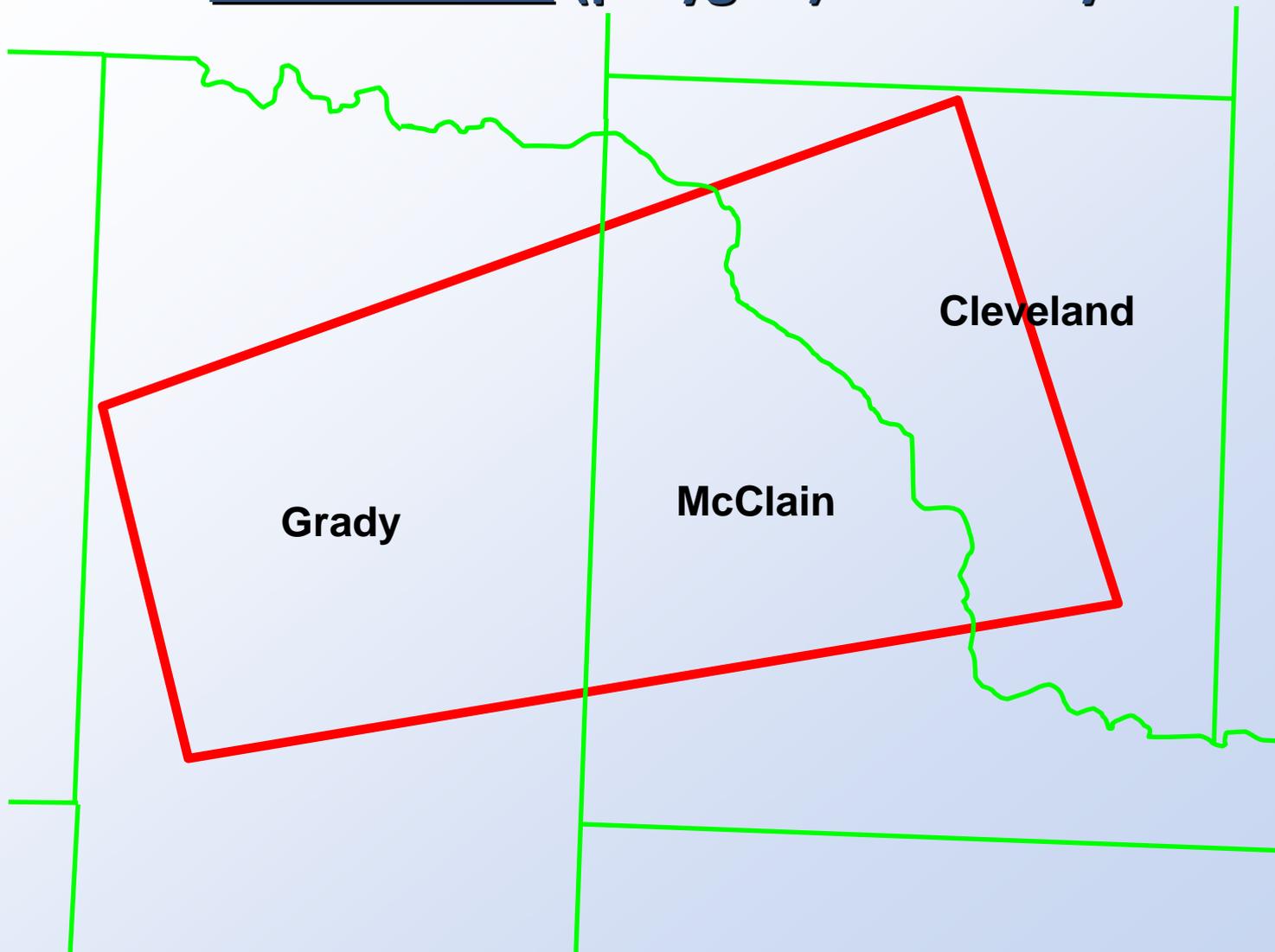
100,000+ people alerted - not in warning



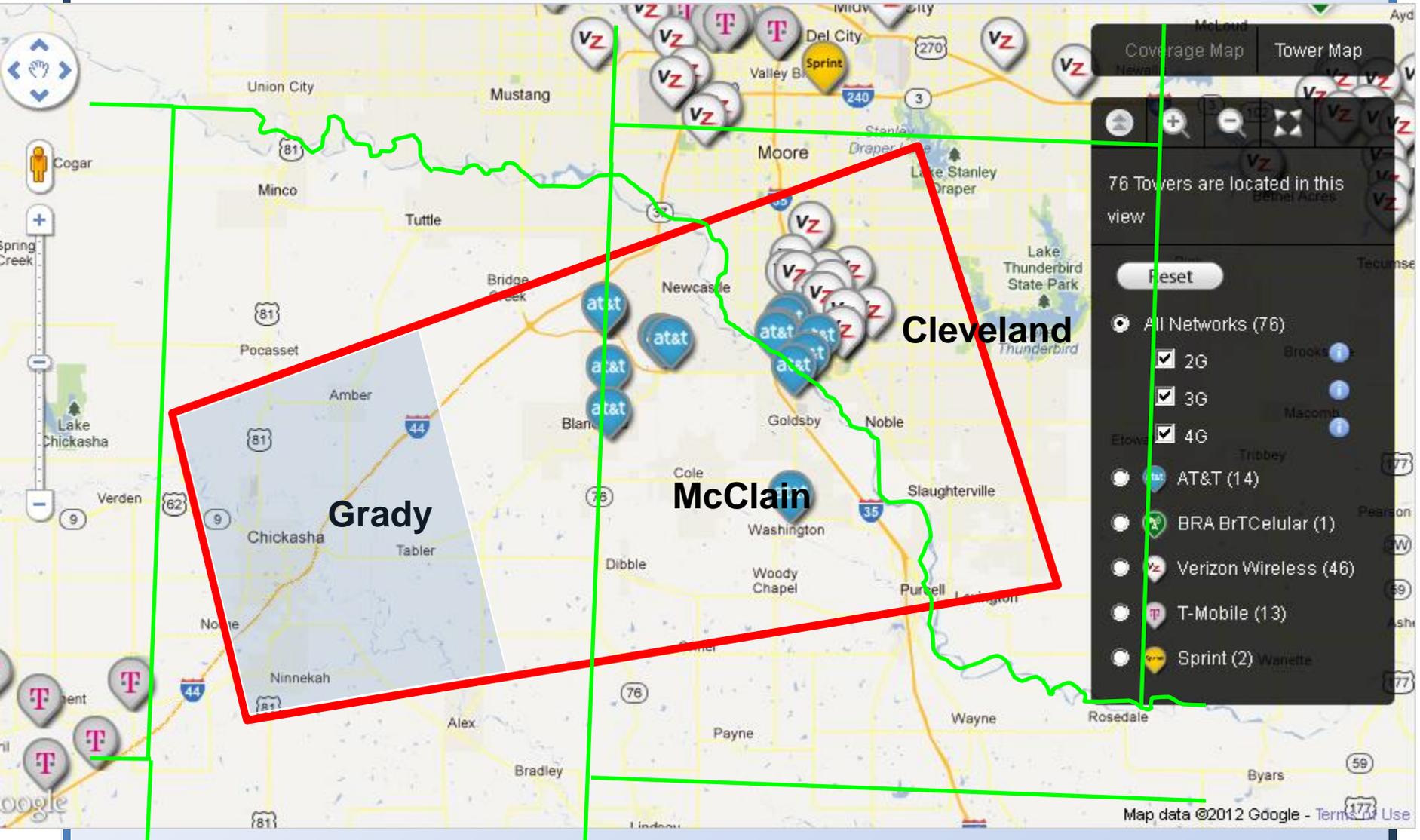
# Commercial Mobile Alert System (CMAS)

## The Ugly

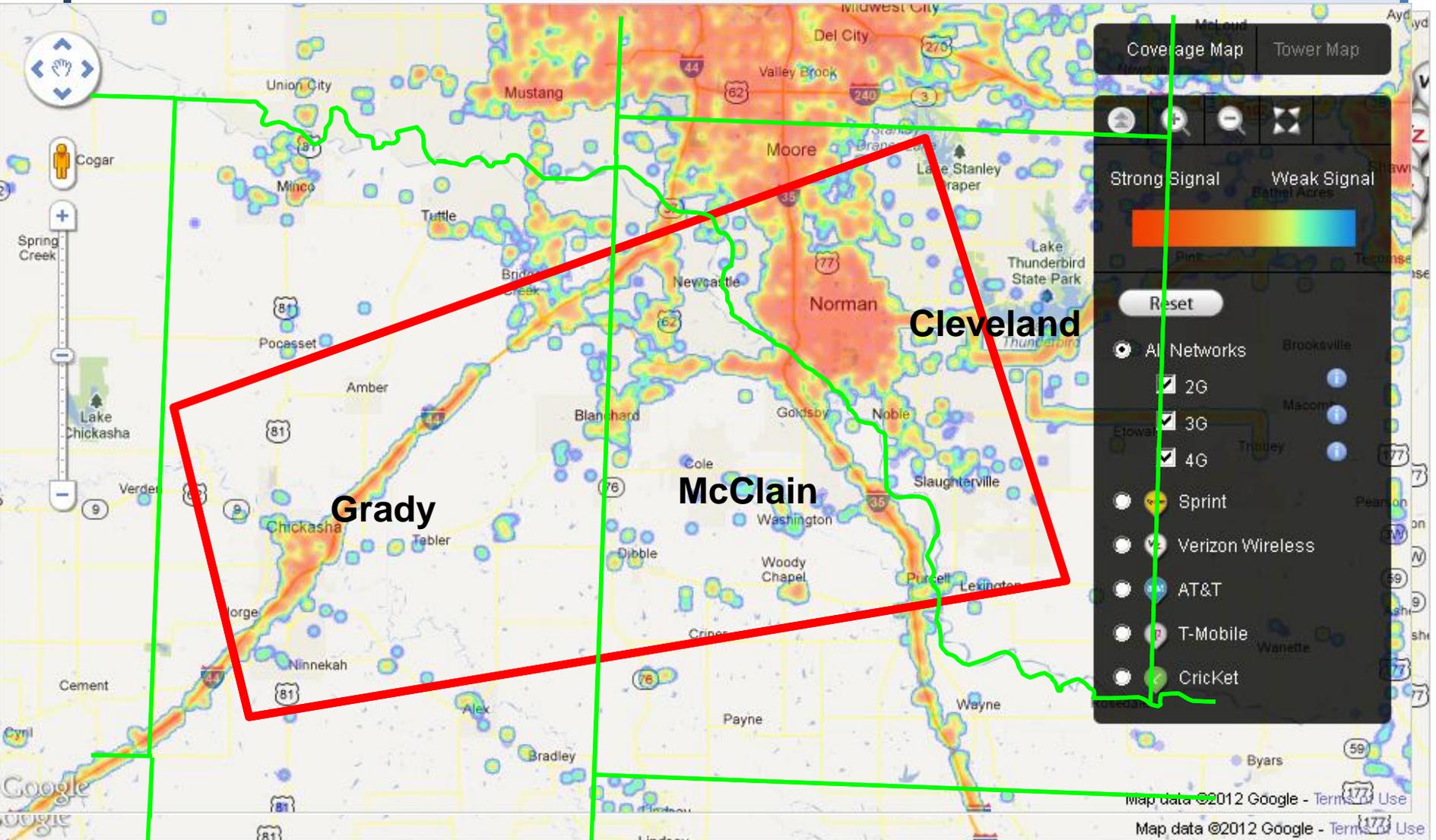
Storm-based (polygon) vs County-based



# Storm-based (polygon) vs County-based



# Variable Signal Strength



# Commercial Mobile Alert System (CMAS)

## The Ugly

### Testing by Cell Providers - Not Well Advertised



A photo from Monmouth County, NJ of a test on Dec. 11, 2011 received by Verizon Wireless phone customers in New Jersey



#### Verizon & Government scaring the hell out of people again with CMAS Alerts

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It seems that without warning their customers, Verizon has yet again scared

# **Commercial Mobile Alert System (CMAS)**

## **The Ugly**

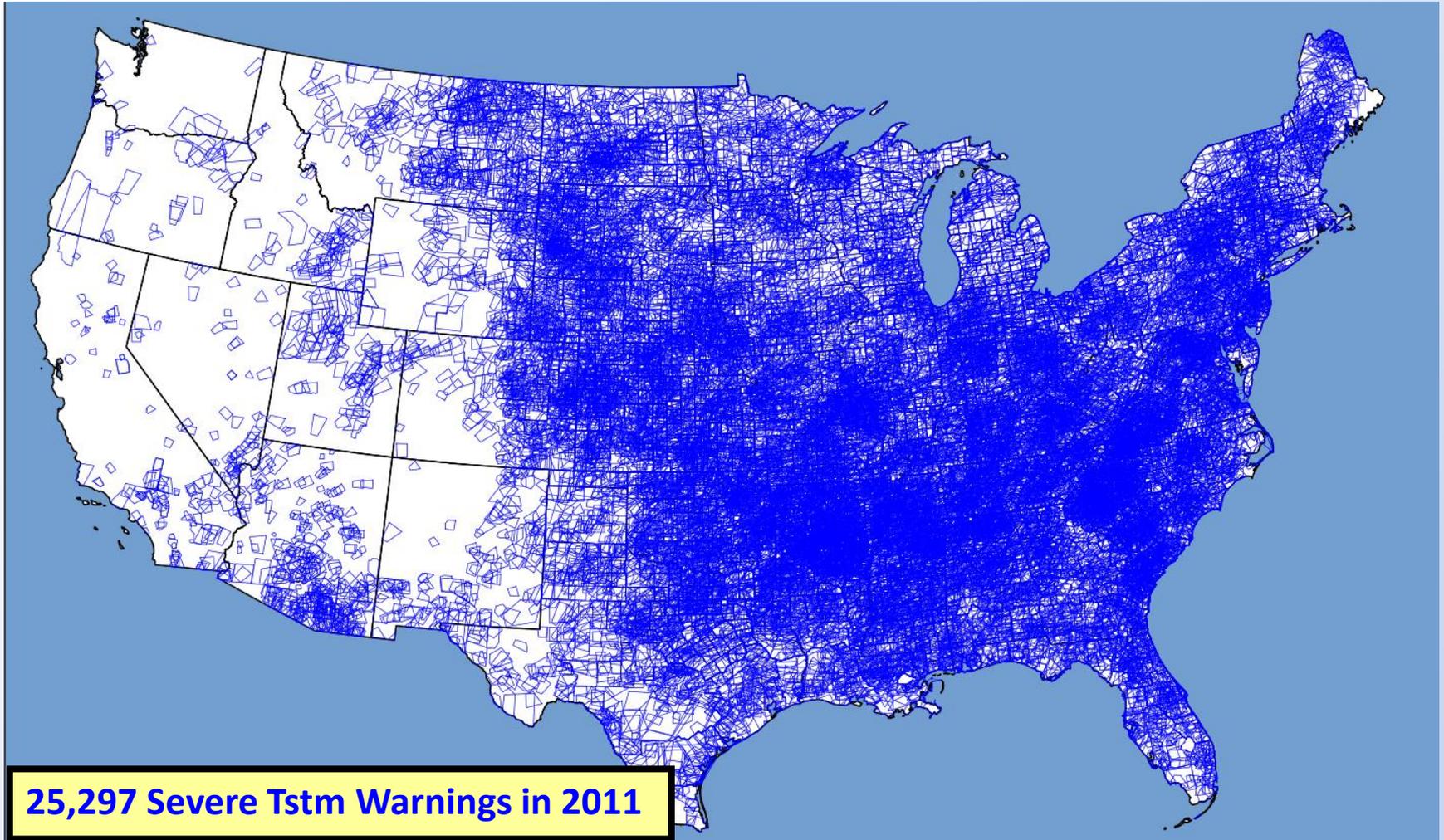
### **Potential for Over-warning**

- **NOAA Wx Radio listener complaints on county level warnings**
- **Cell users only have choice to receive all or no “imminent threat” notifications**
- **Cell users likely to opt-out in droves if we’re not judicious**
- **Current Activation = Tsunami, Tornado, Flash Flood**
- **Under consideration = Hurricane, Typhoon, Blizzard, Ice Storm, Lake Effect Snow, Dust Storm, Severe**

# Severe Thunderstorm Warning

## Risk of Including in CMAS vs. Not Including in CMAS

### Over warning?



# Severe Thunderstorm Warning

## Risk of Including in CMAS vs. Not Including in CMAS Under warning?



### Indiana State Fair Stage Collapse Saturday, August 13, 2011

- Not a tornado, 7 fatalities
- Gust front ahead of storm
- Winds 40-60 mph



# Additional Information

- **FCC Web Site –**  
<http://www.fcc.gov/guides/personal-localized-alerting-network-plan>
- **FEMA Web Site**  
<http://www.fema.gov/emergency/ipaws/cmas.shtm>
- **FEMA Training Available –**  
<http://www.fema.gov/emergency/ipaws/>
- **January 2012 AWARE**
  - *“NWS Readyng CAP v1.2”*
  - *“Details Emerge on Rollout of Mobile Alerts”*
- **John Ferree, NWS Severe Storms Services Lead**
  - [John.T.Ferree@noaa.gov](mailto:John.T.Ferree@noaa.gov)
  - (405) 325-2209



at&t



T-Mobile



# Summary

- **Commercial Mobile Alerting System (CMAS) aka Personal Localized Alert Network (PLAN) aka Wireless Emergency Alerts (WEA)**
  - *Broadcast emergency alerts from cell towers*
  - *Coming to a cell phone near you – April 2012*
- **Most CMAS warnings will be related to high-impact weather**
- **An important new tool for disseminating alerts**
- **There will be growing pains**

