



Funding

This report outlines a variety of strategies and initiatives designed to make New York stronger and more resilient to climate change. Given a world of limited resources, the goal of this report is to begin *now* to make ambitious but targeted and cost-effective investments that will make New Yorkers materially safer than they were before Sandy. These investments also will ensure that when, from time to time, extreme weather events overwhelm the City's best-laid plans (which, because of nature's power, they sometimes will), New York will be able to bounce back more quickly than in the past.

The advantage of this approach is that it not only puts forward bold proposals, but also puts forward bold proposals that can be implemented starting immediately. It also reserves for future City leaders the ability to monitor changes in the climate over time and to make incremental investments based on observed experience as conditions warrant and further resources become available.

Because of the scale of the challenge posed by climate change, even a tailored plan scaled to available resources brings with it a significant price tag that will need to be borne by the public. In the case of the plan outlined in this report, this public price tag (which includes government-funded projects, as well as projects funded by broad populations, such as utility ratepayers) is projected to total almost \$14 billion. This amount will cover both capital expenditures and study costs. When combined with various other housing, business, and City agency recovery and resiliency needs, the total grows to approximately \$19.5 billion.

Though the needs are clearly significant, the good news for New Yorkers is that, as of the writing of this report, available public funding sources are significant too. For example, thanks to Sandy-related federal aid as well as a robust ongoing City capital program, much of the plan as outlined is already funded (approximately \$10 billion), or is expected by the City to be funded (approximately \$5 billion). However, even assuming the foregoing sources, the City's plan comes with a significant funding gap, estimated at approximately \$4.5 billion.

As outlined in this chapter, the City proposes to address this gap in two ways. First, with the funding in hand or expected to become available, the City will start to implement the initiatives that can be covered by these sources—initiatives that will, even without more funding, result in a New York that is materially stronger and more resilient than it is today. The remaining unfunded initiatives in this report, however, remain critically important.

That is why, as a second part of its strategy for addressing the funding gap, the City is putting forward proposals for meeting the shortfall. Enacting these funding proposals will require the cooperation of the State and Federal governments—cooperation that is essential for the sake of not just the city, but also the region and the country.

Uses of Funds

The uses of funds identified below include primarily capital costs over the next ten years, expressed in nominal terms, based on cost estimates as of the writing of this report. The total also includes identified study and planning costs, where recommended.

Special Initiative for Rebuilding and Resiliency (\$14 billion)

As discussed above, it is currently estimated that the initiatives outlined in this report, will require total public funding of over \$14 billion over a ten-year period. These costs are associated with only the first phase of the projects and programs that are described throughout this report. They do not include implementation costs for projects and programs that are identified as worthy of study or that are proposed for completion beyond the 10-year time horizon of this plan; these projects and programs will need to be funded separately with new sources. So, for example, the costs described in this chapter do include the proposed Phase 1 measures described in Chapter 3 (*Coastal Protection*), but do not include the incremental costs associated with completing the Full-Build measures described in that chapter.

While significant investments and other programs are called for throughout this report, certain chapters require particularly significant capital investments, including those focused on the water and wastewater system, coastal protection, the existing building stock, and energy utility systems. Anticipated funding under the plan also would be dispersed geographically, with over three-quarters of the allocated resources anticipated to be spent in vulnerable areas outside of Manhattan, including more than a third in Staten Island and Brooklyn, and over a quarter in Queens alone.

Other Recovery and Resiliency Needs

Generally, this report concentrates on resiliency investments, rather than investments intended purely to assist with recovery from Sandy (i.e., helping businesses and individuals impacted by the storm to repair damage and “get back on their feet”). The reason for this is that the City's recovery efforts have, by necessity, focused on

short- to medium-term needs, rather than the medium- to long-term timeframe of this report. It is important to note, however, that this report and the City's recovery efforts, led by a combination of the Mayor's Office of Housing Recovery Operations (HRO), the Department of Housing Preservation and Development, the New York City Economic Development Corporation (NYCEDC), the Department of Small Business Services and an array of other City agencies, have been developed in parallel and with substantial coordination.

Notwithstanding the different timeframes of the City's recovery efforts and this report, because certain elements of the recovery efforts are so closely linked to the mission of this plan (e.g., housing recovery as it pertains to the most impacted communities), in certain cases these recovery efforts have been incorporated into this report by reference. In so doing, the City has sought to highlight these efforts and ensure that their connection to the City's longer-term efforts is clear to all.

Among the recovery efforts that are closely related to the focus of this report and that, therefore, are included in the total public cost estimate are the following:

Housing Recovery (\$2.4 billion)

The mission of HRO is to return Sandy-impacted residents in New York City to permanent, safe and sustainable housing. This includes, in many cases, rebuilding destroyed homes and repairing homes that suffered substantial damage (greater than 50 percent loss), in each case ensuring—per Federal, State, and City requirements—that these homes are rebuilt to the highest resiliency standards (i.e., elevation). HRO also will seek to repair homes that suffered less-than-substantial damage. In these cases, repairs will involve primarily replacement in-kind, rather than mitigation measures such as elevation. The City currently estimates the total cost of these housing recovery efforts will be \$2.5 billion, with about \$100 million of this likely to come from private insurance payouts and philanthropic sources. The remaining \$2.4 billion is likely to come from public sources, of which a portion has been secured (see below for further details).

Public Housing Resiliency (\$1.1 billion)

Over 400 buildings owned by the New York City Housing Authority (NYCHA) were affected significantly by Sandy, including as a result of flooding and/or loss of power. In addition to repairing these facilities (which include community centers and NYCHA's Emergency Operations Center), NYCHA has identified a need of approximately \$420 million to ensure the inclusion of resiliency measures in these

repairs. Beyond those impacted by Sandy, there also are a significant number of additional NYCHA buildings that are found in the 100-year floodplain throughout the city and, therefore, remain vulnerable. NYCHA has estimated a total cost of \$620 million to implement basic resiliency and mitigation measures in these buildings. NYCHA also has identified approximately 30 community centers located in undamaged buildings in flood-vulnerable areas that also require resiliency investments to enable them to serve as warming centers, information distribution sites, local command centers, phone-charging centers, or emergency shelters in future storms. NYCHA estimates that this effort will cost \$60 million. All of these uses are likely to be funded through public sources, of which a portion has been secured (see below for further details).

Business Recovery (\$300 million)

Hurricane Sandy caused significant damage to businesses across the five boroughs, including approximately 23,400 businesses that were located in flood-impacted areas and faced extensive damage from loss of inventory, and damaged equipment and personal property. While private insurers and federal agencies such as the Small Business Administration (SBA) have stepped in to provide assistance, the City has implemented its own loan and grant programs and expects to provide additional assistance going forward (please refer to *Economic Recovery* for additional details). It is currently anticipated that the City's comprehensive business recovery needs will total approximately \$300 million. These uses are likely to be funded through public sources, of which a portion has been secured (see below for further details).

City Agency Recovery Needs (\$1.2 billion)

In preparing for and responding to Hurricane Sandy, City agencies incurred an array of unexpected costs that must be reimbursed in order to avoid creating a hole in the City's operating budget, requiring unplanned cuts in other programmatic areas. Various agencies also saw damage to facilities that must be repaired. Though some of these costs are eligible for federal reimbursement, in other cases only a portion of these costs are eligible. Finally, some agencies—particularly the Health and Hospitals Corporation—must be reimbursed for staff and other expenses necessary to maintain their operational readiness to restore vital services to the community as quickly as possible. These and other agency recovery needs currently are estimated at approximately \$1.2 billion. These are likely to be funded through public sources, of which a portion has been secured (see below for further details).

City Agency Resiliency Needs—First Phase (\$500 million)

In the aftermath of Hurricane Sandy, at the request of the Mayor's Office, City agencies took stock of the resiliency investments that may be needed to ensure that the City can provide essential services over the long term, as the climate changes. While the City is continuing to gather and prioritize these needs, at least \$100 million of these investments are a high priority and will be funded by an incremental addition to the City's capital budget. Another \$400 million may be eligible for certain federal hazard mitigation funds provided as a supplement to FEMA Public Assistance grants (see below for further details).

Sources of Funds

Existing Sources

As stated above, the City has available to it, or is highly confident that it will receive, significant funding against the needs described in this report. These sources include amounts already funded through its capital plan and certain federal assistance. The total value of these existing sources is approximately \$10 billion, calculated as follows:

City Capital (\$5.5 billion)

The City's existing capital plan includes funding for a number of the initiatives included in this report. Among the initiatives funded through the City's capital budget are a variety of water and wastewater initiatives, as well as selected economic development, infrastructure, and cultural investments in impacted communities. This existing \$5.5 billion investment program is a clear demonstration of the City's commitment to make vulnerable assets more resilient and accelerate recovery in the neighborhoods hit hardest by Sandy.

Community Development Block Grants—First Allocation (\$1.8 billion)

On February 6, 2013, the Department of Housing and Urban Development (HUD) announced the allocation to the City of nearly \$1.8 billion in funding from the Community Development Block Grant (CDBG) appropriation provided for in the Disaster Relief Appropriations Act of 2013. The passage of this Act, frequently referred to as the "Sandy Supplemental," was the result of an aggressive advocacy effort on the part of the Congressional delegations of New York and New Jersey in the wake of the disaster.

In accordance with federal regulations, the City detailed its proposed uses of this allocation in a Partial Action Plan, which

HUD approved on May 10, 2013, after public comment (the City's partial action plan and other recovery resources are available at www.nyc.gov/recovery).

The initial funding allocations in this Partial Action Plan are:

- Housing recovery and resiliency programs (\$648 million);
- Business recovery and resiliency programs (\$293 million);
- Repair and restoration of City infrastructure and other City services (\$360 million); and
- Planning and administration (up to \$177 million of which any unused portion will be reallocated to programs).

The City's initial Partial Action Plan also reserved \$294 million for resiliency investments, in addition to approximately \$26 million of the funding for planning and administration costs noted above for a total resiliency allocation of \$320 million. In anticipation of the completion of this report, the Partial Action Plan did not provide for the programming of these funds with specificity. The City now will seek approval from HUD for the following applications of these funds:

- Coastal Protection (at least \$180 million), associated with the construction of an integrated floodwall system along "Hospital Row" in Manhattan, repair of and enhancements to bulkheads citywide, and armored revetments along the South Shore of Staten Island and Coney Island Creek, all as described in detail in Chapter 3 (*Coastal Protection*);
- Building Resiliency (at least \$120 million), representing the first tranche of an incentive program intended to assist vulnerable buildings to implement the Core Flood Resiliency Measures, as described in Chapter 4 (*Buildings*); and
- Planning and Administration (up to \$26 million), including funding for studies described in this report to be undertaken by the Office of Long-Term Planning and Sustainability, the Department of City Planning (DCP), the Department of Buildings, and other agencies.

Housing Recovery Funding (\$700 million)

As noted above, the City has identified housing recovery needs of approximately \$2.5 billion, of which \$2.4 billion is likely to come from public sources. In addition to the CDBG funding described above, the City estimates available public funding other than the CDBG funding above to be approximately \$700 million. These public sources include payouts from the National Flood Insurance Program, as well as assistance from the Federal Emergency Management Agency (FEMA).

Sandy Supplemental Aid Package

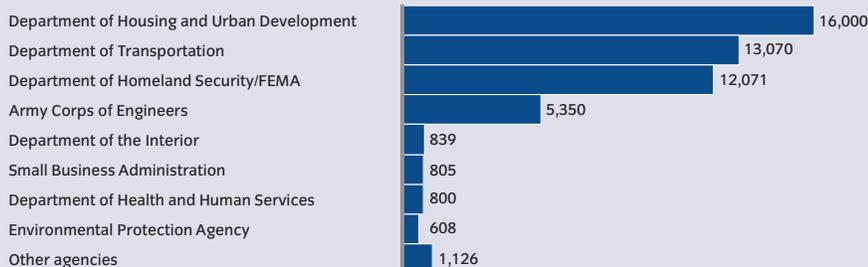
Congress passed and the President signed into law two bills in the aftermath of Sandy. The first, passed in December 2012, provided for a \$9.7 billion increase in the National Flood Insurance Program's borrowing authority in order to enable the program to make payouts to insured victims of Sandy and other storms. The second was the Disaster Relief Appropriations Act of 2013, a \$50.7 billion aid package known alternatively as the Sandy Supplemental, which is dedicated primarily (though not exclusively) to Sandy disaster relief, recovery, and resiliency. The \$50.7 billion aid package was subsequently reduced to approximately \$48 billion due to the sequestration process resulting from ongoing negotiations to reduce the federal deficit. Although the Federal government may restore the sequestered funds after a successful resolution of future budget negotiations, there is no assurance that such restoration will occur.

The federal aid package includes funding for an array of uses, including most significantly: \$16 billion in pre-sequestration CDBG funding, \$13 billion in pre-sequestration Department of Transportation funding, \$12 billion in pre-sequestration Department of Homeland Security/FEMA funding, and \$5 billion in pre-sequestration USACE funding. With the exception of Section 406 and Section 404 funds described elsewhere in this chapter, the bulk of this funding is dedicated to help those whose homes and businesses were damaged or destroyed to rebuild and recover. Some of this rebuilding will include resiliency investments, but a significant majority of these funds will be dedicated to purposes other than the long-term resiliency measures that are the focus of this report.

Funding Provided by the Disaster Relief Appropriations Act of 2013

Recovery Funding for Top Agencies

\$ in Millions



Recovery Funding for Other Agencies

\$ in Millions

| | | | |
|--------------------------------|-----|---------------------------------|----|
| Department of Commerce | 476 | NASA | 15 |
| Department of Veterans Affairs | 236 | General Services Administration | 7 |
| Department of Agriculture | 228 | Smithsonian Institution | 2 |
| Department of Defense | 113 | Social Security Administration | 2 |
| Department of Labor | 25 | Legal Services Corporation | 1 |
| Department of Justice | 21 | | |

Source: Federal Hurricane Sandy Rebuilding Task Force

Other Federal Aid (\$2.3 billion)

The City has received or is expected to receive additional federal funding from a variety of sources as a result of the Sandy Supplemental. A portion of these amounts can be used for resiliency investments called for in this report. This includes especially funding for a variety of US Army Corps of Engineers (USACE) projects in Brooklyn, Queens, and Staten Island as described in Chapter 3.

Other Sources (\$40 million)

Immediately following Sandy, the City put in-place emergency recovery programs. These included \$25 million in loan and grant programs for small businesses, as well as \$15 million in mold removal programs for inundated housing. This money came from a combination of City sources, including NYCEDC, and matching funding from private organizations and philanthropies, such as the Mayor's Fund for the Advancement of New York City.

Expected Sources

In addition to the existing sources described above, the City also expects several other public sources of funding to be available to pay for the plan set forth in this report, including the following:

Additional Federal Sources (at least \$4 billion)

1. Community Development Block Grants—Future Allocations (TBD)

The Sandy Supplemental includes a total CDBG allocation of \$16 billion, primarily for Sandy-impacted areas, although the law instructs the HUD Secretary to reserve an unspecified portion for other natural disasters in the years 2011 through 2013. The law does not specify the process by which HUD should allocate the CDBG funds to particular grantees. Such allocation is left to the discretion of the HUD Secretary.

In the first allocation, the City received nearly \$1.8 billion out of HUD's first allocation of \$5.4 billion, or nearly 33 percent of that allocation. HUD noted that it based its first allocation on data from the FEMA Individual Assistance program and the SBA's disaster loan programs, which enabled HUD to identify the areas of greatest need.

With respect to the remaining \$10.6 billion in CDBG funding available under the Sandy Supplemental, a portion of this amount has, unless remedied in Washington, been lost to sequestration (leaving nearly \$9.3 billion available at present). At the same time, a portion is to be reserved for natural disasters other than Sandy. If HUD were to allocate a significant share of the available funds in the same proportion as the initial allocation, the City could receive billions of dollars in additional CDBG funds.

2. Section 404 and 406 Funding (TBD)

The Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended (Stafford Act) provides the authority for Federal disaster assistance activities, including not just assistance for response and recovery, but also for preparedness and mitigation. FEMA defines mitigation as any sustained action taken to reduce or eliminate long-term risk to life and property from a hazard event. In pursuit of mitigation, the Stafford Act authorizes post-disaster funding to help governments and certain nonprofit organizations reduce their risk of future loss.

The Stafford Act has two distinct hazard mitigation funding streams that are available post-disaster. First, FEMA may provide hazard mitigation funding as part of its Public Assistance program, as authorized by Section 406 of the Stafford Act. This funding pays

for the inclusion of mitigation measures in the repair of damaged facilities and infrastructure. City agencies, led by the Office of Emergency Management (OEM) and the Office of Management and Budget, currently are in the process of identifying projects that are eligible for hazard mitigation funding as part of Public Assistance projects, pursuant to Section 406.

Eligibility for this funding is based on a set of objective criteria and project-specific limitations, though there is no program-level cap for the amount of funding available. Every project that receives Public Assistance from FEMA may also be eligible to receive additional mitigation funds under the Section 406 program for approved mitigation measures. By FEMA policy, funding under this program generally is available in an amount equal to up to 15 percent of the cost of the associated approved repair project (or, up to 100 percent if the project is on a list of predetermined, cost-effective mitigation measures).

Currently, the City estimates that agencies will receive approximately \$3 billion in Public Assistance for capital-eligible work. At the 15 percent level, this would translate to more than \$400 million in available Section 406 funding, though, as indicated above, the overall sum available to the City could be significantly more or less than this amount.

The second source of funding under the Stafford Act is Section 404 and is also known as Hazard Mitigation Grant Program (HMGP) funding. This program provides mitigation funding for undamaged facilities and infrastructure not covered by Section 406 hazard mitigation funding. Private building owners may apply through a government entity. Funding – which is capped at an amount set as a percentage of FEMA Individual Assistance and Public Assistance dispensed during a given disaster – is allocated pursuant to a State-led application process. Eligible sub-applicants, including local governments and certain nonprofit organizations providing a general government-like service, may submit projects for consideration by the State.

In order to be eligible for Section 404 funding, federal law requires that jurisdictions have a FEMA-approved Hazard Mitigation Plan (“HMP”) in place. In New York City, OEM is responsible for the creation of the HMP, working in close partnership with a Mitigation Planning Council that includes nearly 40 City, State, and private entities, as well as extensive community input. The City’s HMP, which received FEMA approval in 2009, includes 161 potential projects intended to address eight separate weather-related hazards and is now in the process of being updated by OEM in close partnership with DCP.

Based on the allocation of FEMA Individual Assistance and Public Assistance during and after Sandy, the City currently projects that New York State will be eligible to receive approximately \$1 billion in Section 404 funding, though the actual amount may vary from this estimate. The State is, therefore, expected to launch a process that invites sub-applicants such as the City to propose projects suitable for funding. The City currently intends to submit funding requests for projects in the following four categories:

- Mitigation investments for destroyed or substantially damaged homes (e.g., elevation);
- Mitigation investments other than elevation for vulnerable buildings;
- Mitigation investments for vulnerable City-owned infrastructure; and
- Mitigation investments for vulnerable City-owned hospitals.

In addition, a number of nonprofit hospitals located in New York City are eligible to apply directly to the State for Section 404 funding—including several Staten Island institutions that have been prioritized by the Borough President. The City will support and provide technical assistance to these applications, as necessary and appropriate.

In total, given the distribution of Public Assistance and Individual Assistance claims across New York City and the rest of New York State, the City is seeking to receive allocations representing at least half of the State’s Section 404 allocation.

3. Summary of Additional Federal Sources

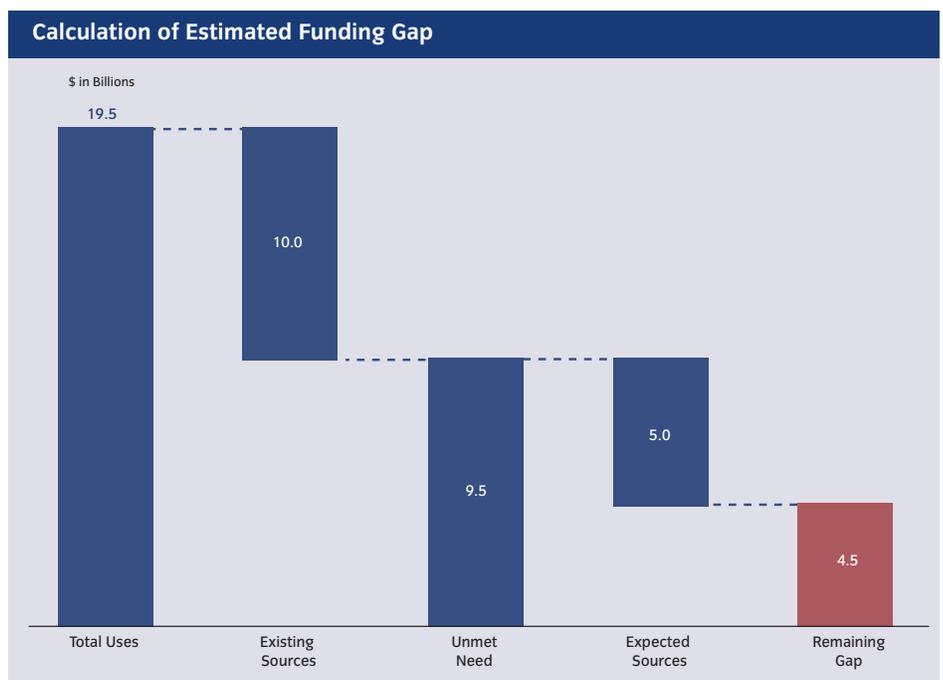
Based on the foregoing, the City currently estimates that between future CDBG

allocations, Section 404 funding, and Section 406 funding, the City could be eligible to receive an additional \$4 billion or more for use in funding the programs and projects described in this report. As indicated above, however, these amounts remain subject to processes and decision-making that generally are not within the City’s control.

Utility Rate Base (at least \$1 billion)

In Chapter 6 (*Utilities*), this report outlines a plan to support new resiliency standards for utilities, including significant hardening of key assets, increases to system flexibility, and projects to ensure faster service restoration. The City estimates that this plan would require significant capital investments in utility infrastructure over the next five to ten years. For example, Con Edison already has filed a proposal to spend \$1 billion on resiliency investments over the next three years. These cost projections are preliminary however, and the plan is subject to approval by the New York State Public Service Commission (PSC). Other utility-related investments may be subject to the approval of the PSC or the Federal Energy Regulatory Commission, as well as acceptance by the utilities and generation asset owners.

The City expects that most, if not all, of approved resiliency costs will be recoverable from the utilities’ existing rates through modifications to the utilities’ budgets, reprioritization of projects, and cost reductions in other areas. To the extent there is a proven need for additions to the utilities’ revenue requirements to achieve the goals of the plan, the City will support requests by the utilities for corresponding adjustments to their rates



(inclusive of a reasonable rate of return). Given the level of capital funding already included in rates, the City estimates that the impact to customers from any requests for rate adjustments will be minimal.

On May 31, 2013, the City provided detailed testimony on a rate case that Con Edison submitted to the PSC, including certain investments described in Chapter 6 of this report. While these measures will require additional funding, the City believes that they can be made within the parameters of Con Edison's proposed rate case. The PSC is expected to rule on Con Edison's proposal by the end of 2013.

Sizing the Gap

Based on the uses and sources identified above, the City currently faces a funding gap for the initiatives identified in this report of approximately \$4.5 billion. This means that, without additional sources, a number of these initiatives and programs would need to be delayed, scaled back, or even eliminated. However, the challenge of climate change is too great, and the potential impact of these initiatives too

Additional Supplemental Appropriation Precedent

There is a clear precedent for the proposed supplement to the initial USACE allocation for Sandy-impacted areas. In the year after Hurricane Katrina struck the Gulf Coast region, Congress appropriated over \$6 billion to the USACE for coastal protection. However, recognizing the needs beyond this initial appropriation—much of which, like the Sandy Supplemental, targeted short-term investments to repair coastal infrastructure—Congress provided four additional USACE appropriations for Katrina-related work, including the creation of significant new defenses. These additional appropriations totaled over \$9 billion.

An equivalent \$9 billion allocation would enable the City and other area governments to begin to make significant progress on the type of coastal defenses described in this report, protecting residents, businesses, and critical infrastructure from extreme weather events. At a minimum, Congress should allocate to New York City the \$3.7 billion necessary to fund the Phase 1 coastal protection initiatives set forth in Chapter 3 of this report.

significant, to simply accept this funding gap. That is why the City will continue to push aggressively to identify ways of filling this gap. Provided below are a series of strategies that would allow for the full implementation of the plan set forth in this report.

Strategies to Fill the Gap

The following are potential approaches for filling all or a significant portion of the identified funding gap associated with the plan outlined in this report. In the case of several approaches, the approval of another governmental entity (at the State or Federal level) would be required. However, because of the risks associated with the failure to implement this plan, the City is hopeful that it will find willing partners to secure the funding needed to make them a reality.

Additional Supplemental Appropriation

The Sandy Supplemental signed into law in January includes \$5.4 billion in funds for the USACE. However, much of this funding provides merely for the repair and restoration of protections that existed before the storm hit, and were damaged. Only limited funding is available for the study, design, and implementation of new measures that reflect the risk New York City and its neighbors face now and in the future, with very limited funding available for implementing these measures.

Given this, it is clear that the initial USACE allocation in the Sandy Supplemental is inadequate to deal head on with the threats that climate change poses—especially taking into account the size of the area's population and its contribution to the national economy. Accordingly, an additional, significant USACE allocation would represent a valuable and necessary investment on the part of the Federal government. The City will work with the State, the Congressional delegation, and regional leaders to secure this necessary federal contribution. (See sidebar: *Additional Supplemental Appropriation Precedent*)

Lower Manhattan Tax Benefit Trade-In

In the months following the September 11, 2001 terrorist attacks, Congress provided \$5 billion in tax benefits to help in the rebuilding and economic recovery of Lower Manhattan. However, subsequent analysis showed that New York never received at least \$2 billion of this aid, due to technical issues in the design of the tax benefits. The City previously sought to work with Congress and the President to reprogram these unused tax benefits for investments in transportation infrastructure. In the wake of Hurricane Sandy, however, it is now appropriate to consider ways in which this

promised but still-undelivered \$2 billion in Federal assistance can be used for resiliency purposes, in order to prevent future damage in the City's vulnerable coastal areas, including Lower Manhattan.

Property & Casualty Insurance Resiliency Assurance Surcharge

Insurance exists to compensate policyholders for losses in the event that unfortunate events occur. While that compensation can help soften the blow of a loss, policyholders frequently do not receive full compensation—either for their losses, or for their non-financial costs, including lost time and anxiety. That is one reason why even those with insurance would prefer that losses not happen in the first place.

That is why, in the event that the City is unsuccessful in securing the supplemental federal appropriations described above, the City will work with the State, including the State legislature, to explore a "Resiliency Assurance Charge" (RAC) on property and casualty (P&C) insurance policies in New York City. This insurance includes automobile, homeowner, general liability, commercial multi-peril, and certain other forms of insurance. Because of the massive volume of P&C insurance premiums written for New York City exposure (over \$33 billion in New York State in 2010 alone, according to the State Department of Financial Services, of which a majority is applicable to New York City), even a small surcharge would produce sufficient proceeds to fill the identified gap. For example, by bonding against a surcharge of approximately 1.5 percent, the City could generate more than enough in upfront bond issuance proceeds and excess revenues to cover the \$5 billion shortfall. This surcharge would translate to just over a dollar a month for a homeowners insurance policy with a \$1,000 annual premium.

To access this funding source, the City would need to obtain passage of State legislation. Models such as this one exist in other areas of the country that are vulnerable to climate change, including Florida, Louisiana, and Texas, though, in these jurisdictions, surcharges on P&C policies are generally assessed after an extreme weather event to pay for insured losses that cannot otherwise be covered, rather than, as proposed in this report, to minimize the chances that those losses will happen in the first place.

City Capital Contribution

As described above, the City's existing capital budget includes significant funds for projects with an important resiliency and community recovery component. Although the City believes that the Federal and other sources

identified above could (and, especially in the case of the Federal sources, should) fill the bulk of the resiliency funding gap identified by this report, the City remains committed to making necessary investments that will protect New York and its residents. The Bloomberg Administration, therefore, is prepared to work with the City Council to make up to an additional \$1 billion in capital available for resiliency efforts, as follows:

- Implementation of this plan (\$150 million): The City will begin to invest immediately in selected resiliency measures included in this report that do not already have a dedicated funding source. This includes providing funding for the required “local match” for certain projects that are largely federally-funded, such as the USACE’s plan to construct an armored dune along portions of the East Shore of Staten Island;
- Agency resiliency needs (\$100 million): As described previously, the City has begun the process of identifying, and is prepared to fund, an initial set of \$100 million high-priority agency investments that would protect critical City facilities and ensure the continued provision of City services, during and after future extreme events;
- City “match” for new sources (up to \$750 million): Accessing the non-City sources described above will in each case require State or Federal approval. The City is prepared to allocate, on a contingent basis, additional funds to the extent that these approvals are obtained, on the basis of a 1-to-5 match, up to \$750 million. For example, if the City were successful in obtaining an additional \$3.75 billion in new funding, it would allocate the additional \$750 million in City capital, bringing total funding to \$4.75 billion (including the \$150 and \$100 million in new capital allocations described immediately above).

Other Sources

The options identified above represent the most significant and least speculative potential sources to fill the funding gap identified above. However, other potential sources that may be smaller in scale or more speculative are also available and worthy of consideration.

For example, Chapter 18 (*Southern Manhattan*) suggests studying the creation of a new multi-purpose levee along the eastern edge of Lower Manhattan from the Battery Maritime Building to Pier 35 to protect this at-risk area in the same way that Battery Park City helped to protect adjacent neighborhoods during Sandy, thanks to the area’s elevation. In addition to offering this protection, the multi-purpose levee, if constructed, also would create new, developable parcels that could generate significant excess proceeds—as proved to be the case for Battery Park City—that, in turn, could be

used for further resiliency investments. Given the extensive analysis, permitting, and construction that would be required before the multi-purpose levee were to become a reality, any proceeds from this project must be deemed to be highly speculative and unlikely to materialize for many years, if at all.

Another strategy for protecting Southern Manhattan, as described in Chapter 3, is an integrated floodwall system that would include both permanent measures (e.g., landscaping) and temporary, deployable floodwalls. The City is proposing to construct such a system as part of its Phase I coastal protection plan across a significant section of the Lower East Side and Chinatown. The Phase I plan could be extended south to the Financial District, below Chambers Street, were additional resources identified. Given the concentration of high-value real estate in the Financial District, a potential source to cover all or a portion of the cost of such an extension would be a modest per-square-foot assessment on some or all of the buildings in the area. Though such an assessment could obviate the need for some landlords to invest in certain building-level protections from extreme weather and could also result in lower insurance premiums for area buildings, such an assessment also could face opposition, meaning that this source too must be deemed a relatively speculative one.

Yet another potential source to fund the gap identified in this report is a concept known as mitigation banking. Mitigation banking is meant to address the sub-optimal outcome caused by the fact that, currently, developers in New York wishing to build on wetlands are required to restore adjacent wetlands in-kind. While this approach is laudable in theory, the reality is that the requirement often results in wetland restorations that are neither as cost-effective nor as environmentally desirable as they could be. To address a similar issue, 28 states—including New Jersey and Connecticut—have instituted mitigation banking programs, through which a third-party entity performs wetland restoration in offsite, environmentally significant areas, thereby generating “mitigation credits” that are sold to developers to offset the impacts of their activities. Such an approach typically enables the protection of more and more critical wetlands, but at a lower cost than onsite mitigation. This approach could be used to fund several of the wetlands-related proposals contained in Chapter 3. Currently, NYCEDC is piloting such a program (working with the Department of Environmental Protection and others), that if successful, would be expanded. As beneficial as a program such as this could be, however, it is expected to be a comparatively limited source for the proposals contained in this report.

Third-Party Proposal: MoveNY

Former Traffic Commissioner Sam Schwartz has introduced a plan called “MoveNY.” In the plan, Schwartz identifies problems with area tolling, including that significant revenue is collected at bridges far from central business districts, in areas that lack transit alternatives. For example, every entry into Staten Island is tolled, and many Queens residents pay to travel within the borough. At the same time, there are untolled entrances into Manhattan, despite numerous transit options. According to Schwartz, these entrances lure drivers from highways that lead to tolled crossings instead to local streets that lead to free bridges.

To address these problems, Schwartz proposes tolls to enter the Manhattan central business district via the East River bridges and at 60th Street. The plan would use funds from these tolls to reduce tolls on the Verrazano Narrows, Gil Hodges, Cross Bay, Whitestone, and Throgs Neck bridges.

Schwartz projects that the plan would produce about \$1.5 billion in new annual revenues, which he estimates could support a bond issuance of \$12 to \$15 billion. This sum could fund bridge maintenance, transit improvements, achievement of a “state of good repair” for MTA and City transportation assets, and more. According to Schwartz, the plan also offers other benefits including: traffic reduction, improvements to public health and the environment, and economic impacts from new construction.

As outlined in this chapter, the City will seek a number of sources to fill the funding gap identified in this report. If these sources are secured, additional funding would not be required for the initiatives detailed herein (though it could be required to pay for later phases of resiliency investment). As such, the City is not, in this report, calling for the implementation of MoveNY. However, the additional sources that the City is seeking require approvals that are far from certain. Accordingly, acknowledging the significant approvals that would be required to institute MoveNY as well, but given the fact that there is a nexus between auto usage and climate change, and that many of the areas that would benefit from toll reductions are also areas that are recovering from Sandy, the City believes it would be prudent for New Yorkers and their future leaders to evaluate the MoveNY proposal as a way, not just of achieving Schwartz’s goals, but potentially funding resiliency investments as well.