AECOM

WORKING SUSTAINABLY AND TACKLING THE CLIMATE EMERGENCY

ENSURING NEW YORK'S FUTURE THROUGH COASTAL RESILIENCE

AECOM city experts **Stephen Engblom** and **Joel Sonkin** as well as **Via's Daniel Berkovits** discuss findings, from the last of a four-part series of ground-breaking financial innovation labs, exploring innovative public and private financial solutions to deliver essential climate adaptation and flood protection infrastructure for Lower Manhattan, New York.

In October 2012, Superstorm Sandy led to the death of more than 40 people and caused significant damage and economic losses totalling US$19 billion[1] for New York City and the U.S. East Coast. It demonstrated the extreme vulnerability of one of the world's key economic centers. Since then, New York's public and private sectors have been directing resources towards long-term recovery and resilience efforts.

A global financial center at risk

Lower Manhattan, home to 10 percent of New York City's jobs and 10 percent of its economic output, remains at risk from future extreme weather events, which are likely to become evermore frequent, damaging, and costly as sea- and groundwater-levels continue to rise.

In recognition of the importance of Lower Manhattan and the risks it faces, the City released its *Lower Manhattan Climate Resilience Study*[2] (which was developed by a team of consultants led by AECOM) in March 2019. The study builds upon previous work and recommendations to identify US$500 million of near-term climate adaptation projects combined with a comprehensive long-term strategy for the study area. It recommends a climate resilience masterplan for the Financial District and Seaport that will examine extending the East River shoreline, an effort estimated to cost US$10 billion. →

$19B
economic loss for New York City and the U.S. East coast adter Superstorm Sandy

Lower Manhattan's need would significantly strain, and potentially overwhelm, the city's budgetary capacity, and in the absence of federal and state funding, will require new and innovative financing mechanisms to ensure that Lower Manhattan maintains its position as a global center of culture and commerce.

Using innovation to deliver resiliency projects

The Milken Institute, in collaboration with AECOM, convened its final in a four-part series of Financial Innovation Labs late last year in New York. The Lab examined innovative opportunities for public and private funding and financing to deliver the East River shoreline expansion as part of Lower Manhattan's climate resilience masterplan.

The Financial Innovation Lab brought together government agencies, academics, NGOs, advocacy groups, property owners, insurance industry experts, investors and financial institutions to discuss the advantages and disadvantages of different funding and financing models.

Bridging the gap

Lab participants agreed that to protect Lower Manhattan from the magnitude of climate change, sea-level rise and associated risks, significant investments in infrastructure investments are necessary. The extraordinary capital requirements are likely to strain existing local, state, and federal resources, and innovative public and private funding and financing solutions can help to meet this shortfall. Participants agreed that there is no one solution, but rather a variety of tools will be required.

Participants explored approaches to identify new sources of cross-sector funding and financing, and capture future value generated by resilience projects to help bridge the funding gap.

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> —

Five key recommendations were made:

1/ IMPROVE DATA COLLECTION, METRICS AND QUANTIFICATION OF RISK

Understanding the true magnitude of predicted climate change impacts requires existing scientific and insurance-industry research to be better publicized and integrated into decision-making by private stakeholders, such as real-estate investors and developers as well as members of the insurance industry. Collection and synthesis of local-level data made available on a public website would help to address this gap between information and behavior. This data could also help to support the development of integrated resiliency scores, incorporating the risk to assets and the value of investments in resilience, that could factor into insurance and investment decisions.

2/ EXPAND MUNICIPAL BOND OPTIONS

A municipal bonding program as part of a funding toolkit could include general obligation bonds, revenue bonds, a tourism tax, a bond that is tied to environmental or resiliency improvements (environmental impact bond), or a bond linked to climate change triggers (catastrophe bond). A blend of these bond types may be needed; reflecting the projects, or portions of projects that would be appropriate for each bond type.

3/ DESIGN AN INSURANCE SURCHARGE FOR RESILIENCY

Resiliency challenges are regional in nature and addressing them successfully requires cross-jurisdictional collaboration. This, in turn, requires an approach that ensures an equitable distribution of resources. A state or regional trust fund that capitalized on surcharges assessed against certain lines of insurance could establish a dedicated funding source and take advantage of bond leverage. A new independent body created to ensure political neutrality and built on the principle of equity could manage the fund and facilitate regional project coordination and information sharing.

4/ MODEL THE VALUE OF SHORELINE EXPANSION

Leveraging the East River shoreline extension proposed in the city's Lower Manhattan Climate Resilience Study requires an exploration of the potential value of private development opportunities on the reclaimed land, weighed against concerns related to new development at the water's edge. If development is determined through the planning process to be a component of the shoreline extension, a portion of this new value could be captured to support resilience investments through several different mechanisms. →

This includes the outright sale of development rights, long-term lease structures, or a tax-increment financing approach. Strategies to permit the transfer of development rights to existing parcels in areas in, and around, Lower Manhattan that are not at risk of flooding could also generate new funding for resilience investments.

5/ DESIGN A WATER AND SEWER SURCHARGE

Applying a new surcharge to revenue-generating services and utilities such as water and sewer fees would allow the capitalization of a trust fund. The surcharge would be applied using a tiered rate structure to all city residents and businesses based on their level of risk from sea-level rise, flooding, and/or other impacts of climate change. Low-income households and owners who implement resiliency improvements would be eligible for rebates.

Realizing resilience

The lab advanced the development of a toolkit of financing options that enables the successful delivery of essential climate adaptation and mitigation projects for both Lower Manhattan and the region. Lab participants emphasized the need for regional coordination between stakeholders to ensure the long-term success of the city. Great importance was placed on the need to ensure equitable distribution of resources that protects our most vulnerable communities.

Connecting the dots to address the gap

The New York Lab was the final in a four-part series of the Milken Institute's signature Financial Innovations Lab® program, hosted in collaboration with AECOM. The series examined ways to engage and accelerate new forms of capital that attract investors to the infrastructure space and explore innovative value capture mechanisms.

By bringing together interdisciplinary leaders from the public, private, academic, and non-profit sectors, we generated market-based solutions to help overcome a city's resilience challenges. The series provided the opportunity to leverage a diverse pool of knowledge that can help expedite and identify new, innovative ways of funding impactful infrastructure projects.

The series was designed to respond to this need by focusing on a single case study per city — a critical resilient urban infrastructure project or program that lacks a clear path to full funding. The lab discussions explored recent infrastructure development and new investment vehicles in New York City and previously in Los Angeles, Chicago and London. Following each lab, an executive summary that encapsulates the lab discussions and recommendations was produced. WL

Download the full New York lab executive summary to read now.

The Los Angeles lab executive summary is available here.

The Chicago lab executive summary is available here.

The London lab executive summary is available here.

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