



Outdoor Warning Sirens - Update

Public Safety Committee Briefing

April 16, 2007

Office of Emergency Management





Historical Information

- The first sirens were placed in Dallas following a 1957 tornado that killed 10 people, injured 200, and caused \$2.5 million in damage
- There are currently 94 sirens citywide
- Majority of sirens 30+ years old
- The current sirens system is maintained by the City's Street Services - Flood Control Division.
- Last siren purchased in 1999.
- Sirens are one of the primary means of Mass Notification for the City of Dallas.



Operation and Maintenance

- Office of Emergency Management oversees the program and activates the sirens
- Police Dispatch is the secondary activation point
- Streets Department - Flood Control Division electricians perform maintenance on sirens
- Current system is aging and difficult to acquire parts for many of the older sirens
- 30 year *reliable* life expectancy
- Current cost for a new siren \$20,000 - \$25,000 each (Depending on options)

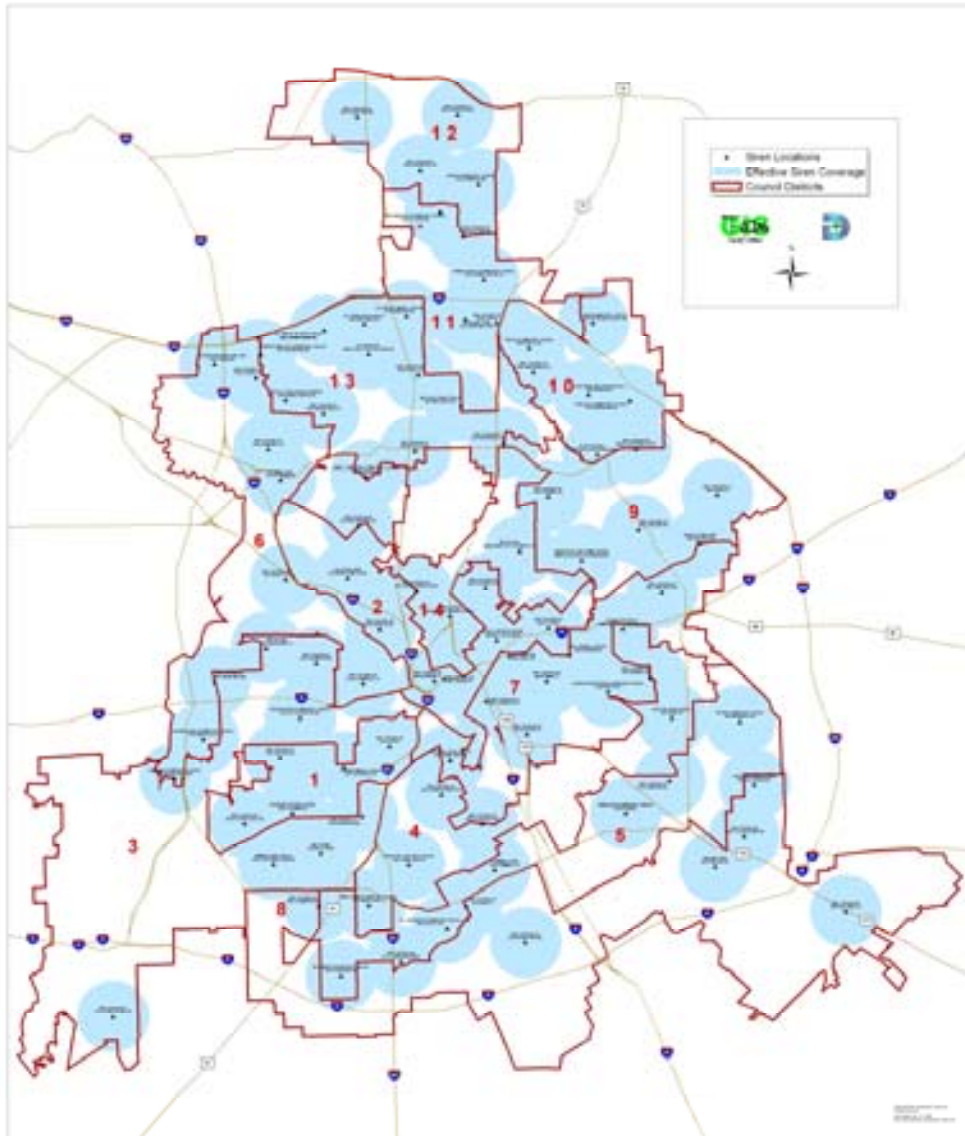
Current Coverage

- 60% of the land area
- 83% of the population
- Average of 1 mile radius
- Estimates for “full coverage” 125+ sirens are needed to appropriately cover the City



This figure illustrates the 1 mile coverage radius for a siren.

Dallas Warning Siren Coverage Council Districts



Outdoor Warning System - Current

- The map illustrates coverage of the current system.
- Please note the areas in white that are not covered by sirens
- Current system is comprised of 94 sirens



Outdoor Warning System - Proposed

- 100% Coverage
- Approximately 125+ sirens will canvas the City to provide appropriate coverage.
- Voice Capable Sirens in areas with large outdoor gatherings (CBD, Fair Park, and Trinity Corridor)
- Allows silent testing
- Allows individual sirens or neighborhoods to be activated, as well as activate “citywide”



Phase 1 – Overview

- 250K provided by City Manager's Office (FY06)
- Intended to fill in gaps in current system
- Will pave the way for complete siren upgrade by:
 - Conducting citywide survey and identify optimal locations for new sirens (Implementation Plan)
 - Upgrade siren radio system so siren can utilize 800 MHz system
 - Purchase of initial 10 sirens
 - Upgrade both activations points with new control software (OEM & Police Dispatch)



Phase 2 – Overview

- \$3.3 Million as part of 2007 Bond Initiative
- Resume installation of sirens based on locations identified in comprehensive survey (Phase 1)
- Removal and disposal of old sirens
- Acceptance testing of entire system
- Increase public education for citizens pertaining to warning system

Comparison of Sirens & Technology



Vs.



- 30+ year old technology
- One-way communications
- No remote diagnostic information available
- Activation of sirens can be done by sectors
- Part needed for repairs are not readily available
- Audible testing required

- State of the art technology
- Two-way communication, allows for diagnostic tests
- Activation done by computer and activation more versatile & flexible
- Parts can be shipped within hours of order
- Audible or silent testing can be performed

2001SRNB Siren



➤ *Siren produces 130dB at 100ft*

- A rotating directional, electro-mechanical siren that covers more than 3.5 square miles
- Produces three high powered signals
- AC, DC or AC/DC operation available
- Supplies minimum of 15 minutes full power output from batteries after AC power loss
- Produces a 60 degree projection of sound which rotates at 3RPM

Modulator Series Siren - Speaker Array



- Highly efficient design produces high intensity warning signals, and makes moderate demands on the battery power source
- Up to 7 different warning signals, voice communication, and continued emergency operation regardless of primary power outages
- Excellent frequency response for crystal clear voice reproduction
- 360 degree coverage with no sound variation in the horizontal plane

Federal Commander Digital System TM



Complete, secure activation and status monitoring of any siren system

- Point and click activation and polling
- Maps with color-coded status of each siren
- FSK digital encryption
- Complete RTU configuration and reprogramming from control site
- “Digipeat” system feature eliminates the need for radio repeater systems
- Automatic call-out function to alert key personnel of events
- Password protection for Activation, Operator and Administrator levels
- Complete storage of all status and alarm data
- Automatic notification of change in AC Power, Low Battery, Intrusion, etc.
- Remote system control

Overall Project Cost Estimate – Phase 1 & 2



Estimate includes:

- Siren speaker arrays (Selected areas voice capable, i.e. CBD, Fair Park);
- Siren controllers (EOC, Police Dispatch & Portable Controller);
- Siren radio controls;
- Antenna and cabling;
- Encoders;
- Concrete poles;
- Lightning arrestors and;
- Batteries

Total – \$3,450,000.00



Timeline (Tentative)

- May 2007 – Have contract signed and present to council
- June 2007 – Begin comprehensive survey and identify siren locations
- August 2007 – Begin installation of initial 10 sirens
- November 2007 – Sale of Bonds and beginning of Phase 2
- March 2008 – Begin acceptance testing and completion of project



Summary

In summary, this project is essential for providing appropriate warning information to the citizens of Dallas.

The current system only provides partial coverage and has not been updated in a number of years. In the FY06 Budget, OEM was authorized to spend \$250,000 for upgrading the current system. Phase 2 of the implantation will be done with FY07 Capitol Bond Funds.