NATIONAL COMMUNICATIONS SYSTEM

NCS

# National Communications System

## Priority Telecommunications Services For Public Safety

**Missouri Homeland Security**

**5 November 2008**

Homeland Security

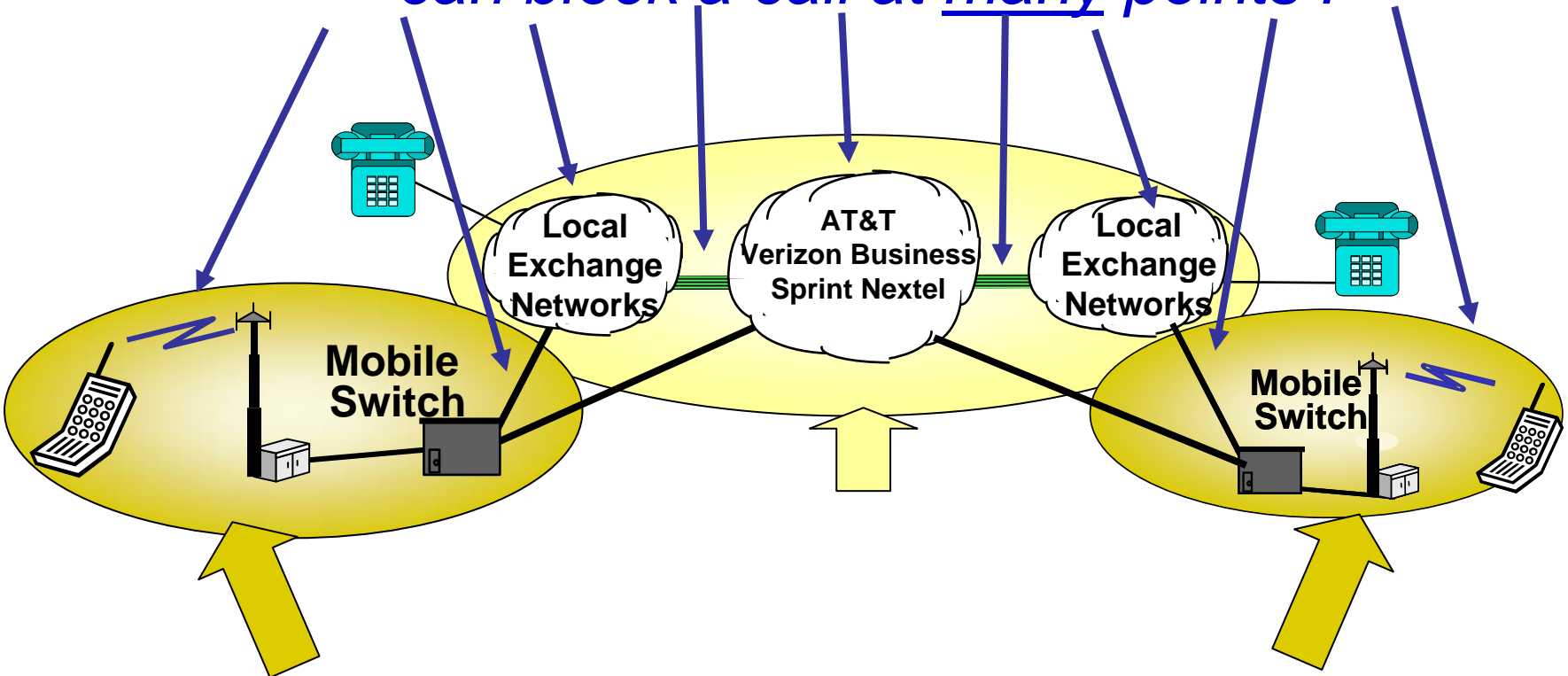# National Communications System

## AGENDA

- **Discussion of The Network Congestion Model**

- **Impact of Congestion On Emergency Incidents**

- **Description of Response With NCS Priority Telecommunications Services**

"I'm sorry, all circuits are busy now.

Please hang up and try your call again later."

# The Fundamental Issue:
# Emergencies Cause Network Congestion

*Congestion
can block a call at <u>many</u> points !*

**Local Exchange Networks**

**AT&T Verizon Business Sprint Nextel**

**Local Exchange Networks**

**Mobile Switch**

**Mobile Switch**

**Priority Telecommunications Services** *address congestion at call origination <u>and</u> call termination*
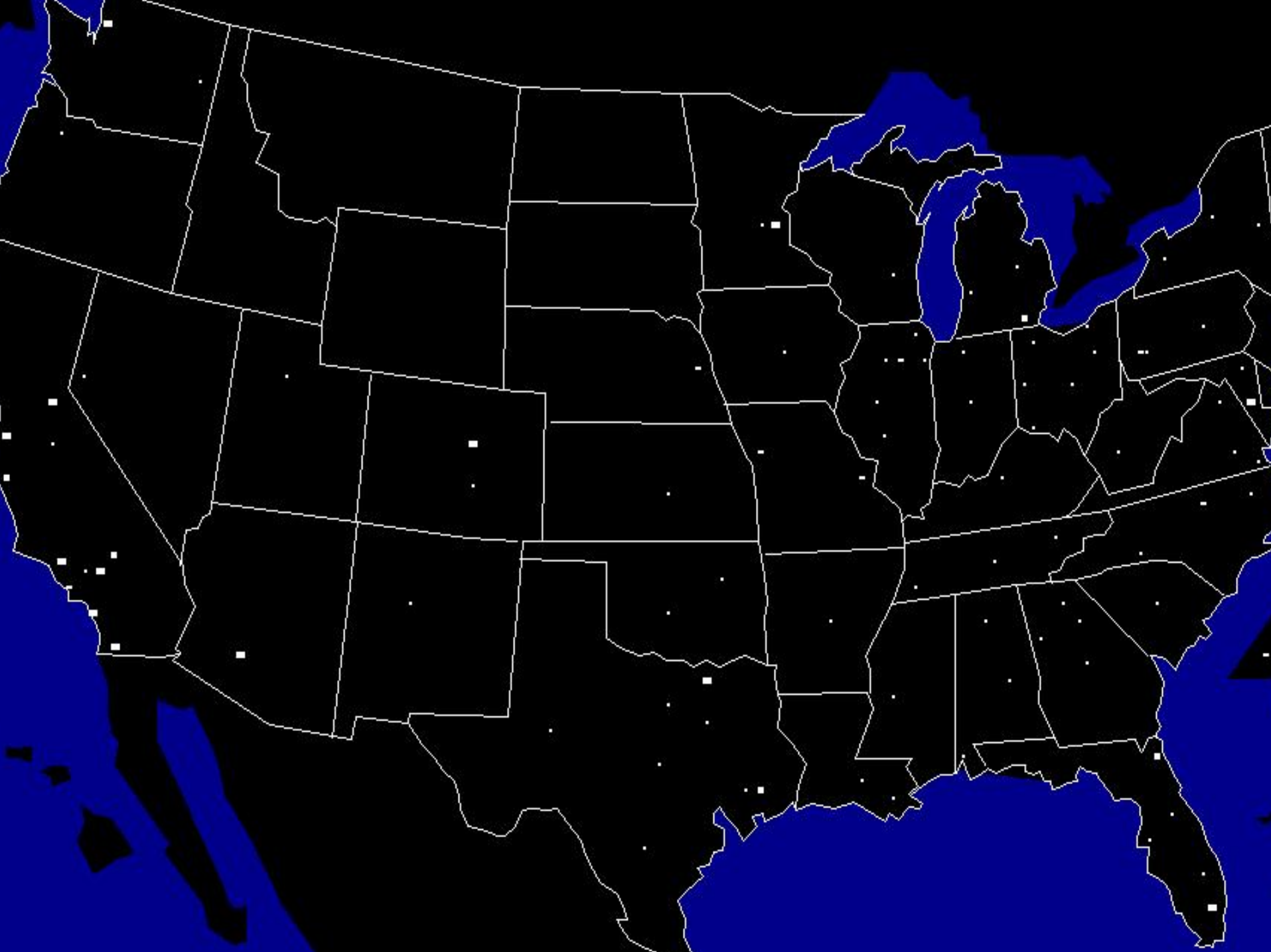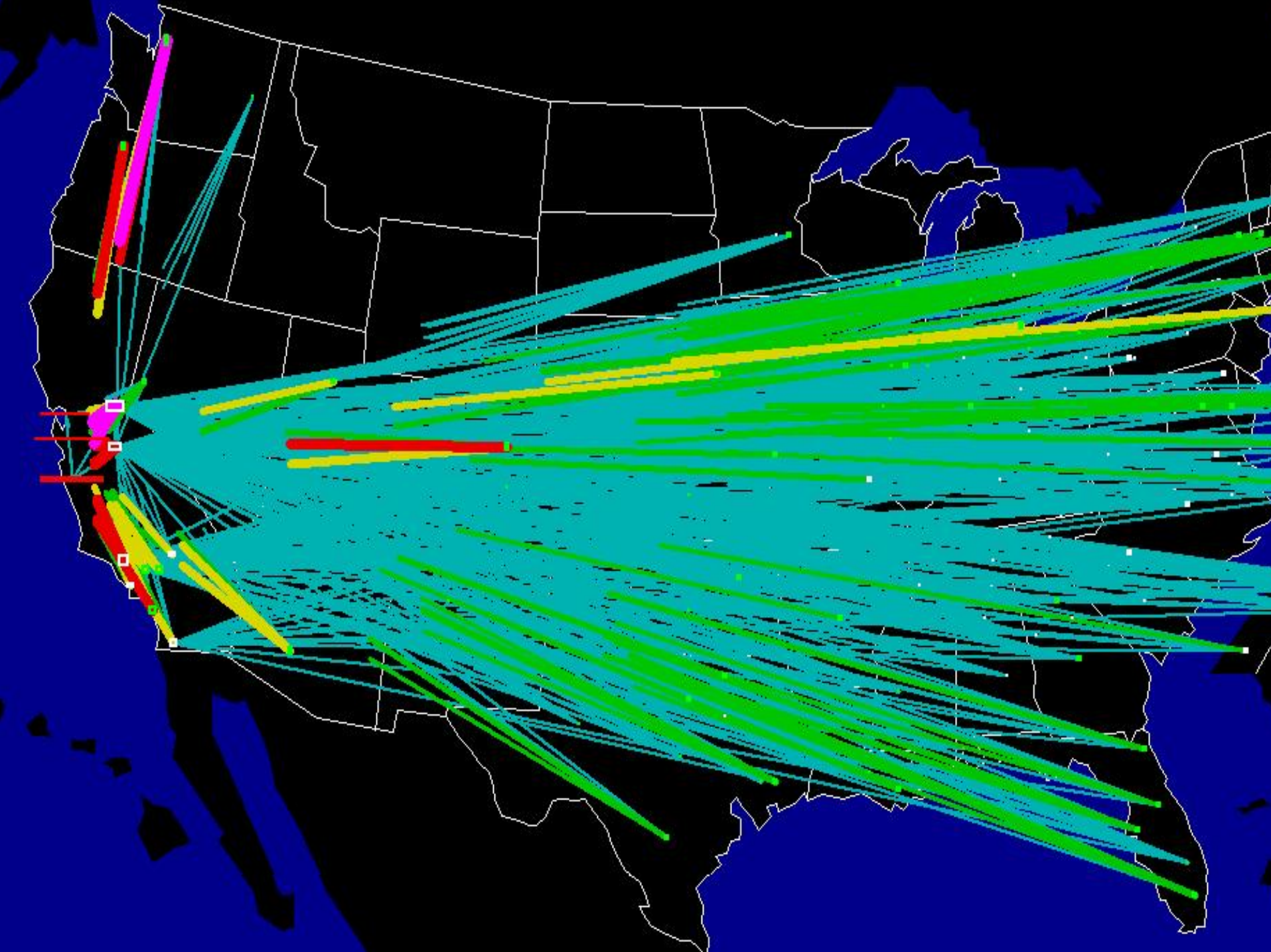
# Hurricane IKE

## Network
## Damage & Congestion

**13 September 2008**

- Damaged and Inoperative Network Assets -- Louisiana and Texas

  - More than 280,000 customer phone lines
  - More than 2,500 cell sites (~50% of all sites)
  - 4 PSAPs (All in Texas-Galveston Calls Rerouted)
  - 15 switching centers (97 others on backup power)

# Network Congestion





After an earthquake or other disaster, mass calling by the public often triggers congestion in landline and cellular networks, forcing emergency responders and other key personnel to compete with the public for the same overloaded communications resources!

# Network Congestion
## Minneapolis - August 3, 2007



"Cell-phone congestion blocked some calls near the collapsed bridge site Wednesday evening, causing Minneapolis police to ask people to get off their phones. Police needed to use the cell-phone networks themselves to mobilize doctors, the Red Cross and other emergency workers who don't have police radios."

Knight Ridder/Tribune Business News - August 3, 2007

# Are You Prepared for Network Congestion?





What plans and tools are in-place to assure public telephone network communications during and after a man-made or natural disaster?

# Solutions: The GETS Calling Card and Wireless Priority Service

**Government Emergency Telecommunications Service**

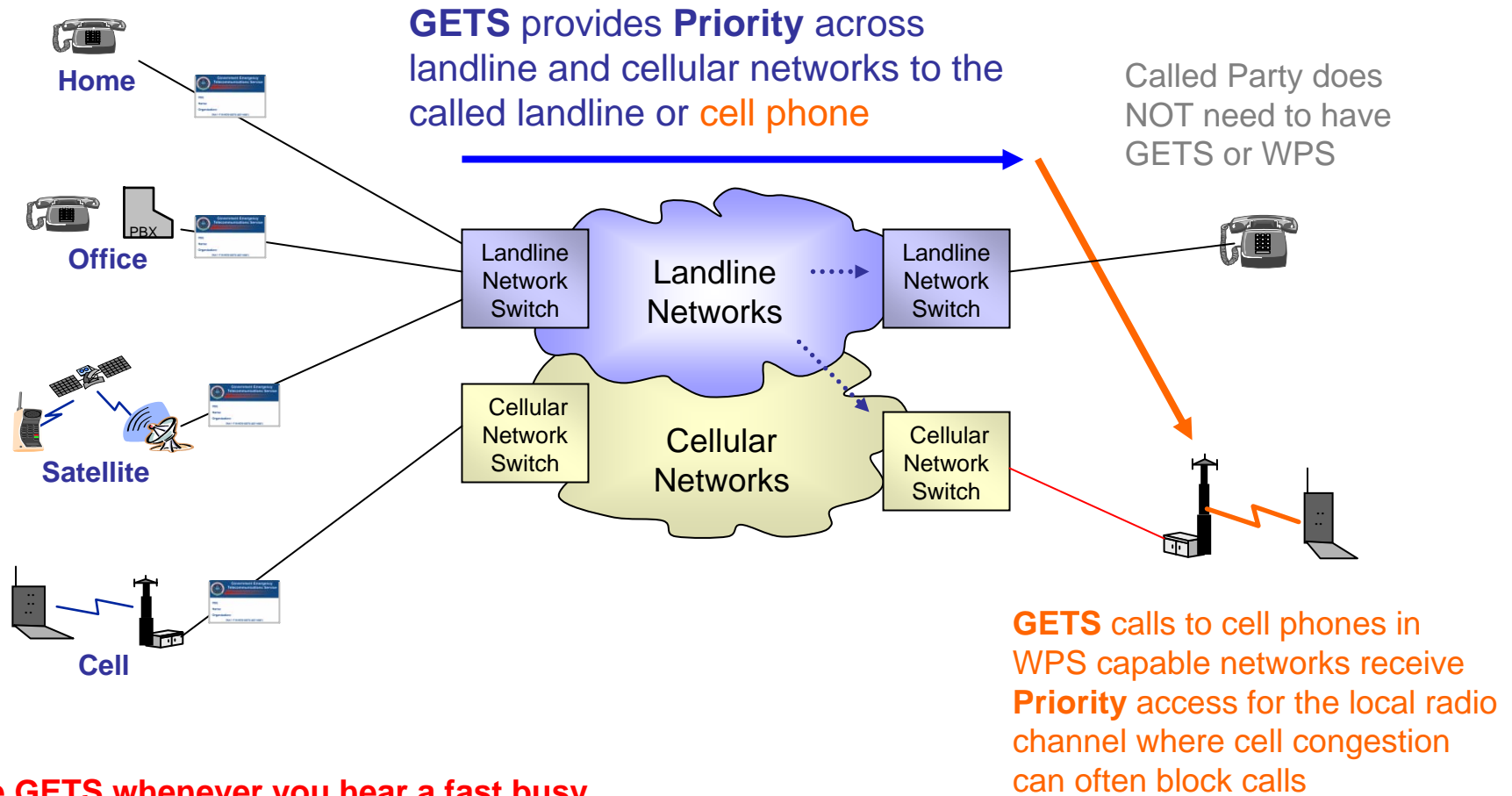**1234 5678 9012**

Name:

Organization:

GETS is an emergency calling card service that can be used from <u>virtually any telephone</u> to provide priority for emergency calls

*272 + DN

WPS is an add-on feature subscribed on a per cell phone basis – works with existing cell phones in WPS-equipped networks

# GETS Provides Priority for Emergency Calls When Using the Public Network

**Home**

**Office**

**Satellite**

**Cell**

**GETS** provides **Priority** across landline and cellular networks to the called landline or cell phone

Called Party does NOT need to have GETS or WPS

Landline Network Switch

Landline Networks

Landline Network Switch

Cellular Network Switch

Cellular Networks

Cellular Network Switch

**GETS** calls to cell phones in WPS capable networks receive **Priority** access for the local radio channel where cell congestion can often block calls

**Use GETS whenever you hear a fast busy signal, "All circuits busy" announcement, or otherwise cannot complete your call**

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# Making a GETS Call

GETS Access Number

Toll Free number for each GETS carrier (backup)

Toll Free User Assistance number (24x7)

12 Digit Personal Identification Number (PIN)

User Name and Organization

Dial 1-710-NCS-GETS (627-4387)
At the tone, enter your PIN.
When prompted, dial your destination number (area code + number).

*If you cannot complete a call,* use a different long distance carrier:

AT&T: 1-888-288-4387  -or-  1010 + 288
MCI: 1-800-900-4387  -or-  1010 + 222  +1-710-627-4387
Sprint: 1-800-257-8373  -or-  1010 + 333

From a Wireless Priority Service enabled device:
**Dial *272 before any call, including a GETS call.**

Assistance: For help or to report trouble, dial 1-800-818-GETS (4387) or 1-703-818-GETS (4387).

Test Calls: Make periodic GETS calls to 1-703-818-3924.

**US GOVERNMENT PROPERTY.** If found, return to: NCS (N2), 701 South Court House Road, Arlington, VA 22204-2198
**WARNING:** For Official Use Only by Authorized Personnel.

**Government Emergency Telecommunications Service**

1234 5678 9012

Name:

Organization:

1. **Dial GETS Access Number**

2. **Listen for tone, then enter your PIN (<u>do not</u> enter # after last digit)**

3. **Listen for voice prompt: "Please enter your destination number now."**

4. **Enter the destination number (omit the 1 before the area code)**

5. **You will hear an announcement "You are using GETS, AT&T/MCI/Sprint"**

6. **Network will route your call to the destination telephone number**

**Periods of silence are normal – particularly if call is queued during heavy congestion. Calls may take 30 to 90 seconds to complete**
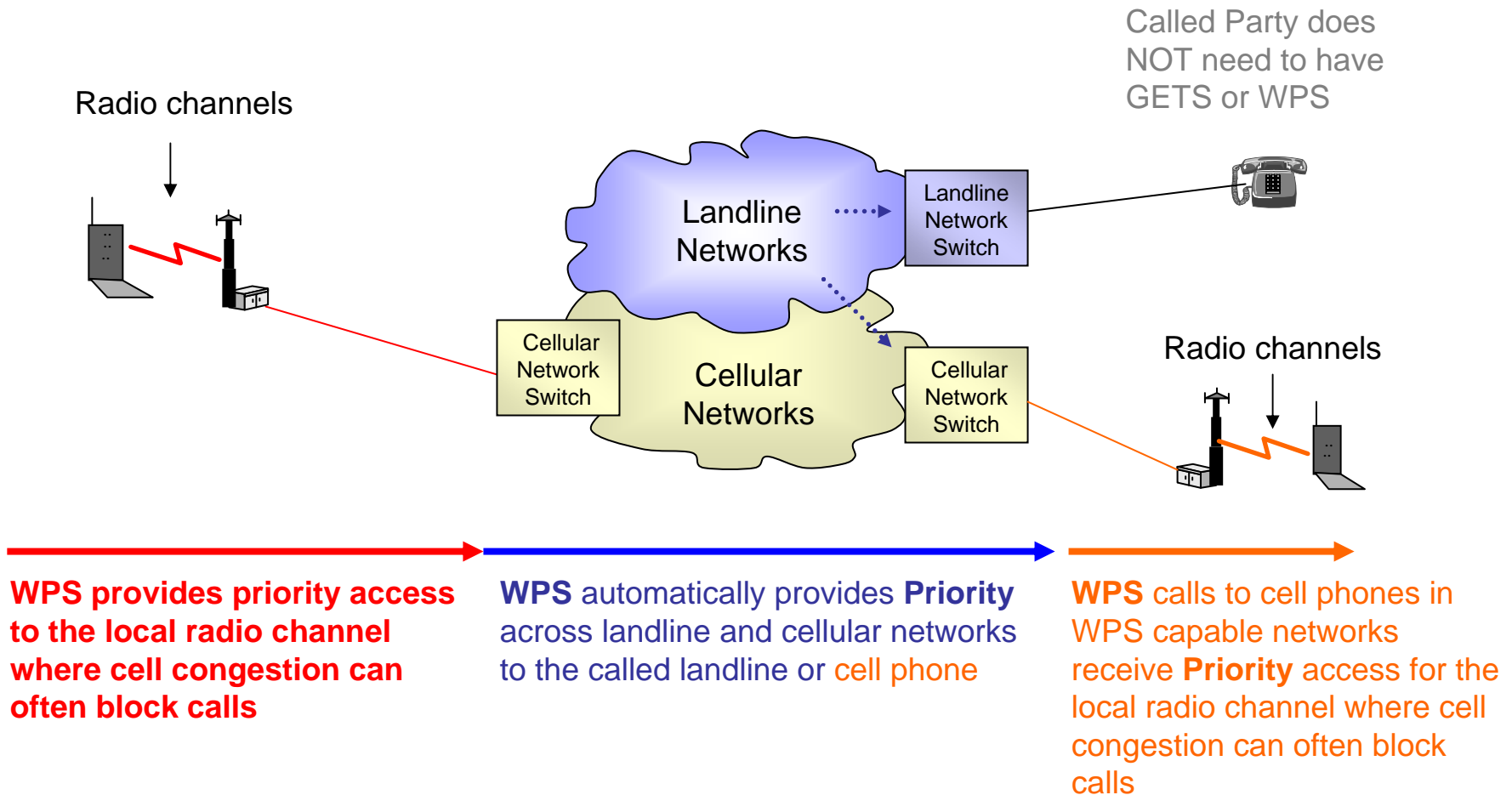
# Wireless Priority Service (WPS)

WPS is an add-on feature subscribed on a per-cell phone basis to provide priority for emergency calls made from cell phones. WPS works with existing cell phones in WPS-equipped networks
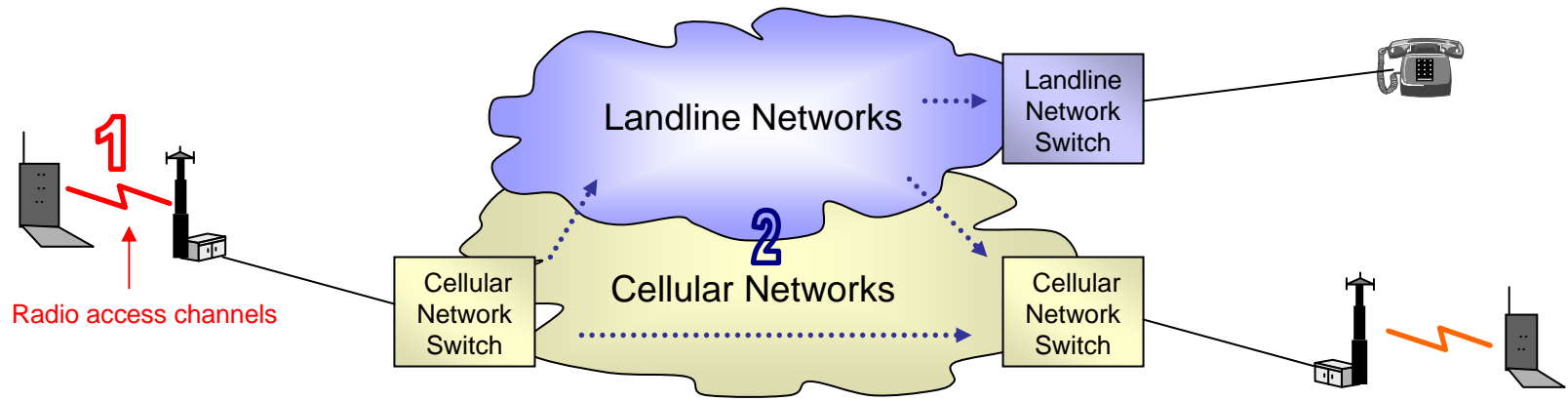


**1** WPS provides priority access to the radio channel where local area congestion can often block calls

**2** WPS automatically provides priority call processing across landline and cellular networks

# Wireless Priority Service (WPS) Provides Priority for Emergency Calls from Cell Phones



Radio channels

Called Party does NOT need to have GETS or WPS

Landline Networks

Landline Network Switch

Cellular Network Switch

Cellular Networks

Cellular Network Switch

Radio channels

**WPS provides priority access to the local radio channel where cell congestion can often block calls**

**WPS** automatically provides **Priority** across landline and cellular networks to the called landline or cell phone

**WPS** calls to cell phones in WPS capable networks receive **Priority** access for the local radio channel where cell congestion can often block calls

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# Making a WPS Call

1. **Confirm radio signal** 📶

2. **Enter ✳272 + destination telephone number and push SEND key (example: ✳272 703 818 4387 - SEND )**

3. **Network will route call to the destination telephone number**

- **Screen messages** vary among carriers and mobile phone models.

- WPS calls show same screen messages as regular calls

- While WPS calls are in queue screen message usually displays "Calling + Destination Number"

- **Audible alerts** vary among carriers and mobile phone models

- During WPS call set-up you may hear alternating periods of ringing and silence

- Busy signal, announcement, or extended silence indicates call cannot complete

**Periods of continuous ringing and/or silence may occur – particularly if call is queued at several points during heavy congestion.  Calls may take 30 to 90 seconds to complete**

# Why WPS ?

| Year | Landlines | Cell Phones | Total U.S. Phones |
|------|-----------|-------------|-------------------|
| 1989 | 120,000,000 | 10,000,000 | 130,000,000 |
| **2006** | 140,000,000 | **230,000,000** | 370,000,000 |

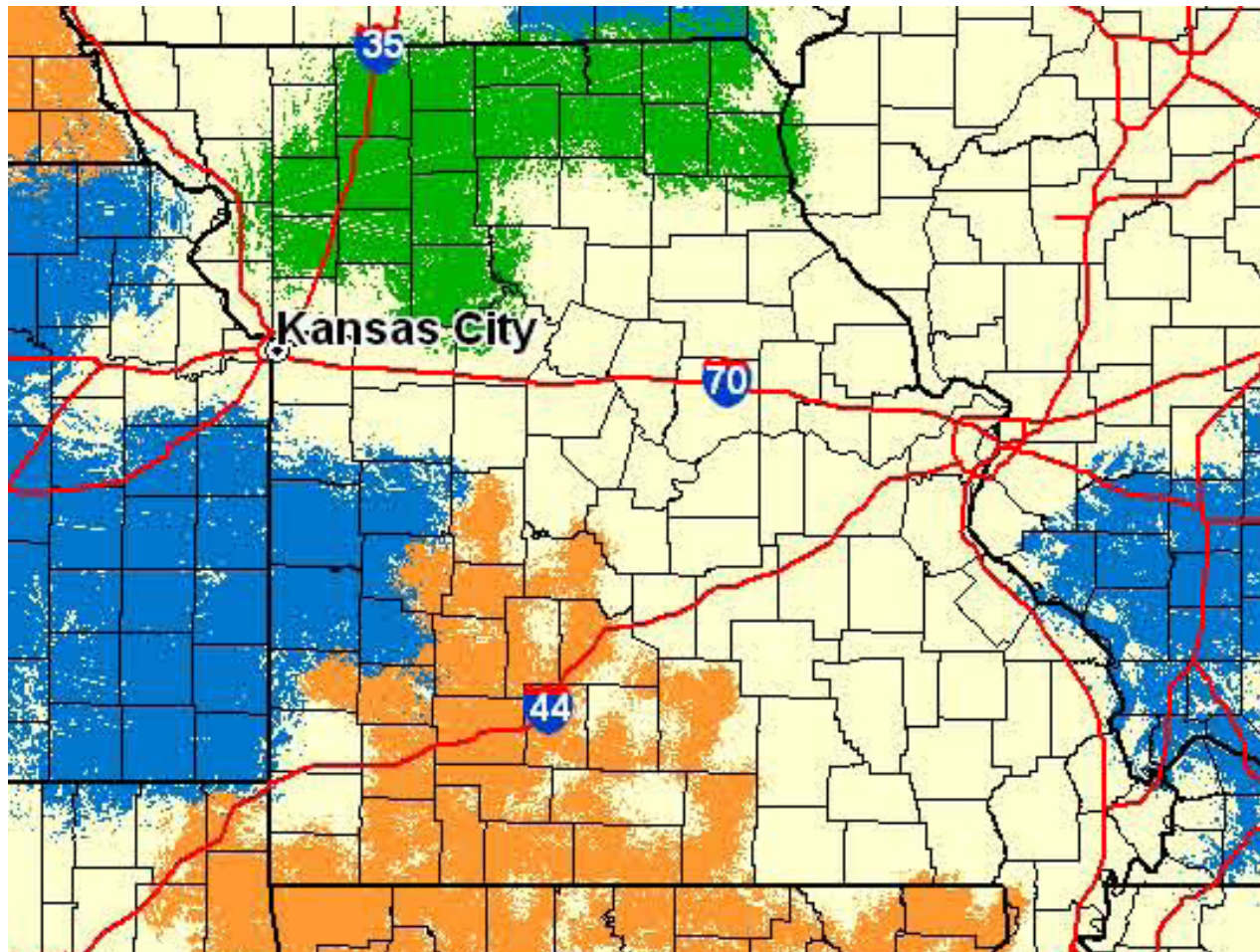Source: FCC and CTIA (Cellular Telecommunications Industry Association)

# WPS AVAILABILITY

- AT&T Mobility        Available Now
- Nextel        Available Now
- T-Mobile        Available Now
- Verizon (Nationwide)        Available Now
- Sprint PCS        Available Now
- AllTel (Missouri)        Available Now (Green/Blue)

- AllTel (Missouri)        Available 2010 (Orange)

**AllTel WPS Availability in Missouri**

# Hurricane Ike

## GETS Performance

- **TX, LA, OK, MS, AR Only:**

| Date | % Call Completion | GETS Call Volume |
|---|---|---|
| 9/11/2008 | 98.9% | 175 |
| 9/12/2008 | 97.3% | 146 |
| 9/13/2008 (landfall) | 90.4% | 613 |
| 9/14/2008 | 92.6% | 337 |

- **Metro Houston, TX Only:**

| Date | % Call Completion | GETS Call Volume |
|---|---|---|
| 9/11/2008 | 98.0% | 99 |
| 9/12/2008 | 98.0% | 99 |
| 9/13/2008 (landfall) | 89.0% | 519 |
| 9/14/2008 | 92.5% | 309 |

# Hurricane Ike

## GETS Performance

- **All calls:**

| Date | % Call Completion | GETS Call Volume |
|---|---|---|
| 9/11/2008 | 99.4% | 693 |
| 9/12/2008 | 98.7% | 627 |
| 9/13/2008 (landfall) | 93.2% | 1261 |
| 9/14/2008 | 95.5% | 698 |

# Who Should Have GETS/WPS?

## Organizations

- Cities/Counties/States/Districts
- Offices of Emergency Services
- Police/Sheriff/Fire
- Water and Power, Telecom
- Irrigation Districts/Flood Control
- Public Health
- Hospitals/Medical Services
- Transit Agencies
- Ports/Airports
- Utilities/Transportation and other Industries
- Search and Rescue
- School and College Districts
- Critical Infrastructure Suppliers
- Agencies included in State & Local Emergency Management Plans

## Individuals

- Mayor, Council Members, Supervisors
- City Manager and staff
- Media Relations
- OES Management and staff
- Police/Fire Chiefs and staff
- Police/Fire Field Command
- Department Heads and staff
- **Individuals with an Emergency Preparedness and Response role.**

## Locations/Functions

- EOC Work Stations
- Back-up EOC
- City and County Operations Centers
- PSAPs (911)
- Computer/IT Center
- Police/Fire Dispatch
- Remote Offices/Stations
- Power/Pump Stations
- Shelters
- Command Vehicles

# Budgeting for Priority Services

**GETS**

- No charge for GETS cards



- For organizations outside the Federal government, billing information is required to establish an account for GETS calls (@10 cents/min). You will not be billed for:
    - **Calls to confirm receipt of individual GETS cards**
    - **Test calls to the familiarization line (703-818-3924)**
    - **Legitimate GETS usage in response to emergencies**

**WPS**
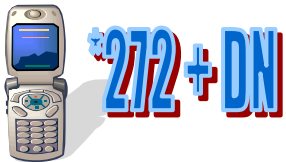


- Ordered on a per-phone basis through the NCS
    - **Per Phone charge not to exceed $4.50 per month**
    - **One-time $10.00 Activation Charge**
    - **Usage charge will not exceed 75 cents per minute when WPS is invoked (*272)**

- Billed by the carrier on the individual cell phone bill/invoice

# Emergency Preparedness Challenge

"Prediction is very difficult,
    especially if it's about the future."

- Niels Bohr

Nobel Laureate in Physics

# Information Resources

**For more information:**

**www.ncs.gov**
**www.gets.ncs.gov**
**www.wps.ncs.gov**

**Lee Johnson**
**Regional Outreach Coordinator**
**303.741.4782 (Office)**
**LKJ2327@msn.com**

**For assistance setting up on-line accounts and ordering:**

Priority Telecommunications Service Center: **1-866-627-2255**
- 8am to 6pm Eastern Time
- Follow voice prompts for each service