

# FDNY

## Counterterrorism and Risk Management Strategy



**Michael R. Bloomberg, Mayor**  
**Salvatore J. Cassano, Fire Commissioner**  
**Edward S. Kilduff, Chief of Department**

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## Letter from the Fire Commissioner and the Chief of Department

The beginning of the 21<sup>st</sup> century has proved to be a difficult, but auspicious period for the Fire Department of the City of New York. Ten years ago, like any other public agency or private organization facing the turn of the new century, FDNY had prepared for both expected and unexpected challenges that lay ahead. What no one could foresee, however, was a singular act that would unalterably change the course and direction of the Department, this City and our nation.

September 11, 2001, still stands as a milestone, marking the resilience and determined response of all Americans who stood witness to events that day. FDNY's loss of 343 brave members is perhaps the defining event in our storied 147-year history. The pride we felt in their act of immeasurable bravery remains steadfast as we look back on their rescue of nearly 25,000 fellow New Yorkers from the Twin Towers. What we also take pride in, a decade later, is the resourcefulness demonstrated by some 15,000 FDNY members whose commitment and dedication allowed us to restore this Department to its rightful position as a pre-eminent emergency response agency.

Since 9/11, FDNY has accomplished much. We have hired 6000 new firefighters, rebuilt and re-engineered our Fire and EMS field services and enhanced our communications, equipment and technology to meet the expanding service needs of 8.4 million residents and 50 million annual visitors to New York City. In addition to our daily routine of fighting fires and providing pre-hospital emergency medical care, FDNY's range of services now requires a multi-tier Fire and EMS response to large-scale events, such as earthquakes, hurricanes and/or potential terrorism attacks. This Strategy is a bridge between the substantial accomplishments FDNY has made to homeland security and emergency response in the past decade and the Department's vision to remain an agency of progress, innovation and relevance.

As you read in this Strategy, FDNY has worked tirelessly during the past 10 years to significantly enhance its planning and operational capabilities to better respond to terrorism and/or major disaster incidents. Whether it was the purchase of new state-of-the art fireboats, computerized risk analysis, optimizing fire service intelligence or improving managerial models, FDNY has had but one focus: to keep this City, its residents and its visitors safe from harm. This is our mission, our core service and our principal commitment to you, the public.

Handwritten signature of Salvatore J. Cassano in blue ink.

Salvatore J. Cassano  
Fire Commissioner

Handwritten signature of Edward S. Kilduff in blue ink.

Edward S. Kilduff  
Chief of Department



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## **I. INTRODUCTION**

The tenth anniversary of the 9/11 terrorist attacks marked a significant milestone for the Fire Department of the City of New York (FDNY), as well as the nation. A decade after the worst tragedy in fire service history and the most destructive terrorist attacks on American soil, the FDNY looked back on the substantial progress it has made in terrorism and disaster preparedness. Simultaneously, its leaders reached forward, anticipating the organizational changes necessary for the FDNY to continue executing its role as New York City's lead life-safety agency across a wide spectrum of responses. As the Department refines and clarifies its position in homeland security, the FDNY must constantly re-evaluate its goals from the past decade, as well as building on the 2007 *FDNY Terrorism and Disaster Preparedness Strategy*. The 2011 *FDNY Counterterrorism and Disaster Management Strategy* acknowledges years of preparedness improvements, as well as the Department's efforts to recalibrate its focus to better align itself with today's and tomorrow's challenges in the ever-changing world of counterterrorism (CT) and risk management.

As the FDNY weighs both today's and tomorrow's natural and human caused threats, it is important that the Department identify critical uncertainties in its environment through performance measures and evaluations. Progress will come from innovation, adaption and closer collaborations with other fire departments, along with more effective coordination with other professional disciplines across all levels of government. As the lessons gained from its deep heritage propel the FDNY's future, this document balances continuity with change. The following strategy provides a capsule of recent terrorism and disaster preparedness improvements, as well as a vision of the Department's direction within each area of focus.

| <b>Comparisons between 2007 and 2011 Terrorism and Disaster Strategies</b> |  |
|--|--|
| <b>2007</b>  | <b>2011</b>  |
| <b>Provide direction and vision</b>  | <b>Refine the vision, based on experience</b>  |
| <b>Understand a complex threat</b>   | <b>Adapt to anticipate a changing threat environment</b>   |
| <b>Trends toward centrally controlled terrorist organizations</b>          | <b>Concern over domestically radicalized terrorists, "lone wolves" and terror networks</b>                             |
| <b>Focus on National Response Plan's target capabilities list</b>          | <b>Evaluating a broader response to target capabilities list</b>   |
| <b>Network command concept introduced</b>                                  | <b>More robust networked operations: ECB; FDOC; and information-sharing (realizes 2007 plan)</b>                       |
| <b>Hazmat tiered response</b>  | <b>Department-wide tiered response to include Haz-mat Ops, Marine Ops, Collapse/Rescue and the Regional Task Force</b> |



## II. OVERVIEW

Counterterrorism, once the exclusive purview of the traditional intelligence community and the military, now includes the functions of local emergency responders. *The Intelligence Guide for First Responders*, released in March 2011 by the National Counterterrorism Center (NCTC), redefines CT with the following:

**Counterterrorism: (1) The practices, tactics, techniques, and strategies adopted to prevent or respond to terrorist threats and/or acts, both real and imputed; (2) A strategy intended to prevent or counter terrorism.**

For the national fire service, the key component of the latest CT definition is inclusion of response considerations. The Department's terrorism preparedness can minimize the effects of an attack, quicken mitigation and recovery, and better inform firefighters and emergency medical personnel of trends in terrorism. Today, FDNY counterterrorism includes intelligence production and consumption, counterterrorism-specific training, technological enhancements and improved network command structures that can better manage complex, large-scale incidents.

This strategy shares common themes with the newly released *U.S. National Strategy for Counterterrorism*, acknowledging a shifting terrorism landscape. The national CT strategy calls for "supporting community leaders and influential local stakeholders as they develop solutions tailored to their own particular circumstances." Stressing that all terrorist attacks cannot be prevented, the national document calls for a "culture of preparedness and resilience," while reiterating its support of local municipalities in its "whole-of-government" approach to meet its counterterrorism goals.

The *FDNY Counterterrorism Strategy* articulates key priorities and initiatives, ranging from an increasingly networked approach to government, including information-sharing and collaboration, to robust improvement in operations, command and technologies that are driving the Department. Homeland security training programs and education also have advanced dramatically. And the exercise-design team has refined preparedness drills, which now cover a broad sampling of the target capabilities list.

"Our terrorist adversaries have shown themselves to be agile and adaptive," according to the new national CT strategy. Despite being the largest fire department in the U.S., the FDNY can be as adaptive as the terrorists who continue to target NYC. Just as researchers have found that large metropolises promote creativity at a faster rate than small cities, the FDNY, as a virtual metropolis, can use its size, network of Department personnel and outside experts and preparedness momentum to better connect its best thinkers in various commands to spur innovation, ensuring that the FDNY continues to lead the national fire service in counterterrorism, disaster preparedness and risk management.



### III. THE THREAT

As the FDNY prepares for the threats and hazards that pose the greatest risk to NYC, much has changed in counterterrorism and disaster readiness. Al Qaeda's (AQ) operational leader has been killed, but the network has strengthened, especially in Yemen and Africa. In Somalia, for example, terrorists have organized into insurgencies, controlling vast swathes of territory and revenue sources. The loosely affiliated Islamist terror network has targeted both local and international interests and continues to seek global media attention through its attacks, making NYC a perennial target.

In addition to organizational shifts, terrorists have evolved their attack methods. In the U.S., domestically placed terrorists (who may or may not be American citizens), along with a rise in homegrown radicalization, are growing concerns. At the operational level, the profile of terrorists is as wide as it has ever been, which now includes women, children (sometimes against their will) and insiders such as the Fort Hood shooter. Methods are more varied than ever before. Since the Mumbai terrorist attacks in November 2008, international terrorists now combine the use of fire with firearms. "Terrorist organizations or affiliates may seek to acquire, build, and use weapons of mass destruction (WMD)," PPD-8.

***Mumbai, the New Paradigm--***In November 2008, 10 operatives from the Pakistan-based terrorist group Lashkar-e-Taiba (LeT) executed a series of swarm-like attacks in Mumbai, killing almost 200 people and wounding 300. The group targeted a mix of critical infrastructure and high-profile, soft targets, including a railroad terminal, hotels, a café and a Jewish center. During the three-day ordeal, firefighters, emergency medical crews and police officers faced automatic firearms, grenades/IEDs and incendiary weapons.

The 2008 Mumbai attacks are significant on many levels. What is now called the Mumbai-style attack method--mobile attackers striking targets through an innovative weapons mix of firearms, explosives and fire--has changed the way municipalities across the globe prepare for terrorist attacks by lowering the bar on what is required for terrorists to carry out successful attacks. The Mumbai attacks introduced a new model for terror strikes, similar to other forms of convergence, such as flash mobs and ad hoc protests enabled by social media and wireless technology.

As a "spectacular" event covered widely by international media, especially the photographs and videos of fire and smoke pouring out of the Taj Hotel, the success of the Mumbai attacks may lead to more terrorist events in the future, making all Western targets more attractive, especially in NYC. There are several geographic, cultural and economic similarities between New York and Mumbai, suggesting that a similar attack may occur in NYC, reminiscent of the foiled 1993 Landmark Plot, which was meant to be a follow-up attack after the WTC bombing earlier that year, targeting the United Nations, the Lincoln and Holland Tunnels and the George Washington Bridge. For Mumbai-style attacks, the implications for emergency responders are evident, but many agencies have been slow to adjust to this emerging threat.





In the fall of 2010, European security officials warned of terror plots in France, Germany and the United Kingdom, with the possibility of strikes in the U.S., as well as using assault-style siege and barricade methods, as seen in Mumbai 2008. At about the same time, a paper by the Bipartisan Policy Center titled "*Assessing the Terrorist Threat*," declared that terrorist threats are "more complex and more diverse" than before as terrorists adapt tactics to available weaponry. In December of last year, John Arquilla, a well-known military theorist at the Naval Postgraduate School, wrote an editorial column claiming that the U.S. is unprepared for a Mumbai-style terrorist attack. Arquilla, who is considered an authority on swarming methods, said that it is likely that small-scale assaults based on the Mumbai model will continue. "I recommend the notion of building a swarming capacity of our own," Arquilla wrote. What is most relevant to the FDNY related to Mumbai-style attacks is the intentional use of fire as weapons by terrorists.

***From AQ to its Affiliates***--The death of Usama bin Laden weakened the core of al Qaeda. However, most recent plots against the U.S. and its allies have been planned by the wider group of AQ affiliates. AQ's new leader, Ayman al-Zawahiri, is expected to shift attacks to American targets overseas, which are easier to execute, but the reports may be misleading. AQ affiliates, with no direct accountability to AQ proper, may still seek attacks on Americans, directly affecting U.S. emergency responders. A weakened AQ may not necessarily weaken the terror network. In fact, OBL's death may inspire like-minded international terrorists to fill the leadership vacuum or splinter off to form more violent iterations. Lastly, instantaneous electronic communication has enabled AQ's various groups to better align their respective missions.

With a common anti-West ideology, AQ groups in the Middle East now are forming stronger alliances in Africa, most significantly with al Shabaab, the terror group based in Somalia. Al Shabaab, which has pledged loyalty to AQ and its affiliates, has historically confined attacks to Somalia, Kenya and Uganda, but it may execute attacks on the West. An investigative report on al Shabaab recruitment and radicalization strategies within the U.S. was released in July 2011 by the U.S. House of Representatives Committee on Homeland Security. The key finding of the report was the danger of Americans with links to al Shabaab, which may include non-Somali Muslim extremists, returning to the U.S. to carry out attacks. To reflect the group's shift from mostly youth-based to a more mature membership, al Shabaab is now called Imaarah Islamiya.

***AQAP***--Of the associated groups, Al-Qaeda in the Arabian Peninsula (AQAP), based in Yemen, appears to be the most active AQ affiliate targeting the U.S. As a terrorist safe haven, Yemen has certain advantages, such as ease of travel and an extremely weak central government. AQAP is linked to several terror plots, including the Christmas bomber, the cargo plane plot, the Fort Hood shooting and the Times Square car bomb attempt.

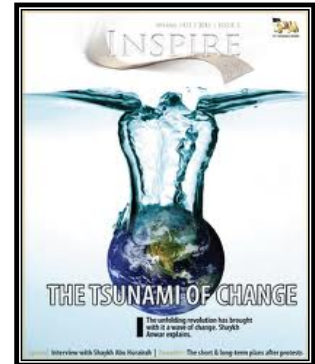
The September 2011 drone strike that killed AQAP's clerical leader, Anwar al-Awlaki, has weakened AQAP. Al Awlaki, who spoke both English and Arabic, regularly posted charismatic sermons on Jihadist internet sites; as a recruiter, al-Awlaki was considered





extremely dangerous. Security officials have not yet determined how Awlaki's death will affect AQAP, but a dangerous voice against the U.S. has been silenced.

**Inspire**--Published by AQAP, *Inspire* is an electronic, English-language periodical (first released in July 2010) for like-minded Jihadist readers in the West. According to experts, *Inspire's* main goal is to spur action through individual jihad as part of the wider homegrown radicalization movement and to incite more attacks in the U.S. and Great Britain. Articles address tactical issues, such as IED assembly, firearms maintenance and covert movements. Other themes have included a call for strict practice of Sharia law and the Koran, a shift to frequent, small-scale attacks to bleed the West (called "Operation Hemorrhage") and the importance of individual jihad. It was recently confirmed that Samir Khan, who was killed during the same drone strike that eliminated al Awlaki, was the editor and publisher of *Inspire*. Khan, who grew up in the borough of Queens in NYC and on Long Island during his teenage years, used his knowledge of American culture and landmarks to encourage fellow jihadists to commit terrorist attacks in the U.S.



**The Homegrown Threat**--Another development is the emergence of locally placed or grassroots terrorists, whose methods may lack the sophistication of those carried out by a more organized terror group. These operatives usually are not technically advanced, but they exploit their knowledge of Western society, its security norms and its vulnerabilities. Even with limited resources, individuals (or even small, isolated groups) can still inflict destruction and loss of life, in addition to economic disruptions. The national CT strategy stressed the need to "focus on addressing the near-term challenge of preventing those individuals already on the brink from embracing al-Qa'ida ideology and resorting to violence." While analyzing terrorist trends, a high-ranking U.S. intelligence official said that the number and pace of attacks was higher in 2010 than in any other year and he expects that trend to continue.

Homegrown threats can come from attackers distorting a wide range of political or religious ideologies. In 1995, the bombing attack on the Alfred P. Murrah federal building in Oklahoma City was carried out by two anti-government extremists. In July 2011, Norway suffered twin attacks from a local, right-wing extremist, who is a native Norwegian. He first detonated a bomb outside a national government building and then traveled to an island retreat for youths affiliated with the ruling Labor Party, drastically changing his attack method from explosives to active shooter.



**Times Square Car Bomb Attempt--**The most notable terrorism-related event to occur in NYC since 9/11 was the Times Square car bomb attempt in May 2010 by Faisal Shahzad. Shahzad, an immigrant from Pakistan living in Connecticut, rigged his SUV as a vehicle-borne improvised explosive device (VBIED) and parked the car on a side street near the Times Square theater district that attracts thousands of pedestrian travelers. The device ignited, but failed to explode. As FDNY units approached what they thought was a routine car fire, based on dispatch information, the first-to-arrive company officers suspected that "something wasn't right" and ordered their members and pedestrians to stay a safe distance away. This incident proves the continued threat to NYC, the validity of FDNY terrorism awareness initiatives and how the decisions of emergency responders can drastically alter an incident's outcome.



**NYC Vulnerability--**After two large-scale attacks and several disrupted plots in 18 years (1993-present), NYC continues to be an attractive target for terrorists. The City's cultural and economic significance remains and today, most of the world's top media companies have headquarters in Manhattan. With the media attention that surrounded the tenth commemoration of the World Trade Center attacks, terrorists are more compelled than ever to strike NYC, as confirmed with recent reports from intelligence gained from the raid on OBL's hideout in Pakistan and other analysis. High-profile events in NYC will continue to attract terrorists.

Threats come both from within and outside U.S. borders. In September 2009, Najibullah Zazi drove from Denver to carry out an IED attack on the NYC subway system in coordination with two men from Queens. The men were arrested before they could execute their plans. The thwarted plot was said to be the first discovery of an AQ cell operating in the U.S. since the 9/11 attacks. Lastly, three high-profile terrorism cases were tried in federal courts in lower Manhattan in 2010, which also may be used as motivation for future attacks.

**Natural and Manmade Disasters--**Disaster readiness is one of the Department's top priorities. "Natural hazards, including hurricanes, earthquakes, tornados, wildfires, and floods, present a significant and varied risk across the country," according to PPD-8. The FDNY prepares for an array of low-probability/high-impact events, such as hurricanes, earthquakes, power outages and pandemics. Due to its geography and climate, NYC is vulnerable to a direct strike from a tropical storm or hurricane. As an archipelago spanning 600 miles of coastline, much of the five boroughs sit at sea level, offering inadequate buffers to stop the storm surges. A lesser-known danger is NYC's seismic activity (minimal in comparison to the West Coast) as several fault lines run under the City. Also, the area is vulnerable to regional tremors, as seen in late August



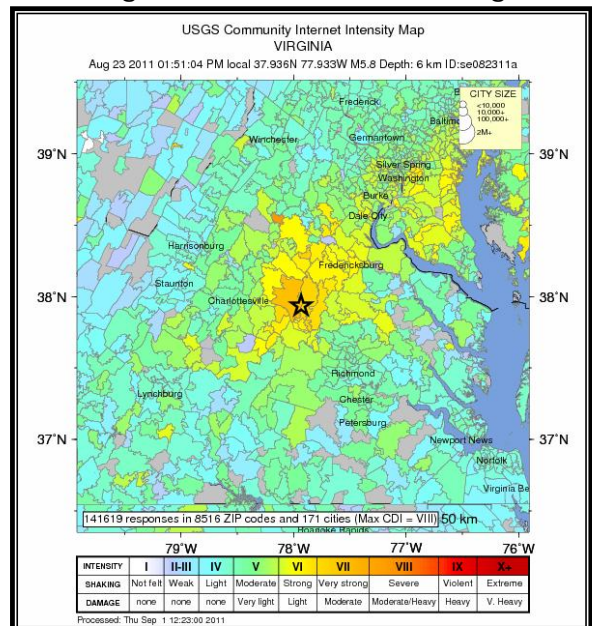
with the Virginia earthquake. Lastly, the potential for biological outbreaks has not waned; influenza strains mutate year after year, which may cause global influenza pandemics to become more deadly in the near future.

**Hurricane Irene**--At 9:00 a.m. on August 28, 2011, Hurricane Irene, which had just been downgraded to a tropical storm, struck Coney Island with sustained winds of almost 60 mph. FDNY units faced extreme flooding, downed electrical lines, high winds, hospital evacuations and trapped persons across the five boroughs. Preparations made before the event were just as important as actions during the operational period. An updated hurricane and severe storm procedure provided field units with a road map in the days before the storm.



Improvements detailed in the *Marine Operations Strategy* (2010) were realized in the FDNY response to the tropical storm, which included 61 rescues in a flooded area of Staten Island by rapid response fireboats. Lastly, the FDNY response was part of a wider NYC deployment involving dozens of agencies, including the Mayor's Office of Emergency Management (OEM), Department of Environmental Protection and utility companies.

**Virginia Earthquake**--As stated in the Threats section above, part of disaster readiness in NYC is exploring unlikely, but possible, large-scale events, including those caused by seismic activity. While it surprised many on August 23, 2011, NYC and much of the Northeast experienced tremors from a 5.8 earthquake. The quake struck outside Washington, D.C., exceeding the estimated magnitude (4.8) of the last significant earthquake recorded in the region in 1875. Fortunately, the recent quake caused minimal damage, but led to building evacuations, major airport closures and a sharp spike in emergency dispatch call volume, affecting FDNY unit availability citywide. During the past hundred years, the area around NYC has experienced small quakes due to a network of faults, including the 125th Street and Dyckman Street Fault Zones. The most recent event served as a reminder that the region is not invulnerable to seismic events.







## CORE CAPABILITIES





## **IV. AREAS OF FOCUS**

The National Preparedness Goal defines success as “a secure and resilient Nation with the capabilities required across the whole community to prevent, protect against, mitigate, respond to, and recover from the threats and hazards that pose the greatest risk.”

--PPD-8

### **A. Prevention**

Prevention includes those capabilities necessary to avoid, prevent, or stop a threatened or actual act of terrorism--PPD-8

***Network Fusion***--As the homeland security intelligence community evolves, the FDNY has proposed to complement the fusion center model with a networked intelligence architecture called *network fusion*. In an effort to make homeland security actors more interconnected, network fusion is an adaptable organizational design that encourages expeditious information-sharing and collaboration among several actors across multiple disciplinary and technological channels. Network fusion links law enforcement, the fire service, health care, transportation systems, environmental protection and other emergency systems, providing a more efficient platform for connecting disparate organizations and their unique perspectives.

Network fusion creates a framework that fuses information from multiple sources and does not require members to be co-located permanently. The networked approach can provide a comprehensive picture of the threat environment to lessen potential system failure. For instance, with the current fusion center’s hub-and-spoke model, any separation from the main link, through technical or physical causes, would sever the information conduit. With network fusion, multi-channel networks connect and fuse information from many different sources, building speed and resiliency.

***Intelligence Production***--During the past four years, the FDNY has broken new ground in fire service intelligence, spearheading initiatives from non-traditional intelligence consumers and producers, such as the fire service. In April 2010, an appendix to “Baseline Capabilities for State and Major Urban Area Fusion Centers” was released. Called “Fire Service Integration for Fusion Centers,” it provides recommendations on how urban fusion centers can effectively integrate the fire service into their operations, similar to the work that already had begun. In connection with the appendix’s release, Department of Homeland Security Secretary Janet Napolitano personally commented on the importance of intelligence for firefighters, calling them “the face of homeland security.” The secretary added that the fire service is critical in identifying threats, uncovering vulnerabilities and exchanging information and intelligence with the greater homeland security community.

The FDNY has expanded its intelligence role beyond consumer to producer, tailored to the direct needs of firefighters and emergency responders. Reports are released in several forms and timetables. The FDNY’s flagship intelligence product, the *Watchline*, is a weekly newsletter covering the pertinent stories and topics in homeland security,



primarily emergency response. The *Watchline*, which sets the standard of fire service intelligence, is distributed both internally and externally, reaches 100 agencies from all levels of government and more than 1000 direct subscribers outside the FDNY. In four years since its creation, it is estimated--due to extensive email forwarding--internal and external weekly readership is more than 40,000 and even includes international consumers. The Intelligence section has extended its product offerings with PowerPoint presentations called *Fireguards*, which expand on a specific topic or event, such as the FDNY definition of a Mumbai-style terrorist attack, combustible metal fires, chemical suicides, chlorine bombs and the Times Square car bomb incident in 2010. In the past four years, *Fireguards* have become more nuanced, making the products more relevant for a wider audience of emergency responders and related professionals.

Conceptually, the April 2011 *Fireguard* that introduced the FDNY definition of a Mumbai-style terrorist attack was one of the most original PowerPoint intelligence products. Since late 2008, media coverage and security experts have referred to "Mumbai-style" attacks to describe such a broad array of active-shooter attack scenarios that the term lost much of its meaning. Recognizing that a definition was needed that captured the true fundamentals of Mumbai-style attacks, the FDNY offered the national emergency responder community an expanded interpretation of this new threat. The essential component of the definition is recognition of the intentional use of fire as integral to this terrorist method, which greatly confuses and delays an emergency response, while garnering more sustained media attention. The FDNY took a loosely defined concept in need of refinement and turned out a product that is essential to understanding an emerging trend in terrorism. With the clarity of FDNY's definition, references to Mumbai-style attacks now have operational significance to the fire service and law enforcement. A recent intelligence assessment from the Federal Bureau of Investigation (FBI), titled "Characteristics of Mumbai-Style Attacks," released in August 2011, which cites the FDNY Mumbai *Fireguard*, is one of the first law enforcement reports to weigh the deliberate use of fire as a weapon in these attacks.

**FDNY Definition of Mumbai-style Terrorism:**

- ▶ **Multiple, highly-mobile active shooters**
- ▶ **Multiple targets**
- ▶ **Combined weapons (firearms, explosives, fire)**
- ▶ **Deliberate use of fire to confuse responders, attract media and maximize casualties.**

Other intelligence products are released as needed, including those that provide timely updates to the Department on breaking events, called Terrorism (or Information) Awareness Alerts. Recent alerts include the July bombing and shooting attacks in Norway, a warning on possible attacks on Independence Day, the significance of OBL's death, the 10<sup>th</sup> anniversary of the 9/11 attacks and awareness of the Occupy Wall Street protests. The intelligence section refocused its efforts on internal, online content to coincide with the release of a new FDNY intranet browser and archive system, called DiamondPlate, which is meant to be the primary online information source for members in every firehouse and EMS station.



**Intelligence Collaborations**--As the Department prioritizes collaboration, the intelligence section of the Center for Terrorism and Disaster Preparedness has enhanced its participation in local, regional and national homeland security networks. Intel staff members routinely engage local and national intelligence providers, including the National Operations Center (NOC), the New York State Intelligence Center (NYSIC) and the NYPD Counter Terrorism Division. FDNY intelligence representatives meet weekly with Nassau County Police and the United States Coast Guard. In recognition of the Department's active participation in the intelligence community, the National Counterterrorism Center (NCTC) has requested that an FDNY analyst be assigned to its Interagency Threat Assessment and Coordination Group (ITACG) in Washington, D.C., starting in 2012.



Intra-agency intelligence exchanges sometimes are held at either the Secret or Top Secret security clearance levels and the FDNY leads the fire service with the number of members holding clearances, opening more dialogues in the intelligence community, including direct links with the DHS Office of Intelligence and Analysis. In addition, the Department has liaisons with the NYC Police Department (NYPD), the FBI and its Joint Terrorism Task Force (JTTF), as well as a close relationship with the Lower Manhattan Security Initiative (LMSI).

As the emergency responder intelligence network continues to organize, the FDNY is well positioned to become one of the system's lynchpins or critical nodes. The Department has the in-house expertise to host seminars, lectures and discussions on fire service intelligence, how emerging trends in terrorism affect emergency response (such as Mumbai-style attacks) and disaster-related preparedness. Also, the FDNY will harness building and infrastructure information databases as it expands offerings in target hazard and risk identification, providing an important asset to the Department and its partners. In the future, information-sharing among all city, state and federal agencies would be greatly enhanced through a new concept called network fusion.

## **B. Protection**

Protection includes capabilities to safeguard the homeland against acts of terrorism and manmade or natural disasters--**PPD-8**

**CTDP**--As it strives to protect NYC citizens and its visitors, the FDNY has created a terrorism and disaster preparedness nexus. Opened in the summer of 2004, the FDNY Center for Terrorism and Disaster Preparedness (CTDP) has evolved into a national leader in intelligence, exercise design, WMD readiness, technology enhancements and strategic initiatives. Four years after the first FDNY counterterrorism strategy in 2007,





the Center's research, strategies, plans, exercises and leadership program have improved the Department's all-hazards approach and influenced national policies. Situated at Fort Totten in Bayside, Queens, CTDP offers a secure location to formulate sensitive and confidential documents, conduct exercises and seminars and collaborate with other agencies.



One of the Center's functions is to help coordinate FDNY response planning. Through CTDP, Emergency Response Plans (ERPs) are released that augment or replace current procedures, providing general guidance and detailed tactical direction in the event of a terrorist attack, natural disaster or a large-scale accident. ERP topics vary widely, such as: hazmat; chemical attacks in subways; biological, radiological and nuclear responses; collapse rescue; and under-river tunnel operations. Also, an ERP on operations at explosive or incendiary incidents was released in September 2011.

In the future, the CTDP will, more than ever, strive to offer a space for innovation to its participants, one of the few places in the nation where firefighters can brainstorm with singular focus on emerging trends and gaps in terrorism and disaster preparedness, as well as risk management. CTDP will continue to challenge its thinkers to cross cognitive borders as they survey a wide range of interdisciplinary research. The Center's members will continue to synthesize their own original thoughts with the best ideas from FDNY leaders and outside sources with the goal of improving Department and national policy.

**Safety Command**--The goal of Safety Command, to minimize risk and injury to FDNY personnel through advances in cultural change, leadership, supervision and personal responsibility, is woven into the fabric of every function of the Department. Safety Command's motto, "protecting those that serve," is more than a catch phrase. It is a philosophy that captures the essence of Safety's mission, which is even more critical during the chaos and uncertainty associated with large-scale responses caused by natural disasters, accidents or terrorism. Many projects originating from Safety Command are steering important advances in the FDNY, related to equipment improvements (mainly through the Research and Development unit), technology and communications upgrades, safer procedures and, most importantly, changes in the way FDNY members think and perform to better align risk to anticipated gains.

In the past few years, two initiatives brought Safety Command most visibly into firehouses and classrooms; namely, the injury and accident reduction programs. The Injury Reduction Program, which ran from June to December 2008, brought company officers from Safety Command into firehouses 1400 times in an attempt to reach all groups on the work chart. Visits included a video of interviews from injured firefighters and affected family members, called "Courage to Be Safe," and a PowerPoint



presentation, followed by a discussion. According to the Safety Command, the FDNY has averaged about two firefighter deaths per year since the early 1980s (excluding 9/11) as it ultimately strives to bring that number as close to zero as possible. In the past 10 years, firefighter fatalities are down 32 percent from the 1990s (again, excluding 9/11), owed partly to Safety Command initiatives.

The Accident Reduction Program followed next—from May 2009 to January 2011. Safety Command representatives visited newly promoted students in the Captains' Development Course and the First Line Supervisor Training Program (FLSTP) for lieutenants, where company officers are instructed through a PowerPoint presentation and discussion on responsibilities and liabilities when supervising or operating a Department vehicle. Since the Accident Reduction Program was started, along with the Modified Response Program that slows responses to less exigent emergencies, accidents and injuries that occur en route are down considerably. In the future, Safety Command plans to update and reintroduce the injury and accident reduction programs.



As part of a wider movement in the FDNY, Safety Command conforms to the tiered response system, scaling its deployment to incidents, as necessary. For instance, battalion chiefs are trained as safety officers and can function in that role until the Safety Battalion arrives. On multiple-alarm fires or emergencies, the Chief of Safety Command or his executive will dispatch. In essence, the Safety Command response can be adjusted to match incident conditions and dangers. Looking ahead, Safety Command will continue initiatives that change the culture of the FDNY to better balance risk/reward analysis, embodied in the phrase "risk a life to save a life."

**Exercise Design--**Since the last strategy, Exercise Design (ED) output has grown substantially, including intra-/inter-agency



tabletops and functional and full-scale exercises. The primary function of an exercise is to evaluate preparedness related to a specific scenario type related to terrorism or disasters within the Citywide Incident Management System (CIMS). ED works closely with Department borough and division commanders and outside partners, such as DHS, NYC OEM, the Centers for Disease Control and Prevention (CDC) and other subject matter experts (SMEs), in exercises that simulate natural, accidental or terrorist events.



One of the FDNY's most notable exercise series is one partnered with the United States Military Academy at West Point and held at the FDNY Operations Center. For the past three years, the FDNY has hosted West Point cadets enrolled in the Homeland Security and Defense course. Students set up a simulated operation center under the guidance of FDNY officers. Scenarios have included a 10-kiloton nuclear detonation, an earthquake in upper Manhattan and an anthrax release in Grand Central Terminal. The simulations are designed to expand cadets' analytical and leadership skills in a stressful decision-making environment, while managing a large-scale emergency.

As the scope and relevance of its exercises have grown, the Exercise Team has increased its number of officers certified through the Master Exercise Practitioner (MEP) program at the National Fire Academy in Emmitsburg, Maryland, which instructs state and local public policy officials in a three-week credentialing course. After they are certified, members manage exercises that evaluate the Department's capabilities to respond to terrorist attacks, as well as natural- and human-caused disasters. Lessons gained from these exercises are reflected in after-action reports/improvement plans, which influence FDNY operations and protocols. The Department currently has 23 MEP-trained personnel and plans to expand that number.



**Education--**FDNY education and training initiatives related to terrorism studies and leadership have progressed steadily since 2007. High-level education is offered now to select Department officers in a variety of ways, including a master's program, three executive leadership courses and graduate-level instruction, run jointly with the U.S. Military Academy at West Point. Also, through symposiums organized by

the FDNY and the FDNY Foundation, annual seminars are held that attract a diverse audience representing the fire service, law enforcement, the military and health services. In addition, chief officers have completed executive programs and a master's degree in public administration from Harvard's Kennedy School of Government.

To date, 22 FDNY Fire and EMS officers have earned Master of Arts degrees in security studies from the Center of Homeland Defense and Security (CHDS) at the Naval Postgraduate School (NPS) in Monterey, California. CHDS, considered the premier homeland security program in the nation, helps students develop critical thinking and leadership and policy skills during a rigorous 18-month program that combines quarterly visits to NPS with extensive web-based education. For each student, the program culminates in a thesis addressing a particular issue in his or her field. Theses from FDNY graduates touch on topics related to the fire service, including leadership during a crisis, fire service intelligence, Mumbai-type attacks, incendiary weapons, and use of robotics in rescue and collapse operations. Also, the CHDS Executive Leadership





Program, designed for senior officials in local, state and federal government, has four FDNY graduates, including Chief of Operations Robert F. Sweeney.

The FDNY continues to collaborate with West Point's Combating Terrorism Center (CTC) to offer Department officers instruction in intelligence and counterterrorism studies. To date, the FDNY has graduated 230 members from the West Point Counterterrorism Leadership Program (CLP), which is a four-month-long class on the causes, ideologies and methods of terrorism, taught by military instructors and senior FDNY chief officers. All students are required to write policy papers to complete the program; a few class memos have steered Department policy. Topics have included vulnerability of waterfront chemical storage sites, points-of-distribution (POD) centers for antidotes of biological weapons and the need for an updated radiation/nuclear response plan.

In May 2011, another 16 Fire and EMS chief officers completed the six-month-long FDNY Officers Management Institute (FOMI) course, bringing the total number of graduates to 150 officers. FOMI provides Fire and EMS chiefs with a customized curriculum of leadership and management training. FOMI culminates in student projects that are meant to influence Department policy and procedures. This year's graduates made presentations to Fire Commissioner Salvatore J. Cassano and Chief of Department Edward S. Kilduff on topics such as evaluating protective equipment, improving pre-hospital medical care for the bariatric (obese) patients and creating a priority list for FDNY grant-funded projects. The Institute, funded by the FDNY Foundation, is offered by Columbia University's Picker Center for Executive Education and taught at General Electric Co.'s Jack Welch Executive Training Center in Crotonville, New York. FDNY will continue to improve its FOMI program with new speakers and courses. In addition, a post-FOMI Advanced Leadership Course (ALC) provides a forum for FOMI alumni and other selected members to continue to learn new leadership and management strategies.

In an effort to widen its reach in the homeland security network, the Department hosts FDNY Symposiums at its Training Academy, in coordination with the FDNY Foundation, to an international mix of emergency responders and other public and private professionals. The symposiums are opportunities to share the Department's best practices and procedures. One lecture series from March 2010, titled "Fires and Emergencies," included a talk on new terrorist trends. Other topics have included safety, incident management and innovative technologies created to improve firefighter accountability. Fire departments from across the globe (Miami, Chicago, Hong Kong, London and Montreal, among others), as well as representatives from international banking, security firms, law enforcement and the U.S. Department of Defense, attended the March lecture, attracting more than 300 people.

Since the release of the first strategy, the Department began a terrorism symposium series to educate the FDNY and its partners at the highest level of scholarship, attracting universally recognized experts in terrorism and emergency response. In March 2009, the FDNY hosted two important events. The first was a symposium on the London Metro bombings in 2005, led by top terrorism expert Bruce Hoffman from Georgetown University, who addressed an audience of FDNY members and regional law



enforcement about the overall threat environment, the radicalization process in Leeds, England and the foiled 2006 transatlantic aircraft plot, stressing the importance of learning from actual terrorist attacks as well as unrealized plots. And, in the same month, a symposium, titled "CBRN Terrorism: Improvised Nuclear Device Briefing," was held at the FDNY Training Academy with speakers from Lawrence Livermore National Laboratory, Brookhaven Laboratory and FDNY Haz-Mat Operations. Topics included building and infrastructure, workplace safety, casualty estimates, and coordination with health care providers.

In 2010, FDNY ran two screenings of the HBO film, "Terror in Mumbai," through its symposiums. Attendees at the first screening were hosted by Columbia University's Institute of War and Peace Studies. The second viewing was offered to students in the Department's Counterterrorism Leadership Program (CLP). At both events, panelists represented the military, intelligence, academia and the media. Notable speakers included U.S. Ambassador Michael Sheehan and John Miller, a former journalist who is currently an associate deputy director for the Director of National Intelligence (DNI).

**Training**--The Bureau of Training, the linchpin of all instruction in the FDNY, has added terrorism and disaster preparedness to the wide composite of topics taught in the classroom and through hands-on instruction. The Bureau of Training ensures that all FDNY members--from probationary firefighters, EMT/paramedics, company officers to Chiefs--are adequately trained to meet the ever-shifting demands of emergency response in a diverse urban setting.



As the Bureau has institutionalized counterterrorism training in its emergency response curriculums, instruction is designed to heighten situational awareness, better prepare field units for hazmat and emphasizes the threat of secondary or diversionary attacks. Refresher training is adjusted, as needed, to meet new dangers and deficiencies, while guarding against complacency. These initiatives will continue to evolve, based on new threats.

Providing all members with the appropriate training in firefighting, medical care, search and rescue, counterterrorism and incident management remain a top priority. Additional training programs that enhance specific capabilities will continue, including baseline and advanced hazmat training for Fire and EMS members, as well as technical rescue training for hazmat paramedics. Another key development is an expanded Captains' Command Course to provide newly promoted captains with strategic management and leadership techniques for the new challenges of company command. As part of the course, captains receive detailed training in terrorism response through lecture and computer simulation.

Probationary Firefighter School has extended the duration of training and changed its curriculum to meet the Department's counterterrorism preparedness needs. Today,



modules include the International Association of Firefighters (IAFF) WMD program, as well as an extended peace officer and hazmat instruction, with an emphasis on safety and metering at radiological events. For field units, skill refreshers run by Training Competency Units located at the Academy are supplemented by Mobile Training Units, which test essential skills in the field to ensure adequate proficiency. Notable programs include evaluations on Personal Safety Systems (rope bailouts), mask confidence and the life-saving rope. Competency training addresses a mix of frequently and infrequently used essential skills.

In the past year, Annual Education Day, attended by all firefighters and company officers, includes a terrorism awareness lecture, providing a convenient platform to teach a general overview of current terror threats. The two-part module balances lecture and hands-on experience designed to increase situational awareness. Replicas of illicit laboratories (explosive, chemical/drugs and biological) are mocked up, allowing students to expedite lab identification in the field.

Chief officers' training includes an additional 24 hours of terrorism-specific instruction, offered to newly-promoted Battalion Chiefs, blending command and control scenarios with lectures. The scenarios range from communications and high-rise fires, to an explosion in a subway. In addition, select battalion chiefs in Manhattan have been trained to act as Transit Liaison Officers. Offered jointly with the Metropolitan Transportation Authority (MTA), the program ensures a constant communication link between agencies at rail emergencies.

The structures at the Bureau of Training have been altered to better meet the needs of terrorism response, including one building conversion to a high-rise fire simulator, the creation of bus bomb and subway drills using real vehicles and equipment and mazes of concrete and wood inserts to simulate confined space or collapse incidents, which could be the result of a terrorist bomb detonation. With the modifications, advanced skills and tactics are incorporated into more complex and realistic firefighting and terror-related scenarios.

In compliance with the National Incident Management System (NIMS), the FDNY has adopted the Incident Command System, integrating ICS into everyday planning, organization and incident operations. Today, all FDNY Fire and EMS personnel receive ICS 100, 200 and 700 training. Fire company officers are trained in ICS 300 and all FDNY chiefs attend the ICS 400 and 800 series. Employment of ICS and a unified command structure greatly reduce information gaps among responding agencies.

Three years ago, the Department began integrated bus bomb response training, developed by various FDNY bureaus and commands. Today, the program is offered in two parts: a lecture with associated PowerPoint and a highly realistic, hands-on training scenario where field units simulate operations at a bus bombing with multiple casualties and possible secondary devices.

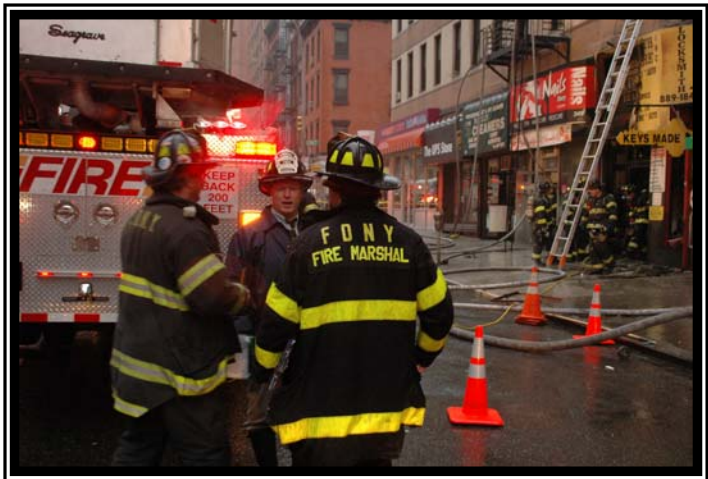
The Bureau of Training has seamlessly integrated terrorism and disaster preparedness into its core teaching functions. The level of instruction at the FDNY Fire Academy is



stronger than ever, regardless of the rank of the student, topic complexity or the method in which the curriculum is presented (classroom, computer simulation, scenarios, hands-on, etc.). As firefighters constantly need instruction in how to operate and make decisions in stressful, life-threatening situations, training is a process that continues for members' entire careers.

**Fire Investigations--**The Bureau of Fire Investigation (BFI) expanded its core investigative mission since 2001 and in the four years since the last strategy, it has further improved collaboration and security. Since July 2002, Fire Marshals have been assigned to the FBI Joint Terrorism Task Force (JTTF) and today, they contribute to many high-profile terrorism investigations. The two permanently assigned fire marshals now participate in the Hazmat Response unit, which is an arm of JTTF that investigates suspicious or unusual hazmat releases that may have a criminal or terrorist cause, as well as the JTTF WMD Squad, an investigative team that tracks possible plots to use hazmat as a weapon.

Since 2007, BFI has expanded security, including force protection at large-scale disasters. Based on a recommendation from BFI, FDNY Incident Management Teams (IMTs), which deploy regionally or nationally through FEMA, added Fire Marshals for security in 2009. IMT force protection can begin at the onset of a deployment as some Fire Marshals connected with the IMT have received Law Enforcement Officer (LEO) Flying Armed Training through the Federal Air Marshal Service (FAMS). At scenes, Fire Marshals ensure the safety of participating members, who may support operations in remote, isolated regions. Security includes improvements to Incident Command Posts (ICPs)/base camps, tighter access controls and force protection. In addition, fire marshals serve as liaison officers with other law enforcement entities, improving security and information-sharing for IMTs. In the future, Fire Marshals plan to add an expanded intelligence function to IMTs, as well as making further improvements to site security.



In general, BFI initiatives hardened building security, including improved identification cards for Department members and civilians, new biometrics scanners and an increase in closed-circuit televisions (CCTV). In the future, BFI will explore more initiatives in terrorism and disaster preparedness. Fire Marshals will expand on relationships with law enforcement and intelligence agencies, and by playing a more active role in the security of uniformed personnel and civilians, both at the scenes of incidents or in the workplace. With BFI's ability to expeditiously investigate a wide range of incidents (arson, hazmat, collapse, etc.), along with its inclusion in the wider law enforcement





network, the bureau will continue to give incident commanders, as well as FDNY's top leaders, the information they need to make the safest decisions possible.

**WMD-**Many terrorism experts claim that terrorists are shifting to simpler attacks, but that does not diminish the threat of weapons of mass destruction (WMD). The WMD section at the CTDP has two main goals: to coordinate and steer strategy and tactics related to hazardous materials incidents from the local to national level; and to share newly released chemical, biological, radiological, nuclear and explosive (CBRNE) research to appropriate experts and leaders within the Department.

To improve the FDNY Radiological Response Plan and citywide procedures, members of the WMD section have participated on several national committees focused on radiological dispersion devices (RDDs) and improvised nuclear devices (INDs). These committees include the National Council of Radiation Protection and Measurements Reports and the American National Standards Institute (ANSI).

Also, FDNY participation in the DHS Secure the City Rad/Nuc program through CTDP, Haz-Mat Operations and the Marine Division has improved coordination with regional law enforcement and other partners. And the FDNY currently is working with the NYC Department of Health and Mental Hygiene (DOHMH) to collect and share radiological data during radiation emergencies for use in geographic information systems (GIS) analysis. The FDNY has improved its



detection capacity with added radiological meters that can better alert emergency responders of a possible dirty bomb or other radiological event, carried by all officers.

Regarding initiatives related to chemical weapons and releases, FDNY members have worked with the National Institute for Occupational Safety and Health (NIOSH) to develop standards for CBRNE-rated firefighting breathing apparatus and with the U.S. Department of Defense Technical Support Working Group (TSWG) to test standard turnout ensembles against the permeation effects of chemical warfare agents and common industrial chemicals, as well.

WMD staff members have worked with scientists at the national level to develop minimum performance standards for biological detection instruments in both laboratory settings and field environments. These efforts support quality performance in DHS Bio Watch environmental monitors deployed in NYC and other major cities, as well as the Bio Detection Systems (BDS) working in several U.S. Postal Service sorting locations in NYC. In the future, efforts will continue to attract commercial equipment vendors to submit their field detection instruments for validation testing.



Without these tests, emergency responders cannot be guaranteed of reliable field bio detection equipment. Preparations for biological attacks or events have been equally robust. Due to the combined efforts of FDNY Haz-Mat Operations, CTDP and the Bureau of Health Services, along with the United States Marine Corps' Chemical, Biological, Incident Response Force (CBIRF), the Interagency Board successfully pushed for chemical protective ensembles that are more maneuverable than traditional "Level A" suits, which now are carried by FDNY units performing hazmat duties.

Research and policy adjustments related to explosives' WMD has focused on the recently-released FDNY emergency response plan on explosives and incendiaries. The document complements a list of ERPs that have been added to Department procedures in the past few years. Policy-level WMD preparedness initiatives must be supported with compatible hazmat training, procedures and equipment upgrades.

## C. Mitigation

Mitigation includes those capabilities necessary to reduce loss of life and property by lessening the impact of disasters--**PPD-8**

By attempting to best understand the threat environment, FDNY mitigation efforts aim to minimize the long-term effects of terrorism and disaster response. As mitigation inherently spans a long duration, it links the other core capacities (prevent, protect, respond, recover). As risks are reduced, mitigation suggests organizational resilience, making the Department stronger and more flexible. Mitigation is only effective when an agency understands the threats and hazards it faces, which are only understood through proper risk assessment. The four initiatives below are examples of how the FDNY has better managed risk through networked incident command, understanding trends in terrorism, treatment modeling for biological attacks and improved disaster planning.

**Network Command**--Improved accountability will make the chaos of fires and other incidents more manageable, increasing the safety of members. The FDNY always has strived to have its technology better support Department operations, but current projects in command and firefighter accountability best exemplify this blend of safety and technical advancement. In an approach called *network command*, the Department has built an information-sharing framework that uses voice, video and data to connect emergency responders for situational awareness and Incident Command. By leveraging technology, connecting its members and linking emergency operations, network command ultimately gets as much information as possible to decision makers, who need the best tools and procedures to make accurate risk analyses.

Beginning in December 2010 as a pilot program, the Electronic Fireground Accountability System (EFAS), under the Safety Command, is now a citywide initiative that improves accountability of members at fires and other emergencies. EFAS, installed on a chief officer's mobile data terminal (MDT), identifies all members by company and assigned position. EFAS monitors fireground radio transmissions and allows the Incident Commander (IC) or designee to perform a quick and efficient



Electronic Roll Calls (ERCs) in response to *mayday* transmissions. EFAS can identify members and deem them “accounted for” after members click their microphones—a vast improvement on former *mayday* procedures, which were arduous and time-consuming. With a quicker assessment of unaccounted members, ICs can more rapidly deploy assistance teams.

Closely related to EFAS is the Electronic Command Board (ECB). The Department is developing a PC-based, wireless incident accountability system for use at scenes, affording chief officers access to essential Departmental databases and direct data communication to the Fire Department Operations Center (FDOC). The ECB, a portable, 32-inch plasma screen, can be used at multiple-alarm fires and other large incidents, but Chiefs will have other viewing options, including the Command Pad, a portable 10-inch tablet. ECB enhances member accountability, including an important redundancy as the data automatically are transmitted to the Field Communications Unit, as well as the FDOC. ECB increases situational awareness for chiefs at the scene or those at headquarters, and for chiefs en route, who will be able to devote more attention to critical decisions instead of trying to memorize assigned units. ECB allows smoother transitions of command as the next layer of command already has a picture of units associated with the incident. The ECB will serve as the platform for EFAS and ERC.



The Department will further synchronize ECB with available data on threat and building assessments through Computer Aided Dispatch (CAD) data, including the electronic Critical Information Dispatch System (CIDS)—a decades-old, Twitter-like way to quickly read important building information. Also, with CAD, Fire officers will have more detailed building information cards, building records and digital blueprints from the FDNY or the NYC Buildings Department, FDNY pre-incident guidelines on high-risk locations and up-to-date spatial data from the Department’s Geographic Information Systems (GIS) Unit. The ECB pilot program, expected to be completed this year, is currently active in four battalions and two divisions and ECBs are expected to be introduced Department-wide as early as 2012. As the technology becomes more refined, ECB will become more capable and intuitive, further enhancing an IC’s ability to manage incidents.

**Terrorism Awareness--**The FDNY has improved its building inspection programs to now include better awareness for terrorism-related hazards. Terrorism prevention encompasses a wide array of initiatives, which today includes pre-incident guidelines for high-profile locations, site familiarization drills and evacuation plan reviews. The Department also added a third day of building inspections per week, increasing the probability of discovering dangerous conditions or hazardous materials before an



incident occurs. In that same spirit, FDNY members remain aware during inspections and responses for any suspicious or threatening material or objects in plain sight, similar to a decades-old procedure on firearms discovery during routine visits or responses.

Another development that brings information to FDNY Commanders is the Critical Response Information Management System (CRIMS), which is a secure, web-based, data management tool developed by Fire Prevention, Safety Command and Operations, to assist on-scene fire chiefs in evaluating critical infrastructure for situational awareness and risk assessment. CRIMS links data together on building construction, storage of hazardous material, in-building communication systems and digital blueprints of floor areas. In the future, a more nuanced risk-based fire prevention program will help identify buildings that require more frequent inspections above current guidelines.

**BIOPOD**--Each fall, the exercise design team works with the Bureau of Health Services (BHS) in conducting the annual BIOPOD full-scale exercise, simulating a biological attack, requiring the Department to set up citywide point-of-distribution centers for its members; instead of actual treatments related to attacks, participating members receive an influenza shot. BIOPOD offers the Incident Management Team an opportunity to manage a major event. With these efforts, the FDNY leads the nation in ensuring that its firefighters and EMS personnel are protected from bio-terrorism and pandemic events, securing an adequate work force.

**Preparations for Natural- or Human-caused Disasters**--Global events in the past four years prove the horrible potential of natural disasters, including the January 2010 earthquake in Haiti that claimed at least 100,000 lives; the 9.0 magnitude earthquake and associated tsunami that struck Japan in April 2011; and the floods in Pakistan that kept 20 million people from proper food, water and services for months. As it prepares for terrorism-related incidents, the FDNY also must weigh the formidable threat of natural disasters. New York City's geography, location and density make it uniquely vulnerable to various natural disasters. Hurricanes are the areas biggest natural threat, as the direct hit by Tropical Storm Irene in late August proved.

The FDNY has addressed disaster preparedness and mitigation in several ways. In October 2009, the Department issued a revised procedure for hurricanes, incorporating addendums on the evacuation maps, a contact list and checklists covering different times leading to the event. Also, FDNY conducts regular interagency exercises based on natural-event scenarios with its local and regional partners (ConEd, hospitals, etc.). Lessons learned usually can be applied to a range of manmade accidental or deliberate causes that affect essential services and life safety.

As a national disaster asset, the FDNY participates in New York Task Force 1 (NY-TF1), NYC's Urban Search and Rescue (USAR) unit, a disaster emergency response unit consisting of FDNY firefighters and NYPD personnel. NY-TF1 is run through the NYC Mayor's Office of Emergency Management (OEM) and coordinated nationwide by the Federal Emergency Management Agency (FEMA). NY-TF1 has deployed to natural





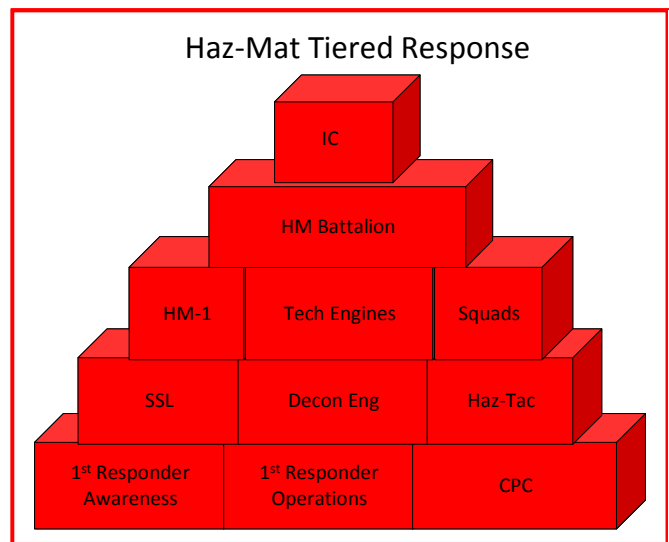
disasters and emergencies about 10 times in 20 years, most notably to New Orleans during Hurricane Katrina in 2005 and the aftermath of the 2010 earthquake in Haiti.

Consistent with goals articulated in PPD-8, part of disaster readiness is exploring low probability/high-impact events. As area residents learned recently with the Virginia earthquake in August 2011, the NYC region is seismically active. Numerous small earthquakes have been felt during the last hundred years due to a network of faults, including the 125th Street and Dyckman Street Fault Zones. As recently as 1985, a 4.1 quake was recorded along the Dobbs Ferry fault in Westchester County, just north of NYC. A 2001 FEMA report lists NYC as the 11th most vulnerable U.S. city to earthquake damage, and some experts estimate that a 6.0 quake occurs in the area every 670 years on average. City building codes did not include a seismic provision until 1996, compounding the potential destruction and loss of life. In addition, though highly improbable, a tsunami could hit the U.S. east coast as some geophysicists estimate that an eruption from the Cubre Vieja volcano in the Canary Islands, off the west coast of Africa, could cause a mountainside of debris to slip into the Atlantic Ocean, sending tsunami waves of 15-20 meters (49-67 feet) to the NYC area. In the future, the FDNY must continue to consider all types of natural disasters in its mitigation efforts and not just the most likely events.

## D. Response

Response includes those capabilities necessary to save lives, protect property and the environment, and meet basic human needs after an incident has occurred--**PPD-8**

**Tiered Response**--Tiered response follows two main principles of the National Incident Management System (NIMS): flexibility and standardization. This flexibility makes it a very cost-effective and efficient management approach. Haz-Mat Operations was the first command of the FDNY to incorporate tiered response, which is now used Department-wide to address a variety of incident types, providing the Department with a wide surge capacity to bring the proper assets to any incident in a timely and sustainable way. The FDNY's tiered response system also adheres to stringent standardization, exceeding national qualifications for personnel, training, uniforms and equipment. "Standardization is the key to flexibility," said retired U.S. Air Force Colonel Randall J. Larsen, who is an expert in crisis management.

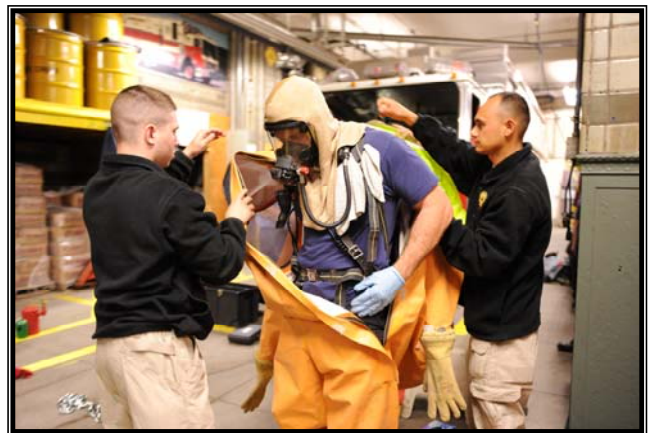




**Haz-Mat Operations**--Haz-Mat Operations has advanced its response component through the tiered response system, ensuring optimal availability and distribution of response resources. As suggested above, tiered response provides layered special response capabilities that can be scaled as needed, enabling incident commanders to deploy the appropriate mix of specialty units as an incident escalates or recedes while maintaining adequate coverage citywide.

Situated at the top tier of Haz-Mat Operations is Hazardous Materials Co. 1, whose specialists have 500 hours of advanced training, including nuclear, biological and chemical warfare. The next tier has 600 technicians, requiring up to 120 hours of training. Today, more FDNY hazmat technicians attend national schools than ever before. In addition, 600 members are trained in technical decontamination, followed by 800 firefighters and officers qualified to wear chemical protective clothing (CPC). All Fire and EMS Operations personnel are now trained to the hazmat operations level. The FDNY maintains capabilities-based training with the Marine Corps' CBIRF, as well as the New York National Guard's CBRNE Enhanced Response Package (CERFP) and its Civil Support Teams (CSTs).

Hazmat training and education for all ranks has become more focused. A select group of chief officers assigned to Manhattan commands attend a national radiation school. FDNY members are sent to advanced homemade explosives training, improving recognition and response. At the operations level, SOC Support Ladder Companies are re-trained more thoroughly in annual refreshers, which now include a one-day session at the FDNY Training Academy, supplemented by field visits by hazmat instructors.



**CPC**--In its effort to have its equipment, as well as its procedures, correspond to the incident type and magnitude within tiered response, the Department has introduced a more versatile protective ensemble. The greatest protection available inside chemical hot zones is Level A suits, which are one-time use outfits that are considered bulky, hot and difficult to don and communicate while wearing. Today, FDNY Level A suits have been updated with two models. Units in hazmat tiered response tasked with mitigation (HM-1, Squads, Rescues, Tech Engines) wear improved flash suits, which are lighter and offer more visibility and dexterity. For units tasked with rescue operations in a hot zone (CPC units, EMS HazTac, etc.), their primary suit is designed to don quicker and cause less heat stress. In consideration of cost-effectiveness, the two new suits have an extended shelf life.

**Rescue Medics and HazTac**--In the past four years, personnel from the EMS Bureau have been more closely integrated into FDNY hazmat preparedness. Today, 35 hazardous materials tactical (HazTac) ambulance units are manned by 300 EMS hazmat



technicians, who now can perform medical monitoring and intervention in hot and warm zones. Also, a select group of paramedics are trained as “rescue medics” to complement SOC units performing at technical rescues (collapse, confined space, high-angle, etc.). The rescue-medic program paid dividends at the two Eastside crane collapses in March and May 2008, where paramedics were able to access and stabilize trapped patients prior to extrication.

**Search and Rescue**--FDNY’s Special Operations Command mission extends well beyond hazardous-materials’ incidents. Recently, SOC has improved many of its functions and response thresholds, including improved breathing devices, its ability to locate trapped firefighters and technical rope rescues. For instance, SOC’s rebreather program has expanded since 2007 to include SOC Support Ladder Companies, whose members now are trained to don and operate with rebreathers (designed to recycle expelled gases), providing extended respiratory protection at long-duration incidents or those affording limited egress.

Units in SOC have improved their ability to locate and remove trapped and missing firefighters with a Pak-Tracker, which is a directional device that hones in on emergency signals emitted from firefighters’ SCBA motion alert system. Also, SOC has widened its range in technical rescue with lead climbing capabilities, allowing firefighters to attach protection points to a rope as they ascend a vertical plane; lead climbing gives firefighters an important option if top-rope descent methods are physically impossible.



**Regional Task Force**--A recent development is the formation of the Special Operations Command Task Force, which is meant to provide the FDNY with a surge capacity in response to large-scope events that could overwhelm day-to-day operations. The 80-person task force, which can mobilize within six hours, is designed to activate without disruption to field unit availability. The task force could deploy in NYC or as a regional asset. The task force functions state-wide or nationally as a NYS search and rescue component or Emergency Management Assistance Unit (EMAC) asset. The specialized group can provide specialized search, rescue and recovery capabilities for a variety of mass-casualty incidents (MCIs).



The Department tested the interoperability of the SOC Task Force with the FDNY Incident Management Team (IMT) during a four-day, full-scale deployment readiness exercise that simulated three bomb detonations in the Midtown Tunnel. The goal of the exercise was to evaluate how the Department could rescue the greatest number of people in the shortest amount of time within acceptable risk parameters. The site of the exercise was a





decommissioned, 2800-foot traffic tunnel at the Center for National Response (CNR) in West Virginia. Key findings of the exercise validated close coordination between the IMT and the task force and the effectiveness of Department rescue and hazmat training. In the future, the FDNY will supplement the task force with additional vehicles and more robust logistics.

**Marine Operations--**With hundreds of miles of waterfront, dozens of bridges and tunnels and 20 million people living in the region, New York/New Jersey Harbor is uniquely vulnerable to manmade or natural disasters. Threats can come from terrorist acts on ferries, accidents involving petroleum containers, hurricanes or any number of incident types. The FDNY Marine Division has made significant progress in terrorism and disaster preparedness since 2007, both at the strategic level and with equipment upgrades, greatly expanding its WMD and disaster-related capabilities, providing indispensable, water-based, emergency response services in one of the busiest ports in the world.



**Marine Tiered Response--**In December 2010, the Department released, in collaboration with the Harvard Business School, the *Marine Operations Strategy* to meet the growing challenges and vulnerabilities in and around the Port of New York and New Jersey. The marine strategy explains its multi-faceted and multi-level response for firefighting, water rescue, medical evacuation and treatment, as well as hazardous material mitigation for complex maritime events, extending FDNY's primary life safety mission to the water. In realizing a concept proposed in the *2007 FDNY Terrorism and Disaster Preparedness Strategy*, the *Tiered Response System* now is used to provide appropriate, measured lifesaving capabilities for incidents on or near the water. Marine's comprehensive approach is more closely aligned with DHS strategic objectives, illustrating the essential role that fireboats play in protecting the Harbor from routine emergencies to large-scale crises.

The Marine tiered response was critical in the rescue of the passengers and crew of US Airways Flight 1549, which made an emergency landing in the Hudson River across from West 45<sup>th</sup> Street on January 15, 2009. FDNY fireboats were instrumental in the rescues, and also in securing and transporting the airplane before it could plunge to the bottom of the river.

**High-Performance Fireboats--**In consideration of large fuel loads, possible chemical or radiological cargo and high voltage electrical systems, emergencies aboard maritime vessels are a challenge to FDNY Marine and Haz-Mat operations. To address this vulnerability at the highest response tier, the FDNY has launched two new high-capacity fireboats in the past two years. The fireboat *Three Forty Three*, named in



honor of the number of FDNY members who made the supreme sacrifice at the World Trade Center in 2001, was commissioned on May 26, 2010 and put in service on the ninth anniversary of the 9/11 attacks in 2010. *Three Forty Three*, which is 140 feet long, can travel at 18 knots and pump up to 50,000 gallons of water per minute. In addition to its firefighting functions, the boat has a pressurized air system to protect onboard personnel from smoke and CBRN agents, along with mass decontamination capability. For water-based evacuation of Staten Island ferries, the fireboat includes a ballast system that can align its deck to match the ferries' decks. Commissioned on December 7, 2010, *Three Forty Three's* sister ship, *Fire Fighter II*, has similar size and function. In the future, the FDNY Emergency Medical Service (EMS) is planning to detail rescue paramedics on high-performance boats during select special events and other incidents, placing Advanced Life Support (ALS) directly on the water.

***Rapid Response Boats***--As part of Marine tiered response, the division's smaller, faster boats have made contributions to Harbor safety. Just days after going into service in June 2011, the crew of the *Bravest* rescued a man drowning in the East River. During the tropical storm response in late August, flood rescue boats were instrumental in rescuing 61 people who were stranded in their Staten Island homes.

With such a diverse range of Marine vessels under tiered response, the FDNY has proved its ability to deploy the right asset for the right incident, which profoundly improves mitigation efforts during a terrorist attack or disaster. The FDNY understands that Marine units do much more than water-based firefighting, which contribute to pre-hospital medical care, hazmat detection and mitigation and technical rescues. The importance of Marine assets is indisputable: on 9/11, draft operations from fireboats delivered the only reliable water source immediately after the collapses at the WTC, bypassing broken underground water mains. In the future, the FDNY's fleet of fireboats will continue to be upgraded within tiered response, including plans to detail rescue paramedics on rapid response boats (similar to the plan for high-performance boats), allowing the Department to adjust to incident type, scale and complexity.

***Bureau of EMS and Pre-Hospital Care***-- Since 9/11, the FDNY Emergency



Medical Service has built on its primary role in pre-hospital care to better integrate terrorism and disaster response. EMS has made even more progress in its expanded delivery of medical services during large-scale, catastrophic events. EMS has improved strategic planning, situational awareness, vehicle security, rescue paramedic capacity, radio technology, patient treatment and improved air respirators.



In 2010, an EMS Task Force of senior leaders released the EMS Strategic Plan to meet the ever-increasing demands on the EMS pre-hospital care system. The multi-year plan strives to further reduce response times to the most critical, life-threatening incidents. To accomplish this, the Department will reallocate ambulance resources to respond even faster to these critical emergencies--specifically cardiac arrest and trauma--through modified dispatch procedures/phone triage, improved training and quality assurance and implementation of new technologies. The FDNY has enhanced its leadership training program for newly promoted EMS Deputy Chiefs. The program will improve competency in areas such as on-scene command and control, management of multiple-casualty incidents and Medical Branch Officer functions, including administrative tasks and communication skills. The initiative is meant to improve command of pre-hospital medical care during both day-to-day operations and large-scale events. Also, supervisory training has increased for lieutenants and captains at EMS stations, and the FDNY has improved joint training with Fire and EMS personnel, leading to better communication and coordination Department-wide.

Proper situational awareness is paramount at any operation and more so today with the constant threat of terrorism; this is true for FDNY firefighters and emergency medical personnel. EMS strives to keep its personnel alert and informed. Members are trained to show caution at all incidents, especially high-profile locations, bridges and tunnels, places of public assembly and in subways. Awareness also is reinforced through pre-incident surveillance of possible terrorist targets and response protocols encourage members to deviate from normal vehicle placements in consideration of primary or secondary attacks. Security is closely related to awareness and all FDNY vehicles have security decals affixed to the cab doors.

Since 2007, personal protective ensembles (PPE) have improved dramatically for EMS. Current PPE (coats, pants and gloves) is more resistant to the elements and blood-borne pathogens and provides limited protection to flash fires, as well as limited splash protection to common chemicals. Full PPE is worn at a wide scope of incidents, including multiple-casualty incidents, motor vehicle accidents or any roadway incident (partly for its reflective qualities), hazardous materials incidents and fire scenes. Also, EMS has advanced its Patient Tracking System, a computerized matrix to electronically track the location and movement of patients from initial contact with FDNY personnel to transport and admission to the hospital. Portable devices electronically transfer patient data to the FDOC, FDNY Office of Medical Affairs and EMS Command, which are linked to the ePCR (electronic patient care report) database. Given the increasing threat of terrorism and ever-present threat of natural disasters, this is an essential tool for managing multiple-casualty incidents. Moving forward, the Bureau of EMS will expand its participation in joint training and exercises, designed to better prepare pre-hospital care personnel for unpredictable circumstances. Heightened awareness and situational readiness remain paramount responsibilities for its members as EMS moves toward improving its position in the emergency responder intelligence network as an essential consumer.



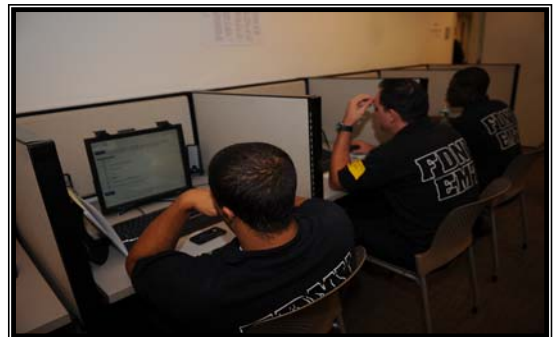
## E. Recovery

Recovery includes those capabilities necessary to assist communities affected by an incident in recovering effectively--**PPD-8**

An often overlooked component of the response cycle is recovery, but perceptions in the homeland security community are changing. In the National Response Framework (NRF), released in 2008, "recover" is a main function of response actions, even succeeding "prepare" and "respond." The NRF states that long-term recovery, depending on severity and extent of damage, could take months or years and it will be unique to each community or agency affected. Recovery for the FDNY after terrorist incidents or disasters is more than restoration of physical assets, but encompasses many areas that include operations, personnel, command, administration and symbolism. The FDNY initiatives highlight the Department's priority to ensure adequate crisis recovery organizationally and individually, including pre-incident planning.

**COOP**--The FDNY continues to improve its Continuity of Operations Plan (COOP), a managerial framework to ensure sustainability of essential agency functions in the event of a wide range of potential emergencies. As part of COOP, Bureau Emergency Response Groups (ERGs) are activated to maintain essential functions and operations, including protecting personnel, locations, equipment, technology, systems, records and assets. COOP also is designed to reduce or mitigate disruptions to operations, minimize injury or loss of life and expedite an orderly recovery, including the timely resumption of complete FDNY services. The Department coordinates its COOP preparedness with other city agencies through drills and exercises, improving NYC's ability to prepare for, respond to and recover from emergency incidents and catastrophic events.

**WTC Annual Screening**--Medical assessments are more important than ever for FDNY active and retired members who participated in the rescue and recovery efforts on 9/11. The FDNY continues the World Trade Center Medical Monitoring and Treatment Program, a nationally renowned initiative funded through the National Institute for Occupational Safety and Health (NIOSH) and the September 11 Recovery Grant of the American Red Cross Liberty Disaster Relief Fund. The FDNY has expanded its screening and treatment services to meet the increasingly complex health care needs of this population. As of year-end 2010, the FDNY has provided at least one WTC monitoring exam to 98 percent of eligible members. Participation remains strong; subsequent screenings indicate that more than 79 percent of members have received a fourth exam. The FDNY program is integral to the well-being of active and retired members and contributes to the wealth of data collected on the health impacts affecting WTC rescue workers. In the future, the Department will continue to advocate for sustained federal funding to ensure this program meets the changing health needs of members and retirees.







## **V. CONCLUSION**

The awareness and competency that FDNY members exhibit at terrorist events or disasters are not a coincidence, but are the culmination of Department-wide preparedness efforts pre-dating the 9/11 attacks. Today, the Department's approach at these incidents is more refined, expeditious and scalable. The Fire Commissioner encourages all FDNY members to raise their alertness and preparedness by expanding on what has become a nationwide maxim in terrorism awareness:

**"See something, say something, do something.  
Know what to do and what not to do."**

**--Fire Commissioner Salvatore J. Cassano**

Organizational preparedness is the best way to remember and honor the FDNY members who made the supreme sacrifice. The Department shows its gratitude for such sacrifice by striving to make today's FDNY more capable of addressing the effects of terrorism and large-scale disaster. The FDNY acknowledges that it is part of a wider community and as this strategy proves, the FDNY is committed to the "whole-of-government" effort, requiring close intra-agency coordination with its own bureaus and commands, as well as more advanced inter-agency collaborations at all levels of government. Today, the FDNY better assesses current and future risk than at any other time, guiding its capacity, capabilities and delivery as it executes its primary mission of life safety. As proved with this document, the FDNY has shown to be remarkably resilient and agile in the past 10 years, regardless of the mission or threat. As the FDNY looks forward, its leadership recognizes that the Department's greatest strength is its people, who never hesitate to answer the call of duty.





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*“The greatest way to honor those we lost on 9/11 is to make sure that we are prepared for the next event.”*

*Fire Commissioner Salvatore J. Cassano.*