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***January 16, 2013***

## ***Oversight: Emergency Planning and Management During and After Hurricane Sandy: Disaster Management***

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## I. Introduction

On January 16, 2013, the Committee on Public Safety, chaired by Peter F. Vallone, Jr., the Committee on Fire & Criminal Justice Services, chaired by Elizabeth S. Crowley, the Committee on Aging, chaired by Jessica Lappin, the Committee on General Welfare, chaired by Annabel Palma, the Committee on Health, chaired by Maria del Carmen Arroyo, and the Committee on Mental Health, Developmental Disability, Alcoholism, Drug Abuse & Disability Services, chaired by G. Oliver Koppell (collectively, "the Committees") will hold an oversight hearing entitled, "Emergency Planning and Management During and After Hurricane Sandy: Disaster Management." This is the first in a series of Hurricane Sandy related oversight hearings to be heard by the Council in the coming weeks.

## II. Hurricanes in New York City

Hurricanes are a type of tropical cyclone or circulating weather system found over tropical waters.[1] According to the National Ocean and Atmospheric Association ("NOAA"), a tropical cyclone is an atmospheric closed low-level circulation of clouds and thunderstorms that rotates counter-clockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere.[2] A Hurricane is a tropical cyclone with maximum sustained winds of 74 mph (64 knots based on a one minute average or higher.[3] According to NOAA, for a tropical cyclone to form, six typical factors need to be present: (i) ocean temperatures of at least 80°F to a depth of at least 150 feet; (ii) atmosphere that cools rapidly with an increase in height; (iii) moist layers in

[1] In the western North Pacific, hurricanes are called typhoons; similar storms in the Indian Ocean and South Pacific Ocean are called cyclones.
[2] *See* National Hurricane Center's Tropical Cyclone Climatology explanation, *available at:* http://www.nhc.noaa.gov/climo/.
[3] *Id.* Tropical cyclones are classified as tropical depressions if they have maximum sustained surface winds (using a one minute average) of less than 38 mph and tropical storms if they have maximum sustained surface winds of 39 to 73 mph.

the troposphere[4] to an altitude of approximately 3 miles; (iv) a minimum distance of at least 300 miles from the Equator; (v) a pre-existing near-surface disturbance; and (vi) low values of vertical wind shear[5] between the surface and the upper troposphere.[6] However, even if all these conditions are present, a tropical cyclone may not form.[7]

Hurricane strength[8] is measured by the Saffir-Simpson Hurricane Wind Scale based on the sustained wind speed (using a one minute average) of the hurricane. A Hurricane with sustained wind speeds between 74 and 95 mph is a Category 1; between 96 and 110 mph is Category 2; between 111 and 130 mph is Category 3; between 131-155 mph is Category 4; and 156 mph or more is Category 5.[9] Hurricanes classified as Category 3 or greater are considered major hurricanes.[10]

The hurricane season for the Atlantic Basin lasts from June 1 to November 30, peaking in September, however, hurricanes do occasionally form outside of the hurricane season. On average, ten tropical storms form in the Atlantic Ocean each year with six becoming hurricanes, and two striking the United States.[11] Hurricane landfalls in the United States cost an average of

[4] The troposphere is the lowest portion of Earth's atmosphere with a depth of up to 12 miles in the tropics.
[5] Wind shear is the difference between wind speed and direction between different horizontal or vertical layers of the atmosphere.
[6] http://www.aoml.noaa.gov/hrd/tcfaq/A15.html
[7] *Id.*
[8] Hurricanes derive their power from the energy released when warm ocean water evaporates, is carried aloft winds into cooler levels of the troposphere and condenses. The energy released by condensation results in higher wind speeds, which cause more evaporation and condensation in a positive-feedback loop known as wind-induced surface heat exchange (WISHE).
[9] United States Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service, *Hurricanes… Unleashing Natures Fury*, Revised September 2006.
[10] *Id.*
[11] Weather Almanac, Vol. 1, WeatherExplained.com, *available at*: http://www.weatherexplained.com/Vol-1/Hurricanes.html

$10 billion per year in damage; however, individual storms have caused upwards of $150 billion in damage.[12]

In 2010, New York City was named by the Weather Channel as the second most vulnerable and overdue city for a hurricane.[13] Despite being well north of the tropics, hurricanes do occasionally strike the area around New York City, and, although New York City is usually spared a direct hit, it has been hit twice in the past two years – Tropical Storm Irene in 2011 and Hurricane Sandy in 2012.

***Major Tropical Cyclones Impacting New York City***

One of the first major tropical cyclones to impact the New York City area is said to have happened sometime between 1278 and 1438, as shown by paleotempestological[14] research.[15] Thereafter, on September 3, 1821, the "Norfolk and Long Island Hurricane" made landfall in Jamaica Bay near where John F. Kennedy Airport sits today. The hurricane strength of the 1821 storm is estimated to have been a Category 3 or 4.[16] Manhattan Island was completely flooded from the Battery to Canal Street by a storm surge of 13 feet.[17] However, because the flooding was concentrated to neighborhoods with far fewer homes than exist today, there were only a few deaths attributed to the very powerful 1821 storm.[18] In fact, Nicholas Coch, a professor of coastal geology at Queens College, stated that the "only thing that saved the city" was that the

[12] Roger A. Pielke Jr., Joel Gratz, Christopher W. Landsea, Douglas Collins, Mark A. Saunders, & Rade Musulin, *Normalized Hurricane Damage in the United States: 1900–2005*, NATURAL HAZARDS REVIEW, February 2008, *available at:* http://www.nhc.noaa.gov/pdf/NormalizedHurricane2008.pdf

[13] Top 5 Hurricane Vulnerable & Overdue Cities, The Weather Channel, *available at:* http://www.weather.com/outlook/weather-news/news/articles/top5-most-vulnerable-overdue-hurricane-cities_2010-07-14?page=5.

[14] Paleotempestology is the study of past tropical cyclone activity by means of geological proxies as well as historical documentary records.

[15] Jeffrey P. Donnelly, *Sedimentary evidence of intense hurricane strikes from New Jersey*, GEOLOGY 29 (7): 615–618 (2001).

[16] Aaron Naparstek, *The Big One for New York City*, THE NEW YORK PRESS, July 20, 2005, *available at*: http://web.archive.org/web/20071230031244/http://www.nypress.com/18/29/news&columns/aaronnaparstek.cfm

[17] *Id.*

[18] *Id.*

1821 storm hit during low tide.[19] About 70 years later another tropical cyclone arrived on August 24, 1893. This storm, a Category 1 or 2 hurricane, struck the western end of the Rockaway Peninsula, and passed through Brooklyn. As a result, Hog Island, a mile-long barrier island that existed to the south of Rockaway Beach was completely washed away by the storm surge and 30 foot waves that came up to 200 feet inland were reported in Coney Island.[20]

Years later, New York City was impacted by a Category 3 hurricane, known as the Long Island Express. On September 21, 1938, the Long Island Express made landfall in Suffolk County causing winds of 100 mph in Brooklyn and Queens and 75 mph in Manhattan, and power outages across the City. The resulting storm surge caused the East River to flood three blocks inland.[21] Only six years later, on September 14, 1944, New York City was again impacted by a tropical cyclone. This time, a category 1 hurricane known as the Great Atlantic Hurricane of 1944 made landfall on Long Island and produced wind gusts of well over 100 mph in the City.[22]

Thereafter, New York City experienced varying levels of impacts from tropical cyclones passing through the area. For instance, in 1954, Hurricane Carol – the most destructive storm since the Long Island Express – made landfall in Eastern Long Island and Southeastern Connecticut. However, because, the storm's track was forty miles further east, New York City was spared a direct hit, although, major flooding still occurred throughout the City.[23] Then, in 1955 Hurricane Connie again caused significant flooding, with about a foot of rainfall recorded at LaGuardia Airport, even though the eye of the storm did not pass over the City.[24] The same is true for other hurricanes, such as Donna (1960), Agnes (1972), Gloria (1985), and Floyd (1999),

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[19] *Id.*
[20] *Id.*
[21] *Id.*
[22] H.C. Sumner, *North Atlantic Hurricanes and Tropical Disturbances of 1944*, Monthly Weather Review (December 1944) *available at*: http://www.aoml.noaa.gov/general/lib/lib1/nhclib/mwreviews/1944.pdf.
[23] NYC Hazards: NYC Hurricane History, New York City Office of Emergency Management, *available at*: http://www.nyc.gov/html/oem/html/hazards/storms_hurricanehistory.shtml.
[24] *Id.*

which caused New York City's schools to close and led the City to open emergency storm shelters as a precautionary measure.[25]

Since Floyd, New York City sustained two direct impacts from tropical cyclones in the past two years, with only 14-months separating the two incidents. On August 28, 2011, Tropical Storm Irene made landfall in Coney Island, Brooklyn. Just prior to its landfall, the storm was downgraded from a hurricane to a tropical storm, and since the strongest winds were over water to the east of the path of the center of the storm, New York City escaped severe damage.[26] Nonetheless, a storm surge of 4.36 feet was recorded at the Battery in lower Manhattan, with other locations recording surges between 3 and 6 feet, all of which caused hundreds of millions of dollars in property damage in New York City and Long Island.[27] Fourteen months later, in October of 2012, New York City was again impacted by a tropical cyclone, but this time much more severely.

## III. The Path of Hurricane Sandy

On October 22, 2012, a tropical depression cyclone formed in the southern Caribbean with wind speeds below 39 mph.[28] The depression strengthened and became Tropical Storm Sandy, with maximum winds of about 40 mph.[29] By October 24th Sandy was a Category 1 hurricane and crossed Jamaica with reported winds of 80 mph. Sandy left more than 20 inches of rain on Hispaniola and more than 50 people died in flooding and mudslides in Haiti.[30] On

[25] *Id.*
[26] Lixion A. Avila and John Cangialosi, *Hurricane Irene Tropical Cyclone Report*, NOAA National Hurricane Center, *available at*: http://www.nhc.noaa.gov/data/tcr/AL092011_Irene.pdf.
[27] *Id.*
[28] *See* Posting of Willie Drye to National Geographic Newswatch, *A Timeline of Hurricane Sandy's Path of Destruction*, Nov. 2, 2012, *available at:* http://newswatch.nationalgeographic.com/2012/11/02/a-timeline-of-hurricane-sandys-path-of-destruction/; *see also* Hurricane Sandy Advisory Archive, NOAA National Hurricane Center, *available at*: http://www.nhc.noaa.gov/archive/2012/SANDY.shtml.
[29] *Id.*
[30] *Id.*

October 26th Sandy struck Cuba with winds of about 110 mph, just below the status of a major Category 3 hurricane. On October 27th Sandy turned to the northeast, off the coast of Florida, and left in its path an estimated death toll in the Caribbean of 70 or more. After briefly weakening to a tropical depression, Sandy re-intensified into a Category 1 hurricane.[31] On October 28th Sandy continued moving northeast on a track parallel to the coasts of Georgia, South Carolina and North Carolina. At this time, the storm was still considered a Category 1 hurricane with peak winds of about 80 mph. Meteorologists warned that the storm would likely morph into a powerful, hybrid super-storm as it moved further northward towards a high-pressure cold front that was expected to force Sandy to start turning to the northwest toward Baltimore, Washington, Philadelphia and New York.[32] The full moon was expected to make Sandy's storm surge – initially expected to be 11 to 12 feet in some places – a little higher as it made landfall.[33]

On October 29th Sandy made the anticipated sharp turn toward the northwest on a path for the coast of New Jersey.[34] The storm began interacting with other weather systems and gained energy. During the afternoon, Sandy brought high winds and rains from Washington, D.C. northward, toppling trees and power lines and cutting off electrical power for millions of people. By approximately 8 p.m. Sandy's center had come ashore near Atlantic City, New Jersey. The storm was no longer considered a hurricane and was classified as a post-tropical nor'easter. However, the storm's unusual path from the southeast made its storm surge much worse for New Jersey and New York.[35] The surge was also worsened because of the full moon and Sandy's arrival at high tide. The National Weather Service's New York office reported that

[31] Hurricane Sandy Advisory Archive, NOAA National Hurricane Center, *available at*: http://www.nhc.noaa.gov/archive/2012/SANDY.shtml.
[32] *See* Posting of Willie Drye, *available at:* http://newswatch.nationalgeographic.com/2012/11/02/a-timeline-of-hurricane-sandys-path-of-destruction/
[33] *Id.*
[34] *Id.*
[35] *Id.*

the nearly 14 foot surge was a new record for a storm surge in the harbor. The surge topped the seawall at The Battery in Lower Manhattan and flooded parts of the City's subway system. The surge also flooded the Hugh Carey Tunnel that links Lower Manhattan to Brooklyn and did unspeakable damage throughout Staten Island, Coney Island, and the Rockaways.[36] The storm's winds, rain and flooding continued to pound New Jersey and New York throughout the night and through three cycles of high and low tides.

By October 30th Sandy started to move away from New York, while the backside of the storm continued to pummel the Northeast.[37] As the day progressed, Sandy weakened as it moved inland over Pennsylvania.[38] On October 31st the storm dissipated over western Pennsylvania, and the NOAA issued its final advisory on the storm.[39] On November 3rd NBC News reported that the death toll in the U.S. from the storm was 109, including at least 40 in New York City[40] – a number which grew to 43 as of November 17th, 2012[41] – half of which were on Staten Island. NBC also reported that damages from Hurricane Sandy would likely exceed $50 billion.[42]

## IV. New York City Office of Emergency Management – Coastal Storm Plan

The New York City Office of Emergency Management ("OEM") is a charter agency tasked with coordinating the City's multi-agency response to all emergency conditions and potential incidents which affect public health and safety, such as severe weather, threats from

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[36] *Id.*
[37] Hurricane Sandy Advisory Archive, NOAA National Hurricane Center, *available at*: http://www.nhc.noaa.gov/archive/2012/SANDY.shtml.
[38] *Id.*
[39] *Id.*
[40] Posting of Miguel Llanos to NBCNews U.S. News Blog, *Sandy death toll in US rises to 109; 'there could be more,' Bloomberg warns*, Nov. 11, 2012, *available at*: http://usnews.nbcnews.com/_news/2012/11/02/14884300-sandy-death-toll-in-us-rises-to-109-there-could-be-more-bloomberg-warns?lite.
[41] Hurricane Sandy's Deadly Toll, NY Times, *available at*: Posting of Miguel Llanos to NBCNews U.S. News Blog, *Sandy death toll in US rises to 109; 'there could be more,' Bloomberg warns*, Nov. 11, 2012, *available at*: http://usnews.nbcnews.com/_news/2012/11/02/14884300-sandy-death-toll-in-us-rises-to-109-there-could-be-more-bloomberg-warns?lite.
[42] *Id.*

natural hazards and natural disasters, power and other public service outages, hazardous substance discharges, building collapses, aviation disasters, and acts of terrorism.[43] In addition to coordinating multi-agency response, OEM is responsible for overall planning and emergency preparation including educating the public about preparedness and collecting and disseminating critical information to key stakeholders and the public during emergencies. As part of these duties, OEM maintains the City's Coastal Storm Plan ("CSP"), which outlines measures the City may take in the event of a serious tropical storm or hurricane.[44] This contingency plan has been developed to protect the public if a hurricane poses a significant threat of coastal flooding.[45]

In 2006, OEM performed a review of the City's hurricane evacuation plan with input from New York City first responders deployed to Louisiana and Mississippi in the aftermath of Hurricanes Katrina and Rita. Through this process, OEM learned of the need to strengthen the City's then-existing response protocols for evacuating vulnerable populations, by ensuring adequate sheltering capacity and making specific provisions for limited mobility and special needs populations.[46] As a result, OEM created a new $30 million plan that was intended to make evacuations easier for vulnerable populations such as the elderly and hospital patients.[47] In addition, the revised CSP raised the number of evacuation centers from 23 to 65 so as to guarantee that evacuees are appropriately distributed to local evacuation shelters, eliminating potential overcrowding or underutilization of shelters.

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[43] *See generally* New York City Charter §497

[44] Press Release, NYC Office Of Emergency Management, *New York City Office of Emergency Management Unveils 2005 Hurricane Awareness Ad Campaign*, August 10, 2005, available at http://www.nyc.gov/html/oem/html/news/05_08_10_hurricane_ads.shtml.

[45] *See id.*

[46] Press Release, Office of the Mayor of the City of New York, *Mayor Bloomberg and Office of Emergency Management Commissioner Bruno Unveil Revised Coastal Storm Plan*, June 28, 2006, *available at*: http://www.nyc.gov/cgi-bin/misc/pfprinter.cgi?action=print&sitename=OM&p=1356632417000.

[47] Diane Cardwell, *New City Plan Outlines Evacuations in Hurricane*, NEW YORK TIMES, June 29, 2006.

Overall, the revised OEM CSP guides the City's response in times of coastal storm emergencies and includes key elements such as: (1) storm-tracking and decision making; (2) evacuation; (3) sheltering; (4) logistics; (5) public information; and (6) recovery.[48]

***Storm-Tracking and Decision Making***

As part of the preparation work done by OEM, computer models were used to predict and map storm surge areas to create Evacuation Zones based on these predictions. These Evacuation Zones must be evacuated well before a storm arises; therefore tracking the storm is a very important aspect of the CSP.[49]

OEM establishes and posts New York City's hurricane contingency plans on their website. These plans are based on three evacuation zones: Zone A, Zone B, and Zone C.[50] These zones represent varying threat levels of coastal flooding resulting from storm surge, which can produce crippling effects to low-lying areas. OEM designates Zone A as having the highest risk of flooding and the greatest need for evacuation due to a hurricane.[51] Zone A areas include most of the Lower Manhattan's shore line from the Battery to 34th Street, the Rockaways, Coney Island, Red Hook, and most of the Staten Island shore line. Zone B has a moderate risk of evacuation and includes East Harlem, Willets Point, Sheepshead Bay, and Howard Beach. Zone C has a low risk of evacuation due to potential flooding and includes areas that are inland, such as parts of Chelsea, East New York, and South Jamaica.

[48] Testimony of OEM Commissioner Joe Bruno before the Committee on Public Safety, the Committee on Waterfronts and the Committee on Fire & Criminal Justice Services, October 12, 2010, *available at*: http://legistar.council.nyc.gov/View.ashx?M=F&ID=1078923&GUID=CCB04AB2-670A-4C15-979B-20213CD74B32

[49] *Id.*

[50] OEM Evacuation Zones at http://www.nyc.gov/html/oem/html/hazards/storms_evaczones.shtml. Last visited Jan. 9, 2013.

[51] *Id.*

OEM works in consultation with the National Weather Service to interpret and monitor weather data.[52] In addition, OEM uses a tool called HurrEvac to determine the probability and timing of a hurricane strike.[53] HurrEvac is a storm tracking and decision support tool that assists local emergency managers in determining the most prudent evacuation decision time and the potential for significant storm effects such as wind and storm surge.[54] OEM uses HurrEvac to keep apprised of the number of hours (or days) available for preparation and planning in advance of a threatening storm.[55] With HurrEvac, OEM is continually updated on the City's Evacuation Decision Time, or last possible time by which an evacuation could be initiated if it is to be completed before the arrival of the storm hazards.[56]

It is with the coordination of the National Weather Service and the information provided via HurrEvac that OEM provides the Mayor and the Governor with the information needed to make a timely decision on evacuation procedures and emergency declarations, which can be made at either the State or local level.

***Evacuation***

The most important element of OEM's CSP is the evacuation phase. According to testimony provided to the City Council by OEM Commissioner Joseph Bruno in 2010, evacuation operations proceed during "blue sky conditions" and should end well before heavy rains and storm force winds impact procedures.[57] According to Commissioner Bruno, the City will "order evacuations to start days before the storm to give…plenty of time to get everybody to

[52] *See* Testimony of OEM Commissioner Joe Bruno before the Committee on Public Safety, the Committee on Waterfronts and the Committee on Fire & Criminal Justice Services, October 12, 2010.
[53] *Id.*
[54] *See* Key Features of HurrEvac, *available at*: http://www.hurrevac.com/about.htm.
[55] *Id.*
[56] *Id.*
[57] Testimony of OEM Commissioner Joe Bruno before the Committee on Public Safety, the Committee on Waterfronts and the Committee on Fire & Criminal Justice Services, October 12, 2010, *available at*: http://legistar.council.nyc.gov/View.ashx?M=F&ID=1078923&GUID=CCB04AB2-670A-4C15-979B-20213CD74B32

high ground." With that in mind, the CSP Evacuation Plan consists of two main components: roadway management and mass transportation, both of which are used to manage flow of traffic and guide evacuations.[58] These two components include the following:

Roadway Management

- Designated evacuation routes to accommodate increased demand
- NYPD and DOT traffic control personnel deployments along evacuation routes
- Prepositioning of tow trucks to move vehicles blocking traffic
- Modification of traffic signals to speed the flow of traffic out of evacuation zones
- Roadway toll waivers[59]

Public Transportation

- Work closely with MTA to increase subway and bus service into and out of flood zones and to evacuation centers – including increased Metro North and PATH service for out-of-city evacuations
- Request waiver of public transportation fares
- Taxi & Limousine Commission regulations modified to increase capacity[60]

In addition, OEM works closely with the New York State Department of Health ("State DOH") to ensure that all health care facilities, such as nursing homes and hospitals, in New York City have their own evacuation plans.[61] In fact, the CSP includes sample timelines for evacuating hospitals and nursing homes.[62] In 2010, Commissioner Bruno testified that OEM would coordinate and track hospital and nursing home evacuations in collaboration with facility administrators and the New York City Fire Department ("FDNY").[63] According to Commissioner Bruno, OEM and the State DOH helped hospitals and nursing homes in establishing relationships with contractors to assist in evacuations and ensuring that a sufficient

[58] *Id.*
[59] *Id.*
[60] *Id.*
[61] *Id.*
[62] Testimony of Officer of Emergency Management Commissioner Joseph Bruno, Oct. 12, 2010, Hearing of the Committees on Fire and Criminal Justice Services, Public Safety, and Waterfronts, at p. 11.
[63] *Id.*

number of companies would be available to carry out evacuations.[64] In addition, New York State law requires that the State Disaster Preparedness Commission assist nursing homes in the development of evacuation plans and to establish standards for nursing home disaster preparedness plans.[65]

Finally, when revising the CSP in 2006, OEM learned that people with special needs tend to be disproportionately affected by major emergencies.[66] Special needs populations include people with disabilities, older adults, people with access and functional needs, and others that are potentially vulnerable in an emergency. In fact, research shows that 73 percent of Hurricane Katrina-related deaths in the New Orleans area were among people aged 60 and over, and the majority of those individuals had medical conditions and functional or sensory disabilities.[67] The major barriers faced by people with disabilities in emergencies include a lack of effective communication, accessible emergency transportation, and accessible shelters.[68] Since effective communication is essential during emergencies, yet many people with disabilities are not able to access traditional communication systems, OEM revised is CSP to include a Special Needs and Homebound Population Advance Warning System ("AWS") as a way to provide critical information to special needs populations both before and during emergencies in New York City.

According to Commissioner Bruno, the AWS "provides real-time incident specific information to individuals with Special Needs through the service providers that have pre-

[64] *Id.* at p. 29.
[65] N.Y. Executive Law § 23-b.
[66] CDC.gov, Emergency Preparedness http://www.cdc.gov/ncbddd/disabilityandhealth/emergencypreparedness.html (last visited Dec. 19, 2012).
[67] Lex Frieden, *The Impact of Hurricanes Katrina and Rita on People with Disabilities: A Look Back and Remaining Challenges*, National Council on Disability (2006), *available at*: http://www.ncd.gov/publications/2006/Aug072006 (last visited Dec. 19, 2012).
[68] *Id.*

established, trusted relationships with them."[69] The AWS is designed as a two-way communication system. First, the system provides agencies that work with special needs populations with public preparedness and emergency information.[70] The agencies are then able to distribute this information to individuals that receive services from the agency.[71] As of 2010, 1,500 service providers, representing 623,000 clients, have utilized the advance warning system.[72] Second, service agencies can use the system to inform the City of areas where special needs populations need assistance.[73] This data can effectively assist people with disabilities during an evacuation when they may find it difficult to locate accessible transportation. In New York City, all buses are wheelchair accessible and ambulette services, such as MTA Access-A-Ride, are available to transport people with disabilities who are unable to use fixed-route bus or subway services.

***Sheltering***

The CSP's Emergency Sheltering Program provides the capacity to evacuate up to three million people and shelter 605,000 people in 509 hurricane shelters.[74] The shelter system is based on a "solar system model" where 65 evacuation centers around the City act as the "center" of the system to coordinate staffing and evacuation inflow for 5-10 hurricane shelters each.[75] According to a presentation given by OEM after revising the CSP in 2006, the "solar system" model is "scalable and ensures flexibility in the City's hurricane response."[76] At the Evacuation Centers, evacuees are assigned to a particular evacuation shelter and can be transported to that

[69] Testimony of Officer of Emergency Management Commissioner Joseph Bruno, Oct. 12, 2010, Hearing of the Committees on Fire and Criminal Justice Services, Public Safety, and Waterfronts, at p. 13.
[70] Advance Warning System NYC http://www.advancewarningsystemnyc.org/ (last visited Dec. 19, 2012)
[71] *Id.*
[72] Testimony of Officer of Emergency Management Commissioner Joseph Bruno, Oct. 12, 2010, Hearing of the Committees on Fire and Criminal Justice Services, Public Safety, and Waterfronts, at p. 14.
[73] *Id.*
[74] *Id.*
[75] *Id.*
[76] *Id.*

shelter by bus or van. Evacuation shelters are carefully selected based upon the safety of their location (outside of inundation areas) and proximity to the Evacuation Center. According to the 2006 CSP, the evacuation shelters are managed by American Red Cross staff, in conjunction with up to 34,000 volunteers, who are employees of the City's nonemergency agencies, as well as other partners to assist with food services, security, communications, health services and staff support.[77] According to Commissioner Bruno, nonemergency agency City employees are trained for volunteer work through the StormStaff program.[78] This program includes pre-incident training courses given in classroom or online and "just-in-time" training that is given at the shelters.[79] According to Commissioner Bruno's 2010 testimony, at the time there were over 140,000 City staff registered as shelter staff and all of their contact information is available through a web-based system known as "Sahana" which allows the City to notify and deploy the shelter staff.[80]

Evacuation shelters, often located in school buildings, provide for basic needs for those with no other place to go. However, OEM recognized that certain individuals have special medical needs and for that population the CSP calls for the opening of special medical needs shelters, which are run by the City's Health and Hospitals Corporation.[81] Wherever possible, the special medical needs shelters will be co-located with general shelters.[82]

[77] *Id.*
[78] *Id.* at 16.
[79] *Id.*
[80] *Id.*
[81] *Id.* at 16-17.
[82] *Id.* at 16-17.

Evacuation Centers and Hurricane Shelters are spread throughout the five boroughs as follows:

- Manhattan: 13 Centers, 79 Shelters; 2 Special Needs Shelters;
- Bronx: 13 Centers, 104 Shelters; 1 Special Needs Shelter;
- Brooklyn: 18 Centers, 144 Shelters; 2 Special Needs Shelters;
- Queens: 16 Centers, 151 Shelters; 2 Special Needs Shelters;
- Staten Island: 5 Centers, 23 Shelters; 1 Special Needs Shelter.[83]

***Logistics***

The CSP includes planning for logistical concerns such as supplying the 509 citywide hurricane shelters. According to Commissioner Bruno, OEM maintains an Emergency Supply Stockpile.[84] This stockpile includes medical supplies, personal care items, cots, blankets, food, water, and baby and pet supplies. According to Commissioner Bruno, these items can be deployed with 48 hours and there are enough supplies to support the basic needs of thousands of sheltered individuals for up to seven days.[85]

***Public Information***

Understanding the importance of informing communities that could be affected by coastal storms, the CSP includes protocols for disseminating emergency notifications and outreach. In the event of an impending coastal storm, OEM will activate a Joint Information Center ("JIC") as part of the Emergency Operations Center. The JIC is meant to clearly and consistently communicate with the media days in advance of the storm in an effort to advise the public of what is currently happening and what is anticipated.[86]

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[83] *See* OEM Coastal Storm Plan, Powerpoint Presentation Summary, June 28, 2006 (on file with Committee on Public Safety).
[84] Testimony of Officer of Emergency Management Commissioner Joseph Bruno, Oct. 12, 2010, Hearing of the Committees on Fire and Criminal Justice Services, Public Safety, and Waterfronts, at p. 17.
[85] *Id.*
[86] Testimony of Officer of Emergency Management Commissioner Joseph Bruno, Oct. 12, 2010, Hearing of the Committees on Fire and Criminal Justice Services, Public Safety, and Waterfronts, at p. 17.

In addition, OEM utilizes Notify NYC to quickly inform residents of emergency situations via telephone calls, text messaging, emailing, and social networking.[87] On a more local community level, the CSP utilizes OEM's Community Emergency Response Teams (CERT). CERT members undergo an intensive 10-week training program to learn about emergencies and disasters and the basic response skills needed.[88] CERT members support their communities by assisting with emergency education and response.[89] During non-emergency situations, NYC CERTs educate their communities about emergency preparedness by building community disaster networks and working with the Ready New York program, which is pivotal in OEM's preparedness efforts.[90] The Ready New York program provides City residents with multi-lingual guides that inform residents about basic hurricane preparedness. According to Commissioner Bruno in 2010, since 2006 the City has distributed over 1.6 million Ready New York hurricane guides to those living in hurricane evacuation zones.[91]

## V. The Role of the Fire Department & Emergency Medical Services ("EMS")

The FDNY responds to more than 269,000 fire and non-fire related emergencies and more than 1.2 million medical emergencies each year.[92] The FDNY is comprised of 198 Engine Companies and 143 Ladder Companies[93] and maintains 218 firehouses and 33 EMS stations.[94] The FDNY core competencies have evolved from a heavy emphasis on fighting traditional structural fires and providing pre-hospital care to an expanded role in handling all types of

[87] *Id.* at p. 18; *See also* NYC OEM CERT website, *available at*: http://www.nyc.gov/html/oem/html/get_prepared/cert.shtml.
[88] NYC OEM CERT website, *available at*: http://www.nyc.gov/html/oem/html/get_prepared/cert.shtml.
[89] *Id.*
[90] *Id.*
[91] Testimony of Officer of Emergency Management Commissioner Joseph Bruno, Oct. 12, 2010, Hearing of the Committees on Fire and Criminal Justice Services, Public Safety, and Waterfronts, at pp. 19-20.
[92] 2012 Mayor's Management Report at http://www.nyc.gov/html/ops/downloads/pdf/mmr0912/fdny.pdf
[93] FDNY Vital Statistics 2012 Calendar Year at http://www.nyc.gov/html/fdny/pdf/vital_stats_2012.pdf
[94] FDNY Vital Statistics 2009 Calendar Year at http://www.nyc.gov/html/fdny/pdf/vital_stats_2012.pdf

emergencies, such as hazardous materials incidents, building collapses, transportation accidents, utility-related emergencies, natural disasters, medical response, and acts of terrorism throughout the City.[95]

In addition, the FDNY has an Incident Management Team (IMT) – created after September 11, 2001 – that is tasked with managing large scale, complex incidents such as natural disasters.[96] The FDNY's IMT consists of 147 experts in finance, logistics, operations, information, safety, and planning, all of whom work together to coordinate tasks associated with major emergencies, from the ordering of supplies to the maintaining of timesheets for all workers and volunteers.[97] Since its inception, the FDNY IMT has responded to dozens of floods, hurricanes, and other disasters – including Hurricanes Katrina and Sandy – and worked closely with first responders from multiple Federal, State, and local agencies.[98]

EMS is responsible for delivering ambulance and pre-hospital emergency medical services Citywide, as well as providing tactical and medical direction to field personnel, and administrative and support services to the EMS Bureau.[99] Local Law 20 of 1996 amended the City Charter and granted the FDNY the power to run EMS, thus transferring emergency medical and general ambulance duties from the Health and Hospitals Corporation to the FDNY.

EMS operates advanced life support ambulances ("ALS"), which are staffed by two paramedics, and basic life support ambulances ("BLS"), which are staffed by two emergency

[95] FDNY Strategic Plan found at http://www.nyc.gov/html/fdny/pdf/pr/2004/strategic_plan/responsibilities.pdf.
[96] FDNY Incident Management Team website, *available at*: http://fdny2.imtcenter.net/main/index.aspx. *See also* Sarah Dorsey, *FDNY 'Incident' Team Key to Post-Sandy Response*, THE CHIEF (Dec. 17, 2012), *available at*: http://thechiefleader.com/news/news_of_the_week/fdny-incident-team-key-to-post-sandy-response/article_64f647f0-4660-11e2-823c-001a4bcf6878.html.
[97] Dorsey, *supra.*
[98] *Id.*
[99] New York City Council Finance Committee Report for the joint hearing on 6/4/10 with the Committees on Fire and Criminal Justices Services and Finance (on file with Committees).

medical technicians (EMTs). Paramedics receive 1,500 hours of training and EMTs are required to complete 120 to 150 hours of training.[100]

***FDNY in Hurricane and Severe Weather Emergencies***

According to the CSP, in addition to their routine fire and emergency responsibilities, the FDNY is responsible for healthcare facility and homebound evacuations.[101] The FDNY's Terrorism and Disaster Preparedness Strategy ("the Strategy") governs how the FDNY carries out those operations in a hurricane. The Strategy is meant to ensure that the FDNY is prepared to execute its life safety mission and that preparedness goals are achieved in a manner that is effective, efficient, and sustainable, including their response to hurricanes and other large-scale disasters.[102] According to the Strategy, the FDNY seeks to attain the optimal position to execute a strong and swift initial response to all hazards, focusing on four main points: (i) organizational adaptability,[103] (ii) response capability,[104] (iii) prevention and protection, and (iv) coordination and collaboration.[105]

FDNY's All Unit Circular 159 ("AUC 159") sets out the FDNY Standard Operating Procedures for hurricane and severe storm emergencies.[106] When weather conditions indicate that a severe storm is likely to strike New York City, AUC 159 outlines specific anticipated

[100] Bernard O'Brien, *Two Paramedics on an Ambulance—Only in New York*, IBO WEB BLOG, Jul. 27, 2009, *available at:* http://ibo.nyc.ny.us/cgi-park/?p=77.
[101] FDNY Terrorism and Disaster Preparedness Strategy, http://www.nyc.gov/html/fdny/html/publications/tdps/tdps.shtml.
[102] *Id.*
[103] Organizational adaptability is divided into three areas consisting of (i) network-centric command, (ii) tiered response, and (iii) decentralization. During an incident, network-centric command supports information sharing among city, state and federal agencies to improve situational awareness and provide a common operating picture for the FDNY commanders. FDNY units are trained in "tier response", which is a system of layered resource grades, with each layer containing a defined number of units with incrementally higher levels of special response capabilities.
[104] Response capability is intended to bolster and enhance the Department's core competencies, which include: (i) fire suppression, (ii) pre-hospital emergency medical care, (iii) structural evacuation, (iv) search and rescue, (v) Hazardous Materials (HazMat) life safety and decontamination, and (vi) arson investigation.
[105] The FDNY's Incident Command System provides a common organizational structure for the immediate response to emergencies and involves the coordination of personnel and equipment on-site at an incident.
[106] FDNY AUC 159, October 6, 2009 (on file with the Fire and Criminal Justice Services Committee).

critical areas, including Borough Evacuation Zones.[107] Additionally, the FDNY operational plan is divided into two phases.[108] Phase A is designated the Activation Phase and Phase B is designated the Implementation Phase.[109]

Phase A is instituted when weather forecasters predict a severe storm approaching New York City, and initiates preliminary activities in preparation for emergency conditions.[110] Phase A activities include: (i) making contact with other pertinent city, state and federal agencies; (ii) conducting surveys to develop a strategy for prospective activities; (iii) checking the availability and status of apparatus and equipment; (iv) assessing transportation; (v) checking water supply and hydrants to determine where serious deficiencies may develop; (vi) determining the need for additional staffing and placing sufficient personnel on stand-by to meet the anticipated need for an increase in staffing levels; and (vii) preparing and securing all FDNY quarters.[111]

Phase B is instituted when actual emergency conditions have been reached or are imminent and special activities are deemed necessary.[112] Phase B activities include, among other things, establishing communications, command and control, which encompasses: (i) staffing a fire department control center and coordination with OEM; (ii) determining staffing needs, designating assignments, recalling off duty personnel and determining the need for additional apparatus and getting it prepared; (iii) establishing liaisons with news media and radio stations to transmit necessary broadcasts; (iv) determining the need to retain or recall department mechanics and other civilian personnel; (v) staffing reserve apparatus; (vi) conducting continuing surveys

[107] *Id.* at p.3.
[108] *Id.* at p.10.
[109] *Id.* at p.10.
[110] *Id.* at p.10.
[111] *Id.* at p.11-12.
[112] *Id.* at p.10.

and reconnaissance regarding street and hydrant conditions; and (vii) developing appropriate solutions when streets are difficult to maneuver or are impassable.[113]

***EMS in Severe Weather Emergencies***

EMS Command Operating Guide Procedure 106-15 ("OGP 106-15") sets out EMS policy for the activation of the Severe Weather Contingency Plan, including procedures implemented during weather conditions constituting a *Severe Weather Alert and/or Severe Weather Emergency*.[114] OGP 106-15 applies to all members of the EMS Command and employees of Voluntary Hospitals.[115] When the National Weather Service has declared a *Weather Advisory* (watch/warning), EMS Command implements a two phase contingency plan.[116] Phase-A is declared when there is a potential for adverse weather arriving within 12 to 36 hours, or when a *Weather Advisory* (watch/warning) has been announced by the National Weather Service, or when predicted or actual severe weather conditions can be reasonably expected to affect EMS operations.[117] The information is normally relayed from OEM.[118] Phase-B is declared when weather and/or traffic conditions are having an adverse effect on ambulance operations or when a Weather Emergency has been declared.[119]

[113] *Id.* at p.13-20.
[114] FDNY EMSC OGP 106-15, January 10, 2012, (on file with the Fire and Criminal Justice Services Committee).
[115] *Id.*
[116] *Id.*

[117] FDNY EMSC OGP 106-15, January 10, 2012, (on file with the Fire and Criminal Justice Services Committee).
[118] *Id.*
[119] *Id.*

## VI. The City's Preparation For and Emergency Response to Hurricane Sandy

A State disaster emergency may be declared by the Governor, either of his own volition, or pursuant to the request of the Mayor.[120] If the Governor finds that the disaster is beyond the capabilities of the State, he may request federal assistance.[121] Additionally, when the Governor declares a State disaster emergency he may authorize assistance, such as equipment, supplies or the services of State personnel, to political subdivisions.[122] Localities have the authority to call local states of emergencies if their chief executive determines that there is a "disaster . . . catastrophe, or similar public emergency," or threat thereof.[123] In the case of New York City, the Mayor holds this power.[124] Calling a local state of emergency allows the Mayor to "promulgate local emergency orders to protect life and property or to bring the emergency situation under control."[125] When a local state of emergency has been declared, the Mayor may request the governor to provide assistance to the City if the Mayor determines that managing the disaster is beyond the capacity of local government.[126] The information provided by OEM is, therefore, imperative.

[120] New York Executive Law § 28.
[121] New York Executive Law § 28(4). Under the Federal law, the Governor must find that the situation in the State is so severe that Federal assistance is necessary and must then request assistance from the President. Following the request, the President may declare a major disaster or emergency and grant assistance to the state. *See also* 42 U.S.C. §§ 5170, 5191.
[122] New York Executive Law § 29. Once the Governor authorizes assistance, the responsibility for disaster response rests with the Disaster Preparedness Commission per Executive Law §22(2)(b). The State Emergency Management Office ("SEMO") is the administrative aid of the Disaster Preparedness Commission, and coordinates aid. *See also* "New York State Comprehensive Emergency Management Plan," p. I-1 (January, 2011), *available at* http://www.semo.state.ny.us/uploads/2011_01_NYS%20CEMP_Vol_02.pdf.
[123] New York Executive Law § 24(1).
[124] *Id.*
[125] *Id.*
[126] New York Executive Law § 24(7). Specifically, the Mayor must determine that the disaster "is beyond the capacity of local government to meet adequately and state assistance is necessary to supplement local efforts to save lives and to protect property, public health and safety, or to avert or lessen the threat of a disaster."

***Timeline of Events***

Thursday, October 25, 2012

- The City of New York activates the Command Center at the Office of Emergency Management in response to weather reports predicting a possible impact from Hurricane Sandy.[127]
- Governor Andrew M. Cuomo calls on the New York State Division of Homeland Security and Emergency Services to monitor the progress of Hurricane Sandy and prepare for potential storm impacts.[128]

Friday, October 26th, 2012

- Governor Andrew M. Cuomo declares a state of emergency in New York in preparation for the potential impact of Hurricane Sandy.[129] The Governor continues to coordinate statewide preparation for the storm and orders the State's Emergency Operations Center to operate twenty-four hours a day. [130]
- Governor Cuomo asks President Barack H. Obama for a pre-landfall disaster declaration which would allow New York State to gain access to funds and Federal Emergency Management Agency ("FEMA") resources.[131]

[127] *See* Press Release, Office of the Mayor of the City of New York, *Mayor Bloomberg Updates New Yorkers on City Preparations for Hurricane Sandy and Steps new Yorkers should Take To Prepare* (October 26, 2012), *available at*: http://www.nyc.gov/html/om/html/2012b/pr375-12.html.
[128] Press Release, Office of the Governor of New York State, *Governor Cuomo Directs Division of Homeland Security and Emergency Services to Monitor Hurricane Sandy* (October 25, 2012), *available at*: http://www.governor.ny.gov/press/102512hurricanesandy.
[129] Press Release, Office of the Governor of New York State, *Governor Cuomo Declares State of Emergency in New York in Preparation for Potential Impact of Hurricane Sandy* (October 26, 2012), *available at*: http://www.governor.ny.gov/press/10262012-sandystateofemergency.
[130] *Id.*
[131] *Id.*

- Mayor Michael Bloomberg holds press conference encouraging New Yorkers to begin taking precautions for the possibility of Hurricane Sandy's impact. At this time, Mayor Bloomberg did not call for an evacuation or close any schools.[132]
- Mayor Bloomberg reminds all New Yorkers to "remain alert to weather forecasts for the next several days."[133] In addition, Mayor Bloomberg explains that, at that moment, he does not recommend that the six hospitals and 41 chronic care facilities in low-lying areas evacuate.[134] Instead, Mayor Bloomberg recommends that these facilities cancel elective admissions and discharge any patients that can be safely discharged.[135]
- The City begins to place informational flyers at 26 New York City Housing Authority Developments located in low-lying areas.[136]

Saturday, October 27, 2012

- Mayor Bloomberg holds a press conference where he explains that the trajectory of Hurricane Sandy indicates that it would hit south of the City.[137]
- Mayor Bloomberg reiterates that no evacuation orders are currently in effect for any parts of the City.[138]
- Health Commissioner Tom Farley is in touch with all health facilities in low-lying areas, and according to Mayor Bloomberg, all of the facilities canceled elective

[132] Press Release, Office of the Mayor of the City of New York (October 26, 2012), *supra* note 127.
[133] *Id*.
[134] *Id*.
[135] *Id*.
[136] Press Release, Office of the Mayor of the City of New York, *Mayor Bloomberg Updates New Yorkers on City Response to Hurricane Sandy, Announces Public Schools will Be Closed Tomorrow* (October 29, 2012), *available at*: http://www.nyc.gov/html/om/html/2012b/pr380-12.html.
[137] Press Release, Office of the Mayor of the City of New York, *Mayor Bloomberg Updates New Yorkers on City Preparations for Hurricane Sandy and Steps New Yorkers Should Take to Prepare* (October 27, 2012), *available at*: http://www.nyc.gov/html/om/html/2012b/pr376-12.html.
[138] *Id*.

admissions. Mayor Bloomberg also explains that State Officials indicated that all ventilator-dependent patients in "Slosh Zones" (the Rockaways, Northeast Queens, and Eastern Bronx Shore) will be transferred to safe locations by 5pm on Sunday, October 28, 2012.[139]

- According to Mayor Bloomberg, all health care facilities in low-lying areas are taking additional precautions to prepare and every facility explained that they are comfortable going for a "reasonable period of time dealing with a power outage should that occur."[140]
- Mayor Bloomberg urges New Yorkers in low-lying areas who are concerned about their safety to relocate either with friends, family, or at one of the City's hurricane shelters, which according to the Mayor, were set to open as of 9 o'clock a.m. on Sunday, October 28, 2012.[141]
- Meetings are held with residents at New York City Housing Authority ("NYCHA") developments and doors of all residents are beginning to be knocked on to provide them with information.[142]
- Governor Cuomo directs the Metropolitan Transit Authority ("MTA") to begin planning for the "orderly suspension of all subway, bus, and commuter railroad service."[143]

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[139] *Id*.
[140] *Id*.
[141] *Id*.
[142] Press Release, Office of the Mayor of the City of New York, *Mayor Bloomberg Updates New Yorkers on City Response to Hurricane Sandy, Announces Public Schools will Be Closed Tomorrow* (October 29, 2012), *available at*: http://www.nyc.gov/html/om/html/2012b/pr380-12.html.
[143] Press Release, Office of the Governor of New York State, *Governor Cuomo Directs MTA to Begin Planning for Possible Orderly Suspension of All MTA Service in Advance of Hurricane Sandy* (October 27, 2012), *available at*: http://www.governor.ny.gov/press/10272012-MTAserviceSANDY.

- State Department of Health releases general guidance for all health care facilities to be prepared for prolonged power outages and to check on generators.[144] State DOH also requires all adult homes and nursing homes in the New York City metropolitan area to bring "staffing levels to 150% of standard shifts" by 5pm Sunday, October 28, 2012.[145]

Sunday, October 28, 2012

- President Obama declares an emergency exists in the State of New York and orders federal aid to supplement state and local response efforts.[146]
- In the early morning, Governor Cuomo announces that the MTA's New York City subways will begin to curtail service after 7 p.m. and bus service after 9 p.m.[147] Outbound Access-A-Ride trips will end at 12 p.m. and return trips will end at 5 p.m.[148]
- At 9 a.m. 72 evacuation centers are opened in public schools around New York City.[149]
- In the 11 am hour, Mayor Bloomberg issues Executive Order Number 163 ("E.O. 163") proclaiming a state of emergency and a mandatory evacuation of low-lying

[144] *Id.*
[145] *Id.*
[146] Press Release, The White House, *President Obama Signs New York Emergency Declaration* (October 28, 2012), *available at*: http://www.whitehouse.gov/the-press-office/2012/10/28/president-obama-signs-new-york-emergency-declaration.
[147] Press Release, Office of the Governor of New York State, *Governor Cuomo Announces MTA to Suspend Service in Advance of Hurricane Sandy* (October 28, 2012), *available at*: http://www.governor.ny.gov/press/10282012mtasuspension.
[148] *Id.*
[149] Press Release, Office of the Mayor of the City of New York, *Mayor Bloomberg Issues Order for Mandatory Evacuation of Low-Lying Areas as Hurricane Sandy Approaches* (October 28, 2012), *available at*: http://www.nyc.gov/html/om/html/2012b/pr377-12.html.

areas.[150] Specifically, he orders mandatory evacuations for Zone A, which includes the southern tip of Manhattan, the Coney Island, Brighton Beach, Red Hook, and Manhattan Beach areas of Brooklyn, and the entire Rockaways peninsula, as well as Hamilton Beach and Broad Channel in Queens, almost all coastal areas of Staten Island, City Island, and part of the Throggs Neck area of the Bronx.[151]

- Mayor Bloomberg explains that there will be no evacuation of patients in hospitals and chronic care facilities in Zone A. Teams from the New York City Department of Health and Mental Hygiene visit these facilities to make sure that emergency generators are working.[152]
- However, Manhattan Veteran's Affairs Medical Center and New York Downtown Hospital are evacuated in advance of the storm.[153]
- Mayor Bloomberg announces the closure of New York City Public Schools for Monday, October 29, 2012.[154]
- The New York City Department of Homeless Services enhances street outreach to encourage people on the street to seek shelter.[155]
- NYPD Police Officers are put on extended hours and NYPD Highway Patrol Units are prepositioned to aid stranded motorists.[156]

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[150] Executive Order Number 163, *Proclamation of a State of Emergency and Evacuation Order* (October 28, 2012), *available at*: http://www.nyc.gov/html/om/pdf/eo/eo_163.pdf.
[151] *Id.*
[152] Press Release, Office of the Mayor of the City of New York, *Mayor Bloomberg Issues Order for Mandatory Evacuation of Low-Lying Areas as Hurricane Sandy Approaches* (October 28, 2012), *available at*: http://www.nyc.gov/html/om/html/2012b/pr377-12.html.
[153] Posting of Syndey Lupkin, ABCNews Medical Unit Blog, *Hospitals Evacuate Ahead of Hurricane Sandy* (October 29, 2012), *available at*: http://abcnews.go.com/blogs/health/2012/10/29/hospitals-evacuate-ahead-of-hurricane-sandy/.
[154] Press Release, Office of the Mayor of the City of New York, *Mayor Bloomberg Issues Order for Mandatory Evacuation of Low-Lying Areas as Hurricane Sandy Approaches* (October 28, 2012), *available at*: http://www.nyc.gov/html/om/html/2012b/pr377-12.html.
[155] *Id.*

- FDNY special rescue units are prepared and extra fire engines are placed on Staten Island in the event that ferries or the bridges are shut down.[157]
- Staten Island Ferry service is suspended at 8 p.m.[158]
- NYCHA works to inform residents of the 26 NYCHA facilities located in Zone A to evacuate.[159] Police officers use loudspeakers at these locations to inform people to evacuate.[160]
- The Coast Guard closes New York Harbor at night, and diverts all cruise ships scheduled for Monday and Tuesday arrivals.[161]
- Governor Cuomo directs the New York Army and Air National Guard to mobilize.[162]
- Governor Cuomo directs the Port Authority of New York and New Jersey to make preparations to prevent flooding and to secure all construction materials at the World Trade Center site.[163]

Monday, October 29, 2012

- New York City public schools and Department of Education school-based afterschool programs are closed.[164]

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[156] Press Release, Office of the Mayor of the City of New York (October 27, 2012), *supra* note 136.
[157] *Id*.
[158] Press Release, Office of the Mayor of the City of New York, *Mayor Bloomberg Issues Order for Mandatory Evacuation of Low-Lying Areas as Hurricane Sandy Approaches* (October 28, 2012), *available at*: http://www.nyc.gov/html/om/html/2012b/pr377-12.html.
[159] Press Release, Office of the Mayor of the City of New York, *Mayor Bloomberg Updates New Yorkers on City Response to Hurricane Sandy, Announces Public Schools will Be Closed Tomorrow* (October 29, 2012), *available at*: http://www.nyc.gov/html/om/html/2012b/pr380-12.html.
[160] Press Release, Office of the Mayor of the City of New York, *Mayor Bloomberg Updates New Yorkers on City Response to Hurricane Sandy, Announces Public Schools will Be Closed Tomorrow* (October 29, 2012), *available at*: http://www.nyc.gov/html/om/html/2012b/pr380-12.html.
[161] *Id*.
[162] Press Release, Office of the Governor of New York State, *Governor Cuomo Directs the New York Army and Air National Guard to Mobilize for Hurricane Sandy* (October 28, 2012), *available at*: http://www.governor.ny.gov/press/10282012nationalguardmobilized.
[163] Press Release, Office of the Governor of New York State, *Governor Cuomo Directs the Port Authority to Prepare for Potential Flooding and High Winds at World Trade Center Site* (October 28, 2012), *available at*: http://www.governor.ny.gov/press/10282012worldtradepreps.

- Street cleaning rules and parking meter rules are suspended.[165]
- New York City Offices remain open and City Employees report to work.[166]
- Senior Centers are closed and are to remain closed on Tuesday, October 30, 2012.[167]
- Overnight (Sunday to Monday) EMS crews transport 13 homebound elderly from their residences in low-lying areas.
- Bronx River Parkway and westbound lanes of the Goethals Bridge are closed.
- Hugh L. Carey Brooklyn-Battery Tunnel and Holland Tunnel close at 2pm.
- Governor Cuomo closes the Bayonne Bridge, the Outerbridge Crossing, the Cross Bay Veterans Memorial Bridge, Throgs Neck Bridge, Bronx-Whitestone Bridge, Verrazano-Narrows Bridge, Henry Hudson Bridge, Marine Parkway-Gil Hodges Memorial Bridge, and the George Washington Bridge.[168]
- Brooklyn Bridge, Manhattan Bridge, Williamsburg Bridge, and Ed Koch-Queensboro Bridge close at 7pm.[169]
- New York State Department of Health ("State DOH") sends more than 80,000 notifications regarding patient safety efforts and storm preparedness to health care

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[164] Press Release, Office of the Mayor of the City of New York, *Mayor Bloomberg Issues Order for Mandatory Evacuation of Low-Lying Areas as Hurricane Sandy Approaches* (October 28, 2012), *available at*: http://www.nyc.gov/html/om/html/2012b/pr377-12.html.
[165] *Id*.
[166] *Id*.
[167] *Id*.
[168] Press Release, Office of the Governor of New York State, *Governor Cuomo Announces Updates on Bridge Closures* (October 29, 2012), *available at*: http://www.governor.ny.gov/press/10282012bridgeupdate.
[169] Press Release, Office of the Mayor of the City of New York, *Mayor Bloomberg Updates New Yorkers on City Response to Hurricane Sandy* (October 29, 2012), *available at*: http://www.nyc.gov/html/om/html/2012b/pr382-12.html.

facilities.[170] State DOH contacts all health care facilities located in New York City Zone A and sends staff to facilities in Far Rockaways and Coney Island.[171]

- NYU-Langone Medical Center evacuates over 200 patients during the storm amidst lost power and failed back-up generators.
- Coney Island Hospital is evacuated.
- Over 80 homes and buildings catch fire in Breezy Point, Queens and FDNY units are unable to respond due to chest-high flood waters.

Tuesday, October 30, 2012

- New York City public schools remain closed and Mayor Bloomberg announces that they will be closed on October 31, 2012 as well.
- Mayor Bloomberg signs Executive Order Number 164 ("E.O. 164"), which permits cab drivers to pick up multiple passengers, even if a passenger is already in the cab. In addition, E.O. 164 allows livery and black cars to pick up passengers off the street, anywhere in the City.[172]
- Mayor Bloomberg announces that Bellevue Hospital lost power in the storm but at the moment is running on backup power.[173]
- Mayor Bloomberg announces that there are more than 6,100 people in the City's emergency shelters and more than 2,200 City staff working in the shelters.[174]

[170] Press Release, Office of the Governor of New York State, *Governor Cuomo Directs Port Authority and MTA to Close Bridges at 7pm* **(**October 29, 2012), *available at*: http://www.governor.ny.gov/press/10292012-port-authority-mta-bridge-closings.
[171] *Id*.
[172] Executive Order Number 164, *Amendment of Prior Proclamation of a State of Emergency* (October 30, 2012), *available at*: http://www.nyc.gov/html/om/pdf/eo/eo_164.pdf.
[173] Press Release, Office of the Mayor of the City of New York, *Mayor Bloomberg Updates New Yorkers on City Response to Hurricane Sandy* (October 30, 2012), *available at*: http://www.nyc.gov/cgi-bin/misc/pfprinter.cgi?action=print&sitename=OM&p=1357746465000
[174] *Id*.

Wednesday, October 31, 2012

- Most MTA bus lines begin operating and do so free of charge to customers.[175]
- All the East River bridges are opened, but the Queens Midtown Tunnel, the Hugh Carey Brooklyn Battery Tunnel and the Holland Tunnels remain closed.[176]
- Mayor Bloomberg issues Executive Order Number 165 ("E.O. 165") which explains that the mandatory evacuation order set forth in E.O. 163 remains in effect except that members of the public may begin to re-occupy commercial and residential buildings in Zone A only after the New York City Department of Buildings has made a determination that re-occupation is permitted.[177]
- Pursuant to E.O. 165, inspectors from the City's Department of Buildings begin inspecting buildings and structures in Zone A and tagging them with stickers to inform occupants of their safety. A red sticker indicates that the building is unsafe to re-occupy, a yellow sticker indicates that re-occupation is allowed but with extreme caution, and a green sticker indicates that re-occupation is allowed and the building or structure is safe.[178]
- E.O. 165 also prohibits all passenger vehicles containing fewer than three persons from entering Manhattan via the Brooklyn Bridge, the Manhattan Bridge, the Ed Koch Queensboro Bridge, and the Williamsburg Bridge from 6 a.m. to midnight on Thursday November 1, 2012 and Friday November 2, 2012.[179]

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[175] Press Release, Office of the Mayor of the City of New York, *Mayor Bloomberg Updates New Yorkers on City Response to Hurricane Sandy* (October 31, 2012).
[176] *Id*.
[177] Executive Order Number 165, *Emergency Evacuation and Re-Occupation and Transportation Order* (October 31, 2012), *available at*: http://www.nyc.gov/html/om/pdf/eo/eo_165.pdf.
[178] Press Release, Office of the Mayor of the City of New York, *Mayor Bloomberg Updates New Yorkers on City Response to Hurricane Sandy* (October 31, 2012).
[179] Executive Order Number 165 (October 31, 2012), *supra* note 176.

***FDNY and EMS Preparation for and Response to Hurricane Sandy***

To prepare for the impact Hurricane Sandy was expected to have on the City, the FDNY undertook various measures prior to Sandy's arrival in order to increase the number of available personnel. These measures included: (i) adding more than 600 additional firefighters and EMS staff to current scheduled shifts during the height of the storm;[180] (ii) mobilizing special units (with small boats) and pre-positioning them in Zone A areas for possible deployment during storm;[181] and (iii) staffing more than 100 extra EMS ambulances.[182]

According to FDNY, more than 500 individuals trapped by rising waters were rescued by firefighters using 30 small "swift water" boats in Brooklyn, Queens and Staten Island.[183] In an effort to address the higher-than-normal call volume, FDNY Operations consulted with OEM and the State, which agreed to supply up to 50 high-axle Humvee vehicles. During the storm, EMS received a record-breaking 5,681 calls, and maintained a City-wide average response time to the most serious life-threatening calls of 6 minutes and 59 seconds (only about 29 seconds above the normal daily average).[184] However, allegations have been made indicating there was a failure in the way that the FDNY/EMS handled the evacuation of some of its own facilities during the storm. For this reason, along with others, the unions representing EMS technicians, paramedics, and officers are calling for the resignation of EMS Chief Abdo Nahmod.[185]

FDNY Operations also set up Command Posts in each of the hardest hit areas of Brooklyn, Queens and Staten Island as bases from which to coordinate with other agencies and gather additional resources. In addition, the FDNY's IMT played a critical role prior to and

[180] Correspondence between Fire and Criminal Justice Services Committee Staff and FDNY representatives (on file with Fire and Criminal Justice Services Committee).
[181] *Id.*
[182] *Id.*
[183] *Id.*
[184] *Id.*
[185] Susan Edelman, Rebecca Harshbarger, & Kate Briquelet, *Paramedics union demands FDNY's EMS chief resign over Sandy fiasco*, N.Y. POST, Nov. 25, 2012.

during Hurricane Sandy.[186] By undertaking pre-storm planning, such as determining geographic areas most likely to need resources, the FDNY IMT was able to quickly dispatch three FEMA search-and-rescue teams into affected areas by 6 a.m. the morning after Sandy impacted the City.[187] FDNY IMT gave clear work assignments and planned "how to record the searches and how to support [the searches]."[188] The IMT also coordinated the delivery of meals, blankets, water, and medical supplies to victims, as well as the filling of prescriptions for residents whose pharmacies had been shut down.[189] Weeks after the storm hit, the IMT began conducting health-and-wellness surveys to find out how many residents were without power and how many need heat and medications.[190]

Below is a chart indicating the number of emergencies the FDNY responded to on Monday, October 29, 2012 and Tuesday, October 30, 2012, as compared to the daily average for 2012 year-to-date:[191]

| | **Monday - 10/29/12** | **Tuesday – 10/30/12** | **Daily Avg. 2012 YTD** |
|---|---|---|---|
| Structural Fires | 180 | 151 | 68 |
| Non-Structural Fires | 153 | 201 | 39 |
| Medical Emergencies | 387 | 410 | 601 |
| Non-Medical Emergencies | 3,315 | 2,911 | 566 |
| Malicious False Alarms | 90 | 113 | 60 |
| **Total Incidents** | **4,125** | **3,786** | **1,334** |

[186] Dorsey, *FDNY 'Incident' Team Key to Post-Sandy Response*, THE CHIEF (Dec. 17, 2012).
[187] *Id.*
[188] *Id.*
[189] *Id.*
[190] *Id.*
[191] Correspondence between Fire and Criminal Justice Services Committee Staff and FDNY representatives (on file with Fire and Criminal Justice Services Committee).

***City's Outreach Efforts to Homeless Individuals Before the Storm***

As described above, while New York City prepared for Hurricane Sandy, including the mandatory evacuation of residents in the high-flood Zone A, homeless individuals were among the City's most vulnerable residents. In fact, according to the 2012 HOPE Street Survey conducted by the New York City Department of Homeless Services ("DHS"), 3,262 homeless individuals are living in public places in New York City, including parks, streets and subways at any given time.[192] Immediately prior to the storm, DHS increased its efforts to reach out to homeless individuals, with a particular emphasis on those living in Zone A. In conjunction with the NYPD's homeless outreach units, DHS outreach teams attempted to make contact with as many people as possible to warn them of the impending weather and bring them into shelters.[193] According to a DHS representative, these efforts brought 175 people inside, with an estimated 10 people remaining outside in Zone A.[194] DHS also coordinated with the MTA Homeless Outreach Unit to find homeless individuals living in the subways and transport them to shelters.[195] In addition to DHS outreach efforts, drop-in centers remained open for 24 hours a day and restrictions on entering shelter were lifted, including initiating Code Blue Procedures which are activated during extreme cold weather conditions and requires shelters to automatically accept walk-in applicants.[196] In addition to homeless individuals living in public places, close to 50,000 homeless people, both adults and children, spend any given night in New

[192] Department of Homeless Services, *Hope 2012 The NYC Street Survey*, http://www.nyc.gov/html/dhs/downloads/pdf/hope_2012_presentation_web.pdf (last visited Dec. 2012).
[193] Kelly Faircloth, *Homeless Still on the Streets of New York as Sandy Hits Land*, THE NEW YORK OBSERVER, Oct. 29, 2012, http://observer.com/2012/10/homeless-still-on-the-street-of-new-york-as-sandy-hits-land/ (last visited Dec. 2012).
[194] *Id*.
[195] Danielle Tcholakian, *Bloomberg Urges Evacuation to Emergency Shelters Intensifies Homeless Outreach*, METRO, Oct. 29, 2012. http://www.metro.us/newyork/local/article/1155221--bloomberg-urges-evacuation-to-emergency-shelters-intensifies-homeless-outreach. (last visited Jan. 9, 2013).
[196] *Id*.; *see also* NYC Department of Homeless Services, *DHS "Code Blue" Emergency Procedure Protects Those Seeking Shelter Due To Winter Weather*, November 18, 2008, http://www.nyc.gov/html/dhs/html/press/pr111808.shtml (last visited Dec., 2012).

York City shelters.[197] Prior to the landfall of Hurricane Sandy, when residents of Zone A were required to evacuate their homes in low-lying areas in Coney Island, Red Hook, the Rockaways, City Island, Hamilton Beach, coastal Lower Manhattan and coastal Staten Island, DHS transferred individuals and families living in the shelters in those neighborhoods to other shelter locations across the City.[198] Nine homeless shelters and one intake shelter, housing more than 1,000 people, are located in Zone A and residents had to be transported to safer locations.[199]

The Council intendeds to conduct oversight into DHS management of shelters after the storm at a future hearing, but today the Committees would like to learn more about OEM's coordination with DHS and how the CSP takes into consideration the needs of this population.

***Hurricane Sandy Impact on Nursing Homes and Hospitals***

As seen above, prior to, during, and after Hurricane Sandy, a number of hospitals and nursing homes lost power, causing many to institute emergency evacuations after emergency generators failed.[200] New York University Langone Medical Center, Bellevue, the Manhattan Veterans Administration, and Coney Island hospitals all evacuated patients following flooding and power failures in the wake of Sandy.[201] On the evening Sandy made landfall in New York City, Langone Medical Center evacuated 215 patients down stairwells with the assistance of flashlights into awaiting ambulances after basement flooding caused a complete loss of

[197] Department of Homeless Services, Daily Report 12/19/12, http://www.nyc.gov/html/dhs/downloads/pdf/dailyreport.pd (last visited Dec. 2012).
[198] NY 1, *With Sandy Approaching, Residents Head to City Shelters,* October 29, 2012, http://www.ny1.com/content/top_stories/171522/with-sandy-approaching--residents-head-to-city-shelters/ (last visited Dec., 2012).
[199] *Id.*
[200] Jennifer Preston, Sheri Fink, and Michael Powell, *Call That Kept Nursing Home Patients in Sandy's Path*, N.Y. TIMES, Dec. 2, 2012, *available at*: http://www.nytimes.com/2012/12/03/nyregion/call-that-kept-nursing-home-patients-in-sandys-path.html?pagewanted=all; Heidi Evans, *No date set to reopen hospitals that evacuated during Hurricane Sandy*, N.Y. DAILY NEWS, Nov. 11, 2012, *available at*: http://www.nydailynews.com/new-york/date-set-reopen-hospitals-evacuated-hurricane-sandy-article-1.1200359.
[201] Evans, *No date set to reopen hospitals that evacuated during Hurricane Sandy*, N.Y. DAILY NEWS, Nov. 11, 2012,

electricity in the hospital.[202] Similar power failures and patient removals occurred throughout the City at other health care facilities, including some in Zone A that were not evacuated.

Nursing homes in Zone A were advised by the City not to evacuate in advance of Hurricane Sandy.[203] The City, after consulting with aides to Governor Andrew Cuomo and the State Department of Health (DOH), recommended that nursing homes and adult homes not evacuate their residents due to concerns over risks in transporting residents.[204] Notably, prior to the landfall of Tropical Storm Irene in August 2012, hospitals, nursing homes, and homes for the aged in Zone A were directed to evacuate.[205] The order applied to one psychiatric facility, eight nursing homes, and eight adult care centers.[206]

According to the New York Times, at least 29 nursing homes in the City sustained severe flooding and subsequent power outages left the facilities without heat, water, and food.[207] After Promenade nursing home in Rockaway Park, Queens lost power and was unable to provide proper food and care; its nearly 200 residents were moved to various emergency shelters throughout the City, many unaccompanied by medical records or nursing home staff, leaving family members unable to track their loved ones.[208] Promenade is currently being investigated by

[202] Sharon Begley, *Insight: Sandy shows hospitals unprepared when disaster hits home*, Reuters, Nov. 3, 2012, http://www.reuters.com/article/2012/11/03/us-storm-sandy-hospitals-idUSBRE8A20AV20121103.
[203] Preston, *Call That Kept Nursing Home Patients in Sandy's Path*, N.Y. TIMES, Dec. 2, 2012.
[204] *Id.*
[205] Press Release of Mayor Michael Bloomberg, Mayor Bloomberg Updates New Yorkers On Preparations for Hurricane Irene, Aug. 26, 2011, *available at*: http://www.nyc.gov/portal/site/nycgov/menuitem.c0935b9a57bb4ef3daf2f1c701c789a0/index.jsp?pageID=mayor_press_release&catID=1194&doc_name=http%3A%2F%2Fwww.nyc.gov%2Fhtml%2Fom%2Fhtml%2F2011b%2Fpr308-11.html&cc=unused1978&rc=1194&ndi=1.
[206] *Id.*
[207] Michael Powell and Sheri Fink, *Queens Nursing Home Is Faulted Over Care After Storm*, N.Y. TIMES, Nov. 9, 2012, *available at:* http://www.nytimes.com/2012/11/10/nyregion/queens-nursing-home-is-faulted-over-care-after-storm.html?pagewanted=all.
[208] *Id.*

the State DOH for its actions following Hurricane Sandy, but the center contends that the State failed residents by directing them not to evacuate.[209]

The Council intends to further explore the issue of pre-storm evacuations at hospitals, health care and chronic care facilities at a future hearing, but today the Committees would like to learn more about OEM's role in coordinating with these facilities prior to emergency situations, and the decision made to not evacuate.

***Emergency Food Assistance After Hurricane Sandy***

In the immediate aftermath of Hurricane Sandy one of the most vital forms of assistance necessary for those affected by the storm was access to food. With major sections of the City left without power, thousands of people were in need of assistance after the food in their homes quickly spoiled. Advocates have argued that due to a lack of planning, emergency food providers had difficulties with identifying, transporting, and deploying food to people who needed it, resulting in too long of delays in food distribution. According to advocates it was not until approximately two weeks after the storm that the process around emergency food distribution was organized. Furthermore, reports indicate that many people had difficulty accessing their SNAP benefits in the first few days after storm because retailers were not always aware of non-electronic ways of accessing benefits.

The Council intends to further explore the issue of emergency food planning at a future hearing, but today the Committees would like to learn more about the alleged delays in emergency food distribution.

[209] *Id.*

## VII. The City's Emergency and Non-Emergency Communications Systems

***The 9-1-1- Emergency System***

The City's 911 emergency communications system was historically a bifurcated system handled by the NYPD and FDNY, both of which were responsible for call taking and dispatch operations. There are approximately 1,100 police communication technicians who process 911 calls and dispatch police assistance, while there are approximately 200 FDNY dispatchers.[210] These technicians answer approximately 13 million calls annually.[211] Until 2009, these dispatchers were stationed in each of the 5 boroughs. However, after the September 11, 2001 attacks and the August 2003 black-out, the City initiated the Emergency Communications Transformation Project ("ECTP") in 2004 in an attempt to address shortcomings in the City's emergency public call taking and dispatch operations by overhauling the way operations are managed and supported.[212] Specifically, the ECTP was designed to centralize and integrate the call taking and dispatch operations among the NYPD, FDNY, and EMS. The purpose of ECTP was to reduce emergency response times, improve the City's capacity to coordinate multi-agency responses to emergencies, ensure that the City's systems are fully redundant, and to enhance the resiliency of the NYPD and FDNY, including EMS, dispatch operations.[213] As such, now, FDNY dispatchers from Manhattan, Brooklyn and Staten Island are located in Public Services Answering Center ("PSAC") 1 in Brooklyn and dispatchers in the Bronx and Queens are located

[210] New 911 Operators Join NYPD Force of Emergency Dispatchers – Press Release: NYPD—February 3, 2009.
[211] Lillian Roberts, AFSCME, AFL-CIO, Testimony before the Committees on Fire and Criminal Justice, Public Safety and Technology in Government, December 10, 2009.

[212] Submitted testimony by Deputy Mayor Edward Skyler to NYCC Committees on Fire and Criminal Justice Services, Public Safety, and Technology in Government on December 10, 2009.
[213] Press Release, Office of the Mayor of the City of New York, *Streamline Call-taking Process Will Reduce the Time to Dispatch Emergency Units*, May 6, 2009.
ECTP has four initiatives aimed at meeting the projects objectives, including: (i) the establishment of a Public Services Answering Center ("PSAC 1") in Brooklyn, where NYPD, Fire and EMS would be situated, (ii) the construction of a back-up 911 call-taking and dispatch center ("PSAC 2") in the Bronx, (iii) unifying 911 call-taking functions in a single call-taking operation at PSAC 1 and PSAC 2 that will be managed by the NYPD, and (iv) the integration of the NYPD, FDNY and EMS Computer-Aided Dispatch ("CAD") systems.

in those boroughs, respectively, but will eventually be located in PSAC 2 in the Bronx upon its completion.

Another component of the ECTP is the Unified Call Taker ("UCT") system[214] and its purpose is to streamline the call-taking process by reducing call handling time for fire calls and to allow first responders to reach New Yorkers more quickly in emergencies.[215] Prior to the implementation of the UCT system on May 4, 2009, when an emergency caller phoned 911, the call was answered by a police call taker who collected caller and incident information.[216] After the police call taker took the information, if the incident being reported was a fire, the police call taker would initiate a conference call with an FDNY call taker/dispatcher. During the conference call with the caller and the police call taker, the FDNY call taker/dispatcher would collect similar FDNY-related information.[217] The FDNY dispatcher would then dispatch the appropriate unit to the scene of the fire. Under the UCT system, improved technology and training allow the NYPD call taker to collect both NYPD and FDNY incident information and then electronically share and coordinate the appropriate emergency response with dispatchers from either agency.[218] The Administration claims that the UCT system allows the caller to give information one time to one call taker, rather than multiple times to multiple call takers thereby saving time in processing the caller's critical information.[219]

Notwithstanding this assertion, allegations surfaced in 2009 and have persisted with regards to problems with the information being gathered by the police call takers and

[214] *Id.*
[215] Department of Information and Technology and Telecommunications Testimony Before the NYCC Committees on Land Use and Technology in Government, FY 2010 Executive Budget, May 14, 2009.
[216] *Id.*
[217] *Id.*
[218] *Id.*
[219] Id.

disseminated to FDNY dispatchers and first responders.[220] In fact, after a series of incidents in which incorrect information was purportedly transmitted by Police call takers, a process was developed to report the alleged problem so it could be reviewed by the FDNY and NYPD.[221] In subsequent months, Fire Union officials indicated they were receiving a half-dozen to a dozen reports of mistaken transmissions every day from commanders in the field, something they alleged rarely happened before the UCT was launched. Particularly troubling were reports that wrong addresses were being given to FDNY responders in unprecedented numbers.[222] Although fire officials reportedly conceded some UCT errors, they said errors also took place under the old system and that there were far fewer than the hundreds of complaints fire unions were alleging arose under UCT.[223] On November 20, 2009 the NYPD and FDNY announced that the UCT process would be temporarily modified and that now Police call takers would conference in FDNY call takers who could listen to the call and have the opportunity to ask additional questions of the caller if necessary, and verify the accuracy of the information that the Police call taker was transmitting to the FDNY dispatchers.[224]

A year later, the City's UCT system was put on center stage when a blizzard struck New York City, on December 26, 2010. The blizzard caused numerous public safety issues, including delays in answering 9-1-1 calls. In response to this storm Mayor Bloomberg ordered the Office of Citywide Emergency Communications ("OCEC") to undertake a review of the 9-1-1 call-taking and dispatch functions. The task, known as the 9-1-1- Call Processing Review

[220] According to one report, on May 10, 2009, firefighters were dispatched to the scene of an apparent car accident in the Bronx where two people were purportedly trapped in a vehicle. When firefighters reached the location they realized it was a crime scene; a robbery had occurred in which a gunman killed a livery cab driver. Marcia Kramer reporting - CBS news at http://wcbstv.com/local/fdny.dispatch.system.2.1013579.htm.
[221] A Burning Question, New York Daily News, November 11, 2009. By Juan Gonzalez.
[222] Id.
[223] Id.
[224] Press Release, New York City Fire Department, *Police and Fire Departments Announce Temporary Modification of Unified Call Taking Procedure*, November 20, 2009.

("911CPR") Project was undertaken by OCEC with the help of Winbourne Consulting, LLC. A final report was issued on May 1, 2012, and it included a section dedicated to UCT.[225] One of the major issues uncovered by the report was that "UCT summary reports" – which are developed by the UCT project team – did not accurately reflect the performance of the UCT process.[226] Specifically, the 911CPR report supports the contention that the supposed improvements in call taking time under UCT were not necessarily accurate, as calls were measured in a different way under UCT than before UCT.[227] The 911CPR report follows this contention with a number of specific recommendations with respect to UCT. These recommendations are that the City should: (i) establish a working group to provide UCT oversight and define the roles of all UCT stakeholders; (ii) review and modify certain UCT business processes/protocols; (iii) develop a UCT call taker training program; (iv) oversee improvements to the call taking and dispatching quality assurance function of UCT; (v) define specific performance metrics to measure UCT; and (vi) consider changing the order of the questions asked in the UCT call taking process by asking what the emergency is first, and then conferencing in the appropriate agency's call taker.

During Hurricane Sandy's landfall on the City, the emergency 9-1-1 system was again put to the test with higher-than-normal call volume. In fact, there were 20,000 calls made to the 9-1-1 system per hour during the storm.[228] Under normal circumstances, the 9-1-1 system handles 30,000 calls per day.[229] There were allegations that the call center was understaffed to handle the high call volume, even though, the Administration has claimed that the system is

[225] *See* City of New York 9-1-1 Call Processing Review (911CPR) Final Report, May 1, 2012 (on file with Public Safety Committee Staff).
[226] *Id.*
[227]
[228] Kirstan Conley and Chuck Bennett. *Frankenstorm: The Aftermath 911's deadly dial & error*, N.Y. POST Nov. 19, 2012.
[229] *Id.*

prepared to handle 50,000 calls in an hour.[230] As a result, callers experienced frustrations when they tried calling 9-1-1 including delays, busy signals, and recorded messages.[231] It was also reported that at times 9-1-1 operators urged callers to call the 3-1-1 system instead.[232]

In addition, there have been reports of feuding between police, fire, and EMS dispatchers, as well as poor planning leading to understaffing.[233] The head of the fire alarm dispatchers' union alleged that the UCT system severely hampered fire dispatchers' ability to quickly and efficiently respond to calls during the Storm.[234] According to Union officials, there were roughly 60 Fire Dispatchers and 10 supervisors on duty during the height of the storm and they spent a majority of their time sifting through 2,100 pages of information per hour in order to weed out un-prioritized reports and extraneous information to find true emergencies, like people stuck in rising water.[235] Furthermore, it was reported that callers were receiving busy signals and recordings because the City's 911 call center was understaffed.[236] Union leaders criticized the City for failing to adequately schedule shifts for call-takers or foresee transit issues for call-takers and set up a contingency plan to get call-takers to their stations.[237]

***The 3-1-1 Non-Emergency System***

The 311 system was launched in 2003 and provides information and processes non-emergency requests for City services 24 hours a day, 7 days a week. The service provides information on non-emergency City services in 170 languages. According to the Department of

[230] Josh Margolin, Kirstan Conley and Chuck Benett. *911 underplanned and undermanned*, N.Y. POST Nov. 21, 2012.
[231] Kirstan Conley & Chuck Bennett, *City's swamped call center failed as lifeline for Sandy's victims*, N.Y. POST, November 19, 2012.
[232] *Id.*
[233] *See* Sarah Dorsey, *Fire Dispatchers Say New 911 System Less Efficient*, THE CHIEF, November 27, 2012.
[234] *Id.*
[235] *Id.*
[236] Josh Margolin, Kirstan Conley and Chuck Benett. *911 underplanned and undermanned*, N.Y. POST Nov. 21, 2012.
[237] *Id.*

Information Technology and Telecommunications, on average, the system manages to successfully direct a caller to a live operator within seven seconds.[238]

In response to the 2010 blizzard that resulted in the 3-1-1 system being overwhelmed with calls,[239] Local Law 29 of 2011 was enacted and required that no later than September 30, 2011, the 3-1-1 customer service center implement a protocol for responding to high call volume. The protocol included, among other things, a system to efficiently and effectively answer, direct and track all calls; increased utilization of automated telephone messages, short message services, social media, email alerts, and the City's website to disseminate information and to reduce non-critical information requests; and a plan to ensure adequate staffing both in anticipation of, and in response to, high call volume incidents.

Notwithstanding the development and implementation of these protocols, the 3-1-1 system experienced a very high volume of calls before, during and after the hurricane that resulted in call takers being overwhelmed and unable to respond to the calls.[240] One news report stated that around 1 p.m. on Sunday, October 28, a day before the storm hit, calls to 3-1-1 went unanswered or rang busy.[241] Another news report found that callers who dialed 9-1-1 were told to call 3-1-1 if it was not a "medical emergency" and gave as an example a resident of Rockaway Park who was told by a 9-1-1 operator to call 3-1-1 when the resident was trying to evacuate a 72-year-old neighbor who suffered from Cerebral Palsy as floodwaters approached.[242]

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[238] Department of Information Technology and Telecommunications, Testimony before the City Council Committee on Land Use and Technology in Government, Fiscal Year 2010 Preliminary Budget, March 19, 2009.
[239] Gail Robinson, As 911 Modernizes, Bad Weather Trumps Technology, Gotham Gazette, Jan. 10, 2011.
[240] Chris Smith, *New York Has Become Really Good at Dealing with Emergencies*, New York Magazine, Oct. 30, 2012.
[241] Carla Zanoni and Jill Colvin, *City Evacuation Website and 311 Overloaded as Hurricane Sandy Nears*, DNAinfo.com, Oct. 28, 2012).
[242] *Report: NYC 911 Failed Some Sandy Victims*, myfoxny.com, Nov. 19, 2012.

## VIII. Conclusion

At this hearing, the Committees intend to discuss and assess the implementation of the City's Office of Emergency Management's Coastal Storm Disaster Plan, including the pre-planning stages, the actions taken during the storm, the initial response in the two or three days immediately following the storm, and the effectiveness of the City's 9-1-1 and 3-1-1 call systems. Most particularly, the Committees would like to analyze the following to determine whether appropriate decisions were made and to understand if those decisions were lacking and, if so, how they could have been corrected:

- **The timing and scope of the evacuation.** As Commissioner Bruno testified in 2010 it is recommended that an evacuation begin days prior to the impact of a storm, or at the very least under "blue sky" conditions. However, in the case of Hurricane Sandy New Yorkers were told to evacuate less than 36 hours before the major effects of Sandy were felt, and while numerous meteorological reports showed that the storm was on track for quite a few days. Moreover, the Mayor's evacuation order came only 8 hours before mass transit was to start shutting down, which also happened to be when the weather began to rapidly degrade and become unsafe. The timing evacuation order made evacuation difficult for all New Yorkers, especially those with special needs. In addition to what may have been poor timing, it turned out that many areas in Zone B – such as Gerristen Beach, Brooklyn – suffered major damage, yet were not part of the City's mandatory evacuation order. Similarly, the failure to evacuate the City's 6 hospitals and 41 chronic care facilities in low-lying areas resulted in many dangerous situations and a strain on resources during and after the storm.

- **Communication with the public.** The Committees want to review and assess the City's ongoing communication with the public prior to and during the storm. Particularly, the Committees are concerned that New Yorkers did not receive a proper sense of urgency – most particularly those residents of Zone A**.** For example, when issuing the mandatory evacuation order, Mayor Bloomberg's message could have been seen as underplaying the severity of the storm's impact on the City when he stated that he told Governor Cuomo that New York City will be able to help upstate counties in their relief efforts.[243] The Committees are concerned that many people did not evacuate Zone A because they did not feel as though there was an imminent need to do so. There are approximately 375,000 residents in Zone A, including 45,000 living in public housing, yet the highest recorded number of evacuees at the City's emergency shelters was only 6,800. This also resulted in the need for multiple search-and-rescue operations, which not only put the lives of first-responders at risk, but diverted resources when they could have been used elsewhere.
- **On-the-ground OEM coordination and communication.** The Committees would like to examine OEM's on-the-ground coordination and communication during and after the storm, including how OEM obtained and delivered supplies and equipment where needed and how they worked with our response partners including state and federal agencies**.** Reports from volunteers on the ground immediately after the storm passed indicate that there was little to no OEM presence to report conditions to OEM

[243] Specifically, Mayor Bloomberg said: "I also had a conversation with the Governor volunteering our services for after we're out of danger, because there's likely to be a lot of damage if the hurricane continues to stall upstate and inland, and so our Police, Fire, Sanitation services perhaps will be able to help other parts of the state and the region that are less fortunate than we are." Press Release, Office of the Mayor of the City of New York, *Mayor Bloomberg Issues Order for Mandatory Evacuation of Low-Lying Areas as Hurricane Sandy Approaches* (October 28, 2012), *available at*: http://www.nyc.gov/html/om/html/2012b/pr377-12.html.

headquarters. Aside from Staten Island where OEM set up a mobile office in the Mid-Island, OEM did not set up a command center immediately after the storm in other effected areas. Additionally, there were a significant number of volunteers available to the City, but there was no clear sense of coordination on a citywide level.

- **Addressing the needs of vulnerable populations.** The Committees would like to investigate how the City provided certain vulnerable populations (e.g. seniors, medically frail, people with mental health needs and the homebound) with necessities, such as food, water, clothing, and medication in the days immediately following the storm. Reports contend that the City did not adequately prepare to provide the City's special needs populations with these necessities and that the City did not make efforts to identify or conduct outreach to seniors, disabled people, and others who could not leave their homes. In addition, the Committees want to know how clients of the City's HIV/AIDS Services Administration were attended to during the days following the storm and if they were provided with adequate services.
- **Ability to handle higher volumes of 9-1-1 and 3-1-1 calls.** Reports allege that the City's 9-1-1 and 3-1-1 systems were technologically unable to handle the higher-than-normal call volume during Hurricane Sandy, however, the Administration argues that the system is capable of handling 50,000 calls per hour. The question to be answered then is why many people reportedly received busy signals, recordings, or very long wait times. Some Union officials contend this was due to poor staff-planning on the part of the City which led to many unmanned call-taking stations.

In addition to discussing the issues raised by aforementioned points, the Committees hope to have a meaningful dialogue about, among other things: (i) how OEM can update its Coastal Storm Plan and evacuation zone map; (ii) how the City can better track storms; (iii) how the City can better organize supplies and volunteers; (iv) how the City can better coordinate with external stakeholders on all issues, including those relevant to special needs populations; (v) the performance of our first responders, whether they were able to provide adequate responses to life threatening emergencies, and whether they had sufficient staffing and equipment to meet the needs of the storm; and (vi) how the City can be assured that its emergency and non-emergency communications systems are going to be unaffected by higher-than-normal call volumes.