



Appendix: Initiatives

Initiative	Lead City Agency	Milestones for Completion, Assuming Funding		10-Year Capital / Study Cost (Preliminary Estimate, in \$ Millions, Nominal)	Funding Source
		By End of 2014	By End of 2020		

Strengthen the quality of available climate analysis

CLIMATE ANALYSIS	1	Work with FEMA to improve the flood-mapping process	OLTPS	Implement technical and process improvements	--	N/A	N/A
	2	Work with FEMA to improve the communication of current flood risks	OLTPS	Launch a new interactive tool	--	N/A	N/A
	3	Call on the State and Federal governments to coordinate with the City on local climate change projections	OLTPS	Obtain Federal agreement to rely on NPCC	--	N/A	N/A
	4	Continue to refine local climate change projections to inform decision-making	OLTPS	Issue expanded NPCC projections; release evaluation metric for climate change	--	N/A	N/A
	5	Explore improved approaches for mapping future flood risks, incorporating sea level rise	OLTPS	Develop revised future flood maps	--	N/A	N/A
	6	Launch a pilot program to identify and test strategies for protecting vulnerable neighborhoods from extreme heat health impacts	OLTPS	Launch pilot program	Complete pilot and seek to expand it	<1	CDBG

Increase coastal edge elevations

COASTAL PROTECTION	1	Continue to work with the USACE to complete emergency beach nourishment in Coney Island	DPR	Complete beach nourishment projects	--	40–60	USACE
	2	Continue to work with the USACE to complete emergency beach nourishment on the Rockaway Peninsula	DPR	Complete beach nourishment projects	--	100–125	USACE
	3	Complete short-term beach nourishment, dune construction, and shoreline protection on Staten Island	DPR	Complete beach nourishment and related projects	--	10–20	FEMA
	4	Install armor stone shoreline protection (revetments) in Coney Island	OLTPS	Begin design	Complete project	20–40	CDBG
	5	Install armor stone shoreline protection (revetments) on Staten Island	OLTPS	Begin design	Complete project	20–40	CDBG
	6	Raise bulkheads in low-lying neighborhoods across the city to minimize inland tidal flooding	OLTPS	Launch study of low-lying neighborhoods; begin selected implementation	Complete initial work; pursue additional work subject to study results	80–100	CDBG
	7	Complete emergency bulkhead repairs adjacent to the Belt Parkway in Southern Brooklyn	DPR	Complete bulkhead repairs	--	1–10	FEMA
	8	Complete bulkhead repairs and roadway drainage improvements adjacent to Beach Channel Drive on the Rockaway Peninsula	NYCEDC	Complete bulkhead repairs and related drainage improvements	--	20–40	City
	9	Continue to work with the USACE to complete emergency floodgate repairs at Oakwood Beach, Staten Island	OLTPS	Complete floodgate repairs	--	1–10	USACE
	10	Complete tide gate repair study at Flushing Meadows Corona Park, Queens	DPR	Study tide gate repairs	Subject to study results	1–5	City

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Minimize upland wave zones							
COASTAL PROTECTION	11	Continue to work with the USACE to complete existing studies of the Rockaway Peninsula and implement coastal protection projects	DPR	Begin study of flood risk reduction projects; complete identified short-term dune improvements	Subject to study results	100–125	USACE
	12	Call on and work with the USACE to study and install primary and secondary dune systems in vulnerable Rockaway Peninsula neighborhoods (such as Breezy Point)	OLTPS/DPR	Begin study	Subject to study results	40–60	TBD
	13	Call on and work with the USACE to study and install offshore breakwaters adjacent to and south of Great Kills Harbor	OLTPS	Begin study	Subject to study results	200–250	TBD
	14	Call on and work with the USACE to study and install wetlands for wave attenuation in Howard Beach and to study further flood protection improvements within Jamaica Bay	DPR	Begin study	Subject to study results	250–300	TBD
	15	Call on and work with the USACE to study and install living shorelines for wave attenuation in Tottenville	DPR	Begin study	Subject to study results	60–80	TBD
	16	Continue to work with the USACE to complete its Plumb Beach breakwater and beach nourishment project in Southern Brooklyn	DPR	Complete construction	--	1–10	USACE
	17	Complete living shorelines and floating breakwaters for wave attenuation in Brant Point, Queens	DEP	Complete construction	--	1–10	City
	18	Continue to work with the USACE to complete its Sea Gate project in Southern Brooklyn	DPR	Complete construction	--	20–40	USACE
Protect against storm surge							
COASTAL PROTECTION	19	Install an integrated flood protection system in Hunts Point	OLTPS	Begin design	Complete construction	150–175	TBD
	20	Install an integrated flood protection system in East Harlem	OLTPS	Begin design	Complete construction	175–200	TBD
	21	Install an integrated flood protection system in Lower Manhattan, including the Lower East Side	OLTPS	Begin design	Complete construction	300–350	TBD
	22	Install an integrated flood protection system at Hospital Row	OLTPS	Launch competition; begin design	Complete construction	60–80	CDBG
	23	Install an integrated flood protection system in Red Hook	OLTPS	Begin design	Complete construction	175–200	TBD
	24	Continue to work with the USACE to complete existing studies on Staten Island and implement coastal protection projects	DPR	Complete study	Subject to study results	400–450	USACE/TBD
	25	Continue to work with Con Edison to protect the Farragut substation	OLTPS	File comments on rate case	Subject to rate case outcome	40–60	Ratepayers
	26	Call on and work with the USACE to study and install local storm surge barriers at Newtown Creek	OLTPS	Begin study	Subject to study results	950–1000	TBD

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Improve coastal design and governance

COASTAL PROTECTION	27	Continue to work with the USACE to complete its comprehensive flood protection study of New York Harbor	OLTPS	Complete draft study, recommending projects ready for authorization by Congress	Subject to study results	10–20	USACE
	28	Implement the WAVES Action Agenda	DCP	Complete scheduled projects	--	N/A	N/A
	29	Implement citywide waterfront inspections to better manage the City's waterfront and coastal assets	NYCEDC	Implement program	--	1–10	TBD
	30	Study design guidelines for waterfront and coastal assets to better mitigate the effects of flooding	DPR	Complete study	Subject to study results	N/A	N/A
	31	Evaluate soft infrastructure as flood protection and study innovative coastal protection techniques	OLTPS	Partner with the planned Jamaica Bay Science and Resilience Center and others to begin studies	--	1–10	TBD
	32	Evaluate the city's vulnerability to drainage pipe flooding and identify appropriate solutions to minimize those risks	OLTPS	Complete study as part of other coastal protection projects	Subject to study results	10–20	TBD
	33	Evaluate strategies to fund wetland restoration and explore the feasibility of wetland mitigation banking structures	NYCEDC	Complete study of mitigation banking	Subject to study results	10–20	TBD
	34	Work with agency partners to improve the in-water permitting process	NYCEDC	Launch website	--	<1	ESDC
	35	Enhance waterfront construction oversight by strengthening the City's waterfront permit and dockmaster units	SBS	Explore options to enhance waterfront permitting and dockmaster function	--	N/A	N/A
	36	Identify a lead entity for overseeing the collaboration on the USACE comprehensive study and for overseeing the implementation of coastal flood protection projects	OLTPS	Identify lead entity	--	N/A	N/A
	37	Call on and work with the USACE and FEMA to collaborate more closely on flood protection project standards	OLTPS	Identify risk reduction standards	--	N/A	N/A

Strengthen new and substantially rebuilt structures to meet the highest resiliency standards moving forward

BUILDINGS	1	Improve regulations for flood resiliency of new and substantially improved buildings in the 100-year floodplain	OLTPS	Adopt changes to Construction Codes and zoning	Complete analysis of additional freeboard	N/A	N/A
	2	Rebuild and repair housing units destroyed and substantially damaged by Sandy	HRO	Disburse funds to rebuild and repair 500 buildings	Disburse funds to rebuild and repair 100% of eligible buildings	950–1000	CDBG (Partial)/ TBD
	3	Study and implement zoning changes to encourage retrofits of existing buildings and construction of new resilient buildings in the 100-year floodplain	DCP	Begin studies for 5-10 neighborhoods and citywide strategies	Complete all studies and implement zoning changes per study findings	20–40	CDBG (Partial)/ TBD
	4	Launch a competition to encourage development of new, cost-effective housing types to replace vulnerable stock	HPD	Launch and award Phase I of competition and launch Phase II	Complete Phase II RFP for Phase I winners and complete resilient designs	10–20	TBD
	5	Work with New York State to identify eligible communities for the New York Smart Home Buyout Program	HRO	Identify all projects and complete transactions	--	150–175	CDBG (NYS)
	6	Amend the Building Code and complete studies to improve wind resiliency for new and substantially improved buildings	OLTPS	Implement initial Building Code changes	Complete wind studies	1–10	TBD

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Retrofit as many buildings as possible so that they will be significantly more resilient than they are today							
BUILDINGS	7	Encourage existing buildings in the 100-year floodplain to adopt flood resiliency measures through an incentive program and targeted requirements	NYCEDC	Implement code changes and launch incentive program	Complete Core Flood Resiliency Measures on >100M square feet	1150–1200	CDBG (Partial)/ TBD
	8	Establish Community Design Centers to assist property owners in developing design solutions for reconstruction and retrofitting, and connect them to available City programs	HRO	Launch centers in targeted neighborhoods	--	N/A	NA
	9	Retrofit public housing units damaged by Sandy and increase future resiliency	NYCHA	Install backup generators in vulnerable buildings; launch planning efforts for undamaged but vulnerable buildings	Complete repairs and resiliency retrofits in 40% of vulnerable buildings	700–750	CDBG (Partial)/ TBD
	10	Launch sales tax abatement program for flood resiliency in industrial buildings	NYCIDA	Launch program	--	1–10	City
	11	Launch a competition to increase flood resiliency in building systems	NYCEDC	Launch competition and select winners	--	40–60	CDBG
	12	Clarify regulations relating to the retrofit of landmarked structures in the 100-year floodplain	LPC	Issue written guidance	--	N/A	N/A
	13	Amend the Building Code to improve wind resiliency for existing buildings and complete studies of potential retrofits	OLTPS	Implement initial Building Code changes	Complete wind studies	1–10	TBD
	14	Amend the Construction Codes and develop best practices to protect against utility service interruptions	OLTPS	Implement changes to Construction Codes	Develop best practices	1–10	TBD
Support community and economic recovery in impacted areas							
ECONOMIC RECOVERY	1	Launch Business Recovery and Resiliency Programs	NYCEDC	Launch program and begin disbursing funds	Complete investments	150–175	CDBG
	2	Launch Neighborhood Game Changer Competition	NYCEDC	Issue RFP and select winning proposals	Complete investments	80–100	CDBG
	3	Launch Neighborhood Retail Recovery Program	NYCEDC	Launch Business Incentive Rate for retail and approve applications	--	1–10	Utilities/ City
	4	Support local merchants in improving and promoting local commercial corridors	SBS	Provide technical assistance and funding	Continue support	N/A	N/A
	5	Continue to support the FRESH program to increase the number of full-line grocers in underserved neighborhoods	NYCEDC	Pursue FRESH programs in Sandy-impacted neighborhoods	Continue FRESH program	N/A	City
	6	Reassess commercial properties citywide to reflect post-Sandy market values	DOF	Establish new market values and lower property taxes	--	80–100	City
Target affordability solutions to low-income policyholders							
	1	Support Federal efforts to address affordability issues related to reform of the NFIP	OLTPS	Complete affordability study	Subject to study findings	N/A	N/A
Define resiliency standards for existing buildings							
INSURANCE	2	Develop FEMA-endorsed flood protection standards and certifications for existing urban buildings	OLTPS	Complete development of building standards and FEMA review	--	N/A	N/A
	3	Call on FEMA to recognize mixed-use buildings as a distinct building category	OLTPS	Create a mixed-use building category within the NFIP	Obtain flood-proofing certifications	N/A	N/A

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Incorporate resiliency standards in insurance underwriting							
INSURANCE	4	Call on FEMA to develop mitigation credits for resiliency measures	OLTPS	Complete study of mitigation options and risk reduction	Subject to study findings	<1	TBD
	5	Study approaches for New York City to join FEMA's Community Rating System program	OLTPS	Complete study of City's ability to be admitted to CRS program and cost-benefit analysis	Subject to study findings	<1	TBD
Expand pricing options for policyholders							
	6	Call on FEMA to allow residential policyholders to select higher deductibles	OLTPS	Complete evaluation of higher deductible options	Obtain FEMA approval to allow higher deductibles for residential policies	N/A	N/A
Improve awareness and education about insurance							
INSURANCE	7	Support the goals of the NYS 2100 Commission to protect New York State, consumers, and businesses	OLTPS	Support State efforts	--	N/A	N/A
	8	Call on New York State to improve policyholder awareness at the point of sale or renewal	OLTPS	Support State efforts to improve policyholder awareness	--	N/A	N/A
	9	Launch a consumer education campaign on flood insurance	DCA	Complete citywide campaign	--	<1	TBD
	10	Launch an engagement campaign targeting insurers	OLTPS	Establish regular meetings with leading insurers	--	N/A	N/A
Redesign the regulatory framework to support resiliency							
UTILITIES	1	Work with utilities and regulators to develop a cost-effective system upgrade plan to address climate risks	OLTPS	Incorporate cost-benefit analysis tool into regulatory framework	--	N/A	N/A
	2	Work with utilities and regulators to reflect climate risks in system design and equipment standards	OLTPS	Submit comments to 2014 NYISO Reliability Needs Assessment	--	N/A	N/A
	3	Work with utilities and regulators to establish performance metrics for climate risk response	OLTPS	Complete Con Edison rate case proceeding	--	N/A	N/A
Harden existing infrastructure to withstand climate events							
UTILITIES	4	Work with power suppliers and regulators to harden key power generators against flooding	OLTPS	Launch effort with stakeholders	--	N/A	N/A
	5	Work with utilities and the PSC to harden key electric transmission and distribution infrastructure against flooding	OLTPS	Complete Con Edison rate case proceeding	--	Subject to 2013 rate case decision	Ratepayers
	6	Work with utilities and the PSC to harden vulnerable overhead lines against winds	OLTPS	Complete Con Edison rate case proceeding and Local Law 13 study	--	Subject to 2013 rate case decision	Ratepayers
	7	Work with utilities, regulators, and gas pipeline operators to harden the natural gas system against flooding	OLTPS	Complete Con Edison rate case proceeding	--	Subject to 2013 rate case decision	Ratepayers
	8	Work with steam plant operators and the PSC to harden steam plants against flooding	OLTPS	Complete Con Edison rate case proceeding	--	Subject to 2013 rate case decision	Ratepayers

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Reconfigure utility networks to be redundant and resilient							
UTILITIES	9	Work with industry partners, New York State, and regulators to strengthen New York City's power supply	OLTPS	Continue ongoing power supply efforts	--	N/A	N/A
	10	Require more in-city plants to be able to restart quickly in the event of blackout	OLTPS	Continue ongoing efforts	--	N/A	N/A
	11	Work with Con Edison and the PSC to develop a long-term resiliency plan for the electric distribution system	OLTPS	Complete Con Edison rate case proceeding	--	N/A	N/A
	12	Work with utilities and regulators to minimize electric outages in areas not directly affected by climate impacts	OLTPS	Complete Con Edison rate case proceeding	--	Subject to 2013 rate case decision	Ratepayers
	13	Work with utilities and regulators to implement smart grid technology to assess system conditions in real time	OLTPS	Complete Con Edison rate case proceeding	--	Subject to 2013 rate case decision	Ratepayers
	14	Work with utilities and regulators to speed up service restoration for critical customers via system configuration	OLTPS	Complete Con Edison rate case proceeding	--	Subject to 2013 rate case decision	Ratepayers
	15	Work with utilities and regulators to speed up service restoration via pre-connections for mobile substations	OLTPS	Complete Con Edison rate case proceeding	--	Subject to 2013 rate case decision	Ratepayers
	16	Work with pipeline operators to expand and diversify natural gas supply	OLTPS	Continue ongoing efforts	--	N/A	N/A
	17	Work with utilities and regulators to strengthen the in-city gas transmission and distribution system	OLTPS	Complete Con Edison rate case proceeding	--	Subject to 2013 rate case decision	Ratepayers
	18	Launch energy infrastructure resiliency competition	NYCEDC	Select winners of competition	--	N/A	N/A
Reduce energy demand							
UTILITIES	19	Work with utilities and regulators to expand citywide demand response programs	OLTPS	Complete Con Edison rate case	Implement 50 MW of DR capacity at municipal buildings	Subject to 2013 rate case decision	Ratepayers
	20	Work with government and private sector partners to expand the energy efficiency of buildings	OLTPS	Launch Green Light New York Center	--	N/A	N/A
Diversify customer options in case of utility outage							
UTILITIES	21	Work with public and private partners to scale up distributed generation (DG) and micro-grids	OLTPS	Launch micro-grid feasibility study	Installation of at least 55 MW of distributed generation in municipal buildings	N/A	N/A
	22	Incorporate resiliency into the design of City electric vehicle initiatives and pilot storage technologies	OLTPS	Continue ongoing efforts; implement and pilot at Brooklyn Army Terminal	--	N/A	N/A
	23	Improve backup generation for critical customers	OEM	Expand City emergency generator fleet by 20 to 30 units	--	N/A	N/A

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Seek to harden the liquid fuels supply infrastructure							
LIQUID FUELS	1	Call on the Federal government to convene a regional working group to develop a fuel infrastructure hardening strategy	OLTPS	Develop regional strategy	--	N/A	N/A
	2	Develop a reporting framework for fuel infrastructure operators to support post-emergency restoration	OLTPS	Ensure development of IT systems and information reporting framework	--	N/A	N/A
	3	Work with Buckeye and New York State to safely build pipeline booster stations in New York City to increase supply and withstand extreme weather events	OLTPS	Ensure booster stations to withstand climate change impacts	--	N/A	N/A
	4	Work with New York State to provide incentives for the hardening of gas stations to withstand extreme weather events	OLTPS	Assist in launching incentive program	--	N/A	N/A
	5	Ensure that a subset of gas stations and terminals have access to backup generators in case of widespread power outages	OEM	Ensure creation of a generator pool and pre-event positioning plan	--	N/A	N/A
Enhance the ability of the supply chain to respond to disruptions							
LIQUID FUELS	6	Explore the creation of a transportation fuel reserve to temporarily supply the private market during disruptions	OLTPS	Evaluate feasibility and cost	--	N/A	N/A
	7	Call on New York State to modify price gouging laws and allow flexibility of gas station supply contracts to increase fuel availability during disruptions	OLTPS	Secure passage of legislation	--	N/A	N/A
	8	Develop a package of City, State, and Federal regulatory actions to address liquid fuel shortages during emergencies	OEM/DCAS	Complete rationing plan and package of regulatory waivers	--	N/A	N/A
Improve the City's ability to fuel first responders and private critical fleets							
	9	Harden municipal fueling stations and enhance mobile fueling capability to support both City government and critical fleets	DCAS	Procure equipment	Put flood protection standards in place	20–40	City
Ensure critical providers' operability through redundancy and the prevention of physical damage							
HEALTHCARE	1	Improve design and construction of new hospitals	OLTPS	Amend Construction Codes		N/A	N/A
	2	Require the retrofitting of existing hospitals in the 500-year floodplain	OLTPS	Amend Construction Codes	Confirm 100% compliance or plan to reach compliance by 2030	700–750	FEMA/VA/State/ (Partial) TBD
	3	Support the Health and Hospital's Corporation effort to protect public hospital emergency departments (EDs) from flooding	HHC	Determine strategies and identify funding for each at-risk ED	Begin construction planning	N/A	N/A
	4	Improve the design and construction of new nursing homes and adult care facilities	OLTPS	Amend Construction Codes	--	N/A	N/A
	5	Require the retrofitting of existing nursing homes in the 100-year floodplain	OLTPS	Amend Construction Codes	Confirm 100% compliance or plan to reach compliance by 2030	80–100	FEMA (Partial) TBD
	6	Require the retrofitting of existing adult care facilities in the 100-year floodplain	OLTPS	Amend Construction Codes	Confirm 100% compliance or plan to reach compliance by 2030	1–10	FEMA
	7	Support nursing homes and adult care facilities with mitigation grants and loans	DOHMH	Develop and launch program	Disburse funds to ~60% of providers	40–60	TBD
	8	Increase the air conditioning capacity of nursing homes and adult care facilities	NYCEDC	Develop and launch program	Disburse funds to ~60% of providers	1–10	TBD

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Reduce barriers to care during and after emergencies						
HEALTHCARE	9 Harden primary care and mental health clinics	DOHMH	Develop and launch program	Disburse funds and complete mitigation projects	1–10	TBD
	10 Improve pharmacies' power resiliency	DOHMH	Implement regulatory changes	--	N/A	N/A
	11 Encourage telecommunications resiliency	DOHMH	Develop and distribute best practice guide	--	N/A	N/A
	12 Encourage electronic health record-keeping	DOHMH	Incorporate resiliency into EHR programs and conduct outreach	--	N/A	N/A
Improve the ability of communities to prepare for and respond to disasters						
COMMUNITY PREPAREDNESS	1 Launch pilot program to identify and address gaps in community capacity	OEM	Complete pilot assessment	Develop and implement plan to address gaps	<1	TBD
	2 Continue and Expand OEM's Community Emergency Response Teams	OEM	Expand programs	--	<1	TBD
	3 Expand the Worker Connect information technology tool to serve as an Emergency Services Portal	Office of Deputy Mayor for Health and Human Services	Create new emergency services portal and strengthen functionality of Worker Connect	--	1–10	TBD
	4 Explore the creation of a new online Emergency Notification Contact System	HPD	Begin to create voluntary database	Launch fully functional database	1–10	TBD
Increase accountability to promote resiliency						
TELECOMMUNICATIONS	1 Establish an office within DoITT to focus on telecommunications regulation and resiliency planning	DoITT	Establish and operationalize new office	--	N/A	N/A
	2 Establish new resiliency requirements for providers using scheduled renewals of the City's franchise agreements	DoITT	Establish framework of new resiliency requirements	Execute new franchise agreements including resiliency requirements	N/A	N/A
Enable rapid recovery after extreme weather events						
	3 Request business continuity plans from current City franchisees as permitted under existing franchise agreements	DoITT	Establish regular meetings with cell providers; develop criteria for hardening cell sites	Harden selected cell sites	N/A	N/A
Harden facilities to reduce weather-related impacts						
TELECOMMUNICATIONS	4 Develop flood protection standards for placement of telecommunications equipment in buildings	OLTPS	Implement programs	Put flood protection standards in place	N/A	N/A
	5 Use the DoITT franchise agreements to ensure hardening of all critical facilities	DoITT	Audit all critical facilities and provide guidance for hardening	Establish requirements for facilities and equipment	N/A	N/A
	6 Work with cell providers to encourage hardening of cell sites	DoITT	Establish regular meetings with cell providers develop criteria for hardening cell sites	Harden selected cell sites	N/A	N/A

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Create redundancy to reduce risk of outages

TELECOMMUNICATIONS	7	Study options to increase conduit infrastructure redundancy and resiliency	DoITT	Launch study	Subject to study findings	N/A	N/A
	8	Continue implementation of ConnectNYC Fiber Access to create broadband redundancy	NYCEDC	Complete second round of applications and begin installing fiber connections	Complete fiber installations	N/A	N/A
	9	Add telecommunications provider quality and resiliency to the WiredNYC and NYC Broadband Map ratings	NYCEDC	Launch updated maps	Make available information about telecommunications resiliency	N/A	N/A

Protect assets to maintain system operations

TRANSPORTATION	1	Reconstruct and resurface key streets damaged by Sandy	NYCDOT	Begin reconstruction and resurfacing	Complete resurfacing and majority of reconstruction	450–500	FHWA / FEMA
	2	Integrate climate resiliency features into future capital projects	NYCDOT	Ongoing	Ongoing	175–200	FHWA (Partial)/ City
	3	Elevate traffic signals and provide backup electrical power	NYCDOT	Begin effort	Complete implementation	1–10	FEMA
	4	Protect NYCDOT tunnels in Lower Manhattan from flooding	NYCDOT	Launch design	Complete implementation	20–40	TBD
	5	Install watertight barriers to protect movable bridge machinery	NYCDOT	Launch design	Complete implementation	1–10	TBD
	6	Protect Staten Island Ferry and private ferry terminals from climate change-related threats	NYCDOT	Design underway	Complete implementation	10–20	FTA (Partial)/ TBD
	7	Integrate resiliency into planning and project development	NYCDOT	Begin effort	Ongoing	N/A	N/A
	8	Call on non-City agencies to implement strategies to address climate change threats	OLTPS	Engage with non-City agencies	Ongoing	N/A	N/A

Prepare the transportation system to restore service after extreme climate events

TRANSPORTATION	9	Plan for temporary transit services in the event of subway system suspensions	NYCDOT	Complete initial planning	Continue to update as necessary	1–10	FTA (Partial)/ TBD
	10	Identify critical transportation network elements and improve transportation responses to major events through regular resiliency planning exercises	NYCDOT	Complete initial planning, including multiple planning exercises and one live drill	Continue to update as necessary	<1	City
	11	Develop standard plans for implementing High-Occupancy Vehicle (HOV) requirements	NYCDOT	Complete plan	Continue to update as necessary	<1	City
	12	Plan for and install new pedestrian and bicycle facilities to improve connectivity to key transportation hubs	NYCDOT	Develop plan for improvements; begin implementation of most critical components	Implement first plan on improvements; pursue ongoing development of additional facilities	10–20	TBD
	13	Construct new ferry landings to support private ferry services	NYCEDC	Identify locations and launch design	Complete new ferry landings	20–40	FTA
	14	Deploy the Staten Island Ferry's Austen Class vessels on the East River Ferry and during transportation disruptions	NYCDOT	Complete operational plans for various types of deployment	Continue to update as necessary	<1	FTA
	15	Improve at all levels communications about the restoration of transportation services	NYCDOT	Put communications plan in place	Continue to update as necessary	N/A	N/A

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Implement new and expanded services to increase system flexibility and redundancy							
TRANSPORTATION	16	Expand the city's Select Bus Service network	NYCDOT	Implement four SBS routes	Implement four additional Phase II SBS routes	80–100	FTA (Partial)/ TBD
	17	Expand the network of bus priority strategies on arterial highways	NYCDOT	Initiate planning for first highway priority corridor	Implement first highway priority corridor and launch planning and design for two additional corridors	40–60	FTA (Partial)/ TBD
	18	Expand ferry services in locations citywide	NYCEDC	Complete Citywide Ferry Study	Implement additional viable ferry services as per study and through RFEIs	<1	City
Adapt parks and expand green infrastructure to shield adjacent communities from the impacts of extreme weather events							
PARKS	1	Restore city beaches	DPR	Engage community and begin design options	Subject to study results	250–500	Federal/City/TBD
	2	Harden or otherwise modify shoreline parks and adjacent roadways to protect adjacent community (See Coastal Protection Initiative 30)	DPR	Complete preliminary design investigation for pilot	Complete improvements	20–40 (Pilot)	Federal/TBD
	3	Reinforce or redesign bulkheads in coastal parks (See Coastal Protection Initiative 6; see Coastal Protection Initiative 29)	DPR	Inspect damaged bulkheads on parkland and develop plan	Subject to development of plan	40–60 (Pilot)	Federal/TBD
	4	Expand the City's greenstreets plan, including for Jamaica Bay	DPR	Expand program to area around Jamaica Bay	Expand program to 14 new neighborhoods	60–80	Federal/TBD
Retrofit or harden park facilities to withstand the impacts of climate change							
PARKS	5	Fortify marinas and piers	DPR	Complete preliminary design investigation	Complete improvements	5–20 (Pilot)	Federal/City/TBD
	6	Relocate or increase the resiliency of playgrounds and athletic fields	DPR	Complete preliminary design investigation	Complete improvements	125–150	Federal/City/TBD
	7	Protect mechanical systems at major park facilities and buildings	DPR	Complete preliminary design investigation	Complete improvements	60–80 (Pilot)	Federal/City/TBD
	8	Move or protect critical operations centers	DPR	Begin to construct protective measures	Complete protective measures	80–100	Federal/City/TBD
Protect wetlands, other natural areas, and the urban forest							
PARKS	9	Work with the Federal government to transform Jamaica Bay	DPR	Continue to advance partnership and launch transformation	Implement transformation	N/A	N/A
	10	Increase the health and resiliency of natural areas, including Tibbetts Brook	DPR	Launch projects in Alley Creek and Bronx River watersheds and tidal wetlands in Staten Island, Bronx, and Queens	--	20–40 (Pilot)	Federal/TBD
	11	Improve the health and resiliency of the city's urban forest	DPR	Hire and train 10 foresters	Increase pruning operations and expand tree beds	N/A	N/A
	12	Increase growth of local plant material for restoration work	DPR	Launch improvements to Greenbelt Native Plants Center	Expand operations	10–20	Federal/City/TBD

Initiative	Lead City Agency	Milestones for Completion, Assuming Funding		10-Year Capital / Study Cost (Preliminary Estimate, in \$ Millions, Nominal)	Funding Source
		By End of 2014	By End of 2020		

Develop tools for comprehensive climate adaptation planning and design

PARKS	13	Establish a center for resiliency and restoration efforts in the Jamaica Bay-Rockaway Parks	DPR	Launch initial operations of center	--	1–20	Federal/City/TBD
	14	Quantify the benefits of the city's ecosystems and green infrastructure	DPR	Commission studies on the impact of the city's green infrastructure program	Subject to study findings	N/A	N/A
	15	Create climate adaptation plans for all parks in the 100-year floodplain	DPR	Map and catalogue vulnerable sites	Develop and maintain updated climate adaptation plans	N/A	N/A
	16	Map the city's overhead utilities and street trees	DPR	Launch mapping effort	Complete map	N/A	N/A

Protect sites with hazardous substances and encourage brownfield redevelopment

ENVIRONMENTAL PROTECTION AND REMEDIATION	1	Identify cost-effective measures to safeguard exposed substances in the 100-year floodplain	DCP	Complete Open Industrial Uses study	Subject to study findings	N/A	N/A
	2	Develop a catalogue of best practices for storing enclosed hazardous substances in the 100-year floodplain	OLTPS	Begin process of developing best practices	Complete catalogue	N/A	N/A
	3	Accelerate brownfield cleanup in the 100-year floodplain to prevent release of pollutants	OER	Launch expansion of existing Brownfield Incentive Grant program	Subject to funding, complete cleanup of 150 tax lots in floodplain	1–10	Federal/City
	4	Explore strengthened cleanup standards on industrial waterfront brownfields	OER	Examine existing soil cleanup standards and evaluate how to strengthen protections	Subject to study findings	N/A	N/A
	5	Launch brownfield climate change resiliency audits and improve storm preparedness	OER	Begin audits of brownfield cleanup and publish report findings	Subject to study findings	<1	TBD
	6	Launch full operations of the NYC Clean Soil Bank	OER	Launch NYC Clean Soil Bank	Reuse 600,000 tons of soil	N/A	N/A
	7	Perform update of SPEED, the City's online environmental research engine	OER	Complete update to SPEED database	Continue periodic updates	<1	TBD

Protect wastewater treatment facilities from storm surge

WATER AND WASTEWATER	1	Adopt a wastewater facility design standard for storm surge and sea level rise	DEP	Adopt new design guidelines	--	N/A	N/A
	2	Harden pumping stations	DEP	Incorporate resiliency measures in repairs and capital projects	Incorporate resiliency measures in repairs and capital projects	125–150	TBD
	3	Harden wastewater treatment plants	DEP	Incorporate resiliency measures in repairs and capital projects	Incorporate resiliency measures in repairs and capital projects	700–750	TBD
	4	Explore alternatives for the Rockaway Wastewater Treatment Plant	DEP	Initiate feasibility study	Subject to study findings	1–10	City
	5	Develop cogeneration facilities at North River Wastewater Treatment Plant	DEP	Substantially complete design of cogeneration facilities	--	200–250	City
	6	Explore opportunities to expand cogeneration and other energy measures	DEP	Initiate feasibility study	Subject to study findings	N/A	N/A
	7	Encourage regional resiliency planning	DEP	Share results of DEP's detailed wastewater risk and adaptation analysis	--	N/A	N/A

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Initiative		Lead City Agency	Milestones for Completion, Assuming Funding		10-Year Capital / Study Cost (Preliminary Estimate, in \$ Millions, Nominal)	Funding Source	
			By End of 2014	By End of 2020			
Improve and expand drainage infrastructure							
WATER AND WASTEWATER	8	Reduce combined sewer overflows with Green Infrastructure	DEP	Complete four long-term control plans	Capture runoff in 4% of impervious areas and complete all long-term control plans	700–750	City
	9	Reduce combined sewer overflows with high-level storm sewers citywide	DEP	Begin or continue construction of 4 high-level storm sewer capital projects	Substantially complete 10 high-level storm sewer capital projects	350–400	City
	10	Continue to implement and accelerate investments in Bluebelts across the city	DEP	Continue build out of South Richmond Bluebelt and begin construction of Mid-Island Bluebelt	Substantially complete South Richmond Bluebelt and advance projects in Mid-Island and Twin Ponds, Queens	500–550	City (Partial)/ TBD
	11	Build out stormwater sewers in areas of Queens with limited drainage systems	DEP	Begin or continue construction of three storm sewer build-out capital projects	Substantially complete 15 storm sewer build-out capital projects	125–150	City
	12	Periodically review rainfall trends and implications for stormwater infrastructure	DEP	Create process to reassess precipitation data	Complete at least one data reassessment	N/A	N/A
Promote redundancy and flexibility to ensure constant supply of high-quality water							
WATER AND WASTEWATER	13	Repair the leak in the Delaware Aqueduct	DEP	Continue construction of bypass tunnel	Implement water augmentation and conservation measures in preparation for temporary shutdown of aqueduct	1050–1400	City
	14	Improve interconnection between the Catskill and Delaware aqueducts and maximize capacity to deliver water from the Catskill/Delaware system	DEP	Begin construction of inter-connection	Complete construction of interconnection and design of Catskill Pressurization	550–600	City
	15	Continue the Watershed Protection Program to maintain drinking water quality	DEP	Incorporate updates to Long-Term Watershed Protection Program	--	250–300	City
Identify and harden critical food distribution assets							
FOOD SUPPLY	1	Study the food distribution system to identify other prospective vulnerabilities	OLTPS	Launch study	Subject to study findings	1–10	TBD
	2	Expand upon prior energy studies, to explore options for cost-effective, continuous power for the Hunts Point Food Distribution Center	NYCEDC	Expand current study	Subject to study findings	N/A	N/A

Initiative		Lead City Agency	Milestones for Completion, Assuming Funding		10-Year Capital / Study Cost (Preliminary Estimate, in \$ Millions, Nominal)	Funding Source	
			By End of 2014	By End of 2020			
Improve the resiliency of consumer access							
FOOD SUPPLY	3	Call on New York State to issue preparedness guidelines to retailers in anticipation of extreme weather events	OLTPS	Disseminate State-issued preparedness guidelines	--	N/A	N/A
	4	Call on the State legislature to pass City-sponsored legislation mandating electric generators for food retailers	OEM	Advance legislation	Secure passage	N/A	N/A
	5	Continue to support the FRESH program to increase the number of full-line grocers in underserved neighborhoods	NYCEDC	Continue to advance program	--	N/A	N/A
	6	Expand DCAS food procurement pilots towards contracts with larger, more resilient distributors that have active New York operations	DCAS	Begin expansion of suppliers	--	N/A	N/A
	7	Implement preparedness measures for continued availability of SNAP benefits for vulnerable consumers following large-scale power outages	HRA	Prepare waiver for immediate submission if necessary	--	N/A	N/A
Protect solid waste facilities and disposal networks							
SOLID WASTE	1	Harden critical City-owned facilities	DSNY	Incorporate resiliency measures in repairs and capital projects	Incorporate resiliency measures in repairs and capital projects	20–40	TBD
	2	Work with third-party owners to protect critical assets and networks	DSNY	Develop an inventory of critical system vulnerabilities and catalogue known risks	Develop contingency plans and implement resiliency measures	N/A	N/A
Coastal Protection							
BROOKLYN-QUEENS WATERFRONT	1	Work with the Port Authority to continue a study of innovative coastal protection measures using clean dredge material in Southwest Brooklyn	NYCEDC	Complete study and launch pilot measures	Subject to study findings	N/A	N/A
	2	Call on and work with the USACE to develop an implementation plan and preliminary designs for a local storm surge barrier along the Gowanus Canal	OLTPS	Complete preliminary feasibility study and design and launch USACE study	Subject to study findings	1–10	TBD
	3	Implement strategies to protect Brooklyn Bridge Park and DUMBO	Brooklyn Bridge Park Corporation/ OLTPS	Begin construction of the John St. section of the park; designate developer for John St. lower site; complete study of DUMBO resiliency measures	Subject to DUMBO study findings	10–20	Brooklyn Bridge Park Corp./TBD
	4	Support private investments that reduce flood risk along Newtown Creek	NYCEDC	Advertise support to businesses; provide technical assistance	Continue to provide technical assistance	N/A	N/A
	5	Create an implementation plan for comprehensive flood-protection improvements on public and private property along the Williamsburg, Greenpoint, and Long Island City coastlines	OLTPS	Commence study	Subject to study findings	<1	TBD
Buildings							
	6	Implement planned upgrades to vulnerable City-owned, industrial properties	NYCEDC/ BNYDC	Commence property upgrades and substantially complete	Complete additional property upgrades	80–100	FEMA/Insurance Proceeds

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Critical Infrastructure							
BROOKLYN-QUEENS	7	Improve connections between Red Hook and the rest of Brooklyn	NYCDOT	Complete enhancements to Mill Street connection and BQE underpass	--	<1	City
	8	Call for the MTA to explore Red Hook-Lower Manhattan bus connections	NYCEDC	Complete assessment	Subject to findings from assessment	N/A	N/A
	9	Implement expanded free summer weekend ferry service from Manhattan to Red Hook in 2013	NYCEDC	Complete summer 2013 service and evaluate results	Extend service if justified	<1	City
Community and Economic Recovery							
BROOKLYN-QUEENS	10	Create and implement a revitalization strategy for targeted retail and community spaces within Red Hook Houses	NYCEDC/ NYCHA	Complete assessment	Subject to results of assessment	1–10	TBD
	11	Implement planned and ongoing investments by the City and private partners	Varies	Complete first phase of Bush Terminal Park	Complete residential buildings for parcels A and B at Hunters Point South development	Varies	Varies
Coastal Protection							
SOUTHERN BROOKLYN	1	Call on and work with the USACE to study additional Sea Gate oceanfront protections	OLTPS	Launch study	Subject to plan findings	N/A	N/A
	2	Continue to work with the USACE to study strengthening the Coney Island/Brighton Beach nourishment	OLTPS	Launch study	Subject to plan findings	N/A	N/A
	3	Call on and work with the USACE to study Manhattan Beach oceanfront protections	OLTPS	Launch study	Subject to plan findings	N/A	N/A
	4	Call on and work with the USACE to study mitigating inundation risks through Rockaway Inlet, exploring a surge barrier and alternative measures	OLTPS	Launch study	Subject to plan findings	N/A	N/A
	5	Develop an implementation plan and preliminary designs for new Coney Island Creek wetlands and tidal barrier	OLTPS	Complete preliminary feasibility study and design and identify next steps	Subject to study findings	1–10	TBD
Buildings							
	6	Study additional resiliency initiatives for ground-floor housing within NYCHA buildings	NYCHA	Complete outreach process and study	Subject to study findings	<1	TBD

Initiative	Lead City Agency	Milestones for Completion, Assuming Funding		10-Year Capital / Study Cost (Preliminary Estimate, in \$ Millions, Nominal)	Funding Source
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Critical Infrastructure

SOUTHERN BROOKLYN	7	Support CUNY launch of study and pilot of new technologies for high-rise buildings	OLTPS	CUNY to identify site and launch study and pilot	Subject to study findings	N/A	N/A
	8	Study options to ensure resiliency of private cogeneration facilities in the area	OLTPS	Launch study	Subject to study findings	N/A	N/A
	9	Construct new Coney Island Hospital outpatient clinic to replace the destroyed Ida G. Israel facility	HHC	Open interim facility	Construct and make operational a permanent facility	10–20	FEMA (Partial)/ TBD
	10	Call for the USACE to develop an implementation plan for the reinforcement of existing Belt Parkway edge protections	OLTPS	Complete study	Implementation subject to study findings	N/A	N/A
	11	Restore recreational infrastructure along Southern Brooklyn beaches	DPR	Complete restoration of infrastructure and facilities	--	See Parks Initiative 1	See Parks Initiative 1
	12	Complete planned drainage improvements in Coney Island to mitigate flooding	DEP	Commence first phases of construction and advance design for future phases	Complete construction	125–150	City
	13	Provide technical assistance to support Sea Gate in repairing Sandy-damaged infrastructure	OLTPS/DDC	Work with Sea Gate Association to study private infrastructure and prepare scope for repairs	Subject to study findings	N/A	N/A

Community and Economic Recovery

SOUTHERN BROOKLYN	14	Work with Brooklyn Chamber of Commerce to assist in organizing Sheepshead Bay businesses	SBS	Assist local merchant organizing efforts	Subject to local merchant organizing and planning	N/A	N/A
	15	Support area recovery through the rebuilding and expansion of the entertainment district	NYCEDC/DCA	Complete phase 5 of amusement area expansion with new roller coaster; commence Aquarium expansion	Complete Aquarium expansion	175–200	FEMA/City
	16	Study opportunities along Coney Island Creek to generate economic activity and facilitate resiliency investments	NYCEDC	Complete study of economic development opportunities	Subject to study findings	<1	TBD
	17	Implement planned and ongoing investments by the City and private partners	Varies	Complete Calvert Vaux Park fields; West 8th Street Access Project; Coney Island Commons and YMCA	Implement Coney Island Comprehensive Plan	Varies	Varies

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Coastal Protection							
SOUTHERN MANHATTAN	1	Create an implementation plan and design for an integrated flood protection system for remaining Southern Manhattan areas	OLTPS	Commence competition and design study	Subject to study findings and funding availability	1–10	TBD
	2	Conduct a study for a multi-purpose levee along Lower Manhattan's eastern edge to address coastal flooding and create economic development opportunities	NYCEDC	Complete initial feasibility study	Subject to study findings	1–10	TBD
Critical Infrastructure							
	3	Construct physical enhancements to Water Street	NYCEDC/ NYCDOT	Complete temporary improvements and design permanent improvements	Complete permanent improvements	10–20	LMDC/ City
Community and Economic Recovery							
SOUTHERN MANHATTAN	4	Implement temporary programming of Water Street privately owned public spaces (POPS)	DCP/NYCEDC	Approve zoning changes, select programming partner, and commence programming	--	N/A	N/A
	5	Launch a program to enable permanent improvements to Water Street privately owned public spaces (POPS)	DCP	Create design criteria and solicit design proposals; facilitate land use approvals	Enact permanent regulatory changes to facilitate improvements, as necessary	N/A	N/A
	6	Implement planned and ongoing investments in the South Street Seaport	NYCEDC	Complete resiliency improvements to Schermerhorn Row and Museum Block	--	<1	City
	7	Use the Job Creation & Retention Program to attract and retain businesses in Sandy-impacted areas of Lower Manhattan	NYCEDC	Extend and create a new program to make awards to new and renewing tenants	Make awards to new and renewing tenants	10–20	CDBG (ESDC)
	8	Expand Take the HELM program (Hire and Expand in Lower Manhattan)	NYCEDC	Expand competition and make awards to businesses new to Lower Manhattan in the 100-year floodplain	--	1–10	TBD
	9	Implement planned and ongoing investments by the City and private partners	Varies	Complete East River Waterfront, EcoPark, Pier 42 Waterfront Park, Battery Park Playspace, Peck Slip Park, Asser Levy Park, Hudson River Park, The High Line, Peck Slip reconstruction, Battery Maritime Building, Pier A renovation, 9/11 Museum	Complete Hudson Yards South Tower, Peck Slip School	Varies	Varies

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Coastal Protection

1	Call on and work with the USACE to study the construction of a floodgate at Mill Creek	OLTPS	Commence study	Subject to study findings	N/A	N/A
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Critical Infrastructure

EAST AND SOUTH SHORES STATEN ISLAND	2	Assist Staten Island University Hospital (SIUH) in applying for hazard mitigation funding	OEM	Provide technical support to SIUH	--	N/A	N/A
	3	Implement and expedite roadway and sewer capital projects along Hylan Boulevard, especially in vulnerable South Shore areas	NYCDOT/DEP	Commence sewer enhancement and paving projects; complete intersection improvements	Complete sewer enhancement and paving projects	40–60	City
	4	Call on and work with the MTA to create an implementation plan for the relocation of Richmond Valley SIR station to Page Avenue	NYCEDC	Commence relocation feasibility study	Subject to study findings	<1	TBD
	5	Study potential new ferry routes serving Staten Island and issue a Request for Expressions of Interest (RFEI) to gauge market interest	NYCEDC/ NYCDOT	Commence Comprehensive Citywide Ferry Study	Subject to study findings	See Transportation Initiative 18 for Ferry Study	See Transportation Initiative 18
	6	Secure available Federal funding to implement the Community Wildfire Protection Plan for fire-prone areas on the East Shore	DPR	Apply for relevant funding	Subject to funding	<1	TBD
	7	Launch the first capital project for the Mid-Island Bluebelt in Midland Beach	DEP	Finalize Environmental Impact Statement; obtain all necessary permits; begin property acquisition	Complete capital project located in the New Creek West Branch	1–10	City
	8	Explore expansion of the City's mitigation banking pilot as a funding mechanism to facilitate the construction of the Mid-Island and South Shore Bluebelts	NYCEDC/DEP	Develop pilot mitigation banking structure	Subject to implementation structure	<1	TBD

Community and Economic Recovery

EAST AND SOUTH SHORES STATEN ISLAND	9	Issue a Request for Expressions of Interest (RFEI) for new concessions and services at City-controlled beaches in the East Shore	NYCEDC/DPR	Issue RFEI; activities subject to RFEI response	Subject to RFEI response	<1	TBD
	10	Create a comprehensive revitalization plan for Great Kills Harbor to increase resiliency and to draw additional investment	NYCEDC	Complete plan	Subject to plan recommendations	<1	TBD
	11	Create a strategic plan for public recreational land, including the beachfront recreation areas and open space	NYCEDC	Complete plan	Subject to plan recommendations	<1	TBD
	12	Implement planned and ongoing investments by the City and private partners	Varies	Complete Ocean Breeze track and field athletic complex; select respondent for Brielle Avenue municipal site	Complete first phase of Charleston Mixed-Use Development, New Stapleton Waterfront development and former Coast Guard Site development; complete St. George waterfront redevelopment	Varies	Varies

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Coastal Protection							
SOUTH QUEENS	1	Call for USACE to develop an implementation plan to mitigate inundation risks through Rockaway Inlet, exploring a surge barrier and alternative measures	OLTPS	Launch study	Subject to study findings	N/A	N/A
	2	Develop an implementation plan to address frequent tidal inundation in Broad Channel and Hamilton Beach, incorporating international best practices	NYCEDC/ OLTPS	Complete study	Subject to study findings	1–10	TBD
	3	Complete short-term dune improvements on the Rockaway Peninsula	OLTPS	Complete dune improvements	--	See Coastal Protection Initiative 3 for dune implementation cost	See Coastal Protection Initiative 3
Buildings							
	4	Complete design competition to enhance resiliency of planned Arverne East Project	HPD	Complete competition and announce winning submission	Subject to competition outcome	N/A	Private
Critical Infrastructure							
SOUTH QUEENS	5	Build a new multi-specialty ambulatory surgical center on the Rockaway Peninsula	NYCEDC	With private developer, complete center and make operational	--	N/A	Private
	6	Expand ferry service to the Rockaway Peninsula	NYCEDC	Construct flexible ferry infrastructure; commence comprehensive Citywide Ferry Study	Subject to study findings	10–20 See Transportation Initiative 18 for Ferry Study	Federal (Partial) TBD
Community and Economic Recovery							
SOUTH QUEENS	7	Get New Yorkers “Back to the Beach” for summer 2013	DPR	Complete summer 2013 beach programs; complete near-term restoration of the boardwalk	--	See Parks Initiative 1 for boardwalk restoration cost	See Parks Initiative 1
	8	Explore opportunities for long-term activation of the beachfront	DPR/NYCEDC	Continue to address substantially damaged areas of boardwalk; explore options for new beachfront destinations issue; RFEI for cultural programming partners	Subject to exploration of options	10 See Parks Initiative 1 for boardwalk restoration	See Parks Initiative 1
	9	Develop a revitalization strategy for the Beach 108th Street corridor	NYCEDC/DCP	Complete strategy	Subject to strategy recommendations	<1	TBD
	10	Develop a comprehensive commercial revitalization plan for Beach 116th Street	NYCEDC/DCP	Complete plan	Subject to plan recommendations	<1	TBD
	11	Develop a commercial revitalization strategy for Far Rockaway, potentially involving repositioning of City- and MTA-controlled sites	NYCEDC	Complete plan; issue RFP for NYC/DOT/MTA controlled sites; complete Beach 20th Street plaza	Subject to strategy recommendations and RFP response	<1	TBD
	12	Launch a satellite Workforce1 Career Center in Far Rockaway	SBS	Complete and open Center	--	<1	TBD
	13	Implement planned and ongoing investments by the City and private partners	Varies	Launch Jamaica Bay/ Rockaway Restoration Corps; complete Beach 73rd Street YMCA	Complete Jamaica Bay Green Infrastructure Plan, Rockaway Institute for a Sustainable Environment	Varies	Varies