

Nextel Disaster Recovery

West Region Disaster Response Efforts
Current Network Capabilities
Future Enhancements

Overview

Deployments

Network

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2002 Arizona Rodeo-Chediski Fires

Largest Wildfires in AZ History. June-July 2002.

Fires and staging areas were in largely remote areas.

Phoenix Operations team rolled out **3 COWs and Generators**. Team relocated the COWs during the fires to meet the needs of Forrest Service.

1 Bi-directional amplifier deployed to enhance coverage at the AZ Fire Management Division's Emergency Operations Center



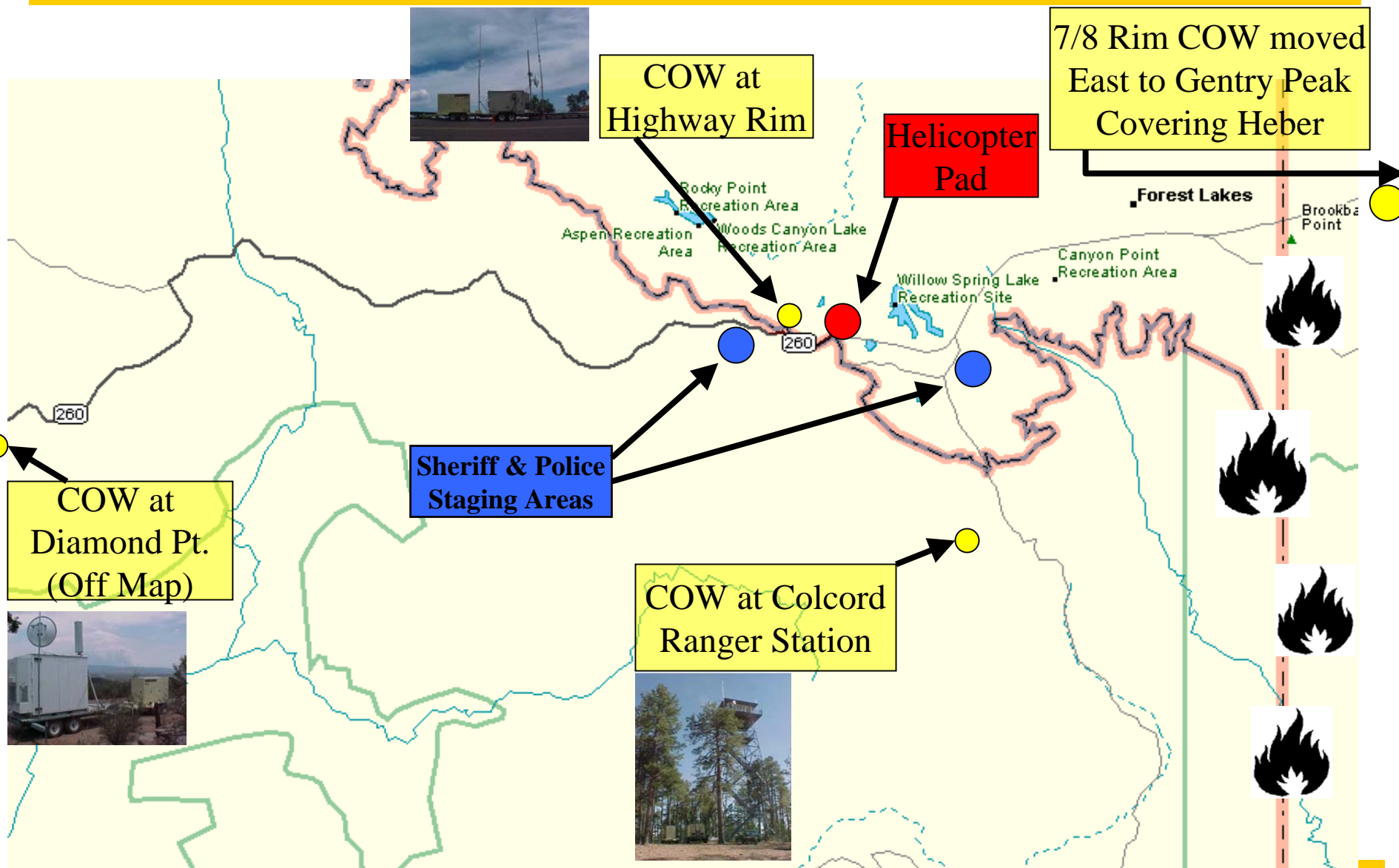
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2002 Arizona Rodeo-Chediski Fires



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2002 Arizona Rodeo-Chediski Fires

175 phones activated and distributed to Forest service with car and home chargers. New activations supported AZ Fire Management, Gila County Sheriff Dept, FEMA, local news media and other organizations. Nextel personnel had single point of contact within the Forest service For access and coverage concerns.

The site below served as a microwave hub for the third deployed COW.



Overview

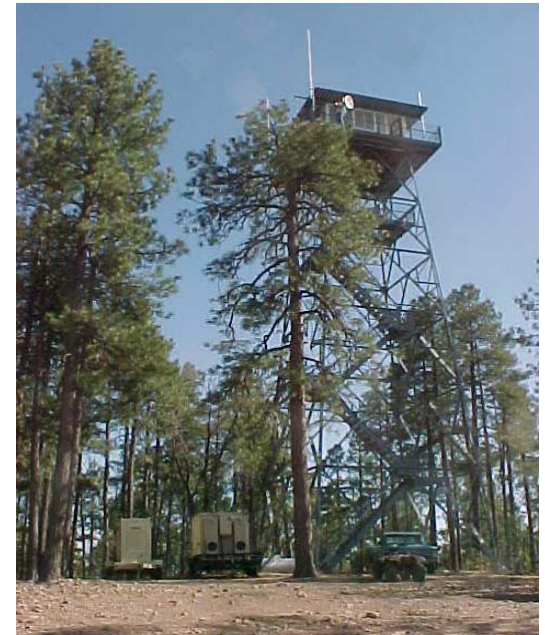
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Forest Service Collaboration

Nextel worked with Forest service in assessing site locations. Here an existing Forest service tower was used to achieve a higher location for Nextel antennas.



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2002 Southern Oregon Fires

Largest forest fires in Oregon history.

Firefighter camps, Incident Command Post and staging areas supported by Nextel.



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REF: www.biscuitfire.com

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Southern Oregon Deployments

Local engineering deployed 2 COWs to support firefighters:
July 29 – September 9 2002.

Cave Junction

Lake Selmac



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Fall 2003 Southern California Fires

Multiple fires affected areas surrounding Los Angeles and San Diego.

Nextel rapidly restored existing sites, and enhanced coverage in affected areas:

3 COWs expanded Nextel coverage into areas of special concern:

Crest and Harbison Canyon: Staging area for relief workers. Additional coverage for SD G&E restoration work.

Borrego Springs : Support for evacuees from the Jullian area and relief workers.

Scripps Ranch / Barona: COW set up to provide additional coverage in this fire-impacted area.

1 Mountain Top site (Mt. Woodson) was modified with a new sector, providing additional coverage.

Fall 2003 Southern California Fires

Mt. Woodson: Nextel installed an additional sector of antennas, providing new coverage into the affected areas.

Additional Capacity support: Nearby network sites were upgraded to provide additional capacity due to fire fighting and relief efforts.



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Fall 2003 Southern California Fires

Engineering Team received list of planned Red Cross shelters and evaluated for coverage and capacity.

Additional capacity was added to support shelters as needed.

Team tracked fire movement and proactively created back-up power and telco plans for potentially threatened sites.

4 COWs deployed from Sacramento and staged near San Diego ready for response.

4 COWs staged in UTAH.



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San Simeon Earthquake : January 2004

6.5 Earthquake impacted communities near Paso Robles. Nextel deployed 2 high capacity COWs from LA and staged them on site in Paso Robles in anticipation of possible after shocks or Red Cross assistance.



Paso Robles, CA January 25, 2004 -- Structures and a vehicle damaged in downtown Paso Robles in the 6.5 San Simeon Earthquake. FEMA Photo/Dane Golden

** Note: This is *NOT* the photo of this deployment This *IS* the physical COW that was deployed, shown here at another deployment.

REF: www.fema.gov

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Cottonwood Fire : May 2004

Fire burning in rural areas east of Riverside, CA
CA Department of Forestry requested improved
coverage at the base camp in Cherry Valley at
Noble Creek Park on Friday Morning,
5/14/2004.

Nextel Engineering teams responded. Friday
evening a temporary Cell Site and 100 foot
mobile tower were in place. Strong in-
building signal was provided in and around
the base camp.



Verbenia Fire in Pine Cove : July 2004

Verbenia Fire burning SW of Palm Springs, near Pine Cove, CA. Nextel received request for service on 7/14/04 from the Pine Cove water district.

A COW and Generator were set up by Engineering, providing coverage in the surrounding areas on 7/15/04.



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Ronald Reagan Memorial: June 2004

Request for additional coverage from Ventura County Sherrif and FBI for:

Additional footprint on Pt. Mugu Naval Base for Presidential Boeing 747 ingress/egress.

Rapid increase in capacity near the RR Presidential library in Simi Valley, CA

Nextel Engineering teams responded, deploying 2 COWs and over 50 radio additions at sites in the area.



Nextel COW at Pt. Mugu Naval Base

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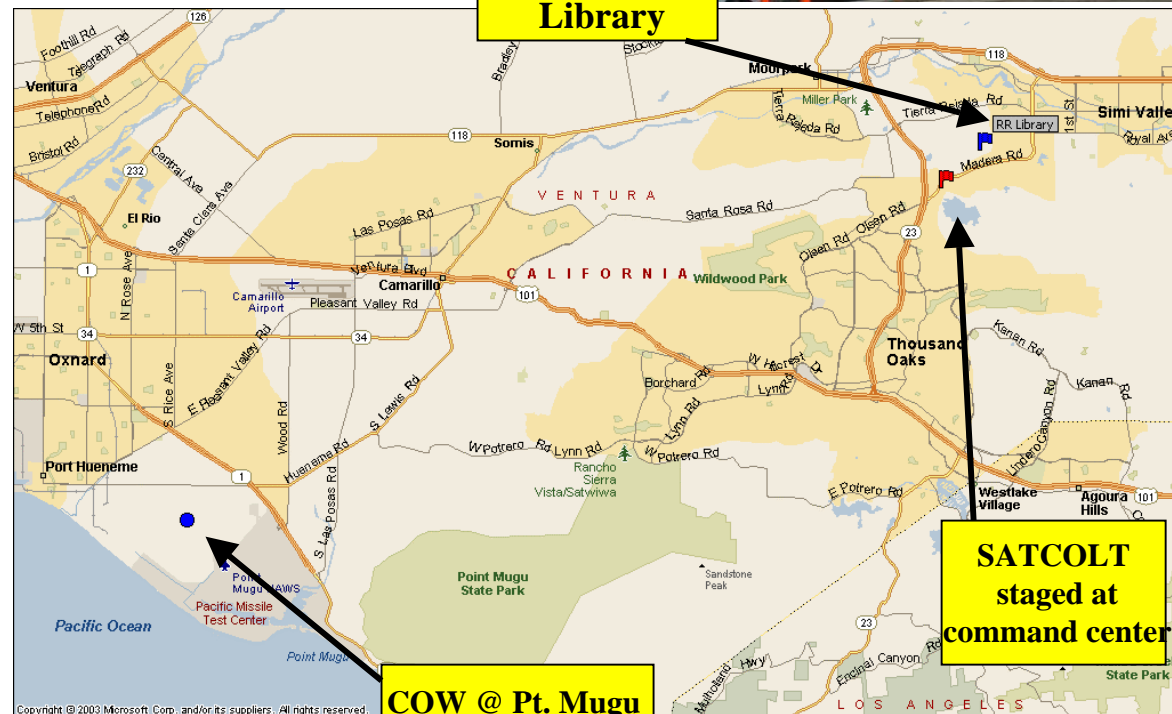
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Ronald Reagan Memorial Activities : June 2004

Presidential Library: High capacity COW deployed overlooking the library, providing additional coverage and capacity for Secret Service, FBI and other users.



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Hurricane Frances/Ivan : September 2004

West Region ENG provided logistical support:

8 COWs and their associated towers transported from Utah and Colorado to Georgia.

50 Mobile Generators routed from California to Georgia.



Nextel staged personnel & equipment from across the country to expedite recovery in the SE.

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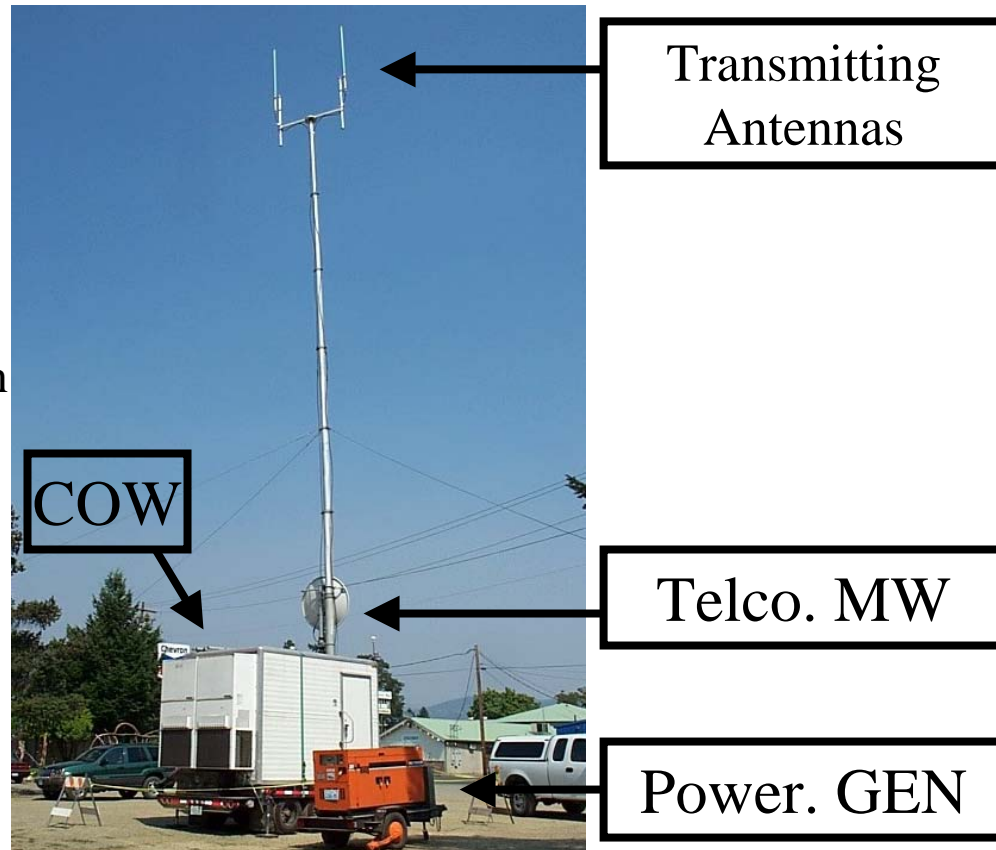
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Elements of a COW Deployment

Establishing a COW requires several elements:

1. **COW asset** available. This contains the electronics and Air Conditioning units.
2. **Telco:** Connection into the landline network. This can be microwaved in from another location, or be available at the COW deployment location. An exceptional more costly alternative is Satellite backhaul to a Nextel switch.
3. **Power:** Most COW needs can be supported by a 25 KW Generator. Increased capacity or power levels can drive higher power needs.
4. Viable **location** for the COW.
The ready availability of Telco or power can accelerate deployment.



The Nextel Network

On-going efforts to better serve critical customers:

Priority Dispatch and Wireless Priority Service

Higher level of access provided to critical customers.

Currently utilized in the border region for the border patrol personnel for example.



Aggressive **network build** planned to increase Nextel's footprint into more rural and corridor areas.

Network reliability, drop call rates, Nationwide Direct Connect

Direct Connect's advantage in times of PSTN congestion

Mototalk feature. "Off Network" walkie talkie capability on select units. 2-5 Miles.

Nextel's Disaster Recovery program

Improved fleet of temporary Cell Sites on Wheels (COWs)

Satellite COW capability (COLTs : Cell Site on Light Truck)

Combination trailers

Future Enhancements:

Higher data rates. Better support for services such as mobile data terminals.

Dynamic Talk Group Programming

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Switch Hardening

Central Switching locations are engineered to minimize impact of potential disasters:

Power:

Standby generators with automatic power transfer. Approximately 3 days of fuel on site at full load.

8 hours of battery back-up

Transport Path:

Fully redundant entry paths into the MSO.

Sonet ring protection.

Fire Protection:

Non-corrosive FM200 fire suppression systems

Security:

Entry/exits are monitored via cameras. Locations are low-profile and in secure districts.

Seismic earthquake rating, Zone 4

Equipment redundancy

Disaster Recovery

24 hour West Region monitoring from National Network Operations Center in Oakland. This center is backed up by the McLean, VA monitoring center.

Disaster Recovery Team

Personnel at the National Headquarters and regional levels dedicated full time to Disaster Recovery. Local engineering teams mobilize to respond.

Cell Site Hardening Initiative

Nextel is hardening key network sites to keep 80-90% of the network in car coverage available for 48 hours in the event of power loss.
(Class 1,2 sites)

Equipment

Cell Sites on Wheels: Mobile cell sites.

Mobile Generators

Microwave transport links

Cell Site Back-up:

- Fixed Back-up Generators at key sites

- Battery Back-up at all Cell Sites

- Dynamic power reduction measures at all sites

- Redundancy built into cell sites: Control equipment, radios, GPS

Redundancy: Multiple Cell Sites with overlapping coverage serving many key areas

Regional Points of Contact

West Region Disaster Recovery Points of contact:

First Level: **Shah Daneshkhah**, Disaster Recovery Senior Manager

shah.daneshkhah@nextel.com , 602 757 7306

Second Level: **Brett Franssen**, Sr. Director of Disaster Recovery and RF Operations

brett.franssen@nextel.com , 714 412 4112

In affected area, the “**First Tier**” of responders are notified, who mobilize their teams as needed.

Department	Mandatory	As Needed
NHQ (based on operational impact)		
Business Continuity Team	On-Call Manager	Other team members
National Network Ops	Director Disaster Recovery	VP, Natl Network Ops
NNOC	Director, NNOC	Sr. Director, NNOC/EMC
EMC	Director, EMC	Sr. Director, NNOC/EMC
NTS	Sr. Director, NTS	VP, Natl Network Ops
IT Operations	Director, Disaster Recovery	Sr. Director, IT Ops
Field (based on operational impact and geographic scope)		
Regional Management	Regional DR Manager	Regional VP
RF Engineering	Director for impacted area	VP RF Engineering
Fixed Ntwk Engineering	Director for impacted area	VP FNE
RF Operations	Director for impacted area	VP RF Operations
Site Construction	Director for impacted area	VP Site Construction

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References:

www.fema.gov

Sun West Engineering . www.sunwesteng.com

www.biscuitfire.com : Information on Southern Oregon forest fires.

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Special thanks for assistance from :

Jim O'Brien

Mark Severseike

George Tyler

Bryan Latimer

Richard Reinhofer

Tim Gaines

Bernard Berba

Lynn Ellsworth

Dave Allen

Rod Woodfield

Tom Drummond

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Strategic Alliances

Partnership with Disaster Recovery Team

Network of redundant transportation vendors in markets

KPMG External Audits

Strohls Systems BCP Applications



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