

CHAPTER 2: PLANNING PROCESS



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1. Introduction

Effective planning efforts result in useful, high-quality plans, but written plans are only one element in the process. The planning process is as important as the plan itself.

A successful planning process forges partnerships and brings together a cross-section of government agencies, the public, and other stakeholders to reach consensus on how to achieve a desired outcome or resolve a community issue. An inclusive and transparent process adds validity to the plan. Those involved gain a better understanding of the problem or issue and how solutions and actions were devised. The result is a common set of community values and widespread support for directing financial, technical, and human resources to an agreed-upon action.

New York City followed an inclusive, transparent planning process to complete the update to the New York City Hazard Mitigation Plan (HMP). This chapter of the HMP serves as a permanent record of New York City's mitigation planning process.

The process, which evolved over the past year, was consistent with the steps presented in the Federal Emergency Management Agency (FEMA) [Local Mitigation Plan Review Guide](#) (2011) (see end of chapter 2 for website link). The following FEMA requirements were addressed in this process:

- **FEMA 44 CFR Requirement §201.6(b):** An open public involvement process is essential to the development of an effective plan. In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process *shall* include:
 - (1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;
 - (2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as

well as businesses, academia and other private and non-profit interests to be involved in the planning process; and

(3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

- **FEMA 44 CFR Requirement §201.6(c)(1):** [The plan *shall* document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

The following New York State Division of Homeland Security and Emergency Services (DHSES) [Hazard Mitigation Planning Standards](#) (2012) (see end of chapter 2 for website link) are also addressed in this chapter:

- **NYS Requirement §F1:** Plans developed with State OEM-administered funds must document that the stakeholders were invited to participate at each phase, and whether they did or not.
- **NYS Requirement §F7:** Plans developed with State OEM-administered funds must be posted (draft plan during the public comment period, and final adopted versions after adoption) and must include specific contact information.

2. Planning Participants and Organizational Structure

The process for developing the 2014 Hazard Mitigation Plan was facilitated by the organizational structure described here (see Figure 2.1).

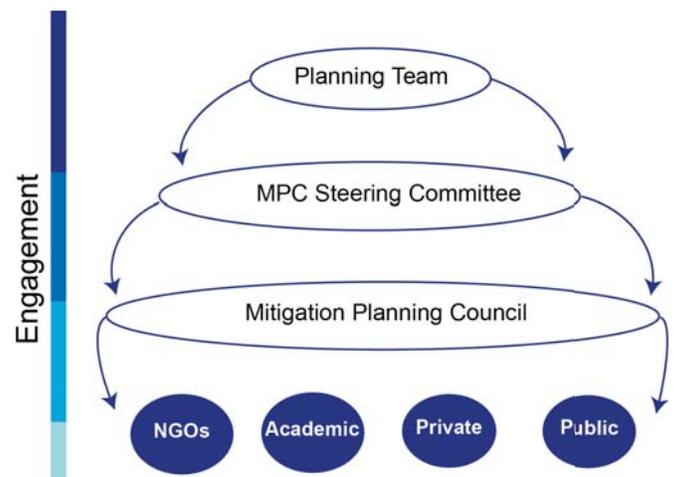
i. Planning Team

The Planning Team was the overall lead for developing the HMP. It was comprised of representatives of the New York City Office of Emergency Management (OEM) and the New York City Department of City Planning (DCP), working in close collaboration with the Office of Long-Term Planning and Sustainability (OLTPS). Specifically, the Planning Team consisted of four planners from the OEM Planning and Preparedness Division, one specialist from OEM's Geographic Information Systems (GIS) Unit, and five planners from DCP. OEM planners facilitated the overall plan development to ensure the HMP met the requirements of DMA 2000, and OEM's GIS specialist worked to customize and execute hazard models and create maps and data tables for the plan. DCP, which has expertise in demographic and land-use analyses in addition to several agency-driven climate change initiatives, designated its planners to work on two specific sections of the HMP: New York City's Hazard Environment and the Flooding hazard profile in the Risk Assessment chapter. DCP also provided guidance on the public outreach strategy. OLTPS assisted both OEM and DCP with the future environment sections of the report. The Planning Team participants and information about their agencies are included in Figure 2.2.

As the HMP coordinator, the Planning Team had the following responsibilities:

- Organize and guide all meetings with the Mitigation Planning Council (MPC) Steering Committee and members
- Develop and implement the community involvement process
- Guide the plan development to adhere to DMA 2000 requirements
- Manage identification, collection, and analysis of mitigation actions submitted by the MPC

Figure 2.1: HMP Organization Structure



- Facilitate responsibilities and provide support for all participants in the hazard mitigation planning process
- Coordinate with MPC members to identify relevant material for the HMP

Figure 2.2: HMP Planning Team

	<p>The New York City Office of Emergency Management (OEM) plans and prepares for emergencies, coordinates emergency response and recovery, and collects and disseminates emergency information. To accomplish this mission, OEM maintains a disciplined unit of emergency management personnel, including planners, watch commanders, and administrative and support staff, to identify and respond to various hazards.</p>	<p>Heather Roiter Damiano , Hazard Mitigation Program Manager</p> <p>Amy Post, Director Transportation and Infrastructure</p> <p>Melissa Umberger, Hazard Mitigation Specialist</p> <p>Gary Monitz, Hazard Mitigation Specialist</p> <p>Joshua Friedman, GIS Specialist</p>
	<p>New York City Department of City Planning (DCP) is responsible for the city’s physical and socioeconomic planning, including land-use and environmental review; preparation of plans and policies; providing technical assistance and planning information to government agencies, public officials, and community boards. The commissioner of the agency serves as the chair of the City Planning Commission.</p>	<p>Sarah Goldwyn, Planner</p> <p>Ralph Blessing, Planner</p> <p>Maryam Hariri, Planner</p> <p>Reza Tehranifar, GIS Specialist</p> <p>Thaddeus Pawlowski, Planner</p> <p>Jesse Levin, Project Manager</p>
	<p>New York City’s Office of Long-Term Planning and Sustainability (OLTPS) was created as part of the Mayor’s Office by local law in 2006. The office coordinates with all other City agencies to develop, implement, and track the progress of PlanNYC and other issues of infrastructure and the environment which cut across multiple City departments.</p>	<p>Carrie Grassi, Senior Policy Advisor</p> <p>Erika Lindsey, GIS Specialist</p>

ii. Mitigation Planning Council Steering Committee

The Mitigation Planning Council Steering Committee (MPCSC), which helped develop, manage, and implement the HMP, is a core group of 13 local agencies and regional organizations that own or manage some of the city's largest infrastructure networks and/or engage in planning for or regulating these systems (see Figure 2.3). The MPCSC includes New York City agencies and entities that were involved in the 2009 HMP and remained involved through the 2014 HMP update: OEM, DCP, and OLTPS in addition to the Department of Buildings (DOB), Department of Environmental Protection (DEP), Department of Parks & Recreation (DPR), New York City Department of Transportation (DOT), Metropolitan Transportation Authority (MTA), and the Regional Plan Association (RPA). For the 2014 update to the HMP, the Planning Team expanded the membership of the MPCSC to include the Department of Health and Mental Hygiene (DOHMH), the Mayor's Office for Housing Recovery (HRO), the New York City Police Department (NYPD), and the New York City Fire Department (FDNY). The MPCSC provided subject-matter expertise in the following areas: emergency management, land use planning, building codes, housing recovery, public health, public safety, transportation, infrastructure protection, climate change, regional planning, and natural resource protection.

On July 26, 2013, the Planning Team led the first MPCSC meeting. During this meeting MPCSC members discussed selecting hazards for the HMP, developing goals and objectives, and identifying agency-specific capabilities for implementing mitigation actions. Following the first meeting, MPCSC members attended two additional meetings during the planning process to facilitate the development of the HMP. During these meetings, the MPCSC provided information for and reviewed the Risk Assessment section of the plan and evaluated mitigation actions. OEM also conducted individual meetings with MPCSC members and maintained regular phone and email contact to develop specific ideas and identify additional resources related to the development of the plan.

The MPCSC's responsibilities were as follows:

- Support plan development
- Attend meetings through December 2013
- Develop HMP mission statement, goals, and objectives
- Provide subject-matter expertise
- Assist in evaluating and prioritizing mitigation actions
- Review and comment on draft HMP sections provided by the Planning Team
- Assist with maintaining the HMP

Figure 2.3: MPCSC Members



New York City Department of Environmental Protection (DEP) protects public health and the environment by supplying clean drinking water, collecting and treating wastewater, and reducing air, noise, and hazardous materials pollution. DEP distributes more than one billion gallons of clean drinking water each day to nine million New Yorkers and treats the 1.3 billion gallons of wastewater that New Yorkers produce each day in a way that protects the quality of the New York Harbor.

William Morris
Alan Cohn
Gregory Anderson



City of New York
Parks & Recreation

New York City Department of Parks & Recreation (DPR) is responsible for maintaining the City's parks system, preserving and maintaining the ecological diversity of the City's natural areas, and furnishing recreational opportunities for City residents. The department maintains more than 17,000 parks, playgrounds, and recreation facilities across five boroughs. It is responsible for more than 1,000 playgrounds, 800 athletic fields, 550 tennis courts, 48 recreational facilities, 66 public pools, 14 miles of beaches, 13 golf courses, and 17 nature centers. Parks also cares for park flora and fauna, community gardens, historic houses, statues and monuments, and more than 2.6 million trees.

Jon Ells
Mike Dockett
Jessenia Aponte



New York City Department of Buildings (DOB) ensures the safe and lawful use of more than 950,000 buildings and properties through enforcing the City's Building Code, Electrical Code, Zoning Resolution, New York State Labor Law, and New York State Multiple Dwelling Law. DOB's main activities include performing plan examinations, issuing construction permits, inspecting properties, and the maintenance of construction codes and licensing trades.

Keith Wen
Charles Shelmar
Daniel Cornwell
Juan Arias



Department of Health and Mental Hygiene (DOHMH) protects and promotes the health of all New Yorkers. DOHMH is responsible for issuing birth and death certificates, providing food safety training, restaurant inspections, immunization information, and public health publications. In addition, DOHMH works to prevent, protect against, respond to, and increase NYC's ability to recover from public health threats. The agency works to build NYC Community resilience against public health emergencies through collaboration with NYC healthcare facilities and community organizations.

Kizzy Guzman
Mitchell H. Stripling
Lachelle Francis



New York City Department of Transportation (DOT) is responsible for providing safe, efficient, and environmentally responsible movement of people and goods throughout New York City. The agency's responsibilities include day-to-day maintenance of the City's 5,800 miles of streets, highways, and sidewalks. The agency's responsibilities also include the management 6,300 miles of streets and highways, over 12,000 miles of sidewalk, 781 bridge structures and six tunnels. The agency also operates the Staten Island Ferry and other ferry operations on City owned piers. DOT staff installs and maintains more than 1.3 million street signs, traffic signals at more than 12,000 signalized intersections, and over 300,000 street lights.

Alan Olmsted
Tom Maguire
Magdeline DeCamps
Sharita Hunter

PLANNING PARTICIPANTS AND ORGANIZATIONAL STRUCTURE

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Fire Department of New York City (FDNY) responds to fires, public safety and medical emergencies, disasters and terrorist acts, FDNY protects the lives and property of New York City residents and visitors. The Department advances public safety through its fire prevention, investigation and education programs. The timely delivery of these services enables the to make significant contributions to the safety of New York City and homeland security efforts.

Jeff Roth
Caroline Kretz
Anthony Migliore



The Mayor's Office of Housing Recovery (HRO) is responsible for providing information on the City's efforts to help New Yorkers recover from Hurricane Sandy; NYC Build it Back is a central tenant of HRO. This program assists homeowners, landlords, and tenants in the five boroughs whose homes and properties were damaged by Hurricane Sandy. NYC Build it Back provides several pathways to help affected residents return to permanent, sustainable housing by addressing unmet housing recovery needs in several categories.

Thaddeus Pawlowski



Metropolitan Transportation Authority (MTA) serves a population of 15.1 million people in a 5,000 sq mile area spanning from New York City through Long Island, southeastern New York State and Connecticut. MTA subways, buses, and railroads provide 2.62 billion trips each year to New Yorkers. In addition, MTA bridges and tunnels carry more than 280 million vehicles per year.

Judy Walker
Keyla Hamman



New York City Police Department (NYPD) enhances the quality of life by working in partnership with the community and in accordance with constitutional rights to enforce the laws, preserve the peace, reduce fear and provide a safe environment. NYPD protects the lives and property of citizens and impartially enforces the law and fights crime both by preventing it and by aggressively pursuing violators of the law.

Robert Harnischfeger
James Wahlig
Victor Ferrante
Chris Matousek



Regional Plan Association (RPA) is an independent, not-for-profit regional planning organization that focuses on recommendations to improve the quality of life and the economic competitiveness of the 31-county New York-New Jersey-Connecticut region through research, planning, and advocacy. RPA's mission is to help shape transportation systems, protect open spaces, and promote better community design for the region's continued growth. RPA addresses future challenges to the region and works to mobilize the region's civic, business, and government sectors to take action.

Rob Pirani
Laura Tolkoff

iii. Mitigation Planning Council

The MPC's 41 members played an integral role in identifying existing and potential mitigation actions that will make New York City more resilient to natural and non-natural disasters. The members include the 39 agencies, public authorities, non-profit organizations, and private utility providers that were involved in the 2009 HMP: the New York City Department for the Aging (DFTA), DOB, DCP, Department of Citywide Administrative Services (DCAS), Department of Design and Construction (DDC), Department of Correction (DOC), Department of Education (DOE), DEP, DOHMH, Department of Homeless Services (DHS), Department of Information Technology and Telecommunications (DoITT), DPR, Department of Sanitation (DSNY), DOT, the Economic Development Corporation (EDC), FDNY, Health and Hospitals Corporation (HHC), Housing Preservation and Development (HPD), Human Resources Administration (HRA), Landmarks Preservation Commission (LPC), New York City Housing Authority (NYCHA), NYPD, OEM, OLTPS, the Port Authority of New York and New Jersey (PANYNJ), RPA, Small Business Services (SBS), the United States Army Corps of Engineers (USACE), Consolidated Edison (Con Ed), Public Service Electric and Gas Company (PSEG) (formerly known as the Long Island Power Authority), Verizon, and the MTA (see Figure 2.4). For the 2014 HMP, the Planning Team expanded the MPC to include the following agencies: City University of New York (CUNY), HRO, the Mayor's Office of Environmental Remediation (OER), the Office of Management and Budget (OMB), and the Office of the Chief Medical Examiner (OCME). In addition, New York's Director of Resiliency (OLTPS), Dan Zarrilli was engaged in the planning process of the HMP. Furthermore, James Colgate, the New York City Floodplain Administrator, supports the implementation of the mitigation strategy identified in the HMP.

On June 18, 2013, MPC members participated in a large-group kickoff meeting (discussed further below). The Planning Team used this meeting to introduce participants to hazard mitigation, discuss hazard mitigation funding and eligible projects, and request a list of mitigation actions from each participant. In addition, the Planning Team met with each member agency or

organization separately to provide additional hazard and risk information and discuss specific mitigation actions.

MPC members' responsibilities were as follows:

- Attend MPC meetings
- Identify, develop, and submit alternative mitigation actions for inclusion in the Mitigation Strategy section
- Review and comment on the draft HMP
- Provide ongoing monitoring of hazard mitigation efforts after plan adoption

Figure 2.4: Mitigation Planning Council (MPC) Members



Renato Derech
Dennis Connelly



Frank Eilam
Patricia Lyons
Sharvon Stewart
Jeff Pico
Hardee Saini



Howard Apsan
Bernard Jones



Alan Olmsted
Tom Maguire
Magdeline DeCamps
Sharita Hunter



Kevin DePodwin
Brad Zoref



Lisa Templeton
Joseph Gallagher



Sarah Goldwyn
Maryam Hariri
Jessie Levin
Reza Tehranifar



John Chingas
Gerald Carannante



Eric Macfarlane
Sofia Zuberbuhler-Yafer
Alek Pitel



Rich Cote
Rory Melvin



William Morris
Alan Cohn
Gregory Anderson



Jeff Roth
Caroline R. Kretz
Anthony P. Migliore



Linda Whitaker
Lenny James



Tamiru Mammo
Susan Meehan



Fernando Miranda
Thomas Vanacore
Glen Panazzolo



Vito Mustaciuolo
Ann Marie Santiago



City of New York
Parks & Recreation

Jon Ells
Mike Dockett
Jessenia Aponte



Kathryn Dyjakk
Lisa Montllor Macedo



Keith Wen
Charles Shelhamer
Daniel Cornwell
Juan Arias



Thaddeus Pawlowski

PLANNING PARTICIPANTS AND ORGANIZATIONAL STRUCTURE

CHAPTER 2: PLANNING PROCESS



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Carrie Grassi
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Nick Lizanich
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Ken Kane



Douglas McNevin
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Jeff Garafalo
Noreen Chambers
Kerry Fristoe



Robert Harnischfeger
James Wahlig
Victor Ferrante
Chris Matousek



Bruce Swiren



Donnell Harvin
Frank DePaolo



Rob Pirani
Laura Tolhoff



Amy Post
Heather Roiter
Melissa Umberger
Gary Monitz
Joshua Friedman
Cynthia Barton



Al Miller
Zarines Negron



Daniel C. Walsch
Hannah Moore



John Beldin-Quinones

*MTA members include New York City Transit (NYCT), MTA Bus Company, Long Island Rail Road (LIRR), Metro-North Railroad (MNR), and Bridges and Tunnels

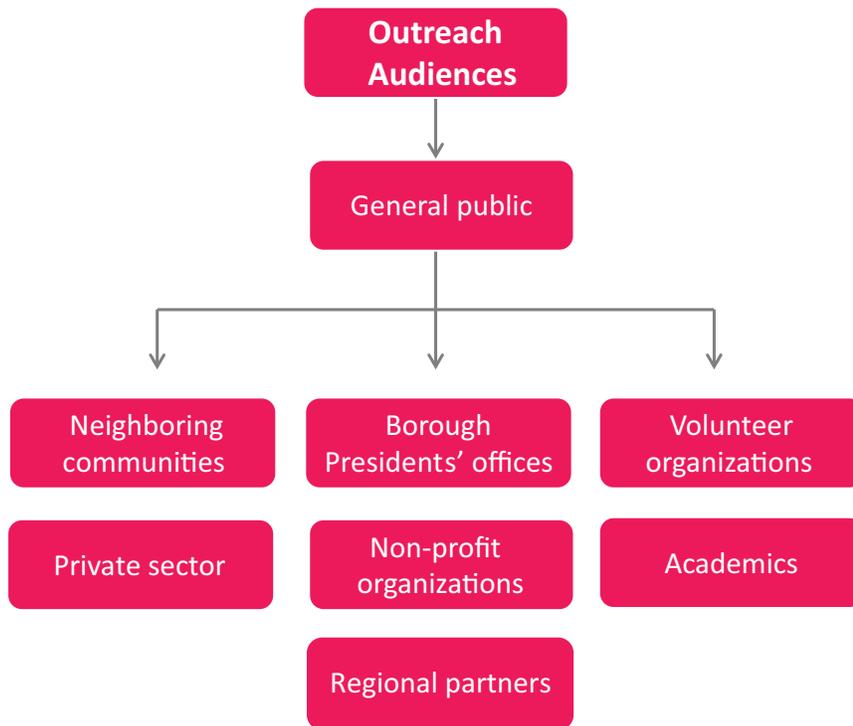
iv. Community Involvement

To engage the community in the hazard mitigation planning process, the Planning Team developed a comprehensive community involvement strategy. The Planning Team first compiled a list of outreach contacts based on the following intended audiences: neighboring communities, community board offices, borough presidents' offices, the private sector, professional organizations, neighboring jurisdictions (Nassau, Suffolk, and Westchester counties and New Jersey), regional partners, non-profit organizations, and academics. The strategy employed to engage the public in the planning process is detailed in Figure 2.5.

igation postcard to be distributed at public outreach meetings and Ready New York events (see Figure 2.7). This postcard was also attached to the newsletters that were emailed to the general public.

In addition, the Planning Team created an online survey. The purpose of this survey was to gain a better understanding of the types of hazards that members of the general public feel pose a risk to the city as well as communicate actions that local communities can take to mitigate the impact of hazards and strategies that local, state, and federal government can implement to lessen disaster losses. The survey can be found in the Appendix C. The survey was posted to OEM's website

Figure 2.5: Hazard Mitigation Public Outreach Audiences



The HMP's community involvement process also builds on and incorporates the City of New York's *A Stronger More Resilient New York*, developed in early 2013, which included significant community engagement and feedback (see Figure 2.6).

The Planning Team emailed newsletters notifying the general public about the update to the HMP and guiding them to the OEM website for more information on the plan. The Planning Team also created a hazard mit-

igation postcard to be distributed at public outreach meetings and Ready New York events (see Figure 2.7). This postcard was also attached to the newsletters that were emailed to the general public. In addition, the Planning Team created an online survey. The purpose of this survey was to gain a better understanding of the types of hazards that members of the general public feel pose a risk to the city as well as communicate actions that local communities can take to mitigate the impact of hazards and strategies that local, state, and federal government can implement to lessen disaster losses. The survey can be found in the Appendix C. The survey was posted to OEM's website

Figure 2.6: A Stronger More Resilient New York Public Outreach Statistics

Outreach Mechanism	Metric	Status	
Elected Officials	SIRR presentation and Q&A	# of collective/individual briefings	30+
		# of elected offices briefed	65+
		# of community boards briefed	~20
Organizations	SIRR presentation and Q&A	# of community-based, business, environmental, faith, labor, policy organizations briefed	320+
Public Workshops	SIRR overview and facilitated discussion	# of public workshops	11
		# of attendees	1,000+

Figure 2.7: Hazard Mitigation Postcard



ings in addition to the full list of general public contacts can be found in the Appendix C.

To engage academic, private sector, and community-based stakeholders, the Planning Team held four meetings designed to inform participants about hazard mitigation, generate discussion, and elicit feedback on the HMP. The meetings targeted New York City academic institutions, professional organizations and the private sector, community-based organizations, re-

gional organizations, and non-profit organizations.

1) Academic Institutions Meeting

On November 18, 2013, the Planning Team held a Hazard Mitigation Plan information session for academic institutions engaged in the fields of hazard mitigation, climate change, urban planning, architecture, and engineering. The Planning Team first presented an overview of the HMP, which covered the planning process,

the plan components, and the public review process.

The Planning Team then asked participants for feedback as well as suggestions for additional research and potential mitigation actions. Throughout the meeting, participants had the opportunity to ask questions and participate in the discussion. One topic of concern was the need to incorporate community organizations in the public outreach process and to include the mitigation strategies and projects these organizations are currently involved in. The Planning Team addressed this topic, explaining that the mitigation actions of non-profits will be included in the narrative description in the Mitigation Strategy section of the plan and noting that the Planning Team would be coordinating a webinar for community groups in early December 2013. The Planning Team also explained that the public outreach process will continue in 2014 for an abridged version of the plan due in fall 2014. One meeting participant recommended that the city address an additional hazard: meteor crashes. To solicit additional comments and suggestions, all meeting invitees were notified when the draft HMP was available for review online.

Members from the following academic institutions attended this meeting: Columbia University (Center for Climate Systems Research/Graduate School of Architecture, Planning and Preservation/Mailman School of Public Health), CUNY Hunter College (Urban Planning), East Carolina University, Harvard University (Urban Planning), Manhattan College, New York University (NYU) (Center for Catastrophe Preparedness and Response/Polytechnic Institute/Wagner Graduate School of Public Service), Pratt Institute (City and Regional Planning), and Stevens Institute of Technology. The full invitee list is included in the Appendix.

2) Private Sector and Professional Organizations Meeting

On November 13, 2013, the Planning Team held a community involvement meeting with representatives from New York City's private sector, professional organizations, and volunteer groups. This meeting was organized by OEM's Public Private Initiatives Unit, which regularly holds webinars for their Partners in Prepared-

ness program. The Partners in Preparedness program helps organizations better prepare their employees, services, and facilities for disasters, and its members include private companies, institutions, and non-profit groups (see Appendix A). At this meeting, the Planning Team provided an overview of the Hazard Mitigation Plan, covering the planning process, plan components, select hazard profile summaries, mitigation action types, and a timeline of major milestones. The presentation was followed by a question-and-answer period. Participants were asked for feedback on the work presented as well as suggestions on how the Planning Team can help participants educate their members about hazard mitigation. The webinar was recorded and is available via OEM's [website](#) (weblink provided at the end of the chapter). The Planning Team will work with interested parties to help promote hazard mitigation through future working groups or mitigation discussions.

The following organizations RSVP'd to the webinar: Allied Rockaway Foundation for Animal Recreation and Fitness (ARF-ARF), American Red Cross (ARC), BNP Paribas, BNY Mellon, Brooklyn Bureau of Community Services, Building Owners & Managers Association of Greater NY, CIBC World Markets, CME Group, Cravath, Swaine & Moore LLP, CUNY Hunter College, Disney/ABC Television Group, Fordham University, Hippodrome, Institute for Business & Safety, Macy's, Marubeni America Corporation, Mass Mutual, Medical Reserve Corps, Neighborhood Housing Services of New York City, New York Law School, New York Life Insurance Company, NYC Amateur Radio Emergency Communication Service, NYC Clothing Bank, NYC Department Cultural Affairs (DCA), DOE, HHC, New York Liquidation Bureau (NYLB), NYS DEC Region 2, Orrick, Herrington & Sutcliffe, Remlu, Inc, RXR Realty, Shearman & Sterling LLP, St. Johns University, New York Botanical Garden, The Walt Disney Company, Time Warner Cable, and Trinity Real Estate.

The full invitee list is included in Appendix A. All meeting invitees were notified when the draft HMP was available for review online.

3) Non-Profit Organizations and Regional

Partners Meetings

On September 17, 2013 the Planning Team held a community involvement meeting with the New York City Citizen Corps Council. The Citizen Corps Council is part of a national initiative to bring together local leaders from community organizations, government agencies, the private sector, and volunteer programs to promote community preparedness and volunteerism. At the meeting, the Planning Team presented a brief overview of the HMP, which included a discussion of the hazards to be included in the plan and some of the mitigation actions identified by the MPC. The participants were asked for feedback as well as suggestions for improving the plan.

Several of the participants inquired about how local communities or neighborhoods can become more involved in developing mitigation practices. The Planning Team addressed this question by explaining the New York State Community Reconstruction Zone (CRZ) Program, which allows communities to identify safe, resilient, and innovative reconstruction projects based on community-driven plans that consider current damage, future threats, and the community's economic opportunities. On December 11, 2013, the Planning Team held a webinar with representatives of a variety of New York City community-based non-profit organizations and regional organizations. These organizations are a valuable resource for educating the public about hazard mitigation and actions the community can engage in to make New York City more disaster-resilient. After the presentation, participants were given the opportunity to ask questions.

The following organizations were invited to the webinar event: Association for the Advancement of Blind and Retarded (AABR), Arch Care (health ministry of the Archdiocese of New York), Birch Family Services, Inc., Broad Channel Volunteer Fire Department and Ambulance Corps, Brookdale Hospital Medical Care, CARES, Inc., Central Family Life Center, Inc., Cerebral Palsy Association of NYS, Continuum Health Partners, Guild for Exceptional Children, Hamaspik of Kings County, Hebrew Academy for Special Children, Intrepid Museum, Jamaica Hospital Medical Center, Jewish Community Council of Greater Coney Island, Inc, Jewish Institute

of Queens, Lutheran Medical Center, Mercy Home for Children, National Society Hebrew Day Schools, New York Hospital Queens, New York Presbyterian Hospital, NY eHealth Collaborative, NY Sandy Hook Pilots, Ohel Children's Home and Family Services, Providence Rest, Queens Borough Public Library, Regional Catastrophic Planning Grant Team, Rogosin Institute, Services for the Underserved, St John's University, Unique People Services, Womens League, Wyckoff Heights Medical Center, and YAI Network. For more information on these organizations please see Appendix A. All meeting invitees were notified when the draft HMP was available for review online.

v. Public Review

To engage the public in the planning and development of the HMP, the Planning Team posted the draft of the plan on the OEM website for a 31-day comment period beginning December 16, 2013 and concluding January 16, 2014. The website provided an online comment form for people to provide feedback.

Hard copies of the draft HMP were also available for on-site viewing at the five DCP Borough Offices. The addresses are listed below:

Table 2.1: Draft HMP Hard Copy Locations

Borough Office	Address
Bronx	One Fordham Plaza, 5 th Fl. Bronx, NY 10458-5891
Brooklyn	16 Court Street, 7 th Fl. Brooklyn, NY 11241-01203
Manhattan	22 Reade Street 6 th Fl. West New York, NY 10007-1216
Queens	120-55 Queens Blvd., Kew Gardens, NY 11424
Staten Island	130 Stuyvesant Place, 6 th Fl. Staten Island, NY 10301

To publicize the plan and elicit feedback, OEM sent email notifications to New York City's CERT teams, Citizen Corps Council, Partners in Preparedness members, OEM Special Needs Advanced Warning System contacts, FEMA Long-term Recovery groups, MPC members, vol-

unteer organizations, neighboring jurisdictions (Nassau, Suffolk, and Westchester counties and New Jersey), regional partners, elected officials, borough presidents' offices, community board offices, professional organizations, academics, and non-profit organizations.

The Planning Team also coordinated with the New York City Citizens Corps Council, the OEM Public Private Initiatives unit, and the OEM Sandy Special Needs Recovery Task Force to help publicize the plan and solicit feedback. The Citizen Corps and Partners in Preparedness newsletters made note of the HMP to solicit comments. Planning Team members also made announcements of the HMP public review period to the Sandy Special Needs Recovery Task Force during a weekly conference call and the Special Needs Advisory Group (SNAG) at a quarterly meeting (see Appendix A).

Although there were several on-site visitors and readers, DCP borough offices did not receive any comments. However, there were 25 total comments received via email or the on-line comment form. These comments focused on adding additional mitigation actions and refining the hazard profiles. The Planning Team documented and reviewed comments received during the official comment period for inclusion in the 2014 HMP. Comments received after the 31-day period will be reviewed and considered for inclusion to the upcoming abridged version of the HMP.

3. Development of the HMP

The HMP has two major sections, Risk Assessment and Mitigation Strategy. These sections were developed through the process described here.

A. Review and Incorporation of Existing Plans and Studies

The Planning Team members reviewed various plans, studies, and guides to begin developing the HMP. These plans included New York City's 2009 HMP along with comparable plans from surrounding jurisdictions and other cities; FEMA guidance documents; emergency-services documents; contingency plans; climate change studies; community plans; and federal, local, and state regulations and ordinances (see Table 2.2).

B. Development of the Risk Assessment Chapter of the HMP

To develop the Risk Assessment chapter of the plan, the Planning Team followed these steps:

i. Identifying Hazards

To determine which natural hazards to profile in the HMP update, the Planning Team reviewed the hazards profiled in the draft *2014 New York State Standard Multi-Hazard Mitigation Plan* (NYS HMP). In addition, the Planning Team researched numerous natural hazard resources to determine the hazards that have the potential to occur in New York City.

To gain a better understanding of the non-natural hazards that may pose a threat to the city, the Planning Team reviewed existing plans from other regional jurisdictions. In addition, the Planning Team consulted the New York City Urban Area Working Group's *Threat and Hazard Identification and Risk Assessment* (THIRA) report and reviewed historic activations of the OEM Emergency Operations Center (EOC).

The Planning Team then distributed a hazard selection worksheet to MPCSC members to determine which hazards may affect their facilities or operations. The Planning Team eliminated some hazards addressed in the draft 2014 NYS HMP because they were either outside the scope of the plan or do not impact New

York City. The final list of natural and non-natural hazards chosen to be included in the New York City HMP is: coastal erosion; coastal storms; disease outbreaks; drought; earthquakes; extreme temperatures; flooding; severe weather; wildfires; winter storms; chemical, biological, radiological, and nuclear releases (CBRN); cyber threats; and infrastructure failures.

ii. Profiling Hazards

In the report, the hazard profiles are divided into two main components: hazard description and vulnerability assessment. The hazard description provides a general description of the hazard as well as an analysis of severity, probability of occurrence, location, and historic occurrences. The vulnerability assessment examines how the hazard impacts the social, built, natural, and future environments. For most of the hazards, climate change will play a significant role in determining future vulnerability.

To ensure the Risk Assessment section contains the most accurate information, the Planning Team reviewed local and state hazard mitigation plans and natural and non-natural hazard-related publications, and consulted with hazard-specific experts.

iii. Estimating Potential Losses

The Risk Assessment section includes potential loss estimates for New York City for each hazard. HAZUS-MH, a nationally applicable standardized methodology and software program, generated potential loss estimates for earthquakes, coastal storms, and floods. OEM GIS specialists and the Planning Team employed a variety of methods to generate loss estimates for the remaining hazards, such as estimating exposure, identifying vulnerable populations, determining frequency of past occurrences, and mapping infrastructure. The Risk Assessment section details the methodology and potential loss estimates for the hazards.

C. Development of the Mitigation Strategy Section of the HMP

Developing the Mitigation Strategy section of the HMP involved the following steps:

Table 2.2: Plans and Studies Consulted in the Development of the HMP

Plans/Studies/Guides	Author
<i>VISION 2020: New York City Comprehensive Waterfront Plan</i>	DCP
<i>Urban Waterfront Adaptive Strategies</i>	DCP
<i>Designing for Flood Risk</i>	DCP
<i>New York City Zoning Resolution</i>	DCP
<i>Planning Population: Projecting the Future</i>	DCP
<i>History of New York City's Water Supply System</i>	DEP
<i>NYC Green Infrastructure Plan</i>	DEP
<i>Drought Management Contingency Plan 2012</i>	DEP
<i>Downstream Flooding Reduction Program</i>	DEP
<i>Reservoir Release Notification Plan</i>	DEP
<i>New York City Construction Code</i>	DOB
<i>Pandemic Influenza: Preparedness and Response Plan</i>	DOHMH
<i>Vital Signs: Deaths Associated with Heat Waves in 2006</i>	DOHMH
<i>FEMA's How-to-Guide(Series 386-1, 2, 3, 4 and 5)</i>	FEMA
<i>Hazard Mitigation Planning</i>	FEMA
<i>Integrating Manmade Hazards Into Mitigation Planning 2003</i>	FEMA
<i>Local Mitigation Handbook</i>	FEMA
<i>National Flood Insurance Program</i>	FEMA
<i>NFIP Community Rating System</i>	FEMA
<i>Local Mitigation Planning Handbook</i>	FEMA
<i>Post-Sandy Housing Reconstruction Analysis</i>	FEMA/HRO
<i>NYC Build it Back</i>	HRO
<i>Nassau County Hazard Mitigation Plan</i>	Nassau County OEM
<i>State of New Jersey 2011 Hazard Mitigation Plan</i>	New Jersey OEM
<i>Waterfront Action Agenda (WAVES)</i>	NYC EDC
<i>Flood Mitigation Taskforce Stormwater Mitigation Study Area Report</i>	New York City Mayor's Office
<i>Hurricane Sandy After Action: Report and Recommendations to Mayor Michael R. Bloomberg</i>	New York City Mayor's Office
<i>2014 New York State Multi-Hazard Mitigation Plan (Draft)</i>	NYS OEM
<i>New York City Urban Area: Materials and Background Information for the Threat and Hazard Identification and Risk Assessment (THIRA)</i>	NYC Urban Area Working Group: NYC, Westchester, Nassau, Suffolk, Port Authority, MTA, Yonkers
<i>New York State Coastal Erosion Act</i>	NYSDEC

Plans/Studies/Guides	Author
<i>New York State Coastal Erosion Map</i>	NYSDEC
<i>Citywide Interagency Management System (CIMS) Protocol</i>	OEM
<i>Coastal Storm Plan</i>	OEM
<i>Flash Flood Plan</i>	OEM
<i>Heat Emergency Plan</i>	OEM
<i>H1N1 Playbook</i>	OEM
<i>Power Disruption</i>	OEM
<i>Radiological Response and Recovery Plan (RRRP)</i>	OEM
<i>Winter Weather Emergency Plan (WWEP)</i>	OEM
<i>Cyber Incident Response Protocol</i>	OEM
<i>PlaNYC: A Greener, Greater New York</i>	OLTPS
<i>A Stronger, More Resilient New York</i>	Special Initiative for Rebuilding and Resiliency
<i>Parks Department Parkland Plan</i>	DPR
<i>Local Waterfront Revitalization Plans - Consistency Review</i>	DPR
<i>Commonwealth of Pennsylvania 2010 Standard All-Hazard Mitigation Plan</i>	Pennsylvania
<i>Sandy Regional Assembly Recovery Agenda</i>	Sandy Regional Assembly
<i>Suffolk County Multi-Jurisdictional Multi-Hazard Mitigation Plan October 2008</i>	Suffolk County, NY
<i>Flooding and Land Use Planning: A Guidance Document for Municipal Officials and Planners</i>	Westchester County Department of Planning
<i>Westchester County Comprehensive Emergency Management Plan</i>	Westchester County, NY
<i>Threat and Hazard Identification and Risk Assessment Guide 2012</i>	US DHS

i. Establishing Goals and Objectives

Using information gleaned from the draft 2014 NYS HMP, hazard profiles, and community meetings, the Planning Team drafted a set of goals (see Figure 2.8) and objectives that represent New York City's long-term vision for reducing the impact of natural and non-natural hazards on the built environment and the city's population. The Planning Team distributed the draft goals and objectives to the MPCSC for review and comments. Mitigation goals were also presented at community involvement meetings. Based on feedback, the Planning Team produced a final set of five goals and 28 objectives (see Mitigation Strategy chapter).

impact of natural and non-natural hazards.

Mitigation Action Worksheets

MPC members were asked to use the following criteria to identify mitigation actions for the mitigation action worksheets: mitigates against one or more of the 13 natural or non-natural hazards profiled in the HMP and falls under one of the six FEMA mitigation categories (prevention, property protection, public education and awareness, coastal/natural resource protection, emergency services, and infrastructure projects), and achieves one or more of the five hazard mitigation goals and 28 objectives. For each mitigation action, agencies identified: the lead agency; "existing"

Figure 2.8: Hazard Mitigation Goals



ii. Identifying Preliminary Mitigation Actions

The MPC was the designated entity for identifying preliminary mitigation actions. At its kickoff meeting, Commissioner Joseph Bruno (OEM) and Commissioner Amanda Burden (DCP) made opening remarks concerning the importance of mitigation planning and OEM and DCP's collaboration in the report. Marc Ricks, Senior Advisor to the Mayor, described the findings and recommendations from *A Stronger, More Resilient New York*, which provide underpinnings for the HMP. Heather Roiter Damiano (OEM) presented on the components of the HMP and the expectations for MPC members, and Thaddeus Pawlowski (DCP) presented on the upcoming *Flood Resiliency Design Manual* and DCP's role in the HMP update. At the conclusion of the meeting, MPC members were given mitigation action worksheets to take back to their agencies to identify current and potential projects that aim to reduce the

or "potential" projects (existing projects are those with funding in place and ongoing strategies, whereas potential actions are projects agencies would like to implement and for which they are seeking funding); relevant hazard(s); project type; and project description. Agencies were also asked to use the mitigation action worksheets to report on the status of actions that were the result of the 2009 HMP.

Agency One-on-One Meetings

After receiving the completed mitigation actions worksheets from the MPC agencies, the Planning Team cross-referenced the actions with ongoing city resiliency initiatives. These initiatives included *A Stronger, More Resilient New York* recommendations and Hazard Mitigation Grant Program (HMGP) applications. The Planning Team then scheduled meetings with each agency to review actions and recommend including any additional actions identified in the city's ongoing

resiliency initiatives.

These meetings were a valuable opportunity for each agency to ask specific questions and gain a better understanding of how their operations relate to hazard mitigation. The Planning Team also gained a better understanding of the mitigation actions proposed by the agencies. During each meeting, the participants determined what, if any, modifications were necessary to the text and/or content of the worksheet and if there were additional mitigation actions the agency could undertake in the future. Agencies were then tasked with re-submitting mitigation actions to include support agencies, timeline, project costs, funding, and action status (for actions from the 2009 HMP). In total, the Planning Team conducted 32 agency one-on-one meetings.

Following the meetings, agencies reviewed their submissions, made appropriate corrections and additions, and resubmitted a revised list of mitigation actions for incorporation into the HMP.

iii. Finalizing Mitigation Actions

Upon receiving the revised mitigation action worksheets from the MPC agencies, the Planning Team compiled a list of 330 existing mitigation actions and 332 potential actions based on consistency with mitigation funding guidelines and relevancy to natural and non-natural hazard mitigation.

iv. Evaluating Mitigation Actions

The Planning Team and MPCSC performed a qualitative analysis of the potential 332 mitigation actions. The Planning Team and MPCSC used FEMA's Social, Technical, Administrative, Political, Legal, Economic, and Environmental (STAPLEE) analysis to understand the opportunities and constraints for implementing the potential mitigation actions (see the Chapter 4: Mitigation Strategy for the full results of the STAPLEE analysis).

v. Prioritizing Mitigation Actions

In accordance with FEMA requirements, the Planning Team prioritized mitigation actions to maximize benefits with consideration for potential costs. The Plan-

ning Team devised a prioritization methodology using the seven STAPLEE criteria as well as the number of objectives each action addressed, project cost, and project timeframe. Based on these criteria, the potential mitigation actions received a numerical ranking that translated to a high, medium, or low priority (see the Mitigation Strategy chapter for a detailed explanation of the prioritization process). These rankings are dynamic and can change because of funding availability, revisions to the mitigation actions, or changing city conditions. OEM's Hazard Mitigation Unit (HMU) will work closely with New York State Division of Homeland Security and Emergency Services (NYS DHSES) and FEMA to secure funding for mitigation actions that are in accordance with the goals and objectives of this plan.

4. Plan Development Meetings

Hurricane Sandy's arrival on October 29, 2012 created both constraints and benefits for the development of the HMP. Due to the storm's impact on the city, the planning process for updating the HMP was delayed for several months. However, the storm also initiated a dialogue among agencies, utility providers, and non-profit organizations about strategies to mitigate the impact of hazards on the city's built environment.

The Planning Team initiated the development of the 2014 New York City HMP in January 2013 and concluded the process in December 2013. During this period, the Planning Team coordinated and participated in 86 plan development meetings with agencies, the academic community, non-profit organizations, the private sector, volunteer organizations, and regional partners (see Appendix A). The Planning Team held bi-weekly meetings and met numerous times throughout the planning process on specific issues. In addition, the Planning Team and MPC members worked on many Sandy-related resiliency and recovery initiatives throughout this plan development process.

Website Links:

FEMA Local Mitigation Plan Review Guide:

http://www.fema.gov/media-library-data/20130726-1809-25045-7498/plan_review_guide_final_9_30_11.pdf

NYS DHSES Hazard Mitigation Standards:

<http://www.dhSES.ny.gov/oem/mitigation/documents/hazard-mit-plan-standards2012.pdf>

Private Sector and Professional Organizations Meeting Webinar:

https://oemnyc.adobeconnect.com/_a1089546215/p3buqqokaa5/?launcher=false&fcsContent=true&pbMode=normal