

Alerting and Notification

By

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Public Safety Alerting Requirements

- Fast Group Alert with Positive Acknowledgement
- Resilient & Redundant Infrastructure
- Simple Durable Subscriber Equipment
- Direct CAD Interface
- Direct Email Interface
- Cost Effective

Current notification methods

- **Leased one-way pagers**
 - No acknowledgement of messages
 - No message security-encryption
 - Only local or regional coverage
 - Limited group capability
- **Leased two-way pagers**
 - Coverage holes
 - Expensive recurring cost
 - Sluggish message delivery
- **Cellular telephones**
 - Limited in-building coverage
 - Very expensive recurring cost
 - Very few public safety grade handsets
 - No public safety grade networks

Quotes

■ Florida Department of Transportation Hurricane Response Evaluation and Recommendations February 11,2005

- *The widespread failures of the Nextel system and other commercial communications providers indicate that cellular and enhanced specialized mobile relay (ESMR) or other commercial wireless service providers should not be relied on to provide mission-critical communications. Either they become overloaded due to general public use during such emergencies or they fail due to the local tower's inability to access the remote system controller. [p 39]*
- *Nextel was “useless” in the affected areas for a week following the hurricane. [p 29]*

Quotes

■ Arlington County After-Action report on the response to the September 11th terrorist attack on the Pentagon

- *The paging system, when available and used, seemed to be the most reliable notification device. However, most firefighters do not have pagers. [p A-40]*
- *The paging message to members of the NMRT directed personnel not to “callback,” but to report directly to the Arlington County Fire Training Academy. Other page and voicemail messages directed a confirmation callback, adding to an already overburdened telephone system. [p A-41]*

Quotes

■ FCC Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks

- *Additionally, pagers benefited from having a long battery life and thus remained operating longer during the power outages. [p 10]*
- *Two-way paging operations remained generally operational during the storm and did provide communications capabilities for some police, fire emergency medical personnel, but could have been more widely utilized. [p 24]*
- *Finally, although it is unclear whether this function was utilized, group pages can be sent out during times of emergencies to alert thousands of pager units all at the same time. [p 10]*
- *Urge public safety licensees to familiarize themselves with alternative communications technologies to provide communications when normal public safety networks are down. Such technologies include satellite telephones, two-way paging devices, and other technologies less reliant on the PSTN. [p 38]*

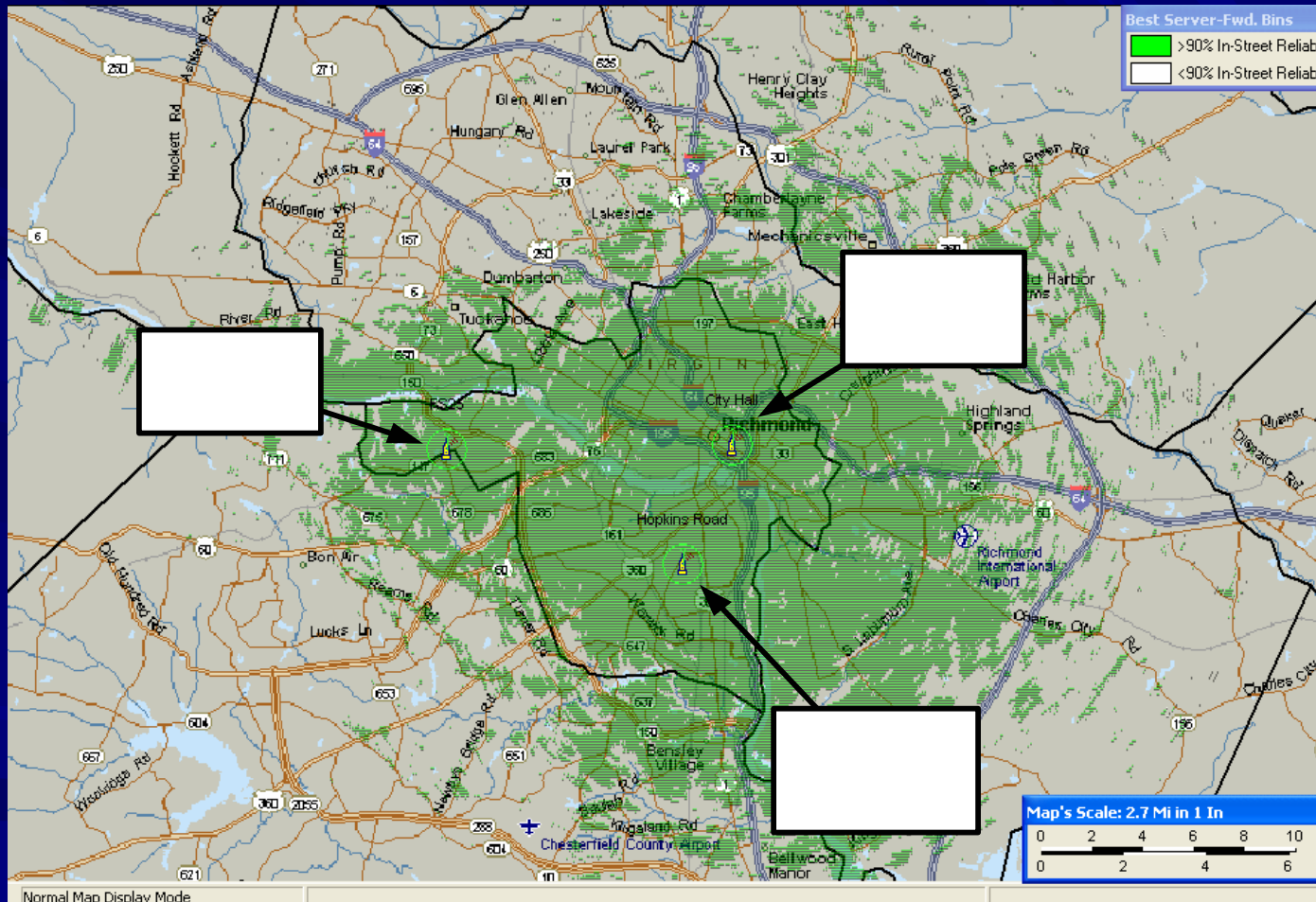
Conclusion

- Cellular technology is unreliable when needed the most.
- One-way paging does not allow for message acknowledgement
- Two-way paging is supported by the FCC's Katrina report for use in Public Safety.

The City of Richmond Plan

- Develop a 3-site ReFLEX two-way private campus network.
- Replace all existing leased pagers
- Partner with a nationwide ReFLEX provider for nationwide roaming
- Leverage network for Automatic Vehicle Location (AVL) to enhance value to city
- Eventually, leverage network for SCADA applications to maximize value to city.

Predicted System Coverage

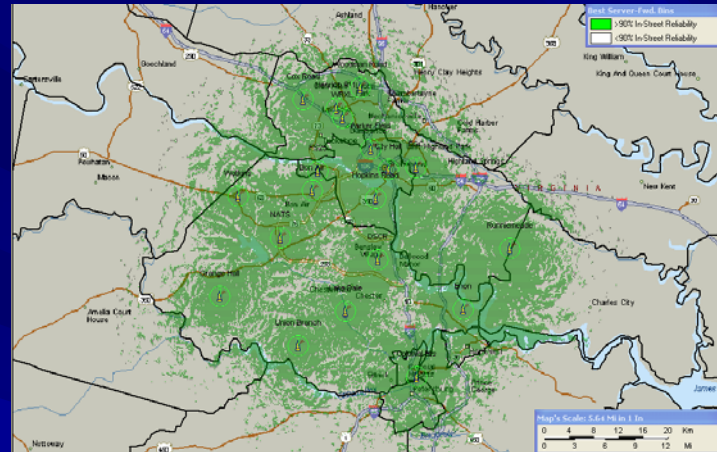


Benefits

- Leverages existing City infrastructure
- Increases network redundancy – fault tolerant
- Excellent in-building coverage
- Low-latency
- Assured delivery
- Message acknowledgement – real-time feedback
- Multiple unique group alerts for each device
- AES encryption with OTAR
- Over-the-Air device management
- Interface to CAD system at 911
- Leverages City email and phone numbers
- Ruggedized as well as COTS devices
- Interoperability with nationwide carriers

Regional Partnership Benefits

- Improved coverage
- Cost sharing
- Redundancy
- Interoperability between jurisdictions
- Possible grant funding for regional effort



Project Status

- Received FCC License
- Purchased and installed the infrastructure at the 3 City radio sites
- Purchased devices
- Public/Private partnership with Skytel for nationwide roaming
- Currently developing web gateway for customer interaction
- Expect to complete project by August 2007
- Integrated project into Regional Interoperability Strategic Plan

Questions?

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