



## GOAL 6.0 ADVANCE TECHNOLOGY

### *Advance the technological capabilities of the Department.*

#### *Overview*

The Department has taken important steps to upgrade systems and plan for future communication and technology needs. To streamline the process, the Department has established a Technology Oversight Committee, comprised of senior representatives from Fire Operations, EMS Operations, Technology, Communications and Administration. The Committee is responsible for leading the development of the Department's Technology Plan and ensuring that all specific technology projects included in the plan support the operational requirements of the Department.

FDNY also has identified the need to enlist external communications and technology experts who will be responsible for reviewing our current communications systems and assisting the Department in drafting specifications that will incorporate FDNY's evolving needs. Throughout the implementation of specific initiatives, the Committee will provide periodic updates describing technology milestones achieved, the progress of ongoing initiatives and any specific obstacles that need resolution to the Planning Oversight Committee.

Simultaneously, the Department has addressed urgent needs in communications and technology, infrastructure, processes and protocols. Specifically, the Department successfully tested and deployed new handie-talkie radios to the field in February 2003. The new radios have several features that provide significant advantages compared to the previous model. The Department's radios now support a larger number of channels and use the UHF band, which allows for greater penetration in buildings and allows for interoperability among Fire and EMS and other emergency service agencies, including the NYPD. To provide a mobile communication system for the handie-talkies in high-rise buildings, a system was developed that consists of the handie-talkies, high-powered post radios, Battalion car repeaters and emergency transmission channels. Taken together, these enhanced features measurably improve the communications capability of the Department.

Additionally, interoperable radio communication is now possible through the installation of new equipment (TRP-1000) in the Department's Field Communications vehicle. Draft protocols outlining interoperability procedures have been developed so that the Incident Commander can communicate with other agencies.

Other than technological advances, the Department needs a method to receive and disseminate critical information about an emergency incident. The Department developed protocols with the NYPD for placing an FDNY Chief Officer in a police helicopter to help manage large-scale or complex incidents.

Specifically, the Department has identified the following objectives:



***Objective 6.1 Complete upgrade of Fire Department Operations Command Center.***

*Background*

The Fire Department Operations Center (FDOC) serves as the critical point of contact in the Department for other City, State and Federal agencies. It also keeps senior staff apprised of fire and EMS emergencies Citywide. The management structure of the FDOC must be fully integrated into the Incident Command System protocols, which will govern any large-scale or long-duration incident. FDOC personnel are assigned specific roles, such as planning and logistics, and are given the proper facilities and equipment to carry out these responsibilities.

*Accomplishments*

During the past year, the Department has improved the FDOC's capacities by upgrading telecommunications and procedures to better prepare for routine operations and large-scale incidents. Predetermined activation levels have been established to address various kinds of incidents depending upon their size and complexity. These activation levels require the senior Staff Chiefs to respond quickly to the Operations Center located at MetroTech Headquarters. The senior Staff Chiefs have the ability to provide Citywide command and control, as well as operational planning for the entire Department during both routine and major incidents. The ability to access NYPD video transmissions and Department of Transportation digital photographs has been established.

In Spring 2003, the Department released a solicitation for a communications consultant. Through the Technology Oversight Committee's review process, a consultant was selected to: 1) further identify and evaluate current and future needs; 2) develop specifications to obtain equipment and vendors; and 3) forecast funding requirements.

*Next Steps and Time Frames*

- The Department will continue to pursue and obtain grant funding for the re-design and construction of the enhanced FDOC by January 31, 2004.
- By April 1, 2004, the Department's communications consultant will provide an analysis of current and future communication technology needs and make recommendations to ensure state-of-the-art functionality.
- By January 1, 2005, the Department plans to expand the FDOC into a fully functional operations center with upgraded infrastructure and additional state-of-the-art communications capabilities. Specifically, the FDOC's capabilities will be enhanced to enable the center to serve as an off-site command post. Among other features sought for the center are video teleconferencing, on-scene live video using footage from media helicopters, wireless command board data and enhanced Geographic Information Systems (GIS) to provide an increased situational awareness capacity.



- As the FDOC is further developed, by March 15, 2004, FDNY will review the relevant recommendations in the Mayor's Office report, "Enhancing New York City's Emergency Response Preparedness," as it pertains to the regional blackout of August 14-15, 2003.

The Department plans to implement the following at the upgraded FDOC:

- Establish the Department's operational priorities during resource-taxing events in the City or region
- Monitor all incidents in the City in real time to determine current and possible resource requirements
- Monitor Citywide coverage, analyze the Department's resource availability and manage its resources, including the initiation of recall(s) of members and mutual-aid requirements
- Serve as a single point of contact for other agencies to coordinate activities on a Citywide or regional basis
- Compile and analyze information on specific incidents and relevant conditions throughout the City and disseminate this information to appropriate partners
- Support the command and control of any major incident in the City
- Serve as a regional command post if multiple, large-scale incidents are taking place in the City
- Serve as the information backbone for ICS support functions
- Provide all assigned staff with ICS training

#### *Lead Bureau*

- Technology and Development
- Operations

#### ***Objective 6.2 Develop electronic wireless command post boards.***

#### *Background*

Large-scale incidents of the kind potentially confronting the Department require the management of large amounts of information regarding the deployment of personnel and equipment. In light of the loss of the command posts at the World Trade Center on September 11, 2001, the need to safeguard critical information and manage resources recorded at the command post board is essential. With electronic command boards, the Department can replicate and store current deployment information at all times. Portable, PC-based electronic command post boards have much greater functionality than existing magnetic command boards. These boards can help the Incident Commander with Firefighter tracking, communications and tactical coordination tasks. PC-based boards can store and display maps and building plans. This enables a Chief to review structural and other characteristics of buildings and zoom in on specific floors or building areas. They also can be used to store detailed hazards lists and FDNY procedures. This critical information must be captured using modern technology so that information can be disseminated quickly and simultaneously backed up remotely in case of another major catastrophe.



### *Accomplishments*

Prototype electronic command post boards have been researched and the Technology Oversight Committee is coordinating the development of a Request for Proposals for an electronic command post board. In addition, the Committee is researching command boards that include a Firefighter accountability system, which would help determine who is on the scene and locate all members.

### *Next Steps and Time Frames*

- Phase I--By December 15, 2004, electronic wireless command post boards, using personal computers that can graphically display the locations of unit deployments, will improve on-scene incident management. The boards will use wireless technology, whereby key data will be backed up by the FDOC in the event of the loss of an on-site electronic wireless command post board.
- Phase II--By December 31, 2005, the electronic wireless command post boards will have mapping capabilities, retrieve site-specific historical and hazard data from Department databases, provide digital photography and video of the scene and automate tracking of unit locations. Through the use of radio identification signals and computerization of riding lists, these boards will enable the Incident Commander to reference this information.

### *Lead Bureau*

- Technology and Development
- Operations

### ***Objective 6.3 Obtain a computerized unit deployment and tracking model program for Fire and EMS resources.***

#### *Background*

Given increased demands on deployment of both Fire and EMS resources, the Department needs to improve efficiencies and productivity through the use of new technologies. The Department's current unit deployment and tracking model for Fire resources can predict response times, but cannot be used to analyze or improve deployment in real time. It also lacks an interface with EMS, which currently operates without a computer model. The ability to use a deployment and tracking model that includes EMS in real time is critical for modernizing the Department's planning and response capacity.

### *Accomplishments*

The Department has researched various deployment and tracking models and is working with vendors to develop pilot programs using Department data to determine short- and long-term benefits and costs.



#### *Next Steps and Time Frames*

- By March 15, 2005, the Department will seek and obtain grant funds to purchase a state-of-the-art, computerized unit tracking and deployment model that will use dispatch data to optimize response to and coverage of routine operations and large-scale incidents. Integrating computer analytical capabilities, which reflect real-time response data and identify available specialized manpower and apparatus resources, will greatly improve the safety of both emergency responders and the public.

#### *Lead Bureau*

- Management Analysis and Planning

#### ***Objective 6.4 Implement a second EMS Citywide channel.***

#### *Background*

In recognition of the communication difficulties EMS experienced on September 11, 2001, the Department has studied EMS radio communications and will establish a second EMS Citywide radio channel to deal with large incidents. This will allow a dedicated channel to handle a large-scale incident, while permitting other existing channels to handle day-to-day communications.

#### *Accomplishments*

FDNY has received cost estimates for the equipment needed to implement a second EMS Citywide channel. The Department also has received cost estimates for necessary facilities upgrades to handle the new equipment. The Department's technical staff has visited 28 of the 30 sites.

#### *Next Steps and Time Frames*

- By June 31, 2004, the Department will modify current procedures, protocols and staffing needs regarding the second channel.
- By July 15, 2004, a second EMS Citywide channel will be operational to support EMS radio channel deployment in the event of another multiple-casualty incident.
- To improve direct communications between on-scene Engine Companies at a CFR-D call with EMS, by April 15, 2004, a pilot program will be implemented in three Battalions to study and test an additional communications channel.

#### *Lead Bureaus*

- Technology and Development
- Communications